

A portrait of Avi Loeb, a man with glasses and a slight smile, wearing a dark quilted puffer jacket over a white shirt and dark tie. The background is dark with some faint architectural lines and a starry sky in the upper left. The image is framed by a black border with glowing blue circuit-like patterns on the left and right sides.

**UAP STUDIES
PODCAST**

**AVI
LOEB**

1
00:00:05,930 --> 00:00:02,149
welcome back everybody very special day

2
00:00:08,509 --> 00:00:05,940
today we probably have the top mind uh

3
00:00:10,250 --> 00:00:08,519
in terms of respect and funding from the

4
00:00:12,530 --> 00:00:10,260
government and everything else we have

5
00:00:15,049 --> 00:00:12,540
the leader of the Galileo project we

6
00:00:17,269 --> 00:00:15,059
have a Harvard University Professor uh

7
00:00:19,670 --> 00:00:17,279
you know the uh the man who brought us

8
00:00:22,130 --> 00:00:19,680
umuamua we're talking about Avi lobe and

9
00:00:24,109 --> 00:00:22,140
he's on the show today professors in the

10
00:00:26,689 --> 00:00:24,119
house right yeah absolutely yeah up

11
00:00:28,130 --> 00:00:26,699
studies Professor is in the house and uh

12
00:00:30,050 --> 00:00:28,140
we got some viewer questions that we're

13
00:00:32,150 --> 00:00:30,060

going to go over as well uh we're gonna

14

00:00:33,889 --> 00:00:32,160

ask Avi he's told us we can ask him

15

00:00:35,690 --> 00:00:33,899

anything and we're going to ask him

16

00:00:37,250 --> 00:00:35,700

anything and uh we're gonna see what he

17

00:00:39,530 --> 00:00:37,260

has to say I know he's very well spoken

18

00:00:40,850 --> 00:00:39,540

he's going to try to shed some light on

19

00:00:42,650 --> 00:00:40,860

you know are we going the right

20

00:00:46,010 --> 00:00:42,660

direction is he finding anything cool

21

00:00:48,470 --> 00:00:46,020

what's the right way in his mind to get

22

00:00:50,270 --> 00:00:48,480

more actual evidence because there's a

23

00:00:52,610 --> 00:00:50,280

lot of talk not a whole lot of evidence

24

00:00:54,770 --> 00:00:52,620

and he's about finding it so I'm super

25

00:00:57,229 --> 00:00:54,780

pumped to chat with this man Jay are you

26

00:00:58,729 --> 00:00:57,239

ready oh I'm ready to do this let's do

27

00:01:05,710 --> 00:00:58,739

this we'll be right back with Mr Avi

28

00:01:23,950 --> 00:01:19,520

[Music]

