

MON DEC 6 **LIVE**
7:00 PM PT/10:00PM ET

Prof. AVI LOEB
The Galileo Project

F2B
with Jimmy Church



1
00:00:27,670 --> 00:00:24,630

[Music]

2
00:00:30,550 --> 00:00:27,680

the smoke radio for the masses headline

3
00:00:32,310 --> 00:00:30,560

edition july 8 1947

4
00:00:34,790 --> 00:00:32,320

the army air force's has announced that

5
00:00:36,549 --> 00:00:34,800

a flying disk has been found and is now

6
00:00:39,270 --> 00:00:36,559

in the possession of the army

7
00:00:41,270 --> 00:00:39,280

if the game is rigged change the game

8
00:00:44,470 --> 00:00:41,280

game changer

9
00:00:46,470 --> 00:00:44,480

i occasionally think how quickly our

10
00:00:47,830 --> 00:00:46,480

differences worldwide

11
00:00:50,549 --> 00:00:47,840

would vanish

12
00:00:53,850 --> 00:00:50,559

if we were facing an alien threat from

13
00:00:59,510 --> 00:00:56,709

[Applause]

14

00:01:02,150 --> 00:00:59,520

this is fade to black with your host

15

00:01:05,350 --> 00:01:02,160

jimmy church on the game changer radio

16

00:01:09,030 --> 00:01:05,360

network and kgra the global radio

17

00:01:14,260 --> 00:01:11,190

i need your help to get to the year

18

00:01:20,070 --> 00:01:18,070

[Music]

19

00:01:26,710 --> 00:01:20,080

you are listening to fate to flag with

20

00:01:39,510 --> 00:01:35,830

[Music]

21

00:01:39,520 --> 00:01:42,630

fade to black

22

00:01:46,710 --> 00:01:45,190

bespoke radio

23

00:01:48,870 --> 00:01:46,720

for

24

00:01:51,190 --> 00:01:48,880

the

25

00:01:53,109 --> 00:01:51,200

masses

26

00:01:55,290 --> 00:01:53,119

uh yeah man how you doing today is

27

00:02:02,749 --> 00:01:55,300

monday december 6 2021.

28

00:02:06,870 --> 00:02:05,180

340 days into the new year

29

00:02:10,550 --> 00:02:06,880

[Music]

30

00:02:12,550 --> 00:02:10,560

only 25 days left

31

00:02:14,470 --> 00:02:12,560

we are live from a bunker somewhere in

32

00:02:17,110 --> 00:02:14,480

the middle of nowhere a total

33

00:02:19,510 --> 00:02:17,120

undisclosed location

34

00:02:22,949 --> 00:02:19,520

but it is beautiful

35

00:02:24,309 --> 00:02:22,959

it's really nice

36

00:02:25,990 --> 00:02:24,319

i would like to welcome everybody

37

00:02:28,710 --> 00:02:26,000

listening all around the world all

38

00:02:30,470 --> 00:02:28,720

across the united states

39

00:02:32,309 --> 00:02:30,480

hither and tether to and fro back and

40

00:02:35,430 --> 00:02:32,319

forth up and down east and west north

41

00:02:38,790 --> 00:02:35,440

and south far and near

42

00:02:41,750 --> 00:02:38,800

this is fade to black for kj cr

43

00:02:42,830 --> 00:02:41,760

and the on x networks i'm your host

44

00:02:44,630 --> 00:02:42,840

jimmy church

45

00:02:48,830 --> 00:02:44,640

[Music]

46

00:02:51,589 --> 00:02:48,840

what is cracking everybody how you

47

00:02:54,390 --> 00:02:51,599

doing how you doing we got a great week

48

00:02:56,070 --> 00:02:54,400

on the show this week

49

00:02:59,430 --> 00:02:56,080

tonight

50

00:03:03,509 --> 00:02:59,440

very special guest professor avi loeb

51
00:03:06,470 --> 00:03:03,519
joins us to discuss the galileo project

52
00:03:07,990 --> 00:03:06,480
tomorrow night it is the return of jason

53
00:03:11,430 --> 00:03:08,000
quit

54
00:03:15,030 --> 00:03:11,440
wednesday night live from peru

55
00:03:17,030 --> 00:03:15,040
jorge luis delgado

56
00:03:20,070 --> 00:03:17,040
cannot wait and then thursday is another

57
00:03:21,350 --> 00:03:20,080
fader night with open lines all night

58
00:03:23,190 --> 00:03:21,360
long

59
00:03:25,270 --> 00:03:23,200
all right

60
00:03:27,509 --> 00:03:25,280
how you doing

61
00:03:35,589 --> 00:03:30,710
i am great

62
00:03:41,030 --> 00:03:37,509
let me start off with this

63
00:03:43,750 --> 00:03:41,040

everybody wants their own crystal skull

64

00:03:46,789 --> 00:03:43,760

you know i've got a family of them just

65

00:03:50,630 --> 00:03:46,799

sitting right over here and they are

66

00:03:53,509 --> 00:03:50,640

nice and you want one of your very own

67

00:03:55,190 --> 00:03:53,519

and it's all simple to do

68

00:03:57,509 --> 00:03:55,200

all you got to do is click on carolyn

69

00:04:00,390 --> 00:03:57,519

ford's banner at jimmychurchradio.com

70

00:04:01,589 --> 00:04:00,400

right now visit her einstein website

71

00:04:04,630 --> 00:04:01,599

go

72

00:04:07,429 --> 00:04:04,640

use the promo code jimmy right in time

73

00:04:12,149 --> 00:04:07,439

for the holidays and get 10

74

00:04:13,509 --> 00:04:12,159

off of your crystal skull order today

75

00:04:17,749 --> 00:04:13,519

all right

76

00:04:19,990 --> 00:04:17,759

einstein the crystalskull.com

77

00:04:23,189 --> 00:04:20,000

it's a great website i poked around

78

00:04:25,030 --> 00:04:23,199

there this weekend oh man

79

00:04:27,189 --> 00:04:25,040

lots of nice stuff over there go get

80

00:04:29,670 --> 00:04:27,199

yourself your own crystal skull

81

00:04:31,350 --> 00:04:29,680

and i don't even know

82

00:04:33,189 --> 00:04:31,360

i don't know if i have a

83

00:04:35,749 --> 00:04:33,199

favorite

84

00:04:37,510 --> 00:04:35,759

i used to i don't i don't know if i do

85

00:04:38,870 --> 00:04:37,520

anymore they're all

86

00:04:41,110 --> 00:04:38,880

they're all

87

00:04:42,950 --> 00:04:41,120

they all have their own little meaning

88

00:04:47,830 --> 00:04:42,960

to them

89

00:04:53,189 --> 00:04:51,189

follow me on twitter at j church radio

90

00:04:54,310 --> 00:04:53,199

follow me on twitter

91

00:04:57,270 --> 00:04:54,320

right there

92

00:05:00,390 --> 00:04:57,280

at j church radio oh look at that cavs

93

00:05:04,310 --> 00:05:02,230

but

94

00:05:06,710 --> 00:05:04,320

a star is that what that says i can't i

95

00:05:08,830 --> 00:05:06,720

can't see it it's too small that's nice

96

00:05:12,710 --> 00:05:08,840

that's a nice girl i love that

97

00:05:15,270 --> 00:05:12,720

color it's kind of like coffee

98

00:05:17,830 --> 00:05:15,280

that's a gorgeous skull right there

99

00:05:20,310 --> 00:05:17,840

that is a gorgeous skull yeah follow me

100

00:05:22,790 --> 00:05:20,320

on twitter at j church radio hashtag f2b

101
00:05:24,870 --> 00:05:22,800
is the sandbox you can go and check out

102
00:05:28,469 --> 00:05:24,880
what everybody else is posting right now

103
00:05:32,310 --> 00:05:28,479
in real time during the show

104
00:05:34,950 --> 00:05:32,320
let's get to the breaking news hundreds

105
00:05:36,550 --> 00:05:34,960
listen to this

106
00:05:42,070 --> 00:05:36,560
renee

107
00:05:45,270 --> 00:05:42,080
anywhere in show business

108
00:05:47,749 --> 00:05:45,280
she is the best and uh

109
00:05:50,550 --> 00:05:47,759
and she said you know and and when when

110
00:05:53,670 --> 00:05:50,560
i get the news from her

111
00:05:56,469 --> 00:05:53,680
sometimes like this story

112
00:06:00,390 --> 00:05:56,479
this is breaking news

113
00:06:04,309 --> 00:06:00,400

hundreds of colombian tarantulas

114

00:06:06,230 --> 00:06:04,319

giant cockroaches and scorpions that

115

00:06:09,430 --> 00:06:06,240

were crammed into a suitcase and

116

00:06:11,670 --> 00:06:09,440

illegally bound for europe were seized

117

00:06:15,430 --> 00:06:11,680

last week by authorities at el dorado

118

00:06:17,670 --> 00:06:15,440

international airport in bogota colombia

119

00:06:19,830 --> 00:06:17,680

airport police spotted the living cargo

120

00:06:22,230 --> 00:06:19,840

and luggage belonging to two german

121

00:06:24,629 --> 00:06:22,240

citizens who were leaving the country

122

00:06:26,710 --> 00:06:24,639

and they alerted the ministry of

123

00:06:29,309 --> 00:06:26,720

environment

124

00:06:31,510 --> 00:06:29,319

authorities confiscated

125

00:06:34,830 --> 00:06:31,520

232 spiders

126

00:06:38,469 --> 00:06:34,840

trapdoor spiders and tarantulas

127

00:06:42,550 --> 00:06:38,479

67 giant cockroaches

128

00:06:43,990 --> 00:06:42,560

and a scorpion with seven baby scorpions

129

00:06:52,550 --> 00:06:44,000

and nine

130

00:06:58,230 --> 00:06:55,670

those cockroaches down there man oh

131

00:06:59,749 --> 00:06:58,240

man i remember when i was a kid

132

00:07:02,070 --> 00:06:59,759

i'm gonna make this really quick i'm a

133

00:07:03,270 --> 00:07:02,080

kid i'm in summer school because i

134

00:07:06,390 --> 00:07:03,280

failed out of

135

00:07:08,309 --> 00:07:06,400

algebra taking algebra again or algebra

136

00:07:09,430 --> 00:07:08,319

2 or algebra or whatever

137

00:07:11,350 --> 00:07:09,440

and uh

138

00:07:13,189 --> 00:07:11,360

and i'm in summer school friend of mine

139

00:07:15,990 --> 00:07:13,199

comes up and goes hey man

140

00:07:17,510 --> 00:07:16,000

check out these giant cockroaches this

141

00:07:18,629 --> 00:07:17,520

is at school at balboa high school i'm

142

00:07:19,830 --> 00:07:18,639

like what are you talking about we go

143

00:07:21,430 --> 00:07:19,840

outside

144

00:07:24,230 --> 00:07:21,440

at the at the end of one of the

145

00:07:26,629 --> 00:07:24,240

buildings and there was a steel

146

00:07:28,710 --> 00:07:26,639

like trap door in the ground

147

00:07:31,589 --> 00:07:28,720

and he opened it up

148

00:07:33,029 --> 00:07:31,599

and we looked in

149

00:07:34,910 --> 00:07:33,039

i said i'm going to leave it right there

150

00:07:40,070 --> 00:07:34,920

but what what i saw

151
00:07:46,869 --> 00:07:43,029
millions that's all i've got to say

152
00:07:48,710 --> 00:07:46,879
all right albatrosses mate for life

153
00:07:51,029 --> 00:07:48,720
they do

154
00:07:54,469 --> 00:07:51,039
but climate change has doubled their

155
00:07:57,909 --> 00:07:54,479
divorce rates that's right

156
00:07:59,430 --> 00:07:57,919
about 15 500 albatross couples live on

157
00:08:02,230 --> 00:07:59,440
new island which is part of the

158
00:08:06,309 --> 00:08:02,240
falklands in the south atlantic ocean

159
00:08:08,390 --> 00:08:06,319
a data set spanning 15 years revealed

160
00:08:10,309 --> 00:08:08,400
that divorce rates

161
00:08:12,869 --> 00:08:10,319
were had an average of

162
00:08:14,070 --> 00:08:12,879
3.7

163
00:08:15,830 --> 00:08:14,080

that's right

164

00:08:18,150 --> 00:08:15,840

but today

165

00:08:20,790 --> 00:08:18,160

couples are calling it quits at a rate

166

00:08:23,830 --> 00:08:20,800

of 7.7

167

00:08:26,390 --> 00:08:23,840

more than double

168

00:08:29,510 --> 00:08:26,400

incredible climate change

169

00:08:30,869 --> 00:08:29,520

trader joe's now talked about eggnog

170

00:08:34,230 --> 00:08:30,879

last week

171

00:08:36,630 --> 00:08:34,240

uh here on the show talked about eggnog

172

00:08:37,589 --> 00:08:36,640

and uh good old renee

173

00:08:41,029 --> 00:08:37,599

right

174

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

sends me trader joe's new trader joe's o

175

00:08:45,269 --> 00:08:42,880

nog

176

00:08:46,949 --> 00:08:45,279

it is a very merry

177

00:08:49,030 --> 00:08:46,959

non-dairy

178

00:08:51,190 --> 00:08:49,040

version of eggnog that

179

00:08:54,070 --> 00:08:51,200

calls on the power of oats to deliver

180

00:08:56,710 --> 00:08:54,080

the same creamy satisfying nutmeg and

181

00:09:00,070 --> 00:08:56,720

ginger profile but with

182

00:09:04,550 --> 00:09:00,080

all vegan ingredients

183

00:09:05,910 --> 00:09:04,560

so what's in an all vegan eggnog you ask

184

00:09:07,269 --> 00:09:05,920

well i'm glad that you're asking that

185

00:09:09,190 --> 00:09:07,279

question right now because i'm going to

186

00:09:11,670 --> 00:09:09,200

tell you

187

00:09:14,310 --> 00:09:11,680

it's got water

188

00:09:16,389 --> 00:09:14,320

hydrolyzed oats

189

00:09:18,150 --> 00:09:16,399

cane sugar

190

00:09:20,470 --> 00:09:18,160

sunflower oil

191

00:09:22,790 --> 00:09:20,480

nutmeg turmeric

192

00:09:25,430 --> 00:09:22,800

anato extract

193

00:09:27,350 --> 00:09:25,440

natural flavors

194

00:09:28,870 --> 00:09:27,360

xanthan gum

195

00:09:31,750 --> 00:09:28,880

gel and gum

196

00:09:35,110 --> 00:09:31,760

calcium carbonate

197

00:09:36,949 --> 00:09:35,120

d potassium phosphate

198

00:09:41,269 --> 00:09:36,959

sea salt

199

00:09:43,750 --> 00:09:41,279

and try calcium phosphate

200

00:09:45,750 --> 00:09:43,760

that's got to be tasty

201
00:09:48,230 --> 00:09:45,760
let's get this show cracking happy

202
00:09:50,710 --> 00:09:48,240
birthday to today

203
00:09:52,870 --> 00:09:50,720
rem guitars peter buck

204
00:09:55,910 --> 00:09:52,880
is 65.

205
00:09:57,910 --> 00:09:55,920
our dead guy's birthday today is

206
00:10:01,990 --> 00:09:57,920
randy rhodes

207
00:10:05,110 --> 00:10:02,000
1956 to 1982 died at the age of 25.

208
00:10:06,310 --> 00:10:05,120
randy to this very day

209
00:10:09,430 --> 00:10:06,320
is considered one of the most

210
00:10:11,509 --> 00:10:09,440
influential musicians for his or any

211
00:10:13,990 --> 00:10:11,519
other generation

212
00:10:15,590 --> 00:10:14,000
randy died in a plane crash on march 19

213
00:10:19,670 --> 00:10:15,600

1982

214

00:10:23,910 --> 00:10:19,680
in leesburg florida at the age of 25.

215

00:10:27,030 --> 00:10:23,920
on this day in history 1917

216

00:10:30,470 --> 00:10:27,040
at 9 05 a.m

217

00:10:33,030 --> 00:10:30,480
in the harbor of halifax in nova scotia

218

00:10:35,590 --> 00:10:33,040
the most devastating man-made explosion

219

00:10:37,590 --> 00:10:35,600
in the pre-atomic age occurs

220

00:10:41,750 --> 00:10:37,600
killing more than 1

221

00:10:44,230 --> 00:10:41,760
800 people injured 9 000 and destroyed

222

00:10:45,670 --> 00:10:44,240
almost the entire north end of the city

223

00:10:48,389 --> 00:10:45,680
of halifax

224

00:10:49,670 --> 00:10:48,399
including more than sixteen hundred

225

00:10:51,750 --> 00:10:49,680
homes

226
00:10:54,150 --> 00:10:51,760
on this day in nineteen seventeen fader

227
00:10:56,870 --> 00:10:54,160
fact

228
00:11:00,829 --> 00:10:56,880
in 2011

229
00:11:04,150 --> 00:11:00,839
an egg sized meteorite believed to be

230
00:11:06,870 --> 00:11:04,160
4.5 billion years old

231
00:11:10,550 --> 00:11:06,880
struck a home in france

232
00:11:12,790 --> 00:11:10,560
the family's last name was

233
00:11:14,470 --> 00:11:12,800
comment

234
00:11:16,470 --> 00:11:14,480
and that

235
00:11:18,069 --> 00:11:16,480
is your fader fact

236
00:11:21,670 --> 00:11:18,079
tonight we have very special guest

237
00:11:25,190 --> 00:11:21,680
professor avi loeb joins us to discuss

238
00:11:29,110 --> 00:11:25,200

the galileo project tomorrow night it's

239

00:11:31,750 --> 00:11:29,120

the return of jason quit jq

240

00:11:33,269 --> 00:11:31,760

jason quit returns tomorrow night and

241

00:11:37,430 --> 00:11:33,279

then wednesday night

242

00:11:38,949 --> 00:11:37,440

live from peru jorge luis delgado

243

00:11:40,790 --> 00:11:38,959

thursday night is another fader night

244

00:11:42,870 --> 00:11:40,800

with open lines all night long now it's

245

00:11:52,510 --> 00:11:42,880

time for me to hit this

246

00:11:57,350 --> 00:11:54,829

[Music]

247

00:12:07,030 --> 00:11:57,360

rivermoonwellness.com yeah

248

00:12:13,430 --> 00:12:09,350

i gotta do it right

249

00:12:17,350 --> 00:12:15,110

all right

250

00:12:20,069 --> 00:12:17,360

how you doing

251
00:12:23,350 --> 00:12:20,079
it's like this

252
00:12:31,430 --> 00:12:26,470
randy rhodes

253
00:12:31,440 --> 00:12:35,509
today 65

254
00:12:40,629 --> 00:12:38,629
it was almost 40 years ago

255
00:12:43,190 --> 00:12:40,639
when i got the phone call at my desk at

256
00:12:45,269 --> 00:12:43,200
bell labs

257
00:12:47,430 --> 00:12:45,279
and uh

258
00:12:49,750 --> 00:12:47,440
and i really remember they moved to my

259
00:12:52,069 --> 00:12:49,760
desk when i first i i

260
00:12:54,389 --> 00:12:52,079
i had when i first hired nfl labs they

261
00:12:56,550 --> 00:12:54,399
moved me three times

262
00:12:58,310 --> 00:12:56,560
right when i first got there they had me

263
00:13:00,389 --> 00:12:58,320

back in the drafting department they

264

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

hadn't made room yet in the art group

265

00:13:03,990 --> 00:13:02,639

for me so i'm back with all the other

266

00:13:05,990 --> 00:13:04,000

draftsman

267

00:13:08,870 --> 00:13:06,000

and that lasted about a month and then

268

00:13:11,430 --> 00:13:08,880

they moved me up to

269

00:13:14,069 --> 00:13:11,440

uh the center of the

270

00:13:15,910 --> 00:13:14,079

uh art group uh looking out over

271

00:13:16,790 --> 00:13:15,920

shadeland avenue had a window in front

272

00:13:19,030 --> 00:13:16,800

of me

273

00:13:21,190 --> 00:13:19,040

and eventually they moved me down at the

274

00:13:23,269 --> 00:13:21,200

end

275

00:13:24,949 --> 00:13:23,279

but anyway i was in the middle spot and

276
00:13:26,150 --> 00:13:24,959
and i remember that because that's where

277
00:13:28,629 --> 00:13:26,160
i was

278
00:13:30,069 --> 00:13:28,639
when i got the call there at bell labs

279
00:13:32,629 --> 00:13:30,079
when my friend

280
00:13:35,190 --> 00:13:32,639
randy smiley

281
00:13:36,949 --> 00:13:35,200
oh man

282
00:13:37,829 --> 00:13:36,959
he caught and he just went straight at

283
00:13:43,990 --> 00:13:37,839
it

284
00:13:46,790 --> 00:13:44,000
randy rhodes just died in a plane

285
00:13:50,710 --> 00:13:47,670
and

286
00:13:54,470 --> 00:13:50,720
i remember sitting there

287
00:13:57,189 --> 00:13:54,480
just like staring at the window

288
00:13:59,030 --> 00:13:57,199

and the the conversation didn't last too

289

00:14:01,350 --> 00:13:59,040

long you know i just hung up the phone

290

00:14:04,150 --> 00:14:01,360

and i was seriously crushed and here is

291

00:14:05,509 --> 00:14:04,160

the thing um

292

00:14:08,470 --> 00:14:05,519

you know i

293

00:14:10,470 --> 00:14:08,480

people die all the time

294

00:14:12,470 --> 00:14:10,480

the cycle of life you know what affects

295

00:14:14,389 --> 00:14:12,480

you john lennon died that didn't really

296

00:14:16,949 --> 00:14:14,399

affect me john bonham when he died

297

00:14:20,150 --> 00:14:16,959

didn't really affect me you know bowie

298

00:14:21,509 --> 00:14:20,160

messed with me of course eddie van halen

299

00:14:22,310 --> 00:14:21,519

but um

300

00:14:49,750 --> 00:14:22,320

a

301
00:14:52,150 --> 00:14:49,760
of oz

302
00:14:53,590 --> 00:14:52,160
i bought it that day

303
00:14:55,829 --> 00:14:53,600
and from

304
00:14:56,790 --> 00:14:55,839
what i recall

305
00:14:58,470 --> 00:14:56,800
nothing

306
00:15:01,910 --> 00:14:58,480
was really playing on the radio from

307
00:15:04,150 --> 00:15:01,920
that album now i i had heard crazy train

308
00:15:06,470 --> 00:15:04,160
like once or twice

309
00:15:08,790 --> 00:15:06,480
um but that was about it there was a

310
00:15:11,110 --> 00:15:08,800
little buzz going around about ozzie's

311
00:15:12,550 --> 00:15:11,120
new album you know black sabbath at the

312
00:15:14,069 --> 00:15:12,560
time was uh

313
00:15:16,389 --> 00:15:14,079

searching for a singer maybe they had

314

00:15:18,230 --> 00:15:16,399

ronnie james deal by then

315

00:15:19,990 --> 00:15:18,240

um but uh

316

00:15:21,590 --> 00:15:20,000

there wasn't much out there

317

00:15:23,829 --> 00:15:21,600

but for me

318

00:15:26,870 --> 00:15:23,839

it was like you know who is this guitar

319

00:15:29,430 --> 00:15:26,880

player randy rhodes

320

00:15:31,189 --> 00:15:29,440

you know and and nobody had heard of him

321

00:15:32,389 --> 00:15:31,199

remember it was a different world back

322

00:15:34,069 --> 00:15:32,399

then

323

00:15:35,749 --> 00:15:34,079

uh you know with all of the obvious

324

00:15:37,990 --> 00:15:35,759

things i don't need to get into you know

325

00:15:39,509 --> 00:15:38,000

like no internet no mtv

326

00:15:41,430 --> 00:15:39,519

you know back then he had like hit

327

00:15:43,189 --> 00:15:41,440

parader magazine

328

00:15:45,430 --> 00:15:43,199

rolling stone

329

00:15:47,110 --> 00:15:45,440

you had your local dj

330

00:15:48,230 --> 00:15:47,120

you know giving you the music news on

331

00:15:50,230 --> 00:15:48,240

the radio

332

00:15:52,870 --> 00:15:50,240

but heavy metal you know like black

333

00:15:54,870 --> 00:15:52,880

sabbath this stuff just wasn't covered

334

00:15:57,509 --> 00:15:54,880

in the magazines

335

00:16:00,150 --> 00:15:57,519

i mean not yet at least back then you

336

00:16:01,670 --> 00:16:00,160

really had to dig for it seriously you

337

00:16:02,949 --> 00:16:01,680

know those were my bands and i could

338

00:16:06,389 --> 00:16:02,959

never find

339

00:16:09,030 --> 00:16:06,399

any news about black sabbath no you know

340

00:16:09,990 --> 00:16:09,040

it was like you know black sabbath was

341

00:16:11,350 --> 00:16:10,000

just

342

00:16:13,269 --> 00:16:11,360

it was weird man it was like the

343

00:16:15,189 --> 00:16:13,279

red-headed stepchild

344

00:16:17,829 --> 00:16:15,199

of the music industry especially with

345

00:16:20,790 --> 00:16:17,839

you know magazines like hit parader and

346

00:16:23,030 --> 00:16:20,800

and uh rolling stone

347

00:16:25,189 --> 00:16:23,040

and uh i remember

348

00:16:28,069 --> 00:16:25,199

playing blizzard of oz for the first

349

00:16:31,110 --> 00:16:28,079

time on my dad's stereo my dad had a

350

00:16:32,949 --> 00:16:31,120

badass stereo and uh

351

00:16:36,310 --> 00:16:32,959

still to this day he's got a reputation

352

00:16:39,269 --> 00:16:36,320

was pretty pretty serious but anyway

353

00:16:42,870 --> 00:16:39,279

my next door neighbor mark pratt

354

00:16:44,790 --> 00:16:42,880

and randy smiley who uh later would call

355

00:16:48,230 --> 00:16:44,800

me at bell labs

356

00:16:50,550 --> 00:16:48,240

uh randy uh mark lived next door randy

357

00:16:52,470 --> 00:16:50,560

lived across the street

358

00:16:55,110 --> 00:16:52,480

and all three of us were in my parents

359

00:16:57,430 --> 00:16:55,120

living room when i dropped the needle

360

00:16:59,910 --> 00:16:57,440

and the first track on blizzard of oz

361

00:17:02,870 --> 00:16:59,920

was i don't know

362

00:17:04,710 --> 00:17:02,880

and it was the very first time that all

363

00:17:06,949 --> 00:17:04,720

of us had heard it

364

00:17:08,949 --> 00:17:06,959

that was the first time seriously and

365

00:17:11,990 --> 00:17:08,959

looking back it was truly a moment in

366

00:17:14,150 --> 00:17:12,000

time especially now

367

00:17:16,710 --> 00:17:14,160

with how important of a song it turned

368

00:17:18,470 --> 00:17:16,720

out to be but man we were listening to

369

00:17:19,590 --> 00:17:18,480

it for the first

370

00:17:24,150 --> 00:17:19,600

time

371

00:17:26,549 --> 00:17:24,160

and i was like what is going on here

372

00:17:28,150 --> 00:17:26,559

anyway

373

00:17:30,470 --> 00:17:28,160

we wore the album out there's no

374

00:17:34,390 --> 00:17:30,480

question about it that much is certain

375

00:17:36,310 --> 00:17:34,400

but uh right after its release

376

00:17:39,510 --> 00:17:36,320

ozzy was on tour

377

00:17:41,270 --> 00:17:39,520

and indy was on the schedule

378

00:17:43,029 --> 00:17:41,280

and uh we're all excited and you know

379

00:17:44,950 --> 00:17:43,039

ozzie's coming to town and black sabbath

380

00:17:48,470 --> 00:17:44,960

was coming to town with uh

381

00:17:51,430 --> 00:17:48,480

with uh ronnie james dio too as well

382

00:17:53,830 --> 00:17:51,440

and uh i immediately

383

00:17:55,350 --> 00:17:53,840

immediately

384

00:17:58,230 --> 00:17:55,360

bought a pair of tickets at karma

385

00:18:00,310 --> 00:17:58,240

records as soon as i found out he was on

386

00:18:01,669 --> 00:18:00,320

that schedule man i was right there

387

00:18:04,549 --> 00:18:01,679

karma records

388

00:18:07,510 --> 00:18:04,559

give me my aussie tickets got him

389

00:18:10,150 --> 00:18:07,520

and my memory says now this is kind of

390

00:18:12,549 --> 00:18:10,160

like indie legend here

391

00:18:15,510 --> 00:18:12,559

this is indy legend

392

00:18:17,430 --> 00:18:15,520

because originally they were supposed to

393

00:18:19,190 --> 00:18:17,440

play market square arena and black

394

00:18:20,950 --> 00:18:19,200

sabbath was at the same time it's play

395

00:18:21,990 --> 00:18:20,960

market square arena i went to that show

396

00:18:22,870 --> 00:18:22,000

too

397

00:18:27,270 --> 00:18:22,880

but

398

00:18:30,470 --> 00:18:27,280

to support

399

00:18:31,270 --> 00:18:30,480

market square arena for ozzie

400

00:18:33,270 --> 00:18:31,280

so

401
00:18:36,390 --> 00:18:33,280
i think they bounced down to like the

402
00:18:38,070 --> 00:18:36,400
convention center you know the the the

403
00:18:39,430 --> 00:18:38,080
show's coming up the date's coming up

404
00:18:40,630 --> 00:18:39,440
and there was not enough ticket sales

405
00:18:42,870 --> 00:18:40,640
for that

406
00:18:46,549 --> 00:18:42,880
you know lack of sales

407
00:18:48,710 --> 00:18:46,559
and eventually the show was scheduled

408
00:18:50,789 --> 00:18:48,720
for the circle theater

409
00:18:52,390 --> 00:18:50,799
in downtown indy

410
00:18:53,750 --> 00:18:52,400
and this was a place i had never heard

411
00:18:55,110 --> 00:18:53,760
of

412
00:18:57,750 --> 00:18:55,120
at the time

413
00:18:59,350 --> 00:18:57,760

but mark and i my neighbor mark pratt

414

00:19:01,909 --> 00:18:59,360

mark and i were there

415

00:19:04,150 --> 00:19:01,919

before the doors opened you know first

416

00:19:05,909 --> 00:19:04,160

in line right there right against

417

00:19:08,950 --> 00:19:05,919

right there we were first

418

00:19:11,110 --> 00:19:08,960

in the rain by the way no bs

419

00:19:14,870 --> 00:19:11,120

and uh

420

00:19:18,950 --> 00:19:14,880

and when they let us in out of the rain

421

00:19:23,590 --> 00:19:21,029

and it's tiny

422

00:19:25,830 --> 00:19:23,600

i was kind of shocked

423

00:19:27,510 --> 00:19:25,840

and i i mean i couldn't believe it and

424

00:19:29,110 --> 00:19:27,520

the people that say

425

00:19:30,710 --> 00:19:29,120

that they were at that show at the

426

00:19:33,270 --> 00:19:30,720

circle theater i think the circle

427

00:19:35,750 --> 00:19:33,280

theater held like 500 people

428

00:19:37,029 --> 00:19:35,760

and you could i don't know i don't 600

429

00:19:39,830 --> 00:19:37,039

it was tiny

430

00:19:41,270 --> 00:19:39,840

and the amount of people today that say

431

00:19:43,990 --> 00:19:41,280

that they were at that show that

432

00:19:45,270 --> 00:19:44,000

probably numbers 50 000

433

00:19:47,590 --> 00:19:45,280

in india

434

00:19:49,750 --> 00:19:47,600

and somebody's not telling the truth

435

00:19:53,510 --> 00:19:49,760

that place is tiny anyway

436

00:19:56,710 --> 00:19:53,520

uh there we were mark and i front row we

437

00:19:58,470 --> 00:19:56,720

were first in the doors ran down

438

00:19:59,830 --> 00:19:58,480

i mean imagine going to a movie theater

439

00:20:01,270 --> 00:19:59,840

in your local neighborhood that's how

440

00:20:03,830 --> 00:20:01,280

big this place was

441

00:20:04,950 --> 00:20:03,840

so uh there we were

442

00:20:10,310 --> 00:20:04,960

front row

443

00:20:15,350 --> 00:20:12,630

and def leppard opened

444

00:20:17,590 --> 00:20:15,360

never heard of def leppard

445

00:20:20,470 --> 00:20:17,600

i think the average age of def leppard

446

00:20:23,350 --> 00:20:20,480

at that time was like 16.

