

#22

SETH SHOSTAK

SETI

ETIs, UFOs,
& Disclosure



1
00:00:08,240 --> 00:00:04,910
welcome to tales from the rabbit hole my

2
00:00:10,970 --> 00:00:08,250
guest today is Seth Shostak the senior

3
00:00:12,799 --> 00:00:10,980
astronomer at the SETI Institute

4
00:00:16,039 --> 00:00:12,809
Seth welcome to tales from the rabbit

5
00:00:18,980 --> 00:00:16,049
hole you know thanks very much Mike it's

6
00:00:21,370 --> 00:00:18,990
great to have you here and I've been

7
00:00:23,750 --> 00:00:21,380
happy to found obviously a SETI as any

8
00:00:26,599 --> 00:00:23,760
self-respecting nerd would be for a very

9
00:00:28,460 --> 00:00:26,609
very long time and SETI search for

10
00:00:30,830 --> 00:00:28,470
extraterrestrial intelligence I always

11
00:00:32,450 --> 00:00:30,840
think of that as being the telescope's

12
00:00:34,970 --> 00:00:32,460
pointing at the sky and the radio

13
00:00:37,069 --> 00:00:34,980

telescopes that saw it been my my big

14

00:00:38,270 --> 00:00:37,079

impression of what it's been about but

15

00:00:40,400 --> 00:00:38,280

of course you're a lot more than that

16

00:00:42,770 --> 00:00:40,410

and you can't kind of recently it seems

17

00:00:44,209 --> 00:00:42,780

like you've been branching out more into

18

00:00:47,540 --> 00:00:44,219

kind of science education and things

19

00:00:49,520 --> 00:00:47,550

like that and yeah SETI has kind of

20

00:00:52,100 --> 00:00:49,530

small three divisions the the Carl Sagan

21

00:00:54,139 --> 00:00:52,110

Center which itself has several

22

00:00:55,310 --> 00:00:54,149

divisions and then the center of

23

00:00:58,189 --> 00:00:55,320

Education and the center for public

24

00:01:00,770 --> 00:00:58,199

outreach can you can talk about how the

25

00:01:02,599 --> 00:01:00,780

the goal of SETI and your involvement in

26

00:01:05,870 --> 00:01:02,609

SETI has kind of evolved over the last

27

00:01:09,350 --> 00:01:05,880

say ten years or so well to be honest

28

00:01:13,100 --> 00:01:09,360

the SETI Institute was founded in 1984

29

00:01:15,499 --> 00:01:13,110

so that's a long time now and from the

30

00:01:17,749 --> 00:01:15,509

beginning it was seen as sort of a

31

00:01:20,120 --> 00:01:17,759

three-legged stool right on the one hand

32

00:01:23,690 --> 00:01:20,130

there was SETI on the second hand there

33

00:01:26,030 --> 00:01:23,700

was what we call astrobiology so that's

34

00:01:28,999 --> 00:01:26,040

looking for life but life in our own

35

00:01:30,530 --> 00:01:29,009

solar system which presumably isn't

36

00:01:32,300 --> 00:01:30,540

going to be very intelligent I mean if

37

00:01:34,429 --> 00:01:32,310

you find you know microbes under the

38

00:01:36,710 --> 00:01:34,439

sands of Mars you know they probably

39

00:01:39,289 --> 00:01:36,720

don't recite poetry to one another or if

40

00:01:40,969 --> 00:01:39,299

they do they keep it fairly quiet so

41

00:01:43,249 --> 00:01:40,979

that's a second branch but the third

42

00:01:45,109 --> 00:01:43,259

branch has always been education and

43

00:01:46,880 --> 00:01:45,119

outreach in other words to to give

44

00:01:50,410 --> 00:01:46,890

something back to the public so that's

45

00:01:53,300 --> 00:01:50,420

actually not so new we do it today but

46

00:01:55,190 --> 00:01:53,310

we've always done it if you will now

47

00:01:56,840 --> 00:01:55,200

when it comes to the science you know

48

00:01:59,209 --> 00:01:56,850

back in the days when said he was a NASA

49

00:02:02,359 --> 00:01:59,219

program it was much much a much larger

50

00:02:05,149 --> 00:02:02,369

project than today today 95 percent of

51
00:02:07,429 --> 00:02:05,159
the research done here research as

52
00:02:10,529 --> 00:02:07,439
opposed to education and outreach is in

53
00:02:13,830 --> 00:02:10,539
fact astrobiology

54
00:02:17,550 --> 00:02:13,840
now astrobiology you say that's mostly

55
00:02:19,589 --> 00:02:17,560
stuff within our solar system but is

56
00:02:23,130 --> 00:02:19,599
there an aspect of our biology where you

57
00:02:27,660 --> 00:02:23,140
look at kind of indications of

58
00:02:30,000 --> 00:02:27,670
biological life on say other planets yes

59
00:02:31,770 --> 00:02:30,010
very definitely biological life I don't

60
00:02:35,210 --> 00:02:31,780
know that's it sounds almost redundant

61
00:02:37,860 --> 00:02:35,220
to me but thank you I mean I don't know

62
00:02:40,080 --> 00:02:37,870
but yes there are people here at the

63
00:02:42,390 --> 00:02:40,090

Institute who work in fact well good

64

00:02:44,729 --> 00:02:42,400

work and now well they used to work for

65

00:02:46,890 --> 00:02:44,739

the Kepler project it's a NASA project

66

00:02:49,920 --> 00:02:46,900

to find exoplanets to find planets

67

00:02:52,080 --> 00:02:49,930

around other stars and today you know

68

00:02:54,720 --> 00:02:52,090

that emphasis is being shifted away from

69

00:02:56,210 --> 00:02:54,730

discovering more planets always and hope

70

00:02:58,920 --> 00:02:56,220

the nice thing to do but two

71

00:03:00,569 --> 00:02:58,930

characterizing them in other words can

72

00:03:03,119 --> 00:03:00,579

you say anything about them other than

73

00:03:04,649 --> 00:03:03,129

you know their size or their their mass

74

00:03:07,649 --> 00:03:04,659

or their distance from their home star

75

00:03:09,569 --> 00:03:07,659

so can you for example detect anything

76
00:03:12,180 --> 00:03:09,579
in their atmospheres there was a press

77
00:03:13,860 --> 00:03:12,190
release today about a planet that has

78
00:03:15,780 --> 00:03:13,870
been found to have water vapor in its

79
00:03:17,939 --> 00:03:15,790
atmosphere you say maybe that's not so

80
00:03:20,159 --> 00:03:17,949
surprising but it's very hard to do and

81
00:03:22,080 --> 00:03:20,169
the fact that you know people can do

82
00:03:23,970 --> 00:03:22,090
that now that that's very interesting

83
00:03:25,289 --> 00:03:23,980
yeah that's very impressive and of

84
00:03:27,839 --> 00:03:25,299
course you know water vapor in the

85
00:03:31,050 --> 00:03:27,849
atmosphere is a good indicator of

86
00:03:32,759 --> 00:03:31,060
possible habitable planet well that's

87
00:03:35,819 --> 00:03:32,769
right unless you don't like the humidity

88
00:03:39,059 --> 00:03:35,829

yes yes for for our life for our

89

00:03:40,920 --> 00:03:39,069

purposes yeah I was looking at your the

90

00:03:42,689 --> 00:03:40,930

SETI Institute page and the things on

91

00:03:44,849 --> 00:03:42,699

the front page and your interesting

92

00:03:47,069 --> 00:03:44,859

thing that came out was the the fast

93

00:03:48,900 --> 00:03:47,079

radio bursts and you cook and it's this

94

00:03:50,369 --> 00:03:48,910

teaser headline fast radio bursts from

95

00:03:53,039 --> 00:03:50,379

space of baffled scientists for years

96

00:03:54,180 --> 00:03:53,049

but an explanation may come soon so

97

00:03:56,909 --> 00:03:54,190

what's actually coming down the pipeline

98

00:03:58,649 --> 00:03:56,919

with the the fast radio bursts that's

99

00:04:02,720 --> 00:03:58,659

not yeah that's an article I actually

100

00:04:05,430 --> 00:04:02,730

originally wrote for NBC's website and

101
00:04:08,339 --> 00:04:05,440
there was an announcement a couple of

102
00:04:09,780 --> 00:04:08,349
weeks ago by astronomers connected with

103
00:04:12,719 --> 00:04:09,790
the chyme

104
00:04:15,240 --> 00:04:12,729
radio telescope chime is a you know what

105
00:04:16,860 --> 00:04:15,250
is a very tortured acronym for Canadian

106
00:04:19,710 --> 00:04:16,870
hydrogen

107
00:04:23,730 --> 00:04:19,720
I don't know it was a radio telescope

108
00:04:26,640 --> 00:04:23,740
that it was built in Canada it's about

109
00:04:28,320 --> 00:04:26,650
3035 miles north of the American border

110
00:04:31,140 --> 00:04:28,330
actually it's in the Canadian Rockies

111
00:04:33,540 --> 00:04:31,150
British Columbia and it's a very big

112
00:04:35,219 --> 00:04:33,550
thing so it's very sensitive and it was

113
00:04:37,290 --> 00:04:35,229

originally designed to look at faraway

114

00:04:39,870 --> 00:04:37,300

galaxies but it turns out it's pretty

115

00:04:42,000 --> 00:04:39,880

much perfect for discussing as it

116

00:04:45,330 --> 00:04:42,010

discussing discovering what are called

117

00:04:48,200 --> 00:04:45,340

fast radio bursts and these are very

118

00:04:51,120 --> 00:04:48,210

brief I mean like an eye blink long

119

00:04:54,150 --> 00:04:51,130

radio screeches from the sky

120

00:04:55,409 --> 00:04:54,160

very mysterious but chime has been very

121

00:04:57,480 --> 00:04:55,419

successful in finding them and they

122

00:04:59,909 --> 00:04:57,490

recently published a paper in which they

123

00:05:02,760 --> 00:04:59,919

found you know eight more of these that

124

00:05:04,890 --> 00:05:02,770

repeat that's very important because you

125

00:05:05,279 --> 00:05:04,900

just go off once and you never see them

126

00:05:06,930 --> 00:05:05,289

again

127

00:05:09,390 --> 00:05:06,940

but if they repeat that means you can go

128

00:05:10,620 --> 00:05:09,400

back and study them so you know I think

129

00:05:13,620 --> 00:05:10,630

that we're gonna figure out what these

130

00:05:14,610 --> 00:05:13,630

fast radio bursts are pretty soon so

131

00:05:16,830 --> 00:05:14,620

that's that's kind of an interesting

132

00:05:18,540 --> 00:05:16,840

story I take it you don't think that

133

00:05:20,159 --> 00:05:18,550

they are aliens you think it's gonna be

134

00:05:22,469 --> 00:05:20,169

something kind of like a collapsing

135

00:05:26,219 --> 00:05:22,479

stars or rotating something or other

136

00:05:28,200 --> 00:05:26,229

yeah you know collision something stars

137

00:05:32,159 --> 00:05:28,210

eating stuff black holes eating stuff I

138

00:05:33,540 --> 00:05:32,169

mean the tendency certainly historically

139

00:05:36,089 --> 00:05:33,550

has always been whatever you found

140

00:05:37,890 --> 00:05:36,099

something new of course if it's new you

141

00:05:40,050 --> 00:05:37,900

don't usually understand it right away

142

00:05:42,450 --> 00:05:40,060

it takes a couple of years to figure out

143

00:05:44,520 --> 00:05:42,460

what it is but in those first couple of

144

00:05:47,189 --> 00:05:44,530

years everybody was oh it's aliens right

145

00:05:49,350 --> 00:05:47,199

here's blame for everything but it

146

00:05:51,360 --> 00:05:49,360

doesn't make much sense to have a fast

147

00:05:53,400 --> 00:05:51,370

radio bursts in that direction three

148

00:05:55,500 --> 00:05:53,410

billion light years away and then

149

00:05:57,210 --> 00:05:55,510

another one over here two billion light

150

00:05:58,770 --> 00:05:57,220

years away and then back there a couple

151
00:06:01,110 --> 00:05:58,780
of billion light years away I mean how

152
00:06:04,170 --> 00:06:01,120
did these these civilizations if that's

153
00:06:06,120 --> 00:06:04,180
what you think it they are you know that

154
00:06:08,879 --> 00:06:06,130
are separated by billions of light years

155
00:06:11,760 --> 00:06:08,889
actually arranged to all do the same

156
00:06:14,310 --> 00:06:11,770
kind of stupid thing just send out a

157
00:06:15,689 --> 00:06:14,320
little burp into the into the ether and

158
00:06:17,760 --> 00:06:15,699
it doesn't make too much sense yeah

159
00:06:19,830 --> 00:06:17,770
that'd be really spread out somebody I

160
00:06:21,480 --> 00:06:19,840
asked on Twitter for questions but

161
00:06:23,610 --> 00:06:21,490
people to ask you and somebody brought

162
00:06:25,860 --> 00:06:23,620
up the question of would they even use

163
00:06:28,320 --> 00:06:25,870

radios like these radio bursts might be

164

00:06:29,429 --> 00:06:28,330

a symptom of something else just like a

165

00:06:32,219 --> 00:06:29,439

side effect but

166

00:06:34,619 --> 00:06:32,229

is there a possibility using something

167

00:06:37,439 --> 00:06:34,629

else to community they were not looking

168

00:06:39,449 --> 00:06:37,449

at yeah in the case of the repeating

169