29

00:01:28,969 --> 00:01:26,749

welcome back very special episode of UAP

30

00:01:31,249 --> 00:01:28,979

studies podcast my name is Louis Borges

31

00:01:33,649 --> 00:01:31,259

joining me as always my good friend and

32

00:01:35,990 --> 00:01:33,659

illustrious co-host Jason Gilman oh

33

00:01:37,969 --> 00:01:36,000

thank you you are so kind illustrious

34

00:01:39,410 --> 00:01:37,979

co-host I love it how are you yeah and

35

00:01:41,390 --> 00:01:39,420

it's a good day today we're we're

36

00:01:44,270 --> 00:01:41,400

chatting with one of the brightest Minds

37

00:01:46,249 --> 00:01:44,280

on the topic somebody very current and

38

00:01:48,770 --> 00:01:46,259

somebody in a very interesting role and

39

00:01:51,289 --> 00:01:48,780

I mean everybody's heard of avilo I have

40

00:01:52,910 --> 00:01:51,299

just some of his uh credentials here I

41

00:01:54,950 --> 00:01:52,920

mean the list could go on forever but

42

00:01:56,389 --> 00:01:54,960

essentially we're chatting today with

43

00:01:58,850 --> 00:01:56,399

the professor of science at Harvard

44

00:02:01,010 --> 00:01:58,860

University he has a PHD in theoretical

45

00:02:03,289 --> 00:02:01,020

physics he's a best-selling author

46

00:02:05,389 --> 00:02:03,299

director of The Institute for Theory and

47

00:02:08,510 --> 00:02:05,399

computation and he is the head of the

48

00:02:10,969 --> 00:02:08,520

Galileo project and that in itself is a

49

00:02:12,949 --> 00:02:10,979

lot so we can only pick his brain so

50

00:02:14,150 --> 00:02:12,959

much in the hour that we have here but

51
00:02:16,850 --> 00:02:14,160
we're also going to ask some viewer

52
00:02:18,650 --> 00:02:16,860
questions and get to know him and get to

53
00:02:20,750 --> 00:02:18,660
know what we can expect coming in the

54
00:02:22,729 --> 00:02:20,760
future so a very warm welcome to our

55
00:02:25,670 --> 00:02:22,739
good friend Mr Avi Lope

56
00:02:27,830 --> 00:02:25,680
thanks for hosting me and you could have

57
00:02:30,350 --> 00:02:27,840
saved some time if you just Define me as

58
00:02:33,229 --> 00:02:30,360
a farm boy I was born on a farm and that

59
00:02:35,570 --> 00:02:33,239
pretty much shaped my scientific career

60
00:02:38,210 --> 00:02:35,580
at least your hard work I think for sure

61
00:02:41,210 --> 00:02:38,220
oh yeah well that's one thing and the

62
00:02:43,850 --> 00:02:41,220
second is I became connected to Nature

63
00:02:46,910 --> 00:02:43,860

much more so than two people so I don't

64

00:02:49,130 --> 00:02:46,920

have any footprint on social media and I

65

00:02:52,430 --> 00:02:49,140

want to learn from nature without any

66

00:02:55,309 --> 00:02:52,440

Prejudice without you know with humility

67

00:02:56,750 --> 00:02:55,319

basically because very often nature

68

00:02:59,990 --> 00:02:56,760

gives us a message that we haven't

69

00:03:02,509 --> 00:03:00,000

expected just a century ago as an

70

00:03:03,650 --> 00:03:02,519

example we discovered quantum mechanics

71

00:03:05,690 --> 00:03:03,660

and that was completely

72

00:03:08,570 --> 00:03:05,700

counter-intuitive to many people

73

00:03:12,170 --> 00:03:08,580

including Albert Einstein who fought for

74

00:03:14,630 --> 00:03:12,180

many years on the wrong ideas of how to

75

00:03:17,210 --> 00:03:14,640

interpret quantum mechanics but we found

76

00:03:20,330 --> 00:03:17,220

it experimentally and obviously nobody

77

00:03:23,570 --> 00:03:20,340

would have expected it to start with and

78

00:03:25,610 --> 00:03:23,580

now a century later we use it to

79

00:03:28,970 --> 00:03:25,620

construct all of our technological

80

00:03:30,589 --> 00:03:28,980

gadgets like cell phones computers we

81

00:03:32,809 --> 00:03:30,599

are communicating thanks to the

82

00:03:34,670 --> 00:03:32,819

understanding of quantum mechanics so my

83

00:03:36,710 --> 00:03:34,680

point is nobody would have expected

84

00:03:38,509 --> 00:03:36,720

quantum mechanics to be the way it is

85

00:03:41,449 --> 00:03:38,519

and we still don't fully understand it

86

00:03:44,809 --> 00:03:41,459

and therefore we should be you know

87

00:03:47,330 --> 00:03:44,819

humble and try to learn from nature and

88

00:03:49,910 --> 00:03:47,340

it's a dialogue with nature it's not a

89

00:03:51,830 --> 00:03:49,920

monologue many of my colleagues feel

90

00:03:53,869 --> 00:03:51,840

that they are smart enough to have a

91

00:03:55,670 --> 00:03:53,879

monologue to say to Nature what it's

92

00:03:57,890 --> 00:03:55,680

supposed to be like there should be

93

00:04:00,410 --> 00:03:57,900

extra Dimensions there should be super

94

00:04:02,630 --> 00:04:00,420

symmetry all kinds of statements and

95

00:04:04,789 --> 00:04:02,640

then they do mathematical gymnastics and

96

00:04:08,390 --> 00:04:04,799

demonstrate that they are smart my point

97

00:04:10,970 --> 00:04:08,400

is that science you know is just when I

98

00:04:12,530 --> 00:04:10,980

was a kid you know it's a sort of a

99

00:04:14,149 --> 00:04:12,540

learning experience you learn about the

100

00:04:16,909 --> 00:04:14,159

world and you have to be humble because

101
00:04:19,550 --> 00:04:16,919
very often nature surprises you and if

102
00:04:22,490 --> 00:04:19,560
you pay too much attention to people you

103
00:04:24,950 --> 00:04:22,500
can go in a dark alleys that lead

104
00:04:27,350 --> 00:04:24,960
nowhere you can spend tens of billions

105
00:04:30,050 --> 00:04:27,360
of dollars in searching for things that

106
00:04:32,749 --> 00:04:30,060
do not exist and an example for that is

107
00:04:34,969 --> 00:04:32,759
the Large Hadron Collider searching for

108
00:04:37,790 --> 00:04:34,979
super symmetry in the natural parameter

109
00:04:40,850 --> 00:04:37,800
space that a lot of scientists were

110
00:04:42,290 --> 00:04:40,860
arguing must be there and even the Dark

111
00:04:43,790 --> 00:04:42,300
Matter was supposed to be found we

112
00:04:46,730 --> 00:04:43,800
didn't do we didn't find those things

113
00:04:49,070 --> 00:04:46,740

and my point is that should teach us

114

00:04:50,870 --> 00:04:49,080

modesty and of course that's on the

115

00:04:53,030 --> 00:04:50,880

negative side of expecting things and

116

00:04:56,030 --> 00:04:53,040

not finding them but there is the other

117

00:04:58,070 --> 00:04:56,040

side which is not expecting things and

118

00:05:00,530 --> 00:04:58,080

then finding them to our surprise and

119

00:05:02,510 --> 00:05:00,540

you know we will talk about it but in my

120

00:05:03,830 --> 00:05:02,520

mind the interstellar objects are

121

00:05:06,110 --> 00:05:03,840

exactly that

122

00:05:09,290 --> 00:05:06,120

so what is a brilliant science mind like

123

00:05:12,050 --> 00:05:09,300

yourself doing getting into UFO and UAP

124

00:05:13,730 --> 00:05:12,060

weirdness and opening themselves up to

125

00:05:16,070 --> 00:05:13,740

this barrage of rocks and people

126

00:05:17,870 --> 00:05:16,080

throwing Stone what made you want to get

127

00:05:19,249 --> 00:05:17,880

into this particular and thank God you

128

00:05:21,409 --> 00:05:19,259

have we really appreciate your

129

00:05:23,629 --> 00:05:21,419

contribution I just want to say that but

130

00:05:25,909 --> 00:05:23,639

what made you want to go down this this

131

00:05:27,350 --> 00:05:25,919

Rabbit Hole uh you know and put your

132

00:05:29,450 --> 00:05:27,360

license and your career and everything

133

00:05:31,670 --> 00:05:29,460

else on the line well it's paying

134

00:05:33,670 --> 00:05:31,680

attention to intriguing evidence that's

135

00:05:36,830 --> 00:05:33,680

all and not paying attention to people

136

00:05:39,110 --> 00:05:36,840

it's really strange on this subject uh

137

00:05:42,189 --> 00:05:39,120

this is you know the community of people

138

00:05:44,510 --> 00:05:42,199

talking about it is polarized as much as

139

00:05:46,610 --> 00:05:44,520

politics you know in politics you find

140

00:05:48,890 --> 00:05:46,620

people on the two extremes making

141

00:05:51,050 --> 00:05:48,900

statements that make no sense and they

142

00:05:52,909 --> 00:05:51,060

fuel each other because one extreme says

143

00:05:54,469 --> 00:05:52,919

nonsense and the Other Extreme says look

144

00:05:57,409 --> 00:05:54,479

at this nonsense and therefore they go

145

00:05:59,090 --> 00:05:57,419

the opposite direction so the same

146

00:06:01,370 --> 00:05:59,100

happens in this case there are people

147

00:06:03,290 --> 00:06:01,380

who are believers they had some

148

00:06:05,570 --> 00:06:03,300

experience at age seven in their bedroom

149

00:06:07,610 --> 00:06:05,580

they they saw some lights

150

00:06:08,990 --> 00:06:07,620

to me as a scientist that makes little

151
00:06:13,010 --> 00:06:09,000
sense you know science is not about

152
00:06:15,350 --> 00:06:13,020
belief and a seven-year-old kid is not a

153
00:06:16,909 --> 00:06:15,360
scientist and the fact that the kid saw

154
00:06:19,610 --> 00:06:16,919
some lights that could have been coming

155
00:06:21,529 --> 00:06:19,620
from you know the window somewhere I

156
00:06:24,529 --> 00:06:21,539
mean that is not evidence and therefore

157
00:06:26,930 --> 00:06:24,539
the belief of that person is nothing is

158
00:06:29,390 --> 00:06:26,940
no evidence for anything okay and then

159
00:06:31,850 --> 00:06:29,400
on the other side you have scientists

160
00:06:34,909 --> 00:06:31,860
who are ridicule the study of

161
00:06:36,309 --> 00:06:34,919
unidentified objects of of interstellar

162
00:06:39,230 --> 00:06:36,319
objects that are

163
00:06:41,330 --> 00:06:39,240

nothing familiar you know and we can

164

00:06:43,930 --> 00:06:41,340

talk about it more only over the past

165

00:06:45,950 --> 00:06:43,940

decade astronomers discovered the first

166

00:06:47,570 --> 00:06:45,960

Interstellar objects objects that came

167

00:06:50,330 --> 00:06:47,580

from outside the solar system through

168

00:06:53,330 --> 00:06:50,340

telescopes and two of them were

169

00:06:55,189 --> 00:06:53,340

discovered by my student and me

170

00:06:58,249 --> 00:06:55,199

um they were the first two

171

00:07:01,189 --> 00:06:58,259

um meteors one from 2014 another one

172

00:07:04,189 --> 00:07:01,199

from March 2017. the third one was

173

00:07:08,210 --> 00:07:04,199

discovered by telescope in Hawaii uh in

174

00:07:10,510 --> 00:07:08,220

2007 October 2017 and it looked very

175

00:07:14,150 --> 00:07:10,520

weird and we can talk more about it

176

00:07:17,090 --> 00:07:14,160

right and then yeah that was on which

177

00:07:21,050 --> 00:07:17,100

the book that I wrote um you know

178

00:07:24,230 --> 00:07:21,060

um extraterrestrials is based and I

179

00:07:27,409 --> 00:07:24,240

would much rather show a photo album if

180

00:07:30,469 --> 00:07:27,419

I had that if I had access to close-up

181

00:07:32,330 --> 00:07:30,479

photographs of this object ID you know

182

00:07:34,730 --> 00:07:32,340

they say a picture is worth a thousand

183

00:07:36,230 --> 00:07:34,740

words in my case it's worth 66 000 words

184

00:07:38,210 --> 00:07:36,240

I would never write a book if I had a

185

00:07:40,129 --> 00:07:38,220

photograph so to me it's all about

186

00:07:42,830 --> 00:07:40,139

evidence and if the evidence looks

187

00:07:45,950 --> 00:07:42,840

intriguing like all three objects appear

188

00:07:47,529 --> 00:07:45,960

to be unusual the first two meteors were

189

00:07:50,330 --> 00:07:47,539

tougher than iron

190

00:07:52,909 --> 00:07:50,340

and they were outliers relative to the

191

00:07:55,430 --> 00:07:52,919

space rocks we had seen before and

192

00:07:58,490 --> 00:07:55,440

omumua was really weird because it had

193

00:08:00,110 --> 00:07:58,500

an extreme shape most likely flat it was

194

00:08:01,730 --> 00:08:00,120

pushed away from the Sun by some

195

00:08:03,770 --> 00:08:01,740

mysterious Force without showing

196

00:08:07,909 --> 00:08:03,780

cometary tale it was definitely not a

197

00:08:11,809 --> 00:08:07,919

comet and the question is whether any of

198

00:08:15,050 --> 00:08:11,819

them was a spacecraft or some artificial

199

00:08:17,870 --> 00:08:15,060

object and to me that's what brought me

200

00:08:19,550 --> 00:08:17,880

into the subject the the the fact

201

00:08:22,249 --> 00:08:19,560

that these objects the first ones

202

00:08:24,230 --> 00:08:22,259

discovered the first three looked

203

00:08:26,689 --> 00:08:24,240

peculiar they didn't look like something

204

00:08:28,430 --> 00:08:26,699

familiar and then of course the U.S

205

00:08:30,650 --> 00:08:28,440

government started talking more

206

00:08:32,870 --> 00:08:30,660

seriously about unidentified aerial

207

00:08:34,430 --> 00:08:32,880

phenomena so that was added to the

208

00:08:36,230 --> 00:08:34,440

