

SOMEWHERE IN THE SKIES



ET AND THE MYSTERY OF
VANISHING STARS
FEATURING BEATRIZ VILLARROEL

1
00:00:08,790 --> 00:00:05,510
hey guys ryan here the summer in the

2
00:00:10,950 --> 00:00:08,800
skies podcast is a labor of love every

3
00:00:13,430 --> 00:00:10,960
week and with that comes many different

4
00:00:15,990 --> 00:00:13,440
costs to keep the show running that's

5
00:00:18,150 --> 00:00:16,000
where our patreon campaign comes in you

6
00:00:20,470 --> 00:00:18,160
give what you think the show is worth

7
00:00:22,390 --> 00:00:20,480
there's different rewards available all

8
00:00:24,950 --> 00:00:22,400
the time including shout outs on the

9
00:00:27,750 --> 00:00:24,960
show early editions of main episodes

10
00:00:30,310 --> 00:00:27,760
bonus episodes and content and very soon

11
00:00:33,590 --> 00:00:30,320
monthly patron hangouts where we sit

12
00:00:35,350 --> 00:00:33,600
back and chat all things ufos so i hope

13
00:00:37,910 --> 00:00:35,360

you'll consider becoming a patreon

14

00:00:41,190 --> 00:00:37,920

subscriber today to learn more and to

15

00:00:43,430 --> 00:00:41,200

join visit patreon.com

16

00:00:50,229 --> 00:00:43,440

somewhereskies thank you for your

17

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

today on the show astrophysicist

18

00:00:56,549 --> 00:00:54,480

principal investigator of vasco and

19

00:00:59,910 --> 00:00:56,559

winner of the l'oreal prize for women in

20

00:01:02,150 --> 00:00:59,920

science beatriz villar oil

21

00:01:04,310 --> 00:01:02,160

my team is searching for objects that

22

00:01:06,390 --> 00:01:04,320

have vanished or appeared during 70

23

00:01:08,630 --> 00:01:06,400

years on our night sky

24

00:01:11,190 --> 00:01:08,640

this includes a number of exotic

25

00:01:13,750 --> 00:01:11,200

astrophysical phenomena including stars

26

00:01:15,350 --> 00:01:13,760

that collapse directly into black holes

27

00:01:17,830 --> 00:01:15,360

it also includes

28

00:01:19,749 --> 00:01:17,840

possible signatures of et

29

00:01:21,510 --> 00:01:19,759

our research is basic research which

30

00:01:24,149 --> 00:01:21,520

means that it contributes to human

31

00:01:26,789 --> 00:01:24,159

knowledge and aims to answer some of the

32

00:01:28,770 --> 00:01:26,799

most profound questions for example are

33

00:01:33,570 --> 00:01:28,780

we alone here

34

00:01:33,580 --> 00:01:38,310

[Applause]

35

00:01:43,400 --> 00:01:41,190

this is somewhere in the skies with ryan

36

00:01:50,210 --> 00:01:43,410

spread

37

00:01:50,220 --> 00:02:00,389

[Music]