447

00:20:25,990 --> 00:20:23,360

pete willis man he was like this anyway

448

00:20:28,470 --> 00:20:26,000

never heard of def leppard they rocked

449

00:20:30,230 --> 00:20:28,480

uh eventually mtv happened and def

450

00:20:32,789 --> 00:20:30,240

leppard happened and stuff but at this

451
00:20:34,390 --> 00:20:32,799
time nobody ever heard of def leopard

452
00:20:35,430 --> 00:20:34,400
and uh

453
00:20:36,710 --> 00:20:35,440
but

454
00:20:39,110 --> 00:20:36,720
wow

455
00:20:40,390 --> 00:20:39,120
i got to see randy like

456
00:20:43,510 --> 00:20:40,400
this close

457
00:20:45,270 --> 00:20:43,520
the stage was at my knees

458
00:20:46,950 --> 00:20:45,280
it was it was crazy

459
00:20:49,909 --> 00:20:46,960
and uh

460
00:20:51,669 --> 00:20:49,919
wow it was insane it was

461
00:20:54,870 --> 00:20:51,679
it was insane i i

462
00:20:58,390 --> 00:20:54,880
i said for months after that

463
00:21:01,029 --> 00:20:58,400

then i had randy rhodes sweat just all

464

00:21:02,630 --> 00:21:01,039

over my and i i did

465

00:21:04,870 --> 00:21:02,640

it was hot in there

466

00:21:06,870 --> 00:21:04,880

it was crazy now right after all of this

467

00:21:09,510 --> 00:21:06,880

went down

468

00:21:11,190 --> 00:21:09,520

diary of a madman was released a few

469

00:21:12,390 --> 00:21:11,200

months later maybe six months later or

470

00:21:14,549 --> 00:21:12,400

something like that but they were like

471

00:21:16,470 --> 00:21:14,559

right back to back a diary of a madman

472

00:21:18,230 --> 00:21:16,480

comes out i really like that album i

473

00:21:21,510 --> 00:21:18,240

like them both about the same

474

00:21:24,310 --> 00:21:21,520

um by this time though

475

00:21:26,070 --> 00:21:24,320

randy had pretty much taken over the

476
00:21:27,510 --> 00:21:26,080
world of guitar you know it was just him

477
00:21:29,430 --> 00:21:27,520
and eddie

478
00:21:31,350 --> 00:21:29,440
and it was a great time to be a guitar

479
00:21:33,909 --> 00:21:31,360
player like me when you're you know 15

480
00:21:34,789 --> 00:21:33,919
years old like that 16

481
00:21:38,950 --> 00:21:34,799
and

482
00:21:39,909 --> 00:21:38,960
you had these two guitar greats that

483
00:21:42,230 --> 00:21:39,919
were just

484
00:21:44,390 --> 00:21:42,240
playing these new styles and everything

485
00:21:47,029 --> 00:21:44,400
was fresh man it was just great

486
00:21:49,750 --> 00:21:47,039
it was awesome it was awesome

487
00:21:52,710 --> 00:21:49,760
and uh and then

488
00:21:54,870 --> 00:21:52,720

it was announced that the diary tour

489

00:21:56,549 --> 00:21:54,880

was also coming to indy like it was back

490

00:22:02,390 --> 00:21:56,559

to back

491

00:22:04,230 --> 00:22:02,400

to be at market square and i'm going to

492

00:22:07,110 --> 00:22:04,240

buy another pair of tickets same

493

00:22:11,990 --> 00:22:09,350

this time around i go with my drummer

494

00:22:14,149 --> 00:22:12,000

jerry reeskamp

495

00:22:15,510 --> 00:22:14,159

jerry's got cancer right now and and uh

496

00:22:16,470 --> 00:22:15,520

jerry if you're listening love you

497

00:22:19,110 --> 00:22:16,480

brother

498

00:22:21,750 --> 00:22:19,120

just keep fighting that thing anyway

499

00:22:25,270 --> 00:22:21,760

so my drummer jerry reese camp

500

00:22:27,510 --> 00:22:25,280

and uh we get to the arena early uh we

501
00:22:29,830 --> 00:22:27,520
were first through the doors

502
00:22:31,990 --> 00:22:29,840
and we made the mad dash down to the

503
00:22:33,270 --> 00:22:32,000
floor level there at market square arena

504
00:22:37,590 --> 00:22:33,280
and

505
00:22:41,350 --> 00:22:37,600
right there front row this time

506
00:22:44,310 --> 00:22:41,360
a little to the right of center

507
00:22:46,549 --> 00:22:44,320
right where randy would be standing in

508
00:22:48,549 --> 00:22:46,559
front of us for the night

509
00:22:51,990 --> 00:22:48,559
and that was an amazing show they had

510
00:22:53,270 --> 00:22:52,000
the big castle on the stage and you know

511
00:22:55,270 --> 00:22:53,280
it's amazing

512
00:22:57,750 --> 00:22:55,280
but here's the deal by this time i had

513
00:23:00,230 --> 00:22:57,760

seen most of the great bands and the one

514

00:23:02,390 --> 00:23:00,240

thing i noticed above all else

515

00:23:04,710 --> 00:23:02,400

that randy

516

00:23:06,230 --> 00:23:04,720

and his sound

517

00:23:10,390 --> 00:23:06,240

was clear

518

00:23:13,190 --> 00:23:10,400

you heard the notes it was never sloppy

519

00:23:16,390 --> 00:23:13,200

technical yes fast for sure

520

00:23:18,870 --> 00:23:16,400

at times yeah of course but everything

521

00:23:23,190 --> 00:23:18,880

was always crystal clear

522

00:23:27,029 --> 00:23:23,200

you heard every single note

523

00:23:30,070 --> 00:23:27,039

now years later as everyone knows by now

524

00:23:32,310 --> 00:23:30,080

i uh i partnered up with rudy sarzo and

525

00:23:33,669 --> 00:23:32,320

we had a studio together at his home in

526
00:23:36,390 --> 00:23:33,679
sherman oaks

527
00:23:37,990 --> 00:23:36,400
we did that for about seven years

528
00:23:40,870 --> 00:23:38,000
rudy of course

529
00:23:43,830 --> 00:23:40,880
played bass in ozzy with randy but he

530
00:23:46,710 --> 00:23:43,840
was also in quiet riot with randy before

531
00:23:49,269 --> 00:23:46,720
the two of them joined up with ozzy

532
00:23:51,350 --> 00:23:49,279
and he was also on the bus when the

533
00:23:54,070 --> 00:23:51,360
plane that randy was in

534
00:23:55,590 --> 00:23:54,080
crashed into it

535
00:23:58,710 --> 00:23:55,600
and until

536
00:24:01,750 --> 00:24:00,149
it's like this

537
00:24:03,909 --> 00:24:01,760
i'm emotional when i talk about the

538
00:24:05,430 --> 00:24:03,919

stuff through all the years of hanging

539

00:24:07,669 --> 00:24:05,440

out with rudy

540

00:24:09,909 --> 00:24:07,679

we never talked about it

541

00:24:12,149 --> 00:24:09,919

until one day i had a friend over at the

542

00:24:15,350 --> 00:24:12,159

studio with this named jeff

543

00:24:17,190 --> 00:24:15,360

and he turns to rudy and says hey man

544

00:24:18,470 --> 00:24:17,200

weren't you on the bus that day that

545

00:24:21,110 --> 00:24:18,480

randy died

546

00:24:23,510 --> 00:24:21,120

i'd never talked to rudy about this

547

00:24:25,830 --> 00:24:23,520

and rudy just laid it all out

548

00:24:28,549 --> 00:24:25,840

from beginning to end

549

00:24:30,870 --> 00:24:28,559

now i remember when i sat there

550

00:24:33,110 --> 00:24:30,880

listening to the events

551
00:24:35,029 --> 00:24:33,120
all i could do was

552
00:24:37,510 --> 00:24:35,039
was think about that day at bell labs

553
00:24:38,630 --> 00:24:37,520
when i got the call

554
00:24:40,470 --> 00:24:38,640
and

555
00:24:42,230 --> 00:24:40,480
the truth is

556
00:24:45,269 --> 00:24:42,240
that with all of this

557
00:24:48,630 --> 00:24:45,279
after 40 years

558
00:24:50,710 --> 00:24:48,640
we still remember randy rhodes

559
00:24:52,070 --> 00:24:50,720
we do

560
00:24:55,510 --> 00:24:52,080
so all i have to say is i hope he's

561
00:24:58,390 --> 00:24:55,520
listening right now happy birthday randy

562
00:25:02,310 --> 00:24:58,400
you changed the world

563
00:25:04,310 --> 00:25:02,320

and i truly mean it truly mean it

564

00:25:05,830 --> 00:25:04,320

it's uh

565

00:25:09,750 --> 00:25:05,840

heartbreaking

566

00:25:12,149 --> 00:25:09,760

you know 25 years old so fresh

567

00:25:13,190 --> 00:25:12,159

getting it done

568

00:25:16,710 --> 00:25:13,200

tonight

569

00:25:17,680 --> 00:25:16,720

here on fade to black professor avi loeb

570

00:25:19,190 --> 00:25:17,690

joins us

571

00:25:21,909 --> 00:25:19,200

[Music]

572

00:25:23,350 --> 00:25:21,919

he's here to discuss the galileo project

573

00:25:26,070 --> 00:25:23,360

now listen

574

00:25:28,710 --> 00:25:26,080

this interview was recorded

575

00:25:31,190 --> 00:25:28,720

a couple of hours ago right before show

576

00:25:33,909 --> 00:25:31,200

time i just wrapped it up got it ready

577

00:25:35,350 --> 00:25:33,919

for the show now which means

578

00:25:37,510 --> 00:25:35,360

you know he's got to teach class in the

579

00:25:38,310 --> 00:25:37,520

morning he can't stay up late with us

580

00:25:40,470 --> 00:25:38,320

but

581

00:25:43,669 --> 00:25:40,480

it means i'm going to jump over and hang

582

00:25:46,070 --> 00:25:43,679

out on youtube so enjoy this i am your

583

00:25:48,549 --> 00:25:46,080

host jimmy church tonight professor avi

584

00:25:48,559 --> 00:25:53,500

i'll see you over on youtube

585

00:25:53,510 --> 00:25:57,909

[Music]

586

00:26:02,230 --> 00:25:59,990

this is nicole church daughter of you

587

00:26:03,230 --> 00:26:02,240

know who and you're listening to fade to

588

00:26:04,870 --> 00:26:03,240

black on

589

00:26:07,750 --> 00:26:04,880

jimmychurchradio.com and the game

590

00:26:11,430 --> 00:26:09,909

you're listening to jimmy church and

591

00:26:20,950 --> 00:26:11,440

fade to black

592

00:26:27,350 --> 00:26:23,269

you're listening to jimmy church fade to

593

00:26:34,870 --> 00:26:29,590

fate to black will now pause for alien

594

00:26:39,029 --> 00:26:37,190

introducing the game changer blend from

595

00:26:41,590 --> 00:26:39,039

river moon coffee that delivers a

596

00:26:44,630 --> 00:26:41,600

customized blend made specifically for

597

00:26:47,590 --> 00:26:44,640

the fader knots if the game is rigged

598

00:26:48,789 --> 00:26:47,600

change the game it's a boulder cup with

599

00:26:51,029 --> 00:26:48,799

some bite

600

00:26:53,269 --> 00:26:51,039

game changer is the coffee of choice for

601
00:26:56,390 --> 00:26:53,279
those that prefer an organic dark roast

602
00:26:59,110 --> 00:26:56,400
that is slightly lighter and milder but

603
00:27:01,350 --> 00:26:59,120
it's still dark with wild notes of

604
00:27:03,990 --> 00:27:01,360
pecans and chocolate with a rich

605
00:27:06,070 --> 00:27:04,000
balanced full-bodied cup that is roasted

606
00:27:09,110 --> 00:27:06,080
to perfection for a great coffee to

607
00:27:12,149 --> 00:27:09,120
start your day as an after dinner coffee

608
00:27:14,630 --> 00:27:12,159
or anywhere in between artisan small

609
00:27:17,190 --> 00:27:14,640
batch roasted to perfection usda

610
00:27:19,590 --> 00:27:17,200
certified organic all river moon coffee

611
00:27:22,470 --> 00:27:19,600
is freshly roasted and packaged in the

612
00:27:24,549 --> 00:27:22,480
usa just go to rivermooncoffee.com or

613
00:27:28,470 --> 00:27:24,559

click on the banners over on our site

614

00:27:30,549 --> 00:27:28,480

and use the promo code f2b blend for 15

615

00:27:33,450 --> 00:27:30,559

off of your order today

616

00:27:39,110 --> 00:27:33,460

rivermooncoffee.com

617

00:27:43,269 --> 00:27:41,510

make contact

618

00:27:46,149 --> 00:27:43,279

this is jimmy church of fade to black

619

00:27:48,470 --> 00:27:46,159

and you can get our podcast for just two

620

00:27:50,789 --> 00:27:48,480

dollars per month all you have to do is

621

00:27:53,590 --> 00:27:50,799

click on the podcast banner over at

622

00:27:56,230 --> 00:27:53,600

jimmychurchradio.com

623

00:27:58,870 --> 00:27:56,240

hi folks it's trembling times and fear

624

00:28:00,630 --> 00:27:58,880

is pushing emotions which in turn pushes

625

00:28:02,789 --> 00:28:00,640

health the wrong direction do you ever

626

00:28:05,190 --> 00:28:02,799

get an egg because life is uneasy try

627

00:28:07,110 --> 00:28:05,200

life change tea get the tea.com life

628

00:28:09,190 --> 00:28:07,120

change tea works on your digestive tract

629

00:28:11,750 --> 00:28:09,200

helping to move food through quicker and

630

00:28:13,510 --> 00:28:11,760

comfortably so your health is spot on

631

00:28:15,590 --> 00:28:13,520

life change tea may not help with world

632

00:28:18,149 --> 00:28:15,600

issues but it will help with your

633

00:28:20,710 --> 00:28:18,159

digestive issues a glass a day helps

634

00:28:23,269 --> 00:28:20,720

keep the intruders away so

635

00:28:26,389 --> 00:28:23,279

change your life today log on to get the

636

00:28:28,710 --> 00:28:26,399

tea.com that's get the tea dot com if

637

00:28:31,750 --> 00:28:28,720

your health game is off get on by

638

00:28:33,510 --> 00:28:31,760

ordering life change tea get the tea.com

639

00:28:36,149 --> 00:28:33,520

and while you're on our site look around

640

00:28:38,070 --> 00:28:36,159

at the great non-gmo organic supplements

641

00:28:40,789 --> 00:28:38,080

and if you're a sales shopper go to our

642

00:28:42,549 --> 00:28:40,799

specials page and see what's for you

643

00:28:44,070 --> 00:28:42,559

i've been drinking the tea for 12 years

644

00:28:46,710 --> 00:28:44,080

and i'm sure glad for its health

645

00:28:48,630 --> 00:28:46,720

benefits again that's get the tea dot

646

00:28:49,909 --> 00:28:48,640

com get the tea

647

00:28:53,110 --> 00:28:49,919

dot com

648

00:28:56,870 --> 00:28:53,120

the tea that makes you go

649

00:28:59,110 --> 00:28:56,880

the new kunx db the unex network

650

00:29:01,750 --> 00:28:59,120

bringing you the best in paranormal

651
00:29:04,630 --> 00:29:01,760
programming in premium high definition

652
00:29:07,190 --> 00:29:04,640
streaming audio and video log on to the

653
00:29:09,190 --> 00:29:07,200
network at nextnetwork.com

654
00:29:11,909 --> 00:29:09,200
and check out the growing lineup of

655
00:29:14,870 --> 00:29:11,919
programs including jimmy church whitley

656
00:29:17,430 --> 00:29:14,880
strieber micah hanks and many more sign

657
00:29:20,070 --> 00:29:17,440
up for the free onex newsletter follow

658
00:29:22,710 --> 00:29:20,080
the unex blog or pick up the latest

659
00:29:24,630 --> 00:29:22,720
edition of the unex magazine

660
00:29:26,990 --> 00:29:24,640
be sure to follow us on facebook and

661
00:29:29,669 --> 00:29:27,000
twitter so check us out at

662
00:29:32,230 --> 00:29:29,679
nxnetwork.com tap the show page and the

663
00:29:35,029 --> 00:29:32,240

calendar so you never miss your favorite

664

00:29:38,549 --> 00:29:35,039

live shows and podcasts we are your

665

00:29:42,710 --> 00:29:38,559

portal for all things paranormal the x

666

00:29:42,720 --> 00:29:47,830

nine out of ten geneticists agree

667

00:29:51,590 --> 00:29:50,230

fade to black

668

00:29:55,190 --> 00:29:51,600

is not

669

00:29:58,389 --> 00:29:55,200

your father's radio show on the game

670

00:30:00,389 --> 00:29:58,399

changer radio network

671

00:30:04,950 --> 00:30:00,399

hi this is rob reiner from anvil and

672

00:30:14,280 --> 00:30:08,230

what's up chris what up this is jimmy

673

00:30:27,830 --> 00:30:19,890

[Music]

674

00:30:30,149 --> 00:30:27,840

welcome back to fade to black i'm your

675

00:30:32,230 --> 00:30:30,159

host jimmy church what a great week

676
00:30:35,190 --> 00:30:32,240
we've got coming up tonight professor

677
00:30:36,389 --> 00:30:35,200
avi loeb is joining us tomorrow night

678
00:30:39,110 --> 00:30:36,399
it's the return

679
00:30:42,470 --> 00:30:39,120
of jason quit and then wednesday night

680
00:30:44,149 --> 00:30:42,480
jorge luis delgado is live from peru

681
00:30:46,710 --> 00:30:44,159
thursday's another fader night with open

682
00:30:49,909 --> 00:30:46,720
lines all night long but tonight it's

683
00:30:51,909 --> 00:30:49,919
professor avilobe of harvard university

684
00:30:54,549 --> 00:30:51,919
joining us to discuss the galileo

685
00:30:56,789 --> 00:30:54,559
project and the hunt for evidence of et

686
00:30:59,990 --> 00:30:56,799
and etc here

687
00:31:02,630 --> 00:31:00,000
throughout the milky way and beyond

688
00:31:05,990 --> 00:31:02,640

avi is a theoretical physicist who works

689

00:31:08,870 --> 00:31:06,000

on astrophysics and cosmology he is the

690

00:31:11,110 --> 00:31:08,880

frank b baer junior professor of science

691

00:31:13,029 --> 00:31:11,120

at harvard university he has had the

692

00:31:15,350 --> 00:31:13,039

longest serving chair of harvard's

693

00:31:18,389 --> 00:31:15,360

department of astronomy from 2011 to

694

00:31:21,029 --> 00:31:18,399

2020 founding director of harvard's

695

00:31:23,909 --> 00:31:21,039

black hole initiative and director of

696

00:31:24,950 --> 00:31:23,919

the institute for theory and computation

697

00:31:26,710 --> 00:31:24,960

and

698

00:31:28,870 --> 00:31:26,720

all of that within the harvard

699

00:31:31,269 --> 00:31:28,880

smithsonian center for astrophysics he

700

00:31:32,669 --> 00:31:31,279

has written eight books including most

701
00:31:34,630 --> 00:31:32,679
recently the best-selling

702
00:31:37,029 --> 00:31:34,640
extraterrestrial the first sign of

703
00:31:38,389 --> 00:31:37,039
intelligent life beyond earth and i

704
00:31:41,110 --> 00:31:38,399
would like to welcome back to fade to

705
00:31:43,509 --> 00:31:41,120
black professor avi loeb avi

706
00:31:45,110 --> 00:31:43,519
good evening my man how you doing

707
00:31:47,909 --> 00:31:45,120
i'm doing great thanks for having me

708
00:31:49,990 --> 00:31:47,919
it's a great pleasure and uh here here's

709
00:31:53,430 --> 00:31:50,000
the deal uh we're going to be talking

710
00:31:55,350 --> 00:31:53,440
about the galileo project tonight but

711
00:31:57,509 --> 00:31:55,360
i want to back up for a second and

712
00:32:01,669 --> 00:31:57,519
remind the audience

713
00:32:05,750 --> 00:32:01,679

that to most you just burst on the scene

714

00:32:09,029 --> 00:32:05,760

four years ago with omua

715

00:32:11,430 --> 00:32:09,039

you you got your phd in physics at the

716

00:32:14,389 --> 00:32:11,440

age of 24.