basket of things that I really care

209

00:08:38,810 --> 00:08:36,240

about and

210

00:08:40,730 --> 00:08:38,820

you know the evidence is not conclusive

211

00:08:42,230 --> 00:08:40,740

on any of them but it's sufficiently

212

00:08:45,050 --> 00:08:42,240

intriguing to

213

00:08:46,850 --> 00:08:45,060

uh for me as a scientist to go out and

214

00:08:49,190 --> 00:08:46,860

search for more evidence

215

00:08:52,550 --> 00:08:49,200

however you know many of my colleagues

216

00:08:54,350 --> 00:08:52,560

prefer to brush it under the the rag and

217

00:08:56,930 --> 00:08:54,360

and just ignore it and say business is

218

00:08:59,090 --> 00:08:56,940

new as usual and it gets to an extreme

219

00:09:01,190 --> 00:08:59,100

situation I can give an example where a

220

00:09:03,470 --> 00:09:01,200

colleague of mine wrote a couple of

221

00:09:05,870 --> 00:09:03,480

months ago wrote a review paper in a

222

00:09:07,370 --> 00:09:05,880

very distinguished Journal called annual

223

00:09:09,769 --> 00:09:07,380

review of astronomy and astrophysics

224

00:09:12,829 --> 00:09:09,779

that's the place where you put the most

225

00:09:14,949 --> 00:09:12,839

prestigious review papers on subject in

226

00:09:17,690 --> 00:09:14,959

astrophysics and he wrote a review about

227

00:09:19,790 --> 00:09:17,700

omumua so that was supposed to be the

228

00:09:22,190 --> 00:09:19,800

authoritative summary of what we know

229

00:09:24,170 --> 00:09:22,200

about it and he wrote an email to me

230

00:09:27,769 --> 00:09:24,180

saying I'm just finishing the review

231

00:09:30,290 --> 00:09:27,779

paper about the comet omumua so I asked

232

00:09:32,930 --> 00:09:30,300

him how can you call it a comet that was

233

00:09:35,210 --> 00:09:32,940

clearly not a commentary tale no

234

00:09:37,970 --> 00:09:35,220

evidence for any carbon based molecules

235

00:09:39,530 --> 00:09:37,980

around it because the space of Space

236

00:09:41,570 --> 00:09:39,540

Telescope looked very deeply couldn't

237

00:09:43,910 --> 00:09:41,580

see it was definitely not a comet of the

238

00:09:46,610 --> 00:09:43,920

type that we are familiar with so he

239

00:09:49,269 --> 00:09:46,620

replies well I have a theory that in

240

00:09:52,370 --> 00:09:49,279

fact fact it was

241

00:09:54,350 --> 00:09:52,380

it didn't show a commentary tale when we

242

00:09:56,690 --> 00:09:54,360

looked at it but when we didn't look at

243

00:09:59,090 --> 00:09:56,700

it when we looked away it had a

244

00:10:00,650 --> 00:09:59,100

commentary tale and I told him to me it

245

00:10:03,530 --> 00:10:00,660

sounds like going to the zoo and looking

246

00:10:07,130 --> 00:10:03,540

at an elephant and then saying this is a

247

00:10:09,410 --> 00:10:07,140

zebra and it shows its stripes when we

248

00:10:12,050 --> 00:10:09,420

look away from the elephant and that

249

00:10:14,509 --> 00:10:12,060

makes little sense now the fact that a

250

00:10:17,870 --> 00:10:14,519

person from the mainstream

251
00:10:19,430 --> 00:10:17,880
who writes a review about the object

252
00:10:21,650 --> 00:10:19,440
which is supposed to summarize

253
00:10:24,350 --> 00:10:21,660
everything we know goes in that

254
00:10:26,690 --> 00:10:24,360
direction tells you a lot because it

255
00:10:29,509 --> 00:10:26,700
says you know that person and the

256
00:10:32,090 --> 00:10:29,519
community that justifies it would much

257
00:10:34,130 --> 00:10:32,100
rather speak about the object in

258
00:10:35,690 --> 00:10:34,140
familiar terms call it a comet even

259
00:10:37,970 --> 00:10:35,700
though it's not a comet so that they

260
00:10:40,850 --> 00:10:37,980
would feel comfortable and move on and

261
00:10:43,370 --> 00:10:40,860
ignore it and that again is completely

262
00:10:45,290 --> 00:10:43,380
unreasonable okay so I'm trying to

263
00:10:47,389 --> 00:10:45,300

follow common sense I'm trying to go in

264

00:10:49,069 --> 00:10:47,399

the middle and just collect more

265

00:10:50,810 --> 00:10:49,079

evidence because I say here is something

266

00:10:52,069 --> 00:10:50,820

unusual you know and it's quite possible

267

00:10:54,470 --> 00:10:52,079

that it's a probe from another

268

00:10:57,650 --> 00:10:54,480

civilization why not allow for that we

269

00:11:00,530 --> 00:10:57,660

sent out five Interstellar probes you

270

00:11:03,769 --> 00:11:00,540

know ourselves in 50 years okay and so

271

00:11:05,329 --> 00:11:03,779

other stars formed five billion years

272

00:11:07,310 --> 00:11:05,339

before the sun and if there was a

273

00:11:09,710 --> 00:11:07,320

civilization like ours it could have

274

00:11:11,810 --> 00:11:09,720

sent such a you know chemical Rockets

275

00:11:13,430 --> 00:11:11,820

billions of years ago and it takes only

276

00:11:16,550 --> 00:11:13,440

half a billion years for a chemical

277

00:11:18,050 --> 00:11:16,560

rocket to Traverse the entire Milky Way

278

00:11:21,290 --> 00:11:18,060

galaxy so they could have arrived here

279

00:11:23,050 --> 00:11:21,300

so what is wrong with considering

280

00:11:26,569 --> 00:11:23,060

something that we ourselves are doing

281

00:11:29,329 --> 00:11:26,579

and then just you know checking it out

282

00:11:31,970 --> 00:11:29,339

collecting more evidence and you know

283

00:11:34,370 --> 00:11:31,980

there are many reasons why this is not

284

00:11:35,870 --> 00:11:34,380

popular in the scientific Community one

285

00:11:37,370 --> 00:11:35,880

of them is of course the Other Extreme

286

00:11:40,069 --> 00:11:37,380

of people claiming everything is

287

00:11:44,329 --> 00:11:40,079

extraterrestrial but without any proof

288

00:11:46,370 --> 00:11:44,339

but uh also you know experts prefer to

289

00:11:48,470 --> 00:11:46,380

explain everything they see based on

290

00:11:51,590 --> 00:11:48,480

their past knowledge because that that's

291

00:11:53,990 --> 00:11:51,600

where their reputation hangs and uh the

292

00:11:56,750 --> 00:11:54,000

the person you know the their statue

293

00:12:01,310 --> 00:11:56,760

stature and uh so they would much rather

294

00:12:02,990 --> 00:12:01,320

not go in into new territories and uh

295

00:12:05,750 --> 00:12:03,000

they would claim that everything in the

296

00:12:07,850 --> 00:12:05,760

sky is rocks even if it's a rock of a

297

00:12:10,190 --> 00:12:07,860

type that we've never seen before just

298

00:12:11,870 --> 00:12:10,200

like a cave dweller when finding a cell

299

00:12:13,370 --> 00:12:11,880

phone would argue it's a rock of a type

300

00:12:17,269 --> 00:12:13,380

that I've never seen before

301
00:12:19,550 --> 00:12:17,279
oh actually good point uh yeah so when

302
00:12:21,350 --> 00:12:19,560
you were talking about how nature Like

303
00:12:22,910 --> 00:12:21,360
You observe nature you're a big fan of

304
00:12:24,230 --> 00:12:22,920
Nature and one thing that I appreciate

305
00:12:26,210 --> 00:12:24,240
is that you

306
00:12:29,269 --> 00:12:26,220
understand that if there's such things

307
00:12:31,310 --> 00:12:29,279
as extraterrestrial visitations or other

308
00:12:34,430 --> 00:12:31,320
beings out there it's part of nature

309
00:12:36,350 --> 00:12:34,440
it's it's part of of the galactic nature

310
00:12:38,569 --> 00:12:36,360
it's not just you know us here thinking

311
00:12:40,850 --> 00:12:38,579
that we're by ourselves when there might

312
00:12:43,370 --> 00:12:40,860
be teeming of Life out there in the

313
00:12:45,290 --> 00:12:43,380

universe yeah so it's it's great to have

314

00:12:47,030 --> 00:12:45,300

that and to hear that and there's a lot

315

00:12:49,610 --> 00:12:47,040

of uh you know people saying

316

00:12:51,829 --> 00:12:49,620

reminiscence or of you know John Mack

317

00:12:54,290 --> 00:12:51,839

when John Mack was at Harvard he had a

318

00:12:56,509 --> 00:12:54,300

hard time for a while like some people

319

00:12:58,850 --> 00:12:56,519

sort of giving them a rough time for his

320

00:13:00,710 --> 00:12:58,860

ideas and conceptions that's quite

321

00:13:02,690 --> 00:13:00,720

different because he was he was

322

00:13:05,810 --> 00:13:02,700

interested in the psychology of people

323

00:13:09,050 --> 00:13:05,820

who claim the to be abducted I don't

324

00:13:11,810 --> 00:13:09,060

consider humans as scientific detectors

325

00:13:14,389 --> 00:13:11,820

because humans are often you know

326

00:13:17,569 --> 00:13:14,399

um hallucinating have wishful thinking

327

00:13:19,970 --> 00:13:17,579

uh you know you cannot in science when

328

00:13:23,150 --> 00:13:19,980

you do physics you cannot uh use

329

00:13:24,350 --> 00:13:23,160

eyewitness testimonies to substantiate

330

00:13:27,230 --> 00:13:24,360

any any

331

00:13:29,750 --> 00:13:27,240

claim scientific claim uh he was just

332

00:13:32,810 --> 00:13:29,760

focusing on humans so that that's a very

333

00:13:34,850 --> 00:13:32,820

big difference and you know humans maybe

334

00:13:36,829 --> 00:13:34,860

you know those people who claim they

335

00:13:38,990 --> 00:13:36,839

were abducted who claim they've had

336

00:13:40,790 --> 00:13:39,000

experiences they have something in

337

00:13:43,670 --> 00:13:40,800

common so the best you can hope by

338

00:13:45,470 --> 00:13:43,680

examining them is to study what do they

339

00:13:48,350 --> 00:13:45,480

have in common they could all be

340

00:13:51,110 --> 00:13:48,360

illusioned by the same mechanism I don't

341

00:13:53,449 --> 00:13:51,120

care about it I want to find what is out

342

00:13:56,030 --> 00:13:53,459

there in the reality that we all share

343

00:13:57,829 --> 00:13:56,040

just like you know uh the question of

344

00:14:00,110 --> 00:13:57,839

whether the Earth moves around the Sun

345

00:14:02,269 --> 00:14:00,120

or the the Earth is at the center of the

346

00:14:04,069 --> 00:14:02,279

universe that's that's not a question

347

00:14:07,069 --> 00:14:04,079

that you can resolve based on what

348

00:14:08,750 --> 00:14:07,079

people tell you because you know for a

349

00:14:11,090 --> 00:14:08,760

thousand years people believe that we

350

00:14:13,850 --> 00:14:11,100

are in the center of the world and and

351

00:14:16,190 --> 00:14:13,860

you know that was true also just two

352

00:14:18,889 --> 00:14:16,200

decades ago in my home when my daughters

353

00:14:20,690 --> 00:14:18,899

uh you know when they were infants they

354

00:14:22,790 --> 00:14:20,700

thought that they're at the center of

355

00:14:26,150 --> 00:14:22,800

the universe because the universe for

356

00:14:28,430 --> 00:14:26,160

them was our home the they they realize

357

00:14:30,530 --> 00:14:28,440

that we pay that we all run around them

358

00:14:32,150 --> 00:14:30,540

and of course they had the psychological

359

00:14:33,650 --> 00:14:32,160

shock on the first day in the

360

00:14:36,889 --> 00:14:33,660

kindergarten because they found a

361

00:14:38,509 --> 00:14:36,899

smarter kid on their block and that was

362

00:14:41,030 --> 00:14:38,519

really traumatic as far as they were

363

00:14:43,550 --> 00:14:41,040

concerned so my point is our

364

00:14:46,069 --> 00:14:43,560

civilization will mature when we meet

365

00:14:48,829 --> 00:14:46,079

others and until then you know people

366

00:14:50,509 --> 00:14:48,839

tend to be quite arrogant because that

367

00:14:51,710 --> 00:14:50,519

gives us a good feeling you know to

368

00:14:53,750 --> 00:14:51,720

think that we are the center of the

369

00:14:55,730 --> 00:14:53,760

world but then we realize oh okay the

370

00:14:57,530 --> 00:14:55,740

Earth moves around the sun we cannot

371

00:14:59,150 --> 00:14:57,540

really ignore that we cannot ignore the

372

00:15:01,610 --> 00:14:59,160

facts after we have enough data

373

00:15:03,829 --> 00:15:01,620

initially you know Galileo was put in

374

00:15:07,189 --> 00:15:03,839

house arrest today he would have been

375

00:15:10,430 --> 00:15:07,199

canceled on social media but eventually

376

00:15:13,910 --> 00:15:10,440

those philosophers who didn't want his

377

00:15:16,250 --> 00:15:13,920

voice to be heard you know they would

378

00:15:18,230 --> 00:15:16,260

never be able to reach Mars with a

379

00:15:20,269 --> 00:15:18,240

spacecraft because they thought that

380

00:15:22,850 --> 00:15:20,279

Mars moves around the earth and that's

381

00:15:24,230 --> 00:15:22,860

the wrong idea reality is whatever it is

382

00:15:26,870 --> 00:15:24,240

that's my point that people can say

383

00:15:28,910 --> 00:15:26,880

whatever they want just to beautify

384

00:15:31,490 --> 00:15:28,920

reality you know just like people put

385

00:15:34,430 --> 00:15:31,500

makeup so that they look better people

386

00:15:36,590 --> 00:15:34,440

to take recreational drugs so that

387

00:15:39,050 --> 00:15:36,600

reality will appear much more appealing