38

00:02:04,950 --> 00:02:02,310

beatrice thank you so much for joining

39

00:02:06,709 --> 00:02:04,960

us today on somewhere in the skies

40

00:02:08,949 --> 00:02:06,719

it's a pleasure

41

00:02:10,869 --> 00:02:08,959

yeah we're really excited to talk to you

42

00:02:13,030 --> 00:02:10,879

when chrissy and i first heard about

43

00:02:16,790 --> 00:02:13,040

your work and we saw that you were the

44

00:02:19,830 --> 00:02:16,800

winner of the uh the 2021 l'oreal unesco

45

00:02:21,830 --> 00:02:19,840

for women in science award we were like

46

00:02:24,070 --> 00:02:21,840

yes this is someone we have to talk to

47

00:02:26,790 --> 00:02:24,080

you not only because of the amazing work

48

00:02:29,270 --> 00:02:26,800

you've done but um highlighting the work

49

00:02:31,190 --> 00:02:29,280

of women in science which which you know

50

00:02:32,150 --> 00:02:31,200

is an issue a lot of the times when it

51
00:02:34,229 --> 00:02:32,160
comes to

52
00:02:36,949 --> 00:02:34,239
who's at the forefront of talking about

53
00:02:38,309 --> 00:02:36,959
these things and um we were super

54
00:02:40,710 --> 00:02:38,319
excited so

55
00:02:43,589 --> 00:02:40,720
yeah um chrissy if you don't mind i'd

56
00:02:45,430 --> 00:02:43,599
love to start and ask beatrice the

57
00:02:47,910 --> 00:02:45,440
obvious question like how she got

58
00:02:49,509 --> 00:02:47,920
interested in all this stuff so beatrice

59
00:02:51,750 --> 00:02:49,519
how did you first get interested in

60
00:02:53,509 --> 00:02:51,760
astrophysics and what made you want to

61
00:02:56,229 --> 00:02:53,519
take that that journey

62
00:02:58,710 --> 00:02:56,239
actually it wasn't a clear thing for me

63
00:03:00,229 --> 00:02:58,720

i always liked a lot of things and i

64

00:03:03,030 --> 00:03:00,239

have always been very passionate about

65

00:03:04,550 --> 00:03:03,040

music since i was a kid i really loved

66

00:03:05,910 --> 00:03:04,560

playing violin a lot i still love

67

00:03:07,830 --> 00:03:05,920

playing violin

68

00:03:09,589 --> 00:03:07,840

um

69

00:03:11,750 --> 00:03:09,599

at the same time i was quite intrigued

70

00:03:13,270 --> 00:03:11,760

by science and i was

71

00:03:15,990 --> 00:03:13,280

as a teenager i was particularly

72

00:03:18,470 --> 00:03:16,000

interested in molecular biology and i

73

00:03:21,190 --> 00:03:18,480

thought that it was so cool like how dna

74

00:03:24,949 --> 00:03:21,200

becomes a protein and all these things

75

00:03:26,309 --> 00:03:24,959

however with time i discovered like that

76

00:03:28,949 --> 00:03:26,319

there were many questions in

77

00:03:31,670 --> 00:03:28,959

astrophysics that intrigued me as well

78

00:03:34,309 --> 00:03:31,680

and i mean and since i was a kid i was

79

00:03:37,030 --> 00:03:34,319

always kind of a nerd i loved star wars

80

00:03:39,750 --> 00:03:37,040

and all these things and so astronomy

81

00:03:41,190 --> 00:03:39,760

has kind of been very natural for me

82

00:03:42,789 --> 00:03:41,200

um

83

00:03:44,309 --> 00:03:42,799

like a choice

84

00:03:46,869 --> 00:03:44,319

right well you're talking to two star

85

00:03:48,949 --> 00:03:46,879

wars fans here as well so you're in good

86

00:03:50,869 --> 00:03:48,959

company you're in good company um i love

87

00:03:53,589 --> 00:03:50,879

that i love hearing the origin story of

88

00:03:55,350 --> 00:03:53,599

how people get interested in what they

89

00:03:56,390 --> 00:03:55,360

do um chrissy do you want to take it

90

00:03:58,470 --> 00:03:56,400

from here

91

00:04:00,390 --> 00:03:58,480

yeah you said music you brought up the

92

00:04:02,630 --> 00:04:00,400

music part have you been able to bring

93

00:04:03,990 --> 00:04:02,640

bridge music and your passion for it

94

00:04:05,750 --> 00:04:04,000

into the work that you're doing in

95

00:04:06,789 --> 00:04:05,760

science has there been any intersections

96

00:04:08,789 --> 00:04:06,799

of that

97

00:04:11,589 --> 00:04:08,799

actually i was organizing for several

98

00:04:13,030 --> 00:04:11,599

years it's chamber music concert at my

99

00:04:15,110 --> 00:04:13,040

alma mater

100

00:04:16,629 --> 00:04:15,120

where i did my phd during those years i

101
00:04:18,229 --> 00:04:16,639
was doing my phd studies i also

102
00:04:19,590 --> 00:04:18,239
organized this concert and sometimes

103
00:04:21,509 --> 00:04:19,600
played on them

104
00:04:23,270 --> 00:04:21,519
so i did that

105
00:04:25,430 --> 00:04:23,280
okay it has been very important for me

106
00:04:27,270 --> 00:04:25,440
to kind of keep the music alive i can't

107
00:04:29,350 --> 00:04:27,280
function unless i both do music and

108
00:04:31,990 --> 00:04:29,360
science at the same time

109
00:04:33,670 --> 00:04:32,000
yeah and you have like two um research

110
00:04:36,310 --> 00:04:33,680
fields can you break them down a little

111
00:04:37,990 --> 00:04:36,320
bit for us and like what they consist of

112
00:04:38,710 --> 00:04:38,000
so one of the things i like working with

113
00:04:41,350 --> 00:04:38,720

is

114

00:04:43,670 --> 00:04:41,360
active galactic nuclei i think many

115

00:04:45,430 --> 00:04:43,680
might have heard of quasars and

116

00:04:47,430 --> 00:04:45,440
and they know that quasars are like

117

00:04:48,790 --> 00:04:47,440
extremely luminous galaxy cores that you

118

00:04:50,150 --> 00:04:48,800
can find

119

00:04:51,830 --> 00:04:50,160
and um

120

00:04:53,909 --> 00:04:51,840
these kind of quasars i've been very

121

00:04:55,590 --> 00:04:53,919
very interested in trying to understand

122

00:04:56,629 --> 00:04:55,600
the physics and

123

00:04:58,390 --> 00:04:56,639
of them

124

00:05:00,230 --> 00:04:58,400
and so on

125

00:05:03,270 --> 00:05:00,240
and the second thing i'm very interested

126
00:05:05,749 --> 00:05:03,280
in is searching for vanishing stars

127
00:05:07,029 --> 00:05:05,759
because this is a field that is pretty

128
00:05:09,590 --> 00:05:07,039
untouched

129
00:05:11,670 --> 00:05:09,600
and that i always been or not always but

130
00:05:13,029 --> 00:05:11,680
that i have been very excited about in

131
00:05:16,070 --> 00:05:13,039
the last years

132
00:05:18,550 --> 00:05:16,080
yeah the vanishing stars aspect of this

133
00:05:19,909 --> 00:05:18,560
is where what i'm really interested in

134
00:05:22,550 --> 00:05:19,919
hearing about and how this will

135
00:05:24,870 --> 00:05:22,560
eventually relate to uh you know the

136
00:05:27,189 --> 00:05:24,880
search for extraterrestrial intelligence

137
00:05:30,469 --> 00:05:27,199
and whatnot but i actually heard you in

138
00:05:32,790 --> 00:05:30,479

an interview um talk about how you first

139

00:05:35,110 --> 00:05:32,800

got interested in the idea of vanishing

140

00:05:37,590 --> 00:05:35,120

stars and i loved how endearing the

141

00:05:38,550 --> 00:05:37,600

story was uh would you mind sharing that

142

00:05:40,710 --> 00:05:38,560

with us

143

00:05:43,189 --> 00:05:40,720

sure i can't i can tell the story i

144

00:05:47,510 --> 00:05:43,199

actually also posted it on my blog on

145

00:05:49,749 --> 00:05:47,520

the 11th 11th of february on the um

146

00:05:51,909 --> 00:05:49,759

international day for women and girls in

147

00:05:52,790 --> 00:05:51,919

science

148

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

so

149

00:05:58,790 --> 00:05:55,600

it's um

150

00:06:00,870 --> 00:05:58,800

i was younger i was uh i think either i

151
00:06:02,469 --> 00:06:00,880
was in my undergrad years i was a phd

152
00:06:04,950 --> 00:06:02,479
student i don't remember exactly

153
00:06:06,390 --> 00:06:04,960
unfortunately when it was

154
00:06:09,270 --> 00:06:06,400
i was

155
00:06:11,270 --> 00:06:09,280
i i used to write some kind of fables

156
00:06:13,029 --> 00:06:11,280
and short stories and when i whenever i

157
00:06:15,270 --> 00:06:13,039
had something i wanted to tell you you

158
00:06:17,510 --> 00:06:15,280
should type it down for myself

159
00:06:20,710 --> 00:06:17,520
it's i usually never share these stories

160
00:06:23,430 --> 00:06:20,720
or very seldom i share it with someone

161
00:06:26,390 --> 00:06:23,440
and so i was writing this kind of fable

162
00:06:29,430 --> 00:06:26,400
about that sad quasar

163
00:06:33,110 --> 00:06:29,440

and i kind of

164

00:06:35,909 --> 00:06:33,120

wrote it and then i to watch and i sent

165

00:06:37,990 --> 00:06:35,919

him through a wormhole and

166