00:06:41,040 --> 00:06:39,459

fashion radio bursts of course you look

170

00:06:43,169 --> 00:06:41,050

at them again certainly with radio

171

00:06:44,820 --> 00:06:43,179

telescopes but also with optical

172

00:06:47,059 --> 00:06:44,830

telescopes do you see a flash of light

173

00:06:50,189 --> 00:06:47,069

for example you see anything else

174

00:06:52,139 --> 00:06:50,199

anything else we can measure and so far

175

00:06:53,909 --> 00:06:52,149

it's been the radio but you know who

176
00:06:55,139 --> 00:06:53,919
knows maybe with the more observations

177
00:06:56,519 --> 00:06:55,149
we'll find a little flashes of light

178
00:07:01,739 --> 00:06:56,529
that'll give you a clue to what it is

179
00:07:04,739 --> 00:07:01,749
but you know radio is the kind of if you

180
00:07:06,600 --> 00:07:04,749
will noise that many natural processes

181
00:07:08,159 --> 00:07:06,610
produce I mean you know you're just

182
00:07:09,779 --> 00:07:08,169
sitting there you're producing a little

183
00:07:11,850 --> 00:07:09,789
bit of radio noise believe it or not

184
00:07:14,909 --> 00:07:11,860
because your temperature is not zero

185
00:07:16,379 --> 00:07:14,919
right so everything does but these

186
00:07:19,619 --> 00:07:16,389
little bursts of radio it's very easy to

187
00:07:22,079 --> 00:07:19,629
make radio noise it's not terribly hard

188
00:07:24,209 --> 00:07:22,089

to make a little flash of light too but

189

00:07:25,859 --> 00:07:24,219

as far as other stuff well what other

190

00:07:27,839 --> 00:07:25,869

stuff we'll be talking about I mean you

191

00:07:29,879 --> 00:07:27,849

know neutrinos particles of some sort

192

00:07:31,409 --> 00:07:29,889

you might make that but yeah and I

193

00:07:33,329 --> 00:07:31,419

suppose that's kind of almost an appeal

194

00:07:34,589 --> 00:07:33,339

to magic really that it could be

195

00:07:37,319 --> 00:07:34,599

something that we just don't know about

196

00:07:40,350 --> 00:07:37,329

and you know about it why can we how can

197

00:07:43,169 --> 00:07:40,360

we measure it yeah also how can we

198

00:07:44,730 --> 00:07:43,179

discuss it and about it say well it's

199

00:07:46,919 --> 00:07:44,740

something we don't know well then you're

200

00:07:49,199 --> 00:07:46,929

done with the conversation yeah yeah oh

201
00:07:51,839 --> 00:07:49,209
something we do know about something you

202
00:07:52,949 --> 00:07:51,849
wrote about on your site or show it's

203
00:07:55,949 --> 00:07:52,959
kind of surprised to see on the front

204
00:07:59,999 --> 00:07:55,959
page was you read an article on storming

205
00:08:02,159 --> 00:08:00,009
area 51 and this is you know obviously

206
00:08:03,689 --> 00:08:02,169
very it's something that starts out to

207
00:08:06,659 --> 00:08:03,699
joke some guy said like we should all go

208
00:08:08,489 --> 00:08:06,669
to area 51 and release the aliens I said

209
00:08:10,919 --> 00:08:08,499
what prompted you to write about that

210
00:08:12,029 --> 00:08:10,929
well NBC again they asked me to write a

211
00:08:15,089 --> 00:08:12,039
path okay

212
00:08:17,279 --> 00:08:15,099
so I did but yeah yeah yeah no I mean

213
00:08:20,069 --> 00:08:17,289

it's sort of a popular story right it

214

00:08:23,279 --> 00:08:20,079

was an internet meme as you say and it

215

00:08:24,959 --> 00:08:23,289

was started as a joke and I don't know

216

00:08:26,939 --> 00:08:24,969

whether it ever progressed from being a

217

00:08:29,429 --> 00:08:26,949

joke to being something serious you know

218

00:08:32,549 --> 00:08:29,439

millions of people said they were keen

219

00:08:34,139 --> 00:08:32,559

on storming area 51 I don't know how

220

00:08:36,600 --> 00:08:34,149

many of them actually will do so the

221

00:08:37,829 --> 00:08:36,610

storm area 51 to begin with you're

222

00:08:39,269 --> 00:08:37,839

probably not gonna get very far the

223

00:08:40,469 --> 00:08:39,279

government you know it's a secret

224

00:08:42,310 --> 00:08:40,479

government facility they have fences

225

00:08:44,379 --> 00:08:42,320

they don't want you storm yet

226

00:08:45,910 --> 00:08:44,389

because their secrets they're not aliens

227

00:08:47,560 --> 00:08:45,920

I don't think there are any aliens there

228

00:08:49,990 --> 00:08:47,570

I knew people who work there but they

229

00:08:52,060 --> 00:08:50,000

didn't see any aliens but there are you

230

00:08:54,069 --> 00:08:52,070

know military aircraft in the idea is to

231

00:08:55,870 --> 00:08:54,079

keep them secret you don't want them

232

00:08:57,910 --> 00:08:55,880

being photographed and then you know put

233

00:09:01,360 --> 00:08:57,920

on the internet so that the the enemy

234

00:09:03,759 --> 00:09:01,370

can can see these things but also every

235

00:09:06,160 --> 00:09:03,769

51 I've been to that area of the country

236

00:09:07,629 --> 00:09:06,170

and you know if you don't have a food

237

00:09:10,120 --> 00:09:07,639

truck nearby you're gonna find it a

238

00:09:15,160 --> 00:09:10,130

little uncomfortable probably gonna be

239

00:09:17,230 --> 00:09:15,170

hot and not much to eat yeah hopefully

240

00:09:18,910 --> 00:09:17,240

nobody actually does go there because it

241

00:09:19,960 --> 00:09:18,920

could could be bad if a lot of people

242

00:09:22,540 --> 00:09:19,970

did because they don't really have the

243

00:09:23,590 --> 00:09:22,550

resources to to handle it but it's it's

244

00:09:25,780 --> 00:09:23,600

kind of an interesting cultural

245

00:09:29,379 --> 00:09:25,790

phenomena and I think it kind of shows

246

00:09:31,569 --> 00:09:29,389

how how deep this kind of aliens being

247

00:09:35,680 --> 00:09:31,579

held captive or whatever alien

248

00:09:38,319 --> 00:09:35,690

technology at area 51 meme is this is

249

00:09:41,800 --> 00:09:38,329

within within popular culture this was

250

00:09:45,400 --> 00:09:41,810

really you you must get us a lot our

251
00:09:48,009 --> 00:09:45,410
peoples and CNN Poland 2002 I think it

252
00:09:49,780 --> 00:09:48,019
was a toll up all done together with the

253
00:09:53,170 --> 00:09:49,790
Roper organization and they found that

254
00:09:54,610 --> 00:09:53,180
80% of the public that they asked seemed

255
00:09:55,930 --> 00:09:54,620
to think that the government was hiding

256
00:09:57,910 --> 00:09:55,940
evidence of aliens

257
00:09:59,650 --> 00:09:57,920
so if 80 percent believe that then you

258
00:10:04,389 --> 00:09:59,660
think a lot of people don't wanna want

259
00:10:05,889 --> 00:10:04,399
somebody to go storm area 51 yeah yeah

260
00:10:09,069 --> 00:10:05,899
something somebody else brought up on

261
00:10:10,269 --> 00:10:09,079
Twitter was the Fermi paradox which you

262
00:10:13,000 --> 00:10:10,279
know obviously you're familiar with

263
00:10:15,069 --> 00:10:13,010

which is the you know the the idea that

264

00:10:17,590 --> 00:10:15,079

if there was alien life in the galaxy

265

00:10:20,500 --> 00:10:17,600

then we should be able to see it because

266

00:10:22,600 --> 00:10:20,510

the just statistically he would have

267

00:10:26,110 --> 00:10:22,610

spread out through the galaxy by now

268

00:10:28,030 --> 00:10:26,120

unless we're very very unlucky so the

269

00:10:30,519 --> 00:10:28,040

fact that we don't see alien life

270

00:10:32,769 --> 00:10:30,529

throughout the galaxy is perhaps a good

271

00:10:34,750 --> 00:10:32,779

indication that there isn't any so

272

00:10:37,509 --> 00:10:34,760

what's your what's your personal take on

273

00:10:39,249 --> 00:10:37,519

the the Fermi paradox well I think the

274

00:10:41,710 --> 00:10:39,259

Fermi paradox is a great thing to bring

275

00:10:43,420 --> 00:10:41,720

up in a dinner conversation if you you

276

00:10:45,610 --> 00:10:43,430

know you you want to be invited to that

277

00:10:49,420 --> 00:10:45,620

dinner again maybe you shouldn't it it

278

00:10:51,670 --> 00:10:49,430

could get contentious but but it you

279

00:10:53,949 --> 00:10:51,680

know it's extrapolating from a very

280

00:10:56,150 --> 00:10:53,959

limited and local observation namely we

281

00:10:58,610 --> 00:10:56,160

don't see any aliens here so

282

00:11:00,320 --> 00:10:58,620

maybe they're no aliens anywhere right I

283

00:11:01,610 --> 00:11:00,330

mean that's like my you know walking out

284

00:11:04,100 --> 00:11:01,620

the door here and saying hey there's no

285

00:11:06,920 --> 00:11:04,110

Tigers out in the parking lot ear which

286

00:11:08,570 --> 00:11:06,930

I bet our he is true I doubt that there

287

00:11:10,160 --> 00:11:08,580

are any but it doesn't mean that there

288

00:11:11,960 --> 00:11:10,170

are no Tigers anywhere it just means

289

00:11:14,750 --> 00:11:11,970

that you know you're not a position to

290

00:11:16,670 --> 00:11:14,760

see them right and I feel the same way

291

00:11:18,230 --> 00:11:16,680

about the Fermi paradox to say that well

292

00:11:20,240 --> 00:11:18,240

we don't see any evidence of aliens

293

00:11:21,530 --> 00:11:20,250

anywhere well how would you know I mean

294

00:11:23,660 --> 00:11:21,540

you might have picked up some radio

295

00:11:25,460 --> 00:11:23,670

signals that's what we try to do but if

296

00:11:28,490 --> 00:11:25,470

they're just building big societies on

297

00:11:30,950 --> 00:11:28,500

nearby planets you might have a very

298

00:11:32,480 --> 00:11:30,960

hard time seeing that detecting that

299

00:11:34,040 --> 00:11:32,490

particularly if they're a little bit

300

00:11:37,010 --> 00:11:34,050

cryptic and they don't broadcast strong

301
00:11:39,500 --> 00:11:37,020
signals into space so you know I don't

302
00:11:42,170 --> 00:11:39,510
think it says very much other than as I

303
00:11:44,000 --> 00:11:42,180
say is a interesting topic at your next

304
00:11:47,930 --> 00:11:44,010
cocktail party right

305
00:11:49,520 --> 00:11:47,940
so you think yeah the the there might be

306
00:11:50,990 --> 00:11:49,530
lots of civilizations but they're all

307
00:11:52,880 --> 00:11:51,000
kind of a bit insular and that they're

308
00:11:54,250 --> 00:11:52,890
just you know the local solar systems

309
00:11:56,240 --> 00:11:54,260
and they're not really interested in

310
00:11:58,850 --> 00:11:56,250
going out in space

311
00:12:00,740 --> 00:11:58,860
well I wouldn't even go that far I mean

312
00:12:03,200 --> 00:12:00,750
who's to say all we know is that we

313
00:12:04,550 --> 00:12:03,210

don't see any obvious evidence that

314

00:12:06,260 --> 00:12:04,560

doesn't say that they don't go into

315

00:12:07,670 --> 00:12:06,270

space but they could go into space and

316

00:12:11,450 --> 00:12:07,680

you just might never know I mean how

317

00:12:14,510 --> 00:12:11,460

would you know but you know being

318

00:12:16,280 --> 00:12:14,520

insular they might be cryptic they might

319

00:12:17,680 --> 00:12:16,290

be secretive because you don't know

320

00:12:20,570 --> 00:12:17,690

what's out there this is the usual

321

00:12:22,610 --> 00:12:20,580

argument against broadcasting deliberate

322

00:12:24,410 --> 00:12:22,620

signals that's something else I don't

323

00:12:25,820 --> 00:12:24,420

really buy but you know they're people

324

00:12:27,680 --> 00:12:25,830

like Stephen Hawking and said don't

325

00:12:28,400 --> 00:12:27,690

don't broadcast because you don't know

326

00:12:29,870 --> 00:12:28,410

what's out there

327

00:12:33,230 --> 00:12:29,880

that's true you don't know what's out

328

00:12:35,360 --> 00:12:33,240

there but whatever's out there is you

329

00:12:38,840 --> 00:12:35,370

know a gonna be far away so that

330

00:12:40,790 --> 00:12:38,850

insulates you a little bit but be you

331

00:12:42,710 --> 00:12:40,800

know if they can do you any harm if they

332

00:12:44,420 --> 00:12:42,720

could come here and do you harm then

333

00:12:45,860 --> 00:12:44,430

they're way ahead of you technologically

334

00:12:48,530 --> 00:12:45,870

and they can also pick up your TV

335

00:12:51,410 --> 00:12:48,540