388

00:15:41,509 --> 00:15:39,060

to them people put goggles that bring

389

00:15:44,269 --> 00:15:41,519

them to the metaverse where they always

390

00:15:46,490 --> 00:15:44,279

look like Brad Pitt and they live among

391

00:15:49,430 --> 00:15:46,500

celebrities the question is okay they

392

00:15:51,710 --> 00:15:49,440

feel better this way but it's not the

393

00:15:54,530 --> 00:15:51,720

reality that we all share and the reason

394

00:15:57,230 --> 00:15:54,540

I really focus on the reality that we

395

00:15:59,090 --> 00:15:57,240

share I would like to see the pimples on

396

00:16:02,269 --> 00:15:59,100

the face of reality I don't want any

397

00:16:04,550 --> 00:16:02,279

makeup the reason that I want to do that

398

00:16:06,650 --> 00:16:04,560

as a scientist is because only when you

399

00:16:09,170 --> 00:16:06,660

understand the actual reality that we

400

00:16:12,170 --> 00:16:09,180

all share without any illusions you can

401
00:16:14,389 --> 00:16:12,180
adapt to it so if you realize that the

402
00:16:18,170 --> 00:16:14,399
pandemic is caused by a virus you can

403
00:16:21,730 --> 00:16:18,180
try and develop mRNA vaccines okay if

404
00:16:25,550 --> 00:16:21,740
you realize uh you know

405
00:16:28,250 --> 00:16:25,560
that gravity is is a curvature of space

406
00:16:30,230 --> 00:16:28,260
and time you can design GPS systems that

407
00:16:32,870 --> 00:16:30,240
allow you to navigate if you understand

408
00:16:35,509 --> 00:16:32,880
quantum mechanics you can develop cell

409
00:16:37,730 --> 00:16:35,519
phones and computers that we all use you

410
00:16:40,490 --> 00:16:37,740
can develop the internet so the point is

411
00:16:42,290 --> 00:16:40,500
you can shape reality only if you

412
00:16:45,290 --> 00:16:42,300
understand it if you have the wrong

413
00:16:47,629 --> 00:16:45,300

ideas about reality you will just go in

414

00:16:49,490 --> 00:16:47,639

dark alleys that lead nowhere you know

415

00:16:51,410 --> 00:16:49,500

just like those philosophers during the

416

00:16:53,689 --> 00:16:51,420

days of Galileo they would never reach

417

00:16:56,210 --> 00:16:53,699

Mars they would send Rockets all over

418

00:16:58,550 --> 00:16:56,220

the place and go these Rockets will go

419

00:17:00,050 --> 00:16:58,560

in directions that will never get to the

420

00:17:01,790 --> 00:17:00,060

destination they would waste a lot of

421

00:17:04,549 --> 00:17:01,800

money just because they had the wrong

422

00:17:07,490 --> 00:17:04,559

idea about reality so I think it's our

423

00:17:09,350 --> 00:17:07,500

duty to try and understand reality so we

424

00:17:11,569 --> 00:17:09,360

can adapt to it and that includes not

425

00:17:14,030 --> 00:17:11,579

just what happens on Earth it includes

426

00:17:15,710 --> 00:17:14,040

what happens in space so the Earth moves

427

00:17:19,069 --> 00:17:15,720

around the Sun you know that's of course

428

00:17:20,990 --> 00:17:19,079

old news but then the question is are we

429

00:17:23,750 --> 00:17:21,000

really the only

430

00:17:25,250 --> 00:17:23,760

kid in our Cosmic neighborhood and my

431

00:17:26,750 --> 00:17:25,260

guess probably not I don't think we're

432

00:17:28,610 --> 00:17:26,760

special I think it's arrogant to think

433

00:17:30,770 --> 00:17:28,620

that we are special and unique and in

434

00:17:32,450 --> 00:17:30,780

fact we now know that you know about a

435

00:17:34,789 --> 00:17:32,460

few percent to a hundred percent of all

436

00:17:36,230 --> 00:17:34,799

the stars like the Sun have a planet the

437

00:17:38,510 --> 00:17:36,240

size of the Earth roughly the same

438

00:17:40,130 --> 00:17:38,520

separation so you know it's clear that

439

00:17:43,250 --> 00:17:40,140

what we find in our backyard is not

440

00:17:46,430 --> 00:17:43,260

unique and the the dice of intelligent

441

00:17:48,890 --> 00:17:46,440

uh civilizations was rolled billions of

442

00:17:52,010 --> 00:17:48,900

times within the Milky Way galaxy alone

443

00:17:54,169 --> 00:17:52,020

okay and so we're probably in the middle

444

00:17:55,909 --> 00:17:54,179

of our class of civilizations and we

445

00:18:00,169 --> 00:17:55,919

just started our Science and Technology

446

00:18:01,730 --> 00:18:00,179

a century ago so you know that it's very

447

00:18:05,090 --> 00:18:01,740

unlikely that you would find someone

448

00:18:08,150 --> 00:18:05,100

exactly at your level uh most likely

449

00:18:09,890 --> 00:18:08,160

other civilizations are either much more

450

00:18:12,409 --> 00:18:09,900

primitive than we are the way we were

451
00:18:14,450 --> 00:18:12,419
let's say a million years ago or much

452
00:18:17,450 --> 00:18:14,460
more advanced than we are uh just

453
00:18:19,190 --> 00:18:17,460
because a century is of science and

454
00:18:21,529 --> 00:18:19,200
technology is just one part in 100

455
00:18:23,990 --> 00:18:21,539
million of the age of of the sun you

456
00:18:25,850 --> 00:18:24,000
know it so it's a very short window so

457
00:18:28,250 --> 00:18:25,860
it's unlikely to find them exactly in

458
00:18:31,010 --> 00:18:28,260
that Century so if they are much more

459
00:18:33,650 --> 00:18:31,020
primitive you know we will need to board

460
00:18:36,049 --> 00:18:33,660
the ship land on their planet and start

461
00:18:38,390 --> 00:18:36,059
searching through the the trees to find

462
00:18:41,150 --> 00:18:38,400
them the way we were let's say a million

463
00:18:43,850 --> 00:18:41,160

years ago uh that's that's a lot of work

464

00:18:45,650 --> 00:18:43,860

I don't think we will ever do that

465

00:18:47,390 --> 00:18:45,660

um and the other way if they are much

466

00:18:49,730 --> 00:18:47,400

more advanced than we are we don't need

467

00:18:52,070 --> 00:18:49,740

to do much we just need to look up and

468

00:18:55,250 --> 00:18:52,080

check intriguing objects because they

469

00:18:56,930 --> 00:18:55,260

reached us and we can learn from them so

470

00:18:58,669 --> 00:18:56,940

that's really the opportunity we can

471

00:19:01,789 --> 00:18:58,679

learn from them we can become smarter we

472

00:19:04,789 --> 00:19:01,799

can get limbs at our future there are

473

00:19:06,650 --> 00:19:04,799

lots of benefits to being open-minded

474

00:19:08,270 --> 00:19:06,660

so tell us a little bit about Galileo

475

00:19:10,970 --> 00:19:08,280

project a lot of people have heard of it

476

00:19:13,250 --> 00:19:10,980

they know a little bit about it so from

477

00:19:16,610 --> 00:19:13,260

The Source itself what is the Galileo

478

00:19:17,289 --> 00:19:16,620

project and why is it important right so

479

00:19:20,710 --> 00:19:17,299

um

480

00:19:23,390 --> 00:19:20,720

in June 2021

481

00:19:25,250 --> 00:19:23,400

there was a report delivered to the U.S

482

00:19:27,770 --> 00:19:25,260

Congress about unidentified aerial

483

00:19:30,950 --> 00:19:27,780

phenomena and a few weeks before the

484

00:19:33,049 --> 00:19:30,960

report the report became public Bill

485

00:19:35,810 --> 00:19:33,059

Nelson the head of NASA said that

486

00:19:38,750 --> 00:19:35,820

scientists should get engaged in

487

00:19:39,710 --> 00:19:38,760

studying UAP and understanding their

488

00:19:41,450 --> 00:19:39,720

nature

489

00:19:44,510 --> 00:19:41,460

you know the government is not a

490

00:19:47,029 --> 00:19:44,520

scientific organization and if a

491

00:19:49,730 --> 00:19:47,039

government official says that he used to

492

00:19:53,210 --> 00:19:49,740

be a senator he was he's also classified

493

00:19:55,970 --> 00:19:53,220

data on UAP so I took his words

494

00:19:59,029 --> 00:19:55,980

seriously and I approached an assigned

495

00:20:01,430 --> 00:19:59,039

basically said that I would be glad to

496

00:20:04,310 --> 00:20:01,440

make their boss happy

497

00:20:07,010 --> 00:20:04,320

and I was asked to submit a white paper

498

00:20:10,390 --> 00:20:07,020

about it and I heard nothing

499

00:20:12,250 --> 00:20:10,400

in return so around the same time a few

500

00:20:14,770 --> 00:20:12,260

multi-billionaires

501
00:20:17,350 --> 00:20:14,780
decided to contribute

502
00:20:19,970 --> 00:20:17,360
to my research account at Harvard

503
00:20:21,169 --> 00:20:19,980
without me doing any fundraising they

504
00:20:24,529 --> 00:20:21,179
were inspired by my book

505
00:20:26,630 --> 00:20:24,539
extraterrestrial and I decided that to

506
00:20:29,690 --> 00:20:26,640
establish the Galileo project simply to

507
00:20:34,270 --> 00:20:29,700
do what I was trying to get NASA to do

508
00:20:37,070 --> 00:20:34,280
as itself and and it's first of all

509
00:20:39,110 --> 00:20:37,080
build a suite of instruments that will

510
00:20:41,570 --> 00:20:39,120
monitor the sky you know the sky is not

511
00:20:44,270 --> 00:20:41,580
classified the reason that the most

512
00:20:46,190 --> 00:20:44,280
juicy data within government is

513
00:20:48,289 --> 00:20:46,200

classified is because it was taken by

514

00:20:50,810 --> 00:20:48,299

classified sensors and the government

515

00:20:52,490 --> 00:20:50,820

doesn't want adversaries to be aware of

516

00:20:54,230 --> 00:20:52,500

the quality of the sensors being used

517

00:20:58,370 --> 00:20:54,240

and that's why the data is not released

518

00:20:59,630 --> 00:20:58,380

but if you collect the same quality data

519

00:21:01,190 --> 00:20:59,640

or even better data with

520

00:21:03,650 --> 00:21:01,200

state-of-the-art instruments that you

521

00:21:05,810 --> 00:21:03,660

buy off the shelf just looking at the

522

00:21:07,549 --> 00:21:05,820

sky and by the way astronomers even

523

00:21:09,350 --> 00:21:07,559

though they look at the sky they they

524

00:21:11,630 --> 00:21:09,360

they look at the small portion of the

525

00:21:12,970 --> 00:21:11,640

sky or they look at very distant sources

526

00:21:15,470 --> 00:21:12,980

they never

527

00:21:19,130 --> 00:21:15,480

try you know if there is an object

528

00:21:23,090 --> 00:21:19,140

moving across the sky they ignore it and

529

00:21:25,070 --> 00:21:23,100

so we had to design a new suite of

530

00:21:27,350 --> 00:21:25,080

instruments that are not currently

531

00:21:29,870 --> 00:21:27,360

available uh in astronomical

532

00:21:31,909 --> 00:21:29,880

observatories so that's the first goal

533

00:21:33,470 --> 00:21:31,919

the first goal is to identify the

534

00:21:35,270 --> 00:21:33,480

unidentified

535

00:21:37,490 --> 00:21:35,280

the second and to help the government

536

00:21:39,770 --> 00:21:37,500

figuring out what it is and you know

537

00:21:41,870 --> 00:21:39,780

it's probably a mixed bag where you know

538

00:21:45,169 --> 00:21:41,880

most of the objects are either human

539

00:21:48,710 --> 00:21:45,179

made you know they could be used uh for

540

00:21:51,549 --> 00:21:48,720

Espionage by other countries or

541

00:21:54,490 --> 00:21:51,559

um they could be drones airplanes

542

00:21:58,430 --> 00:21:54,500

weather balloons satellites and so forth

543

00:22:02,169 --> 00:21:58,440

uh and then another part is just natural

544

00:22:04,850 --> 00:22:02,179

on earth like birds insects and so forth

545

00:22:06,830 --> 00:22:04,860

uh and the question is whether there is

546

00:22:08,870 --> 00:22:06,840

anything else and I won't be surprised

547

00:22:10,789 --> 00:22:08,880

if most of the objects have mundane

548

00:22:14,570 --> 00:22:10,799

explanations but it's sufficient to have

549

00:22:17,930 --> 00:22:14,580

one just one object that is beyond any

550

00:22:19,789 --> 00:22:17,940

reasonable doubt of extraterrestrial

551
00:22:22,130 --> 00:22:19,799
technological origin in other words you

552
00:22:25,210 --> 00:22:22,140
see bolts and screws on it maybe even

553
00:22:27,950 --> 00:22:25,220
the labels saying made on exoplanet Y

554
00:22:30,350 --> 00:22:27,960
and you see it behaving in ways that our

555
00:22:31,970 --> 00:22:30,360
Technologies cannot reproduce and I

556
00:22:35,750 --> 00:22:31,980
should emphasize

557
00:22:38,570 --> 00:22:35,760
we do not imagine new physics here new

558
00:22:41,810 --> 00:22:38,580
physics is a very high bar you know that

559
00:22:43,490 --> 00:22:41,820
physicists are trying to uh find you

560
00:22:44,930 --> 00:22:43,500
know find new physics in all kinds of

561
00:22:47,510 --> 00:22:44,940
laboratory experiments and it takes

562
00:22:51,289 --> 00:22:47,520
decades and a lot of effort to find any

563
00:22:53,870 --> 00:22:51,299

minute deviation from the known physics

564

00:22:56,450 --> 00:22:53,880

just to give you an example a decade ago

565

00:22:59,570 --> 00:22:56,460

there was an experiment called Opera

566

00:23:02,090 --> 00:22:59,580

that reported neutrinos that these are

567

00:23:03,890 --> 00:23:02,100

particles that are quite elusive but the

568

00:23:05,510 --> 00:23:03,900