00:06:39,909 --> 00:06:38,000

and then i kind of started wondering has

167

00:06:42,469 --> 00:06:39,919

anyone ever seen an object just

168

00:06:43,909 --> 00:06:42,479

vanishing from the sky

169

00:06:45,029 --> 00:06:43,919

has nothing to do with science

170

00:06:48,790 --> 00:06:45,039

absolutely

171

00:06:49,670 --> 00:06:48,800

nothing with science it was just um

172

00:06:50,710 --> 00:06:49,680

well

173

00:06:53,029 --> 00:06:50,720

me

174

00:06:55,909 --> 00:06:53,039

a younger version of myself

175

00:06:57,990 --> 00:06:55,919

typing up these fables and stories and

176

00:07:00,550 --> 00:06:58,000

that's kind of how i got the idea i got

177

00:07:02,309 --> 00:07:00,560

stuck with it and then i wanted to check

178

00:07:03,749 --> 00:07:02,319

it the problem was that i didn't have

179

00:07:06,790 --> 00:07:03,759

any tools i didn't have the means i

180

00:07:07,749 --> 00:07:06,800

didn't know which surveys i could use

181

00:07:12,469 --> 00:07:07,759

and

182

00:07:13,830 --> 00:07:12,479

year of my phd studies i knew how i

183

00:07:16,790 --> 00:07:13,840

could do it

184

00:07:19,350 --> 00:07:16,800

and i tried and i tried it with like one

185

00:07:21,029 --> 00:07:19,360

percent of the database that i had

186

00:07:23,749 --> 00:07:21,039

access to because it was

187

00:07:25,510 --> 00:07:23,759

a too big um effort

188

00:07:26,309 --> 00:07:25,520

and that's kind of how vasco project was

189

00:07:27,990 --> 00:07:26,319

born

190

00:07:30,629 --> 00:07:28,000

it turned out to be super difficult to

191

00:07:33,189 --> 00:07:30,639

check technically

192

00:07:35,909 --> 00:07:33,199

interesting i i see that's so

193

00:07:38,550 --> 00:07:35,919

cool how like your curiosity as a kid

194

00:07:40,550 --> 00:07:38,560

would ultimately lead to like this huge

195

00:07:42,390 --> 00:07:40,560

project that you undertook i love

196

00:07:44,390 --> 00:07:42,400

hearing stories like that we always hear

197

00:07:46,790 --> 00:07:44,400

like science fiction

198

00:07:49,670 --> 00:07:46,800

you know inspires a lot of scientists

199

00:07:51,430 --> 00:07:49,680

until they can make it science fact when

200

00:07:53,990 --> 00:07:51,440

you when i heard that story i was like i

201
00:07:57,510 --> 00:07:54,000
have to ask her about that but um the

202
00:07:59,670 --> 00:07:57,520
vasco project um i'd love to hear you

203
00:08:02,710 --> 00:07:59,680
know how you started this

204
00:08:05,909 --> 00:08:02,720
um what exactly it is and yeah would you

205
00:08:08,070 --> 00:08:05,919
mind telling us a little more about that

206
00:08:09,749 --> 00:08:08,080
so the vasco project is the vanishing

207
00:08:12,629 --> 00:08:09,759
and appearing sources during a century

208
00:08:13,830 --> 00:08:12,639
of observations project is a project

209
00:08:15,510 --> 00:08:13,840
where we are looking for vanishing

210
00:08:17,909 --> 00:08:15,520
objects anything that vanishes from the

211
00:08:20,230 --> 00:08:17,919
sky and the hope is to find something

212
00:08:22,390 --> 00:08:20,240
that was there there always was there

213
00:08:24,790 --> 00:08:22,400

and one day it just vanishes of course

214

00:08:27,189 --> 00:08:24,800

we don't know if these objects exist

215

00:08:29,189 --> 00:08:27,199

at all we only know that there are not

216

00:08:31,350 --> 00:08:29,199

many studies that are dedicated to look

217

00:08:32,949 --> 00:08:31,360

for them because people just assume that

218

00:08:34,870 --> 00:08:32,959

it kind of doesn't happen

219

00:08:35,829 --> 00:08:34,880

if you have a star that dies either is

220

00:08:36,790 --> 00:08:35,839

going to

221

00:08:38,469 --> 00:08:36,800

um

222

00:08:41,029 --> 00:08:38,479

like

223

00:08:42,870 --> 00:08:41,039

go supernova or it's going to transform

224

00:08:45,190 --> 00:08:42,880

into a white dwarf which which will take

225

00:08:47,269 --> 00:08:45,200

billions of years if it has if it

226

00:08:48,949 --> 00:08:47,279

transforms into this white dwarf

227

00:08:50,550 --> 00:08:48,959

so you have these two modes for a star

228

00:08:52,829 --> 00:08:50,560

to die but there is nothing that says

229

00:08:55,910 --> 00:08:52,839

that it's going to just

230

00:08:58,070 --> 00:08:55,920

vanish so now there is actually is a

231

00:09:00,790 --> 00:08:58,080

hypothesis that some stars might

232

00:09:03,910 --> 00:09:00,800

collapse directly into a black hole

233

00:09:06,230 --> 00:09:03,920

uh it's so-called failed supernovae

234

00:09:09,910 --> 00:09:06,240

and but this is hypothesis nobody knows

235

00:09:13,030 --> 00:09:09,920

if this failed supernova ever happened

236

00:09:14,949 --> 00:09:13,040

so um there's obviously a science case

237

00:09:16,630 --> 00:09:14,959

also so

238

00:09:19,750 --> 00:09:16,640

the vasco project is therefore looking

239

00:09:21,829 --> 00:09:19,760

for these kind of punishing objects

240

00:09:23,910 --> 00:09:21,839

in the vasco project there is also a

241

00:09:25,750 --> 00:09:23,920

connection to like steady research

242

00:09:27,750 --> 00:09:25,760

because this is

243

00:09:29,829 --> 00:09:27,760

an example of a so-called impossible

244

00:09:32,550 --> 00:09:29,839

effect and

245

00:09:34,310 --> 00:09:32,560

we proposed in a paper in 2016 that you

246

00:09:36,070 --> 00:09:34,320

can look for things that

247

00:09:38,389 --> 00:09:36,080

are impossible let's say a star that

248

00:09:40,230 --> 00:09:38,399

vanishes or a galaxy that vanishes to

249

00:09:41,509 --> 00:09:40,240

take it even more absurd

250

00:09:44,070 --> 00:09:41,519

and

251
00:09:46,389 --> 00:09:44,080
because these kind of impossible effects

252
00:09:48,949 --> 00:09:46,399
uh would be a sign of something that

253
00:09:51,829 --> 00:09:48,959
would look like magic to us

254
00:09:54,710 --> 00:09:51,839
and uh we know from arthas c clark's

255
00:09:56,790 --> 00:09:54,720
laws that anything that looks like magic

256
00:09:58,389 --> 00:09:56,800
uh can just be a very very advanced

257
00:09:59,910 --> 00:09:58,399
technology

258
00:10:01,910 --> 00:09:59,920
i'm not sure if i

259
00:10:03,269 --> 00:10:01,920
said it exactly as it was written there

260
00:10:05,990 --> 00:10:03,279
but something in this

261
00:10:07,110 --> 00:10:06,000
close enough okay sufficiently about

262
00:10:08,870 --> 00:10:07,120
technology

263
00:10:11,990 --> 00:10:08,880

could look like that

264

00:10:14,470 --> 00:10:12,000

right we do hear that a lot in the ufo

265

00:10:17,030 --> 00:10:14,480

research community you know what may

266

00:10:20,069 --> 00:10:17,040

look impossible to us and even some of

267

00:10:22,790 --> 00:10:20,079

our most advanced you know fighter

268

00:10:25,190 --> 00:10:22,800

pilots saying that what they saw

269

00:10:26,069 --> 00:10:25,200

what they chased these anomalies in the

270

00:10:27,750 --> 00:10:26,079

sky

271

00:10:29,269 --> 00:10:27,760

performed unlike anything they'd ever

272

00:10:31,829 --> 00:10:29,279

seen and yeah that's gonna look like

273

00:10:33,990 --> 00:10:31,839

magic to us until we understand the

274

00:10:36,389 --> 00:10:34,000

technology being displayed in what these

275

00:10:40,150 --> 00:10:36,399

anomalies might be so i find that

276

00:10:42,550 --> 00:10:40,160

fascinating as well um before uh chrissy

277

00:10:44,710 --> 00:10:42,560

takes it over from here uh with the

278

00:10:46,710 --> 00:10:44,720

vasco project i love to know have you

279

00:10:49,269 --> 00:10:46,720

found any of these

280

00:10:50,790 --> 00:10:49,279

anomalies or anything um really

281

00:10:52,870 --> 00:10:50,800

compelling in the research that you've

282

00:10:55,509 --> 00:10:52,880

done that would lead you to think yeah

283

00:10:58,389 --> 00:10:55,519

yeah i think we're on the right track

284

00:11:00,389 --> 00:10:58,399

i think we found something that is very

285

00:11:02,310 --> 00:11:00,399

compelling but could also have a very

286

00:11:04,630 --> 00:11:02,320

mundane and boring cause and we don't

287

00:11:07,030 --> 00:11:04,640

know which one it is right now if it's

288

00:11:10,310 --> 00:11:07,040

the exciting cause or the boring cause

289

00:11:13,110 --> 00:11:10,320

so last year we published a paper

290

00:11:15,030 --> 00:11:13,120

in scientific reports where we see nine

291

00:11:17,350 --> 00:11:15,040

sources of light that appear and vanish

292

00:11:19,509 --> 00:11:17,360