signals so you know that that's kind of

336

00:12:53,090 --> 00:12:51,420

a silly worry but it's also the case

337

00:12:55,040 --> 00:12:53,100

that you know it's sort of like asking

338

00:12:56,810 --> 00:12:55,050

well did the ants in my backyard know

339

00:12:58,640 --> 00:12:56,820

that I live you know only 20 feet away

340

00:13:01,640 --> 00:12:58,650

from them and I would say they probably

341

00:13:03,350 --> 00:13:01,650

don't right if they have their own Fermi

342

00:13:06,200 --> 00:13:03,360

paradox either campaigning humans we

343

00:13:08,150 --> 00:13:06,210

don't see the you mentioned picking up

344

00:13:08,900 --> 00:13:08,160

TV signals and something I've heard in

345

00:13:10,550 --> 00:13:08,910

the kind of UFO

346

00:13:12,980 --> 00:13:10,560

community is like some dispute about

347

00:13:15,370 --> 00:13:12,990

whether they could pick up TV signals

348

00:13:17,600 --> 00:13:15,380

like could we actually pick up you know

349

00:13:19,190 --> 00:13:17,610

broadcasts that were meant but just you

350

00:13:21,020 --> 00:13:19,200

know within the planets like satellite

351
00:13:23,510 --> 00:13:21,030
signals and things like that

352
00:13:24,080 --> 00:13:23,520
from a solar system that's light-years

353
00:13:26,480 --> 00:13:24,090
away

354
00:13:28,730 --> 00:13:26,490
well the satellite signals probably not

355
00:13:30,890 --> 00:13:28,740
satellites are very directed signals and

356
00:13:32,900 --> 00:13:30,900
you know the power on a satellite an

357
00:13:34,880 --> 00:13:32,910
orbiting satellite to send telemetry

358
00:13:36,380 --> 00:13:34,890
back is you know maybe it's ten watts or

359
00:13:38,750 --> 00:13:36,390
something like that and it's aimed down

360
00:13:40,370 --> 00:13:38,760
so you're not likely to pick that up but

361
00:13:41,480 --> 00:13:40,380
things you could pick up are things like

362
00:13:43,790 --> 00:13:41,490
radar I don't know about their

363
00:13:46,010 --> 00:13:43,800

television they may not have television

364

00:13:48,050 --> 00:13:46,020

broadcast anymore I mean television is

365

00:13:50,240 --> 00:13:48,060

only well it's less than a century old

366

00:13:52,340 --> 00:13:50,250

ear and we're already moving away from

367

00:13:54,560 --> 00:13:52,350

broadcast so they may have done that a

368

00:13:56,120 --> 00:13:54,570

million years ago I mean you know the

369

00:13:58,790 --> 00:13:56,130

idea that they have big television

370

00:14:01,210 --> 00:13:58,800

antennas belching you know megawatts

371

00:14:05,270 --> 00:14:01,220

into space it might be very

372

00:14:06,650 --> 00:14:05,280

self-centered but one technology can

373

00:14:10,340 --> 00:14:06,660

figure that they probably do have

374

00:14:12,260 --> 00:14:10,350

because it's useful is radar radar and

375

00:14:14,660 --> 00:14:12,270

radar is a very strong signal

376

00:14:16,100 --> 00:14:14,670

you know from light-years away it's not

377

00:14:18,020 --> 00:14:16,110

so strong but it doesn't want depending

378

00:14:20,080 --> 00:14:18,030

on the radar but it's the kind of thing

379

00:14:22,340 --> 00:14:20,090

that in another hundred years of

380

00:14:24,740 --> 00:14:22,350

technological progress here we would be

381

00:14:26,840 --> 00:14:24,750

able to pick up Wow so you'd actually be

382

00:14:29,570 --> 00:14:26,850

to pick up something like I guess maybe

383

00:14:32,030 --> 00:14:29,580

even like weather radar from another

384

00:14:34,100 --> 00:14:32,040

planet I mean every airport has a radar

385

00:14:35,600 --> 00:14:34,110

yeah right and of course they're things

386

00:14:39,980 --> 00:14:35,610

for defense that are very powerful

387

00:14:42,440 --> 00:14:39,990

radars but also radars used to determine

388

00:14:44,540 --> 00:14:42,450

the the orbits of asteroids at something

389

00:14:46,820 --> 00:14:44,550

in comets you you really want to do that

390

00:14:48,350 --> 00:14:46,830

even if you're Klingon I mean that

391

00:14:49,670 --> 00:14:48,360

that's something you'll always be

392

00:14:51,680 --> 00:14:49,680

interested in and those are very

393

00:14:53,960 --> 00:14:51,690

powerful radars that's true and it's

394

00:14:55,640 --> 00:14:53,970

like any sufficiently long lipstick

395

00:14:58,130 --> 00:14:55,650

ization would kind of have to have some

396

00:15:01,960 --> 00:14:58,140

kind of early warning signal all right

397

00:15:04,250 --> 00:15:01,970

yeah that sounds reasonable in it yeah

398

00:15:06,250 --> 00:15:04,260

someone someone brought up what they

399

00:15:09,320 --> 00:15:06,260

said was a what they thought was a

400

00:15:11,780 --> 00:15:09,330

contradiction with the use of the Drake

401
00:15:14,270 --> 00:15:11,790
Equation and the Fermi paradox they say

402
00:15:16,760 --> 00:15:14,280
that the Drake Equation says that there

403
00:15:18,470 --> 00:15:16,770
are yes there's got to be lots of life

404
00:15:19,820 --> 00:15:18,480
throughout the galaxy because if you

405
00:15:22,050 --> 00:15:19,830
multiply these numbers together and it

406
00:15:25,620 --> 00:15:22,060
comes up with a fairly high probability

407
00:15:29,340 --> 00:15:25,630
but then you also say that they won't be

408
00:15:31,560 --> 00:15:29,350
here because things are so far away do

409
00:15:33,000 --> 00:15:31,570
you see any conflicts between like you

410
00:15:35,070 --> 00:15:33,010
know using the Drake Equation to say

411
00:15:37,170 --> 00:15:35,080
that there's lots of life within the

412
00:15:39,360 --> 00:15:37,180
galaxy and also saying that we wouldn't

413
00:15:40,800 --> 00:15:39,370

be at see it well to begin with the

414

00:15:42,600 --> 00:15:40,810

Drake Equation doesn't say that there's

415

00:15:45,180 --> 00:15:42,610

a lots of life in the galaxy you can

416

00:15:47,040 --> 00:15:45,190

depending on what terms you're in it you

417

00:15:48,750 --> 00:15:47,050

can say that because to begin with it's

418

00:15:50,910 --> 00:15:48,760

not about life it's about intelligent

419

00:15:53,640 --> 00:15:50,920

life and in fact technologically

420

00:15:55,050 --> 00:15:53,650

competent life but you know I mean

421

00:15:56,280 --> 00:15:55,060

depending on the numbers you put in you

422

00:15:58,710 --> 00:15:56,290

can come out there with the fact that

423

00:16:00,630 --> 00:15:58,720

we're totally alone or that the place is

424

00:16:02,730 --> 00:16:00,640

chock-a-block with intelligence so you

425

00:16:04,590 --> 00:16:02,740

know it's not that it makes a strong

426

00:16:09,780 --> 00:16:04,600

prediction it just gives you a way to

427

00:16:11,760 --> 00:16:09,790

discuss the subject but you know again I

428

00:16:15,960 --> 00:16:11,770

don't think that the Fermi paradox is

429

00:16:18,270 --> 00:16:15,970

terribly useful right again you know I

430

00:16:20,160 --> 00:16:18,280

mean I didn't see any bears in my garden

431

00:16:22,680 --> 00:16:20,170

this morning doesn't tell me much about

432

00:16:24,360 --> 00:16:22,690

the prevalence of bears so I you know I

433

00:16:26,730 --> 00:16:24,370

don't get any information out of the

434

00:16:29,820 --> 00:16:26,740

Fermi paradox the fact that we haven't

435

00:16:30,990 --> 00:16:29,830

detected anything is undoubtedly just

436

00:16:32,640 --> 00:16:31,000

the result of the fact that we're not

437

00:16:34,260 --> 00:16:32,650

very good at detecting stuff keep in

438

00:16:36,600 --> 00:16:34,270

mind we've had radio for a hundred years

439

00:16:38,430 --> 00:16:36,610

or something like that right you know

440

00:16:41,420 --> 00:16:38,440

big optical telescopes we've had for

441

00:16:45,390 --> 00:16:41,430

less than a hundred years so our ability

442

00:16:47,520 --> 00:16:45,400

to find you know sophisticated societies

443

00:16:50,100 --> 00:16:47,530

is pretty limited I mean it's better

444

00:16:53,190 --> 00:16:50,110

than what the Romans had but it's not a

445

00:16:56,130 --> 00:16:53,200

normal sleep better yeah the Drake

446

00:16:56,610 --> 00:16:56,140

Equation do you think he has any use at

447

00:16:59,250 --> 00:16:56,620

all

448

00:17:01,770 --> 00:16:59,260

how does Isis I see people use it as

449

00:17:03,240 --> 00:17:01,780

like justification for policy like doing

450

00:17:05,070 --> 00:17:03,250

doing research into certain things

451

00:17:08,070 --> 00:17:05,080

because the Drake Equation says a

452

00:17:10,980 --> 00:17:08,080

certain thing now the terms in the Drake

453

00:17:12,720 --> 00:17:10,990

Equation certainly lead to areas of

454

00:17:14,550 --> 00:17:12,730

interesting research I mean one of the

455

00:17:16,740 --> 00:17:14,560

terms is the fraction of planets that

456

00:17:18,870 --> 00:17:16,750

cook up life all right what does that

457

00:17:20,790 --> 00:17:18,880

point into well how did life get started

458

00:17:22,410 --> 00:17:20,800

is it likely to have gotten started on

459

00:17:23,610 --> 00:17:22,420

any other worlds that kind of thing I

460

00:17:26,730 --> 00:17:23,620

mean that's it that's a very legitimate

461

00:17:27,960 --> 00:17:26,740

topic of astrobiology research and there

462

00:17:30,330 --> 00:17:27,970

are plenty of people working on there

463

00:17:32,130 --> 00:17:30,340

plenty okay because it's interesting I

464

00:17:33,870 --> 00:17:32,140

mean how did earth develop life it got

465

00:17:35,190 --> 00:17:33,880

it got started very quickly on this

466

00:17:35,820 --> 00:17:35,200

planet sounds like it probably wasn't

467

00:17:38,070 --> 00:17:35,830

very hard

468

00:17:39,570 --> 00:17:38,080

but you don't know until I do you find

469

00:17:41,910 --> 00:17:39,580

it somewhere else or you understand how

470

00:17:43,380 --> 00:17:41,920

it got started on earth and we still

471

00:17:46,440 --> 00:17:43,390

don't know how it got started on earth

472

00:17:49,170 --> 00:17:46,450

there are a lot of theories but you know

473

00:17:50,430 --> 00:17:49,180

we don't know for sure but you know the

474

00:17:52,050 --> 00:17:50,440

terms of the Drake Equation the Drake

475

00:17:56,040 --> 00:17:52,060

Equation is very valuable in the sense

476

00:17:58,820 --> 00:17:56,050

that any astronomy textbook you buy any

477

00:18:01,620 --> 00:17:58,830

you know astronomy 101 course you take

478

00:18:05,960 --> 00:18:01,630

will cover the Drake Equation because it

479

00:18:10,140 --> 00:18:05,970

is a great way to get into the topics of

480

00:18:13,560 --> 00:18:10,150

astrobiology and of course SETI yeah and

481

00:18:16,280 --> 00:18:13,570

the and the Drake Equation that just

482

00:18:19,830 --> 00:18:16,290

refers to our galaxy is that correct

483

00:18:21,570 --> 00:18:19,840

well I mean you could one galaxy is the

484

00:18:23,580 --> 00:18:21,580

same as the next galaxy pretty much I

485

00:18:25,530 --> 00:18:23,590

mean there there are categories of

486

00:18:27,240 --> 00:18:25,540

galaxies but mm-hmm

487

00:18:29,070 --> 00:18:27,250

you know there are two trillion galaxies

488

00:18:30,660 --> 00:18:29,080

in the visible universe and at least

489

00:18:33,570 --> 00:18:30,670

half of them are sort of like the Milky

490

00:18:37,050 --> 00:18:33,580

Way so yeah yeah I suppose all those

491

00:18:39,240 --> 00:18:37,060

galaxies are essentially makeup beyond

492

00:18:41,610 --> 00:18:39,250

what you might be researching in terms

493

00:18:43,680 --> 00:18:41,620

of alien life is there any theoretical

494

00:18:45,570 --> 00:18:43,690

way of people thinking that they might

495

00:18:48,720 --> 00:18:45,580

be able to detect anything that comes

496

00:18:50,540 --> 00:18:48,730

from another galaxy well sure I mean and

497

00:18:53,070 --> 00:18:50,550

it's been done in fact there been

498

00:18:54,840 --> 00:18:53,080

observations I did some myself now it's

499

00:18:56,400 --> 00:18:54,850

nearby galaxies you point the radio

500

00:18:57,930 --> 00:18:56,410

telescope at a nearby galaxy and if

501
00:18:59,940 --> 00:18:57,940
there's a very powerful transmitter