claim was that they move faster than

569

00:23:08,149 --> 00:23:05,520

light based on what this experiment

570

00:23:11,330 --> 00:23:08,159

detected and then there were you know

571

00:23:13,130 --> 00:23:11,340

tens of Papers written about what that

572

00:23:15,110 --> 00:23:13,140

that may mean if neutrinos move faster

573

00:23:16,669 --> 00:23:15,120

than light and that could have important

574

00:23:18,890 --> 00:23:16,679

implications because you can transmit

575

00:23:20,890 --> 00:23:18,900

information faster than light you can

576
00:23:23,990 --> 00:23:20,900
basically beat the stock market because

577
00:23:25,430 --> 00:23:24,000
all all Communications relating to the

578
00:23:27,770 --> 00:23:25,440
stock market move at the speed of light

579
00:23:30,230 --> 00:23:27,780
and if you can relay information faster

580
00:23:31,909 --> 00:23:30,240
than light then you can make your

581
00:23:33,830 --> 00:23:31,919
transactions before anyone else so that

582
00:23:36,110 --> 00:23:33,840
you know it has huge implications if

583
00:23:38,510 --> 00:23:36,120
something moves faster than light so

584
00:23:41,149 --> 00:23:38,520
anyway then they because of all the

585
00:23:42,890 --> 00:23:41,159
attention they checked the experimental

586
00:23:45,230 --> 00:23:42,900
setup and that would have been of course

587
00:23:47,330 --> 00:23:45,240
new physics and then they realized that

588
00:23:49,850 --> 00:23:47,340

one of the cables was loose in the

589

00:23:52,610 --> 00:23:49,860

experiment so it was clearly a problem

590

00:23:55,310 --> 00:23:52,620

of a loose cable and that's why they got

591

00:23:57,850 --> 00:23:55,320

to the wrong conclusion and you know

592

00:24:00,770 --> 00:23:57,860

this experiment was very carefully

593

00:24:02,690 --> 00:24:00,780

designed and monitored and yet they had

594

00:24:04,610 --> 00:24:02,700

some error in the way that they

595

00:24:06,890 --> 00:24:04,620

connected the cable

596

00:24:08,810 --> 00:24:06,900

um so what I'm saying is it's very

597

00:24:13,930 --> 00:24:08,820

difficult to find new physics you know

598

00:24:17,390 --> 00:24:13,940

for decades we did not find new physics

599

00:24:19,490 --> 00:24:17,400

it's all about what was known since the

600

00:24:22,130 --> 00:24:19,500

60s the standard model of particle

601
00:24:25,010 --> 00:24:22,140
physics and the Higgs boson you know was

602
00:24:27,950 --> 00:24:25,020
discovered but it's old news it's it was

603
00:24:31,990 --> 00:24:27,960
expected from the 60s so so my point is

604
00:24:36,890 --> 00:24:32,000
no physics is a bar that one should only

605
00:24:39,950 --> 00:24:36,900
exceed if the data is extremely good

606
00:24:42,169 --> 00:24:39,960
very high quality so that there is no

607
00:24:44,270 --> 00:24:42,179
doubt there is no mistake in the way the

608
00:24:46,370 --> 00:24:44,280
data was collected and one has to be

609
00:24:50,090 --> 00:24:46,380
very careful before claiming new physics

610
00:24:52,610 --> 00:24:50,100
and you know on that front I'll give you

611
00:24:55,250 --> 00:24:52,620
an example just a few months ago there

612
00:24:58,370 --> 00:24:55,260
was a report from Ukraine by some

613
00:25:01,610 --> 00:24:58,380

astronomers claiming that they see dark

614

00:25:03,770 --> 00:25:01,620

objects at a distance of 10 kilometers

615

00:25:06,289 --> 00:25:03,780

that move at 15 kilometers per second

616

00:25:08,270 --> 00:25:06,299

above this case feed from the earth and

617

00:25:11,750 --> 00:25:08,280

they said these are unidentified aerial

618

00:25:13,610 --> 00:25:11,760

phenomena and and they are potentially

619

00:25:16,370 --> 00:25:13,620

of extraterrestrial origin these are

620

00:25:18,770 --> 00:25:16,380

dark objects and I looked at their paper

621

00:25:21,590 --> 00:25:18,780

and immediately realized that if indeed

622

00:25:24,769 --> 00:25:21,600

you had an object they claimed it's 10

623

00:25:27,409 --> 00:25:24,779

10 meters in size moving at these speeds

624

00:25:30,470 --> 00:25:27,419

that would have created a huge Fireball

625

00:25:32,950 --> 00:25:30,480

in the atmosphere of the earth and you

626

00:25:35,810 --> 00:25:32,960

cannot avoid the friction we with the

627

00:25:38,390 --> 00:25:35,820

electrons and atoms and molecules in

628

00:25:40,310 --> 00:25:38,400

here because they claim that the objects

629

00:25:42,529 --> 00:25:40,320

are dark that means that they block

630

00:25:44,049 --> 00:25:42,539

light they block electromagnetic

631

00:25:46,070 --> 00:25:44,059

radiation so they interact

632

00:25:47,950 --> 00:25:46,080

electromagnetically and that means that

633

00:25:50,390 --> 00:25:47,960

it's inevitable that they would interact

634

00:25:52,490 --> 00:25:50,400

electromagnetically with electrons in

635

00:25:54,230 --> 00:25:52,500

the atmosphere just you know they cannot

636

00:25:55,549 --> 00:25:54,240

distinguish the electric field of

637

00:25:58,190 --> 00:25:55,559

electrons in the atmosphere from the

638

00:26:00,110 --> 00:25:58,200

electric field of radiation so the point

639

00:26:01,850 --> 00:26:00,120

is the laws of physics required that

640

00:26:04,070 --> 00:26:01,860

there would be a huge Fireball around

641

00:26:06,289 --> 00:26:04,080

them at these speeds and then they would

642

00:26:08,149 --> 00:26:06,299

not be dark and then I said okay well if

643

00:26:10,330 --> 00:26:08,159

they got the distance Wrong by a factor

644

00:26:13,610 --> 00:26:10,340

of 10 if these objects were closer to us

645

00:26:15,649 --> 00:26:13,620

then there would be emitter in size they

646

00:26:18,169 --> 00:26:15,659

would move 1.5 kilometers per second

647

00:26:21,110 --> 00:26:18,179

that's exactly the properties of

648

00:26:24,049 --> 00:26:21,120

artillery shells and you would expect a

649

00:26:27,289 --> 00:26:24,059

lot of things moving at this speed of

650

00:26:30,230 --> 00:26:27,299

this size over the sky of Ukraine during

651
00:26:32,510 --> 00:26:30,240
a war time okay and so I suggested that

652
00:26:34,730 --> 00:26:32,520
they got the distance from long because

653
00:26:36,230 --> 00:26:34,740
they measured it from one side usually

654
00:26:39,590 --> 00:26:36,240
to get the distance right you need

655
00:26:41,990 --> 00:26:39,600
multiple sites and then I was attacked

656
00:26:46,130 --> 00:26:42,000
by people who are up

657
00:26:48,769 --> 00:26:46,140
UAP and because they made analogies with

658
00:26:51,049 --> 00:26:48,779
past reports from 20 years ago like for

659
00:26:52,850 --> 00:26:51,059
example the Nimitz that has nothing to

660
00:26:54,830 --> 00:26:52,860
do with what the astronomers in Ukraine

661
00:26:57,169 --> 00:26:54,840
was it were reporting about the only way

662
00:26:59,649 --> 00:26:57,179
to respond to my criticism would be to

663
00:27:02,269 --> 00:26:59,659

say the distance

664

00:27:06,169 --> 00:27:02,279

estimates are accurate actually because

665

00:27:09,470 --> 00:27:06,179

of this and that but nobody replied this

666

00:27:11,930 --> 00:27:09,480

way and also the National Academy of

667

00:27:13,730 --> 00:27:11,940

Science in Ukraine and basically said

668

00:27:16,610 --> 00:27:13,740

the same thing as I said they said that

669

00:27:19,990 --> 00:27:16,620

the distance estimates are not uh

670

00:27:22,730 --> 00:27:20,000

accurate they they also had

671

00:27:25,010 --> 00:27:22,740

bright objects one of which they measure

672

00:27:29,090 --> 00:27:25,020

the distance to from two sides so that

673

00:27:31,430 --> 00:27:29,100

you can rely on and they found it an

674

00:27:34,669 --> 00:27:31,440

elevation of a thousand kilometers I

675

00:27:36,289 --> 00:27:34,679

just put in Google spy satellites and I

676
00:27:38,570 --> 00:27:36,299
saw that the elevation of a thousand

677
00:27:41,090 --> 00:27:38,580
kilometers is typical for for a spy

678
00:27:44,090 --> 00:27:41,100
satellite so obviously that could be a

679
00:27:46,370 --> 00:27:44,100
spice satellite you can't try it a paper

680
00:27:48,529 --> 00:27:46,380
saying these are unidentified objects

681
00:27:50,750 --> 00:27:48,539
that are potentially extraterrestrial if

682
00:27:52,250 --> 00:27:50,760
you didn't rule out the possibility of a

683
00:27:56,090 --> 00:27:52,260
spy satellite in the case of the bright

684
00:27:58,370 --> 00:27:56,100
object or artillery shells or bullets in

685
00:28:00,649 --> 00:27:58,380
the case of the dark objects and these

686
00:28:03,169 --> 00:28:00,659
people were claiming that and then the

687
00:28:05,510 --> 00:28:03,179
UAP Advocates were saying well it's no

688
00:28:07,310 --> 00:28:05,520

physics and I say

689

00:28:09,830 --> 00:28:07,320

it's completely unacceptable you cannot

690

00:28:12,110 --> 00:28:09,840

argue in favor of new physics if the

691

00:28:13,250 --> 00:28:12,120

evidence is sloppy if the evidence is

692

00:28:15,470 --> 00:28:13,260

not robust if you don't have

693

00:28:17,510 --> 00:28:15,480

triangulation okay so on the one hand I

694

00:28:19,850 --> 00:28:17,520

get rocks from the side of the Believers

695

00:28:22,070 --> 00:28:19,860

on the other hand I get rocks on the

696

00:28:25,310 --> 00:28:22,080

side of the Skeptics because they don't

697

00:28:27,950 --> 00:28:25,320

want even to discuss this subject and

698

00:28:29,690 --> 00:28:27,960

but I don't care you know because I just

699

00:28:32,870 --> 00:28:29,700

follow the evidence if the evidence is

700

00:28:35,149 --> 00:28:32,880

not conclusive if it's doubtful we

701
00:28:37,810 --> 00:28:35,159
should seek better evidence so that's

702
00:28:40,430 --> 00:28:37,820
the Galileo project in terms of UAP

703
00:28:42,710 --> 00:28:40,440
collecting high quality evidence so that

704
00:28:44,930 --> 00:28:42,720
it will be clear what the objects are

705
00:28:46,789 --> 00:28:44,940
and we are calibrating our instruments

706
00:28:48,649 --> 00:28:46,799
by the way this week is very important

707
00:28:50,450 --> 00:28:48,659
because it's the first time we're

708
00:28:52,870 --> 00:28:50,460
starting to collect data and we will

709
00:28:55,490 --> 00:28:52,880
analyze it with artificial intelligence

710
00:28:57,789 --> 00:28:55,500
algorithms so that's one branch of the

711
00:29:00,590 --> 00:28:57,799
Galileo project another one is to design

712
00:29:04,390 --> 00:29:00,600
a space mission that will run the Vu

713
00:29:07,850 --> 00:29:04,400

with the next there is a dating app the

714

00:29:11,269 --> 00:29:07,860

very a Rubin observatory in Chile that

715

00:29:13,970 --> 00:29:11,279

would alert us within a year to objects

716

00:29:16,250 --> 00:29:13,980

like and then we could in principle send

717

00:29:19,070 --> 00:29:16,260

the camera that will come close to the

718

00:29:21,110 --> 00:29:19,080

next and take a close-up photograph so

719

00:29:23,930 --> 00:29:21,120

we got about a quarter of a million

720

00:29:26,710 --> 00:29:23,940

dollars for the design of such emissions

721

00:29:31,549 --> 00:29:26,720

we are working on that and the third

722

00:29:33,049 --> 00:29:31,559

branch is to scoop the ocean floor for

723

00:29:35,870 --> 00:29:33,059

the fragments from the first

724

00:29:39,710 --> 00:29:35,880

Interstellar medial meteor that landed

725

00:29:42,169 --> 00:29:39,720

in 2014 near Papua New Guinea about 100

726

00:29:44,149 --> 00:29:42,179

miles of the coast and for that I

727

00:29:46,630 --> 00:29:44,159

received the one and a half million

728

00:29:49,730 --> 00:29:46,640

dollars in a donation that funds it

729

00:29:52,310 --> 00:29:49,740

entirely and we have an excellent team

730

00:29:55,610 --> 00:29:52,320

that has some of the best experts in the

731

00:29:58,610 --> 00:29:55,620

world in Ocean Expeditions and we plan

732

00:30:00,289 --> 00:29:58,620

to go next spring and they basically

733

00:30:02,330 --> 00:30:00,299

scoop the ocean floor find those

734

00:30:04,370 --> 00:30:02,340

fragments because we know that this

735

00:30:08,269 --> 00:30:04,380

meteor was tougher than iron it was

736

00:30:11,870 --> 00:30:08,279

tougher than all 200 172 other space

737

00:30:14,210 --> 00:30:11,880

rocks in the catalog of meteors that the

738

00:30:16,610 --> 00:30:14,220

government compiled so it's clearly an

739

00:30:18,830 --> 00:30:16,620

outlier it's the first Interstellar

740

00:30:21,409 --> 00:30:18,840

object ever discovered roughly half a

741

00:30:25,490 --> 00:30:21,419

meter in size and it exploded about

742

00:30:29,029 --> 00:30:25,500

above the ocean surface an elevation of

743

00:30:31,549 --> 00:30:29,039

about 19 kilometers and then the

744

00:30:33,169 --> 00:30:31,559

fragments from it should be on the ocean

745

00:30:35,149 --> 00:30:33,179

floor and

746

00:30:37,669 --> 00:30:35,159

um you know it released a few percent of

747