717

00:32:17,350 --> 00:32:14,399

and back in 2012 time magazine selected

718

00:32:20,230 --> 00:32:17,360

you as one of the 25 most influential

719

00:32:22,310 --> 00:32:20,240

people in space you've been at this for

720

00:32:25,909 --> 00:32:22,320

a very long time

721

00:32:28,549 --> 00:32:25,919

what what got the interest started

722

00:32:30,950 --> 00:32:28,559

well i remember as a child

723

00:32:33,509 --> 00:32:30,960

attending dinners where i would ask a

724

00:32:35,430 --> 00:32:33,519

difficult question and the adults in the

725

00:32:37,350 --> 00:32:35,440

room would pretend that they know the

726
00:32:39,669 --> 00:32:37,360
answer and that bothered me because it

727
00:32:41,669 --> 00:32:39,679
was obvious they don't know the answer

728
00:32:43,430 --> 00:32:41,679
and that was the good situation the bad

729
00:32:45,669 --> 00:32:43,440
situation was when they would dismiss

730
00:32:47,350 --> 00:32:45,679
the question and say this question is

731
00:32:49,830 --> 00:32:47,360
irrelevant simply because they didn't

732
00:32:51,990 --> 00:32:49,840
know the answer and i thought that by

733
00:32:54,149 --> 00:32:52,000
going into science i will be able to

734
00:32:56,710 --> 00:32:54,159
answer the questions myself

735
00:32:59,350 --> 00:32:56,720
and not be worried about

736
00:33:01,350 --> 00:32:59,360
anything and and simply you know when

737
00:33:04,149 --> 00:33:01,360
you have tenure in academia you're

738
00:33:06,070 --> 00:33:04,159

supposed to have job security and

739

00:33:08,149 --> 00:33:06,080

i thought that i would be surrounded by

740

00:33:10,470 --> 00:33:08,159

like-minded people and that's pretty

741

00:33:12,710 --> 00:33:10,480

much what laid the foundation for me to

742

00:33:14,870 --> 00:33:12,720

work on science and you know over the

743

00:33:17,509 --> 00:33:14,880

years i worked i ended up in

744

00:33:19,509 --> 00:33:17,519

astrophysics studying the universe and

745

00:33:22,070 --> 00:33:19,519

uh and

746

00:33:24,070 --> 00:33:22,080

i worked on the

747

00:33:26,950 --> 00:33:24,080

beginning of the universe when the first

748

00:33:29,430 --> 00:33:26,960

stars formed and the first galaxies and

749

00:33:32,389 --> 00:33:29,440

i worked on black holes and the one

750

00:33:33,990 --> 00:33:32,399

thing i noticed is you know very often

751

00:33:38,710 --> 00:33:34,000

we don't have enough

752

00:33:41,669 --> 00:33:38,720

to decide what is the correct

753

00:33:44,310 --> 00:33:41,679

explanation for what we are seeing and

754

00:33:47,029 --> 00:33:44,320

uh under those circumstances it's quite

755

00:33:48,789 --> 00:33:47,039

standard for us to imagine possible

756

00:33:51,190 --> 00:33:48,799

explanations and then

757

00:33:53,909 --> 00:33:51,200

get more evidence and rule out those

758

00:33:55,990 --> 00:33:53,919

that do not stand up to the data and you

759

00:34:00,549 --> 00:33:56,000

know that's the same approach as

760

00:34:03,110 --> 00:34:00,559

sherlock holmes adapt adapted in

761

00:34:05,509 --> 00:34:03,120

in this fictional story where he would

762

00:34:07,430 --> 00:34:05,519

this exclude all

763

00:34:09,990 --> 00:34:07,440

possibilities that are on the table and

764

00:34:11,909 --> 00:34:10,000

whatever remains must be the truth and

765

00:34:15,430 --> 00:34:11,919

that's the approach that science takes

766

00:34:17,669 --> 00:34:15,440

and and then then omar came along and

767

00:34:19,430 --> 00:34:17,679

that was an object that came from

768

00:34:21,669 --> 00:34:19,440

outside the solar system we knew that

769

00:34:24,389 --> 00:34:21,679

for sure because it moved too fast to be

770

00:34:26,389 --> 00:34:24,399

bound to the sun it was the first object

771

00:34:30,230 --> 00:34:26,399

discovered near earth that came from

772

00:34:34,869 --> 00:34:32,710

spotted by a telescope in hawaii the

773

00:34:36,550 --> 00:34:34,879

size of a football field

774

00:34:39,430 --> 00:34:36,560

and of course the astronomers

775

00:34:40,790 --> 00:34:39,440

immediately said well it must be a comet

776
00:34:42,389 --> 00:34:40,800
because

777
00:34:44,790 --> 00:34:42,399
you know most of the objects that come

778
00:34:46,550 --> 00:34:44,800
from the outskirts of the solar system

779
00:34:48,869 --> 00:34:46,560
are comets and

780
00:34:51,750 --> 00:34:48,879
they are simply rocks covered with ice

781
00:34:53,909 --> 00:34:51,760
and if we imagine another star having

782
00:34:56,389 --> 00:34:53,919
objects like that you know these are the

783
00:34:59,430 --> 00:34:56,399
objects that are most easily

784
00:35:00,950 --> 00:34:59,440
uh dislodged from other planetary

785
00:35:03,190 --> 00:35:00,960
systems because they are in the

786
00:35:05,430 --> 00:35:03,200
outskirts and any passing star can just

787
00:35:07,910 --> 00:35:05,440
kick them out of the system and

788
00:35:10,790 --> 00:35:07,920

so astronomers imagine this must be a

789

00:35:12,710 --> 00:35:10,800

comment they gave it the name of a comet

790

00:35:14,790 --> 00:35:12,720

and then it turned out that there is no

791

00:35:17,910 --> 00:35:14,800

commentary tale that you know it's just

792

00:35:18,710 --> 00:35:17,920

like saying uh you know that

793

00:35:24,150 --> 00:35:18,720

uh

794

00:35:26,550 --> 00:35:24,160

and then a kid comes along and says the

795

00:35:28,790 --> 00:35:26,560

emperor has no clothes you know and and

796

00:35:31,190 --> 00:35:28,800

that's the way i felt that you know

797

00:35:33,670 --> 00:35:31,200

whatever people think that this object

798

00:35:35,510 --> 00:35:33,680

is it doesn't seem to show that it's not

799

00:35:38,150 --> 00:35:35,520

a comet and then the spitzer space

800

00:35:40,630 --> 00:35:38,160

telescope looked very deeply and and

801
00:35:42,310 --> 00:35:40,640
couldn't see and couldn't trace any

802
00:35:45,349 --> 00:35:42,320
carbon-based molecules not only we

803
00:35:47,829 --> 00:35:45,359
couldn't see a cometary tail visibly but

804
00:35:50,550 --> 00:35:47,839
there was nothing evaporating from this

805
00:35:52,950 --> 00:35:50,560
object and then it looked weirder and

806
00:35:55,990 --> 00:35:52,960
weirder and that's what drew me

807
00:35:58,470 --> 00:35:56,000
into it because here is an object that

808
00:36:00,950 --> 00:35:58,480
did not look like objects we have seen

809
00:36:02,470 --> 00:36:00,960
before didn't look like a comet also

810
00:36:04,230 --> 00:36:02,480
didn't look like an asteroid that we

811
00:36:05,270 --> 00:36:04,240
have seen before because as it was

812
00:36:07,109 --> 00:36:05,280
tumbling

813
00:36:09,109 --> 00:36:07,119

every eight hours the amount of sunlight

814

00:36:09,910 --> 00:36:09,119

reflected from it changed by a factor of

815

00:36:12,390 --> 00:36:09,920

ten

816

00:36:14,950 --> 00:36:12,400

and that meant a very extreme shape most

817

00:36:17,510 --> 00:36:14,960

likely flat and then it was pushed away

818

00:36:19,349 --> 00:36:17,520

from the sun by some mysterious force

819

00:36:21,270 --> 00:36:19,359

and since it was not evaporating it

820

00:36:23,829 --> 00:36:21,280

wasn't clear what's pushing it so there

821

00:36:26,950 --> 00:36:23,839

were all these weird things about it

822

00:36:29,910 --> 00:36:26,960

and you know um my colleagues that

823

00:36:32,310 --> 00:36:29,920

worked for decades on rocks in the solar

824

00:36:35,349 --> 00:36:32,320

system they wanted to pretend that they

825

00:36:37,430 --> 00:36:35,359

are experts on the subject and they said

826

00:36:38,950 --> 00:36:37,440

you know it must be natural because

827

00:36:42,310 --> 00:36:38,960

that's what they are used to natural

828

00:36:44,630 --> 00:36:42,320

objects uh that's what they always see

829

00:36:47,510 --> 00:36:44,640

in the dating scene of the of the solar

830

00:36:48,550 --> 00:36:47,520

system i think of it as dating an object

831

00:36:50,390 --> 00:36:48,560

you know that

832

00:36:51,829 --> 00:36:50,400

you go on a date and suddenly you see

833

00:36:53,750 --> 00:36:51,839

something different and you say okay

834

00:36:55,910 --> 00:36:53,760

well it must be similar to the objects

835

00:36:57,750 --> 00:36:55,920

i've seen before you know if you imagine

836

00:36:59,990 --> 00:36:57,760

a caveman finding a cellphone the

837

00:37:02,069 --> 00:37:00,000

caveman would say oh it's a rock of a

838

00:37:04,069 --> 00:37:02,079

type that i've never seen before you

839

00:37:06,550 --> 00:37:04,079

know and that's pretty much the

840

00:37:09,190 --> 00:37:06,560

consensus of the mainstream and uh but

841

00:37:10,950 --> 00:37:09,200

for me it was different because i came

842

00:37:12,710 --> 00:37:10,960

from other areas of studying the

843

00:37:14,870 --> 00:37:12,720

universe where if something unusual

844

00:37:17,030 --> 00:37:14,880

comes along if something anomalous comes

845

00:37:19,349 --> 00:37:17,040

along you start to

846

00:37:21,990 --> 00:37:19,359

imagine new possibilities and in this

847

00:37:24,950 --> 00:37:22,000

case i imagine that it may be artificial

848

00:37:27,510 --> 00:37:24,960

and you know a year ago in september

849

00:37:30,230 --> 00:37:27,520

2020 there was another object discovered

850

00:37:31,910 --> 00:37:30,240

by the same telescope which shared the

851

00:37:34,390 --> 00:37:31,920

qualities of

852

00:37:37,109 --> 00:37:34,400

it was pushed away from the sun

853

00:37:39,910 --> 00:37:37,119

and moreover it didn't have any cometary

854

00:37:44,150 --> 00:37:39,920

tail and this object was given the name

855

00:37:46,230 --> 00:37:44,160

2020 so and then a few weeks later it

856

00:37:49,510 --> 00:37:46,240

was realized that it actually

857

00:37:52,870 --> 00:37:49,520

was artificial in fact it was created by

858

00:37:55,670 --> 00:37:52,880

nasa and launched in 1966

859

00:37:57,910 --> 00:37:55,680

as pa as a rocket booster and

860

00:37:59,510 --> 00:37:57,920

um to me that illustrated the fact that

861

00:38:01,910 --> 00:37:59,520

we can tell the difference between an

862

00:38:04,550 --> 00:38:01,920

artificial object and a natural object

863

00:38:07,589 --> 00:38:04,560

so it sort of closed the circle for me

864

00:38:09,510 --> 00:38:07,599

but not for my colleagues and you know i

865

00:38:12,310 --> 00:38:09,520

there is no point in arguing about this

866

00:38:14,230 --> 00:38:12,320

it's not a philosophical question so a

867

00:38:16,790 --> 00:38:14,240

few months ago i established the galileo

868

00:38:20,390 --> 00:38:16,800

project who's one of his goals its goals

869

00:38:23,349 --> 00:38:20,400

is to discover more objects like it and

870

00:38:26,310 --> 00:38:23,359

date them and look for the next

871

00:38:30,310 --> 00:38:26,320

it's sort of like dating the next

872

00:38:32,150 --> 00:38:30,320

and and and by the way the real question

873

00:38:34,310 --> 00:38:32,160

in the context of this project is you

874

00:38:36,230 --> 00:38:34,320

know such a space mission might cost a

875

00:38:38,069 --> 00:38:36,240

billion dollars to send a camera that

876

00:38:40,069 --> 00:38:38,079

will come close to such an object so you

877

00:38:42,470 --> 00:38:40,079

get a high resolution image so that

878

00:38:43,589 --> 00:38:42,480

nobody can argue whether it's artificial

879

00:38:45,030 --> 00:38:43,599

or natural

880

00:38:47,030 --> 00:38:45,040

and

881

00:38:49,829 --> 00:38:47,040

the real question is not what hamlet

882

00:38:52,630 --> 00:38:49,839

said that to be you know to be or not to

883

00:38:53,910 --> 00:38:52,640

be it's actually to rendezvous or not to

884

00:38:55,910 --> 00:38:53,920

rendezvous

885

00:38:58,150 --> 00:38:55,920

that's a billion dollar

886

00:38:58,950 --> 00:38:58,160

question

887

00:39:00,790 --> 00:38:58,960

and

888

00:39:02,710 --> 00:39:00,800

it's sort of like going on a date you

889

00:39:03,430 --> 00:39:02,720

know you have to decide whether you want

890

00:39:05,510 --> 00:39:03,440

to

891

00:39:08,310 --> 00:39:05,520

partner with the person you went out on

892

00:39:10,790 --> 00:39:08,320

a date you want to perhaps have

893

00:39:13,030 --> 00:39:10,800

an an offspring with that person and you

894

00:39:16,230 --> 00:39:13,040

know you need to collect enough data

895

00:39:18,950 --> 00:39:16,240

and it's true about a future object that

896

00:39:20,710 --> 00:39:18,960

would look weird just like

897

00:39:22,790 --> 00:39:20,720

we want to collect enough data to be

898

00:39:26,230 --> 00:39:22,800

confident that we want to put in the

899

00:39:28,870 --> 00:39:26,240

money and and and go after it now uh

900

00:39:32,230 --> 00:39:28,880

you've mentioned dating now uh three

901
00:39:34,950 --> 00:39:32,240
times uh is your family aware

902
00:39:37,829 --> 00:39:34,960
that you are pursuing

903
00:39:40,390 --> 00:39:37,839
a relationship with an extraterrestrial

904
00:39:43,990 --> 00:39:40,400
civilization

905
00:39:45,270 --> 00:39:44,000
well uh we what i'm saying is

906
00:39:48,630 --> 00:39:45,280
it's worth

907
00:39:51,190 --> 00:39:48,640
to look around i mean so uh

908
00:39:52,870 --> 00:39:51,200
you know other planetary scientists say

909
00:39:54,870 --> 00:39:52,880
everything is rocks everything is

910
00:39:57,750 --> 00:39:54,880
natural out there because that's what

911
00:40:00,470 --> 00:39:57,760
they used to date in the past you see

912
00:40:03,109 --> 00:40:00,480
and they are not there

913
00:40:07,109 --> 00:40:03,119

my point is they will never discover new

914

00:40:08,309 --> 00:40:07,119

partners if they are not open-minded uh

915

00:40:10,069 --> 00:40:08,319

and um

916

00:40:13,270 --> 00:40:10,079

it's quite possible that there is

917

00:40:15,270 --> 00:40:13,280

equipment up you know in space because

918

00:40:17,349 --> 00:40:15,280

we we are sending equipment we are a

919

00:40:19,829 --> 00:40:17,359

technological civilization and the

920

00:40:21,829 --> 00:40:19,839

conditions on earth are replicated in

921

00:40:24,710 --> 00:40:21,839

billions of other planets

922

00:40:26,150 --> 00:40:24,720

in the milky way galaxy alone so there

923

00:40:28,950 --> 00:40:26,160

could have been someone else that

924

00:40:31,190 --> 00:40:28,960

predated us and sent equipment to space

925

00:40:33,990 --> 00:40:31,200

to me it sounds like common sense you

926

00:40:35,990 --> 00:40:34,000

know i grew up on a farm i try to use my

927

00:40:38,390 --> 00:40:36,000

common sense as much as possible i don't

928

00:40:41,030 --> 00:40:38,400

pretend that i'm any different than any

929

00:40:43,510 --> 00:40:41,040

any person on the street and to me it

930

00:40:44,710 --> 00:40:43,520

sounds like common sense so let's go out

931

00:40:47,349 --> 00:40:44,720

and search

932

00:40:49,910 --> 00:40:47,359

now you mentioned uh

933

00:40:52,470 --> 00:40:49,920

your desire to surround yourself with

934

00:40:54,550 --> 00:40:52,480

like-minded individuals and that's why

935

00:40:56,150 --> 00:40:54,560

you chose to get your phd and jump into

936

00:40:58,390 --> 00:40:56,160

academia

937

00:41:00,390 --> 00:40:58,400

how has that been going are you

938

00:41:01,829 --> 00:41:00,400

surrounding yourself with like-minded

939

00:41:03,990 --> 00:41:01,839

individuals

940

00:41:05,829 --> 00:41:04,000

well the amazing thing is

941

00:41:07,910 --> 00:41:05,839

a number of people

942

00:41:09,990 --> 00:41:07,920

came to the porch of my home

943

00:41:12,069 --> 00:41:10,000

uh over the past few months after

944

00:41:15,349 --> 00:41:12,079

reading my book and they had questions

945

00:41:17,670 --> 00:41:15,359

and some of them are quite wealthy and

946

00:41:19,670 --> 00:41:17,680

they decided to donate about two million

947

00:41:21,430 --> 00:41:19,680

dollars to my research account which was

948

00:41:24,069 --> 00:41:21,440

a real surprise because i was not

949

00:41:25,510 --> 00:41:24,079

engaged in fundraising

950

00:41:28,150 --> 00:41:25,520

they were simply

951
00:41:30,550 --> 00:41:28,160
inspired by the vision and that allowed

952
00:41:33,030 --> 00:41:30,560
me to establish the galileo project and

953
00:41:35,910 --> 00:41:33,040
once i announced it you know there were

954
00:41:38,150 --> 00:41:35,920
a huge number of volunteers that uh

955
00:41:41,349 --> 00:41:38,160
offered help and offered from their

956
00:41:43,349 --> 00:41:41,359
expertise and some offered funding

957
00:41:45,430 --> 00:41:43,359
and by now we have more than 100

958
00:41:48,790 --> 00:41:45,440
scientists engaged and

959
00:41:49,430 --> 00:41:48,800
every day we get a few requests for uh

960
00:41:54,470 --> 00:41:49,440
in

961
00:41:56,630 --> 00:41:54,480
project and to me that illustrates that

962
00:41:58,710 --> 00:41:56,640
there is a huge amount of interest in in

963
00:42:01,670 --> 00:41:58,720

the question of whether there are

964

00:42:04,870 --> 00:42:01,680

uh objects that were manufactured by

965

00:42:06,790 --> 00:42:04,880

other civilizations near earth and uh

966

00:42:10,150 --> 00:42:06,800

the public is extremely interested in

967

00:42:12,230 --> 00:42:10,160

this question and uh and and and this

968

00:42:15,270 --> 00:42:12,240

question if you address it could bring

969

00:42:17,750 --> 00:42:15,280

new funds to science that was my uh

970

00:42:20,550 --> 00:42:17,760

message all along since i published my

971

00:42:23,349 --> 00:42:20,560

book extraterrestrial and you know after

972

00:42:26,230 --> 00:42:23,359

my book came out my my publicist in the

973

00:42:27,190 --> 00:42:26,240

united kingdom said

974

00:42:29,349 --> 00:42:27,200

he said

975

00:42:32,309 --> 00:42:29,359

good job avi you are

976

00:42:34,470 --> 00:42:32,319

selling the book quite well um

977

00:42:36,390 --> 00:42:34,480

by explaining the content and so forth

978

00:42:38,790 --> 00:42:36,400

and i told him i'm not trying to sell

979

00:42:40,710 --> 00:42:38,800

the book i'm trying to convey a message

980

00:42:42,790 --> 00:42:40,720

and if if that message would not have

981

00:42:44,950 --> 00:42:42,800

appealed to the public i wouldn't care

982

00:42:46,710 --> 00:42:44,960

less you know i'm uh i think that's the

983

00:42:48,870 --> 00:42:46,720

right message that's what we need to

984

00:42:51,030 --> 00:42:48,880

pursue and that's what i'm advocating

985

00:42:51,750 --> 00:42:51,040

and the public seems to resonate with

986

00:42:52,790 --> 00:42:51,760

that

987

00:42:55,190 --> 00:42:52,800

and

988

00:42:57,430 --> 00:42:55,200

to me it sounds like a very exciting

989

00:42:59,910 --> 00:42:57,440

frontier for the future and obviously if

990

00:43:01,430 --> 00:42:59,920

the galileo project finds something you

991

00:43:03,109 --> 00:43:01,440

know and and has

992

00:43:04,230 --> 00:43:03,119

scientific evidence

993

00:43:06,230 --> 00:43:04,240

that it's

994

00:43:08,630 --> 00:43:06,240

really in some equipment that was not

995

00:43:10,790 --> 00:43:08,640

manufactured on this planet

996

00:43:12,790 --> 00:43:10,800

you know that then everyone would jump

997

00:43:14,069 --> 00:43:12,800

on the ship and say yeah of course these

998

00:43:15,109 --> 00:43:14,079

should be examined they should be

999

00:43:17,589 --> 00:43:15,119

studied

1000

00:43:19,829 --> 00:43:17,599

but until then you know we are taking a

1001
00:43:22,069 --> 00:43:19,839
path that was not taken in the past you

1002
00:43:24,630 --> 00:43:22,079
know the there is this point by robert

1003
00:43:26,550 --> 00:43:24,640
frost that says that you know he went to

1004
00:43:28,230 --> 00:43:26,560
the woods and saw two

1005
00:43:31,349 --> 00:43:28,240
uh

1006
00:43:33,750 --> 00:43:31,359
two roads and took the one that was

1007
00:43:35,430 --> 00:43:33,760
not taken and that made all the

1008
00:43:38,870 --> 00:43:35,440
difference for him

1009
00:43:40,470 --> 00:43:38,880
for me taking the road not taken offers

1010
00:43:43,349 --> 00:43:40,480
the opportunity

1011
00:43:45,829 --> 00:43:43,359
that you might find low-hanging fruit

1012
00:43:47,430 --> 00:43:45,839
because if nobody took that road

1013
00:43:50,790 --> 00:43:47,440

you know there might be a lot of

1014

00:43:51,589 --> 00:43:50,800

low-hanging fruit that was not picked up

1015

00:43:53,190 --> 00:43:51,599

and

1016

00:43:56,150 --> 00:43:53,200

that's what we hope to get in the

1017

00:43:59,190 --> 00:43:56,160

galileo project now the public interest

1018

00:44:01,030 --> 00:43:59,200

has been extraordinary and we've all

1019

00:44:03,910 --> 00:44:01,040

seen this happen not only with the

1020

00:44:06,150 --> 00:44:03,920

public but throughout media but we also

1021

00:44:09,670 --> 00:44:06,160

have washington d.c

1022

00:44:10,790 --> 00:44:09,680

uh if we go back to june 25th of this

1023

00:44:13,990 --> 00:44:10,800

year

1024

00:44:15,190 --> 00:44:14,000

and the release of the uap task force

1025

00:44:17,589 --> 00:44:15,200

report

1026

00:44:19,670 --> 00:44:17,599

uh that was a

1027

00:44:22,470 --> 00:44:19,680

was a really big deal

1028

00:44:25,030 --> 00:44:22,480

how much did you anticipate that and how

1029

00:44:27,670 --> 00:44:25,040

quickly did you read it

1030

00:44:29,990 --> 00:44:27,680

yeah well uh actually the news about it

1031

00:44:31,109 --> 00:44:30,000

about uh coming out

1032

00:44:32,230 --> 00:44:31,119

was

1033

00:44:35,430 --> 00:44:32,240

already

1034

00:44:37,510 --> 00:44:35,440

uh a month in advance of that and

1035

00:44:39,750 --> 00:44:37,520

actually the nasa administrator bill

1036

00:44:41,910 --> 00:44:39,760

nelson talked about it

1037

00:44:44,150 --> 00:44:41,920

a month in advance and said that

1038

00:44:46,470 --> 00:44:44,160

scientists should attend to this subject

1039

00:44:48,829 --> 00:44:46,480

that uh there are all these unexplained

1040

00:44:51,510 --> 00:44:48,839

aerial phenomena

1041

00:44:52,870 --> 00:44:51,520

um uap

1042

00:44:54,790 --> 00:44:52,880

uh that

1043

00:44:58,230 --> 00:44:54,800

we should get to the bottom of figure

1044

00:45:00,470 --> 00:44:58,240

out their nature and uh when i heard him

1045

00:45:04,150 --> 00:45:00,480

i immediately submitted the white paper

1046

00:45:06,470 --> 00:45:04,160

to nasa saying i'm happy to pursue uh

1047

00:45:08,950 --> 00:45:06,480

such a project and that was pretty much

1048

00:45:11,670 --> 00:45:08,960

the skeleton of of the galileo project

1049

00:45:13,910 --> 00:45:11,680

that i drafted back in on the 5th of

1050

00:45:14,790 --> 00:45:13,920

june a few weeks before the report came

1051

00:45:16,630 --> 00:45:14,800

out

1052

00:45:19,349 --> 00:45:16,640

uh and then

1053

00:45:21,910 --> 00:45:19,359

what happened was quite the unusual that

1054

00:45:24,550 --> 00:45:21,920

i didn't hear back from nasa but i did

1055

00:45:25,829 --> 00:45:24,560

the receive donations from interested

1056

00:45:28,950 --> 00:45:25,839

people and

1057

00:45:29,990 --> 00:45:28,960

one of those people was frank lauken

1058

00:45:31,109 --> 00:45:30,000

he's the

1059

00:45:34,069 --> 00:45:31,119

uh

1060

00:45:35,829 --> 00:45:34,079

ceo of the broker corporation came to my

1061

00:45:39,270 --> 00:45:35,839

the porch of my home and

1062

00:45:42,069 --> 00:45:39,280

and suggested that i establish uh a

1063

00:45:44,150 --> 00:45:42,079

project at the galileo project and

1064

00:45:45,990 --> 00:45:44,160

i had everything you know the time was

1065

00:45:47,349 --> 00:45:46,000

right because i had already some

1066

00:45:49,030 --> 00:45:47,359

donations and

1067

00:45:50,309 --> 00:45:49,040

and then i decided to go ahead and we

1068

00:45:52,950 --> 00:45:50,319

announced it

1069

00:45:54,870 --> 00:45:52,960

a month after the director of national

1070

00:45:58,470 --> 00:45:54,880

intelligence delivered the report to to

1071

00:46:00,630 --> 00:45:58,480

congress uh on june 25th and to me that

1072

00:46:02,230 --> 00:46:00,640

was an important a very important

1073

00:46:04,870 --> 00:46:02,240

message from the government that there

1074

00:46:07,670 --> 00:46:04,880

are real objects that they don't

1075

00:46:11,030 --> 00:46:07,680

understand the nature of that scientists

1076
00:46:12,950 --> 00:46:11,040
should look into and and that's a second

1077
00:46:15,910 --> 00:46:12,960
branch of the galileo project so one

1078
00:46:17,990 --> 00:46:15,920
branch has to do with taking

1079
00:46:20,870 --> 00:46:18,000
more data on a future

1080
00:46:22,710 --> 00:46:20,880
omuamua and dating it and

1081
00:46:25,510 --> 00:46:22,720
you know getting a high resolution image

1082
00:46:27,829 --> 00:46:25,520
of it so that we can tell what it is

1083
00:46:29,270 --> 00:46:27,839
and the second branch was inspired by

1084
00:46:31,829 --> 00:46:29,280
this report from the director of

1085
00:46:33,990 --> 00:46:31,839
national intelligence

1086
00:46:36,710 --> 00:46:34,000
and the the goal there is to build

1087
00:46:39,349 --> 00:46:36,720
telescope systems on the ground

1088
00:46:40,550 --> 00:46:39,359

uh that will image the sky take a video

1089

00:46:44,150 --> 00:46:40,560

of the sky

1090

00:46:48,069 --> 00:46:44,160

both in the visible band in the infrared

1091

00:46:51,190 --> 00:46:48,079

also get data audio data and radio data

1092

00:46:53,430 --> 00:46:51,200

and then get to the bottom of what

1093

00:46:55,670 --> 00:46:53,440

some of these objects that the military

1094

00:46:56,550 --> 00:46:55,680

personnel reported about what are they

1095

00:46:59,829 --> 00:46:56,560

and

1096

00:47:01,349 --> 00:46:59,839

uh are they human-made are they

1097

00:47:02,470 --> 00:47:01,359

uh natural

1098

00:47:06,069 --> 00:47:02,480

phenomena

1099

00:47:06,870 --> 00:47:06,079

are they drones birds uh what are they

1100

00:47:09,109 --> 00:47:06,880

and

1101
00:47:11,430 --> 00:47:09,119
you know are they out of this this world

1102
00:47:14,230 --> 00:47:11,440
and the goal is to be able to read off

1103
00:47:15,109 --> 00:47:14,240
the label on on an object and see if it

1104
00:47:17,750 --> 00:47:15,119
says

1105
00:47:20,150 --> 00:47:17,760
made in china made in russia or made on

1106
00:47:22,390 --> 00:47:20,160
exoplanet why you know that that would

1107
00:47:23,670 --> 00:47:22,400
be much more exciting and it's a fishing

1108
00:47:25,750 --> 00:47:23,680
expedition

1109
00:47:27,910 --> 00:47:25,760
you don't know which fish

1110
00:47:29,750 --> 00:47:27,920
one would get and

1111
00:47:31,910 --> 00:47:29,760
you know there is this tale about a

1112
00:47:33,030 --> 00:47:31,920
fisherman that went to see and came back

1113
00:47:35,670 --> 00:47:33,040

and said

1114

00:47:37,990 --> 00:47:35,680

all fish are bigger than two inches

1115

00:47:40,470 --> 00:47:38,000

that's a new law of nature that i i

1116

00:47:42,630 --> 00:47:40,480

realized by going to the sea

1117

00:47:45,349 --> 00:47:42,640

and then someone asked him what is the

1118

00:47:47,589 --> 00:47:45,359

size of the horse in your fishing net

1119

00:47:50,150 --> 00:47:47,599

and he said two inches

1120

00:47:51,270 --> 00:47:50,160

so we don't want i mean in the past we

1121

00:47:53,990 --> 00:47:51,280

had this

1122

00:47:56,549 --> 00:47:54,000

uh fishing net that had huge holes in it

1123

00:47:58,470 --> 00:47:56,559

we wouldn't be able to identify objects

1124

00:48:00,630 --> 00:47:58,480

and clearly what what they are and so

1125

00:48:03,349 --> 00:48:00,640

forth and we want to construct within

1126
00:48:05,750 --> 00:48:03,359
the galileo project a fishing net that

1127
00:48:07,990 --> 00:48:05,760
has very small holes in it so that we

1128
00:48:10,069 --> 00:48:08,000
can catch all the fish

1129
00:48:12,710 --> 00:48:10,079
out there and and you know whatever we

1130
00:48:14,549 --> 00:48:12,720
find will report it would be open data

1131
00:48:16,470 --> 00:48:14,559
transparent analysis

1132
00:48:18,790 --> 00:48:16,480
you know there is this

1133
00:48:22,549 --> 00:48:18,800
story about enrico fermi that 70 years

1134
00:48:25,109 --> 00:48:22,559
ago had lunch at los alamos and was they

1135
00:48:27,430 --> 00:48:25,119
were discussing extraterrestrials and he

1136
00:48:29,270 --> 00:48:27,440
was saying well if they are out there

1137
00:48:31,109 --> 00:48:29,280
where is everybody

1138
00:48:33,030 --> 00:48:31,119

and you know without

1139

00:48:35,910 --> 00:48:33,040

this is a very presumptuous question

1140

00:48:37,030 --> 00:48:35,920

without investing a billion dollars in a

1141

00:48:38,069 --> 00:48:37,040

mission

1142

00:48:41,270 --> 00:48:38,079

to

1143

00:48:42,710 --> 00:48:41,280

go after objects that are passing near

1144

00:48:43,910 --> 00:48:42,720

earth

1145

00:48:44,790 --> 00:48:43,920

you would

1146

00:48:46,790 --> 00:48:44,800

you know

1147

00:48:48,470 --> 00:48:46,800

you would this is meaningless to ask

1148

00:48:50,549 --> 00:48:48,480

where is everybody because it's just

1149

00:48:52,630 --> 00:48:50,559

like sitting at home and saying nobody

1150

00:48:54,630 --> 00:48:52,640

is knocking on my door therefore i don't

1151
00:48:57,349 --> 00:48:54,640
have neighbors you know sometimes you

1152
00:48:59,190 --> 00:48:57,359
have to look out the windows to figure

1153
00:49:01,030 --> 00:48:59,200
out if you have neighbors you can't just

1154
00:49:02,790 --> 00:49:01,040
say you know i don't have neighbors

1155
00:49:05,990 --> 00:49:02,800
because nobody's look knocking at my

1156
00:49:08,630 --> 00:49:06,000
door right now and by the way

1157
00:49:10,710 --> 00:49:08,640
human history is only 10 000 years old

1158
00:49:13,349 --> 00:49:10,720
it's a millionth of the age of the earth

1159
00:49:15,030 --> 00:49:13,359
so for enrico fermi to say right now i

1160
00:49:16,630 --> 00:49:15,040
don't see anybody

1161
00:49:19,030 --> 00:49:16,640
in los alamos

1162
00:49:22,150 --> 00:49:19,040
that's very presumptuous

1163
00:49:25,270 --> 00:49:22,160

the uh there's another uh

1164

00:49:26,870 --> 00:49:25,280

uh analogy to to look at

1165

00:49:28,390 --> 00:49:26,880

which is this

1166

00:49:30,950 --> 00:49:28,400

if you

1167

00:49:32,790 --> 00:49:30,960

go to the ocean you go to the beach and

1168

00:49:35,510 --> 00:49:32,800

and you get a bucket of water and you

1169

00:49:38,390 --> 00:49:35,520

pull it out and the has nothing in it

1170

00:49:39,349 --> 00:49:38,400

therefore there's nothing in the ocean

1171

00:49:42,470 --> 00:49:39,359

right

1172

00:49:45,829 --> 00:49:42,480

the universe is a big place avi

1173

00:49:47,510 --> 00:49:45,839

and and we are you know we're looking as

1174

00:49:50,790 --> 00:49:47,520

as much as we can but we're still

1175

00:49:52,230 --> 00:49:50,800

looking at very very small sections of

1176

00:49:54,150 --> 00:49:52,240

it aren't we

1177

00:49:55,990 --> 00:49:54,160

yeah and and just keep in mind that the

1178

00:49:56,950 --> 00:49:56,000

first object from outside the solar

1179

00:50:01,030 --> 00:49:56,960

system

1180

00:50:02,390 --> 00:50:01,040

was discovered in 2017 so before that

1181

00:50:04,309 --> 00:50:02,400

you know we didn't

1182

00:50:06,390 --> 00:50:04,319

know about objects coming from outside

1183

00:50:07,670 --> 00:50:06,400

the source system and this object was

1184

00:50:09,829 --> 00:50:07,680

the size

1185

00:50:11,510 --> 00:50:09,839

of a football field we couldn't see

1186

00:50:14,790 --> 00:50:11,520

smaller objects

1187

00:50:17,030 --> 00:50:14,800

because they reflect less sunlight and

1188

00:50:18,549 --> 00:50:17,040

during enrico fermi's days even if a

1189

00:50:21,750 --> 00:50:18,559

giant

1190

00:50:22,710 --> 00:50:21,760

spaceship you know the size

1191

00:50:29,190 --> 00:50:22,720

of

1192

00:50:30,870 --> 00:50:29,200

earth around the sun we will notice it

1193

00:50:32,390 --> 00:50:30,880

because nobody was looking nobody was

1194

00:50:34,150 --> 00:50:32,400

servicing the sky with a big enough

1195

00:50:36,309 --> 00:50:34,160

telescope at that time

1196

00:50:38,069 --> 00:50:36,319

so that my point is only recently we

1197

00:50:40,549 --> 00:50:38,079

could see objects the size of a football

1198

00:50:42,790 --> 00:50:40,559

field why would someone send

1199

00:50:45,190 --> 00:50:42,800

very huge objects

1200

00:50:47,829 --> 00:50:45,200

around you know you might expect that if

1201

00:50:49,589 --> 00:50:47,839

they have sophisticated

1202

00:50:51,750 --> 00:50:49,599

electronic systems

1203

00:50:53,670 --> 00:50:51,760

they might use much smaller objects as

1204

00:50:56,069 --> 00:50:53,680

probes and

1205

00:50:58,870 --> 00:50:56,079

and and to detect those we need better

1206

00:51:00,630 --> 00:50:58,880

telescopes to be looking at the sky and

1207

00:51:02,470 --> 00:51:00,640

you know they might use

1208

00:51:04,309 --> 00:51:02,480

for example artificial intelligence

1209

00:51:06,470 --> 00:51:04,319

these might

1210

00:51:08,549 --> 00:51:06,480

they might not carry any

1211

00:51:09,750 --> 00:51:08,559

biological creatures these instruments

1212

00:51:11,670 --> 00:51:09,760

because

1213

00:51:14,549 --> 00:51:11,680

electronic instruments can survive the

1214

00:51:17,270 --> 00:51:14,559

long journey and as you say space is

1215

00:51:19,190 --> 00:51:17,280

huge um it all depends by the way the

1216

00:51:22,069 --> 00:51:19,200

drake equation has nothing to do with

1217

00:51:24,470 --> 00:51:22,079

this the drake equation is dealing with

1218

00:51:26,470 --> 00:51:24,480

detecting radio signals which is just

1219

00:51:28,630 --> 00:51:26,480

like trying to have a phone conversation

1220

00:51:30,710 --> 00:51:28,640

you need the counterpart to be active at

1221

00:51:32,470 --> 00:51:30,720

the time that you're looking and it may

1222

00:51:34,390 --> 00:51:32,480

well be that nobody is transmitting

1223

00:51:35,910 --> 00:51:34,400

exactly at this time so you won't see

1224

00:51:38,230 --> 00:51:35,920

anything just because other

1225

00:51:40,069 --> 00:51:38,240

civilizations are not using radio waves

1226

00:51:42,470 --> 00:51:40,079

that we are trying to detect

1227

00:51:45,109 --> 00:51:42,480

or they are dead by now you know that

1228

00:51:46,950 --> 00:51:45,119

because their star died by now so how

1229

00:51:49,030 --> 00:51:46,960

would you ever detect a signal from a

1230

00:51:51,670 --> 00:51:49,040

civilization next to a dead star you

1231

00:51:53,430 --> 00:51:51,680

know that you would not see anything or

1232

00:51:55,670 --> 00:51:53,440

the civilization is short-lived you know

1233

00:51:57,270 --> 00:51:55,680

they are destroying their climate after

1234

00:51:59,030 --> 00:51:57,280

a few centuries of technological

1235

00:52:00,309 --> 00:51:59,040

development they are not around anymore

1236

00:52:01,750 --> 00:52:00,319

so you have a short window of

1237

00:52:03,910 --> 00:52:01,760

opportunity there are lots of

1238

00:52:07,349 --> 00:52:03,920

possibilities why you would not see a

1239

00:52:09,430 --> 00:52:07,359

radio signal okay and our technologies

1240

00:52:11,510 --> 00:52:09,440

are evolving we will not use radio

1241

00:52:12,950 --> 00:52:11,520

communication in you know a century from

1242

00:52:15,349 --> 00:52:12,960

now perhaps

1243

00:52:18,150 --> 00:52:15,359

so the point is there is a better

1244

00:52:20,549 --> 00:52:18,160

approach that we have never applied and

1245

00:52:23,030 --> 00:52:20,559

that is to look for objects that they

1246

00:52:25,270 --> 00:52:23,040

may have sent because objects survive

1247

00:52:27,589 --> 00:52:25,280

you know even if the sender is not

1248

00:52:30,470 --> 00:52:27,599

around anymore they're just like mail

1249

00:52:32,790 --> 00:52:30,480

packages in the mail that could exist

1250

00:52:33,750 --> 00:52:32,800

even if the sender is dead by now you

1251
00:52:35,190 --> 00:52:33,760
know they

1252
00:52:37,270 --> 00:52:35,200
so the point is it's just like

1253
00:52:39,670 --> 00:52:37,280
archaeology we look for things that were

1254
00:52:42,150 --> 00:52:39,680
sent by others that were produced by

1255
00:52:45,190 --> 00:52:42,160
others that may not be around anymore

1256
00:52:46,710 --> 00:52:45,200
and this type of archaeology in space

1257
00:52:48,549 --> 00:52:46,720
looking for objects sent by other

1258
00:52:50,470 --> 00:52:48,559
civilizations is something that was

1259
00:52:53,190 --> 00:52:50,480
never pursued by

1260
00:52:55,910 --> 00:52:53,200
a scientific research group and that's

1261
00:52:56,950 --> 00:52:55,920
what the galileo project is trying to do

1262
00:52:59,510 --> 00:52:56,960
now

1263
00:53:03,829 --> 00:52:59,520

the same thing applies to us

1264

00:53:06,549 --> 00:53:03,839

in that voyager 1 voyager 2 pioneer 11

1265

00:53:07,589 --> 00:53:06,559

a million years from now a billion years

1266

00:53:11,910 --> 00:53:07,599

from now

1267

00:53:13,750 --> 00:53:11,920

uh gets discovered by an etc out there

1268

00:53:15,670 --> 00:53:13,760

we may not even be here they're

1269

00:53:18,150 --> 00:53:15,680

discovering something

1270

00:53:21,270 --> 00:53:18,160

from a civilization

1271

00:53:23,990 --> 00:53:21,280

that that no longer exists right right i

1272

00:53:25,990 --> 00:53:24,000

but i do i i feel a little bit

1273

00:53:29,190 --> 00:53:26,000

embarrassed by what we put for example

1274

00:53:30,230 --> 00:53:29,200

on voyager or on new horizons on voyager

1275

00:53:32,710 --> 00:53:30,240

we put

1276

00:53:35,349 --> 00:53:32,720

you know cultural artifacts that

1277

00:53:37,990 --> 00:53:35,359

represents the 60s and

1278

00:53:40,710 --> 00:53:38,000

you know since then we developed a lot

1279

00:53:43,349 --> 00:53:40,720

of things that would make us more proud

1280

00:53:45,190 --> 00:53:43,359

of our accomplishments so

1281

00:53:47,670 --> 00:53:45,200

we better send something that moves

1282

00:53:50,309 --> 00:53:47,680

faster than voyager and overtakes it so

1283

00:53:52,069 --> 00:53:50,319

that they will get a better sense of our

1284

00:53:52,870 --> 00:53:52,079

intelligence

1285

00:53:56,309 --> 00:53:52,880

but

1286

00:53:58,710 --> 00:53:56,319

it was even more embarrassing

1287

00:54:01,349 --> 00:53:58,720

as to what we sent with new horizons

1288

00:54:04,549 --> 00:54:01,359

that was the mission to explore pluto

1289

00:54:07,670 --> 00:54:04,559

and then nasa decided to put on the new

1290

00:54:09,190 --> 00:54:07,680

horizons spacecraft

1291

00:54:12,230 --> 00:54:09,200

30 grams

1292

00:54:14,870 --> 00:54:12,240

of the ashes of clyde tambau

1293

00:54:17,190 --> 00:54:14,880

the scientists that discovered pluto and

1294

00:54:18,630 --> 00:54:17,200

they thought it's a great way to

1295

00:54:20,790 --> 00:54:18,640

commemorate

1296

00:54:23,190 --> 00:54:20,800

uh clyde tambao

1297

00:54:25,990 --> 00:54:23,200

but it actually is a very primitive

1298

00:54:29,990 --> 00:54:26,000

ritual because what are

1299

00:54:30,790 --> 00:54:30,000

ashes ashes are burnt up dna so you take

1300

00:54:33,510 --> 00:54:30,800

the

1301
00:54:34,950 --> 00:54:33,520
genetic information of clyde tambo you

1302
00:54:37,430 --> 00:54:34,960
burn it up

1303
00:54:40,150 --> 00:54:37,440
and what is left is no different than

1304
00:54:41,990 --> 00:54:40,160
cigarette ashes it contains it carries

1305
00:54:43,910 --> 00:54:42,000
no information and then you take that

1306
00:54:45,829 --> 00:54:43,920
and put it on a spaceship

1307
00:54:47,750 --> 00:54:45,839
on a spacecraft and that makes very

1308
00:54:48,710 --> 00:54:47,760
little sense if someone finds it they

1309
00:54:50,950 --> 00:54:48,720
would say

1310
00:54:53,349 --> 00:54:50,960
you know what is this primitive culture

1311
00:54:55,270 --> 00:54:53,359
of destroying the genetic information of

1312
00:54:57,829 --> 00:54:55,280
a person to commemorate

1313
00:54:59,750 --> 00:54:57,839

him you know like that makes no sense

1314

00:55:02,470 --> 00:54:59,760

whatsoever and by the way it was done by

1315

00:55:04,630 --> 00:55:02,480

scientists it's not someone that has no

1316

00:55:07,750 --> 00:55:04,640

knowledge about what dna is

1317

00:55:09,349 --> 00:55:07,760

scientists put burned up dna of a person

1318

00:55:11,109 --> 00:55:09,359

they want to commemorate that makes no

1319

00:55:13,670 --> 00:55:11,119

sense that's very embarrassing as far as

1320

00:55:15,670 --> 00:55:13,680

i'm concerned so i actually asked the

1321

00:55:17,910 --> 00:55:15,680

principal investigator of new horizons

1322

00:55:20,150 --> 00:55:17,920

who is a member of the galileo project

1323

00:55:23,670 --> 00:55:20,160

alan stern and i said why didn't you

1324

00:55:25,910 --> 00:55:23,680

send a stem cell of clayton but that

1325

00:55:29,030 --> 00:55:25,920

contains some genetic information or

1326

00:55:31,829 --> 00:55:29,040

maybe even just an electronic

1327

00:55:34,150 --> 00:55:31,839

version of his dna you know so that

1328

00:55:35,910 --> 00:55:34,160

the information is there and he said

1329

00:55:39,510 --> 00:55:35,920

what that would have been

1330

00:55:40,630 --> 00:55:39,520

a bureaucratic nightmare uh within nasa

1331

00:55:43,270 --> 00:55:40,640

to send

1332

00:55:45,109 --> 00:55:43,280

a stem cell you know

1333

00:55:47,670 --> 00:55:45,119

but my point is that it's very

1334

00:55:48,549 --> 00:55:47,680

embarrassing for us to

1335

00:55:52,789 --> 00:55:48,559

send

1336

00:55:55,430 --> 00:55:52,799

spacecraft moving much faster than new

1337

00:55:58,309 --> 00:55:55,440

horizons so that it would overtake it

1338

00:55:59,990 --> 00:55:58,319

and so that the first thing that

1339

00:56:01,430 --> 00:56:00,000

extraterrestrials will see will be

1340

00:56:03,670 --> 00:56:01,440

something more

1341

00:56:05,990 --> 00:56:03,680

that we can be more proud of yeah well

1342

00:56:10,230 --> 00:56:06,000

we did send chuck berry

1343

00:56:14,230 --> 00:56:12,630

we could send van halen or something a

1344

00:56:16,870 --> 00:56:14,240

little more updated

1345

00:56:19,589 --> 00:56:16,880

yeah well i i actually enjoyed the the

1346

00:56:21,030 --> 00:56:19,599

latest music always um

1347

00:56:23,750 --> 00:56:21,040

i you know i

1348

00:56:26,789 --> 00:56:23,760

even though i you know when i back in

1349

00:56:27,990 --> 00:56:26,799

the 60s i enjoyed the 60s uh in the 70s

1350

00:56:30,150 --> 00:56:28,000

the 70s

1351

00:56:32,390 --> 00:56:30,160

i always liked the latest music i'm

1352

00:56:33,990 --> 00:56:32,400

always proud of the latest gadgets we

1353

00:56:36,549 --> 00:56:34,000

have

1354

00:56:38,630 --> 00:56:36,559

so i'm always in favor if you if we ever

1355

00:56:40,470 --> 00:56:38,640

send something let's send the latest at

1356

00:56:41,430 --> 00:56:40,480

a faster speed

1357

00:56:44,470 --> 00:56:41,440

so that

1358

00:56:47,190 --> 00:56:44,480

the package will get to the destination

1359

00:56:49,990 --> 00:56:47,200

ahead of the old packages that

1360

00:56:51,829 --> 00:56:50,000

that do not complement us as much okay

1361

00:56:53,190 --> 00:56:51,839

we need to take a break right here ravi

1362

00:56:54,549 --> 00:56:53,200

but uh

1363

00:56:56,710 --> 00:56:54,559

really quick

1364

00:56:58,549 --> 00:56:56,720

think about this

1365

00:57:01,589 --> 00:56:58,559

what was the last

1366

00:57:04,630 --> 00:57:01,599

song you listened to

1367

00:57:05,910 --> 00:57:04,640

today did you listen to music today

1368

00:57:06,950 --> 00:57:05,920

um

1369

00:57:09,030 --> 00:57:06,960

yeah

1370

00:57:10,150 --> 00:57:09,040

i did um

1371

00:57:12,470 --> 00:57:10,160

it was

1372

00:57:15,349 --> 00:57:12,480

um by um

1373

00:57:17,589 --> 00:57:15,359

uh lennon stella

1374

00:57:19,750 --> 00:57:17,599

there you go this is fade to black the

1375

00:57:24,950 --> 00:57:19,760

big reveal

1376
00:57:27,190 --> 00:57:24,960
professor avi loeb i am your host jimmy

1377
00:57:29,750 --> 00:57:27,200
church we're talking about the galileo

1378
00:57:47,589 --> 00:57:29,760
project more with avi when we come back

1379
00:57:53,270 --> 00:57:49,829
this is fade to black with jimmy church

1380
00:57:54,789 --> 00:57:53,280
on the game changer radio network

1381
00:57:57,270 --> 00:57:54,799
[Music]