502
00:19:01,950 --> 00:18:59,950
there or one that's for some reason

503
00:19:03,780 --> 00:19:01,960
aimed at our galaxy you might pick it up

504
00:19:05,490 --> 00:19:03,790
and the big advantages when you look at

505
00:19:07,470 --> 00:19:05,500
another galaxy you know you might be

506
00:19:11,040 --> 00:19:07,480
looking at many billions of stars

507
00:19:13,280 --> 00:19:11,050
hundreds of billions of stars at once so

508
00:19:16,110 --> 00:19:13,290
it's kind of a wholesale Survey of

509
00:19:17,070 --> 00:19:16,120
course galaxies are farther away and so

510
00:19:19,530 --> 00:19:17,080
the signals would have to be very

511
00:19:22,050 --> 00:19:19,540
powerful or they'd have to be aimed your

512
00:19:24,210 --> 00:19:22,060
way which you know is something that who

513
00:19:25,950 --> 00:19:24,220

knows what a society a million years

514

00:19:27,780 --> 00:19:25,960

more advanced than ours might want to do

515

00:19:29,490 --> 00:19:27,790

maybe you know sending a signal to

516

00:19:33,330 --> 00:19:29,500

another galaxy is a high school science

517

00:19:35,190 --> 00:19:33,340

fair project yeah yeah that would be a

518

00:19:37,200 --> 00:19:35,200

because the nearest galaxy is a very

519

00:19:40,290 --> 00:19:37,210

long way away in terms of how long it

520

00:19:41,910 --> 00:19:40,300

would take a signal to get here so yeah

521

00:19:43,980 --> 00:19:41,920

there's that Alexei's are the Magellanic

522

00:19:45,960 --> 00:19:43,990

Clouds and they're on the order of a

523

00:19:49,500 --> 00:19:45,970

hundred thousand light years away yeah

524

00:19:51,720 --> 00:19:49,510

what's the closest star that is in

525

00:19:56,400 --> 00:19:51,730

testing that you think might be

526

00:19:58,050 --> 00:19:56,410

something well in the nearest other star

527

00:20:00,420 --> 00:19:58,060

Proxima Centauri is known to have a

528

00:20:01,980 --> 00:20:00,430

planet so and at that might even be

529

00:20:04,440 --> 00:20:01,990

inhabited I mean it might be habitable

530

00:20:06,780 --> 00:20:04,450

no one knows if it's inhabited of course

531

00:20:09,480 --> 00:20:06,790

how I'm almost every star has planets so

532

00:20:11,910 --> 00:20:09,490

the the nearest stars of interest are

533

00:20:13,590 --> 00:20:11,920

the nearest stars is that that they're

534

00:20:17,880 --> 00:20:13,600

just like the four or five light-years

535

00:20:20,060 --> 00:20:17,890

away yeah yes you do I think Proxima

536

00:20:22,170 --> 00:20:20,070

Centauri yep that's a great thing to

537

00:20:23,970 --> 00:20:22,180

fantasize about if you found something

538

00:20:25,380 --> 00:20:23,980

interesting on those stars there's the

539

00:20:27,690 --> 00:20:25,390

possibility of communication with

540

00:20:30,140 --> 00:20:27,700

Chester oh yeah know if you're willing

541

00:20:32,610 --> 00:20:30,150

to take the nearest million star systems

542

00:20:35,040 --> 00:20:32,620

then the average distance is you know

543

00:20:37,710 --> 00:20:35,050

roughly 150 light-years now that that

544

00:20:40,920 --> 00:20:37,720

means the communication is slow but it's

545

00:20:42,390 --> 00:20:40,930

not impossibly slow mmm-hmm with the

546

00:20:47,340 --> 00:20:42,400

idea of having some communication within

547

00:20:49,290 --> 00:20:47,350

your lifetime second there are dozens of

548

00:20:51,180 --> 00:20:49,300

star systems that are close close enough

549

00:20:54,120 --> 00:20:51,190

for that yeah that would be if you can

550

00:20:57,410 --> 00:20:54,130

get the fun yeah that would be such an

551
00:21:01,410 --> 00:20:57,420
amazing thing to happen in our lifetimes

552
00:21:04,110 --> 00:21:01,420
but an interesting thing is the what's

553
00:21:05,400 --> 00:21:04,120
known as tabby star which was something

554
00:21:07,350 --> 00:21:05,410
that was in the news like a few years

555
00:21:10,200 --> 00:21:07,360
ago and it was the star that was giving

556
00:21:12,390 --> 00:21:10,210
out these kind of intermittent signals

557
00:21:14,360 --> 00:21:12,400
like it was it was in brightness I

558
00:21:17,790 --> 00:21:14,370
believe and people thought that it was

559
00:21:19,800 --> 00:21:17,800
some kind of mega structure around the

560
00:21:21,630 --> 00:21:19,810
star but like kind of faded away as that

561
00:21:24,450 --> 00:21:21,640
could have been more or less resolved as

562
00:21:26,760 --> 00:21:24,460
to what what it was well there are good

563
00:21:30,330 --> 00:21:26,770

indications that the problem was dust

564

00:21:33,180 --> 00:21:30,340

actually I mean but it wasn't that it

565

00:21:34,800 --> 00:21:33,190

was brightening it was dimming it was

566

00:21:37,740 --> 00:21:34,810

dimming you know every couple of days

567

00:21:40,760 --> 00:21:37,750

every couple of weeks yeah you so it

568

00:21:42,900 --> 00:21:40,770

would dim by you know like 20 percent

569

00:21:45,390 --> 00:21:42,910

occasionally and that's an enormous

570

00:21:47,220 --> 00:21:45,400

amount of giving you know that's not due

571

00:21:49,500 --> 00:21:47,230

to a planet getting in front of the star

572

00:21:51,930 --> 00:21:49,510

and that's something else and then one

573

00:21:54,960 --> 00:21:51,940

suggestion made by Jason Wright actually

574

00:21:58,260 --> 00:21:54,970

at Penn State was well it could be some

575

00:22:00,870 --> 00:21:58,270

sort of half completed Dyson Sphere some

576

00:22:03,180 --> 00:22:00,880

sort of alien mega-structure you know

577

00:22:05,850 --> 00:22:03,190

some artificial construction that was

578

00:22:08,880 --> 00:22:05,860

walking the light but when astronomers

579

00:22:12,870 --> 00:22:08,890

looked at this star and and look at the

580

00:22:14,520 --> 00:22:12,880

dimming using a telescope that could

581

00:22:17,280 --> 00:22:14,530

determine what colored the dimming was

582

00:22:20,520 --> 00:22:17,290

it was reddish and that's the signature

583

00:22:24,840 --> 00:22:20,530

of dust right a lot of dust in a lot of

584

00:22:27,540 --> 00:22:24,850

solar systems so most likely was just

585

00:22:29,190 --> 00:22:27,550

clouds of dust probably not aliens yeah

586

00:22:30,840 --> 00:22:29,200

that's what the redness is essentially

587

00:22:32,370 --> 00:22:30,850

the same thing as a sunset you know just

588

00:22:35,190 --> 00:22:32,380

like being filtered through the the

589

00:22:37,410 --> 00:22:35,200

atmosphere you give us the exact same

590

00:22:38,580 --> 00:22:37,420

interference with the wavelengths as you

591

00:22:40,200 --> 00:22:38,590

would with dust that's that's very

592

00:22:44,360 --> 00:22:40,210

interesting that's there you can try to

593

00:22:49,680 --> 00:22:44,370

figure that out after a while that's

594

00:22:51,540 --> 00:22:49,690

moving onto a kind of UFO ology do you

595

00:22:55,500 --> 00:22:51,550

do you have a lot of interaction with

596

00:22:57,840 --> 00:22:55,510

people in the UFO community well I guess

597

00:23:00,600 --> 00:22:57,850

I do I mean I get phone calls or emails

598

00:23:02,670 --> 00:23:00,610

essentially every day from people this

599

00:23:04,260 --> 00:23:02,680

is usually the general public but they

600

00:23:06,660 --> 00:23:04,270

you know they want to report something

601
00:23:08,730 --> 00:23:06,670
they've seen or they have photos they

602
00:23:09,810 --> 00:23:08,740
have videos I occasionally go to

603
00:23:12,330 --> 00:23:09,820
conferences where there are

604
00:23:16,350 --> 00:23:12,340
presentations from people in the UFO

605
00:23:19,050 --> 00:23:16,360
community community such as alien Con

606
00:23:20,370 --> 00:23:19,060
and stuff like that so I know several of

607
00:23:23,340 --> 00:23:20,380
the people in this community and I

608
00:23:25,080 --> 00:23:23,350
certainly talked with them did you enjoy

609
00:23:27,300 --> 00:23:25,090
doing that that type of thing is it

610
00:23:29,190 --> 00:23:27,310
something that's you like the kind of

611
00:23:30,930 --> 00:23:29,200
the science fiction aspects of it or is

612
00:23:34,110 --> 00:23:30,940
it that it's actual science there that

613
00:23:36,570 --> 00:23:34,120

you you enjoy doing well from my point

614

00:23:39,780 --> 00:23:36,580

of view it's science fiction from their

615

00:23:41,820 --> 00:23:39,790

point of view it's science so yes I

616

00:23:43,860 --> 00:23:41,830

enjoy talking to people about this but

617

00:23:46,560 --> 00:23:43,870

on the other hand when I sit there and

618

00:23:49,680 --> 00:23:46,570

listen to some of the presentations by

619

00:23:51,450 --> 00:23:49,690

some of these people not not all but by

620

00:23:53,400 --> 00:23:51,460

some of these people they're you know

621

00:23:56,400 --> 00:23:53,410

they're very misleading the presentation

622

00:23:58,680 --> 00:23:56,410

and they ignore some you know well-known

623

00:24:00,900 --> 00:23:58,690

science and stuff like that so that can

624

00:24:02,790 --> 00:24:00,910

be a little bit frustrating to me yeah

625

00:24:05,940 --> 00:24:02,800

what are the types of mistakes that you

626
00:24:07,890 --> 00:24:05,950
see coming up over and over again well

627
00:24:09,530 --> 00:24:07,900
they will refer to phenomena that

628
00:24:12,120 --> 00:24:09,540
actually have a very obvious

629
00:24:14,190 --> 00:24:12,130
astronomical explanation that doesn't

630
00:24:16,980 --> 00:24:14,200
involve aliens but they will insist that

631
00:24:18,419 --> 00:24:16,990
it's aliens or they will simply say

632
00:24:20,760 --> 00:24:18,429
a lot of them do what's called an

633
00:24:23,460 --> 00:24:20,770
argument from ignorance the big thing

634
00:24:25,230 --> 00:24:23,470
these days seems to be disclosure right

635
00:24:26,730 --> 00:24:25,240
we're gonna wait for a disclosure there

636
00:24:28,980 --> 00:24:26,740
a lot of people you know they'll take

637
00:24:31,680 --> 00:24:28,990
your money to help fund their efforts to

638
00:24:33,750 --> 00:24:31,690

promote disclosure and as far as I can

639

00:24:36,870 --> 00:24:33,760

tell disclosure means having the US

640

00:24:38,430 --> 00:24:36,880

government come clean and say well we

641

00:24:41,400 --> 00:24:38,440

know about the aliens and here they are

642

00:24:44,549 --> 00:24:41,410

stacked up it wherever very 51 whatever

643

00:24:46,110 --> 00:24:44,559

your favorite stack-up location is they

644

00:24:47,850 --> 00:24:46,120

don't seem to be pressuring for example

645

00:24:50,250 --> 00:24:47,860

the Belgian government to come clean or

646

00:24:51,960 --> 00:24:50,260

the Luxembourg government or the

647

00:24:54,030 --> 00:24:51,970

Brazilians of the Botswana and sort of

648

00:24:56,040 --> 00:24:54,040

the Bolivians or anybody else it's just

649

00:24:57,270 --> 00:24:56,050

the US government because after all the

650

00:24:59,880 --> 00:24:57,280

US government has all the good evidence

651
00:25:02,070 --> 00:24:59,890
somehow it doesn't even make sense but

652
00:25:04,440 --> 00:25:02,080
yeah a guy thing and and I think that

653
00:25:05,910 --> 00:25:04,450
this is such a weak argument well the

654
00:25:08,280 --> 00:25:05,920
only way we can prove that this is true

655
00:25:11,520 --> 00:25:08,290
is having the government tell us that

656
00:25:13,110 --> 00:25:11,530
it's true right oh yeah at that that

657
00:25:15,120 --> 00:25:13,120
didn't make any sense to me it's

658
00:25:19,980 --> 00:25:15,130
essentially the argument for the the

659
00:25:21,870 --> 00:25:19,990
storm area51 meme is it's they're saying

660
00:25:23,190 --> 00:25:21,880
that there's aliens there and all we

661
00:25:25,169 --> 00:25:23,200
have to do is go and force the

662
00:25:27,900 --> 00:25:25,179
government to tell them so that they're

663
00:25:30,030 --> 00:25:27,910

saying like just tell us but if there's

664

00:25:32,100 --> 00:25:30,040

nothing to tell then it's a meaningless

665

00:25:33,480 --> 00:25:32,110

question in any way and they wouldn't

666

00:25:35,640 --> 00:25:33,490

believe it I mean if the government does