00:30:40,190 --> 00:30:37,679

the energy of the Hiroshima atomic bomb

748

00:30:43,190 --> 00:30:40,200

so so that was quite a powerful

749

00:30:46,430 --> 00:30:43,200

explosion at 4 AM near Papua New Guinea

750

00:30:49,490 --> 00:30:46,440

in 2014 I'm sure it woke up some of the

751

00:30:51,470 --> 00:30:49,500

residents there and we are planning to

752

00:30:52,669 --> 00:30:51,480

figure out what the object was made of

753

00:30:56,029 --> 00:30:52,679

was it

754

00:30:58,909 --> 00:30:56,039

um rock you know an unusual Rock perhaps

755

00:31:02,450 --> 00:30:58,919

an iron meteorite or

756

00:31:05,570 --> 00:31:02,460

was it artificial in origin if for

757

00:31:07,370 --> 00:31:05,580

example made of stainless steel and I

758

00:31:09,289 --> 00:31:07,380

already promised the curator of the

759

00:31:11,570 --> 00:31:09,299

Museum of Modern Art in New York City

760

00:31:14,930 --> 00:31:11,580

that if we find any gadget on the ocean

761

00:31:16,549 --> 00:31:14,940

floor I will put it on display in New

762

00:31:18,889 --> 00:31:16,559

York City because it would represent

763

00:31:20,870 --> 00:31:18,899

modernity for us even though it may

764

00:31:21,950 --> 00:31:20,880
represent ancient history for the

765

00:31:24,470 --> 00:31:21,960
senders

766

00:31:26,630 --> 00:31:24,480
oh wow you actually answered one of our

767

00:31:29,690 --> 00:31:26,640
viewer questions just in regards to the

768

00:31:30,769 --> 00:31:29,700
whole uh Ukrainian UAP report and the

769

00:31:32,750 --> 00:31:30,779
question was from a gentleman named

770

00:31:35,149 --> 00:31:32,760
Dennis I think it's Dennis Stefan or

771

00:31:37,070 --> 00:31:35,159
Dennis Stefan but he wanted to know that

772

00:31:39,470 --> 00:31:37,080
if something moving at that velocity

773

00:31:41,330 --> 00:31:39,480
would create a fireball how does that

774

00:31:43,070 --> 00:31:41,340
leave room for the Nimitz and you

775

00:31:45,950 --> 00:31:43,080
mentioned you get rocks from both sides

776

00:31:47,870 --> 00:31:45,960

right the UFO community and the Skeptics

777

00:31:49,970 --> 00:31:47,880

and the scientists so he basically wants

778

00:31:51,710 --> 00:31:49,980

to know if that thing was moving so fast

779

00:31:53,870 --> 00:31:51,720

it should have had a fireball why didn't

780

00:31:56,769 --> 00:31:53,880

the Tic Tac so what are your thoughts on

781

00:32:00,289 --> 00:31:56,779

that so my thoughts are

782

00:32:02,269 --> 00:32:00,299

we don't have the data we just have

783

00:32:03,070 --> 00:32:02,279

eyewitness testimonies about what

784

00:32:06,049 --> 00:32:03,080

happened

785

00:32:08,210 --> 00:32:06,059

near the Nimitz and

786

00:32:10,669 --> 00:32:08,220

um there were reports that the objects

787

00:32:13,789 --> 00:32:10,679

were moving extremely fast but just

788

00:32:17,029 --> 00:32:13,799

imagine a population of multiple objects

789

00:32:19,789 --> 00:32:17,039

okay and some of them come in and out of

790

00:32:23,210 --> 00:32:19,799

view let's say of a radar system or an

791

00:32:25,430 --> 00:32:23,220

infrared sensor so you see an object at

792

00:32:27,169 --> 00:32:25,440

one location and then it goes out of you

793

00:32:28,850 --> 00:32:27,179

and then another object completely

794

00:32:32,029 --> 00:32:28,860

independent of the first object you

795

00:32:34,310 --> 00:32:32,039

looked at shows up behind you okay now

796

00:32:37,010 --> 00:32:34,320

you you might argue oh it's the same

797

00:32:39,409 --> 00:32:37,020

object it was moving extremely fast but

798

00:32:41,389 --> 00:32:39,419

it's actually two different objects and

799

00:32:44,029 --> 00:32:41,399

the only way for us to tell is if you

800

00:32:46,070 --> 00:32:44,039

find some marker some flag on the object

801
00:32:48,110 --> 00:32:46,080
that tells you that it's the same but

802
00:32:49,789 --> 00:32:48,120
without that knowledge it could be a

803
00:32:51,350 --> 00:32:49,799
population of objects and you would just

804
00:32:54,529 --> 00:32:51,360
see them coming in and out of view

805
00:32:56,810 --> 00:32:54,539
another possibility that one should keep

806
00:33:01,610 --> 00:32:56,820
in mind is that it's not a real object

807
00:33:04,970 --> 00:33:01,620
you are familiar with this game that one

808
00:33:07,310 --> 00:33:04,980
plays with a laser beam uh tricking a

809
00:33:09,110 --> 00:33:07,320
cat as if it's a real thing you know so

810
00:33:14,509 --> 00:33:09,120
just move it on the floor the spot of

811
00:33:18,769 --> 00:33:14,519
the laser and the cut ran after it right

812
00:33:20,509 --> 00:33:18,779
um so the cat thinks it's a real object

813
00:33:22,730 --> 00:33:20,519

but in fact it's just the spot of the

814

00:33:25,730 --> 00:33:22,740

laser beam moving around it can move

815

00:33:29,690 --> 00:33:25,740

really fast without doing anything to

816

00:33:33,049 --> 00:33:29,700

the air without doing so the point is uh

817

00:33:37,070 --> 00:33:33,059

we don't know why the government uh kept

818

00:33:39,590 --> 00:33:37,080

the data from that incident secret you

819

00:33:41,389 --> 00:33:39,600

know it's possible in my mind that it

820

00:33:44,389 --> 00:33:41,399

was one branch of government that was

821

00:33:48,110 --> 00:33:44,399

developing some kind of new technologies

822

00:33:52,310 --> 00:33:48,120

let's say an unusual set of drones back

823

00:33:53,930 --> 00:33:52,320

in 2020 but back in around 2000 so 20

824

00:33:57,049 --> 00:33:53,940

years ago

825

00:33:59,149 --> 00:33:57,059

um that back then you know people in the

826

00:34:00,950 --> 00:33:59,159

military were not even imagining okay

827

00:34:03,590 --> 00:34:00,960

and then if you had a population of

828

00:34:05,690 --> 00:34:03,600

those you could have one being mistaken

829

00:34:08,990 --> 00:34:05,700

for another as if it's moving really

830

00:34:10,730 --> 00:34:09,000

fast or it could be lasers that were

831

00:34:13,430 --> 00:34:10,740

used at the time you know now we know

832

00:34:17,210 --> 00:34:13,440

that lasers are used also as weapons in

833

00:34:19,310 --> 00:34:17,220

the Navy so it could be any new

834

00:34:21,470 --> 00:34:19,320

technology that was tested and then of

835

00:34:23,810 --> 00:34:21,480

course they didn't want the data to be

836

00:34:27,050 --> 00:34:23,820

available because the it was all

837

00:34:28,970 --> 00:34:27,060

secretive at the time so that is a

838

00:34:32,270 --> 00:34:28,980

possibility and by the way I don't

839

00:34:34,490 --> 00:34:32,280

really want to touch any classified data

840

00:34:36,290 --> 00:34:34,500

or information that belongs to the

841

00:34:38,930 --> 00:34:36,300

government because it's a matter of

842

00:34:42,109 --> 00:34:38,940

National Security what I want to do is

843

00:34:44,450 --> 00:34:42,119

collect new data because the sky is not

844

00:34:46,930 --> 00:34:44,460

classified and collected with

845

00:34:49,970 --> 00:34:46,940

instruments that I fully understand

846

00:34:51,770 --> 00:34:49,980

without relying on eyewitness

847

00:34:53,869 --> 00:34:51,780

testimonies these instruments will

848

00:34:57,230 --> 00:34:53,879

record something in multiple wavelengths

849

00:35:00,109 --> 00:34:57,240

so the Galore project has infrared radio

850

00:35:03,109 --> 00:35:00,119

and Optical sensors that cover the

851

00:35:06,230 --> 00:35:03,119

entire sky at all times there is an

852

00:35:10,430 --> 00:35:06,240

audio sensor magnetic field sensor so

853

00:35:14,030 --> 00:35:10,440

basically we'll have a full video of the

854

00:35:17,050 --> 00:35:14,040

sky with audio uh at all time like a

855

00:35:19,310 --> 00:35:17,060

movie and then we will analyze it and

856

00:35:22,069 --> 00:35:19,320

obviously we are calibrating our

857

00:35:24,410 --> 00:35:22,079

instruments we understand fully how they

858

00:35:27,589 --> 00:35:24,420

operate and let's see if we find

859

00:35:30,829 --> 00:35:27,599

anything unusual so rather than

860

00:35:33,530 --> 00:35:30,839

you know imagine what the military

861

00:35:34,910 --> 00:35:33,540

personnel were seeing back then 20 years

862

00:35:37,550 --> 00:35:34,920

ago now we have much better

863

00:35:41,329 --> 00:35:37,560

instrumentation if there is a phenomena

864

00:35:43,310 --> 00:35:41,339

out there that evaded explanation and

865

00:35:46,250 --> 00:35:43,320

years of extraterrestrial origin we

866

00:35:48,829 --> 00:35:46,260

should be able to see it and um you know

867

00:35:51,470 --> 00:35:48,839

that's the the more healthy approach to

868

00:35:54,890 --> 00:35:51,480

take because otherwise you can speculate

869

00:35:56,270 --> 00:35:54,900

forever and that would not convince the

870

00:35:58,849 --> 00:35:56,280

mainstream of the scientific community

871

00:36:00,770 --> 00:35:58,859

so that we can move forward now of

872

00:36:03,950 --> 00:36:00,780

course the government may have some data

873

00:36:05,270 --> 00:36:03,960

that we don't have access to but I find

874

00:36:07,010 --> 00:36:05,280

it hard to believe that they would

875

00:36:08,569 --> 00:36:07,020

declassify I don't want to ask them to

876

00:36:12,230 --> 00:36:08,579

declassify it because it will take

877

00:36:14,270 --> 00:36:12,240

forever and I would rather collect data

878

00:36:15,829 --> 00:36:14,280

about the sky myself and that's what we

879

00:36:18,230 --> 00:36:15,839

are doing with the gorilla project and

880

00:36:19,730 --> 00:36:18,240

so just stay tuned hopefully within a

881

00:36:21,829 --> 00:36:19,740

year or two we'll have something

882

00:36:25,069 --> 00:36:21,839

interesting to say

883

00:36:27,410 --> 00:36:25,079

and as far as doing the expedition that

884

00:36:30,950 --> 00:36:27,420

you guys are heading for you said in the

885

00:36:32,750 --> 00:36:30,960

spring of of next year yes yes uh so how

886

00:36:34,130 --> 00:36:32,760

difficult is it going to be to find

887

00:36:35,810 --> 00:36:34,140

those fragments do you think they're

888

00:36:37,310 --> 00:36:35,820

going to be quite easy to find or is it

889

00:36:39,950 --> 00:36:37,320

going to be like a needle in a haystack

890

00:36:44,569 --> 00:36:39,960

type situation well

891

00:36:48,109 --> 00:36:44,579

um we need to visit the the the location

892

00:36:50,690 --> 00:36:48,119

of where the fragments uh are expected

893

00:36:54,710 --> 00:36:50,700

to be and for that we are trying to get

894

00:36:58,609 --> 00:36:54,720

the the location precise as possible uh

895

00:37:01,190 --> 00:36:58,619

by using uh government data so we are

896

00:37:03,890 --> 00:37:01,200

trying to get the cooperation of the US

897

00:37:06,589 --> 00:37:03,900

government to to know precisely where

898

00:37:10,370 --> 00:37:06,599

this Fireball was observed so that we

899

00:37:12,829 --> 00:37:10,380

minimize the area that we search over uh

900

00:37:14,630 --> 00:37:12,839

but you have to understand that once the

901
00:37:17,290 --> 00:37:14,640
object exploded in fact we have a new

902
00:37:20,569 --> 00:37:17,300
scientific paper about it it

903
00:37:22,670 --> 00:37:20,579
produced fragments of different sizes

904
00:37:25,190 --> 00:37:22,680
most of them are around a millimeter the

905
00:37:27,349 --> 00:37:25,200
head of a pin roughly the size the of

906
00:37:30,170 --> 00:37:27,359
the head of a pin and for small

907
00:37:33,109 --> 00:37:30,180
fragments uh the friction with the air

908
00:37:35,510 --> 00:37:33,119
would bring them down just like droplets

909
00:37:37,970 --> 00:37:35,520
of rain they would be stopped by the air

910
00:37:41,329 --> 00:37:37,980
and just fall down and they were very

911
00:37:45,109 --> 00:37:41,339
hot of course they they were melted the

912
00:37:47,870 --> 00:37:45,119
material and uh then the bigger

913
00:37:49,010 --> 00:37:47,880

fragments could continue along the path

914

00:37:51,890 --> 00:37:49,020

of

915

00:37:54,370 --> 00:37:51,900

the original meteor and so you end up

916

00:37:56,950 --> 00:37:54,380

Distributing the fragments along a strip

917

00:38:00,609 --> 00:37:56,960

with the lightest ones

918

00:38:03,910 --> 00:38:00,619

just about just below the explosion site

919

00:38:06,109 --> 00:38:03,920

and the heaviest fragments

920

00:38:09,770 --> 00:38:06,119

aiming in the same direction as the

921

00:38:13,370 --> 00:38:09,780

meteor was aiming so so we want to find

922

00:38:16,670 --> 00:38:13,380

this trip and the ocean is uh fairly

923

00:38:19,069 --> 00:38:16,680

deep out there it's about a mile deep so

924

00:38:21,829 --> 00:38:19,079

we are designing special Machinery that

925

00:38:24,530 --> 00:38:21,839

will include the sled with a magnet and

926

00:38:26,870 --> 00:38:24,540

also a net behind it that will collect

927

00:38:29,270 --> 00:38:26,880