1382
00:58:00,710 --> 00:57:57,280
your 1 million gigawatt paranormal

1383
00:58:04,150 --> 00:58:00,720
powerhouse kumx db

1384
00:58:09,349 --> 00:58:06,069
this is billy carson with forbidden

1385
00:58:11,349 --> 00:58:09,359
knowledge dot tv forbidden knowledge tv

1386
00:58:14,470 --> 00:58:11,359
has just reached its one year

1387
00:58:16,789 --> 00:58:14,480
anniversary that's right one year and as

1388
00:58:19,589 --> 00:58:16,799

a show of appreciation we are giving all

1389

00:58:22,630 --> 00:58:19,599

new subscribers a free 30-day trial of

1390

00:58:25,750 --> 00:58:22,640

forbidden knowledge dot tv that's 30

1391

00:58:28,309 --> 00:58:25,760

days to binge watch thousands of movies

1392

00:58:31,349 --> 00:58:28,319

documentaries conferences workshops

1393

00:58:33,990 --> 00:58:31,359

lectures yoga classes meditation courses

1394

00:58:36,309 --> 00:58:34,000

and so much more so log on to forbidden

1395

00:58:38,470 --> 00:58:36,319

knowledge dot tv from your computer or

1396

00:58:43,030 --> 00:58:38,480

mobile device or get the forbidden

1397

00:58:46,069 --> 00:58:43,040

knowledge tv app on apple tv roku amazon

1398

00:58:49,670 --> 00:58:46,079

itunes or google play today and use

1399

00:58:52,230 --> 00:58:49,680

coupon code 30 days free that's coupon

1400

00:58:57,109 --> 00:58:52,240

code 30 days free on forbidden knowledge

1401
00:59:01,270 --> 00:58:59,190
because you never got that pony you

1402
00:59:02,950 --> 00:59:01,280
always wanted

1403
00:59:05,349 --> 00:59:02,960
damn it

1404
00:59:09,990 --> 00:59:05,359
jimmy church and fade to black on the

1405
00:59:15,589 --> 00:59:13,190
listen i know and you know that you've

1406
00:59:17,750 --> 00:59:15,599
always wanted your first crystal skull

1407
00:59:19,910 --> 00:59:17,760
or maybe you're a collector just like me

1408
00:59:21,750 --> 00:59:19,920
but you just don't know where to go to

1409
00:59:24,470 --> 00:59:21,760
find the real thing

1410
00:59:26,390 --> 00:59:24,480
then i met carolyn ford over at einstein

1411
00:59:28,870 --> 00:59:26,400
the crystalskull.com

1412
00:59:30,870 --> 00:59:28,880
carolyn is the guardian of einstein one

1413
00:59:32,390 --> 00:59:30,880

of the most respected ancient crystal

1414

00:59:34,069 --> 00:59:32,400

skulls in the world

1415

00:59:36,230 --> 00:59:34,079

all of her unique skulls have been

1416

00:59:38,230 --> 00:59:36,240

imprinted sitting with einstein in his

1417

00:59:41,190 --> 00:59:38,240

sacred lodge and are carved from the

1418

00:59:43,349 --> 00:59:41,200

finest gemstone and materials imprinting

1419

00:59:45,990 --> 00:59:43,359

is the process of receiving the ancient

1420

00:59:49,109 --> 00:59:46,000

wisdom from the master skull or master

1421

00:59:51,030 --> 00:59:49,119

computer einstein the ancient crystal

1422

00:59:53,109 --> 00:59:51,040

skull to see carolyn's current

1423

00:59:55,309 --> 00:59:53,119

collection of crystal skulls just visit

1424

00:59:57,510 --> 00:59:55,319

her store at einstein the

1425

00:59:59,990 --> 00:59:57,520

crystal skull.com or click on the banner

1426
01:00:02,630 --> 01:00:00,000
over on our site don't forget to use the

1427
01:00:05,829 --> 01:00:02,640
promo code jimmy at checkout to receive

1428
01:00:08,710 --> 01:00:05,839
10 off of your order today that's promo

1429
01:00:11,270 --> 01:00:08,720
code jimmy finding your first or next

1430
01:00:15,910 --> 01:00:11,280
crystal skull is easy just visit

1431
01:00:20,710 --> 01:00:18,069
when you take the beans from central

1432
01:00:23,109 --> 01:00:20,720
america with dashes of indonesian and

1433
01:00:26,309 --> 01:00:23,119
african mixed in and then roasted to the

1434
01:00:29,670 --> 01:00:26,319
dark side of fade to black you create

1435
01:00:32,470 --> 01:00:29,680
the ultimate brew of fringe introducing

1436
01:00:35,589 --> 01:00:32,480
the fade to black blend from river moon

1437
01:00:38,069 --> 01:00:35,599
coffee yes river moon's darkest

1438
01:00:40,630 --> 01:00:38,079

customized roast was created for the

1439

01:00:43,270 --> 01:00:40,640

love of fade to black

1440

01:00:45,829 --> 01:00:43,280

the alchemy of masterful roasting and

1441

01:00:49,430 --> 01:00:45,839

smoking the beans is in every sip of

1442

01:00:50,870 --> 01:00:49,440

this full-bodied dark java i need my

1443

01:00:53,430 --> 01:00:50,880

coffee doc

1444

01:00:56,470 --> 01:00:53,440

deep with distinct bittersweet chocolate

1445

01:00:58,870 --> 01:00:56,480

highlights just like the bunker leaning

1446

01:01:01,589 --> 01:00:58,880

further into the darkness of the roast

1447

01:01:04,190 --> 01:01:01,599

is fade to black blend from river moon

1448

01:01:06,230 --> 01:01:04,200

coffee just click on the banner at

1449

01:01:09,990 --> 01:01:06,240

jimmychurchradio.com and use the promo

1450

01:01:10,660 --> 01:01:10,000

code f2b blend for 15 off of your order

1451
01:01:12,870 --> 01:01:10,670
today

1452
01:01:14,549 --> 01:01:12,880
[Music]

1453
01:01:16,600 --> 01:01:14,559
you're listening to my main man jimmy

1454
01:01:18,549 --> 01:01:16,610
church on jimmychurchradio.com

1455
01:01:20,470 --> 01:01:18,559
[Music]

1456
01:01:22,309 --> 01:01:20,480
hi this is race hobbes here repping the

1457
01:01:25,730 --> 01:01:22,319
planet and you're listening to my good

1458
01:01:26,870 --> 01:01:25,740
friend jimmy church fade to black

1459
01:01:29,109 --> 01:01:26,880
[Music]

1460
01:01:31,190 --> 01:01:29,119
this is toby kebble you're listening to

1461
01:01:34,230 --> 01:01:31,200
jimmychurchradio.com

1462
01:01:36,470 --> 01:01:34,240
don't hurt me jimmy i'm only little hey

1463
01:01:44,069 --> 01:01:36,480

i'm adrian grenier and this is ari gold

1464

01:01:47,990 --> 01:01:45,670

we're the honey brothers

1465

01:01:49,510 --> 01:01:48,000

and you're listening to jimmy church a

1466

01:01:51,190 --> 01:01:49,520

revolution

1467

01:01:53,190 --> 01:01:51,200

this is jimmy churchill fade to black

1468

01:01:55,510 --> 01:01:53,200

and you can become an official fate or

1469

01:01:59,750 --> 01:01:55,520

not by just going to our membership

1470

01:02:04,150 --> 01:02:01,829

hello this is serena wright taylor from

1471

01:02:06,470 --> 01:02:04,160

conscious life expo and you're listening

1472

01:02:08,870 --> 01:02:06,480

to fade to black with jimmy church who

1473

01:02:12,069 --> 01:02:08,880

holds the lucky pony record for the best

1474

01:02:14,309 --> 01:02:12,079

astrological chart since 1963.

1475

01:02:15,990 --> 01:02:14,319

true story

1476

01:02:17,589 --> 01:02:16,000

this is micah hanks of the grealian

1477

01:02:19,640 --> 01:02:17,599

report and you're listening to jimmy

1478

01:02:23,500 --> 01:02:19,650

church on fade to black

1479

01:02:26,120 --> 01:02:23,510

[Music]

1480

01:02:39,430 --> 01:02:26,130

[Applause]

1481

01:02:41,270 --> 01:02:39,440

[Music]