667

00:25:37,290 --> 00:25:35,650

say that they say there aren't aliens at

668

00:25:39,240 --> 00:25:37,300

area 51 but nobody's gonna believe that

669

00:25:41,520 --> 00:25:39,250

so it really doesn't resolve anything

670

00:25:43,830 --> 00:25:41,530

unless they go in and look at every

671

00:25:45,120 --> 00:25:43,840

square inch of area 51 and don't find

672

00:25:46,560 --> 00:25:45,130

any aliens and even that wouldn't

673

00:25:48,780 --> 00:25:46,570

resolve anything they would say they

674

00:25:51,270 --> 00:25:48,790

knew we were coming and so they've moved

675

00:25:54,240 --> 00:25:51,280

all the aliens - you know Trenton New

676
00:25:56,030 --> 00:25:54,250
Jersey or someplace yeah now the US

677
00:25:58,740 --> 00:25:56,040
government does have some space

678
00:26:00,780 --> 00:25:58,750
operations that are secret they have

679
00:26:02,610 --> 00:26:00,790
their own little little space plane that

680
00:26:04,320 --> 00:26:02,620
flies in orbit and they have all their

681
00:26:07,049 --> 00:26:04,330
secret spy satellites and things like

682
00:26:08,610 --> 00:26:07,059
that first of course the government

683
00:26:11,280 --> 00:26:08,620
secrets of the Defense Department has

684
00:26:13,740 --> 00:26:11,290
secrets but to say because they have

685
00:26:16,320 --> 00:26:13,750
secrets they also have aliens that's a

686
00:26:18,000 --> 00:26:16,330
very interesting bit of logic yes indeed

687
00:26:20,190 --> 00:26:18,010
but I suppose it does leave the door

688
00:26:22,290 --> 00:26:20,200

open because there are there are secrets

689

00:26:24,120 --> 00:26:22,300

and you don't know other secrets are

690

00:26:27,960 --> 00:26:24,130

that yet they're making the assumption

691

00:26:30,270 --> 00:26:27,970

the secrecy no that's an argument from

692

00:26:30,899 --> 00:26:30,280

it yeah you don't know what but they

693

00:26:33,479 --> 00:26:30,909

have so will

694

00:26:35,700 --> 00:26:33,489

soon they have aliens yeah yeah so are

695

00:26:38,609 --> 00:26:35,710

you familiar with to the Stars Academy

696

00:26:41,039 --> 00:26:38,619

we're Tom DeLonge yes yes so that

697

00:26:43,729 --> 00:26:41,049

they've what do you think of these these

698

00:26:46,979 --> 00:26:43,739

three videos that they put out recently

699

00:26:48,899 --> 00:26:46,989

well I haven't seen too much of that I

700

00:26:50,669 --> 00:26:48,909

mean as to the Stars Academy is not a

701
00:26:52,769 --> 00:26:50,679
research organization they're of a

702
00:26:55,109 --> 00:26:52,779
television production organization best

703
00:26:57,029 --> 00:26:55,119
I could tell reading their prospectus so

704
00:27:00,239 --> 00:26:57,039
they're in the business of making TV

705
00:27:03,269 --> 00:27:00,249
shows and you know I mean that that's

706
00:27:05,729 --> 00:27:03,279
fine but it's not the research biz right

707
00:27:08,669 --> 00:27:05,739
so I'll assume that you're referring to

708
00:27:11,070 --> 00:27:08,679
their produced shows and not the video

709
00:27:12,719 --> 00:27:11,080
the gunsight videos from the Navy no I'm

710
00:27:14,279 --> 00:27:12,729
referring to the gunsight videos I'm

711
00:27:15,960 --> 00:27:14,289
wondering what your take is on this with

712
00:27:18,690 --> 00:27:15,970
the ones that they show basically little

713
00:27:20,759 --> 00:27:18,700

black blobs either in the distance or

714

00:27:22,919 --> 00:27:20,769

moving very fast over the water or

715

00:27:24,180 --> 00:27:22,929

there's one that rotates right Mike how

716

00:27:25,649 --> 00:27:24,190

do you know they're moving fast

717

00:27:29,609 --> 00:27:25,659

they look like they're moving fast but I

718

00:27:32,549 --> 00:27:29,619

know that they're moving fast but you

719

00:27:34,649 --> 00:27:32,559

know a bug two feet in front of my face

720

00:27:36,210 --> 00:27:34,659

when it flies past me looks like it's

721

00:27:38,879 --> 00:27:36,220

moving really fast

722

00:27:40,619 --> 00:27:38,889

right but yeah it's you you need to know

723

00:27:42,930 --> 00:27:40,629

the distance to know whether it's moving

724

00:27:44,669 --> 00:27:42,940

fast that that you know people call me

725

00:27:46,710 --> 00:27:44,679

up all the time I saw a UFO and it was

726

00:27:49,080 --> 00:27:46,720

moving faster than any aircraft we have

727

00:27:51,899 --> 00:27:49,090

well how do you know well actually they

728

00:27:54,089 --> 00:27:51,909

don't know they just say that but in

729

00:27:56,789 --> 00:27:54,099

terms of the videos yeah those are

730

00:27:58,409 --> 00:27:56,799

infrared gunsight camera videos and the

731

00:28:00,119 --> 00:27:58,419

are mysterious there's no doubt about it

732

00:28:02,009 --> 00:28:00,129

but they're certainly not conclusive

733

00:28:04,200 --> 00:28:02,019

either these two blobs to look like the

734

00:28:06,749 --> 00:28:04,210

according to a military pilot I talked

735

00:28:09,060 --> 00:28:06,759

to he said they look like the you know

736

00:28:10,769 --> 00:28:09,070

the the exhausts of jet engines of a

737

00:28:13,039 --> 00:28:10,779

plane that's a you know mile or two in

738

00:28:15,089 --> 00:28:13,049

front of wherever these guys are and

739

00:28:17,879 --> 00:28:15,099

because it's an infrared camera of

740

00:28:19,529 --> 00:28:17,889

course they appear dark hue meaning they

741

00:28:21,299 --> 00:28:19,539

triggered the response in the camera and

742

00:28:24,029 --> 00:28:21,309

then of course if that plane banks then

743

00:28:25,349 --> 00:28:24,039

they seem to rotate a little bit hey you

744

00:28:26,969 --> 00:28:25,359

know you could explain it all that way

745

00:28:28,889 --> 00:28:26,979

and if you can explain it all that way

746

00:28:31,229 --> 00:28:28,899

then you ought to consider that because

747

00:28:33,859 --> 00:28:31,239

maybe it's something like that and not

748

00:28:35,789 --> 00:28:33,869

Klingons teasing the US Navy

749

00:28:37,259 --> 00:28:35,799

particularly the videos on the east

750

00:28:38,159 --> 00:28:37,269

coast of the US because the pilot said

751

00:28:41,070 --> 00:28:38,169

well they could see these things

752

00:28:42,539 --> 00:28:41,080

essentially every day well if they can

753

00:28:44,550 --> 00:28:42,549

see them every day what about all the

754

00:28:46,410 --> 00:28:44,560

the pleasure boaters you know

755

00:28:49,320 --> 00:28:46,420

sailing around that part of the the

756

00:28:52,080 --> 00:28:49,330

ocean why don't they see them why don't

757

00:28:53,430 --> 00:28:52,090

our satellites see them not that Defense

758

00:28:55,230 --> 00:28:53,440

Department satellites you can say oh

759

00:28:56,730 --> 00:28:55,240

those are all covered up but they're

760

00:28:58,410 --> 00:28:56,740

plenty of other satellites and from

761

00:29:00,720 --> 00:28:58,420

other countries well they don't seem to

762

00:29:03,120 --> 00:29:00,730

see them amateur astronomers never see

763

00:29:04,470 --> 00:29:03,130

to seeing them I mean why is it that you

764

00:29:06,990 --> 00:29:04,480

know only the government can see them

765

00:29:09,300 --> 00:29:07,000

yeah and the commercial airline pilots I

766

00:29:11,640 --> 00:29:09,310

think what it would say we're not gonna

767

00:29:13,980 --> 00:29:11,650

fly in that part of the you know the

768

00:29:15,750 --> 00:29:13,990

country because doggone it they're these

769

00:29:17,790 --> 00:29:15,760

alien craft there and they don't flop

770

00:29:19,230 --> 00:29:17,800

file a flight plan so we're gonna avoid

771

00:29:20,880 --> 00:29:19,240

that they don't say that

772

00:29:22,110 --> 00:29:20,890

yeah that's a very busy part of the

773

00:29:25,380 --> 00:29:22,120

country obviously with only the

774

00:29:26,850 --> 00:29:25,390

transatlantic traffic over the Northeast

775

00:29:28,500 --> 00:29:26,860

you have done quite a bit of research

776

00:29:30,450 --> 00:29:28,510

into those those videos I think they're

777

00:29:32,730 --> 00:29:30,460

the one that rotates I don't think it's

778

00:29:35,130 --> 00:29:32,740

actually the plane rotating I think it's

779

00:29:37,860 --> 00:29:35,140

actually an optical thing with the

780

00:29:39,990 --> 00:29:37,870

gimbal system on the camera when it

781

00:29:41,730 --> 00:29:40,000

rotates it changes the optical path and

782

00:29:46,230 --> 00:29:41,740

it actually makes the shape of the

783

00:29:47,160 --> 00:29:46,240

highlight of the glare rotated it's it's

784

00:29:49,200 --> 00:29:47,170

something you can you can actually

785

00:29:52,230 --> 00:29:49,210

demonstrate with with with regular

786

00:29:54,090 --> 00:29:52,240

cameras because it's mounted facing

787

00:29:56,340 --> 00:29:54,100

forward it's only got a rotational axis

788

00:29:58,980 --> 00:29:56,350

along the long forward axis and then an

789

00:30:01,590 --> 00:29:58,990

up-and-down access rare which means that

790

00:30:03,120 --> 00:30:01,600

when it pans from left to right it has

791

00:30:05,010 --> 00:30:03,130

this thing like a gimbal lock in the

792

00:30:08,490 --> 00:30:05,020

middle if it's panning and it's pointing

793

00:30:09,840 --> 00:30:08,500

down a bit it can't rotate around a

794

00:30:10,830 --> 00:30:09,850

vertical axis they could any rotate

795

00:30:12,870 --> 00:30:10,840

around the forward axis and an

796

00:30:14,400 --> 00:30:12,880

up-and-down axis so it has to combine

797

00:30:17,160 --> 00:30:14,410

these two rotations and when it gets to

798

00:30:19,290 --> 00:30:17,170

the middle it actually has to do this

799

00:30:20,840 --> 00:30:19,300

this was weird kind of translation to

800

00:30:23,640 --> 00:30:20,850

flip over and then rotate the other way

801
00:30:27,480 --> 00:30:23,650
and this is actually something you can

802
00:30:29,430 --> 00:30:27,490
see in the patent for the the appFolio

803
00:30:31,710 --> 00:30:29,440
system that they used is it as a thing

804
00:30:33,570 --> 00:30:31,720
called a d' rotation mechanism that

805
00:30:35,670 --> 00:30:33,580
keeps the image upright even though the

806
00:30:37,140 --> 00:30:35,680
optics are rotating so you've got this

807
00:30:38,370 --> 00:30:37,150
thing where they it looks like the

808
00:30:42,300 --> 00:30:38,380
camera is not rotating which it actually

809
00:30:43,920 --> 00:30:42,310
is and then that causes the glare to

810
00:30:45,750 --> 00:30:43,930
actually rotate and I think that is

811
00:30:47,100 --> 00:30:45,760
actually what's going on in this one

812
00:30:48,840 --> 00:30:47,110
that looks like it's rotating because he

813
00:30:50,580 --> 00:30:48,850

does rotate a bit 90 degrees which would

814

00:30:52,950 --> 00:30:50,590

be impossible for a you know for a

815

00:30:54,900 --> 00:30:52,960

regular plane mm-hmm that's interesting

816

00:30:56,100 --> 00:30:54,910

yeah I could send you my video

817

00:30:57,990 --> 00:30:56,110

explanation of that if you are

818

00:31:01,659 --> 00:30:58,000

interested

819

00:31:03,549 --> 00:31:01,669

so you think that to the stars Academy

820

00:31:05,680 --> 00:31:03,559

is just you know it's just a production

821

00:31:09,460 --> 00:31:05,690

company and you you we see like lots of

822

00:31:11,830 --> 00:31:09,470

other TV shows like you know unexplained

823

00:31:13,930 --> 00:31:11,840

or yes strange evidence and things like

824

00:31:18,690 --> 00:31:13,940

you know Discovery Channel shows do you

825

00:31:22,360 --> 00:31:18,700

think that's kind of a bad thing science

826

00:31:24,159 --> 00:31:22,370

well I mean it's true that science

827

00:31:26,110 --> 00:31:24,169

literacy in the United States isn't at a

828

00:31:28,029 --> 00:31:26,120

very high level particularly compared

829

00:31:31,120 --> 00:31:28,039

with Europe I lived in Europe for 13

830

00:31:33,100 --> 00:31:31,130

years and my impression was that the the

831

00:31:35,019 --> 00:31:33,110

science literacy the public was

832

00:31:39,430 --> 00:31:35,029

definitely better than in the u.s.