the fragments and you know it's possible

928

00:38:31,190 --> 00:38:29,280

that we will not find anything because

929

00:38:34,250 --> 00:38:31,200

you know in principle everything could

930

00:38:37,790 --> 00:38:34,260

have been vaporized for example or that

931

00:38:39,230 --> 00:38:37,800

we visit the wrong place uh but we very

932

00:38:41,329 --> 00:38:39,240

much hope that we will find something

933

00:38:43,130 --> 00:38:41,339

and we don't need more than a few grams

934

00:38:44,089 --> 00:38:43,140

of material in order to figure out the

935

00:38:46,490 --> 00:38:44,099

composition

936

00:38:48,290 --> 00:38:46,500

so we will do our best and I'm willing

937

00:38:49,910 --> 00:38:48,300

to sleep on the deck you know under

938

00:38:53,690 --> 00:38:49,920

conditions that I haven't experienced

939

00:38:57,530 --> 00:38:53,700

since I was a paratrooper in the Israeli

940

00:38:58,790 --> 00:38:57,540

military back in my 20s uh some 40 years

941

00:39:01,730 --> 00:38:58,800

ago

942

00:39:03,950 --> 00:39:01,740

um and then uh we shall see what we find

943

00:39:06,530 --> 00:39:03,960

you know it's really exciting and um

944

00:39:08,690 --> 00:39:06,540

because we are doing science we are not

945

00:39:10,970 --> 00:39:08,700

the you know this is the first object

946

00:39:13,010 --> 00:39:10,980

from Interstellar space ever spotted and

947

00:39:15,109 --> 00:39:13,020

we have a chance of putting our hands on

948

00:39:17,390 --> 00:39:15,119

the material and if you wanted to do it

949

00:39:20,810 --> 00:39:17,400

in space it it would be a mission that

950

00:39:23,030 --> 00:39:20,820

cost more than a billion dollars so it's

951
00:39:24,950 --> 00:39:23,040
about a thousand times cheaper to do it

952
00:39:25,730 --> 00:39:24,960
here on Earth and that's what we are

953
00:39:28,609 --> 00:39:25,740
doing

954
00:39:30,650 --> 00:39:28,619
so is he significant to this is that

955
00:39:32,750 --> 00:39:30,660
it's a rock that originated outside of

956
00:39:35,329 --> 00:39:32,760
our galaxy is that why outside outside

957
00:39:37,550 --> 00:39:35,339
of the solar system so the the Milky Way

958
00:39:39,890 --> 00:39:37,560
galaxy is a collection of tens of

959
00:39:42,109 --> 00:39:39,900
billions of stars you know many of which

960
00:39:44,569 --> 00:39:42,119
are just like the sun

961
00:39:46,310 --> 00:39:44,579
um so that's that's a galaxy galaxy is

962
00:39:47,990 --> 00:39:46,320
the collection of stars and then beyond

963
00:39:50,270 --> 00:39:48,000

the Milky Way galaxy there is the entire

964

00:39:52,849 --> 00:39:50,280

universe that is made of about a

965

00:39:55,130 --> 00:39:52,859

trillion galaxies okay so all together

966

00:39:58,250 --> 00:39:55,140

the number of stars and the number of

967

00:40:00,770 --> 00:39:58,260

earth-like planets in the observable

968

00:40:03,770 --> 00:40:00,780

volume of the universe is more than the

969

00:40:06,550 --> 00:40:03,780

number of grains of sand on all beaches

970

00:40:10,370 --> 00:40:06,560

on Earth it's 10 to the power

971

00:40:12,470 --> 00:40:10,380

21. so the huge number and that's why we

972

00:40:15,410 --> 00:40:12,480

should be modest and not assume that we

973

00:40:17,150 --> 00:40:15,420

are that Albert Einstein was the

974

00:40:19,490 --> 00:40:17,160

smartest scientist who ever lived since

975

00:40:21,710 --> 00:40:19,500

the big bang you know 13.8 billion years

976
00:40:24,410 --> 00:40:21,720
ago there must have been scientists on

977
00:40:26,270 --> 00:40:24,420
other planets billions of years ago that

978
00:40:28,310 --> 00:40:26,280
were smarter than Einstein and the

979
00:40:30,710 --> 00:40:28,320
civilization that benefited from their

980
00:40:33,589 --> 00:40:30,720
wisdom could have had

981
00:40:35,150 --> 00:40:33,599
could have sent probes into Interstellar

982
00:40:37,430 --> 00:40:35,160
space that would have reached Us by now

983
00:40:40,550 --> 00:40:37,440
and we just need to search for that and

984
00:40:43,069 --> 00:40:40,560
and we can learn from them uh why not

985
00:40:46,130 --> 00:40:43,079
look over the shoulders of a smarter kid

986
00:40:48,589 --> 00:40:46,140
you know in our class and learn from the

987
00:40:51,170 --> 00:40:48,599
answers that they gave simply because

988
00:40:53,450 --> 00:40:51,180

they had more time you know and and what

989

00:40:56,390 --> 00:40:53,460

I keep saying is you know we tend to

990

00:40:57,829 --> 00:40:56,400

think that we are at the center of the

991

00:41:01,310 --> 00:40:57,839

stage

992

00:41:02,870 --> 00:41:01,320

um of a cosmic play uh but guess what we

993

00:41:04,310 --> 00:41:02,880

are not at the center of the stage we

994

00:41:05,870 --> 00:41:04,320

know that the Earth moves around the sun

995

00:41:07,910 --> 00:41:05,880

the sun moves around the center of the

996

00:41:10,130 --> 00:41:07,920

Milky Way galaxy it's one out of tens of

997

00:41:11,750 --> 00:41:10,140

billions of stars like it and then the

998

00:41:14,569 --> 00:41:11,760

Milky Way moves in some random Direction

999

00:41:16,250 --> 00:41:14,579

relative to other galaxies so we are not

1000

00:41:19,910 --> 00:41:16,260

at the center of the stage that's for

1001
00:41:22,490 --> 00:41:19,920
for sure uh but um moreover we just

1002
00:41:25,430 --> 00:41:22,500
arrived the human species was just

1003
00:41:27,770 --> 00:41:25,440
formed a few million years ago and

1004
00:41:28,750 --> 00:41:27,780
that's a tiny fraction of the age of the

1005
00:41:30,890 --> 00:41:28,760
universe

1006
00:41:34,370 --> 00:41:30,900
13.8 billion years

1007
00:41:38,210 --> 00:41:34,380
so um you know if we are if you are not

1008
00:41:40,370 --> 00:41:38,220
at the center of stage and you just

1009
00:41:42,829 --> 00:41:40,380
arrive at the end of the play

1010
00:41:45,349 --> 00:41:42,839
there is a very simple conclusion the

1011
00:41:47,810 --> 00:41:45,359
play is not about you yeah okay we

1012
00:41:50,089 --> 00:41:47,820
refuse to accept that but it's obvious

1013
00:41:51,589 --> 00:41:50,099

any kid would tell you that if you're

1014

00:41:53,450 --> 00:41:51,599

not in the center of the stage and you

1015

00:41:56,390 --> 00:41:53,460

arrive just in last moments of the play

1016

00:41:58,730 --> 00:41:56,400

it's not about you now the if you want

1017

00:42:01,430 --> 00:41:58,740

to find more about the play you better

1018

00:42:03,829 --> 00:42:01,440

find other actors who have been around

1019

00:42:05,810 --> 00:42:03,839

look for longer and they might tell you

1020

00:42:07,190 --> 00:42:05,820

what it's about and that is the correct

1021

00:42:10,310 --> 00:42:07,200

approach

1022

00:42:13,150 --> 00:42:10,320

so this is just again the theorizing

1023

00:42:15,349 --> 00:42:13,160

here but do you think it's sort of a a

1024

00:42:16,910 --> 00:42:15,359

cosmic thing that

1025

00:42:18,589 --> 00:42:16,920

Evolution

1026

00:42:21,890 --> 00:42:18,599

um you know for the the species that

1027

00:42:23,630 --> 00:42:21,900

have evolved faster more than us or is

1028

00:42:26,510 --> 00:42:23,640

just scientifically more inclined than

1029

00:42:27,950 --> 00:42:26,520

we are is it sort of not their

1030

00:42:29,810 --> 00:42:27,960

responsibility of these sort of help

1031

00:42:32,329 --> 00:42:29,820

other species you know what I mean like

1032

00:42:35,329 --> 00:42:32,339

is it a thing that might be Universal

1033

00:42:37,790 --> 00:42:35,339

that to help each other out one thing

1034

00:42:40,730 --> 00:42:37,800

that we run across a lot in this podcast

1035

00:42:43,069 --> 00:42:40,740

is the theme of Consciousness now we do

1036

00:42:46,010 --> 00:42:43,079

look at different aspects than than you

1037

00:42:48,290 --> 00:42:46,020

because you're more you got your

1038

00:42:50,089 --> 00:42:48,300

um you know your specializations that

1039

00:42:51,710 --> 00:42:50,099

you you focus on we look at different

1040

00:42:53,030 --> 00:42:51,720

things and we keep hearing about

1041

00:42:54,710 --> 00:42:53,040

Consciousness Consciousness

1042

00:42:57,190 --> 00:42:54,720

Consciousness it seems to be something

1043

00:42:59,990 --> 00:42:57,200

that we keep hearing and that these

1044

00:43:02,030 --> 00:43:00,000

crafts operate on Consciousness the ones

1045

00:43:04,130 --> 00:43:02,040

that are anyways reported in our skies

1046

00:43:05,990 --> 00:43:04,140

not the ones that are out there the ones

1047

00:43:07,849 --> 00:43:06,000

that you're searching for

1048

00:43:10,609 --> 00:43:07,859

um but I keep thinking is that like a

1049

00:43:13,309 --> 00:43:10,619

cosmic thing that you know visitation is

1050

00:43:14,930 --> 00:43:13,319

a normal thing like once we humans have

1051
00:43:17,809 --> 00:43:14,940
evolved to a point that we're able to

1052
00:43:19,490 --> 00:43:17,819
explore of their civilizations would it

1053
00:43:21,109 --> 00:43:19,500
be our duty at that point to sort of

1054
00:43:24,589 --> 00:43:21,119
help them along the way or at least give

1055
00:43:27,170 --> 00:43:24,599
them little nuggets of information no I

1056
00:43:29,690 --> 00:43:27,180
don't think that's the motivation and it

1057
00:43:32,809 --> 00:43:29,700
will take us a while to figure out you

1058
00:43:34,550 --> 00:43:32,819
know what their purpose is because I the

1059
00:43:36,349 --> 00:43:34,560
way I imagine it is that there would be

1060
00:43:38,870 --> 00:43:36,359
far more I mean these whatever we find

1061
00:43:40,809 --> 00:43:38,880
these objects which will not carry

1062
00:43:43,250 --> 00:43:40,819
biological creatures because you know

1063
00:43:44,990 --> 00:43:43,260

humans for example were never designed

1064

00:43:47,030 --> 00:43:45,000

to survive in interstellar space you

1065

00:43:49,910 --> 00:43:47,040

know the trip with chemical Rockets

1066

00:43:52,790 --> 00:43:49,920

takes 50 000 years to reach the nearest

1067

00:43:54,410 --> 00:43:52,800

star and you know hundreds of millions

1068

00:43:57,290 --> 00:43:54,420

of years to cross the Milky Way galaxy

1069

00:43:59,870 --> 00:43:57,300

so you know that's not a short time and

1070

00:44:01,730 --> 00:43:59,880

you can't enjoy the trip and also you

1071

00:44:04,190 --> 00:44:01,740

would not survive the bombardment by

1072

00:44:06,530 --> 00:44:04,200

energetic particles the vacuum out there

1073

00:44:08,870 --> 00:44:06,540

and so forth makes much more sense to

1074

00:44:11,210 --> 00:44:08,880

send the electronic systems that have

1075

00:44:13,609 --> 00:44:11,220

artificial intelligence I call them AI

1076
00:44:15,170 --> 00:44:13,619
astronauts and that's most likely what

1077
00:44:17,750 --> 00:44:15,180
we will find we will find the

1078
00:44:20,030 --> 00:44:17,760
technological gadgets with technologies

1079
00:44:21,950 --> 00:44:20,040
that are far more advanced than we

1080
00:44:24,230 --> 00:44:21,960
possess but that's not because the other

1081
00:44:26,809 --> 00:44:24,240
civilization station evolved faster than

1082
00:44:29,510 --> 00:44:26,819
we did it's because they started earlier

1083
00:44:31,190 --> 00:44:29,520
I just mentioned most of the Stars you

1084
00:44:33,290 --> 00:44:31,200
know were formed five billion years

1085
00:44:34,790 --> 00:44:33,300
before the sun we know that because we

1086
00:44:36,770 --> 00:44:34,800
observed the star formation history of

1087
00:44:39,710 --> 00:44:36,780
the universe so the sun is a late

1088
00:44:42,950 --> 00:44:39,720

bloomer so you know in fact within a

1089

00:44:45,170 --> 00:44:42,960

billion years the sun will boil off all

1090

00:44:47,089 --> 00:44:45,180

the oceans on Earth and Humanity will

1091

00:44:50,089 --> 00:44:47,099

not survive beyond that time for sure

1092

00:44:52,630 --> 00:44:50,099

irrespective of what we do and other

1093

00:44:56,410 --> 00:44:52,640

sons have reached that Milestone

1094

00:44:59,809 --> 00:44:56,420

basically the the star the whole star

1095

00:45:02,870 --> 00:44:59,819

destroyed sterilized habitable planets

1096

00:45:05,930 --> 00:45:02,880

around them okay and so whatever

1097

00:45:08,809 --> 00:45:05,940

civilization may have existed uh is you

1098

00:45:10,329 --> 00:45:08,819

know dead by now and it's possible that

1099

00:45:14,510 --> 00:45:10,339

you know they had

1100

00:45:15,730 --> 00:45:14,520

cried for help and the last moment when

1101

00:45:18,349 --> 00:45:15,740

the star

1102

00:45:21,010 --> 00:45:18,359

basically burned up the surface of the

1103

00:45:24,829 --> 00:45:21,020

planet so there were cries for help but

1104

00:45:26,510 --> 00:45:24,839

it fell on death death ears here on

1105

00:45:29,450 --> 00:45:26,520

Earth because there were only microbes

1106

00:45:31,550 --> 00:45:29,460

on Earth at the time we just started our

1107

00:45:33,530 --> 00:45:31,560