1482

01:02:43,029 --> 01:02:41,280

all right welcome back fade to black i

1483

01:02:47,190 --> 01:02:43,039

am your host jimmy church tonight

1484

01:02:48,950 --> 01:02:47,200

professor avilo now i want to obvi uh i

1485

01:02:50,950 --> 01:02:48,960

want to jump back for a second you

1486

01:02:54,549 --> 01:02:50,960

brought up bill nelson

1487

01:02:57,589 --> 01:02:54,559

and a couple it was about a month ago

1488

01:03:00,309 --> 01:02:57,599

he was uh a guest

1489

01:03:02,150 --> 01:03:00,319

uh actually for a political conversation

1490

01:03:03,990 --> 01:03:02,160

from one of the universities at the

1491

01:03:05,190 --> 01:03:04,000

university of west virginia i think i

1492

01:03:08,710 --> 01:03:05,200

could be wrong

1493

01:03:10,630 --> 01:03:08,720

but uh a political conversation uh about

1494

01:03:11,910 --> 01:03:10,640

the future and administration of nasa

1495

01:03:16,470 --> 01:03:11,920

and projects

1496

01:03:17,670 --> 01:03:16,480

and at the end of the he he did 10

1497

01:03:21,270 --> 01:03:17,680

minutes

1498

01:03:24,710 --> 01:03:21,280

of talking about et what is visiting

1499

01:03:27,670 --> 01:03:24,720

earth and that nasa is absolutely

1500

01:03:32,150 --> 01:03:27,680

actively pursuing

1501

01:03:34,710 --> 01:03:32,160

the existence of et and etcs out there

1502

01:03:37,190 --> 01:03:34,720

and it was a pretty dramatic step i

1503

01:03:39,510 --> 01:03:37,200

think for the administrator of nasa but

1504

01:03:40,309 --> 01:03:39,520

it was also very public what did you

1505

01:03:42,309 --> 01:03:40,319

make

1506

01:03:44,470 --> 01:03:42,319

about his comments

1507

01:03:45,670 --> 01:03:44,480

well i very much resonate with him i

1508

01:03:47,029 --> 01:03:45,680

think

1509

01:03:48,549 --> 01:03:47,039

if there is something we don't

1510

01:03:50,150 --> 01:03:48,559

understand

1511

01:03:53,029 --> 01:03:50,160

scientists are

1512

01:03:55,190 --> 01:03:53,039

best equipped to address it

1513

01:03:57,510 --> 01:03:55,200

and should address it

1514

01:04:00,230 --> 01:03:57,520

if the public cares about it so for

1515

01:04:01,910 --> 01:04:00,240

example when you find a new

1516

01:04:04,230 --> 01:04:01,920

variant of

1517

01:04:06,549 --> 01:04:04,240

covey then obviously you want scientists

1518

01:04:08,069 --> 01:04:06,559

to look into it and find a vaccine for

1519

01:04:10,309 --> 01:04:08,079

that and

1520

01:04:12,630 --> 01:04:10,319

if there are phenomena

1521

01:04:14,390 --> 01:04:12,640

in the atmosphere that we don't fully

1522

01:04:16,470 --> 01:04:14,400

understand the nature of

1523

01:04:18,230 --> 01:04:16,480

then you want scientists to figure out

1524

01:04:20,470 --> 01:04:18,240

what they are because the public cares

1525

01:04:22,390 --> 01:04:20,480

about it and you know otherwise what

1526

01:04:25,589 --> 01:04:22,400

would happen is there would be lots of

1527

01:04:29,109 --> 01:04:25,599

speculations and

1528

01:04:31,589 --> 01:04:29,119

we we don't want that um in a civilized

1529

01:04:33,750 --> 01:04:31,599

society we we have the tools to address

1530

01:04:37,270 --> 01:04:33,760

those questions and by the way it's not

1531

01:04:39,670 --> 01:04:37,280

it will not cost us a lot in you know by

1532

01:04:40,390 --> 01:04:39,680

any means for example

1533

01:04:42,710 --> 01:04:40,400

you know

1534

01:04:44,470 --> 01:04:42,720

physicists built the large hadron

1535

01:04:47,270 --> 01:04:44,480

collider

1536

01:04:49,510 --> 01:04:47,280

actually in cern and the goal was to

1537

01:04:51,990 --> 01:04:49,520

find a new type of symmetry called

1538

01:04:55,190 --> 01:04:52,000

supersymmetry to find evidence for it by

1539

01:04:57,750 --> 01:04:55,200

finding new particles supersymmetric

1540

01:04:58,470 --> 01:04:57,760

particles and

1541

01:05:00,230 --> 01:04:58,480

it

1542

01:05:03,670 --> 01:05:00,240

the experiment cost

1543

01:05:04,870 --> 01:05:03,680

almost 10 billion dollars okay it was

1544

01:05:06,870 --> 01:05:04,880

the major

1545

01:05:08,710 --> 01:05:06,880

experiment of particle physics over the

1546

01:05:09,829 --> 01:05:08,720

past few decades and

1547

01:05:12,950 --> 01:05:09,839

nothing

1548

01:05:13,910 --> 01:05:12,960

related to supersymmetry was discovered

1549

01:05:18,950 --> 01:05:13,920

now

1550

01:05:19,829 --> 01:05:18,960

any work on the frontier is risky

1551

01:05:21,589 --> 01:05:19,839

and

1552

01:05:24,549 --> 01:05:21,599

this illustrates the fact that even if

1553

01:05:26,470 --> 01:05:24,559

you go on a promising date you know you

1554

01:05:28,950 --> 01:05:26,480

might end up not establishing a

1555

01:05:31,430 --> 01:05:28,960

long-term relationship with whoever you

1556

01:05:33,510 --> 01:05:31,440

dated and you know in this case the

1557

01:05:35,750 --> 01:05:33,520

large hadron collider was

1558

01:05:39,510 --> 01:05:35,760

had a promising date with the idea of

1559

01:05:41,589 --> 01:05:39,520

super symmetry and didn't end up well

1560

01:05:45,190 --> 01:05:41,599

we invested 10 billion dollars we didn't

1561

01:05:47,430 --> 01:05:45,200

find it okay so now that is part of

1562

01:05:49,190 --> 01:05:47,440

pursuing science at the frontier and you

1563

01:05:52,230 --> 01:05:49,200

have to take the risk just like you take

1564

01:05:54,789 --> 01:05:52,240

it on dates you have to be willing

1565

01:05:57,270 --> 01:05:54,799

and not to find what you are looking for

1566

01:05:59,589 --> 01:05:57,280

okay and that is well known to people

1567

01:06:01,430 --> 01:05:59,599

that go on dates and that is well known

1568

01:06:02,789 --> 01:06:01,440

to people who work at the frontiers of

1569

01:06:05,510 --> 01:06:02,799

science

1570

01:06:07,990 --> 01:06:05,520

but when you say to people that

1571

01:06:10,630 --> 01:06:08,000

we haven't searched yet scientifically

1572

01:06:13,510 --> 01:06:10,640

for equipment from other civilizations

1573

01:06:15,670 --> 01:06:13,520

we should do that because there was this

1574

01:06:17,910 --> 01:06:15,680

object of muammar that looked weird

1575

01:06:20,150 --> 01:06:17,920

because the government is talking about

1576

01:06:21,589 --> 01:06:20,160

unidentified aerial phenomena when you

1577

01:06:22,950 --> 01:06:21,599

mention that

1578

01:06:25,270 --> 01:06:22,960

they say

1579

01:06:27,990 --> 01:06:25,280

no we don't want to engage in this

1580

01:06:29,430 --> 01:06:28,000

subject until there is extraordinary

1581

01:06:31,430 --> 01:06:29,440

evidence

1582

01:06:35,510 --> 01:06:31,440

and that follows

1583

01:06:37,510 --> 01:06:35,520

from carl sagan who said famously

1584

01:06:39,670 --> 01:06:37,520

extraordinary claims require

1585

01:06:41,309 --> 01:06:39,680

extraordinary evidence

1586

01:06:43,589 --> 01:06:41,319

my point is

1587

01:06:45,109 --> 01:06:43,599

extraordinary evidence

1588

01:06:46,710 --> 01:06:45,119

requires

1589

01:06:47,990 --> 01:06:46,720

extraordinary

1590

01:06:50,710 --> 01:06:48,000

funding

1591

01:06:52,549 --> 01:06:50,720

okay you will never find extraordinary

1592

01:06:55,029 --> 01:06:52,559

evidence unless you put the money

1593

01:06:56,789 --> 01:06:55,039

towards it and

1594

01:06:59,190 --> 01:06:56,799

just saying i need extraordinary

1595

01:07:00,630 --> 01:06:59,200

evidence and not allocating any funds to

1596

01:07:02,309 --> 01:07:00,640

the search means that this is

1597

01:07:04,549 --> 01:07:02,319

self-fulfilling for prophecy you will

1598

01:07:06,870 --> 01:07:04,559

never find anything this way

1599

01:07:09,069 --> 01:07:06,880

so if we put 10 billion dollars on the

1600

01:07:13,029 --> 01:07:09,079

large hadron collider and didn't find

1601
01:07:15,190 --> 01:07:13,039
supersymmetry so be it why not put

1602
01:07:16,789 --> 01:07:15,200
hundred million dollars on the search

1603
01:07:20,309 --> 01:07:16,799
for technological equipment from other

1604
01:07:23,270 --> 01:07:20,319
civilizations that's one percent of the

1605
01:07:25,270 --> 01:07:23,280
of the lhc budget one percent on a

1606
01:07:27,430 --> 01:07:25,280
subject that is of much greater

1607
01:07:29,990 --> 01:07:27,440
importance for the future of humanity

1608
01:07:32,470 --> 01:07:30,000
right because if we found supersymmetry

1609
01:07:35,349 --> 01:07:32,480
what effect would that have on the daily

1610
01:07:37,829 --> 01:07:35,359
lives of people not much but we find

1611
01:07:39,430 --> 01:07:37,839
evidence for equipment from another

1612
01:07:41,430 --> 01:07:39,440
civilization

1613
01:07:43,430 --> 01:07:41,440

that is near earth that would have a

1614

01:07:45,109 --> 01:07:43,440

huge impact on the future of humanity

1615

01:07:48,309 --> 01:07:45,119

and yet

1616

01:07:51,190 --> 01:07:48,319

there is ridicule there is stigma there

1617

01:07:53,190 --> 01:07:51,200

is unwillingness on the

1618

01:07:55,349 --> 01:07:53,200

part of the scientific community in

1619

01:07:56,870 --> 01:07:55,359

investing even one percent

1620

01:07:58,950 --> 01:07:56,880

of the budget of the large hadron

1621

01:08:00,390 --> 01:07:58,960

collider and you ask yourself

1622

01:08:03,430 --> 01:08:00,400

why would that be the case why would

1623

01:08:05,270 --> 01:08:03,440

that be regarded as more speculative

1624

01:08:07,430 --> 01:08:05,280

than supersymmetry

1625

01:08:09,109 --> 01:08:07,440

and the argument is because there is a

1626

01:08:11,510 --> 01:08:09,119

lot of mathematics backing up

1627

01:08:15,430 --> 01:08:11,520

supersymmetry so i say okay well

1628

01:08:17,910 --> 01:08:15,440

great but this mathematics was not found

1629

01:08:19,749 --> 01:08:17,920

after putting 10 so wouldn't it make

1630

01:08:21,510 --> 01:08:19,759

sense to invest

1631

01:08:23,349 --> 01:08:21,520

1 of that

1632

01:08:25,829 --> 01:08:23,359

in the direction of something the public

1633

01:08:27,829 --> 01:08:25,839

cares so much about well you bring up a

1634

01:08:29,189 --> 01:08:27,839

great point and i never thought i would

1635

01:08:32,149 --> 01:08:29,199

see the day

1636

01:08:34,789 --> 01:08:32,159

but we are here a physicist would rather

1637

01:08:37,990 --> 01:08:34,799

talk about e.t today than supersymmetry

1638

01:08:40,550 --> 01:08:38,000

i guarantee it i guarantee it it was

1639

01:08:41,669 --> 01:08:40,560

i've watched the debate on this over the

1640

01:08:45,269 --> 01:08:41,679

years

1641

01:08:45,990 --> 01:08:45,279

and to have nothing come at the end of

1642

01:08:52,390 --> 01:08:46,000

it

1643

01:08:55,749 --> 01:08:52,400

thing

1644

01:08:58,950 --> 01:08:55,759

with etc avi there isn't a difference

1645

01:09:01,110 --> 01:08:58,960

yes i should say also that um a couple

1646

01:09:04,229 --> 01:09:01,120

of months ago i received an email from a

1647

01:09:04,950 --> 01:09:04,239

rabbi in an arbor michigan who told me

1648

01:09:07,669 --> 01:09:04,960

that

1649

01:09:10,149 --> 01:09:07,679

he gave a sermon

1650

01:09:12,309 --> 01:09:10,159

to his congregation

1651
01:09:14,550 --> 01:09:12,319
that was inspired by my book

1652
01:09:17,669 --> 01:09:14,560
and what i realized from that

1653
01:09:18,950 --> 01:09:17,679
is that this subject has

1654
01:09:21,269 --> 01:09:18,960
spiritual

1655
01:09:24,149 --> 01:09:21,279
connotations that the public cares about

1656
01:09:27,189 --> 01:09:24,159
as well and and that became clear when i

1657
01:09:28,870 --> 01:09:27,199
went to a forum uh in the washington

1658
01:09:32,309 --> 01:09:28,880
national cathedral

1659
01:09:35,669 --> 01:09:32,319
uh on the 10th of november this year uh

1660
01:09:37,910 --> 01:09:35,679
in the company of uh jeff bezos of um

1661
01:09:39,430 --> 01:09:37,920
avril haynes the the director of

1662
01:09:41,110 --> 01:09:39,440
national intelligence

1663
01:09:42,870 --> 01:09:41,120

um

1664

01:09:45,749 --> 01:09:42,880

and uh

1665

01:09:48,390 --> 01:09:45,759

bill nelson was uh featured there and

1666

01:09:50,789 --> 01:09:48,400

and also um

1667

01:09:53,110 --> 01:09:50,799

david wilkinson who is a theologian from

1668

01:09:54,310 --> 01:09:53,120

durham university and it was a very

1669

01:09:55,669 --> 01:09:54,320

interesting

1670

01:09:59,270 --> 01:09:55,679

discussion

1671

01:10:00,709 --> 01:09:59,280

that focused around the issue of

1672

01:10:03,030 --> 01:10:00,719

objects

1673

01:10:07,110 --> 01:10:03,040

near earth and the possibility of

1674

01:10:08,950 --> 01:10:07,120

extraterrestrial equipment and um i i

1675

01:10:12,229 --> 01:10:08,960

was fortunate to participate in a panel

1676

01:10:13,669 --> 01:10:12,239

with the two religious authorities the

1677

01:10:16,470 --> 01:10:13,679

dean of the

1678

01:10:17,350 --> 01:10:16,480

washington national cathedral

1679

01:10:19,910 --> 01:10:17,360

um

1680

01:10:22,790 --> 01:10:19,920

randy hollerith and uh

1681

01:10:25,030 --> 01:10:22,800

david wilkinson the theologian and uh it

1682

01:10:26,630 --> 01:10:25,040

was a very interesting exchange on on

1683

01:10:29,430 --> 01:10:26,640

this subject and

1684

01:10:31,830 --> 01:10:29,440

i should say that when the event ended

1685

01:10:33,830 --> 01:10:31,840

you know all the participants left the

1686

01:10:36,709 --> 01:10:33,840

auditorium but

1687

01:10:37,750 --> 01:10:36,719

or the i should say the the cathedral uh

1688

01:10:39,910 --> 01:10:37,760

but

1689

01:10:42,229 --> 01:10:39,920

there was a long line of people waiting

1690

01:10:44,070 --> 01:10:42,239

to speak with me and about 50 of them

1691

01:10:47,030 --> 01:10:44,080

and it took me half an hour to speak

1692

01:10:48,950 --> 01:10:47,040

with every everyone on in the line and

1693

01:10:51,189 --> 01:10:48,960

they all wanted to convey very simple

1694

01:10:53,910 --> 01:10:51,199

message they said that the galileo

1695

01:10:58,229 --> 01:10:53,920

project is inspiring and my book was

1696

01:10:59,030 --> 01:10:58,239

inspiring for them and they wanted to

1697

01:11:01,830 --> 01:10:59,040

just

1698

01:11:02,790 --> 01:11:01,840

express their support and that was very

1699

01:11:05,110 --> 01:11:02,800

moving

1700

01:11:08,470 --> 01:11:05,120

to me to realize you know this was the

1701

01:11:10,950 --> 01:11:08,480

first public event that i attended

1702

01:11:13,590 --> 01:11:10,960

to the general public

1703

01:11:16,390 --> 01:11:13,600

outside of boston and and it was very

1704

01:11:19,430 --> 01:11:16,400

moving to see that kind of a response to

1705

01:11:21,750 --> 01:11:19,440

both my book and the galileo project now

1706

01:11:23,350 --> 01:11:21,760

uh much uh speaking of the galileo

1707

01:11:24,390 --> 01:11:23,360

project directly

1708

01:11:31,669 --> 01:11:24,400

uh

1709

01:11:33,669 --> 01:11:31,679

and lou elizondo coming on board was a

1710

01:11:36,070 --> 01:11:33,679

pretty big deal not only in the media

1711

01:11:39,510 --> 01:11:36,080

but uh throughout this community

1712

01:11:41,669 --> 01:11:39,520

did you approach uh chris and lou or did

1713

01:11:43,750 --> 01:11:41,679

they

1714

01:11:47,270 --> 01:11:43,760
reach out to you first

1715

01:11:48,709 --> 01:11:47,280
well they reached out to me and

1716

01:11:52,470 --> 01:11:48,719
and i thought that

1717

01:11:54,550 --> 01:11:52,480
their knowledge base and their

1718

01:11:56,070 --> 01:11:54,560
experience over the years could help the

1719

01:11:57,189 --> 01:11:56,080
galileo project in the sense of

1720

01:11:59,669 --> 01:11:57,199
providing

1721

01:12:02,790 --> 01:11:59,679
uh some background information and

1722

01:12:05,910 --> 01:12:02,800
uh for example when

1723

01:12:08,630 --> 01:12:05,920
we think about societal implications of

1724

01:12:10,470 --> 01:12:08,640
whatever we find and they have some good

1725

01:12:12,149 --> 01:12:10,480
insights and also

1726

01:12:14,390 --> 01:12:12,159

when we consider

1727

01:12:16,149 --> 01:12:14,400

where to put the telescope systems they

1728

01:12:17,990 --> 01:12:16,159

could help us and

1729

01:12:19,750 --> 01:12:18,000

uh so i

1730

01:12:22,950 --> 01:12:19,760

um you know the galileo project i

1731

01:12:25,110 --> 01:12:22,960

established it as a very wide tent

1732

01:12:26,870 --> 01:12:25,120

that includes both of them but at the

1733

01:12:29,990 --> 01:12:26,880

same time includes

1734

01:12:32,790 --> 01:12:30,000

people who are skeptical such as

1735

01:12:33,830 --> 01:12:32,800

uh michael shermer and

1736

01:12:35,270 --> 01:12:33,840

seth

1737

01:12:38,630 --> 01:12:35,280

shostak and

1738

01:12:40,470 --> 01:12:38,640

um and i think you know once we have

1739

01:12:42,870 --> 01:12:40,480

good enough evidence

1740

01:12:45,750 --> 01:12:42,880

it should be convincing to everyone uh

1741

01:12:47,669 --> 01:12:45,760

what what we are seeing and i don't care

1742

01:12:50,229 --> 01:12:47,679

so much about the

1743

01:12:52,070 --> 01:12:50,239

views that people bring with them uh you

1744

01:12:53,189 --> 01:12:52,080

know it's not a political discussion

1745

01:12:55,030 --> 01:12:53,199

it's

1746

01:12:57,430 --> 01:12:55,040

it should be based on evidence and

1747

01:12:59,590 --> 01:12:57,440

that's the unifying theme of the galileo

1748

01:13:01,669 --> 01:12:59,600

project that we will try to assemble the

1749

01:13:02,870 --> 01:13:01,679

data the the information that will tell

1750

01:13:05,430 --> 01:13:02,880

us

1751

01:13:06,790 --> 01:13:05,440

what such objects are and irrespective

1752

01:13:10,630 --> 01:13:06,800

of what the initial

1753

01:13:12,709 --> 01:13:10,640

uh beliefs of people are and for example

1754

01:13:14,709 --> 01:13:12,719

just to give an example um michael

1755

01:13:17,430 --> 01:13:14,719

shermer gave a presentation about the

1756

01:13:19,830 --> 01:13:17,440

bayesian statistics and the fact that

1757

01:13:22,229 --> 01:13:19,840

you know

1758

01:13:24,790 --> 01:13:22,239

a lot of objects that are claimed to be

1759

01:13:28,310 --> 01:13:24,800

perhaps unusual may not be unusual maybe

1760

01:13:30,070 --> 01:13:28,320

human-made or and i told him you know

1761

01:13:32,470 --> 01:13:30,080

it's not a matter of statistics if we

1762

01:13:35,189 --> 01:13:32,480

collect good enough data we should be

1763

01:13:37,510 --> 01:13:35,199

able to tell what an object is by having

1764

01:13:38,709 --> 01:13:37,520

a high resolution megapixel image of it

1765

01:13:39,830 --> 01:13:38,719

for example

1766

01:13:43,510 --> 01:13:39,840

and

1767

01:13:46,470 --> 01:13:43,520

i told him if we assemble such data i'm

1768

01:13:47,669 --> 01:13:46,480

confident that you will be convinced and

1769

01:13:49,830 --> 01:13:47,679

he said

1770

01:13:51,590 --> 01:13:49,840

well if you do us if the galileo project

1771

01:13:54,229 --> 01:13:51,600

assembles that data

1772

01:13:57,189 --> 01:13:54,239

uh then i will report about it in my

1773

01:13:58,790 --> 01:13:57,199

magazine skeptic so he has a magazine

1774

01:14:02,390 --> 01:13:58,800

called skeptic that he's the chief

1775

01:14:04,390 --> 01:14:02,400

editor of and i told him well that's not

1776

01:14:06,870 --> 01:14:04,400

a sufficient gesture as far as i'm

1777

01:14:09,510 --> 01:14:06,880

concerned i want you to change the name

1778

01:14:12,630 --> 01:14:09,520

of your magazine from skeptic to

1779

01:14:15,750 --> 01:14:12,640

believer if we get such data did he

1780

01:14:18,390 --> 01:14:15,760

agree that's a good challenge

1781

01:14:20,709 --> 01:14:18,400

no that was a joke i didn't i'm not i'm

1782

01:14:23,350 --> 01:14:20,719

not being cavalier i think that was uh

1783

01:14:24,229 --> 01:14:23,360

that was uh commendable here's the deal

1784

01:14:25,430 --> 01:14:24,239

though

1785

01:14:26,310 --> 01:14:25,440

um

1786

01:14:30,470 --> 01:14:26,320

when

1787

01:14:32,229 --> 01:14:30,480

i hear uh professional academics i'm not

1788

01:14:34,950 --> 01:14:32,239

going to say names

1789

01:14:36,950 --> 01:14:34,960

um say that you know what

1790

01:14:39,270 --> 01:14:36,960

we're alone

1791

01:14:42,630 --> 01:14:39,280

show me proof that we're not alone

1792

01:14:44,950 --> 01:14:42,640

and and i hear this argument actually

1793

01:14:47,910 --> 01:14:44,960

the stronger argument is flipping it

1794

01:14:50,149 --> 01:14:47,920

back on them where's the proof that we

1795

01:14:52,790 --> 01:14:50,159

are not alone

1796

01:14:55,189 --> 01:14:52,800

i can give you all the chemistry right i

1797

01:14:57,110 --> 01:14:55,199

can give you all the gases all of the

1798

01:14:58,870 --> 01:14:57,120

elements all the particles that make us

1799

01:15:01,990 --> 01:14:58,880

up that are

1800

01:15:04,790 --> 01:15:02,000

uh throughout the universe

1801
01:15:07,189 --> 01:15:04,800
life has to be out there

1802
01:15:09,110 --> 01:15:07,199
in infinite

1803
01:15:13,430 --> 01:15:09,120
show me the proof that it is not have

1804
01:15:14,470 --> 01:15:13,440
you been to an exoplanet right

1805
01:15:16,470 --> 01:15:14,480
there

1806
01:15:18,950 --> 01:15:16,480
we need to flip it back around on them

1807
01:15:21,189 --> 01:15:18,960
they they are too used to

1808
01:15:22,630 --> 01:15:21,199
uh trying to be the smart people in the

1809
01:15:25,189 --> 01:15:22,640
room aren't they

1810
01:15:27,110 --> 01:15:25,199
yeah i mean it's a natural tendency for

1811
01:15:29,669 --> 01:15:27,120
us to believe that we are privileged we

1812
01:15:31,910 --> 01:15:29,679
are unique we are the center of the play

1813
01:15:33,510 --> 01:15:31,920

and you know i saw it with my daughters

1814

01:15:35,510 --> 01:15:33,520

when they were young and they were at

1815

01:15:37,510 --> 01:15:35,520

home they thought that they are the

1816

01:15:39,669 --> 01:15:37,520

center of the world and then we and

1817

01:15:41,350 --> 01:15:39,679

they're the smartest and when i took

1818

01:15:43,910 --> 01:15:41,360

them to the kindergarten that view

1819

01:15:45,750 --> 01:15:43,920

changed then they met other kids and you

1820

01:15:47,669 --> 01:15:45,760

know it's another tendency of everyone

1821

01:15:49,350 --> 01:15:47,679

because it flatters our ego to think

1822

01:15:50,070 --> 01:15:49,360

that we are really unique and special

1823

01:15:51,030 --> 01:15:50,080

and

1824

01:15:52,790 --> 01:15:51,040

to me

1825

01:15:55,110 --> 01:15:52,800

the starting point should be exactly the

1826

01:15:57,270 --> 01:15:55,120

opposite as you say the starting point

1827

01:15:59,030 --> 01:15:57,280

should be there is nothing special about

1828

01:16:00,550 --> 01:15:59,040

us because when we thought that we are

1829

01:16:03,030 --> 01:16:00,560

at the center of the universe we were

1830

01:16:04,950 --> 01:16:03,040

proven wrong you know that and we when

1831

01:16:07,990 --> 01:16:04,960

we thought that the earth sun system is

1832

01:16:09,669 --> 01:16:08,000

special again we were proven wrong

1833

01:16:10,550 --> 01:16:09,679

and by the way you know if you think

1834

01:16:13,590 --> 01:16:10,560

about

1835

01:16:16,149 --> 01:16:13,600

the cosmic stage you know that there is

1836

01:16:19,110 --> 01:16:16,159

a play going on and it has been going on

1837

01:16:21,669 --> 01:16:19,120

for 13.8 billion years since the big

1838

01:16:24,550 --> 01:16:21,679

bang we just came at the end so we are

1839

01:16:26,790 --> 01:16:24,560

not at the center of the stage and

1840

01:16:28,470 --> 01:16:26,800

we came just at the end of the play

1841

01:16:31,030 --> 01:16:28,480

and so it's clear that the play is not

1842

01:16:33,110 --> 01:16:31,040

about us you know we are not the central

1843

01:16:35,990 --> 01:16:33,120

players and we are not the only

1844

01:16:37,910 --> 01:16:36,000

and it's quite natural to say okay we

1845

01:16:39,510 --> 01:16:37,920

are not unique we are not special we are

1846

01:16:41,830 --> 01:16:39,520

not privileged

1847

01:16:44,950 --> 01:16:41,840

let's check if there are other actors

1848

01:16:47,189 --> 01:16:44,960

around you know like let's be modest

1849

01:16:48,790 --> 01:16:47,199

and start from

1850

01:16:50,709 --> 01:16:48,800

you know build our knowledge from the

1851

01:16:52,950 --> 01:16:50,719

ground up rather than say we already

1852

01:16:55,189 --> 01:16:52,960

know the answer we are special we are

1853

01:16:57,750 --> 01:16:55,199

unique and that of course flatters our

1854

01:16:59,669 --> 01:16:57,760

ego to think that way instead of that

1855

01:17:00,470 --> 01:16:59,679

let's start from zero let's start from

1856

01:17:02,390 --> 01:17:00,480

saying

1857

01:17:04,390 --> 01:17:02,400

nothing is special about us because that

1858

01:17:07,270 --> 01:17:04,400

has proven to be the better approach in

1859

01:17:08,709 --> 01:17:07,280

the past you see and let's just say

1860

01:17:10,950 --> 01:17:08,719

you know there is nothing unique let's

1861

01:17:13,830 --> 01:17:10,960

just search for evidence that others

1862

01:17:14,709 --> 01:17:13,840

exist because they may very well be out

1863

01:17:16,950 --> 01:17:14,719

there

1864

01:17:18,709 --> 01:17:16,960

and you know if we invest 10 billion

1865

01:17:20,550 --> 01:17:18,719

dollars in searching for sumit super

1866

01:17:22,070 --> 01:17:20,560

symmetry we should invest 100 million

1867

01:17:24,870 --> 01:17:22,080

dollars in searching for equipment

1868

01:17:25,830 --> 01:17:24,880

what's the big deal why is that regarded

1869

01:17:27,910 --> 01:17:25,840

as

1870

01:17:31,270 --> 01:17:27,920

don't even speak about it and ridicule

1871

01:17:35,270 --> 01:17:31,280

it and laugh about it and just move on

1872

01:17:37,590 --> 01:17:35,280

how uh how is the approach centered for

1873

01:17:39,830 --> 01:17:37,600

you with the with the galileo project

1874

01:17:42,790 --> 01:17:39,840

are you first looking

1875

01:17:44,390 --> 01:17:42,800

in our atmosphere and then going beyond

1876

01:17:46,229 --> 01:17:44,400

you know into the solar system out of

1877

01:17:49,189 --> 01:17:46,239

the out of the star system

1878

01:17:50,870 --> 01:17:49,199

uh into the milky way and then further

1879

01:17:52,070 --> 01:17:50,880

out from there into the rest of the

1880

01:17:54,390 --> 01:17:52,080

universe

1881

01:17:56,950 --> 01:17:54,400

well we have two branches in the grail

1882

01:17:59,990 --> 01:17:56,960

low project one is going after

1883

01:18:03,430 --> 01:18:00,000

unidentified aerial phenomena uap and

1884

01:18:05,350 --> 01:18:03,440

the second is going after objects like

1885

01:18:08,070 --> 01:18:05,360

and in both cases trying to get more

1886

01:18:09,750 --> 01:18:08,080

data trying to get the high resolution

1887

01:18:11,110 --> 01:18:09,760

image of the objects so we can tell

1888

01:18:14,709 --> 01:18:11,120

their nature

1889

01:18:17,189 --> 01:18:14,719

and these are very different

1890

01:18:18,709 --> 01:18:17,199

branches very different

1891

01:18:20,709 --> 01:18:18,719

projects

1892

01:18:22,310 --> 01:18:20,719

within the galileo project

1893

01:18:25,110 --> 01:18:22,320

because

1894

01:18:27,110 --> 01:18:25,120

for the first one what we do is we are

1895

01:18:29,030 --> 01:18:27,120

assembling together the first telescope

1896

01:18:30,950 --> 01:18:29,040

system right now we are buying the

1897

01:18:33,270 --> 01:18:30,960

instruments and we will put it on the

1898

01:18:35,350 --> 01:18:33,280

roof of the harvard college observatory

1899

01:18:36,470 --> 01:18:35,360

the first telescope system where we put

1900

01:18:38,470 --> 01:18:36,480

together

1901

01:18:40,950 --> 01:18:38,480

uh

1902

01:18:42,870 --> 01:18:40,960

cameras in the infrared that can look at

1903

01:18:44,310 --> 01:18:42,880

the sky at all times

1904

01:18:47,030 --> 01:18:44,320

and cameras

1905

01:18:49,750 --> 01:18:47,040

in the optical in the visible band that

1906

01:18:51,910 --> 01:18:49,760

will take basically a video of the sky

1907

01:18:53,669 --> 01:18:51,920

and will try to identify

1908

01:18:56,310 --> 01:18:53,679

objects of interest

1909

01:18:58,709 --> 01:18:56,320

and distinguish drones from birds from

1910

01:18:59,669 --> 01:18:58,719

airplanes from something else

1911

01:19:01,350 --> 01:18:59,679

and

1912

01:19:03,030 --> 01:19:01,360

this of course will require some

1913

01:19:05,270 --> 01:19:03,040

software computer software and

1914

01:19:08,870 --> 01:19:05,280

algorithms for identifying the nature of

1915

01:19:10,950 --> 01:19:08,880

objects from the way they look and then

1916

01:19:12,790 --> 01:19:10,960

once we have a system working with which

1917

01:19:15,430 --> 01:19:12,800

will hopefully take place

1918

01:19:17,030 --> 01:19:15,440

uh in the spring of 2022 by the summer

1919

01:19:18,870 --> 01:19:17,040

of 2022

1920

01:19:21,350 --> 01:19:18,880

uh then we will make copies of that

1921

01:19:23,910 --> 01:19:21,360

system and the number of copies we make

1922

01:19:26,550 --> 01:19:23,920

will depend on the funding level so

1923

01:19:28,149 --> 01:19:26,560

right now i received um two million

1924

01:19:29,750 --> 01:19:28,159

dollars and

1925

01:19:31,750 --> 01:19:29,760

you know it would be

1926

01:19:33,350 --> 01:19:31,760

amazing if we were to get

1927

01:19:34,950 --> 01:19:33,360

a hundred million dollars because then

1928

01:19:37,830 --> 01:19:34,960

we can have enough

1929

01:19:39,750 --> 01:19:37,840

systems we can basically have

1930

01:19:41,910 --> 01:19:39,760

you know hundreds of systems distributed

1931

01:19:45,430 --> 01:19:41,920

throughout

1932

01:19:46,390 --> 01:19:45,440

the us and and monitor enough of the sky

1933

01:19:48,470 --> 01:19:46,400

to get

1934

01:19:50,630 --> 01:19:48,480

data on this unidentified aerial

1935

01:19:51,750 --> 01:19:50,640

phenomenon and figure out their nature

1936

01:19:55,030 --> 01:19:51,760

and

1937

01:19:57,590 --> 01:19:55,040

so i still need to be able to

1938

01:19:59,750 --> 01:19:57,600

you know fundraise

1939

01:20:02,229 --> 01:19:59,760

from two million dollars to about a

1940

01:20:05,110 --> 01:20:02,239

hundred million dollars and we are not

1941

01:20:07,110 --> 01:20:05,120

there yet and i very much hope that one

1942

01:20:09,110 --> 01:20:07,120

of your listeners might be inspired to

1943

01:20:11,030 --> 01:20:09,120

contribute to the effort because we

1944

01:20:12,950 --> 01:20:11,040

really need more funding in order to

1945

01:20:14,870 --> 01:20:12,960

accomplish the task

1946

01:20:16,229 --> 01:20:14,880

and then the second part of the project

1947

01:20:19,590 --> 01:20:16,239

is looking

1948

01:20:22,390 --> 01:20:19,600

for a more like objects and dating them

1949

01:20:24,229 --> 01:20:22,400

going on a rendezvous close to them and

1950

01:20:26,390 --> 01:20:24,239

that is a space mission it's something

1951

01:20:29,030 --> 01:20:26,400

very different it may cost much more

1952

01:20:31,270 --> 01:20:29,040

money uh most likely hundreds of

1953

01:20:32,790 --> 01:20:31,280

millions to perhaps a billion dollars

1954

01:20:35,669 --> 01:20:32,800

it's a space mission that should be

1955

01:20:38,070 --> 01:20:35,679

designed by experts on space missions

1956

01:20:40,229 --> 01:20:38,080

and in fact

1957

01:20:41,990 --> 01:20:40,239

alan stern the principal investigator of

1958

01:20:44,390 --> 01:20:42,000

the new horizons mission that i

1959

01:20:47,350 --> 01:20:44,400

mentioned before is on the galileo team

1960

01:20:48,310 --> 01:20:47,360

and we hope to pursue that

1961

01:20:50,950 --> 01:20:48,320

and

1962

01:20:52,229 --> 01:20:50,960

that because it's it requires much more

1963

01:20:54,550 --> 01:20:52,239

funding and

1964

01:20:57,430 --> 01:20:54,560

uh is much more ambitious

1965

01:20:59,350 --> 01:20:57,440

may take more time for us to do but but

1966

01:21:01,030 --> 01:20:59,360

the goal is in the coming years to be

1967

01:21:02,870 --> 01:21:01,040

engaged in both

1968

01:21:04,790 --> 01:21:02,880

uh missions

1969

01:21:07,590 --> 01:21:04,800

now

1970

01:21:10,550 --> 01:21:07,600

give me the protocol really quick

1971

01:21:12,870 --> 01:21:10,560

you you're you're on the roof of a

1972

01:21:15,430 --> 01:21:12,880

building at harvard right

1973

01:21:19,110 --> 01:21:15,440

you guys get the magic shot you get the

1974

01:21:22,950 --> 01:21:19,120

million dollar shot you you get the data

1975

01:21:25,189 --> 01:21:22,960

you have found something that doesn't uh

1976

01:21:28,229 --> 01:21:25,199

uh have an explanation

1977

01:21:31,030 --> 01:21:28,239

right and everybody's excited what do

1978

01:21:33,030 --> 01:21:31,040

you do with that what's the stage do you

1979

01:21:35,910 --> 01:21:33,040

take that to

1980

01:21:38,070 --> 01:21:35,920

odni are you taking that to the navy are

1981

01:21:40,149 --> 01:21:38,080

you taking that to the public you taking

1982

01:21:42,149 --> 01:21:40,159

that to the board of harvard

1983

01:21:43,350 --> 01:21:42,159

are you taking it to your book publisher

1984

01:21:45,110 --> 01:21:43,360

you know what

1985

01:21:46,149 --> 01:21:45,120

what's the next stage

1986

01:21:48,790 --> 01:21:46,159

right so

1987

01:21:51,270 --> 01:21:48,800

the galileo project is a science project

1988

01:21:53,590 --> 01:21:51,280

so we will just follow the standard

1989

01:21:54,790 --> 01:21:53,600

procedure in scientific research which

1990

01:21:57,030 --> 01:21:54,800

means that

1991

01:21:59,110 --> 01:21:57,040

first we will collect the data and by

1992

01:22:01,750 --> 01:21:59,120

the way eventually we will release the

1993

01:22:03,669 --> 01:22:01,760

data will be completely open so it's

1994

01:22:05,910 --> 01:22:03,679

very different from past data that was

1995

01:22:08,790 --> 01:22:05,920

mostly classified because the government

1996

01:22:11,350 --> 01:22:08,800

took it in our case the data will be

1997

01:22:13,350 --> 01:22:11,360

open to the public and the analysis of

1998

01:22:15,510 --> 01:22:13,360

the data will be completely transparent

1999

01:22:16,870 --> 01:22:15,520

that's the way science is done so what

2000

01:22:19,669 --> 01:22:16,880

we will do is first of course the

2001

01:22:21,910 --> 01:22:19,679

galileo team will look at the data

2002

01:22:24,149 --> 01:22:21,920

and analyze it and then we will write a

2003

01:22:26,550 --> 01:22:24,159

scientific paper

2004

01:22:28,390 --> 01:22:26,560

in which we explain what we make out of

2005

01:22:30,550 --> 01:22:28,400

this data and

2006

01:22:32,790 --> 01:22:30,560

we will submit this paper for

2007

01:22:35,510 --> 01:22:32,800

publication in a scientific journal at

2008

01:22:36,950 --> 01:22:35,520

the same time we will release the data

2009

01:22:39,990 --> 01:22:36,960

to the public

2010

01:22:42,070 --> 01:22:40,000

and it will all be open and transparent

2011

01:22:43,189 --> 01:22:42,080

once we figure out you know what to make

2012

01:22:45,750 --> 01:22:43,199

of it

2013

01:22:47,350 --> 01:22:45,760

uh we will release it to everyone

2014

01:22:49,430 --> 01:22:47,360

uh and um

2015

01:22:51,189 --> 01:22:49,440

you know it it may well be that most of

2016

01:22:53,270 --> 01:22:51,199

the time we will see things that are

2017

01:22:56,950 --> 01:22:53,280

made or natural but it's sufficient to

2018

01:22:58,790 --> 01:22:56,960

have one object that perhaps is weird

2019

01:23:00,470 --> 01:22:58,800

and unexplained for this to be

2020

01:23:01,750 --> 01:23:00,480

worthwhile

2021

01:23:04,070 --> 01:23:01,760

and

2022

01:23:05,430 --> 01:23:04,080

by the way the telescope on the roof of

2023

01:23:07,430 --> 01:23:05,440

the harvard college observatory is

2024

01:23:09,910 --> 01:23:07,440

unlikely to see anything of interest

2025

01:23:11,590 --> 01:23:09,920

because it's one telescope system we we

2026
01:23:13,750 --> 01:23:11,600
will have to make hundreds of them and

2027
01:23:16,310 --> 01:23:13,760
put them in many locations

2028
01:23:18,950 --> 01:23:16,320
uh the first system that we assemble is

2029
01:23:20,790 --> 01:23:18,960
just to make sure that it works

2030
01:23:22,790 --> 01:23:20,800
um

2031
01:23:25,669 --> 01:23:22,800
you will see something

2032
01:23:27,910 --> 01:23:25,679
i'll bet you i'll get you a steak dinner

2033
01:23:29,430 --> 01:23:27,920
at the restaurant of your choice

2034
01:23:32,310 --> 01:23:29,440
that you

2035
01:23:34,629 --> 01:23:32,320
will will see something and i think

2036
01:23:38,070 --> 01:23:34,639
that's inevitable but here's the other

2037
01:23:39,910 --> 01:23:38,080
part do you have a contingency plan for

2038
01:23:40,629 --> 01:23:39,920

like the men in black

2039

01:23:42,470 --> 01:23:40,639

right

2040

01:23:44,870 --> 01:23:42,480

you know going back to like the movie

2041

01:23:46,390 --> 01:23:44,880

contact right i think that's a pretty

2042

01:23:48,709 --> 01:23:46,400

good lesson there

2043

01:23:51,189 --> 01:23:48,719

where something significant you know the

2044

01:23:53,750 --> 01:23:51,199

most significant thing in human history

2045

01:23:55,430 --> 01:23:53,760

is discovered and then

2046

01:23:58,550 --> 01:23:55,440

the government shows up and takes

2047

01:24:01,030 --> 01:23:58,560

control do you have a contingency plan

2048

01:24:04,229 --> 01:24:01,040

well that's an excellent question but

2049

01:24:06,470 --> 01:24:04,239

um for now we are just following

2050

01:24:08,870 --> 01:24:06,480

the scientific procedure where once we

2051
01:24:10,629 --> 01:24:08,880
have those telescope systems in place

2052
01:24:12,709 --> 01:24:10,639
and we collect data

2053
01:24:13,750 --> 01:24:12,719
you know if you find something unusual

2054
01:24:14,629 --> 01:24:13,760
and

2055
01:24:16,709 --> 01:24:14,639
worth

2056
01:24:18,629 --> 01:24:16,719
discussion we will

2057
01:24:20,709 --> 01:24:18,639
write a paper about it we will

2058
01:24:23,189 --> 01:24:20,719
disseminate provide the information to

2059
01:24:26,149 --> 01:24:23,199
everyone it will be open

2060
01:24:31,669 --> 01:24:28,470
so it depends really on the nature of

2061
01:24:33,590 --> 01:24:31,679
the of of what we find you see if

2062
01:24:35,750 --> 01:24:33,600
uh

2063
01:24:37,590 --> 01:24:35,760

you're asking a very difficult question

2064

01:24:39,189 --> 01:24:37,600

the question is what does it mean and

2065

01:24:41,270 --> 01:24:39,199

that depends on the scenario you know

2066

01:24:43,350 --> 01:24:41,280

what are the implications and

2067

01:24:45,030 --> 01:24:43,360

let's just imagine the most exciting

2068

01:24:48,390 --> 01:24:45,040

scenario because that's what you are

2069

01:24:50,229 --> 01:24:48,400

after let's imagine that we do find

2070

01:24:52,310 --> 01:24:50,239

an object that

2071

01:24:56,149 --> 01:24:52,320

is of extraterrestrial

2072

01:24:58,470 --> 01:24:56,159

technological origin okay and um

2073

01:25:00,229 --> 01:24:58,480

i think the next question

2074

01:25:02,310 --> 01:25:00,239

if we if it's clear that it's not

2075

01:25:04,709 --> 01:25:02,320

human-made and it's clear that it's

2076

01:25:06,950 --> 01:25:04,719

technological the next question is what

2077

01:25:10,550 --> 01:25:06,960

is the intent of this object you know

2078

01:25:13,110 --> 01:25:10,560

what what is it trying to to do and

2079

01:25:15,750 --> 01:25:13,120

for that we need to monitor it and my

2080

01:25:18,550 --> 01:25:15,760

view is we don't want to engage with

2081

01:25:20,310 --> 01:25:18,560

such an object uh until we understand

2082

01:25:22,629 --> 01:25:20,320

what it's doing you know like what kind

2083

01:25:25,030 --> 01:25:22,639

of information is it trying to collect

2084

01:25:27,270 --> 01:25:25,040

right and how does it respond to what we

2085

01:25:29,110 --> 01:25:27,280

are doing you know these are the kinds

2086

01:25:30,790 --> 01:25:29,120

of questions that we should first

2087

01:25:32,390 --> 01:25:30,800

address and

2088

01:25:34,629 --> 01:25:32,400

and then there should be a discussion

2089

01:25:36,470 --> 01:25:34,639

you know how to respond to it

2090

01:25:38,709 --> 01:25:36,480

whether to engage with it

2091

01:25:39,830 --> 01:25:38,719

you know and what the implications might

2092

01:25:44,070 --> 01:25:39,840

be

2093

01:25:46,070 --> 01:25:44,080

held in a much bigger forum that

2094

01:25:48,229 --> 01:25:46,080

includes a lot of other people outside

2095

01:25:49,110 --> 01:25:48,239

the collaboration

2096

01:25:50,790 --> 01:25:49,120

and

2097

01:25:53,350 --> 01:25:50,800

you know once we get to the bridge we

2098

01:25:55,030 --> 01:25:53,360

decide how to cross it but i think the

2099

01:25:55,830 --> 01:25:55,040

worst thing we can do is just say we

2100

01:25:58,149 --> 01:25:55,840

don't

2101
01:25:58,950 --> 01:25:58,159
let's not engage in this let's not even

2102
01:26:01,110 --> 01:25:58,960
look

2103
01:26:03,030 --> 01:26:01,120
uh because it's just like putting our

2104
01:26:05,189 --> 01:26:03,040
head in the sand so to speak well

2105
01:26:06,870 --> 01:26:05,199
absolutely but the bigger question that

2106
01:26:09,110 --> 01:26:06,880
you're gonna have to answer

2107
01:26:10,470 --> 01:26:09,120
is when your wife says where were you

2108
01:26:12,310 --> 01:26:10,480
and you're going to have to say well i

2109
01:26:13,990 --> 01:26:12,320
was in an underground bunker at the

2110
01:26:17,669 --> 01:26:14,000
c.i.a

2111
01:26:19,750 --> 01:26:17,679
being interrogated about this photograph

2112
01:26:23,189 --> 01:26:19,760
that you're going to have to think about

2113
01:26:24,470 --> 01:26:23,199

well that will only happen i think if i

2114

01:26:26,310 --> 01:26:24,480

were to

2115

01:26:27,990 --> 01:26:26,320

uh be

2116

01:26:30,629 --> 01:26:28,000

do something that is of

2117

01:26:33,189 --> 01:26:30,639

uh risk to poses a risk to national

2118

01:26:35,189 --> 01:26:33,199

security but the way i see it what we

2119

01:26:37,030 --> 01:26:35,199

are after you know if we see anything

2120

01:26:39,270 --> 01:26:37,040

that is human-made we don't care about

2121

01:26:41,510 --> 01:26:39,280

it if we see anything that is natural we

2122

01:26:43,750 --> 01:26:41,520

don't care too much about it i mean if

2123

01:26:45,350 --> 01:26:43,760

it's a rare natural phenomenon like a

2124

01:26:47,110 --> 01:26:45,360

lightning that was never seen before

2125

01:26:49,910 --> 01:26:47,120

maybe we'd write a paper

2126
01:26:51,669 --> 01:26:49,920
but all of these things you know i don't

2127
01:26:53,270 --> 01:26:51,679
if it's a matter of national security i

2128
01:26:56,310 --> 01:26:53,280
don't really care about it i don't i

2129
01:26:58,629 --> 01:26:56,320
don't want that data

2130
01:27:00,310 --> 01:26:58,639
what i really care about is something

2131
01:27:03,350 --> 01:27:00,320
else you know something

2132
01:27:05,430 --> 01:27:03,360
that is of international interest not of

2133
01:27:07,990 --> 01:27:05,440
national interest that that is of

2134
01:27:09,110 --> 01:27:08,000
interest to humanity as a whole

2135
01:27:12,310 --> 01:27:09,120
and

2136
01:27:13,910 --> 01:27:12,320
on that i don't think the cia will have

2137
01:27:15,510 --> 01:27:13,920
an issue with

2138
01:27:18,070 --> 01:27:15,520

if it's something that is of

2139

01:27:20,390 --> 01:27:18,080

international importance for all of

2140

01:27:22,950 --> 01:27:20,400

humanity for all people

2141

01:27:25,189 --> 01:27:22,960

you know there is no reason why

2142

01:27:27,110 --> 01:27:25,199

a particular nation

2143

01:27:28,950 --> 01:27:27,120

would restrict

2144

01:27:31,189 --> 01:27:28,960

access to that information it's just

2145

01:27:32,790 --> 01:27:31,199

like science you know science is dealing

2146

01:27:33,990 --> 01:27:32,800

with the universe

2147

01:27:35,590 --> 01:27:34,000

uh and

2148

01:27:37,430 --> 01:27:35,600

that information that we have about the

2149

01:27:39,750 --> 01:27:37,440

fact that the universe is expanding that

2150

01:27:42,629 --> 01:27:39,760

we started from a big bang and all these

2151
01:27:44,709 --> 01:27:42,639
details you know they have no relevance

2152
01:27:47,430 --> 01:27:44,719
to a particular nation they are of

2153
01:27:48,790 --> 01:27:47,440
interest to the entire human

2154
01:27:51,990 --> 01:27:48,800
you know

2155
01:27:54,950 --> 01:27:52,000
knowledge base and uh that's why science

2156
01:27:56,870 --> 01:27:54,960
is engaged in that and it's open because

2157
01:27:58,870 --> 01:27:56,880
all of our people

2158
01:28:00,870 --> 01:27:58,880
irrespective where they are

2159
01:28:03,350 --> 01:28:00,880
would be interested in knowing you know

2160
01:28:05,270 --> 01:28:03,360
how we how the universe started you know

2161
01:28:07,110 --> 01:28:05,280
it's not a matter of just the us knowing

2162
01:28:09,350 --> 01:28:07,120
it and not giving the information to

2163
01:28:11,270 --> 01:28:09,360

other nations and the same is true the

2164

01:28:13,350 --> 01:28:11,280

way the way i see it the same is true

2165

01:28:15,030 --> 01:28:13,360

for finding evidence that we are not

2166

01:28:16,950 --> 01:28:15,040

alone you know that's that's something

2167

01:28:20,310 --> 01:28:16,960

that everyone should care about on this

2168

01:28:22,070 --> 01:28:20,320

planet our guest tonight professor avi

2169

01:28:23,830 --> 01:28:22,080

loeb i'm your host jimmy church this is

2170

01:28:26,390 --> 01:28:23,840

fade to black we will continue the

2171

01:28:30,430 --> 01:28:26,400

conversation after this short break stay

2172

01:28:30,440 --> 01:28:41,669

[Music]

2173

01:28:47,910 --> 01:28:44,870

way out here we listen to jimmy church

2174

01:28:49,830 --> 01:28:47,920

you're listening to fade to black

2175

01:28:52,470 --> 01:28:49,840

always on the edge of the hottest

2176
01:28:58,330 --> 01:28:52,480
alternative talk jimmy church with fade

2177
01:28:58,340 --> 01:29:10,070
[Applause]

2178
01:29:15,430 --> 01:29:12,390
this is jimmy church and i personally

2179
01:29:17,990 --> 01:29:15,440
invite you to the 2022 conscious life

2180
01:29:21,110 --> 01:29:18,000
expo this february 4th through the 7th

2181
01:29:23,270 --> 01:29:21,120
live at the lax hilton in los angeles

2182
01:29:25,910 --> 01:29:23,280
california this year we have the most

2183
01:29:29,270 --> 01:29:25,920
exciting speakers including whitley

2184
01:29:32,470 --> 01:29:29,280
strieber adam apollo billy carson daryl

2185
01:29:35,910 --> 01:29:32,480
inca and bashar william henry caroline

2186
01:29:39,030 --> 01:29:35,920
corey susan slaughter danien brinkley jj

2187
01:29:41,910 --> 01:29:39,040
and desiree hertox sarah bressman cosme

2188
01:29:44,310 --> 01:29:41,920

george nori gail thackray and many many

2189

01:29:46,709 --> 01:29:44,320

more i will be hosting all weekend long

2190

01:29:49,030 --> 01:29:46,719

including the keynote ancient secrets

2191

01:29:51,350 --> 01:29:49,040

panel on friday night five vendor and

2192

01:29:53,750 --> 01:29:51,360

exhibit halls three floors of speakers

2193

01:29:55,990 --> 01:29:53,760

panels and celebration this is the

2194

01:29:59,070 --> 01:29:56,000

biggest event of the year and early bird

2195

01:30:01,270 --> 01:29:59,080

passes are available now just go to

2196

01:30:03,110 --> 01:30:01,280

consciouslifeexpo.com for the schedule

2197

01:30:06,070 --> 01:30:03,120

speakers and information that's

2198

01:30:08,149 --> 01:30:06,080

consciouslifeexpo.com

2199

01:30:10,870 --> 01:30:08,159

do you want to be an official fate or

2200

01:30:13,110 --> 01:30:10,880

not of course you do this is jimmy

2201
01:30:14,310 --> 01:30:13,120
churchill fade to black just go to our

2202
01:30:16,870 --> 01:30:14,320
membership section at

2203
01:30:19,110 --> 01:30:16,880
jimmychurchradio.com

2204
01:30:21,270 --> 01:30:19,120
this is jimmy church and i invite you to

2205
01:30:24,070 --> 01:30:21,280
attend the 20th annual los angeles

2206
01:30:27,189 --> 01:30:24,080
conscious life expo live and in person

2207
01:30:29,830 --> 01:30:27,199
this september 17th 18th and 19th at the

2208
01:30:32,070 --> 01:30:29,840
lax airport hilton connect with

2209
01:30:34,629 --> 01:30:32,080
exhibitors community thought leaders and

2210
01:30:36,790 --> 01:30:34,639
friends as we begin to recreate the

2211
01:30:39,110 --> 01:30:36,800
world you can also watch the expo from

2212
01:30:41,110 --> 01:30:39,120
the comfort of your own home live stream

2213
01:30:43,590 --> 01:30:41,120

from the main stage in los angeles and

2214

01:30:45,910 --> 01:30:43,600

from the main stage in london truly a

2215

01:30:48,629 --> 01:30:45,920

global simulcast event broadcast around

2216

01:30:51,030 --> 01:30:48,639

the world live stream and in-person expo

2217

01:30:53,350 --> 01:30:51,040

tickets are available now i'll be your

2218

01:30:55,750 --> 01:30:53,360

host all weekend long from los angeles

2219

01:30:58,310 --> 01:30:55,760

and on friday it's my ancient secrets

2220

01:31:01,110 --> 01:30:58,320

and earth mysteries themed segment with

2221

01:31:03,910 --> 01:31:01,120

james keenan caroline corey and william

2222

01:31:07,270 --> 01:31:03,920

henry and on saturday daniel sheen and i

2223

01:31:10,070 --> 01:31:07,280

sit down for a one-on-one interview live

2224

01:31:13,110 --> 01:31:10,080

we have an amazing lineup of 25 speakers

2225

01:31:15,030 --> 01:31:13,120

including bashar gail thackeray kimberly

2226

01:31:17,990 --> 01:31:15,040

meredith whitley strieber stephen

2227

01:31:19,470 --> 01:31:18,000

bassett daniel brinkley and lisa gar

2228

01:31:21,189 --> 01:31:19,480

please visit

2229

01:31:23,149 --> 01:31:21,199

consciouslifeexpo.com for tickets and

2230

01:31:25,510 --> 01:31:23,159

info that's

2231

01:31:29,030 --> 01:31:25,520

consciouslifeexpo.com and use that promo

2232

01:31:31,030 --> 01:31:29,040

code jimmy for a special discount

2233

01:31:32,870 --> 01:31:31,040

vader knots when you think about the

2234

01:31:34,790 --> 01:31:32,880

future of our country and where we're

2235

01:31:37,830 --> 01:31:34,800

headed do you wonder about the food

2236

01:31:39,990 --> 01:31:37,840

supply i do disruptions in the food

2237

01:31:42,790 --> 01:31:40,000

supply chain could be disastrous and

2238

01:31:44,790 --> 01:31:42,800

they usually occur with little warning

2239

01:31:47,750 --> 01:31:44,800

that's why the smartest thing you can do

2240

01:31:50,790 --> 01:31:47,760

today is to stockpile emergency food

2241

01:31:53,510 --> 01:31:50,800

water and other essentials i personally

2242

01:31:55,830 --> 01:31:53,520

recommend my patriot supply they're the

2243

01:31:58,390 --> 01:31:55,840

nation's largest emergency preparedness

2244

01:32:00,950 --> 01:31:58,400

company serving millions of customers

2245

01:32:03,590 --> 01:32:00,960

for more than a decade in fact they're

2246

01:32:06,709 --> 01:32:03,600

the only source my family trusts for our

2247

01:32:10,070 --> 01:32:06,719

preparedness plan you should too right

2248

01:32:12,550 --> 01:32:10,080

now save 20 off a full four week supply

2249

01:32:15,669 --> 01:32:12,560

of delicious meals that provide 2 000

2250

01:32:18,629 --> 01:32:15,679

calories a day saving 20 helps too

2251

01:32:21,590 --> 01:32:18,639

doesn't it especially now so go to

2252

01:32:24,870 --> 01:32:21,600

prepare with jimmy.com and get ready

2253

01:32:28,709 --> 01:32:24,880

that's prepare with jimmy.com there's no

2254

01:32:31,830 --> 01:32:28,719

time to lose do it now

2255

01:32:33,990 --> 01:32:31,840

so you love talk radio then you'll love

2256

01:32:37,189 --> 01:32:34,000

talkstreamlive.com

2257

01:32:39,350 --> 01:32:37,199

talk stream live is always on 24 7 with

2258

01:32:41,350 --> 01:32:39,360

the best streaming talk shows find your

2259

01:32:44,149 --> 01:32:41,360

favorite talkers and discover some new

2260

01:32:46,310 --> 01:32:44,159

ones it's free readily available online

2261

01:32:48,390 --> 01:32:46,320

or on mobile with any smartphone or

2262

01:32:50,950 --> 01:32:48,400

tablet finding your favorite talk shows

2263

01:32:52,830 --> 01:32:50,960

all in one place has gotten a whole lot

2264

01:32:59,140 --> 01:32:52,840

easier just go to

2265

01:32:59,150 --> 01:33:08,229

[Music]