833

00:31:41,080 --> 00:31:39,440

that's for sure but you know to say it

834

00:31:42,639 --> 00:31:41,090

hurts it doesn't hurt

835

00:31:45,159 --> 00:31:42,649

I mean you know how many people get hurt

836

00:31:46,990 --> 00:31:45,169

because they believe in UFOs you know

837

00:31:48,909 --> 00:31:47,000

that aliens are visiting earth you the

838

00:31:50,860 --> 00:31:48,919

aliens are great about this because they

839

00:31:52,299 --> 00:31:50,870

never kill anybody they don't solve any

840

00:31:54,370 --> 00:31:52,309

of our problems they don't do anything

841

00:31:56,620 --> 00:31:54,380

as far as I can tell except you know

842

00:31:58,480 --> 00:31:56,630

promote these kind of television shows I

843

00:32:00,430 --> 00:31:58,490

mean there's that but you know I don't

844

00:32:02,919 --> 00:32:00,440

think those are as anybody either I mean

845

00:32:04,389 --> 00:32:02,929

there's some things in science where the

846

00:32:06,909 --> 00:32:04,399

public doesn't understand science they

847

00:32:08,769 --> 00:32:06,919

do hurt I mean you know if you don't

848

00:32:10,899 --> 00:32:08,779

believe in climate change that's gonna

849

00:32:12,909 --> 00:32:10,909

hurt you because there's rather little

850

00:32:14,500 --> 00:32:12,919

doubt about climate change if you don't

851
00:32:17,139 --> 00:32:14,510
think that vaccines actually keep your

852
00:32:19,419 --> 00:32:17,149
kid from dying that's gonna hurt I mean

853
00:32:22,090 --> 00:32:19,429
you know we worked out the statistics

854
00:32:24,370 --> 00:32:22,100
here not too long ago and it turned out

855
00:32:26,289 --> 00:32:24,380
getting your kid you know not getting

856
00:32:28,510 --> 00:32:26,299
your kid vaccinated was a million times

857
00:32:30,100 --> 00:32:28,520
more lethal than getting your kid

858
00:32:32,680 --> 00:32:30,110
vaccinated some people will die from

859
00:32:33,850 --> 00:32:32,690
vaccinations not because of the you know

860
00:32:35,560 --> 00:32:33,860
you know the ingredients that they like

861
00:32:37,990 --> 00:32:35,570
to target but you know just some people

862
00:32:39,880 --> 00:32:38,000
are going to be resistant to to the

863
00:32:41,289 --> 00:32:39,890

vaccines in it you know have a negative

864

00:32:43,419 --> 00:32:41,299

reaction in the same way that some

865

00:32:44,590 --> 00:32:43,429

people will die from aspirin but you

866

00:32:47,500 --> 00:32:44,600

know it doesn't mean that aspirin is a

867

00:32:50,409 --> 00:32:47,510

bad thing so you know in that case I

868

00:32:53,470 --> 00:32:50,419

think that you have real harm if you

869

00:32:55,330 --> 00:32:53,480

believe in the pseudoscience but in the

870

00:32:57,490 --> 00:32:55,340

case of UFOs if you want to believe it I

871

00:32:58,480 --> 00:32:57,500

mean hey you know I don't have any

872

00:32:59,380 --> 00:32:58,490

problem I mean if you want to believe in

873

00:33:01,870 --> 00:32:59,390

Santa Claus

874

00:33:03,370 --> 00:33:01,880

our angels or ghosts I mean it's roughly

875

00:33:05,409 --> 00:33:03,380

the same fraction of the population that

876

00:33:07,090 --> 00:33:05,419

believes in angels and goes as believe

877

00:33:09,580 --> 00:33:07,100

that we're being visited by UFOs it's

878

00:33:10,720 --> 00:33:09,590

about a third and you know not too many

879

00:33:12,700 --> 00:33:10,730

people suffer

880

00:33:14,950 --> 00:33:12,710

terrible effects because they believe in

881

00:33:17,740 --> 00:33:14,960

ghosts yeah it might even be a positive

882

00:33:19,270 --> 00:33:17,750

thing I think just fostering an interest

883

00:33:23,800 --> 00:33:19,280

in science like I know I was very

884

00:33:25,330 --> 00:33:23,810

interested in in UFOs as a child and you

885

00:33:27,340 --> 00:33:25,340

know it's more of a believer then but

886

00:33:29,140 --> 00:33:27,350

then I got more into reading about you

887

00:33:32,170 --> 00:33:29,150

know real science popular science books

888

00:33:34,120 --> 00:33:32,180

and Here I am now so it's it's a good

889

00:33:37,000 --> 00:33:34,130

skills like a good excuse to talk about

890

00:33:39,370 --> 00:33:37,010

science yeah I think that's true I've

891

00:33:40,900 --> 00:33:39,380

certainly gone into classrooms and it's

892

00:33:41,800 --> 00:33:40,910

a good hook to get them interested in

893

00:33:44,650 --> 00:33:41,810

what you're going to tell them about

894

00:33:47,200 --> 00:33:44,660

because they are interested UFOs indeed

895

00:33:49,870 --> 00:33:47,210

when I was 13 years old or whatever I

896

00:33:52,240 --> 00:33:49,880

bought books about UFOs and George

897

00:33:53,830 --> 00:33:52,250

Adamski and stuff like this you know

898

00:33:54,940 --> 00:33:53,840

with flying saucers in them and so forth

899

00:33:57,370 --> 00:33:54,950

you're quite right

900

00:34:00,250 --> 00:33:57,380

yeah and I think that it's also applies

901
00:34:02,430 --> 00:34:00,260
to flat earth I know you did a show on

902
00:34:06,400 --> 00:34:02,440
Flat Earth on big-picture science

903
00:34:08,250 --> 00:34:06,410
recently and that I think you know you

904
00:34:10,690 --> 00:34:08,260
can you open it up with doing the

905
00:34:12,790 --> 00:34:10,700
classic experiment with the two sticks

906
00:34:14,380 --> 00:34:12,800
where you measure the angle of the Sun

907
00:34:15,460 --> 00:34:14,390
and then again you know eight hundred

908
00:34:17,200 --> 00:34:15,470
miles to the north and then you

909
00:34:19,600 --> 00:34:17,210
determine from that you know that the

910
00:34:21,310 --> 00:34:19,610
earth appears to be curved because the

911
00:34:22,840 --> 00:34:21,320
the angle is different so it's like

912
00:34:25,380 --> 00:34:22,850
little science experiments you can do

913
00:34:28,149 --> 00:34:25,390

like that that come from things like

914

00:34:29,980 --> 00:34:28,159

essentially pseudoscience it's almost

915

00:34:32,169 --> 00:34:29,990

like training people to investigate

916

00:34:34,810 --> 00:34:32,179

suicide if ik claims is a good way of

917

00:34:36,490 --> 00:34:34,820

teaching them real science yeah no

918

00:34:38,230 --> 00:34:36,500

that's true I again I don't know that

919

00:34:40,659 --> 00:34:38,240

many people are hurt by the fact that

920

00:34:43,090 --> 00:34:40,669

they think the earth is flat I I kind of

921

00:34:46,320 --> 00:34:43,100

wonder what what they believe when they

922

00:34:50,110 --> 00:34:46,330

fly from New York to Tokyo right and

923

00:34:51,460 --> 00:34:50,120

doggonit date me you're at sea you know

924

00:34:53,200 --> 00:34:51,470

that the airlines seem to think the

925

00:34:55,780 --> 00:34:53,210

earth is curved and it's better to fly a

926
00:34:57,280 --> 00:34:55,790
great circle route because of that they

927
00:35:00,130 --> 00:34:57,290
don't go in the straight line and all

928
00:35:02,860 --> 00:35:00,140
that kind of stuff but you know I don't

929
00:35:04,720 --> 00:35:02,870
think it kills anybody you know so

930
00:35:06,610 --> 00:35:04,730
that's different than as I say some of

931
00:35:09,100 --> 00:35:06,620
these other cases where pseudoscience

932
00:35:11,080 --> 00:35:09,110
will lead you to make bad choices yeah

933
00:35:15,730 --> 00:35:11,090
you know and those are mostly medical

934
00:35:18,130 --> 00:35:15,740
things a question I got on Twitter this

935
00:35:21,040 --> 00:35:18,140
is kind of slightly silly well a very

936
00:35:22,960 --> 00:35:21,050
silly question but it was how would SETI

937
00:35:24,280 --> 00:35:22,970
continues to get funded if it's

938
00:35:27,250 --> 00:35:24,290

disclosed that UFOs

939

00:35:28,510 --> 00:35:27,260

real and that et is visiting earth how

940

00:35:31,000 --> 00:35:28,520

do you respond to questions like that

941

00:35:32,620 --> 00:35:31,010

yeah well look if he teased our visiting

942

00:35:34,210 --> 00:35:32,630

earth I'm gonna go out and visit you

943

00:35:37,020 --> 00:35:34,220

know ETS

944

00:35:39,670 --> 00:35:37,030

I mean I'm sure that there but you know

945

00:35:42,490 --> 00:35:39,680

many people would do and in fact a

946

00:35:44,170 --> 00:35:42,500

British scientist won't send to me you

947

00:35:46,840 --> 00:35:44,180

know Seth if I thought there was a 1%

948

00:35:48,520 --> 00:35:46,850

chance anything in this UFO stuff was

949

00:35:49,150 --> 00:35:48,530

real I would spend all my time working

950

00:35:50,860 --> 00:35:49,160

on it

951
00:35:52,780 --> 00:35:50,870
well if you could somehow come across

952
00:35:54,550 --> 00:35:52,790
with with really good evidence I mean

953
00:35:56,380 --> 00:35:54,560
good observational evidence you'd have

954
00:35:56,950 --> 00:35:56,390
tens of thousands of scientists working

955
00:35:58,510 --> 00:35:56,960
on it

956
00:35:59,860 --> 00:35:58,520
right I mean the idea that the

957
00:36:01,750 --> 00:35:59,870
government could cover all that up is

958
00:36:04,000 --> 00:36:01,760
just silly it's like my neighbors saying

959
00:36:06,040 --> 00:36:04,010
I got the cure for cancer but I'm gonna

960
00:36:08,160 --> 00:36:06,050
keep it stacked up in my spare bedroom

961
00:36:10,900 --> 00:36:08,170
and nobody's gonna know not very

962
00:36:12,850 --> 00:36:10,910
interesting but as soon as you know he

963
00:36:14,650 --> 00:36:12,860

comes across and publishes a paper or

964

00:36:17,080 --> 00:36:14,660

whatever you're gonna have many many

965

00:36:18,850 --> 00:36:17,090

many people looking into that yeah

966

00:36:21,820 --> 00:36:18,860

people sometimes New York I do like a

967

00:36:23,620 --> 00:36:21,830

bunch of UFO debunking type stuff online

968

00:36:24,640 --> 00:36:23,630

and people sometimes say well yeah what

969

00:36:27,340 --> 00:36:24,650

are you gonna do when you're proved

970

00:36:30,610 --> 00:36:27,350

wrong and the proof that aliens are

971

00:36:32,410 --> 00:36:30,620

actually visiting the earth as if as if

972

00:36:33,850 --> 00:36:32,420

this is gonna be a huge negative and if

973

00:36:35,440 --> 00:36:33,860

this actually was proved it would be

974

00:36:37,330 --> 00:36:35,450

this most amazing thing ever and I would

975

00:36:38,890 --> 00:36:37,340

be like all over it it would be amazing

976
00:36:40,780 --> 00:36:38,900
just well that's right I think what

977
00:36:42,670 --> 00:36:40,790
they're really saying is you're gonna

978
00:36:44,890 --> 00:36:42,680
feel bad when I'm right and you're wrong

979
00:36:46,480 --> 00:36:44,900
I think that's what the hand is yeah but

980
00:36:48,760 --> 00:36:46,490
I would I would happily take it I would

981
00:36:51,150 --> 00:36:48,770
happily take being wrong but uh you know

982
00:36:54,580 --> 00:36:51,160
I don't really see the evidence yet

983
00:36:57,700 --> 00:36:54,590
another Twitter question was do you

984
00:37:00,970 --> 00:36:57,710
would you look into a genomic Wow signal

985
00:37:02,610 --> 00:37:00,980
from prehistoric ET visitation I guess

986
00:37:06,190 --> 00:37:02,620
this is the idea that there would be

987
00:37:09,760 --> 00:37:06,200
markers in the human genome that

988
00:37:11,530 --> 00:37:09,770

indicated some kind of alien visitation

989

00:37:13,390 --> 00:37:11,540

a long time ago like something that's

990

00:37:14,920 --> 00:37:13,400

something that's not natural in the

991

00:37:17,770 --> 00:37:14,930

genome is this something you've even

992

00:37:19,570 --> 00:37:17,780

thought about well a lot of people have

993

00:37:21,370 --> 00:37:19,580

thought about it actually and it was

994

00:37:24,490 --> 00:37:21,380

suggested at a conference I was at in

995

00:37:26,470 --> 00:37:24,500

Australia by Paul Davies he's now at the

996

00:37:29,320 --> 00:37:26,480

Arizona State University very clever

997

00:37:31,480 --> 00:37:29,330

physicist and he said you know we should

998

00:37:32,950 --> 00:37:31,490

just put a grad student on it and just I

999

00:37:36,180 --> 00:37:32,960

mean we've sequenced the human genome

1000

00:37:37,870 --> 00:37:36,190

now at just you know look for look for

1001
00:37:40,750 --> 00:37:37,880
indeed

1002
00:37:42,760 --> 00:37:40,760
mathematics or any case non-random stuff

1003
00:37:45,430 --> 00:37:42,770
in there there's all this junk DNA and

1004