life here on Earth and there was no

1108

00:45:35,930 --> 00:45:33,540

intelligent species here on Earth at the

1109

00:45:38,030 --> 00:45:35,940

time so there could have been a lot of

1110

00:45:41,030 --> 00:45:38,040

civilizations before us that are dead by

1111

00:45:43,609 --> 00:45:41,040

now but they could have sent equipment

1112

00:45:45,829 --> 00:45:43,619

to space you know and and we can find it

1113

00:45:48,829 --> 00:45:45,839

and it's just you know every morning I

1114

00:45:51,290 --> 00:45:48,839

jog at five a.m it's at Sunrise and I I

1115

00:45:52,790 --> 00:45:51,300

jog through the local woods and

1116

00:45:54,650 --> 00:45:52,800

um they you know there is this

1117

00:45:57,470 --> 00:45:54,660

philosophical question if a tree falls

1118

00:46:00,290 --> 00:45:57,480

in the forest and there is no one to

1119

00:46:01,329 --> 00:46:00,300

hear the sound uh does it actually make

1120

00:46:06,349 --> 00:46:01,339

a sound

1121

00:46:07,609 --> 00:46:06,359

uh my point is I do see those

1122

00:46:10,790 --> 00:46:07,619

um logs

1123

00:46:13,010 --> 00:46:10,800

of of trees that fell without anyone

1124

00:46:14,809 --> 00:46:13,020

hearing their sound okay so I can tell

1125

00:46:17,150 --> 00:46:14,819

that there was a tree because I see the

1126

00:46:18,950 --> 00:46:17,160

trunk and I see the log and it tells me

1127

00:46:23,089 --> 00:46:18,960

that there was a living tree before the

1128

00:46:26,569 --> 00:46:23,099

log fell to the ground and in the same

1129

00:46:29,210 --> 00:46:26,579

way we can find you know those AI

1130

00:46:32,390 --> 00:46:29,220

astronauts technological equipment that

1131

00:46:34,970 --> 00:46:32,400

was sent to space from civilizations

1132

00:46:38,809 --> 00:46:34,980

that are dead by now okay that's like

1133

00:46:41,089 --> 00:46:38,819

archeology you find relics and I think

1134

00:46:43,430 --> 00:46:41,099

that is the correct thing to do rather

1135

00:46:45,410 --> 00:46:43,440

than look for wait for a phone call from

1136

00:46:47,930 --> 00:46:45,420

those civilizations which is pretty much

1137

00:46:49,430 --> 00:46:47,940

what we've been doing for 70 years in

1138

00:46:51,349 --> 00:46:49,440

the context of seti the search for

1139

00:46:53,030 --> 00:46:51,359

extraterrestrial intelligence we were

1140

00:46:55,970 --> 00:46:53,040

waiting for a phone call we were looking

1141

00:46:58,550 --> 00:46:55,980

for radio signals the correct approach

1142

00:47:00,829 --> 00:46:58,560

is to check your mailbox maybe you have

1143

00:47:03,170 --> 00:47:00,839

packages in the mailbox that accumulated

1144

00:47:05,809 --> 00:47:03,180

over time it's a very different approach

1145

00:47:08,089 --> 00:47:05,819

and that's what I'm trying to promote it

1146

00:47:11,329 --> 00:47:08,099

was not practiced in the past and the

1147

00:47:14,150 --> 00:47:11,339

strange thing is the seti community has

1148

00:47:17,870 --> 00:47:14,160

a problem with that they ridicule the

1149

00:47:19,970 --> 00:47:17,880

discussion of objects as potential you

1150

00:47:21,770 --> 00:47:19,980

know signatures of extraterrestrial

1151
00:47:24,109 --> 00:47:21,780
intelligence and you ask yourself why

1152
00:47:26,809 --> 00:47:24,119
would the City Community not include

1153
00:47:30,410 --> 00:47:26,819
that as part of in fact they banned

1154
00:47:32,870 --> 00:47:30,420
discussions on UAP in any Conference of

1155
00:47:35,329 --> 00:47:32,880
seti that was banned a year ago yeah

1156
00:47:38,329 --> 00:47:35,339
nobody is allowed to discuss it oh wow

1157
00:47:41,270 --> 00:47:38,339
so you ask yourself why is that and the

1158
00:47:43,910 --> 00:47:41,280
only way I can understand it is if the

1159
00:47:46,370 --> 00:47:43,920
City Community is trying to signal is to

1160
00:47:49,970 --> 00:47:46,380
sort of like virtue signaling trying to

1161
00:47:51,770 --> 00:47:49,980
signal to the mainstream look uh you

1162
00:47:53,870 --> 00:47:51,780
know this subject there is a subject

1163
00:47:56,690 --> 00:47:53,880

that is even more speculative than what

1164

00:47:58,609 --> 00:47:56,700

we are doing and we want you know we

1165

00:48:01,630 --> 00:47:58,619

don't want to consider it we are sort of

1166

00:48:04,849 --> 00:48:01,640

middle way and are trying to appease

1167

00:48:07,250 --> 00:48:04,859

those Skeptics and basically say give us

1168

00:48:09,770 --> 00:48:07,260

a little money so we can do our work and

1169

00:48:11,450 --> 00:48:09,780

my point is one should not be apologetic

1170

00:48:13,130 --> 00:48:11,460

about it because there are all these

1171

00:48:15,290 --> 00:48:13,140

unusual objects let's figure them out

1172

00:48:17,030 --> 00:48:15,300

and if the U.S you know under these

1173

00:48:19,329 --> 00:48:17,040

circumstances it's obvious why the US

1174

00:48:22,970 --> 00:48:19,339

government would be the first to discuss

1175

00:48:25,250 --> 00:48:22,980

uh unidentified objects because they

1176

00:48:26,690 --> 00:48:25,260

have it's their day job to monitor the

1177

00:48:29,990 --> 00:48:26,700

sky they don't have the luxury of

1178

00:48:31,490 --> 00:48:30,000

ignoring the sky okay so they monitor

1179

00:48:33,589 --> 00:48:31,500

the sky and they see things they don't

1180

00:48:35,690 --> 00:48:33,599

understand so if there is anything out

1181

00:48:37,849 --> 00:48:35,700

there the US government would be first

1182

00:48:40,970 --> 00:48:37,859

to to notice it and that's what that's

1183

00:48:43,309 --> 00:48:40,980

the reality that we face and so I think

1184

00:48:45,410 --> 00:48:43,319

it is our civil Duty as scientists to

1185

00:48:47,270 --> 00:48:45,420

help the government figure it out now if

1186

00:48:50,089 --> 00:48:47,280

we don't find anything outside of this

1187

00:48:52,930 --> 00:48:50,099

Earth so be it that's the way science is

1188

00:48:55,849 --> 00:48:52,940

done but we definitely have to examine

1189

00:48:59,150 --> 00:48:55,859

uh what the government is reporting to

1190

00:49:00,890 --> 00:48:59,160

figure out if it's relief outside of

1191

00:49:02,630 --> 00:49:00,900

this Earth

1192

00:49:04,550 --> 00:49:02,640

um and you know that that's also

1193

00:49:06,589 --> 00:49:04,560

exciting I I don't see any problem with

1194

00:49:09,829 --> 00:49:06,599

that um it's actually just like a kid

1195

00:49:11,750 --> 00:49:09,839

wondering uh what the world is about and

1196

00:49:14,450 --> 00:49:11,760

we should do it with modesty we should

1197

00:49:17,089 --> 00:49:14,460

do it with while being agnostic without

1198

00:49:18,530 --> 00:49:17,099

prejudice and and just you know get

1199

00:49:20,510 --> 00:49:18,540

better data

1200

00:49:22,370 --> 00:49:20,520

I love the way that you think I love the

1201

00:49:25,370 --> 00:49:22,380

your approach to this I love hearing

1202

00:49:27,410 --> 00:49:25,380

somebody of science like yourself uh and

1203

00:49:28,910 --> 00:49:27,420

quite high up in science you know all

1204

00:49:31,250 --> 00:49:28,920

the way to Harvard for crying out loud

1205

00:49:32,990 --> 00:49:31,260

uh saying uh you know that we should

1206

00:49:35,450 --> 00:49:33,000

look at this that this is something to

1207

00:49:37,609 --> 00:49:35,460

really you know take a serious look at

1208

00:49:39,470 --> 00:49:37,619

it and not dismiss it anymore the way

1209

00:49:41,510 --> 00:49:39,480

that people have in the past so that

1210

00:49:43,609 --> 00:49:41,520

that's amazing uh Louis do you have any

1211

00:49:45,290 --> 00:49:43,619

final questions for our guest today no I

1212

00:49:47,870 --> 00:49:45,300

just want to give a very warm uh thanks

1213

00:49:50,089 --> 00:49:47,880

to Mr Avi lobe uh again you're you're

1214

00:49:51,589 --> 00:49:50,099

you're ballsy I know that's blunt but

1215

00:49:53,210 --> 00:49:51,599

it's true I mean you could easily be

1216

00:49:55,370 --> 00:49:53,220

studying different things or doing this

1217

00:49:56,990 --> 00:49:55,380

quietly but you're not scared to go

1218

00:49:59,210 --> 00:49:57,000

against some of those opponents and say

1219

00:50:00,950 --> 00:49:59,220

well why not talk about this you know

1220

00:50:02,569 --> 00:50:00,960

like there's no proof one way or the

1221

00:50:05,450 --> 00:50:02,579

other let's find some proof instead of

1222

00:50:07,849 --> 00:50:05,460

conjecture and just having your idea my

1223

00:50:09,710 --> 00:50:07,859

idea it's all Theology and let's get

1224

00:50:11,750 --> 00:50:09,720

something that's actual nuts and bolts

1225

00:50:13,849 --> 00:50:11,760

right we hear that term a lot yeah we

1226

00:50:15,530 --> 00:50:13,859

want the nuts and bolts and now we got a

1227

00:50:18,170 --> 00:50:15,540

guy trying to find it and he's getting

1228

00:50:21,349 --> 00:50:18,180

stoned so it's important to to have

1229

00:50:24,290 --> 00:50:21,359

people like yourself and again if you

1230

00:50:26,030 --> 00:50:24,300

were doing something that was crazy or

1231

00:50:27,530 --> 00:50:26,040

against the government you probably

1232

00:50:28,910 --> 00:50:27,540

wouldn't be doing it somebody would have

1233

00:50:31,430 --> 00:50:28,920

silenced you or said hey this is

1234

00:50:33,770 --> 00:50:31,440

something you don't go near so I I just

1235

00:50:36,050 --> 00:50:33,780

tried to follow common sense and the two

1236

00:50:37,849 --> 00:50:36,060

things I wanted to mention one we live

1237

00:50:39,609 --> 00:50:37,859

for a short time okay so instead of

1238

00:50:42,530 --> 00:50:39,619

spending our time on social media and

1239

00:50:44,809 --> 00:50:42,540

seeking as many likes as we can we

1240

00:50:47,390 --> 00:50:44,819

better you know learn from nature figure

1241

00:50:49,930 --> 00:50:47,400

out what is out there and that's that

1242

00:50:53,870 --> 00:50:49,940

implies collecting evidence and you know

1243

00:50:56,150 --> 00:50:53,880

I I see the back and forth conversation

1244

00:50:58,549 --> 00:50:56,160

is waste of time you know and eventually

1245

00:51:00,950 --> 00:50:58,559

when the evidence will be Beyond any

1246

00:51:02,990 --> 00:51:00,960

reasonable doubt you know whoever

1247

00:51:05,270 --> 00:51:03,000

doesn't believe it would look like a nut

1248

00:51:07,549 --> 00:51:05,280

okay because we would have the evidence

1249

00:51:09,410 --> 00:51:07,559

and of course it's a circle if you don't

1250

00:51:12,349 --> 00:51:09,420

seek evidence you will never find it so

1251
00:51:14,809 --> 00:51:12,359
I'm trying to break that mold okay and

1252
00:51:16,730 --> 00:51:14,819
the second thing is science should be

1253
00:51:18,770 --> 00:51:16,740
fun you know it's not supposed to be

1254
00:51:21,049 --> 00:51:18,780
boring it's not supposed to be about out

1255
00:51:22,670 --> 00:51:21,059
the egos of experts claiming they know

1256
00:51:25,309 --> 00:51:22,680
everything that everything in the sky

1257
00:51:27,650 --> 00:51:25,319
must be rocks it's not about that it's

1258
00:51:30,170 --> 00:51:27,660
about okay here is something intriguing

1259
00:51:32,569 --> 00:51:30,180
it's exciting you know why don't we

1260
00:51:34,670 --> 00:51:32,579
figure it out just like kids and you

1261
00:51:38,030 --> 00:51:34,680
know the personal attacks that I get

1262
00:51:40,490 --> 00:51:38,040
sometimes I think the biggest impact is

1263
00:51:43,309 --> 00:51:40,500

that they deter young people from taking

1264

00:51:45,410 --> 00:51:43,319

the path not taken and that suppresses

1265

00:51:47,450 --> 00:51:45,420

innovation in science that's very bad

1266

00:51:50,990 --> 00:51:47,460

for science for Academia in general and

1267

00:51:54,770 --> 00:51:51,000

and so that makes me even stronger I I

1268

00:51:55,329 --> 00:51:54,780

told my uh publicist that by now

1269

00:52:00,890 --> 00:51:55,339

um

1270

00:52:04,250 --> 00:52:00,900

really care what other people say and

1271

00:52:06,650 --> 00:52:04,260

and the other thing in June 2023 I will

1272

00:52:09,650 --> 00:52:06,660

have a new book coming out it's called

1273

00:52:11,630 --> 00:52:09,660

the interstellar and that will speak

1274

00:52:15,410 --> 00:52:11,640

about the implications to humanity of

1275

00:52:16,849 --> 00:52:15,420

whatever we find nice amazing well thank

1276

00:52:18,049 --> 00:52:16,859

you so much sir we can't thank you

1277

00:52:20,150 --> 00:52:18,059

enough we'd love to have you back on

1278

00:52:21,829 --> 00:52:20,160

again maybe next year you're doing some

1279

00:52:23,750 --> 00:52:21,839

ocean scrubs you find something cool

1280

00:52:25,430 --> 00:52:23,760

come on back on and share it with our

1281

00:52:27,230 --> 00:52:25,440

audience and our viewers I'll be

1282

00:52:33,440 --> 00:52:27,240

delighted thank you thank you so much