2266

01:33:08,239 --> 01:33:13,270

kgraradio.com

2267

01:33:20,070 --> 01:33:15,270

you are listening to fate to black with

2268

01:33:23,030 --> 01:33:20,870

hi

2269

01:33:26,550 --> 01:33:23,040

i'm rhys evans you're listening to jimmy

2270

01:33:29,590 --> 01:33:26,560

church this is revolution the revolution

2271

01:33:31,669 --> 01:33:29,600

will not be televised the revolution is

2272

01:33:36,350 --> 01:33:31,679

on radio

2273

01:34:14,629 --> 01:33:58,550

[Music]

2274

01:34:18,550 --> 01:34:16,709

okay welcome back fade to black i am

2275

01:34:21,030 --> 01:34:18,560

your host jimmy church tonight professor

2276

01:34:22,709 --> 01:34:21,040

avi loeb i want to remind everybody the

2277

01:34:25,750 --> 01:34:22,719

great week we have coming up on fade to

2278

01:34:28,629 --> 01:34:25,760

black uh tomorrow night it's the return

2279

01:34:31,430 --> 01:34:28,639

of jason quit wednesday night or hey

2280

01:34:33,510 --> 01:34:31,440

louis delgado is live from peru then of

2281

01:34:35,990 --> 01:34:33,520

course thursday is another fader night

2282

01:34:39,669 --> 01:34:36,000

with open lines all night long now going

2283

01:34:41,189 --> 01:34:39,679

back uh to where we just left off avi uh

2284

01:34:43,910 --> 01:34:41,199

which is

2285

01:34:46,629 --> 01:34:43,920

the size of everything uh the universe

2286

01:34:48,550 --> 01:34:46,639

is expanding uh

2287

01:34:49,510 --> 01:34:48,560

apparently faster than the speed of

2288

01:34:52,390 --> 01:34:49,520

light

2289

01:34:55,189 --> 01:34:52,400

it it it is expanding and i think that

2290

01:34:57,830 --> 01:34:55,199

the earth the people here

2291

01:35:00,790 --> 01:34:57,840

if we look at pop culture is starting to

2292

01:35:03,590 --> 01:35:00,800

understand the ginormity

2293

01:35:07,990 --> 01:35:03,600

of what we are actually talking about

2294

01:35:10,790 --> 01:35:08,000

it it is beyond any imagination that we

2295

01:35:13,030 --> 01:35:10,800

are alone the universe is just too big

2296

01:35:14,870 --> 01:35:13,040

isn't it

2297

01:35:17,189 --> 01:35:14,880

yeah i mean um

2298

01:35:19,350 --> 01:35:17,199

there is a region that we can see and

2299

01:35:20,790 --> 01:35:19,360

even within that region

2300

01:35:21,990 --> 01:35:20,800

there are more

2301

01:35:23,990 --> 01:35:22,000

planets

2302

01:35:26,790 --> 01:35:24,000

like the earth and there are grains of

2303

01:35:29,510 --> 01:35:26,800

sand on all beaches on earth and we know

2304

01:35:31,109 --> 01:35:29,520

that roughly half of the sun-like stars

2305

01:35:33,510 --> 01:35:31,119

have a planet the size of the earth

2306

01:35:35,430 --> 01:35:33,520

roughly the same separation or you know

2307

01:35:37,030 --> 01:35:35,440

that means that we are not really

2308

01:35:39,750 --> 01:35:37,040

privileged and

2309

01:35:43,109 --> 01:35:39,760

um to me it illustrates the possibility

2310

01:35:45,109 --> 01:35:43,119

that a lot of things like us predated us

2311

01:35:47,430 --> 01:35:45,119

existed before us and

2312

01:35:49,030 --> 01:35:47,440

you know i had an experience

2313

01:35:50,709 --> 01:35:49,040

the other day when

2314

01:35:52,470 --> 01:35:50,719

my wife noticed

2315

01:35:54,870 --> 01:35:52,480

someone standing on the street next to

2316

01:35:56,470 --> 01:35:54,880

her home and looking at our home and she

2317

01:35:58,629 --> 01:35:56,480

said who is this person is this a

2318

01:36:00,149 --> 01:35:58,639

stalker or something she's she was

2319

01:36:01,669 --> 01:36:00,159

worried and i said i'll approach that

2320

01:36:04,629 --> 01:36:01,679

person and

2321

01:36:05,990 --> 01:36:04,639

i i went and the person said that you

2322

01:36:07,350 --> 01:36:06,000

know i was

2323

01:36:09,669 --> 01:36:07,360

a kid

2324

01:36:10,790 --> 01:36:09,679

50 years ago that used to live in your

2325

01:36:12,149 --> 01:36:10,800

house

2326

01:36:14,629 --> 01:36:12,159

and

2327

01:36:16,149 --> 01:36:14,639

i said oh very nice to meet you from 50

2328

01:36:18,229 --> 01:36:16,159

years ago and

2329

01:36:20,390 --> 01:36:18,239

i showed him he wanted to see the

2330

01:36:22,950 --> 01:36:20,400

backyard and i showed it to him and then

2331

01:36:25,189 --> 01:36:22,960

he said you know my father

2332

01:36:27,750 --> 01:36:25,199

buried a cat

2333

01:36:29,830 --> 01:36:27,760

named tiger

2334

01:36:31,510 --> 01:36:29,840

in the backyard and i said tiger that

2335

01:36:33,669 --> 01:36:31,520

sounds familiar because i saw a

2336

01:36:35,910 --> 01:36:33,679

tombstone saying tiger

2337

01:36:37,910 --> 01:36:35,920

and i went there and i showed it to him

2338

01:36:40,310 --> 01:36:37,920

and that was where the cat was buried

2339

01:36:41,030 --> 01:36:40,320

and of course i was relieved to realize

2340

01:36:45,590 --> 01:36:41,040

that

2341

01:36:46,950 --> 01:36:45,600

years ago under this tombstone because

2342

01:36:48,870 --> 01:36:46,960

who knows what else could have been

2343

01:36:51,109 --> 01:36:48,880

buried there that is named tiger you

2344

01:36:52,629 --> 01:36:51,119

know it could have been a tiger um at

2345

01:36:56,229 --> 01:36:52,639

any event um

2346

01:36:58,310 --> 01:36:56,239

um that to me um illustrated an

2347

01:36:59,430 --> 01:36:58,320

important fact that you know you are

2348

01:37:01,030 --> 01:36:59,440

living in

2349

01:37:02,950 --> 01:37:01,040

some space and

2350

01:37:05,430 --> 01:37:02,960

and there's someone that used to live in

2351
01:37:08,229 --> 01:37:05,440
your space before your time

2352
01:37:10,390 --> 01:37:08,239
tells you something new about

2353
01:37:12,709 --> 01:37:10,400
your space and you know

2354
01:37:14,390 --> 01:37:12,719
it means that you should be kind to

2355
01:37:16,950 --> 01:37:14,400
visitors to

2356
01:37:20,149 --> 01:37:16,960
guests and by the way that's something

2357
01:37:21,590 --> 01:37:20,159
that was advocated by the ancient greeks

2358
01:37:23,350 --> 01:37:21,600
zelz the

2359
01:37:25,510 --> 01:37:23,360
most important

2360
01:37:27,109 --> 01:37:25,520
god in greek mythology

2361
01:37:30,790 --> 01:37:27,119
uh was

2362
01:37:33,350 --> 01:37:30,800
considered to be kind to guests and and

2363
01:37:34,149 --> 01:37:33,360

they admired being kind to guests they

2364

01:37:37,910 --> 01:37:34,159

have a

2365

01:37:40,709 --> 01:37:37,920

name for that it's called the shinya and

2366

01:37:43,510 --> 01:37:40,719

what i realized is we should be kind to

2367

01:37:46,470 --> 01:37:43,520

interstellar guests you know because

2368

01:37:47,430 --> 01:37:46,480

they have known they may have known

2369

01:37:48,870 --> 01:37:47,440

our

2370

01:37:51,590 --> 01:37:48,880

region

2371

01:37:54,470 --> 01:37:51,600

longer than we did and they may know

2372

01:37:56,950 --> 01:37:54,480

facts about our region

2373

01:37:58,149 --> 01:37:56,960

uh that we don't know about just like

2374

01:38:00,870 --> 01:37:58,159

this um

2375

01:38:02,950 --> 01:38:00,880

what is buried under the tombstone that

2376

01:38:03,830 --> 01:38:02,960

had the name tiger

2377

01:38:06,470 --> 01:38:03,840

and

2378

01:38:08,390 --> 01:38:06,480

we should be kind to interstellar guests

2379

01:38:13,590 --> 01:38:08,400

and that's my message

2380

01:38:16,470 --> 01:38:13,600

would it surprise you avi if uh an uh an

2381

01:38:19,750 --> 01:38:16,480

archaeologist or there's something

2382

01:38:23,189 --> 01:38:19,760

uh that was found at a dig site

2383

01:38:27,030 --> 01:38:23,199

that was extremely old right that wasn't

2384

01:38:28,470 --> 01:38:27,040

ours 100 million years old some crazy

2385

01:38:31,109 --> 01:38:28,480

uh

2386

01:38:33,350 --> 01:38:31,119

interstellar probe that landed on this

2387

01:38:35,830 --> 01:38:33,360

earth and was buried over time would it

2388

01:38:37,350 --> 01:38:35,840

surprise you if an object like that was

2389

01:38:39,590 --> 01:38:37,360

found

2390

01:38:41,510 --> 01:38:39,600

no it would not i mean it's possible you

2391

01:38:44,149 --> 01:38:41,520

know the moon for example has no

2392

01:38:45,669 --> 01:38:44,159

geological activity there is not no

2393

01:38:47,430 --> 01:38:45,679

mixing of the

2394

01:38:48,709 --> 01:38:47,440

of the surface of the moon with the

2395

01:38:50,629 --> 01:38:48,719

interior

2396

01:38:52,790 --> 01:38:50,639

uh

2397

01:38:55,189 --> 01:38:52,800

unlike what happens on earth where you

2398

01:38:58,390 --> 01:38:55,199

have over hundreds of millions of years

2399

01:39:00,310 --> 01:38:58,400

everything on the surface gets buried

2400

01:39:04,070 --> 01:39:00,320

and so in principle the moon could have

2401
01:39:06,070 --> 01:39:04,080
collected equipment that landed on it uh

2402
01:39:07,990 --> 01:39:06,080
we might want to check it it's just like

2403
01:39:09,590 --> 01:39:08,000
a museum

2404
01:39:12,070 --> 01:39:09,600
i wouldn't be surprised at all you know

2405
01:39:14,870 --> 01:39:12,080
that for example the perseverance rover

2406
01:39:17,430 --> 01:39:14,880
is uh going over the surface of mars and

2407
01:39:20,070 --> 01:39:17,440
trying to look for evidence of primitive

2408
01:39:20,870 --> 01:39:20,080
life that may have existed on on mars

2409
01:39:23,189 --> 01:39:20,880
and

2410
01:39:25,350 --> 01:39:23,199
suppose it bumps into the wreckage of

2411
01:39:27,590 --> 01:39:25,360
some spaceship that

2412
01:39:28,550 --> 01:39:27,600
represents technologies we don't even

2413
01:39:32,070 --> 01:39:28,560

possess

2414

01:39:33,910 --> 01:39:32,080

uh that would be a blow to our ego but i

2415

01:39:36,629 --> 01:39:33,920

would not be surprised you know it's

2416

01:39:38,870 --> 01:39:36,639

possible so we should be open-minded and

2417

01:39:41,510 --> 01:39:38,880

search of course you know we tend to

2418

01:39:43,830 --> 01:39:41,520

think that we know the answer in advance

2419

01:39:45,910 --> 01:39:43,840

um i don't think that's a good approach

2420

01:39:46,870 --> 01:39:45,920

i think we should be open-minded and

2421

01:39:48,550 --> 01:39:46,880

also

2422

01:39:51,590 --> 01:39:48,560

i don't think that we are the smartest

2423

01:39:54,470 --> 01:39:51,600

kid on the block you know i uh based on

2424

01:39:57,109 --> 01:39:54,480

the way we behave i don't think so so

2425

01:39:58,950 --> 01:39:57,119

why not just check you know just like my

2426

01:40:00,709 --> 01:39:58,960

daughters went to the kindergarten they

2427

01:40:01,669 --> 01:40:00,719

found kids that are smarter than they

2428

01:40:03,750 --> 01:40:01,679

are

2429

01:40:05,109 --> 01:40:03,760

why don't we be open-minded to the

2430

01:40:07,030 --> 01:40:05,119

possibility

2431

01:40:09,590 --> 01:40:07,040

that there might be others

2432

01:40:10,790 --> 01:40:09,600

smarter than us out there now

2433

01:40:14,390 --> 01:40:10,800

let's let's

2434

01:40:18,229 --> 01:40:14,400

let's stop right there for a second um i

2435

01:40:19,189 --> 01:40:18,239

understand if uh your goals

2436

01:40:21,030 --> 01:40:19,199

if you

2437

01:40:23,109 --> 01:40:21,040

uh find something interesting with the

2438

01:40:24,390 --> 01:40:23,119

galileo project

2439

01:40:26,070 --> 01:40:24,400

a paper is going to get written you're

2440

01:40:28,229 --> 01:40:26,080

going to talk to the public about it and

2441

01:40:30,470 --> 01:40:28,239

say this is what we found

2442

01:40:33,990 --> 01:40:30,480

if perseverance

2443

01:40:37,750 --> 01:40:34,000

rolls over a coke can on mars

2444

01:40:39,270 --> 01:40:37,760

or finds a a spacecraft from ancient

2445

01:40:42,550 --> 01:40:39,280

times

2446

01:40:44,470 --> 01:40:42,560

would nasa make that a public

2447

01:40:46,229 --> 01:40:44,480

would would we even know about that

2448

01:40:48,149 --> 01:40:46,239

would we find out

2449

01:40:50,310 --> 01:40:48,159

of course as long as it's part

2450

01:40:53,510 --> 01:40:50,320

of a scientific mission like

2451

01:40:55,350 --> 01:40:53,520

perseverance uh we will know about it uh

2452

01:40:58,229 --> 01:40:55,360

i mean the only reason that

2453

01:40:59,990 --> 01:40:58,239

we don't hear for example uh

2454

01:41:03,109 --> 01:41:00,000

about most of the

2455

01:41:04,550 --> 01:41:03,119

evidence that was in the uh

2456

01:41:06,470 --> 01:41:04,560

office of the director of national

2457

01:41:09,350 --> 01:41:06,480

intelligence report to congress is

2458

01:41:12,070 --> 01:41:09,360

because it was taken by uh classified

2459

01:41:15,590 --> 01:41:12,080

instruments classified sensors that the

2460

01:41:18,390 --> 01:41:15,600

government owns and is using them to

2461

01:41:21,030 --> 01:41:18,400

protect the nation you see that there

2462

01:41:22,149 --> 01:41:21,040

are of national security importance and

2463

01:41:24,470 --> 01:41:22,159

because

2464

01:41:26,149 --> 01:41:24,480

uh the data was collected by such

2465

01:41:28,070 --> 01:41:26,159

sensors

2466

01:41:30,629 --> 01:41:28,080

it's not being released so it's kept in

2467

01:41:33,350 --> 01:41:30,639

secret and it's not so much that

2468

01:41:35,910 --> 01:41:33,360

the data itself is kept in secret but

2469

01:41:38,550 --> 01:41:35,920

the fact that we have that data could

2470

01:41:39,270 --> 01:41:38,560

allow our adversaries to tell what kind

2471

01:41:41,669 --> 01:41:39,280

of

2472

01:41:44,390 --> 01:41:41,679

sensors we are using so as a result the

2473

01:41:46,629 --> 01:41:44,400

data is not released and you know

2474

01:41:50,229 --> 01:41:46,639

if you collect the data with

2475

01:41:51,990 --> 01:41:50,239

instruments that are public

2476

01:41:53,350 --> 01:41:52,000

scientific

2477

01:41:54,950 --> 01:41:53,360

then it will be

2478

01:41:56,629 --> 01:41:54,960

the data that is collected will be

2479

01:41:59,590 --> 01:41:56,639

available to the public i don't see any

2480

01:42:00,870 --> 01:41:59,600

way that anyone would restrict access to

2481

01:42:01,590 --> 01:42:00,880

that data

2482

01:42:04,070 --> 01:42:01,600

so

2483

01:42:06,149 --> 01:42:04,080

all scientific projects are supposed to

2484

01:42:07,590 --> 01:42:06,159

be open and that's what the galileo

2485

01:42:09,669 --> 01:42:07,600

project will be

2486

01:42:12,629 --> 01:42:09,679

and that's what you should expect also

2487

01:42:15,830 --> 01:42:12,639

from any project that nasa is sending

2488

01:42:17,109 --> 01:42:15,840

out as a scientific project now with uh

2489

01:42:20,870 --> 01:42:17,119

staying on the

2490

01:42:23,669 --> 01:42:20,880

the uap tf report that was released

2491

01:42:27,669 --> 01:42:23,679

i am going to read it with

2492

01:42:29,990 --> 01:42:27,679

uh my small brain and i'm going to

2493

01:42:32,550 --> 01:42:30,000

run that through a filter

2494

01:42:35,270 --> 01:42:32,560

that that is

2495

01:42:38,310 --> 01:42:35,280

exclusive to me i'm going to read it a

2496

01:42:39,590 --> 01:42:38,320

certain way and extrapolate it in a

2497

01:42:41,669 --> 01:42:39,600

certain way

2498

01:42:44,149 --> 01:42:41,679

you're an academic

2499

01:42:47,430 --> 01:42:44,159

as you read that report

2500

01:42:50,310 --> 01:42:47,440

and you see something like we have 144

2501
01:42:54,550 --> 01:42:50,320
cases that are classified one was

2502
01:42:56,629 --> 01:42:54,560
uh figured out so that leaves 143

2503
01:42:58,149 --> 01:42:56,639
as as a professional academic what does

2504
01:43:01,590 --> 01:42:58,159
that tell you

2505
01:43:05,350 --> 01:43:01,600
why you know it's being scientific data

2506
01:43:07,590 --> 01:43:05,360
or i'm sorry i'm sorry military uh

2507
01:43:09,350 --> 01:43:07,600
data that's one thing but there's also

2508
01:43:12,790 --> 01:43:09,360
eyewitnesses there

2509
01:43:14,709 --> 01:43:12,800
and you could definitely state

2510
01:43:16,470 --> 01:43:14,719
what types of craft

2511
01:43:18,470 --> 01:43:16,480
were involved with this you don't have

2512
01:43:20,390 --> 01:43:18,480
to reveal how it was discovered and what

2513
01:43:22,790 --> 01:43:20,400

the data and what the mechanics and

2514

01:43:24,950 --> 01:43:22,800

logistics were behind it but what were

2515

01:43:26,950 --> 01:43:24,960

the cases themselves

2516

01:43:28,629 --> 01:43:26,960

why doesn't you know why keep that

2517

01:43:30,870 --> 01:43:28,639

secret

2518

01:43:32,550 --> 01:43:30,880

so some of the objects that were

2519

01:43:34,629 --> 01:43:32,560

reported that were discovered by

2520

01:43:35,590 --> 01:43:34,639

multiple instruments and

2521

01:43:37,750 --> 01:43:35,600

and that

2522

01:43:38,709 --> 01:43:37,760

makes them real

2523

01:43:41,669 --> 01:43:38,719

and

2524

01:43:44,229 --> 01:43:41,679

the report just doesn't provide enough

2525

01:43:46,390 --> 01:43:44,239

information about their nature and

2526

01:43:48,229 --> 01:43:46,400

i i assume that the people who wrote

2527

01:43:50,310 --> 01:43:48,239

their report don't really know what

2528

01:43:53,030 --> 01:43:50,320

these objects are but

2529

01:43:56,229 --> 01:43:53,040

they want to talk about them because

2530

01:43:59,350 --> 01:43:56,239

they feel that they may be of

2531

01:44:00,790 --> 01:43:59,360

uh an unusual origin and

2532

01:44:03,590 --> 01:44:00,800

to me that is

2533

01:44:05,669 --> 01:44:03,600

the message of the odni report that that

2534

01:44:07,910 --> 01:44:05,679

there is something intriguing

2535

01:44:10,629 --> 01:44:07,920

and that scientists should figure it out

2536

01:44:13,510 --> 01:44:10,639

that's very simple and the way that

2537

01:44:14,310 --> 01:44:13,520

science is done is

2538

01:44:17,109 --> 01:44:14,320

by

2539

01:44:19,590 --> 01:44:17,119

getting better evidence better data so

2540

01:44:21,830 --> 01:44:19,600

that it can guide us you see if if you

2541

01:44:23,430 --> 01:44:21,840

see a fuzzy image that is not good

2542

01:44:25,430 --> 01:44:23,440

enough to tell you the nature of the

2543

01:44:27,510 --> 01:44:25,440

object you're looking at you're trying

2544

01:44:30,149 --> 01:44:27,520

to build a telescope that is big enough

2545

01:44:32,149 --> 01:44:30,159

so that it will get a crisper image

2546

01:44:33,669 --> 01:44:32,159

you you would be able to tell what this

2547

01:44:34,950 --> 01:44:33,679

object is it's

2548

01:44:39,109 --> 01:44:34,960

it's sort of like

2549

01:44:41,510 --> 01:44:40,229

camera

2550

01:44:43,669 --> 01:44:41,520

at home

2551

01:44:45,990 --> 01:44:43,679

in order to get

2552

01:44:48,790 --> 01:44:46,000

crispier images of whatever you're

2553

01:44:51,590 --> 01:44:48,800

photographing and um and and so that's

2554

01:44:54,070 --> 01:44:51,600

an obvious way to figure out what

2555

01:44:55,189 --> 01:44:54,080

something is is to get more data on it

2556

01:44:56,950 --> 01:44:55,199

it's

2557

01:44:58,709 --> 01:44:56,960

i think the worst thing we can do is

2558

01:45:00,870 --> 01:44:58,719

argue about it and leave it for the

2559

01:45:03,590 --> 01:45:00,880

government to figure out because the

2560

01:45:06,070 --> 01:45:03,600

government is really not in the job of

2561

01:45:07,590 --> 01:45:06,080

you know scientific inquiry figuring out

2562

01:45:09,830 --> 01:45:07,600

what things are

2563

01:45:11,750 --> 01:45:09,840

the government is has some objectives

2564

01:45:14,550 --> 01:45:11,760

that are often political that are

2565

01:45:16,629 --> 01:45:14,560

national security in origin and

2566

01:45:18,390 --> 01:45:16,639

this is not the same as

2567

01:45:20,390 --> 01:45:18,400

a scientific inquiry which is just

2568

01:45:21,910 --> 01:45:20,400

trying you know innocently to figure out

2569

01:45:23,430 --> 01:45:21,920

what something is

2570

01:45:25,750 --> 01:45:23,440

i think this subject you know most of

2571

01:45:27,830 --> 01:45:25,760

the sky is not classified

2572

01:45:30,149 --> 01:45:27,840

uh so we can just observe it with

2573

01:45:31,990 --> 01:45:30,159

telescopes and follow objects of

2574

01:45:33,590 --> 01:45:32,000

interest you see astronomers were

2575

01:45:35,830 --> 01:45:33,600

looking are looking at the sky but they

2576

01:45:37,750 --> 01:45:35,840

are not they're fixated

2577

01:45:40,070 --> 01:45:37,760

on very distant

2578

01:45:41,430 --> 01:45:40,080

sources that are not moving much

2579

01:45:43,590 --> 01:45:41,440

here you have

2580

01:45:45,830 --> 01:45:43,600

to monitor things that are moving and

2581

01:45:48,629 --> 01:45:45,840

and that's very different so astronomers

2582

01:45:50,629 --> 01:45:48,639

so far we're not really pursuing this

2583

01:45:53,669 --> 01:45:50,639

this task and for the first time the

2584

01:45:55,109 --> 01:45:53,679

galileo project is trying to do that and

2585

01:45:56,310 --> 01:45:55,119

let's see what we get

2586

01:45:58,830 --> 01:45:56,320

now uh

2587

01:46:00,390 --> 01:45:58,840

the other interesting part about the

2588

01:46:01,750 --> 01:46:00,400

uaptf

2589

01:46:05,270 --> 01:46:01,760

and i do want to talk about the

2590

01:46:08,870 --> 01:46:05,280

intelligence budget that uh for 2022

2591

01:46:13,750 --> 01:46:08,880

that addresses things a step further but

2592

01:46:15,189 --> 01:46:13,760

uh the uaptf report said it's not us

2593

01:46:17,510 --> 01:46:15,199

we know that

2594

01:46:19,990 --> 01:46:17,520

it's not a foreign adversary it's not

2595

01:46:22,870 --> 01:46:20,000

russia and china we know that

2596

01:46:25,590 --> 01:46:22,880

well wait a minute avi

2597

01:46:27,109 --> 01:46:25,600

what's left right what's left well

2598

01:46:29,910 --> 01:46:27,119

what's left is

2599

01:46:32,950 --> 01:46:29,920

well actually a couple of things one

2600

01:46:35,430 --> 01:46:32,960

it could be some unusual

2601

01:46:36,629 --> 01:46:35,440

natural phenomena that we've never

2602

01:46:38,790 --> 01:46:36,639

imagined

2603

01:46:40,709 --> 01:46:38,800

uh it could be some malfunction of the

2604

01:46:43,590 --> 01:46:40,719

instruments you know that for some

2605

01:46:45,830 --> 01:46:43,600

reason conspires to look as if it's a

2606

01:46:47,990 --> 01:46:45,840

real object but it's not

2607

01:46:50,470 --> 01:46:48,000

and of course

2608

01:46:52,550 --> 01:46:50,480

it could be

2609

01:46:54,790 --> 01:46:52,560

equipment from an extraterrestrial

2610

01:46:56,550 --> 01:46:54,800

technological origin

2611

01:46:58,470 --> 01:46:56,560

and in order to figure out which of

2612

01:47:02,390 --> 01:46:58,480

these possibilities is the correct

2613

01:47:07,430 --> 01:47:04,629

build instruments that i have full

2614

01:47:09,430 --> 01:47:07,440

control over it's not a jittery camera

2615

01:47:11,590 --> 01:47:09,440

in a cockpit of a fighter jet you know

2616

01:47:14,390 --> 01:47:11,600

that you have no control over it's not

2617

01:47:15,350 --> 01:47:14,400

the cell phone of some person on the

2618

01:47:17,590 --> 01:47:15,360

street

2619

01:47:20,149 --> 01:47:17,600

that is not stable that has poor

2620

01:47:22,390 --> 01:47:20,159

resolution you see fuzzy things

2621

01:47:25,270 --> 01:47:22,400

it needs to be scientific instruments

2622

01:47:26,870 --> 01:47:25,280

that are state-of-the-art that we have

2623

01:47:30,390 --> 01:47:26,880

full control over

2624

01:47:31,590 --> 01:47:30,400

and that we analyze the data of you know

2625

01:47:34,070 --> 01:47:31,600

using

2626

01:47:35,030 --> 01:47:34,080

the best computer systems and

2627

01:47:37,109 --> 01:47:35,040

uh

2628

01:47:38,790 --> 01:47:37,119

in a way that we fully understand and

2629

01:47:40,950 --> 01:47:38,800

the data will be open

2630

01:47:41,990 --> 01:47:40,960

and i think that is the way to clear up

2631

01:47:44,149 --> 01:47:42,000

the fog

2632

01:47:47,750 --> 01:47:44,159

and it's not you know something it's not

2633

01:47:49,830 --> 01:47:47,760

a philosophical debate it's just

2634

01:47:51,990 --> 01:47:49,840

a subject on which we need to get more

2635

01:47:54,790 --> 01:47:52,000

data to get to the bottom of which is

2636

01:47:57,270 --> 01:47:54,800

exactly the approach that science takes

2637

01:47:59,270 --> 01:47:57,280

towards many questions like what is the

2638

01:48:00,950 --> 01:47:59,280

nature of dark matter we don't know what

2639

01:48:03,189 --> 01:48:00,960

most of the matter in the universe so we

2640

01:48:04,390 --> 01:48:03,199

do experiments and we invested hundreds

2641

01:48:06,149 --> 01:48:04,400

of millions of dollars looking for

2642

01:48:09,030 --> 01:48:06,159

specific types of particles that make up

2643

01:48:11,189 --> 01:48:09,040

the dark matter we haven't found it yet

2644

01:48:13,350 --> 01:48:11,199

and i think in much the same spirit you

2645

01:48:15,030 --> 01:48:13,360

know we can search in the dark

2646

01:48:16,950 --> 01:48:15,040

for equipment

2647

01:48:19,910 --> 01:48:16,960

from other civilizations and i don't see

2648

01:48:22,070 --> 01:48:19,920

that as less likely to give us important

2649

01:48:24,390 --> 01:48:22,080

results than the search for specific

2650

01:48:26,149 --> 01:48:24,400

types of dark matter so i think it

2651
01:48:28,550 --> 01:48:26,159
should be part of the mainstream of

2652
01:48:30,229 --> 01:48:28,560
science to look for objects of interest

2653
01:48:33,030 --> 01:48:30,239
in the sky

2654
01:48:35,990 --> 01:48:33,040
and it's really unfortunate that it you

2655
01:48:37,189 --> 01:48:36,000
know this commonsensical view is not

2656
01:48:39,189 --> 01:48:37,199
adapted

2657
01:48:41,430 --> 01:48:39,199
uh yet by the mainstream of the

2658
01:48:44,550 --> 01:48:41,440
scientific community but my hope is that

2659
01:48:46,790 --> 01:48:44,560
in the coming years we'll change the

2660
01:48:48,709 --> 01:48:46,800
intellectual climate in academia and it

2661
01:48:50,870 --> 01:48:48,719
will become mainstream and that's you

2662
01:48:54,149 --> 01:48:50,880
know part of the mission of the galileo

2663
01:48:57,030 --> 01:48:54,159

project now the uapth has been

2664

01:48:59,270 --> 01:48:57,040

dismantled there's a new uh group that

2665

01:49:01,109 --> 01:48:59,280

has been put together

2666

01:49:04,550 --> 01:49:01,119

and is

2667

01:49:06,950 --> 01:49:04,560

going to be funded in in 2022

2668

01:49:10,550 --> 01:49:06,960

to collect this data

2669

01:49:13,030 --> 01:49:10,560

um there is uh the gila brand uh

2670

01:49:16,870 --> 01:49:13,040

legislation that is uh been put forth

2671

01:49:20,070 --> 01:49:16,880

too as well do you anticipate uh some

2672

01:49:21,750 --> 01:49:20,080

cooperation with the galileo project and

2673

01:49:23,270 --> 01:49:21,760

the collection of data that the

2674

01:49:24,870 --> 01:49:23,280

department of defense is putting

2675

01:49:26,790 --> 01:49:24,880

together

2676

01:49:29,270 --> 01:49:26,800

well so the galileo project has some

2677

01:49:31,589 --> 01:49:29,280

guiding principles one of which is that

2678

01:49:34,950 --> 01:49:31,599

we will deal only with open data not

2679

01:49:36,550 --> 01:49:34,960

classified data because we want our data

2680

01:49:40,229 --> 01:49:36,560

to be available to the scientific

2681

01:49:42,390 --> 01:49:40,239

community at large and as long as

2682

01:49:44,390 --> 01:49:42,400

anyone else

2683

01:49:46,390 --> 01:49:44,400

adheres to this

2684

01:49:50,790 --> 01:49:46,400

guiding principle then we'll be glad to

2685

01:49:54,709 --> 01:49:53,510

that that is providing us with new data

2686

01:49:55,589 --> 01:49:54,719

and

2687

01:49:58,470 --> 01:49:55,599

but

2688

01:50:00,790 --> 01:49:58,480

we are mostly geared towards assembling

2689

01:50:03,990 --> 01:50:00,800

our own instruments collecting our own

2690

01:50:06,470 --> 01:50:04,000

data but if someone

2691

01:50:07,750 --> 01:50:06,480

that has higher quality data that was

2692

01:50:10,149 --> 01:50:07,760

not yet

2693

01:50:12,310 --> 01:50:10,159

made public that

2694

01:50:13,990 --> 01:50:12,320

if that someone would like to make it

2695

01:50:15,990 --> 01:50:14,000

public and allow

2696

01:50:17,910 --> 01:50:16,000

the scientific research team of the gala

2697

01:50:20,229 --> 01:50:17,920

project look at that you know we could

2698

01:50:21,030 --> 01:50:20,239

do that as long as it's open the data is

2699

01:50:22,470 --> 01:50:21,040

open

2700

01:50:23,510 --> 01:50:22,480

um

2701
01:50:25,990 --> 01:50:23,520
so

2702
01:50:26,950 --> 01:50:26,000
i i very much upload any

2703
01:50:30,310 --> 01:50:26,960
uh

2704
01:50:32,390 --> 01:50:30,320
move towards transparency and the

2705
01:50:34,229 --> 01:50:32,400
gilibrand amendment is a move in the

2706
01:50:36,070 --> 01:50:34,239
right direction it's not clear whether

2707
01:50:37,930 --> 01:50:36,080
it will be

2708
01:50:39,109 --> 01:50:37,940
in force or or

2709
01:50:40,310 --> 01:50:39,119
[Music]