00:37:46,840 --> 00:37:45,440
maybe it's in there now as far as I know

1005
00:37:48,340 --> 00:37:46,850
he hasn't found a grad student willing

1006
00:37:50,530 --> 00:37:48,350
to do it yet I don't know what it feel

1007
00:37:53,350 --> 00:37:50,540
is it I mean I I don't think that's a

1008
00:37:55,630 --> 00:37:53,360
bad idea but to begin with junk DNA is

1009
00:37:58,210 --> 00:37:55,640
now considered not quite so junky

1010
00:37:59,740 --> 00:37:58,220
it does have some effects and then there

1011
00:38:02,500 --> 00:37:59,750
are all sorts of there's a whole field

1012
00:38:05,140 --> 00:38:02,510
of epigenetics which is kind of reshaped

1013
00:38:07,540 --> 00:38:05,150

our thinking about the you know the DNA

1014

00:38:10,030 --> 00:38:07,550

and the genetics of how that worked but

1015

00:38:12,700 --> 00:38:10,040

I mean it still maybe not a bad idea but

1016

00:38:14,230 --> 00:38:12,710

I honestly think that if aliens had

1017

00:38:16,900 --> 00:38:14,240

visited earth a long time ago and they

1018

00:38:19,300 --> 00:38:16,910

said okay Zork you know we're gonna

1019

00:38:22,660 --> 00:38:19,310

leave but who knows a hundred million

1020

00:38:25,240 --> 00:38:22,670

years from now maybe some intelligent

1021

00:38:27,850 --> 00:38:25,250

species will arise and we need to leave

1022

00:38:31,570 --> 00:38:27,860

a calling cards to let them know that we

1023

00:38:33,160 --> 00:38:31,580

came to visit their planet so what are

1024

00:38:35,230 --> 00:38:33,170

your plans for doing that well we could

1025

00:38:37,510 --> 00:38:35,240

just leave a thumb drive here you know a

1026

00:38:39,100 --> 00:38:37,520

buried in concrete all right now well I

1027

00:38:41,560 --> 00:38:39,110

tell you what we could put something in

1028

00:38:44,560 --> 00:38:41,570

orbit they'll find that eventually right

1029

00:38:45,730 --> 00:38:44,570

no no let's reaction ear some organisms

1030

00:38:48,160 --> 00:38:45,740

here that are going to lead to those

1031

00:38:51,790 --> 00:38:48,170

critters and put it into the DNA

1032

00:38:53,860 --> 00:38:51,800

yeah but Zork DNA mutates all the time

1033

00:38:57,040 --> 00:38:53,870

that's called evolution we're gonna lose

1034

00:38:58,960 --> 00:38:57,050

the message well I mean mm-hmm

1035

00:39:01,390 --> 00:38:58,970

yeah you know it just doesn't sound like

1036

00:39:03,430 --> 00:39:01,400

to me the right way to do anything but I

1037

00:39:05,290 --> 00:39:03,440

suppose if so I wants to look into it

1038

00:39:07,570 --> 00:39:05,300

and they can go for a short like you

1039

00:39:09,910 --> 00:39:07,580

said these the day data is there I think

1040

00:39:11,320 --> 00:39:09,920

it's a two week project actually yeah

1041

00:39:13,480 --> 00:39:11,330

and they could probably just do some

1042

00:39:15,970 --> 00:39:13,490

statistical analysis of the data or

1043

00:39:17,380 --> 00:39:15,980

something like that hey someone asked a

1044

00:39:19,120 --> 00:39:17,390

question which I thought was kind of

1045

00:39:20,650 --> 00:39:19,130

interesting which is the is that

1046

00:39:22,840 --> 00:39:20,660

changing debate about the

1047

00:39:26,520 --> 00:39:22,850

anthropomorphic assumption SETI makes

1048

00:39:28,990 --> 00:39:26,530

about ETI extraterrestrial intelligence

1049

00:39:31,060 --> 00:39:29,000

there's very little debate about it I

1050

00:39:33,090 --> 00:39:31,070

think but you could have a debate about

1051

00:39:36,820 --> 00:39:33,100

I mean I I don't know that we make any

1052

00:39:38,290 --> 00:39:36,830

anthropomorphic as you know assumptions

1053

00:39:41,590 --> 00:39:38,300

and that means that we assume that the

1054

00:39:44,200 --> 00:39:41,600

aliens sort of look like humans but the

1055

00:39:46,210 --> 00:39:44,210

experiment do we do that you know

1056

00:39:48,000 --> 00:39:46,220

nowhere I mean we're looking for signals

1057

00:39:50,290 --> 00:39:48,010

and and and the aliens have made the

1058

00:39:51,340 --> 00:39:50,300

transmitters might look like you know

1059

00:39:54,310 --> 00:39:51,350

typewriters or

1060

00:39:57,040 --> 00:39:54,320

bicycles or who knows what and we make

1061

00:39:59,380 --> 00:39:57,050

any anthropomorphic assumptions there we

1062

00:40:01,120 --> 00:39:59,390

do however make the assumption that

1063

00:40:03,610 --> 00:40:01,130

their biological and that they're on a

1064

00:40:05,500 --> 00:40:03,620

planet kind of like the earth right with

1065

00:40:07,900 --> 00:40:05,510

atmospheres and oceans and all that sort

1066

00:40:09,670 --> 00:40:07,910

of thing and that might be wrong I mean

1067

00:40:11,350 --> 00:40:09,680

my own views that most of the aliens

1068

00:40:13,300 --> 00:40:11,360

have moved on to synthetic intelligence

1069

00:40:15,430 --> 00:40:13,310

and so they're they're not restricted to

1070

00:40:18,520 --> 00:40:15,440

earth-like planets or planets of any

1071

00:40:21,250 --> 00:40:18,530

sort so you know aiming our antennas in

1072

00:40:24,040 --> 00:40:21,260

the directions of star systems might be

1073

00:40:25,780 --> 00:40:24,050

missing the boat that that could be what

1074

00:40:27,910 --> 00:40:25,790

do you think of the the argument about

1075

00:40:30,400 --> 00:40:27,920

the I guess it's the von Neumann machine

1076

00:40:33,670 --> 00:40:30,410

thing where a self-replicating robots

1077

00:40:35,410 --> 00:40:33,680

would populate the galaxy and this seems

1078

00:40:37,300 --> 00:40:35,420

like some people to be an inevitability

1079

00:40:39,900 --> 00:40:37,310

and that the fact that it hasn't hasn't

1080

00:40:42,670 --> 00:40:39,910

happened indicates that we're the only

1081

00:40:44,590 --> 00:40:42,680

life-form in the galaxy yeah this is

1082

00:40:46,930 --> 00:40:44,600

another flavor of the Fermi paradox of

1083

00:40:47,860 --> 00:40:46,940

course and it's that well you what

1084

00:40:50,140 --> 00:40:47,870

you'll do is you'll build

1085

00:40:52,180 --> 00:40:50,150

self-replicating machines and then

1086

00:40:53,590 --> 00:40:52,190

they'll get away from you and start you

1087

00:40:56,200 --> 00:40:53,600

know consuming everything in the

1088

00:40:59,200 --> 00:40:56,210

universe to make more machines you know

1089

00:41:02,740 --> 00:40:59,210

we have these kinds of machines here on

1090

00:41:04,330 --> 00:41:02,750

earth they're called insects and insects

1091

00:41:06,400 --> 00:41:04,340

you know they're self-replicating and

1092

00:41:08,980 --> 00:41:06,410

they try and can you know eat everything

1093

00:41:11,320 --> 00:41:08,990

in sight but they don't eat everything

1094

00:41:14,860 --> 00:41:11,330

inside in the end I mean you go up to

1095

00:41:17,350 --> 00:41:14,870

any plant right and you'll find it it's

1096

00:41:19,720 --> 00:41:17,360

been nibbled away by insects but they

1097

00:41:21,130 --> 00:41:19,730

very seldom eat the whole plant right

1098

00:41:24,310 --> 00:41:21,140

why is that well there's you know

1099

00:41:26,170 --> 00:41:24,320

there's competing they run out of the

1100

00:41:29,520 --> 00:41:26,180

resources I mean there all sorts of if

1101

00:41:31,780 --> 00:41:29,530

you will natural brakes on having this

1102

00:41:33,760 --> 00:41:31,790

phenomenon run to if you will to

1103

00:41:35,800 --> 00:41:33,770

completion to the point where it it gets

1104

00:41:37,720 --> 00:41:35,810

rid of everything so it could be that

1105

00:41:40,060 --> 00:41:37,730

there are ongoing minimum machines but

1106

00:41:43,540 --> 00:41:40,070

they just don't eat everything right we

1107

00:41:45,280 --> 00:41:43,550

haven't seen them nearby you know but

1108

00:41:48,040 --> 00:41:45,290

again how would you know

1109

00:41:50,320 --> 00:41:48,050

how would you know what experiment you

1110

00:41:53,230 --> 00:41:50,330

to prove that there are no such machines

1111

00:41:55,420 --> 00:41:53,240

out there yeah indeed yeah we can't we

1112

00:41:57,640 --> 00:41:55,430

can't see them and if they're not

1113

00:42:02,230 --> 00:41:57,650

transmitting towards us then we wouldn't

1114

00:42:04,609 --> 00:42:02,240

know yeah UFO enthusiasts like when they

1115

00:42:07,489 --> 00:42:04,619

they talk about you

1116

00:42:10,160 --> 00:42:07,499

because you're a fairly famous scientist

1117

00:42:12,259 --> 00:42:10,170

and you well-known within the UFO

1118

00:42:15,200 --> 00:42:12,269

community a lot of them can have a

1119

00:42:19,430 --> 00:42:15,210

negative assessment of you in that they

1120

00:42:21,499 --> 00:42:19,440

feel that you are mocking them I hope I

1121

00:42:22,849 --> 00:42:21,509

don't do that but maybe I do I mean I

1122

00:42:25,460 --> 00:42:22,859

don't know of course it's gonna have a

1123

00:42:27,739 --> 00:42:25,470

negative view of me because I challenge

1124

00:42:31,069 --> 00:42:27,749

what they say so I'm not surprised by

1125

00:42:33,349 --> 00:42:31,079

that sometimes they I mean yeah I was

1126
00:42:36,229 --> 00:42:33,359
reading something the other day online

1127
00:42:38,420 --> 00:42:36,239
and about me and it was an article that

1128
00:42:39,979 --> 00:42:38,430
I had written it may have been stoned I

1129
00:42:42,049 --> 00:42:39,989
don't even remember which article was

1130
00:42:44,569 --> 00:42:42,059
but it doesn't matter their comments

1131
00:42:47,390 --> 00:42:44,579
were not shall we say gentle or friendly

1132
00:42:50,900 --> 00:42:47,400
and most of them were ad hominem attacks

1133
00:42:53,359 --> 00:42:50,910
they weren't arguing with what I was

1134
00:42:55,819 --> 00:42:53,369
saying they were just saying that I was

1135
00:42:58,099 --> 00:42:55,829
a worthless person or worse than that

1136
00:43:00,130 --> 00:42:58,109
and I remember my wife came over and she

1137
00:43:02,690 --> 00:43:00,140
said why are you reading this stuff

1138
00:43:04,400 --> 00:43:02,700

which was a good question in a way I

1139

00:43:07,519 --> 00:43:04,410

mean people you know people are gonna

1140

00:43:09,859 --> 00:43:07,529

hate right and but they but I find it

1141

00:43:11,749 --> 00:43:09,869

again kind of I guess it was about

1142

00:43:13,729 --> 00:43:11,759

disclosure that I'd written but I I

1143

00:43:15,440 --> 00:43:13,739

found it kind of disappointing that

1144

00:43:18,259 --> 00:43:15,450

their best arguments were at hominem

1145

00:43:19,549 --> 00:43:18,269

attacks that was that's what it was it

1146

00:43:22,279 --> 00:43:19,559

wasn't because what I was saying was

1147

00:43:25,880 --> 00:43:22,289

likely to have some merit it was because

1148

00:43:29,180 --> 00:43:25,890

as a hominid I didn't have any merit yes

1149

00:43:31,099 --> 00:43:29,190

yeah I get okay that's as well people

1150

00:43:33,769 --> 00:43:31,109

yeah yeah I do Punk things like

1151
00:43:35,209 --> 00:43:33,779
conspiracy theories like more extreme

1152
00:43:37,579 --> 00:43:35,219
ones like chemtrails and things like

1153
00:43:39,469 --> 00:43:37,589
that and people often say that I must be

1154
00:43:41,150 --> 00:43:39,479
a government shill and therefore yeah

1155
00:43:43,670 --> 00:43:41,160
you have to listen to any of my

1156
00:43:45,170 --> 00:43:43,680
arguments yeah yeah but if your

1157
00:43:46,880 --> 00:43:45,180
government shield I mean I get accused

1158
00:43:49,700 --> 00:43:46,890
of that too and I always figure well if

1159
00:43:51,680 --> 00:43:49,710
that's true I mean don't I get a bunch

1160
00:43:55,789 --> 00:43:51,690
of checks I mean you know I think gonna

1161
00:43:58,279 --> 00:43:55,799
pay me for being a shell yes seems and

1162
00:44:00,799 --> 00:43:58,289
the chance I've never never got a check

1163
00:44:02,209 --> 00:44:00,809

I've written one book and that's that's

1164

00:44:04,549 --> 00:44:02,219

the only money I've ever made from

1165

00:44:07,690 --> 00:44:04,559

debunking this stuff but it's very very

1166

00:44:11,150 --> 00:44:07,700

interesting I still I love the idea of

1167

00:44:14,180 --> 00:44:11,160

it researching UFOs have you ever had

1168

00:44:15,469 --> 00:44:14,190

any kind of UFO experience yourself I

1169

00:44:18,140 --> 00:44:15,479

mean you would probably don't think it's