within half an hour

293

00:11:21,190 --> 00:11:19,519

or like or something of that order of

294

00:11:22,949 --> 00:11:21,200

magnitude within the exposure time of

295

00:11:25,990 --> 00:11:22,959

the photographic plates

296

00:11:27,030 --> 00:11:26,000

so this plate is from 1950

297

00:11:29,509 --> 00:11:27,040

and

298

00:11:31,269 --> 00:11:29,519

you have these star looking things that

299

00:11:33,030 --> 00:11:31,279

are there if you look at the plate that

300

00:11:35,670 --> 00:11:33,040

was taking half an hour earlier they are

301
00:11:37,750 --> 00:11:35,680
not there you take a look at this like

302
00:11:40,710 --> 00:11:37,760
at the same region of the sky

303
00:11:43,350 --> 00:11:40,720
six days later and they are not there

304
00:11:45,030 --> 00:11:43,360
so we have to try to like identify the

305
00:11:46,230 --> 00:11:45,040
cause we do we

306
00:11:47,910 --> 00:11:46,240
try to look for all kind of

307
00:11:50,230 --> 00:11:47,920
astrophysical effects that could cause

308
00:11:52,150 --> 00:11:50,240
that and it's simply too many of these

309
00:11:54,310 --> 00:11:52,160
transients uh

310
00:11:57,509 --> 00:11:54,320
you know some too small image of the sky

311
00:11:59,750 --> 00:11:57,519
to be anything that we know

312
00:12:01,670 --> 00:11:59,760
like any astrophysical phenomenon that

313
00:12:04,310 --> 00:12:01,680

we are aware of

314

00:12:07,750 --> 00:12:04,320

so we did all those checks

315

00:12:09,750 --> 00:12:07,760

uh all known as the physics uh gone

316

00:12:11,750 --> 00:12:09,760

so then we started looking at all kind

317

00:12:13,910 --> 00:12:11,760

of instrumental issues we have been

318

00:12:15,829 --> 00:12:13,920

thinking for example double exposure and

319

00:12:18,389 --> 00:12:15,839

so on and we haven't found

320

00:12:19,750 --> 00:12:18,399

anything that that shows or proves us

321

00:12:20,790 --> 00:12:19,760

that this is something instrumental

322

00:12:22,389 --> 00:12:20,800

either

323

00:12:25,110 --> 00:12:22,399

which of course means it still can be

324

00:12:26,870 --> 00:12:25,120

instrumental for example maybe

325

00:12:28,790 --> 00:12:26,880

maybe there is some type of rare

326

00:12:32,389 --> 00:12:28,800

contamination or something like that

327

00:12:34,069 --> 00:12:32,399

that would look exactly like stars

328

00:12:37,030 --> 00:12:34,079

so we've been thinking if it could be

329

00:12:40,389 --> 00:12:38,870

well so maybe a nuclear fallout or

330

00:12:42,389 --> 00:12:40,399

something like that

331

00:12:44,949 --> 00:12:42,399

and um

332

00:12:47,269 --> 00:12:44,959

something boring

333

00:12:49,350 --> 00:12:47,279

and we have been wondering if it could

334

00:12:50,389 --> 00:12:49,360

be something more exciting

335

00:12:52,790 --> 00:12:50,399

because

336

00:12:54,470 --> 00:12:52,800

it doesn't have to be instrumental

337

00:12:56,870 --> 00:12:54,480

effects even if we know that most of the

338

00:12:58,949 --> 00:12:56,880

times it is still the boring explanation

339

00:13:00,389 --> 00:12:58,959

that wins over time

340

00:13:02,629 --> 00:13:00,399

um

341

00:13:04,629 --> 00:13:02,639

and this kind of more exciting idea has

342

00:13:07,190 --> 00:13:04,639

been that maybe

343

00:13:08,949 --> 00:13:07,200

maybe uh what we see could be some kind

344

00:13:11,509 --> 00:13:08,959

of solar reflection

345

00:13:13,670 --> 00:13:11,519

so like reflections of objects that are

346

00:13:15,110 --> 00:13:13,680

in high orbit around earth and that

347

00:13:16,389 --> 00:13:15,120

objects that are very reflective and

348

00:13:18,550 --> 00:13:16,399

flat

349

00:13:20,870 --> 00:13:18,560

um because if you would actually use the

350

00:13:23,350 --> 00:13:20,880

same instrumentation and have a look at

351
00:13:25,590 --> 00:13:23,360
images today you have so much of space

352
00:13:27,670 --> 00:13:25,600
that is that you can actually see

353
00:13:30,710 --> 00:13:27,680
transients that kind of appear and

354
00:13:32,150 --> 00:13:30,720
vanish in a small image

355
00:13:33,110 --> 00:13:32,160
this is kind of one of the things that

356
00:13:34,310 --> 00:13:33,120
you see

357
00:13:36,230 --> 00:13:34,320
when you have these space temperatures

358
00:13:38,870 --> 00:13:36,240
you see lots of glints here and there

359
00:13:41,430 --> 00:13:38,880
however this image is from 1950 seven

360
00:13:42,550 --> 00:13:41,440
years before spooked nikon

361
00:13:44,470 --> 00:13:42,560
so

362
00:13:46,230 --> 00:13:44,480
that's the more exciting

363
00:13:48,310 --> 00:13:46,240

uh hypothesis but one should always

364

00:13:49,910 --> 00:13:48,320

start with the most boring explanation

365

00:13:51,430 --> 00:13:49,920

and maybe

366

00:13:52,310 --> 00:13:51,440

go from there

367

00:13:57,590 --> 00:13:52,320

yeah

368

00:13:59,750 --> 00:13:57,600

fallout is boring but um

369

00:14:03,110 --> 00:13:59,760

i hope it's the other answer i honestly

370

00:14:04,949 --> 00:14:03,120

do um well um chrissy i'd love if you

371

00:14:07,110 --> 00:14:04,959

took it yeah from here i know we have

372

00:14:09,670 --> 00:14:07,120

some other questions relating to vasco

373

00:14:11,750 --> 00:14:09,680

and and whatnot yeah please

374

00:14:13,509 --> 00:14:11,760

i just i think it even if it's mundane

375

00:14:15,430 --> 00:14:13,519

it's still exciting like all the

376

00:14:17,750 --> 00:14:15,440

research that you're doing is is

377

00:14:18,550 --> 00:14:17,760

wonderful and exciting overall

378

00:14:20,710 --> 00:14:18,560

um

379

00:14:24,069 --> 00:14:20,720

i wonder like just does your work cross

380

00:14:25,750 --> 00:14:24,079

over into cosmology and it has it and if

381

00:14:28,470 --> 00:14:25,760

so how does it how does it cross over

382

00:14:30,389 --> 00:14:28,480

into it uh my work is not crossing over

383

00:14:31,350 --> 00:14:30,399

to cosmology right now

384

00:14:33,670 --> 00:14:31,360

um

385

00:14:35,269 --> 00:14:33,680

the work i do with agn

386

00:14:37,189 --> 00:14:35,279

sometimes has some

387

00:14:38,150 --> 00:14:37,199

um

388

00:14:40,949 --> 00:14:38,160

some

389

00:14:42,710 --> 00:14:40,959

implications for cosmology possibly or

390

00:14:44,550 --> 00:14:42,720

some of it might have had all the

391

00:14:45,509 --> 00:14:44,560

objects i work with are fairly close to

392

00:14:46,949 --> 00:14:45,519

me

393

00:14:49,590 --> 00:14:46,959

or to us

394

00:14:52,710 --> 00:14:49,600

so it doesn't really

395

00:14:53,910 --> 00:14:52,720

dive into cosmology as such um well you

396

00:14:56,389 --> 00:14:53,920

did mention

397

00:14:58,310 --> 00:14:56,399

instruments features um i'd love to know

398

00:15:00,150 --> 00:14:58,320

where where do you work out of when

399

00:15:03,189 --> 00:15:00,160

you're when you're doing this um what

400

00:15:04,550 --> 00:15:03,199

type of instruments are you using um is

401
00:15:06,550 --> 00:15:04,560
this a

402
00:15:09,750 --> 00:15:06,560
like an observatory in sweden that you

403
00:15:11,110 --> 00:15:09,760
use or how does that work it's much uh

404
00:15:12,870 --> 00:15:11,120
simpler for me

405
00:15:15,350 --> 00:15:12,880
in this sense i don't work with the

406
00:15:17,269 --> 00:15:15,360
instruments directly myself i use

407
00:15:19,030 --> 00:15:17,279
public data from

408
00:15:20,470 --> 00:15:19,040
like surveys that have been done by

409
00:15:23,350 --> 00:15:20,480
other astronomers

410
00:15:25,189 --> 00:15:23,360
example i use images from the sloan

411
00:15:27,269 --> 00:15:25,199
digital sky survey

412
00:15:29,269 --> 00:15:27,279
i use images from the palomar sky

413
00:15:31,749 --> 00:15:29,279

surveys these images that were taken in

414

00:15:34,069 --> 00:15:31,759

the 50s and 60s and so on

415

00:15:35,829 --> 00:15:34,079

that that actually bleeds into my next

416

00:15:38,629 --> 00:15:35,839

question then um

417

00:15:40,790 --> 00:15:38,639

citizen science you know how

418

00:15:43,910 --> 00:15:40,800

how can people

419

00:15:46,150 --> 00:15:43,920

you know who and amateur astronomers or

420

00:15:48,069 --> 00:15:46,160

or people like that how can they

421

00:15:50,790 --> 00:15:48,079

actually be a part of the research i

422

00:15:53,590 --> 00:15:50,800

guess is my question and um how far have

423

00:15:55,910 --> 00:15:53,600

you gone into the citizen science realm

424

00:15:57,829 --> 00:15:55,920