2710
01:50:41,189 --> 01:50:40,320
embraced

2711
01:50:44,470 --> 01:50:41,199
uh

2712
01:50:47,589 --> 01:50:44,480
in in congress we we have to to see but

2713
01:50:49,990 --> 01:50:47,599

or maybe a reduced version of it will be

2714

01:50:51,910 --> 01:50:50,000

uh i think it's really important to get

2715

01:50:54,310 --> 01:50:51,920

scientists involved

2716

01:50:56,070 --> 01:50:54,320

even if dealing with classified data you

2717

01:50:58,149 --> 01:50:56,080

know that's not part of the galileo

2718

01:50:59,669 --> 01:50:58,159

project but if the government decides to

2719

01:51:01,830 --> 01:50:59,679

look into those

2720

01:51:03,830 --> 01:51:01,840

those data in a more scientific way that

2721

01:51:04,790 --> 01:51:03,840

would be i mean i i think that would be

2722

01:51:06,629 --> 01:51:04,800

great

2723

01:51:08,709 --> 01:51:06,639

eventually i think the data should be

2724

01:51:09,910 --> 01:51:08,719

open if it's not a matter of national

2725

01:51:11,430 --> 01:51:09,920

security and it's a matter of

2726

01:51:12,470 --> 01:51:11,440

international

2727

01:51:14,709 --> 01:51:12,480

uh

2728

01:51:16,790 --> 01:51:14,719

interest then it should be open because

2729

01:51:18,550 --> 01:51:16,800

it's part of this scientific

2730

01:51:21,000 --> 01:51:18,560

exploration you know if we're trying to

2731

01:51:22,550 --> 01:51:21,010

figure out our cosmic neighborhood

2732

01:51:23,510 --> 01:51:22,560

[Music]

2733

01:51:25,750 --> 01:51:23,520

so

2734

01:51:27,270 --> 01:51:25,760

one way or another eventually the data

2735

01:51:28,310 --> 01:51:27,280

should be open and

2736

01:51:31,669 --> 01:51:28,320

um

2737

01:51:33,750 --> 01:51:31,679

i i i upload the attempts to make it

2738

01:51:35,589 --> 01:51:33,760

to make the process of analyzing data

2739

01:51:37,990 --> 01:51:35,599

more transparent

2740

01:51:40,709 --> 01:51:38,000

now when we come back after the break

2741

01:51:43,189 --> 01:51:40,719

we've still got a few minutes to that

2742

01:51:45,830 --> 01:51:43,199

i do want to talk about direct contact

2743

01:51:47,430 --> 01:51:45,840

and and the pursuit of that and how it

2744

01:51:49,830 --> 01:51:47,440

could be possible

2745

01:51:51,750 --> 01:51:49,840

but there's uh another thing that i

2746

01:51:52,790 --> 01:51:51,760

wanted to address you know really

2747

01:51:55,589 --> 01:51:52,800

quickly

2748

01:51:57,830 --> 01:51:55,599

in the budget in the intelligence budget

2749

01:51:59,589 --> 01:51:57,840

there are five points or there's seven

2750

01:52:00,709 --> 01:51:59,599

but there's five points that were really

2751
01:52:03,750 --> 01:52:00,719
interesting

2752
01:52:07,109 --> 01:52:03,760
and one of them avi stood out

2753
01:52:10,149 --> 01:52:07,119
and it said that any

2754
01:52:13,350 --> 01:52:10,159
debris or objects that were retrieved

2755
01:52:16,149 --> 01:52:13,360
from a uap crash retrieval

2756
01:52:19,189 --> 01:52:16,159
should be made public and reported on

2757
01:52:21,589 --> 01:52:19,199
and and i have to step back and go what

2758
01:52:23,350 --> 01:52:21,599
are they talking about here it seems to

2759
01:52:25,669 --> 01:52:23,360
me that they know

2760
01:52:28,870 --> 01:52:25,679
that objects have crashed on this planet

2761
01:52:32,950 --> 01:52:28,880
and and they weren't aware of it it was

2762
01:52:35,189 --> 01:52:32,960
kept secret and now they want reports on

2763
01:52:38,229 --> 01:52:35,199

this and they want that knowledge

2764

01:52:40,950 --> 01:52:38,239

to be part of the public forum

2765

01:52:42,550 --> 01:52:40,960

it did does that surprise you and does

2766

01:52:46,229 --> 01:52:42,560

it suggest that

2767

01:52:48,870 --> 01:52:46,239

there has been crashed retrievals

2768

01:52:50,790 --> 01:52:48,880

uh i don't know i haven't seen

2769

01:52:53,030 --> 01:52:50,800

any evidence for that so i cannot

2770

01:52:55,669 --> 01:52:53,040

comment on that um you know as a

2771

01:52:59,030 --> 01:52:55,679

scientist i only i can only speak about

2772

01:53:01,589 --> 01:52:59,040

things that i'm fully aware of and i've

2773

01:53:03,430 --> 01:53:01,599

seen the evidence for and

2774

01:53:05,750 --> 01:53:03,440

this is not one of them

2775

01:53:09,270 --> 01:53:05,760

yeah and the reason why i haven't i

2776
01:53:11,669 --> 01:53:09,280
haven't retrieved any any objects myself

2777
01:53:15,350 --> 01:53:11,679
but what i'm suggesting here is that

2778
01:53:17,189 --> 01:53:15,360
this discussion is happening and it it

2779
01:53:18,950 --> 01:53:17,199
suggests to me

2780
01:53:21,270 --> 01:53:18,960
that if it's worth talking about and

2781
01:53:23,189 --> 01:53:21,280
putting it in the budget something has

2782
01:53:25,510 --> 01:53:23,199
been going on that the public has not

2783
01:53:27,030 --> 01:53:25,520
been made aware of in the past

2784
01:53:29,430 --> 01:53:27,040
well it would be very interesting if

2785
01:53:31,270 --> 01:53:29,440
that's the case but um

2786
01:53:34,070 --> 01:53:31,280
i'm part of the public and i'm not aware

2787
01:53:36,310 --> 01:53:34,080
of it so uh i i look forward to seeing

2788
01:53:38,709 --> 01:53:36,320

more evidence for anything that was

2789

01:53:41,270 --> 01:53:38,719

found yeah yeah

2790

01:53:42,950 --> 01:53:41,280

and we need to take a break here uh but

2791

01:53:45,510 --> 01:53:42,960

when we come back

2792

01:53:47,669 --> 01:53:45,520

um what i want to uh talk about

2793

01:53:50,550 --> 01:53:47,679

something that is not only in your book

2794

01:53:53,510 --> 01:53:50,560

but uh i i find it very interesting not

2795

01:53:56,709 --> 01:53:53,520

only with seti but if there is

2796

01:53:59,910 --> 01:53:56,719

communication going on out there how is

2797

01:54:01,189 --> 01:53:59,920

it possible that we would know

2798

01:54:03,910 --> 01:54:01,199

what it is

2799

01:54:06,950 --> 01:54:03,920

right and and i want to

2800

01:54:08,709 --> 01:54:06,960

it could just appear to us as noise

2801
01:54:09,510 --> 01:54:08,719
our hours

2802
01:54:11,430 --> 01:54:09,520
uh

2803
01:54:13,510 --> 01:54:11,440
radio and television broadcasts and

2804
01:54:15,830 --> 01:54:13,520
things that come off of this planet may

2805
01:54:17,350 --> 01:54:15,840
not be radio and television broadcast to

2806
01:54:20,790 --> 01:54:17,360
extraterrestrials

2807
01:54:22,629 --> 01:54:20,800
right it could be just noise to them and

2808
01:54:25,030 --> 01:54:22,639
i want to talk about all of that when we

2809
01:54:27,830 --> 01:54:25,040
come back let's take our break right now

2810
01:54:30,470 --> 01:54:27,840
our guest tonight professor avi loeb

2811
01:54:31,910 --> 01:54:30,480
we're talking about the galileo project

2812
01:54:36,740 --> 01:54:31,920
this is fade to black i'm yours jimmy

2813
01:54:39,800 --> 01:54:36,750

church stay with us we'll be right back

2814

01:54:40,970 --> 01:54:39,810

[Music]

2815

01:54:43,589 --> 01:54:40,980

[Applause]

2816

01:54:45,030 --> 01:54:43,599

[Music]

2817

01:54:50,650 --> 01:54:45,040

hi everybody this is rob halpert the

2818

01:54:54,629 --> 01:54:52,229

[Music]

2819

01:54:58,070 --> 01:54:54,639

your 1 million gigawatt paranormal

2820

01:54:59,589 --> 01:54:58,080

powerhouse kumx db

2821

01:55:01,430 --> 01:54:59,599

vx

2822

01:55:03,510 --> 01:55:01,440

why is it we're not very good with our

2823

01:55:05,270 --> 01:55:03,520

health regiment until it's too late we

2824

01:55:07,109 --> 01:55:05,280

don't put oil in the car until the

2825

01:55:09,910 --> 01:55:07,119

engine blows up when the body's out of

2826
01:55:12,149 --> 01:55:09,920
balance your health is not so good give

2827
01:55:15,350 --> 01:55:12,159
your body some love log on to get the

2828
01:55:17,350 --> 01:55:15,360
tea.com that's get the tea dot com try

2829
01:55:20,390 --> 01:55:17,360
our life change tea which cleanses you

2830
01:55:22,070 --> 01:55:20,400
from harmful intruders a clean colon is

2831
01:55:24,070 --> 01:55:22,080
one of the ways to bring the body in

2832
01:55:26,149 --> 01:55:24,080
balance we also carry organic

2833
01:55:28,870 --> 01:55:26,159
supplements to help you get where you

2834
01:55:31,270 --> 01:55:28,880
need to go so do your body a favor log

2835
01:55:33,430 --> 01:55:31,280
on to get the tea.com that's get the

2836
01:55:35,669 --> 01:55:33,440
ttea.com

2837
01:55:38,070 --> 01:55:35,679
you can even visit our sales page to

2838
01:55:40,390 --> 01:55:38,080

save some dough does anybody call money

2839

01:55:42,470 --> 01:55:40,400

dough anymore anyway if you're looking

2840

01:55:45,830 --> 01:55:42,480

for short helpful health tips go to

2841

01:55:48,790 --> 01:55:45,840

youtube and punch in health matters now

2842

01:55:49,990 --> 01:55:48,800

that's health matters now

2843

01:55:53,030 --> 01:55:50,000

so

2844

01:55:55,510 --> 01:55:53,040

log on to get the tea.com shop get

2845

01:55:57,750 --> 01:55:55,520

balanced then learn some cool tips at

2846

01:56:00,709 --> 01:55:57,760

health matters now you'll be glad you

2847

01:56:02,550 --> 01:56:00,719

did that's get the dot com

2848

01:56:05,910 --> 01:56:02,560

this is jimmy church of fade to black

2849

01:56:09,109 --> 01:56:05,920

and i only drink fade to black blend

2850

01:56:10,709 --> 01:56:09,119

coffee from river moon just click on the

2851
01:56:12,470 --> 01:56:10,719
river moon coffee banner at

2852
01:56:16,470 --> 01:56:12,480
jimmychurchradio.com

2853
01:56:19,189 --> 01:56:16,480
promo code f2b blend

2854
01:56:21,910 --> 01:56:19,199
this is the only way

2855
01:56:23,370 --> 01:56:21,920
this is made to black

2856
01:56:27,350 --> 01:56:23,380
make contact

2857
01:56:32,149 --> 01:56:29,189
when you're in the house for longer

2858
01:56:34,629 --> 01:56:32,159
periods of time you can see them flying

2859
01:56:36,310 --> 01:56:34,639
or running across the floor

2860
01:56:39,669 --> 01:56:36,320
ooh yuck

2861
01:56:42,390 --> 01:56:39,679
they're unhealthy gross and disgusting

2862
01:56:44,790 --> 01:56:42,400
bugs i loathe bugs

2863
01:56:46,149 --> 01:56:44,800

we keep a clean home but occasionally

2864

01:56:48,790 --> 01:56:46,159

bugs show up

2865

01:56:52,470 --> 01:56:48,800

well i found something that is tougher

2866

01:56:56,070 --> 01:56:52,480

than bugs orange guard on contact it

2867

01:56:59,030 --> 01:56:56,080

kills hidden bugs including ants roaches

2868

01:57:01,430 --> 01:56:59,040

and fleas plus orange guard is a

2869

01:57:03,510 --> 01:57:01,440

residual repellent all of the

2870

01:57:06,870 --> 01:57:03,520

ingredients of orange guard are on the

2871

01:57:09,189 --> 01:57:06,880

fda generally recognized as safe list

2872

01:57:12,950 --> 01:57:09,199

orange guard may be used around food

2873

01:57:14,950 --> 01:57:12,960

humans and pets it comes with a 30 day

2874

01:57:17,550 --> 01:57:14,960

money back guarantee

2875

01:57:20,629 --> 01:57:17,560

orange guard available at

2876
01:57:22,629 --> 01:57:20,639
orangeguard.com whole foods and ace

2877
01:57:25,990 --> 01:57:22,639
hardware

2878
01:57:28,709 --> 01:57:26,000
gold loves chaos uncertainty and

2879
01:57:30,629 --> 01:57:28,719
disarray history shows us what gold does

2880
01:57:32,390 --> 01:57:30,639
when people aren't sure aren't sure

2881
01:57:35,189 --> 01:57:32,400
about the government the stock market

2882
01:57:37,910 --> 01:57:35,199
their jobs or their retirement savings

2883
01:57:39,830 --> 01:57:37,920
our national debt is skyrocketing gold

2884
01:57:41,990 --> 01:57:39,840
and other precious metals are a defense

2885
01:57:44,790 --> 01:57:42,000
measure against inflation and a stock

2886
01:57:47,030 --> 01:57:44,800
market that might take years to recover

2887
01:57:49,350 --> 01:57:47,040
so what can you do right now to protect

2888
01:57:51,109 --> 01:57:49,360

yourself called united gold group we

2889

01:57:54,310 --> 01:57:51,119

offer gold and other precious metals

2890

01:57:55,910 --> 01:57:54,320

delivered securely within 72 hours are

2891

01:57:58,390 --> 01:57:55,920

you worried about the stock market we

2892

01:58:02,709 --> 01:57:58,400

can also help you set up a real gold or

2893

01:58:05,030 --> 01:58:02,719

silver ira or a 401k safe and secure

2894

01:58:07,430 --> 01:58:05,040

united gold group makes gold ownership

2895

01:58:09,510 --> 01:58:07,440

affordable call now and get up to twenty

2896

01:58:12,229 --> 01:58:09,520

five hundred dollars in free gold or

2897

01:58:15,910 --> 01:58:12,239

silver with a qualified ira call

2898

01:58:15,920 --> 01:58:19,589

that's

2899

01:58:19,599 --> 01:58:31,830

or 800-753-8534 unitedgoldgroup.com

2900

01:58:38,870 --> 01:58:35,990

you want to know a secret i love ponies

2901

01:58:40,709 --> 01:58:38,880

i really love ponies i'm serious

2902

01:58:42,470 --> 01:58:40,719

i couldn't stay sane without pawn

2903

01:58:44,550 --> 01:58:42,480

instabrush

2904

01:58:50,950 --> 01:58:44,560

why fade to black

2905

01:59:01,800 --> 01:58:53,189

this is fade to black with jimmy church

2906

01:59:10,470 --> 01:59:08,790

[Music]