1170

00:44:19,750 --> 00:44:18,150

aliens but some weird unexplained

1171

00:44:22,130 --> 00:44:19,760

thing that you still flying in the sky

1172

00:44:25,029 --> 00:44:22,140

well I did see something when I was

1173

00:44:28,250 --> 00:44:25,039

driving down to what they call the 405

1174

00:44:30,470 --> 00:44:28,260

better known to cognoscenti is the San

1175

00:44:32,390 --> 00:44:30,480

Diego freeway in Los Angeles and there

1176
00:44:33,829 --> 00:44:32,400
was something you know some spherical

1177
00:44:36,769 --> 00:44:33,839
things or two hovering there in the

1178
00:44:39,109 --> 00:44:36,779
skies which was very puzzling at first

1179
00:44:41,150 --> 00:44:39,119
but when I got a little closer it turned

1180
00:44:42,589 --> 00:44:41,160
out to be a blimp and I was seeing it

1181
00:44:46,819 --> 00:44:42,599
head-on

1182
00:44:49,010 --> 00:44:46,829
quickly so that was kind of amusing and

1183
00:44:52,849 --> 00:44:49,020
and I also saw something

1184
00:44:54,559 --> 00:44:52,859
where was it Sierra Vista Arizona I went

1185
00:44:56,960 --> 00:44:54,569
down there to give a talk maybe a year

1186
00:44:58,190 --> 00:44:56,970
ago something like that and again there

1187
00:44:59,750 --> 00:44:58,200
was something hovering in the skies and

1188
00:45:01,339 --> 00:44:59,760

it was definitely not moving and it was

1189

00:45:02,900 --> 00:45:01,349

just so what it didn't look like an

1190

00:45:04,549 --> 00:45:02,910

aircraft because an aircraft eventually

1191

00:45:06,470 --> 00:45:04,559

will will move one way or the other it's

1192

00:45:08,990 --> 00:45:06,480

coming right at you but usually it makes

1193

00:45:13,220 --> 00:45:09,000

a turn but it turned out that it was a

1194

00:45:16,579 --> 00:45:13,230

tethered balloon system too with cameras

1195

00:45:18,319 --> 00:45:16,589

on it to watch the us-mexico border and

1196

00:45:21,160 --> 00:45:18,329

the locals told me that it's always up

1197

00:45:23,599 --> 00:45:21,170

there that's for what it's mysterious

1198

00:45:26,329 --> 00:45:23,609

yeah that's quite a few balloon new

1199

00:45:29,390 --> 00:45:26,339

balloons now there's the the Google loon

1200

00:45:31,430 --> 00:45:29,400

project which of these giant balloons

1201

00:45:32,930 --> 00:45:31,440

are they using to like bring Wi-Fi to

1202

00:45:34,819 --> 00:45:32,940

other places and I think that's going to

1203

00:45:36,529 --> 00:45:34,829

lead to a lot of a lot of new sightings

1204

00:45:38,029 --> 00:45:36,539

and of course weather balloons

1205

00:45:39,260 --> 00:45:38,039

you know people joke about weather

1206

00:45:41,240 --> 00:45:39,270

balloons like oh it's always a weather

1207

00:45:44,059 --> 00:45:41,250

balloon but a lot of sightings actually

1208

00:45:46,220 --> 00:45:44,069

aren't weather balloons yeah yeah I mean

1209

00:45:47,930 --> 00:45:46,230

you know there's a whole laundry list of

1210

00:45:50,089 --> 00:45:47,940

things that people mistake for alien

1211

00:45:51,410 --> 00:45:50,099

craft and certainly balloons are among

1212

00:45:53,029 --> 00:45:51,420

them and not just weather balloons just

1213

00:45:55,279 --> 00:45:53,039

sometimes party balloons they get loose

1214

00:45:57,500 --> 00:45:55,289

and if you're only a mile from where the

1215

00:45:59,450 --> 00:45:57,510

party was and suddenly you see these you

1216

00:46:02,510 --> 00:45:59,460

know white dots in the sky moving in

1217

00:46:04,279 --> 00:46:02,520

formation you know it could be a little

1218

00:46:07,549 --> 00:46:04,289

mysterious but it could be party

1219

00:46:10,250 --> 00:46:07,559

balloons you know from your perspective

1220

00:46:12,470 --> 00:46:10,260

what advice would you give a UFO

1221

00:46:13,789 --> 00:46:12,480

enthusiast who is convinced that the

1222

00:46:16,029 --> 00:46:13,799

government is withholding information

1223

00:46:19,250 --> 00:46:16,039

how do you think they should proceed

1224

00:46:20,390 --> 00:46:19,260

with our belief well I mean obviously

1225

00:46:23,120 --> 00:46:20,400

they could support some of these

1226
00:46:24,829 --> 00:46:23,130
organizations that are you know arguing

1227
00:46:27,500 --> 00:46:24,839
for disclosure but that presumes that

1228
00:46:29,690 --> 00:46:27,510
there's something to disclose and B that

1229
00:46:31,970 --> 00:46:29,700
if there is that they will disclose it

1230
00:46:34,790 --> 00:46:31,980
I think that that's

1231
00:46:38,540 --> 00:46:34,800
of an unproductive way to proceed

1232
00:46:41,750 --> 00:46:38,550
although it is the number one you know I

1233
00:46:44,870 --> 00:46:41,760
don't know I guess you call it the

1234
00:46:48,140 --> 00:46:44,880
number one tactic of choice but I would

1235
00:46:50,390 --> 00:46:48,150
say if we're really being visited you

1236
00:46:52,040 --> 00:46:50,400
know the evidence isn't all going to be

1237
00:46:54,349 --> 00:46:52,050
collected by the US government the US

1238
00:46:56,450 --> 00:46:54,359

government isn't everywhere right I mean

1239

00:46:57,770 --> 00:46:56,460

if if aliens land on my backyard the

1240

00:47:00,470 --> 00:46:57,780

government isn't gonna know about that

1241

00:47:04,130 --> 00:47:00,480

unless I tell them right so there's

1242

00:47:06,440 --> 00:47:04,140

plenty of room for them to in fact do

1243

00:47:08,570 --> 00:47:06,450

their own experiments maybe and and and

1244

00:47:11,030 --> 00:47:08,580

you know I go to places where people

1245

00:47:13,820 --> 00:47:11,040

routinely cite things and and see if

1246

00:47:15,320 --> 00:47:13,830

there is anything going on or just look

1247

00:47:17,060 --> 00:47:15,330

at I don't know that I mean there's

1248

00:47:19,250 --> 00:47:17,070

there are plenty of weather maps that

1249

00:47:20,330 --> 00:47:19,260

are you know taken by satellites and

1250

00:47:23,359 --> 00:47:20,340

some of them are fairly high resolution

1251
00:47:24,560 --> 00:47:23,369
I mean you know I would just say instead

1252
00:47:25,670 --> 00:47:24,570
of throwing up your hands and saying I'm

1253
00:47:27,590 --> 00:47:25,680
waiting for the government to tell me

1254
00:47:29,780 --> 00:47:27,600
what's going on you know that they could

1255
00:47:32,270 --> 00:47:29,790
wait till the cows come home he's better

1256
00:47:35,510 --> 00:47:32,280
to actually figure out well how can we

1257
00:47:37,490 --> 00:47:35,520
in fact look into this it's hard because

1258
00:47:38,930 --> 00:47:37,500
they don't have the resources the

1259
00:47:41,240 --> 00:47:38,940
government has tried at least four or

1260
00:47:42,820 --> 00:47:41,250
five times with various projects you

1261
00:47:45,920 --> 00:47:42,830
know the most recent being this thing

1262
00:47:50,480 --> 00:47:45,930
that you know 22 million that was spent

1263
00:47:53,870 --> 00:47:50,490

mostly in Las Vegas to to investigate

1264

00:47:55,820 --> 00:47:53,880

what we called a nominal anomalous

1265

00:47:58,010 --> 00:47:55,830

aerial phenomena that's kind of kind of

1266

00:48:00,140 --> 00:47:58,020

thing you know they're coming and they

1267

00:48:02,330 --> 00:48:00,150

have access to all sorts of data that

1268

00:48:04,870 --> 00:48:02,340

you might not have access to but it's

1269

00:48:07,040 --> 00:48:04,880

usually it's not secret data I mean I

1270

00:48:09,560 --> 00:48:07,050

don't know what to do I mean you can

1271

00:48:11,660 --> 00:48:09,570

certainly there are 10,000 sightings

1272

00:48:15,080 --> 00:48:11,670

every year you could just help MUFON and

1273

00:48:17,990 --> 00:48:15,090

look into the best ones yeah yeah

1274

00:48:20,270 --> 00:48:18,000

there's certainly an infinite amount of

1275

00:48:22,010 --> 00:48:20,280

UFO sightings like you see UFOs every

1276

00:48:23,630 --> 00:48:22,020

day but I just assume that they're

1277

00:48:25,820 --> 00:48:23,640

actually planes I can't actually

1278

00:48:28,430 --> 00:48:25,830

identify them the little white dots just

1279

00:48:30,109 --> 00:48:28,440

far away in the sky well when people are

1280

00:48:31,430 --> 00:48:30,119

me up and say that I've got you know

1281

00:48:32,570 --> 00:48:31,440

they usually start their conversation by

1282

00:48:35,030 --> 00:48:32,580

saying I have some important information

1283

00:48:38,390 --> 00:48:35,040

for you and then I know exactly what

1284

00:48:40,540 --> 00:48:38,400

they're going to talk about but you know

1285

00:48:43,040 --> 00:48:40,550

I don't think any of these people are

1286

00:48:45,050 --> 00:48:43,050

committing a hoax it's not that they're

1287

00:48:45,829 --> 00:48:45,060

saying that and they're making something

1288

00:48:48,799 --> 00:48:45,839

up they've seen

1289

00:48:50,180 --> 00:48:48,809

something and I will ask do you have any

1290

00:48:52,339 --> 00:48:50,190

photos or videos I mean we don't

1291

00:48:56,479 --> 00:48:52,349

investigate UFOs here that's not our job

1292

00:49:01,069 --> 00:48:56,489

but I I do have a fairly long history in

1293

00:49:03,529 --> 00:49:01,079

photography videography booms and and

1294

00:49:05,690 --> 00:49:03,539

maybe half of them do have photos of

1295

00:49:07,459 --> 00:49:05,700

some sort or other and I say send it to

1296

00:49:11,329 --> 00:49:07,469

me now I'll give you my opinion anyhow

1297

00:49:13,700 --> 00:49:11,339

for what that's worth and maybe half of

1298

00:49:16,249 --> 00:49:13,710

the photos they send like I think I know

1299

00:49:18,589 --> 00:49:16,259

what it is you know internal reflection

1300

00:49:20,900 --> 00:49:18,599

in a zoom lens or you know whatever that

1301

00:49:24,709 --> 00:49:20,910

so the autofocus in a cell phone that

1302

00:49:26,569 --> 00:49:24,719

kind of and I'll give them my opinion it

1303

00:49:29,989 --> 00:49:26,579

doesn't make them happier though I gotta

1304

00:49:31,759 --> 00:49:29,999

say sometimes it does I get quite a few

1305

00:49:33,799 --> 00:49:31,769

of those as well we have a forum on on

1306

00:49:35,870 --> 00:49:33,809

my metal bunk forum called sky identify

1307

00:49:37,400 --> 00:49:35,880

which is for identifying things in the

1308

00:49:40,190 --> 00:49:37,410

sky and we do a lot of that type of

1309

00:49:42,079 --> 00:49:40,200

thing people post photos of little white

1310

00:49:43,880 --> 00:49:42,089

blobs in the sky and then we say that's

1311

00:49:46,130 --> 00:49:43,890

a reflection or whatever and then we

1312

00:49:47,870 --> 00:49:46,140

kind of explain why it is or we

1313

00:49:49,759 --> 00:49:47,880

sometimes you can't figure out what

1314

00:49:51,349 --> 00:49:49,769

things are because delightfully not

1315

00:49:54,950 --> 00:49:51,359

enough information in the photograph

1316

00:49:56,390 --> 00:49:54,960

right yeah yeah yeah that's true it's

1317

00:49:58,849 --> 00:49:56,400

it's very seldom that people will come

1318

00:50:00,829 --> 00:49:58,859

back and say oh okay thanks that's

1319

00:50:03,589 --> 00:50:00,839

somehow that doesn't seem to be the

1320

00:50:06,019 --> 00:50:03,599

common reaction but occasionally yeah

1321

00:50:07,249 --> 00:50:06,029

yeah all right this has been great

1322

00:50:09,620 --> 00:50:07,259

conversation there's anything else that

1323

00:50:12,229 --> 00:50:09,630

you want to touch on before we close out

1324

00:50:13,729 --> 00:50:12,239

no I don't think so I mean you know tell

1325

00:50:17,690 --> 00:50:13,739

people to keep watching this guy's look

1326

00:50:21,079 --> 00:50:17,700

now the universe is it's vast it's big

1327

00:50:22,670 --> 00:50:21,089

really big as Douglas Adam said and as a

1328

00:50:24,410 --> 00:50:22,680

consequence I'm sure there are plenty of

1329

00:50:26,930 --> 00:50:24,420

aliens out there there trillion planets

1330

00:50:28,969 --> 00:50:26,940

in the in the Milky Way galaxy I don't

1331

00:50:30,950 --> 00:50:28,979

think all of them are sterile so I do

1332

00:50:32,509 --> 00:50:30,960

think they're out there I would argue

1333

00:50:34,969 --> 00:50:32,519

that they're not visiting earth but if

1334

00:50:37,309 --> 00:50:34,979

you feel strongly otherwise you know

1335

00:50:38,730 --> 00:50:37,319

work on proving that to me all right