so we have actually made a citizen

425

00:16:01,110 --> 00:15:57,839

science project and it has been

426
00:16:02,949 --> 00:16:01,120
developed by the uppsala university's

427
00:16:05,350 --> 00:16:02,959
i.t department

428
00:16:08,470 --> 00:16:05,360
where they have a designed the very

429
00:16:09,829 --> 00:16:08,480
wonderful web page that is also gamified

430
00:16:11,430 --> 00:16:09,839
so that this should be a little bit more

431
00:16:14,310 --> 00:16:11,440
fun for the users

432
00:16:16,790 --> 00:16:14,320
where a citizen scientist can go there

433
00:16:18,230 --> 00:16:16,800
and compare two images of the sky one

434
00:16:20,470 --> 00:16:18,240
from 1950

435
00:16:21,269 --> 00:16:20,480
and one from let's say five or ten years

436
00:16:23,749 --> 00:16:21,279
ago

437
00:16:26,150 --> 00:16:23,759
and can see if a star that was there has

438
00:16:28,470 --> 00:16:26,160

vanished in the new image

439

00:16:30,150 --> 00:16:28,480

so when the citizen science this can go

440

00:16:31,829 --> 00:16:30,160

there and

441

00:16:33,030 --> 00:16:31,839

make any comments

442

00:16:35,030 --> 00:16:33,040

she or he

443

00:16:37,350 --> 00:16:35,040

finds important

444

00:16:41,910 --> 00:16:39,110

well simply participate in the project

445

00:16:43,749 --> 00:16:41,920

it's open for everyone and

446

00:16:46,069 --> 00:16:43,759

the citizen science project is very fun

447

00:16:48,790 --> 00:16:46,079

for me to work with as well

448

00:16:51,990 --> 00:16:48,800

we are working in particular with

449

00:16:54,550 --> 00:16:52,000

some institutes in

450

00:16:57,269 --> 00:16:54,560

in algeria and in nigeria

451
00:16:59,990 --> 00:16:57,279
and uh with amateur associations in

452
00:17:01,990 --> 00:17:00,000
algeria and it's super fun because we

453
00:17:03,430 --> 00:17:02,000
have a very good collaboration

454
00:17:05,429 --> 00:17:03,440
there

455
00:17:08,390 --> 00:17:05,439
i love that the whole citizen science

456
00:17:10,949 --> 00:17:08,400
thing really i think brings the world

457
00:17:13,189 --> 00:17:10,959
together you know it seems like there's

458
00:17:16,390 --> 00:17:13,199
a lot of division in the world going on

459
00:17:18,789 --> 00:17:16,400
right now but i love that coming back to

460
00:17:20,309 --> 00:17:18,799
these topics of you know space

461
00:17:23,669 --> 00:17:20,319
exploration

462
00:17:26,309 --> 00:17:23,679
and um even ufos it actually like

463
00:17:27,750 --> 00:17:26,319

bridges that gap and we can all

464

00:17:30,070 --> 00:17:27,760

like come together and share our

465

00:17:31,510 --> 00:17:30,080

information so yeah i think that's

466

00:17:34,549 --> 00:17:31,520

awesome that's why i love citizen

467

00:17:37,029 --> 00:17:34,559

science um citizen archaeology i'm part

468

00:17:40,630 --> 00:17:37,039

of an amateur project there where i go

469

00:17:42,870 --> 00:17:40,640

over google map images for hours on end

470

00:17:46,150 --> 00:17:42,880

to see if you know i'm finding the same

471

00:17:48,070 --> 00:17:46,160

things as other people so i i finally my

472

00:17:51,190 --> 00:17:48,080

dream has come true and i'm sort of in

473

00:17:53,350 --> 00:17:51,200

indiana jones so that's uh that's fun

474

00:17:56,150 --> 00:17:53,360

for me that i can have some

475

00:17:58,310 --> 00:17:56,160

some place in the scientific world so

476

00:17:59,909 --> 00:17:58,320

chrissy please take it from there yeah

477

00:18:03,190 --> 00:17:59,919

yeah no i think that's wonderful it's

478

00:18:04,470 --> 00:18:03,200

fabulous you're based in sweden from my

479

00:18:06,549 --> 00:18:04,480

from what i know

480

00:18:08,710 --> 00:18:06,559

i and i'm gonna just you know go into

481

00:18:10,470 --> 00:18:08,720

the ufo question i've talked to some

482

00:18:11,909 --> 00:18:10,480

people you know in clubhouse and you

483

00:18:13,350 --> 00:18:11,919

know which is a great app and you get to

484

00:18:14,549 --> 00:18:13,360

you know talk to people internationally

485

00:18:17,270 --> 00:18:14,559

in real time

486

00:18:19,750 --> 00:18:17,280

and a friend now that's in the clubhouse

487

00:18:22,070 --> 00:18:19,760

is from sweden and he said that the

488

00:18:24,630 --> 00:18:22,080

conversation around ufos is is not

489

00:18:27,190 --> 00:18:24,640

really big in sweden do you do you know

490

00:18:28,549 --> 00:18:27,200

why that might be um you know they say

491

00:18:29,990 --> 00:18:28,559

it's kind of like people are really mom

492

00:18:31,909 --> 00:18:30,000

about it it's not very much of a

493

00:18:33,190 --> 00:18:31,919

conversation now or maybe that's

494

00:18:35,669 --> 00:18:33,200

changing

495

00:18:38,070 --> 00:18:35,679

uh i don't

496

00:18:41,029 --> 00:18:38,080

recall many conversation about ufos with

497

00:18:42,870 --> 00:18:41,039

any one of my swedish colleagues or

498

00:18:45,430 --> 00:18:42,880

swedish friends i think there's a very

499

00:18:49,750 --> 00:18:45,440

different approach or attitude to ufos

500

00:18:51,990 --> 00:18:49,760

in united states and in sweden

501
00:18:54,710 --> 00:18:52,000
and i think like

502
00:18:55,669 --> 00:18:54,720
um if a swede sees something weird on

503
00:18:57,990 --> 00:18:55,679
the sky

504
00:19:00,390 --> 00:18:58,000
she or he will most likely first say

505
00:19:02,630 --> 00:19:00,400
well maybe it's a helicopter or maybe

506
00:19:05,029 --> 00:19:02,640
it's a weird airplane and the the

507
00:19:07,270 --> 00:19:05,039
interpretation will always be

508
00:19:09,029 --> 00:19:07,280
um

509
00:19:12,150 --> 00:19:09,039
will maybe

510
00:19:13,909 --> 00:19:12,160
always be the most boring explanation

511
00:19:14,950 --> 00:19:13,919
first

512
00:19:16,789 --> 00:19:14,960
maybe

513
00:19:18,710 --> 00:19:16,799

i can imagine that

514

00:19:21,990 --> 00:19:18,720

i love to kind of play off of that

515

00:19:23,669 --> 00:19:22,000

beatrice the idea of ufos a lot of

516

00:19:25,430 --> 00:19:23,679

people do believe

517

00:19:27,909 --> 00:19:25,440

that these are

518

00:19:29,870 --> 00:19:27,919

craft or these are some sort of

519

00:19:32,470 --> 00:19:29,880

intelligence that might be

520

00:19:35,270 --> 00:19:32,480

extraterrestrial in origin so

521

00:19:38,310 --> 00:19:35,280

in the research and work you've done has

522

00:19:40,150 --> 00:19:38,320

there ever been any compelling data that

523

00:19:41,430 --> 00:19:40,160

would lead you to believe that there

524

00:19:44,630 --> 00:19:41,440

might be

525

00:19:47,990 --> 00:19:44,640

extraterrestrial intelligence out there

526
00:19:50,710 --> 00:19:48,000
um interstellar even uh yeah what do you

527
00:19:52,549 --> 00:19:50,720
think about the whole idea of these ufos

528
00:19:55,430 --> 00:19:52,559
people seeing on earth

529
00:19:57,750 --> 00:19:55,440
could be piloted or in control by some

530
00:20:00,710 --> 00:19:57,760
sort of i guess e.t

531
00:20:03,029 --> 00:20:00,720
i think i am a you for agnostic

532
00:20:04,870 --> 00:20:03,039
in the sense that i actually don't know

533
00:20:06,230 --> 00:20:04,880
at all what i think about it it's like

534
00:20:07,669 --> 00:20:06,240
depending on if you ask me in the

535
00:20:08,590 --> 00:20:07,679
morning or in the evening you might get

536
00:20:11,110 --> 00:20:08,600
a different answer

537
00:20:14,470 --> 00:20:11,120
[Laughter]

538
00:20:17,750 --> 00:20:16,390

so that's kind of my

539

00:20:20,390 --> 00:20:17,760

um

540

00:20:23,350 --> 00:20:20,400

initial like impression on ufos i think

541

00:20:27,110 --> 00:20:23,360

that people's experiences are always

542

00:20:28,470 --> 00:20:27,120

real or almost always relay like in 99

543

00:20:30,549 --> 00:20:28,480

of the cases

544

00:20:33,430 --> 00:20:30,559

on the other hand i don't know if i

545

00:20:35,510 --> 00:20:33,440

would attribute them to anything

546

00:20:37,669 --> 00:20:35,520

supernatural that's that's exactly what

547

00:20:38,870 --> 00:20:37,679

i hope to find out if there's

548

00:20:45,909 --> 00:20:38,880

some

549

00:20:47,190 --> 00:20:45,919

behind this kind of sightings

550

00:20:49,190 --> 00:20:47,200

that's something i think it would be

551
00:20:51,190 --> 00:20:49,200
super cool if i had a chance to find out

552
00:20:53,330 --> 00:20:51,200
during my lifetime as a researcher on

553
00:20:54,870 --> 00:20:53,340
the other hand i think there is um

554
00:20:56,870 --> 00:20:54,880
[Music]

555
00:20:58,789 --> 00:20:56,880
a very wonderful opportunity for

556
00:21:01,909 --> 00:20:58,799
astronomers to study anomalies on the

557
00:21:03,669 --> 00:21:01,919
sky now especially if there is some kind

558
00:21:05,669 --> 00:21:03,679
of support for that uh

559
00:21:08,390 --> 00:21:05,679
your website things might be

560
00:21:09,909 --> 00:21:08,400
real sightings of something anomalous

561
00:21:11,669 --> 00:21:09,919
i i think it brings a wonderful

562
00:21:14,470 --> 00:21:11,679
opportunity

563
00:21:16,470 --> 00:21:14,480

for projects like the galileo project

564

00:21:18,789 --> 00:21:16,480

and i i think one shouldn't miss out on

565

00:21:20,870 --> 00:21:18,799

this beautiful opportunity to learn more

566

00:21:23,110 --> 00:21:20,880

about the universe

567

00:21:25,909 --> 00:21:23,120

but so far i must say i haven't seen

568

00:21:28,710 --> 00:21:25,919

anything that has convinced me in

569

00:21:30,390 --> 00:21:28,720

in science that there is um

570

00:21:31,430 --> 00:21:30,400

um

571

00:21:34,390 --> 00:21:31,440

that the

572

00:21:39,350 --> 00:21:34,400

here

573

00:21:41,590 --> 00:21:39,360

indications that might one might uh see

574

00:21:43,510 --> 00:21:41,600

published in the scientific literature

575

00:21:45,350 --> 00:21:43,520

and that says that the question is

576
00:21:46,390 --> 00:21:45,360
justified to pose and that we should be

577
00:21:47,990 --> 00:21:46,400
looking

578
00:21:49,830 --> 00:21:48,000
maybe more like that

579
00:21:52,470 --> 00:21:49,840
i love that at least you're willing to

580
00:21:55,510 --> 00:21:52,480
ask the question because i feel like for

581
00:21:58,310 --> 00:21:55,520
so long many in the scientific community

582
00:22:00,950 --> 00:21:58,320
weren't willing to do that and we do see

583
00:22:02,870 --> 00:22:00,960
individuals you know kind of putting

584
00:22:05,029 --> 00:22:02,880
let's be honest their reputation on the

585
00:22:07,510 --> 00:22:05,039
line and saying we need to ask this

586
00:22:09,990 --> 00:22:07,520
question that is part of the scientific

587
00:22:12,310 --> 00:22:10,000
method you have people like avi loeb

588
00:22:14,870 --> 00:22:12,320

with the galileo project you have um

589

00:22:17,830 --> 00:22:14,880

your project with vasco and searching

590

00:22:19,909 --> 00:22:17,840

for dying stars and what that could mean

591

00:22:22,149 --> 00:22:19,919

um so i guess

592

00:22:25,990 --> 00:22:22,159

kind of playing off of that i'd love to

593

00:22:28,070 --> 00:22:26,000

know um seti is this a organization that

594

00:22:30,230 --> 00:22:28,080

you've ever worked with and what do you

595

00:22:32,710 --> 00:22:30,240

think about their idea of searching for

596

00:22:34,630 --> 00:22:32,720

extraterrestrial intelligence through uh

597

00:22:35,909 --> 00:22:34,640

such things as radio waves do you think

598

00:22:38,789 --> 00:22:35,919

there are more

599

00:22:41,510 --> 00:22:38,799

uh beneficial ways that we could be

600

00:22:43,029 --> 00:22:41,520

trying to search for et intelligence or

601
00:22:45,830 --> 00:22:43,039
even communicate with them other than

602
00:22:47,909 --> 00:22:45,840
just radio signals

603
00:22:51,590 --> 00:22:47,919
i think looking for radio signals is a

604
00:22:54,310 --> 00:22:51,600
fantastic uh first idea to explore and

605
00:22:56,390 --> 00:22:54,320
one has been doing it since the 1960s

606
00:22:59,430 --> 00:22:56,400
and i think there's a very

607
00:23:01,190 --> 00:22:59,440
wide parameter space one can look into

608
00:23:02,390 --> 00:23:01,200
and

609
00:23:05,029 --> 00:23:02,400
i think it's great that they are doing

610
00:23:06,789 --> 00:23:05,039
researchers in california

611
00:23:08,710 --> 00:23:06,799
i think however that one can also try

612
00:23:09,830 --> 00:23:08,720
different methods i think

613
00:23:12,310 --> 00:23:09,840

for example

614

00:23:15,750 --> 00:23:12,320

expanding searches in the optical

615

00:23:17,430 --> 00:23:15,760

expanding searches um

616

00:23:19,029 --> 00:23:17,440

with other methods

617

00:23:20,789 --> 00:23:19,039

for example like doing more space

618

00:23:22,950 --> 00:23:20,799

archaeology

619

00:23:24,950 --> 00:23:22,960

in the solar system because there are so

620

00:23:28,070 --> 00:23:24,960

many different ways one can look for et

621

00:23:30,789 --> 00:23:28,080

and ex and if one is willing to look for

622

00:23:32,950 --> 00:23:30,799

thing for life far far far away i don't

623

00:23:35,510 --> 00:23:32,960

see why we shouldn't be looking for

624

00:23:36,470 --> 00:23:35,520

uh extraterrestrials much closer to also

625

00:23:38,470 --> 00:23:36,480

science

626
00:23:41,269 --> 00:23:38,480
of extraterrestrial life

627
00:23:43,590 --> 00:23:41,279
and much closer to

628
00:23:46,070 --> 00:23:43,600
yeah where we are

629
00:23:48,630 --> 00:23:46,080
if if the ufos really are caused by

630
00:23:50,789 --> 00:23:48,640
extraterrestrials it means that it's a

631
00:23:52,789 --> 00:23:50,799
low-lying fruit or low-hanging fruit

632
00:23:55,990 --> 00:23:52,799
long low-hanging fruit

633
00:23:58,149 --> 00:23:56,000
for uh for scientists to sort out

634
00:24:00,789 --> 00:23:58,159
yeah did you um by chance get to read

635
00:24:03,350 --> 00:24:00,799
the ufo report that was released there's

636
00:24:04,789 --> 00:24:03,360
a preliminary report right on june 25th

637
00:24:06,789 --> 00:24:04,799
of last year

638
00:24:08,630 --> 00:24:06,799

what was your perspective from it in the

639

00:24:10,470 --> 00:24:08,640

you know your scientific perspective of

640

00:24:12,230 --> 00:24:10,480

it and your thoughts and feelings around

641

00:24:14,470 --> 00:24:12,240

it

642

00:24:17,029 --> 00:24:14,480

i i have been thinking about that report

643

00:24:19,269 --> 00:24:17,039

quite a lot and i've been changing my

644

00:24:20,549 --> 00:24:19,279

opinion back and forth about it as well

645

00:24:23,190 --> 00:24:20,559

depending on if you ask me in the

646

00:24:25,269 --> 00:24:23,200

morning or enabling

647

00:24:29,830 --> 00:24:25,279

i found it very interesting

648

00:24:34,630 --> 00:24:32,070

i am still skeptical to it because it's

649

00:24:36,630 --> 00:24:34,640

these status is not public it's not

650

00:24:38,549 --> 00:24:36,640

published it's a report

651
00:24:40,070 --> 00:24:38,559
and it's not like scientists can go

652
00:24:41,990 --> 00:24:40,080
there and have a look at the data and

653
00:24:43,430 --> 00:24:42,000
play with it themselves you just need to

654
00:24:45,590 --> 00:24:43,440
trust whoever who wrote the report that

655
00:24:46,710 --> 00:24:45,600
the analysis was currently done

656
00:24:51,269 --> 00:24:46,720
so i'm

657
00:24:53,350 --> 00:24:51,279
at the same time as i find it as a good

658
00:24:54,870 --> 00:24:53,360
enough reason to

659
00:24:56,390 --> 00:24:54,880
actually do this research for those who

660
00:24:58,870 --> 00:24:56,400
are interested i think we need to remove

661
00:25:01,269 --> 00:24:58,880
the stigma from you for research

662
00:25:03,830 --> 00:25:01,279
and and i think that's kind of what the

663
00:25:05,909 --> 00:25:03,840

u.s government is trying to do to get

664

00:25:09,669 --> 00:25:05,919

their active military

665

00:25:11,909 --> 00:25:09,679

involved and to report these ufos when

666

00:25:13,669 --> 00:25:11,919

in the past they haven't done that but i

667

00:25:17,909 --> 00:25:13,679

think you're right i think the next big

668

00:25:20,230 --> 00:25:17,919

step is well we that data in the reports

669

00:25:22,710 --> 00:25:20,240

where does that go next and

670

00:25:25,669 --> 00:25:22,720

i obviously believe it should be going

671

00:25:27,750 --> 00:25:25,679

to the scientific community the ones who

672

00:25:30,350 --> 00:25:27,760

can actually explain these things i

673

00:25:34,789 --> 00:25:30,360

think in the report they looked at

674

00:25:38,149 --> 00:25:34,799

144 ufo reports and they explained one

675

00:25:41,110 --> 00:25:38,159

one as a balloon but what about the 143

676

00:25:43,029 --> 00:25:41,120

others could they be explained by

677

00:25:46,310 --> 00:25:43,039

citizen science could they be explained

678

00:25:48,710 --> 00:25:46,320

by our top leading scientists throughout

679

00:25:51,750 --> 00:25:48,720

the world possibly but that information

680

00:25:54,149 --> 00:25:51,760

is classified and we will probably never

681

00:25:56,310 --> 00:25:54,159

know what's in it so how do we study

682

00:25:58,230 --> 00:25:56,320

something when we don't have the data to

683

00:26:01,029 --> 00:25:58,240

study it that's the uh i think the

684

00:26:03,269 --> 00:26:01,039

conundrum and in the frustration by many

685

00:26:06,310 --> 00:26:03,279

in the science world and in the ufo

686

00:26:08,950 --> 00:26:06,320

community of hey look we could help you

687

00:26:11,110 --> 00:26:08,960

um may we we'll probably be wrong but we

688

00:26:13,750 --> 00:26:11,120

could at least ask questions that you're

689

00:26:15,669 --> 00:26:13,760

not so i mean that's my personal opinion

690

00:26:17,750 --> 00:26:15,679

on the report uh but people have heard

691

00:26:19,029 --> 00:26:17,760

my opinion enough yeah i think it's

692

00:26:20,870 --> 00:26:19,039

actually a really

693

00:26:22,870 --> 00:26:20,880

it's a great comment that you said like

694

00:26:24,549 --> 00:26:22,880

how are we really able to fact check it

695

00:26:26,310 --> 00:26:24,559

it's just somebody who wrote it and now

696

00:26:27,510 --> 00:26:26,320

it's we have to take it as fact i think

697

00:26:28,390 --> 00:26:27,520

that's

698

00:26:30,870 --> 00:26:28,400

right

699

00:26:32,950 --> 00:26:30,880

um why you know we we should be able to

700

00:26:35,190 --> 00:26:32,960

ask more questions and hopefully in the

701
00:26:37,029 --> 00:26:35,200
next coming months you know in years

702
00:26:38,789 --> 00:26:37,039
that when more reports come out they

703
00:26:39,990 --> 00:26:38,799
start giving us better data because i

704
00:26:42,470 --> 00:26:40,000
think you're right the scientific

705
00:26:44,149 --> 00:26:42,480
community is going to ask for it and i'm

706
00:26:45,909 --> 00:26:44,159
happy that i think i'm really happy you

707
00:26:48,789 --> 00:26:45,919
made that comment

708
00:26:50,390 --> 00:26:48,799
uh one thing that we are going to

709
00:26:53,350 --> 00:26:50,400
to do or that we are trying to do now

710
00:26:55,430 --> 00:26:53,360
with the vasco project is that um so we

711
00:26:57,110 --> 00:26:55,440
are trying to test for this hypothesis

712
00:27:00,149 --> 00:26:57,120
that there might be something

713
00:27:01,830 --> 00:27:00,159

uh artificial in high orbits around the

714

00:27:04,630 --> 00:27:01,840

earth before

715

00:27:06,549 --> 00:27:04,640

and the first satellite was launched

716

00:27:07,269 --> 00:27:06,559

and this turns out to be quite easy to

717

00:27:09,990 --> 00:27:07,279

do

718

00:27:12,470 --> 00:27:10,000

if you use old photographic material

719

00:27:14,950 --> 00:27:12,480

from uh let's say from the 50s or if you

720

00:27:17,830 --> 00:27:14,960

would have material that is even older

721

00:27:19,990 --> 00:27:17,840

because what you can look for is

722

00:27:22,230 --> 00:27:20,000

several blinds that fall upon a line

723

00:27:25,269 --> 00:27:22,240

because if you have something

724

00:27:27,510 --> 00:27:25,279

that is very reflective and it's um

725

00:27:29,590 --> 00:27:27,520

far away from the earth and

726

00:27:32,070 --> 00:27:29,600

and it maybe rotates or spins around its

727

00:27:33,350 --> 00:27:32,080

exits it's going to give us a few glints

728

00:27:35,350 --> 00:27:33,360

and that's kind of what we see today

729

00:27:37,350 --> 00:27:35,360

also with satellites and you can look

730

00:27:38,789 --> 00:27:37,360

for these things and

731

00:27:41,269 --> 00:27:38,799

you can look for this in all

732

00:27:43,669 --> 00:27:41,279

photographic plate material and if you

733

00:27:44,549 --> 00:27:43,679

have a single piece it should show up in

734

00:27:45,750 --> 00:27:44,559

these

735

00:27:47,669 --> 00:27:45,760

images

736

00:27:49,110 --> 00:27:47,679

and that's one thing we can do

737

00:27:52,070 --> 00:27:49,120

then we don't deal with any human

738

00:27:54,149 --> 00:27:52,080

reports not with any classified data we

739

00:27:56,149 --> 00:27:54,159

deal with public data

740

00:27:58,549 --> 00:27:56,159

data that is already out there digitized

741

00:28:00,230 --> 00:27:58,559

there that any person can get access to

742

00:28:01,190 --> 00:28:00,240

citizen scientists can help to look

743

00:28:04,870 --> 00:28:01,200

through it

744

00:28:06,870 --> 00:28:04,880

and if there's a single sign of et or a

745

00:28:08,789 --> 00:28:06,880

single

746

00:28:10,149 --> 00:28:08,799

piece of metal in the wrong place at the

747

00:28:12,789 --> 00:28:10,159

wrong time

748

00:28:15,510 --> 00:28:12,799

we should be able to see it so um

749

00:28:17,990 --> 00:28:15,520

you know being a female in science

750

00:28:19,909 --> 00:28:18,000

how has the landscape changed is like a

751
00:28:21,830 --> 00:28:19,919
female perspective from like over the

752
00:28:23,830 --> 00:28:21,840
years from when you maybe first started

753
00:28:26,789 --> 00:28:23,840
to where it has now has how has it

754
00:28:28,470 --> 00:28:26,799
changed for women in science

755
00:28:30,470 --> 00:28:28,480
i think it's steadily progressing and

756
00:28:32,070 --> 00:28:30,480
becoming better and better i cannot

757
00:28:34,950 --> 00:28:32,080
imagine how difficult it must have been

758
00:28:36,789 --> 00:28:34,960
let's say 50 years ago or 30 years ago

759
00:28:38,389 --> 00:28:36,799
but i think it's uh

760
00:28:40,310 --> 00:28:38,399
always progressing and

761
00:28:42,789 --> 00:28:40,320
the conditions today are i think pretty

762
00:28:44,870 --> 00:28:42,799
good it can still be better of course

763
00:28:48,070 --> 00:28:44,880

and i still think there is some work uh

764

00:28:50,389 --> 00:28:48,080

to do to make it better uh yeah and and

765

00:28:51,830 --> 00:28:50,399

l'oreal is working like right now like

766

00:28:53,590 --> 00:28:51,840

you're working with them and women in

767

00:28:55,990 --> 00:28:53,600

science how did that all come about

768

00:28:57,590 --> 00:28:56,000

working with l'oreal and um we watched

769

00:28:59,350 --> 00:28:57,600

the video that's come out that they did

770

00:29:01,269 --> 00:28:59,360

the little bio piece on you which is

771

00:29:03,110 --> 00:29:01,279

really lovely and wonderful

772

00:29:04,149 --> 00:29:03,120

how did that all start and to be honest

773

00:29:05,669 --> 00:29:04,159

that was one of the first times i've

774

00:29:08,389 --> 00:29:05,679

heard that l'oreal has been been doing

775

00:29:09,909 --> 00:29:08,399

that is a is a larger beauty brand so

776

00:29:12,230 --> 00:29:09,919

you know kudos to them a little bit of a

777

00:29:13,909 --> 00:29:12,240

plug but kudos to l'oreal for that but

778

00:29:17,110 --> 00:29:13,919

yeah how did that all how did that all

779

00:29:21,909 --> 00:29:19,750

do you like stories of the strange the

780

00:29:24,789 --> 00:29:21,919

weird and the unexplained then we want

781

00:29:27,510 --> 00:29:24,799

you to check out jim harold's campfire

782

00:29:30,230 --> 00:29:27,520

the concept is pretty simple jim talks

783

00:29:32,389 --> 00:29:30,240

to regular people about strange stuff

784

00:29:36,070 --> 00:29:32,399

that happens to them and yes that

785

00:29:38,630 --> 00:29:36,080

includes ufos along with cryptids ghosts

786

00:29:41,750 --> 00:29:38,640

and head scratchers he doesn't

787

00:29:43,830 --> 00:29:41,760

exaggerate or play a lot of spooky music

788

00:29:46,710 --> 00:29:43,840

kind of like i'm doing right now the

789

00:29:49,430 --> 00:29:46,720

stories speak for themselves one's like

790

00:29:52,070 --> 00:29:49,440

a ghost story involving serial killer

791

00:29:55,430 --> 00:29:52,080

ted bundy or the young man who

792

00:29:57,909 --> 00:29:55,440

encountered an eight-legged demon then

793

00:30:00,710 --> 00:29:57,919

there's the story of an alien abduction

794

00:30:03,590 --> 00:30:00,720

by what could be considered a reptilian

795

00:30:05,909 --> 00:30:03,600

now not all the stories are horrifying

796

00:30:08,870 --> 00:30:05,919

some are actually pretty heartwarming

797

00:30:11,190 --> 00:30:08,880

like a visit from a past loved one or a

798

00:30:14,070 --> 00:30:11,200

peaceful near-death experience

799

00:30:17,110 --> 00:30:14,080

regardless these are true and

800

00:30:19,110 --> 00:30:17,120

fascinating stories told by ordinary

801
00:30:20,789 --> 00:30:19,120
people who've had extraordinary

802
00:30:23,350 --> 00:30:20,799
experiences

803
00:30:26,870 --> 00:30:23,360
tune in to jim harold's campfire on

804
00:30:29,190 --> 00:30:26,880
apple podcasts spotify or wherever you

805
00:30:30,549 --> 00:30:29,200
listen to somewhere in the skies

806
00:30:35,590 --> 00:30:30,559
and remember

807
00:30:40,470 --> 00:30:37,190
so uh

808
00:30:42,470 --> 00:30:40,480
i got the price last year and um

809
00:30:45,269 --> 00:30:42,480
i was like uh

810
00:30:46,950 --> 00:30:45,279
super super happy uh when i got it

811
00:30:48,070 --> 00:30:46,960
because this is a price that you can

812
00:30:50,310 --> 00:30:48,080
apply for

813
00:30:52,789 --> 00:30:50,320

and i had something in my application

814

00:30:55,190 --> 00:30:52,799

and i thought i have no chance like i i

815

00:30:57,509 --> 00:30:55,200

i just applied like for fun i did the

816

00:30:59,350 --> 00:30:57,519

best of course with application

817

00:31:01,990 --> 00:30:59,360

and then when i like got the letter i

818

00:31:04,870 --> 00:31:02,000

was super shocked and super happy

819

00:31:07,029 --> 00:31:04,880

uh i i couldn't believe it that i got

820

00:31:07,990 --> 00:31:07,039

the price and um

821

00:31:10,789 --> 00:31:08,000

so then

822

00:31:13,190 --> 00:31:10,799

well of course we got to know uh

823

00:31:14,789 --> 00:31:13,200

the the organizers of the prize and it

824

00:31:17,350 --> 00:31:14,799

was great because

825

00:31:19,669 --> 00:31:17,360

um we were invited for

826

00:31:21,269 --> 00:31:19,679

a virtual ceremony because it was during

827

00:31:22,230 --> 00:31:21,279

the time of the pandemics which means

828

00:31:23,909 --> 00:31:22,240

that

829

00:31:25,750 --> 00:31:23,919

and they couldn't have the normal

830

00:31:28,389 --> 00:31:25,760

ceremony where 100 people are usually

831

00:31:29,830 --> 00:31:28,399

there and having dinners and all these

832

00:31:31,669 --> 00:31:29,840

fancy things like having beautiful

833

00:31:32,470 --> 00:31:31,679

dresses

834

00:31:36,310 --> 00:31:32,480

yeah

835

00:31:38,230 --> 00:31:36,320

ceremonies

836

00:31:40,389 --> 00:31:38,240

anyway we had a virtual ceremony instead

837

00:31:41,990 --> 00:31:40,399

so they were filming and

838

00:31:44,710 --> 00:31:42,000

it was super cool because they also took

839

00:31:46,630 --> 00:31:44,720

very nice photos with a

840

00:31:49,110 --> 00:31:46,640

with a professional photographer

841

00:31:51,110 --> 00:31:49,120

i thought it was super fun everything

842

00:31:52,950 --> 00:31:51,120

yeah i can imagine

843

00:31:55,029 --> 00:31:52,960

and you know even to keep on the the

844

00:31:56,870 --> 00:31:55,039

topic of women in science do you have

845

00:31:58,950 --> 00:31:56,880

any advice for women you know young

846

00:32:00,630 --> 00:31:58,960

women that want to get into this topic

847

00:32:01,990 --> 00:32:00,640

and are curious and you know are

848

00:32:03,990 --> 00:32:02,000

interested in science do you have any

849

00:32:06,230 --> 00:32:04,000

advice of how they can start their

850

00:32:09,029 --> 00:32:06,240

career in that field my

851
00:32:10,789 --> 00:32:09,039
most important lesson has been to trust

852
00:32:13,029 --> 00:32:10,799
a gut feeling

853
00:32:14,310 --> 00:32:13,039
don't listen to senior scientists trust

854
00:32:17,110 --> 00:32:14,320
your gut feeling if you feel that

855
00:32:18,870 --> 00:32:17,120
something is interesting you follow that

856
00:32:20,870 --> 00:32:18,880
even if the other ones say that this is

857
00:32:22,549 --> 00:32:20,880
boring or uninteresting or something

858
00:32:23,430 --> 00:32:22,559
like that

859
00:32:26,230 --> 00:32:23,440
and

860
00:32:28,070 --> 00:32:26,240
i'm worried sometimes that maybe as the

861
00:32:31,350 --> 00:32:28,080
longer we are in science the more we

862
00:32:34,230 --> 00:32:31,360
kind of gaslight this inner gut feeling

863
00:32:36,070 --> 00:32:34,240

we have like we we always self get

864

00:32:37,990 --> 00:32:36,080

gaslight as i say maybe this is not so

865

00:32:40,230 --> 00:32:38,000

important or so no i think one should

866

00:32:42,310 --> 00:32:40,240

just trust it and

867

00:32:43,990 --> 00:32:42,320

follow this intuition and to watch what

868

00:32:45,669 --> 00:32:44,000

you want to work with

869

00:32:47,909 --> 00:32:45,679

that's my advice

870

00:32:48,950 --> 00:32:47,919

yeah yeah the the questions you're

871

00:32:51,669 --> 00:32:48,960

asking

872

00:32:53,190 --> 00:32:51,679

in in the projects you're involved with

873

00:32:55,830 --> 00:32:53,200

uh are some of the most profound

874

00:32:58,230 --> 00:32:55,840

questions we can ask of humanity you

875

00:33:01,430 --> 00:32:58,240

know is there life out there what is out

876

00:33:04,070 --> 00:33:01,440

there what comes next um i i i find it

877

00:33:06,950 --> 00:33:04,080

so inspiring i remember hearing you know

878

00:33:11,029 --> 00:33:06,960

someone like the character of

879

00:33:13,269 --> 00:33:11,039

dana scully in the xbox

880

00:33:15,669 --> 00:33:13,279

see she after

881

00:33:17,190 --> 00:33:15,679

her character came on television they

882

00:33:19,509 --> 00:33:17,200

said that women

883

00:33:22,630 --> 00:33:19,519

got involved in the scientific world

884

00:33:25,350 --> 00:33:22,640

almost it shot up like 68

885

00:33:26,950 --> 00:33:25,360

and that wow she was the inspiration and

886

00:33:29,669 --> 00:33:26,960

reason that a lot of women got into

887

00:33:31,590 --> 00:33:29,679

science so it's good to hear that uh she

888

00:33:33,430 --> 00:33:31,600

had an impact on you as well i can't

889

00:33:35,909 --> 00:33:33,440

even imagine what that feels like and

890

00:33:37,830 --> 00:33:35,919

that you're probably doing that for

891

00:33:40,870 --> 00:33:37,840

younger women as well who want to get

892

00:33:42,230 --> 00:33:40,880

interested in this it's it's very cool

893

00:33:44,710 --> 00:33:42,240

and this is what we have to do create

894

00:33:46,149 --> 00:33:44,720

better role models like interesting role

895

00:33:48,630 --> 00:33:46,159

models that

896

00:33:49,830 --> 00:33:48,640

the younger generation can be like

897

00:33:51,509 --> 00:33:49,840

inspired by

898

00:33:54,710 --> 00:33:51,519

yeah science is you know hopefully

899

00:33:56,310 --> 00:33:54,720

becoming cool again in many ways and and

900

00:33:57,830 --> 00:33:56,320

women are getting excited about it and

901
00:33:59,750 --> 00:33:57,840
they want to join in the community and

902
00:34:01,430 --> 00:33:59,760
learn more and research i think it's

903
00:34:03,909 --> 00:34:01,440
it's fabulous you know hopefully we'll

904
00:34:05,509 --> 00:34:03,919
see more in the years to come

905
00:34:07,750 --> 00:34:05,519
absolutely

906
00:34:10,470 --> 00:34:07,760
um well what's to come that's what i'd

907
00:34:13,349 --> 00:34:10,480
love to ask yes to kind of wrap things

908
00:34:16,310 --> 00:34:13,359
up two two questions for you um and the

909
00:34:18,869 --> 00:34:16,320
big the first one is kind of big um

910
00:34:22,310 --> 00:34:18,879
say there is in extraterrestrial

911
00:34:23,190 --> 00:34:22,320
intelligence out there somewhere um

912
00:34:26,550 --> 00:34:23,200
or

913
00:34:29,349 --> 00:34:26,560

just something non-human um that

914

00:34:31,349 --> 00:34:29,359

will possibly make contact with earth or

915

00:34:33,430 --> 00:34:31,359

has made contact um

916

00:34:35,190 --> 00:34:33,440

what do you what do you want that to be

917

00:34:37,190 --> 00:34:35,200

do you want it to be alien do you want

918

00:34:38,550 --> 00:34:37,200

it to be inter-dimensional

919

00:34:40,790 --> 00:34:38,560

do you want it to be

920

00:34:43,669 --> 00:34:40,800

humans from the future coming back and

921

00:34:44,629 --> 00:34:43,679

visiting us is there any like

922

00:34:47,430 --> 00:34:44,639

true

923

00:34:48,470 --> 00:34:47,440

answer to this ufo question that you

924

00:34:50,149 --> 00:34:48,480

personally

925

00:34:51,030 --> 00:34:50,159

want um

926
00:34:54,230 --> 00:34:51,040

yes

927
00:34:55,190 --> 00:34:54,240

i would wish it to be some aliens with a

928
00:34:56,710 --> 00:34:55,200

very

929
00:34:58,550 --> 00:34:56,720

strong

930
00:34:59,990 --> 00:34:58,560

um

931
00:35:02,390 --> 00:35:00,000

interest into

932
00:35:04,870 --> 00:35:02,400

arch that would compose a lot of

933
00:35:07,430 --> 00:35:04,880

beautiful music and share all these arts

934
00:35:09,750 --> 00:35:07,440

with us so that we could get enriched

935
00:35:11,589 --> 00:35:09,760

culturally like

936
00:35:12,950 --> 00:35:11,599

like for example

937
00:35:15,190 --> 00:35:12,960

um

938
00:35:17,270 --> 00:35:15,200

we have all these wonderful like

939

00:35:19,829 --> 00:35:17,280

composers all over the world today but

940

00:35:22,069 --> 00:35:19,839

imagine if we could get a factor hundred

941

00:35:22,950 --> 00:35:22,079

more music coming to us to listen to

942

00:35:24,790 --> 00:35:22,960

right

943

00:35:27,910 --> 00:35:24,800

that's what i would like

944

00:35:29,510 --> 00:35:27,920

i love that more art is definitely what

945

00:35:31,750 --> 00:35:29,520

we need and who's to say some of these

946

00:35:33,109 --> 00:35:31,760

composers aren't aliens i mean some of

947

00:35:40,870 --> 00:35:33,119

the things they

948

00:35:44,710 --> 00:35:42,150

yeah

949

00:35:47,190 --> 00:35:44,720

so what comes next beatrice i know the

950

00:35:49,109 --> 00:35:47,200

vasco project is ongoing um i know

951
00:35:51,670 --> 00:35:49,119
you're doing some work with other

952
00:35:53,990 --> 00:35:51,680
organizations and whatnot so what comes

953
00:35:55,829 --> 00:35:54,000
next for you and your uh your endeavors

954
00:35:57,670 --> 00:35:55,839
in the scientific world

955
00:35:59,750 --> 00:35:57,680
so we are now

956
00:36:01,829 --> 00:35:59,760
trying to wrap up the first phase of the

957
00:36:03,670 --> 00:36:01,839
citizen science project we have

958
00:36:05,109 --> 00:36:03,680
like more than 250 thousands of

959
00:36:07,349 --> 00:36:05,119
classifications

960
00:36:09,589 --> 00:36:07,359
and we're working on like vetting the

961
00:36:11,030 --> 00:36:09,599
most interesting candidates

962
00:36:12,390 --> 00:36:11,040
and also

963
00:36:14,550 --> 00:36:12,400

we are now actually

964

00:36:16,069 --> 00:36:14,560

doing the analysis uh in the searches

965

00:36:17,750 --> 00:36:16,079

for these glints

966

00:36:19,190 --> 00:36:17,760

along a line

967

00:36:21,190 --> 00:36:19,200

and we published

968

00:36:24,310 --> 00:36:21,200

one week ago a paper

969

00:36:25,750 --> 00:36:24,320

um in act astronautica that describes

970

00:36:27,190 --> 00:36:25,760

how we can do researches and now we're

971

00:36:28,950 --> 00:36:27,200

actually carrying them out and we're

972

00:36:30,870 --> 00:36:28,960

analyzing the results

973

00:36:32,710 --> 00:36:30,880

so that is the first things that that

974

00:36:34,870 --> 00:36:32,720

comes to me trying to see

975

00:36:37,030 --> 00:36:34,880

is there a single piece of metal in

976
00:36:40,870 --> 00:36:37,040
orbit around the earth before sputnik

977
00:36:43,750 --> 00:36:42,069
so that would

978
00:36:45,829 --> 00:36:43,760
would that sort of fall into the realm

979
00:36:48,230 --> 00:36:45,839
of techno signatures some sort of

980
00:36:51,109 --> 00:36:48,240
technology that

981
00:36:52,710 --> 00:36:51,119
is not from here or originated on earth

982
00:36:54,790 --> 00:36:52,720
would that be considered something

983
00:36:57,109 --> 00:36:54,800
techno signature-esque

984
00:36:59,190 --> 00:36:57,119
yes it would be a techno signature but

985
00:37:01,270 --> 00:36:59,200
right in our own backyard it would be

986
00:37:02,310 --> 00:37:01,280
let's say if et

987
00:37:04,550 --> 00:37:02,320
er

988
00:37:05,589 --> 00:37:04,560

threw some space trash on the way to the

989

00:37:08,790 --> 00:37:05,599

earth

990

00:37:11,829 --> 00:37:08,800

then we would see that

991

00:37:14,470 --> 00:37:11,839

give us all your trash aliens

992

00:37:17,349 --> 00:37:14,480

we will study until the end

993

00:37:18,230 --> 00:37:17,359

exactly we'll be in museums forever yeah

994

00:37:22,310 --> 00:37:18,240

yeah

995

00:37:24,390 --> 00:37:22,320

it's like a bit of the projects so let's

996

00:37:26,870 --> 00:37:24,400

see if it gives us any

997

00:37:28,550 --> 00:37:26,880

consistent results or so

998

00:37:30,550 --> 00:37:28,560

and i'm i think even leaving with the

999

00:37:32,390 --> 00:37:30,560

concept of space trash is like i think

1000

00:37:34,550 --> 00:37:32,400

it's awesome and i love the the whole

1001
00:37:36,790 --> 00:37:34,560
fact like you look at like yeah like

1002
00:37:38,470 --> 00:37:36,800
alien artifacts and things to that so

1003
00:37:40,310 --> 00:37:38,480
i'm just glad that we're you know we're

1004
00:37:41,829 --> 00:37:40,320
looking in all different areas so it's

1005
00:37:46,790 --> 00:37:41,839
exciting

1006
00:37:48,870 --> 00:37:46,800
much for me to go think about right now

1007
00:37:51,510 --> 00:37:48,880
after this conversation and and that's

1008
00:37:53,990 --> 00:37:51,520
what it's about it's about making people

1009
00:37:55,829 --> 00:37:54,000
think and keeping that curiosity going

1010
00:37:58,790 --> 00:37:55,839
and uh that's what's

1011
00:38:01,430 --> 00:37:58,800
honestly going to unravel the the

1012
00:38:03,910 --> 00:38:01,440
answers to the questions we've had for

1013
00:38:06,230 --> 00:38:03,920

all of human history so i personally

1014

00:38:08,150 --> 00:38:06,240

want to thank you for taking the time to

1015

00:38:11,270 --> 00:38:08,160

talk to us today and thank you for

1016

00:38:13,270 --> 00:38:11,280

joining us on somewhere in the skies

1017

00:38:15,670 --> 00:38:13,280

thank you for inviting me i'm very happy

1018

00:38:20,930 --> 00:38:15,680

you did and i i want to contribute to

1019

00:39:01,850 --> 00:39:00,160

[Music]