2907

01:59:12,070 --> 01:59:10,480

welcome back this is faded black i'm

2908

01:59:14,470 --> 01:59:12,080

your host jimmy church another great

2909

01:59:16,709 --> 01:59:14,480

conversation with professor avi loeb

2910

01:59:19,189 --> 01:59:16,719

from harvard and we are talking about

2911

01:59:21,589 --> 01:59:19,199

the galileo project tonight

2912

01:59:24,229 --> 01:59:21,599

and and avi this is

2913

01:59:26,390 --> 01:59:24,239

this is an area that i don't fully

2914

01:59:27,510 --> 01:59:26,400

understand i'm trying to wrap my head

2915

01:59:29,430 --> 01:59:27,520

around

2916

01:59:33,589 --> 01:59:29,440

and that is

2917

01:59:37,430 --> 01:59:33,599

are we expecting et to operate

2918

01:59:40,870 --> 01:59:37,440

in our time scale right the way that we

2919

01:59:43,350 --> 01:59:40,880

are and understand each other here

2920

01:59:46,870 --> 01:59:43,360

with communications and just seeing each

2921

01:59:48,149 --> 01:59:46,880

other right in in this dimension

2922

01:59:51,189 --> 01:59:48,159

um

2923

01:59:53,350 --> 01:59:51,199

would we be if we intercepted something

2924

01:59:56,550 --> 01:59:53,360

out there or saw something

2925

01:59:59,030 --> 01:59:56,560

aren't we expecting them to be in our

2926
02:00:01,589 --> 01:59:59,040
time scale and and something that would

2927
02:00:03,830 --> 02:00:01,599
be visible to us

2928
02:00:05,350 --> 02:00:03,840
well the best way to think about this is

2929
02:00:07,270 --> 02:00:05,360
just imagine

2930
02:00:08,629 --> 02:00:07,280
you know human history you know we

2931
02:00:09,750 --> 02:00:08,639
started

2932
02:00:12,790 --> 02:00:09,760
uh

2933
02:00:15,189 --> 02:00:12,800
being not very different than

2934
02:00:17,830 --> 02:00:15,199
chimpanzees and you know then we went to

2935
02:00:19,189 --> 02:00:17,840
caves and so forth and um

2936
02:00:22,470 --> 02:00:19,199
just imagine

2937
02:00:25,830 --> 02:00:22,480
an early version of us meeting

2938
02:00:29,430 --> 02:00:25,840

us today you know like they would see

2939

02:00:30,629 --> 02:00:29,440

cars or see cell phones and

2940

02:00:32,790 --> 02:00:30,639

just

2941

02:00:34,709 --> 02:00:32,800

you know for them it would be

2942

02:00:38,950 --> 02:00:34,719

out of this world

2943

02:00:40,390 --> 02:00:38,960

um so it's not so much a matter of

2944

02:00:42,709 --> 02:00:40,400

being born

2945

02:00:44,709 --> 02:00:42,719

uh more intelligent

2946

02:00:47,030 --> 02:00:44,719

but just aging you know if a

2947

02:00:48,709 --> 02:00:47,040

technological civilization gets better

2948

02:00:50,709 --> 02:00:48,719

and better with time and that's what we

2949

02:00:52,550 --> 02:00:50,719

are doing right now and actually

2950

02:00:54,870 --> 02:00:52,560

right now technological development is

2951
02:00:57,189 --> 02:00:54,880
accelerating for example artificial

2952
02:00:59,350 --> 02:00:57,199
intelligence over the past few years

2953
02:01:01,910 --> 02:00:59,360
started accelerating in a very rapid

2954
02:01:04,709 --> 02:01:01,920
pace and you know you have

2955
02:01:07,030 --> 02:01:04,719
it's being used in self-driving cars and

2956
02:01:08,709 --> 02:01:07,040
you see in the future i imagine it being

2957
02:01:10,950 --> 02:01:08,719
used

2958
02:01:13,430 --> 02:01:10,960
in space you know you would send the

2959
02:01:15,990 --> 02:01:13,440
artificial intelligence astronauts ai

2960
02:01:18,149 --> 02:01:16,000
astronauts instead of humans because

2961
02:01:20,709 --> 02:01:18,159
you humans are very vulnerable to the

2962
02:01:23,430 --> 02:01:20,719
hazardous conditions in space there are

2963
02:01:25,510 --> 02:01:23,440

energetic particles can destroy

2964

02:01:28,149 --> 02:01:25,520

a significant number of cells in human

2965

02:01:30,229 --> 02:01:28,159

brain within a few years uh

2966

02:01:32,950 --> 02:01:30,239

if you are not protected by the earth's

2967

02:01:34,629 --> 02:01:32,960

magnetosphere if you go far away like

2968

02:01:36,310 --> 02:01:34,639

if you go to the surface of mars you

2969

02:01:38,070 --> 02:01:36,320

know i don't think it's a good idea

2970

02:01:40,070 --> 02:01:38,080

without proper protection i mean you can

2971

02:01:42,149 --> 02:01:40,080

go underground and protect yourself but

2972

02:01:45,510 --> 02:01:42,159

otherwise it's very dangerous

2973

02:01:47,750 --> 02:01:45,520

but if you send equipment like um ai

2974

02:01:50,229 --> 02:01:47,760

astronauts that are made of

2975

02:01:52,470 --> 02:01:50,239

electronics they could survive and they

2976

02:01:55,430 --> 02:01:52,480

could survive for very long times

2977

02:01:56,229 --> 02:01:55,440

and so that's i think what eventually

2978

02:02:00,950 --> 02:01:56,239

will

2979

02:02:03,109 --> 02:02:00,960

likely that another civilization

2980

02:02:05,589 --> 02:02:03,119

might have sent it already and we will

2981

02:02:08,070 --> 02:02:05,599

not find biological creatures visiting

2982

02:02:09,030 --> 02:02:08,080

us we will find ai astronauts visiting

2983

02:02:10,870 --> 02:02:09,040

us

2984

02:02:13,350 --> 02:02:10,880

and

2985

02:02:15,910 --> 02:02:13,360

so what i'm trying to say is that

2986

02:02:18,550 --> 02:02:15,920

you know if we imagine our future

2987

02:02:22,310 --> 02:02:18,560

they may have already reached whatever

2988

02:02:23,910 --> 02:02:22,320

we would get to in our future so if they

2989

02:02:26,950 --> 02:02:23,920

predated us

2990

02:02:28,950 --> 02:02:26,960

they may represent our future and

2991

02:02:31,109 --> 02:02:28,960

if you go back to a caveman you know

2992

02:02:34,310 --> 02:02:31,119

when a caveman sees a cell phone the

2993

02:02:35,669 --> 02:02:34,320

caveman would think it's a shiny rock

2994

02:02:37,669 --> 02:02:35,679

and

2995

02:02:39,430 --> 02:02:37,679

of course the way for the caveman to

2996

02:02:42,070 --> 02:02:39,440

learn something new is by pressing

2997

02:02:44,229 --> 02:02:42,080

buttons on this shiny rock and realizing

2998

02:02:45,270 --> 02:02:44,239

that it records his voice or records his

2999

02:02:47,589 --> 02:02:45,280

image and

3000

02:02:50,870 --> 02:02:47,599

then it would imply that it's not a rock

3001

02:02:52,790 --> 02:02:50,880

so for us you know it will just be

3002

02:02:54,310 --> 02:02:52,800

an experience if we meet something from

3003

02:02:57,669 --> 02:02:54,320

our future

3004

02:03:00,470 --> 02:02:57,679

uh we might not figure it out but

3005

02:03:03,669 --> 02:03:00,480

just like the caveman can tell that a

3006

02:03:06,790 --> 02:03:03,679

cellphone is not a rock we should be

3007

02:03:09,270 --> 02:03:06,800

able to tell that whatever we find is

3008

02:03:11,910 --> 02:03:09,280

not natural in origin you know it's not

3009

02:03:14,390 --> 02:03:11,920

it's an artificial object we cannot

3010

02:03:15,910 --> 02:03:14,400

quite figure out what it's doing

3011

02:03:18,070 --> 02:03:15,920

what it's after

3012

02:03:19,350 --> 02:03:18,080

what it represents

3013

02:03:21,189 --> 02:03:19,360

but it looks

3014

02:03:22,310 --> 02:03:21,199

unusual okay and

3015

02:03:25,350 --> 02:03:22,320

that's

3016

02:03:27,430 --> 02:03:25,360

by itself you know an advance just like

3017

02:03:30,229 --> 02:03:27,440

the cavemen would realize the cell phone

3018

02:03:32,310 --> 02:03:30,239

is something else you know and

3019

02:03:34,470 --> 02:03:32,320

that would be the first step for us to

3020

02:03:36,070 --> 02:03:34,480

see something else something that we've

3021

02:03:36,790 --> 02:03:36,080

never seen before

3022

02:03:38,790 --> 02:03:36,800

and

3023

02:03:41,189 --> 02:03:38,800

what planetary scientists are doing

3024

02:03:42,629 --> 02:03:41,199

right now with respect to omomua they

3025

02:03:44,390 --> 02:03:42,639

basically say

3026

02:03:46,149 --> 02:03:44,400

you know it's a rock of a type that

3027

02:03:49,030 --> 02:03:46,159

we've never seen before

3028

02:03:52,069 --> 02:03:49,040

and they say it's a nitrogen iceberg a

3029

02:03:54,709 --> 02:03:52,079

chip of frozen nitrogen that was chipped

3030

02:03:56,550 --> 02:03:54,719

off the surface of a planet like pluto

3031

02:03:58,229 --> 02:03:56,560

around another star

3032

02:03:59,990 --> 02:03:58,239

even though there is a problem with the

3033

02:04:02,149 --> 02:04:00,000

mass budget of nitrogen there is not

3034

02:04:05,189 --> 02:04:02,159

enough nitrogen to do that that's what

3035

02:04:07,109 --> 02:04:05,199

some people argue very strongly for

3036

02:04:08,870 --> 02:04:07,119

other people argue for a hydrogen

3037

02:04:11,189 --> 02:04:08,880

iceberg again something we've never seen

3038

02:04:13,189 --> 02:04:11,199

before a chunk of frozen hydrogen we

3039

02:04:14,950 --> 02:04:13,199

don't know if nature produces it but

3040

02:04:18,149 --> 02:04:14,960

that's considered part of the mainstream

3041

02:04:22,229 --> 02:04:18,159

to argue that maybe omua was that and

3042

02:04:23,990 --> 02:04:22,239

then another team says maybe it's a

3043

02:04:26,550 --> 02:04:24,000

cloud of dust particles that are very

3044

02:04:27,430 --> 02:04:26,560

loosely bound 100 times less dense than

3045

02:04:28,950 --> 02:04:27,440

air

3046

02:04:30,790 --> 02:04:28,960

and there the problem is that it will

3047

02:04:32,709 --> 02:04:30,800

not maintain its integrity when it gets

3048

02:04:34,950 --> 02:04:32,719

close to the sun and heated

3049

02:04:38,229 --> 02:04:34,960

with a hydrogen iceberg it would get

3050

02:04:40,390 --> 02:04:38,239

evaporated very quickly so all of these

3051
02:04:42,629 --> 02:04:40,400
things that we've never seen before they

3052
02:04:45,270 --> 02:04:42,639
there are explanations that are

3053
02:04:46,390 --> 02:04:45,280
just um placeholders for something

3054
02:04:48,550 --> 02:04:46,400
natural

3055
02:04:50,790 --> 02:04:48,560
we've never seen anything like it before

3056
02:04:52,950 --> 02:04:50,800
and nevertheless those planetary

3057
02:04:55,830 --> 02:04:52,960
scientists are attracted to them because

3058
02:04:57,750 --> 02:04:55,840
they allow them an escape route just

3059
02:04:59,990 --> 02:04:57,760
like the caveman looking at the cell

3060
02:05:01,669 --> 02:05:00,000
phone and saying oh it's just a rock of

3061
02:05:04,149 --> 02:05:01,679
another type that i've never seen before

3062
02:05:05,990 --> 02:05:04,159
and then it throws it away forgets about

3063
02:05:08,790 --> 02:05:06,000

it business as usual comes back to the

3064

02:05:10,310 --> 02:05:08,800

cave and tells his family i just saw a

3065

02:05:12,870 --> 02:05:10,320

shiny rock and that's it don't worry

3066

02:05:14,709 --> 02:05:12,880

about it that's the natural approach and

3067

02:05:15,589 --> 02:05:14,719

that's the worst approach that we can

3068

02:05:18,390 --> 02:05:15,599

take

3069

02:05:20,790 --> 02:05:18,400

i think it makes much more sense for us

3070

02:05:24,550 --> 02:05:20,800

to press buttons on things that look

3071

02:05:25,589 --> 02:05:24,560

weird and try to see what they are

3072

02:05:28,950 --> 02:05:25,599

now

3073

02:05:31,109 --> 02:05:28,960

the the recent uh press releases about

3074

02:05:32,229 --> 02:05:31,119

these two exoplanets uh that were just

3075

02:05:34,950 --> 02:05:32,239

discovered

3076

02:05:38,149 --> 02:05:34,960

uh both earth-like uh one wasn't one was

3077

02:05:40,149 --> 02:05:38,159

jupiter uh a super jupiter but

3078

02:05:41,350 --> 02:05:40,159

uh making

3079

02:05:44,470 --> 02:05:41,360

uh

3080

02:05:45,510 --> 02:05:44,480

a 16-hour year

3081

02:05:48,870 --> 02:05:45,520

now

3082

02:05:52,470 --> 02:05:48,880

it's hard for me to understand a planet

3083

02:05:54,870 --> 02:05:52,480

that is going around its star in 16

3084

02:05:59,350 --> 02:05:54,880

hours that is their year that's their

3085

02:06:01,430 --> 02:05:59,360

time scale here it's 365 days right

3086

02:06:02,470 --> 02:06:01,440

it's a different speed

3087

02:06:05,990 --> 02:06:02,480

does

3088

02:06:08,470 --> 02:06:06,000

the experience if there is extra

3089

02:06:10,470 --> 02:06:08,480

terrestrial life on that planet

3090

02:06:13,750 --> 02:06:10,480

is their year

3091

02:06:16,470 --> 02:06:13,760

that 16 hours is it experienced the same

3092

02:06:18,069 --> 02:06:16,480

as our year

3093

02:06:20,229 --> 02:06:18,079

right

3094

02:06:23,030 --> 02:06:20,239

but actually a better example to think

3095

02:06:25,669 --> 02:06:23,040

about is the nearest star to the sun

3096

02:06:28,229 --> 02:06:25,679

which is called proxima centauri right

3097

02:06:30,550 --> 02:06:28,239

uh it's a dwarf star 12 of the mass of

3098

02:06:32,069 --> 02:06:30,560

the sun and it has half the surface

3099

02:06:34,470 --> 02:06:32,079

temperature of the sun so it emits

3100

02:06:36,870 --> 02:06:34,480

mostly infrared light and it's fainter

3101
02:06:37,990 --> 02:06:36,880
than the sun but it there happens to be

3102
02:06:40,550 --> 02:06:38,000
a planet

3103
02:06:42,550 --> 02:06:40,560
20 times closer to it than the earth is

3104
02:06:44,790 --> 02:06:42,560
from the sun it's a rocky planet roughly

3105
02:06:46,310 --> 02:06:44,800
the size of the earth and

3106
02:06:48,390 --> 02:06:46,320
it's possible

3107
02:06:51,189 --> 02:06:48,400
that it has liquid water on the surface

3108
02:06:52,709 --> 02:06:51,199
because it's just at the right distance

3109
02:06:54,470 --> 02:06:52,719
to have roughly the same surface

3110
02:06:55,669 --> 02:06:54,480
temperature as the earth

3111
02:06:58,069 --> 02:06:55,679
and

3112
02:06:59,750 --> 02:06:58,079
the only difference is that planet

3113
02:07:01,589 --> 02:06:59,760

circles the star

3114

02:07:03,669 --> 02:07:01,599

every 11 days

3115

02:07:06,229 --> 02:07:03,679

so

3116

02:07:09,350 --> 02:07:06,239

a year is 11 days and by the way the

3117

02:07:11,990 --> 02:07:09,360

planet is most likely tidally locked so

3118

02:07:14,629 --> 02:07:12,000

it shows the same phase to the star at

3119

02:07:16,629 --> 02:07:14,639

all times so it has a permanent day side

3120

02:07:19,270 --> 02:07:16,639

and a permanent night side

3121

02:07:20,470 --> 02:07:19,280

and my daughter said that if we ever go

3122

02:07:22,870 --> 02:07:20,480

there

3123

02:07:25,589 --> 02:07:22,880

she would like to have a house on the

3124

02:07:27,669 --> 02:07:25,599

strip that separates these two sides

3125

02:07:30,550 --> 02:07:27,679

where you can sit on the porch and see

3126
02:07:31,990 --> 02:07:30,560
the sunset forever so just imagine

3127
02:07:34,069 --> 02:07:32,000
sitting on the porch and seeing the

3128
02:07:36,709 --> 02:07:34,079
sunset forever

3129
02:07:37,830 --> 02:07:36,719
so all the concepts we have of time

3130
02:07:40,550 --> 02:07:37,840
space

3131
02:07:42,950 --> 02:07:40,560
you know the sunsets and so forth these

3132
02:07:45,830 --> 02:07:42,960
are relative they are special to the

3133
02:07:48,069 --> 02:07:45,840
system that we occupy the solar system

3134
02:07:51,910 --> 02:07:48,079
and are very different elsewhere

3135
02:07:53,830 --> 02:07:51,920
okay so here's the question

3136
02:07:56,470 --> 02:07:53,840
if we

3137
02:07:59,990 --> 02:07:56,480
went to proxima

3138
02:08:02,069 --> 02:08:00,000

and we recorded a video you and i we're

3139

02:08:06,149 --> 02:08:02,079

on that sunny porch right with your

3140

02:08:09,109 --> 02:08:06,159

daughter and we record a video

3141

02:08:11,189 --> 02:08:09,119

now is that video

3142

02:08:13,350 --> 02:08:11,199

in a different is it stretched or

3143

02:08:15,270 --> 02:08:13,360

compressed would it be v you know you

3144

02:08:19,750 --> 02:08:15,280

know what i mean is is

3145

02:08:21,669 --> 02:08:19,760

is it different if you are on an 11 day

3146

02:08:24,149 --> 02:08:21,679

year

3147

02:08:26,390 --> 02:08:24,159

is is time different and experience

3148

02:08:28,310 --> 02:08:26,400

different on proxima than it is here on

3149

02:08:30,790 --> 02:08:28,320

earth

3150

02:08:32,950 --> 02:08:30,800

yeah i mean um you know if you were a cl

3151

02:08:35,430 --> 02:08:32,960

a watch then it would

3152

02:08:37,589 --> 02:08:35,440

take at the same rate as here on earth

3153

02:08:38,790 --> 02:08:37,599

it's not thinking very differently it's

3154

02:08:40,229 --> 02:08:38,800

just that

3155

02:08:43,910 --> 02:08:40,239

the planet that

3156

02:08:45,750 --> 02:08:43,920

we will be on is moving around the star

3157

02:08:47,270 --> 02:08:45,760

every 11 days so it's

3158

02:08:49,589 --> 02:08:47,280

you know if you want to celebrate a

3159

02:08:53,270 --> 02:08:49,599

birthday you would have to do it

3160

02:08:54,069 --> 02:08:53,280

every 11 days week and a half and

3161

02:08:56,790 --> 02:08:54,079

so

3162

02:08:58,790 --> 02:08:56,800

you know everything will be different um

3163

02:09:01,430 --> 02:08:58,800

what you see is different because by the

3164

02:09:03,990 --> 02:09:01,440

way it emits this star emits mostly

3165

02:09:06,069 --> 02:09:04,000

infrared light so i asked the students

3166

02:09:09,030 --> 02:09:06,079

in my class say last year

3167

02:09:12,149 --> 02:09:09,040

if they know of any animal on earth that

3168

02:09:14,870 --> 02:09:12,159

has infrared eyes and one of them said

3169

02:09:16,870 --> 02:09:14,880

yeah actually there is a shrimp and it

3170

02:09:19,830 --> 02:09:16,880

had and she brought

3171

02:09:20,790 --> 02:09:19,840

an image of that shrimp

3172

02:09:22,550 --> 02:09:20,800

and

3173

02:09:23,910 --> 02:09:22,560

she realized that

3174

02:09:26,310 --> 02:09:23,920

uh in fact

3175

02:09:28,310 --> 02:09:26,320

it has um

3176

02:09:30,229 --> 02:09:28,320

eyeballs that look like ping pong balls

3177

02:09:33,510 --> 02:09:30,239

and they are connected with cords to the

3178

02:09:37,270 --> 02:09:33,520

head of the shrimp and uh she said

3179

02:09:40,550 --> 02:09:37,280

well it looks like an alien to me

3180

02:09:41,350 --> 02:09:40,560

do you have an ice cream truck outside

3181

02:09:43,030 --> 02:09:41,360

um

3182

02:09:45,430 --> 02:09:43,040

not right now

3183

02:09:46,550 --> 02:09:45,440

it's freezing it's freezing in boston

3184

02:09:51,350 --> 02:09:46,560

the um

3185

02:09:52,310 --> 02:09:51,360

uh okay so but here is this is where i i

3186

02:09:54,709 --> 02:09:52,320

really

3187

02:09:56,550 --> 02:09:54,719

have a a problem understanding what is

3188

02:09:57,750 --> 02:09:56,560

going on for instance

3189

02:10:01,109 --> 02:09:57,760

if you

3190

02:10:03,669 --> 02:10:01,119

and i we go to proxima and now we are

3191

02:10:04,950 --> 02:10:03,679

experiencing 11 day

3192

02:10:07,270 --> 02:10:04,960

years

3193

02:10:10,790 --> 02:10:07,280

are we now aging

3194

02:10:13,109 --> 02:10:10,800

a year relative to earth it almost goes

3195

02:10:14,870 --> 02:10:13,119

back to relativity and special with

3196

02:10:17,669 --> 02:10:14,880

einstein and traveling at the speed of

3197

02:10:18,550 --> 02:10:17,679

light and how time changes and and space

3198

02:10:21,430 --> 02:10:18,560

time

3199

02:10:25,990 --> 02:10:21,440

where you and i go to proxima and we

3200

02:10:27,109 --> 02:10:26,000

hang out for a year but those are 11 day

3201
02:10:29,270 --> 02:10:27,119
years

3202
02:10:31,669 --> 02:10:29,280
do we come back

3203
02:10:33,350 --> 02:10:31,679
300 years older

3204
02:10:36,870 --> 02:10:33,360
no no not at all

3205
02:10:39,109 --> 02:10:36,880
to do that what you need to do is

3206
02:10:40,870 --> 02:10:39,119
embark on a spacecraft that moves close

3207
02:10:42,790 --> 02:10:40,880
to the speed of light in order for time

3208
02:10:44,550 --> 02:10:42,800
to be ticking differently

3209
02:10:47,109 --> 02:10:44,560
uh it's just that the planet moves

3210
02:10:49,510 --> 02:10:47,119
around the star on a shorter period

3211
02:10:51,750 --> 02:10:49,520
that's all but but time is not ticking

3212
02:10:54,069 --> 02:10:51,760
differently on that planet compared to

3213
02:10:56,149 --> 02:10:54,079

earth and in order for time to tick

3214

02:10:58,550 --> 02:10:56,159

differently you need to to approach the

3215

02:11:01,270 --> 02:10:58,560

speed of light which in principle you

3216

02:11:03,430 --> 02:11:01,280

can do because if you take um you know

3217

02:11:06,149 --> 02:11:03,440

we are situated here on the surface of

3218

02:11:08,709 --> 02:11:06,159

earth and that is called one g the

3219

02:11:10,310 --> 02:11:08,719

acceleration that the earth is keeping

3220

02:11:12,149 --> 02:11:10,320

us

3221

02:11:13,030 --> 02:11:12,159

with is one g

3222

02:11:13,910 --> 02:11:13,040

um

3223

02:11:16,149 --> 02:11:13,920

and

3224

02:11:19,270 --> 02:11:16,159

you know fight

3225

02:11:21,750 --> 02:11:19,280

fighter jets can approach maybe 10 g and

3226

02:11:24,870 --> 02:11:21,760

pilots survive that uh that's the

3227

02:11:27,910 --> 02:11:24,880

acceleration that their body feels

3228

02:11:31,350 --> 02:11:27,920

so if we were to go on a spaceship that

3229

02:11:32,950 --> 02:11:31,360

accelerates at one g it would feel just

3230

02:11:35,030 --> 02:11:32,960

like being on the surface of earth

3231

02:11:36,870 --> 02:11:35,040

because according to einstein you cannot

3232

02:11:39,669 --> 02:11:36,880

tell the difference between a spaceship

3233

02:11:41,990 --> 02:11:39,679

that is accelerated one g and gravity

3234

02:11:44,550 --> 02:11:42,000

it's the same thing if you are on the

3235

02:11:47,990 --> 02:11:44,560

surface you would feel exactly the same

3236

02:11:50,470 --> 02:11:48,000

force as gravity on the surface of earth

3237

02:11:53,430 --> 02:11:50,480

so if you embark on a spaceship that

3238

02:11:54,310 --> 02:11:53,440

accelerates at one g and you do it for a

3239

02:11:56,310 --> 02:11:54,320

year

3240

02:11:58,390 --> 02:11:56,320

you would reach the speed of light

3241

02:12:00,950 --> 02:11:58,400

actually it turns out and if you

3242

02:12:03,189 --> 02:12:00,960

continue to do that you will get closer

3243

02:12:05,109 --> 02:12:03,199

and closer to the speed of light

3244

02:12:08,310 --> 02:12:05,119

and if you do that for

3245

02:12:10,709 --> 02:12:08,320

decades you will eventually get so close

3246

02:12:13,990 --> 02:12:10,719

to the speed of light that you can cross

3247

02:12:15,990 --> 02:12:14,000

the entire universe which is 10 billion

3248

02:12:17,189 --> 02:12:16,000

light years

3249

02:12:19,589 --> 02:12:17,199

long

3250

02:12:22,149 --> 02:12:19,599

you can cross that during your lifetime

3251

02:12:24,390 --> 02:12:22,159

in several decades and the reason for

3252

02:12:26,390 --> 02:12:24,400

that is that time is ticking

3253

02:12:29,109 --> 02:12:26,400

much more slowly

3254

02:12:31,589 --> 02:12:29,119

in the spaceship as compared to the rest

3255

02:12:33,109 --> 02:12:31,599

of the universe so even though your

3256

02:12:34,550 --> 02:12:33,119

the actual

3257

02:12:36,709 --> 02:12:34,560

trip takes

3258

02:12:38,870 --> 02:12:36,719

you know 10 billion years

3259

02:12:40,470 --> 02:12:38,880

uh for you in the spaceship because you

3260

02:12:43,669 --> 02:12:40,480

are moving so close to the speed of

3261

02:12:45,750 --> 02:12:43,679

light it would just take several decades

3262

02:12:48,229 --> 02:12:45,760

and that's the beauty of einstein's

3263

02:12:50,229 --> 02:12:48,239

theory of special relativity but but if

3264

02:12:52,390 --> 02:12:50,239

you are just going to a planet that is

3265

02:12:54,950 --> 02:12:52,400

not moving very fast moving around

3266

02:12:56,790 --> 02:12:54,960

another star even though the year takes

3267

02:12:58,629 --> 02:12:56,800

a different amount of time has nothing

3268

02:13:01,830 --> 02:12:58,639

to do with the rate by which time is

3269

02:13:05,589 --> 02:13:01,840

ticking you will age the same way

3270

02:13:08,390 --> 02:13:05,599

there is a ufo turn around yeah it's

3271

02:13:12,310 --> 02:13:08,400

just on your window

3272

02:13:15,030 --> 02:13:12,320

no no no avi turn to your

3273

02:13:17,589 --> 02:13:15,040

left oh it just went off the side turn

3274

02:13:19,910 --> 02:13:17,599

around

3275

02:13:22,310 --> 02:13:19,920

turn no the other way the other way the

3276

02:13:25,430 --> 02:13:22,320

other way turn around right there one

3277

02:13:27,589 --> 02:13:25,440

foot above on the edge of the window

3278

02:13:29,109 --> 02:13:27,599

look at that look look look avi down

3279

02:13:32,550 --> 02:13:29,119

down down

3280

02:13:33,910 --> 02:13:32,560

down right there on the window blind

3281

02:13:35,669 --> 02:13:33,920

okay

3282

02:13:36,790 --> 02:13:35,679

look at that

3283

02:13:41,430 --> 02:13:36,800

it's crawling up

3284

02:13:43,669 --> 02:13:41,440

[Laughter]

3285

02:13:45,669 --> 02:13:43,679

that's crazy big see that's what the

3286

02:13:48,069 --> 02:13:45,679

galileo project

3287

02:13:49,910 --> 02:13:48,079

you would be able to find out what that

3288

02:13:52,310 --> 02:13:49,920

i've been watching it for the last five

3289

02:13:55,430 --> 02:13:52,320

minutes but it's just just the heater

3290

02:13:58,790 --> 02:13:55,440

that's no no no no turn around avi look

3291

02:14:00,069 --> 02:13:58,800

up there is a giant up

3292

02:14:03,990 --> 02:14:00,079

down

3293

02:14:06,390 --> 02:14:04,000

your eyes are

3294

02:14:10,229 --> 02:14:06,400

just look straight up now bring your

3295

02:14:12,790 --> 02:14:10,239

hand up to the edge of the window blind

3296

02:14:13,910 --> 02:14:12,800

now come down down i'll tell you when to

3297

02:14:15,350 --> 02:14:13,920

stop

3298

02:14:20,069 --> 02:14:15,360

keep going

3299

02:14:24,390 --> 02:14:22,629

i've been watching that it's gone across

3300

02:14:28,390 --> 02:14:24,400

and come back and

3301

02:14:32,069 --> 02:14:28,400

yeah yeah it's um an animal that flies

3302

02:14:35,189 --> 02:14:32,079

it's a big one too okay um uh but but

3303

02:14:35,990 --> 02:14:35,199

here here's the other thing

3304

02:14:36,870 --> 02:14:36,000

uh

3305

02:14:41,750 --> 02:14:36,880

that

3306

02:14:43,510 --> 02:14:41,760

uh are we and this goes back to like

3307

02:14:46,069 --> 02:14:43,520

seth a show stack

3308

02:14:49,109 --> 02:14:46,079

where we are trying to intercept and

3309

02:14:53,030 --> 02:14:49,119

trying to find signals out there

3310

02:14:55,830 --> 02:14:53,040

how do we decode how do we filter noise

3311

02:14:58,149 --> 02:14:55,840

from something else that may be some

3312

02:15:00,790 --> 02:14:58,159

communication

3313

02:15:02,950 --> 02:15:00,800

well that's a an interesting question

3314

02:15:05,270 --> 02:15:02,960

because

3315

02:15:07,750 --> 02:15:05,280

what we first need to do is

3316

02:15:09,830 --> 02:15:07,760

decide that it's not a natural signal

3317

02:15:12,709 --> 02:15:09,840

it's not a signal produced by a natural

3318

02:15:13,589 --> 02:15:12,719

object that exists in nature and as you

3319

02:15:14,020 --> 02:15:13,599

know

3320

02:15:15,589 --> 02:15:14,030

um

3321

02:15:16,629 --> 02:15:15,599

[Music]

3322

02:15:19,750 --> 02:15:16,639

about

3323

02:15:22,629 --> 02:15:19,760

60 years ago there was

3324

02:15:23,510 --> 02:15:22,639

a new type of objects discovered and

3325

02:15:28,470 --> 02:15:23,520

uh

3326
02:15:30,310 --> 02:15:28,480
were pulsating and at first people

3327
02:15:33,350 --> 02:15:30,320
thought maybe it's a

3328
02:15:34,830 --> 02:15:33,360
little green man that you get a radio a

3329
02:15:38,390 --> 02:15:34,840
radio blip

3330
02:15:41,830 --> 02:15:38,400
um periodically and then it ended up

3331
02:15:43,350 --> 02:15:41,840
being a spinning neutron star and

3332
02:15:45,589 --> 02:15:43,360
uh with

3333
02:15:47,990 --> 02:15:45,599
it's sort of like a lighthouse that

3334
02:15:48,870 --> 02:15:48,000
emits radio waves in a beam and then it

3335
02:15:50,980 --> 02:15:48,880
comes

3336
02:15:52,229 --> 02:15:50,990
in our direction

3337
02:15:53,589 --> 02:15:52,239
[Music]

3338
02:15:55,430 --> 02:15:53,599

after a

3339

02:15:57,430 --> 02:15:55,440

spin period and

3340

02:16:00,069 --> 02:15:57,440

by now we know there are many such

3341

02:16:00,870 --> 02:16:00,079

pulses that are spinning neutron stars

3342

02:16:02,950 --> 02:16:00,880

so

3343

02:16:04,550 --> 02:16:02,960

um of course at first when you detect

3344

02:16:06,229 --> 02:16:04,560

something like that you don't know what

3345

02:16:08,709 --> 02:16:06,239

it is and

3346

02:16:11,030 --> 02:16:08,719

and then eventually you figure it out so

3347

02:16:12,790 --> 02:16:11,040

we need to make sure that whatever we

3348

02:16:14,709 --> 02:16:12,800

see that looks unusual

3349

02:16:17,510 --> 02:16:14,719

is not

3350

02:16:20,149 --> 02:16:17,520

a natural source and that's the first

3351

02:16:22,310 --> 02:16:20,159

task and then if it's indeed if it looks

3352

02:16:24,470 --> 02:16:22,320

like it carries information that is

3353

02:16:26,550 --> 02:16:24,480

unlikely to be

3354

02:16:28,629 --> 02:16:26,560

natural in origin then

3355

02:16:30,229 --> 02:16:28,639

of course we need to get as much data as

3356

02:16:32,389 --> 02:16:30,239

possible trying to

3357

02:16:34,709 --> 02:16:32,399

figure out what the information is and

3358

02:16:37,030 --> 02:16:34,719

you know that's just like breaking a

3359

02:16:39,750 --> 02:16:37,040

code you know and uh

3360

02:16:42,629 --> 02:16:39,760

like uh alan turing tried to break the

3361

02:16:44,790 --> 02:16:42,639

enigma during the second world war and

3362

02:16:45,589 --> 02:16:44,800

it's the same challenge you

3363

02:16:47,349 --> 02:16:45,599

uh

3364

02:16:49,190 --> 02:16:47,359

you're seeing some signal that you don't

3365

02:16:50,629 --> 02:16:49,200

fully understand and

3366

02:16:53,110 --> 02:16:50,639

you know we could use for example

3367

02:16:55,509 --> 02:16:53,120

artificial intelligence or any code

3368

02:16:58,230 --> 02:16:55,519

breaking technique to try and figure out

3369

02:17:00,469 --> 02:16:58,240

the meaning of the signal and that of

3370

02:17:03,429 --> 02:17:00,479

course will be the second step and

3371

02:17:04,950 --> 02:17:03,439

um we have not found such a signal as of

3372

02:17:06,070 --> 02:17:04,960

yet

3373

02:17:12,709 --> 02:17:06,080

the

3374

02:17:15,349 --> 02:17:12,719

something approaching our star system

3375

02:17:19,190 --> 02:17:15,359

at the speed of light or close to the

3376

02:17:22,870 --> 02:17:19,200

speed of light etc craft of some kind

3377

02:17:24,549 --> 02:17:22,880

um how easy would that be

3378

02:17:27,750 --> 02:17:24,559

to detect

3379

02:17:30,070 --> 02:17:27,760

or we would would we not see it at all

3380

02:17:32,389 --> 02:17:30,080

well that's an excellent point and i

3381

02:17:35,270 --> 02:17:32,399

actually wrote a paper about that and

3382

02:17:37,830 --> 02:17:35,280

the point is that if astronomers look

3383

02:17:40,070 --> 02:17:37,840

at the sky and they see an object moving

3384

02:17:42,469 --> 02:17:40,080

close to the speed of light

3385

02:17:45,190 --> 02:17:42,479

they might dismiss it because the

3386

02:17:46,790 --> 02:17:45,200

objects that we usually see uh rocks in

3387

02:17:49,110 --> 02:17:46,800

the solar system

3388

02:17:51,429 --> 02:17:49,120

they move at a percent of a percent of

3389

02:17:54,070 --> 02:17:51,439

the speed of light

3390

02:17:55,589 --> 02:17:54,080

uh and that is you know 10 to the power

3391

02:17:57,830 --> 02:17:55,599

minus four of the speed of light that's

3392

02:17:59,349 --> 02:17:57,840

very slow and if you see something

3393

02:18:01,669 --> 02:17:59,359

moving close to the speed of light you

3394

02:18:03,429 --> 02:18:01,679

would simply ignore it because it

3395

02:18:06,230 --> 02:18:03,439

wouldn't seem like it's

3396

02:18:09,030 --> 02:18:06,240

anything similar to what we are used to

3397

02:18:11,349 --> 02:18:09,040

and moreover if it's small it would not

3398

02:18:14,150 --> 02:18:11,359

be even detected so

3399

02:18:16,870 --> 02:18:14,160

um that's a very interesting question we

3400

02:18:18,150 --> 02:18:16,880

we may have big holes in our fishing net

3401
02:18:20,469 --> 02:18:18,160
right now

3402
02:18:22,790 --> 02:18:20,479
now what did you make of

3403
02:18:25,349 --> 02:18:22,800
i meant to get to this earlier a couple

3404
02:18:26,950 --> 02:18:25,359
of months ago it was announced

3405
02:18:28,070 --> 02:18:26,960
that we have

3406
02:18:31,509 --> 02:18:28,080
uh

3407
02:18:33,830 --> 02:18:31,519
probably more rogue planets in the milky

3408
02:18:35,270 --> 02:18:33,840
way than we do planets that are tied to

3409
02:18:37,509 --> 02:18:35,280
their stars

3410
02:18:40,870 --> 02:18:37,519
that's a pretty interesting announcement

3411
02:18:42,830 --> 02:18:40,880
but one of these objects

3412
02:18:45,349 --> 02:18:42,840
has been clocked at

3413
02:18:47,030 --> 02:18:45,359

extraordinary speeds

3414

02:18:49,509 --> 02:18:47,040

and

3415

02:18:50,629 --> 02:18:49,519

when i when i saw the announcement to

3416

02:18:53,030 --> 02:18:50,639

hear

3417

02:18:55,669 --> 02:18:53,040

a conclusion that this is a this is a

3418

02:18:58,070 --> 02:18:55,679

rogue planet uh that is

3419

02:18:59,990 --> 02:18:58,080

uh moving yes very very fast but it's

3420

02:19:01,669 --> 02:19:00,000

just a rogue planet how do we know that

3421

02:19:04,870 --> 02:19:01,679

it's a rogue planet

3422

02:19:06,389 --> 02:19:04,880

uh traveling at you know a million miles

3423

02:19:09,030 --> 02:19:06,399

per hour

3424

02:19:10,870 --> 02:19:09,040

well i i should say it's not an unusual

3425

02:19:12,950 --> 02:19:10,880

speed relative to the speed by which

3426

02:19:15,429 --> 02:19:12,960

stars move around and

3427

02:19:17,910 --> 02:19:15,439

it this planet probably came from a

3428

02:19:20,389 --> 02:19:17,920

planetary system and you know even the

3429

02:19:22,950 --> 02:19:20,399

solar system is thought to have had the

3430

02:19:25,669 --> 02:19:22,960

planets that were kicked out of it

3431

02:19:27,750 --> 02:19:25,679

because their orbits were not stable so

3432

02:19:29,830 --> 02:19:27,760

the planets that we currently find in

3433

02:19:32,950 --> 02:19:29,840

the solar system are the ones that

3434

02:19:34,629 --> 02:19:32,960

remain stable for you know billions four

3435

02:19:37,190 --> 02:19:34,639

four and a half billion years since the

3436

02:19:39,990 --> 02:19:37,200

solar system was made

3437

02:19:43,349 --> 02:19:40,000

and the other planets that used to exist

3438

02:19:48,630 --> 02:19:45,750

kicked out of the system because of the

3439

02:19:51,990 --> 02:19:48,640

gravitational interactions that they had

3440

02:19:53,910 --> 02:19:52,000

and their orbits were not stable and

3441

02:19:55,510 --> 02:19:53,920

as a result you know all these planets

3442

02:19:56,790 --> 02:19:55,520

that left the solar system that were

3443

02:19:58,950 --> 02:19:56,800

born in it

3444

02:20:00,790 --> 02:19:58,960

you you can think of them as orphans um

3445

02:20:04,230 --> 02:20:00,800

they just you know were kicked out of

3446

02:20:06,309 --> 02:20:04,240

the family uh and they left and and

3447

02:20:08,550 --> 02:20:06,319

they're out in interstellar space so we

3448

02:20:10,230 --> 02:20:08,560

expect such things and they would move

3449

02:20:12,870 --> 02:20:10,240

at speeds that are

3450

02:20:16,710 --> 02:20:12,880

similar to the speeds of stars nearby

3451
02:20:18,870 --> 02:20:16,720
and not unusual in that sense and

3452
02:20:21,270 --> 02:20:18,880
there is nothing really

3453
02:20:22,790 --> 02:20:21,280
unexpected about finding planets that

3454
02:20:24,230 --> 02:20:22,800
are wrong

3455
02:20:26,230 --> 02:20:24,240
in fact

3456
02:20:27,590 --> 02:20:26,240
near the black hole at the center of the

3457
02:20:30,469 --> 02:20:27,600
milky way

3458
02:20:32,469 --> 02:20:30,479
stars that had planets could lose them

3459
02:20:34,790 --> 02:20:32,479
uh by the tidal force of the black hole

3460
02:20:37,110 --> 02:20:34,800
they can so you can imagine getting

3461
02:20:39,670 --> 02:20:37,120
planets that move really fast up to the

3462
02:20:41,429 --> 02:20:39,680
speed of light uh that are kicked from

3463
02:20:42,790 --> 02:20:41,439

the inner region of the galaxy by the

3464

02:20:44,469 --> 02:20:42,800

black hole there

3465

02:20:47,510 --> 02:20:44,479

sort of like a pinball machine that

3466

02:20:48,550 --> 02:20:47,520

kicks out objects at high speed

3467

02:20:50,469 --> 02:20:48,560

and

3468

02:20:52,950 --> 02:20:50,479

you know again these are things we

3469

02:20:55,590 --> 02:20:52,960

expect and i wouldn't be terribly

3470

02:20:57,510 --> 02:20:55,600

surprised but of course if you were to

3471

02:20:58,469 --> 02:20:57,520

live on such a planet that gets kicked

3472

02:21:01,510 --> 02:20:58,479

out

3473

02:21:04,230 --> 02:21:01,520

um it's a fantastic journey because you

3474

02:21:06,550 --> 02:21:04,240

can cross the entire milky way galaxy

3475

02:21:10,070 --> 02:21:06,560

uh from the inner part to the outer part

3476

02:21:13,030 --> 02:21:10,080

and and see the the view

3477

02:21:16,230 --> 02:21:13,040

all the way how long if if earth got

3478

02:21:18,309 --> 02:21:16,240

kicked out right we have a molten iron

3479

02:21:20,150 --> 02:21:18,319

metallic core right that keeps the

3480

02:21:21,990 --> 02:21:20,160

planet warm

3481

02:21:23,830 --> 02:21:22,000

if we were kicked out of our solar

3482

02:21:25,750 --> 02:21:23,840

system

3483

02:21:28,710 --> 02:21:25,760

obviously the surface temperatures are

3484

02:21:32,309 --> 02:21:28,720

going to drop but would life still be

3485

02:21:35,590 --> 02:21:32,319

able to exist on earth through that

3486

02:21:36,389 --> 02:21:35,600

milky way road trip

3487

02:21:40,710 --> 02:21:36,399

um

3488

02:21:42,790 --> 02:21:40,720

no not it's not really on the surface

3489

02:21:45,590 --> 02:21:42,800

the surface would freeze

3490

02:21:48,469 --> 02:21:45,600

but under the frozen surface you could

3491

02:21:50,710 --> 02:21:48,479

have life in the deep interior because

3492

02:21:52,469 --> 02:21:50,720

you could have an ice layer and i

3493

02:21:55,349 --> 02:21:52,479

actually wrote a scientific paper about

3494

02:21:56,790 --> 02:21:55,359

it you could have a layer of ice on the

3495

02:21:58,389 --> 02:21:56,800

outside but

3496

02:22:02,550 --> 02:21:58,399

molten

3497

02:22:03,990 --> 02:22:02,560

ice in the inside the liquid water

3498

02:22:06,469 --> 02:22:04,000

deeper down

3499

02:22:07,429 --> 02:22:06,479

where life may persist

3500

02:22:10,309 --> 02:22:07,439

and

3501

02:22:12,150 --> 02:22:10,319

this is subsurface life

3502

02:22:14,070 --> 02:22:12,160

and the might it might be the most

3503

02:22:16,309 --> 02:22:14,080

common thing that you find because there

3504

02:22:19,510 --> 02:22:16,319

are lots of objects that are not close

3505

02:22:22,150 --> 02:22:19,520

enough to a star to be warmed up by the

3506

02:22:23,590 --> 02:22:22,160

star and they may have a crust that is

3507

02:22:25,750 --> 02:22:23,600

made of eyes

3508

02:22:26,550 --> 02:22:25,760

but under it under the eyes there might

3509

02:22:27,750 --> 02:22:26,560

be

3510

02:22:29,030 --> 02:22:27,760

life and

3511

02:22:31,429 --> 02:22:29,040

um

3512

02:22:33,910 --> 02:22:31,439

it's quite possible that that's the most

3513

02:22:36,630 --> 02:22:33,920

common form of life to find out whether

3514

02:22:38,469 --> 02:22:36,640

it exists is a challenge so for example

3515

02:22:40,070 --> 02:22:38,479

in the solar system we have

3516

02:22:42,950 --> 02:22:40,080

two icy

3517

02:22:44,469 --> 02:22:42,960

surfaces that might have an ocean under

3518

02:22:46,070 --> 02:22:44,479

them for example

3519

02:22:48,230 --> 02:22:46,080

europa

3520

02:22:49,190 --> 02:22:48,240

is one of those

3521

02:22:51,910 --> 02:22:49,200

moons

3522

02:22:54,630 --> 02:22:51,920

and enceladus is another one and both of

3523

02:22:56,950 --> 02:22:54,640

them have geysers they have cracks in

3524

02:23:00,870 --> 02:22:56,960

the eyes on the surface

3525

02:23:03,429 --> 02:23:00,880

out of which a steam of water comes out

3526

02:23:04,790 --> 02:23:03,439

and then it indicates that there may

3527

02:23:06,870 --> 02:23:04,800

very well be

3528

02:23:09,190 --> 02:23:06,880

an ocean under the

3529

02:23:11,670 --> 02:23:09,200

ice and we just don't know if there is

3530

02:23:13,910 --> 02:23:11,680

any fish there if there is any life

3531

02:23:16,070 --> 02:23:13,920

in the ocean under the ice and that

3532

02:23:19,830 --> 02:23:16,080

would be a good place to to search for

3533

02:23:21,510 --> 02:23:19,840

it now is it possible this will be uh uh

3534

02:23:23,110 --> 02:23:21,520

one of our closing questions here and i

3535

02:23:24,389 --> 02:23:23,120

want to thank you for another great

3536

02:23:25,910 --> 02:23:24,399

conversation

3537

02:23:27,830 --> 02:23:25,920

is is this

3538

02:23:31,030 --> 02:23:27,840

is it possible

3539

02:23:32,630 --> 02:23:31,040

to advance as a civilization

3540

02:23:33,910 --> 02:23:32,640

in water

3541

02:23:36,230 --> 02:23:33,920

because

3542

02:23:38,070 --> 02:23:36,240

i mean no fire

3543

02:23:40,790 --> 02:23:38,080

how do you build a factory i i don't

3544

02:23:43,830 --> 02:23:40,800

know i i may be reaching here but

3545

02:23:46,550 --> 02:23:43,840

is is it possible to develop

3546

02:23:49,030 --> 02:23:46,560

uh as an extraterrestrial intelligent

3547

02:23:50,230 --> 02:23:49,040

civilization in water

3548

02:23:51,750 --> 02:23:50,240

well it's

3549

02:23:53,510 --> 02:23:51,760

unlikely that

3550

02:23:55,670 --> 02:23:53,520

you can

3551
02:23:58,830 --> 02:23:55,680
develop technologies the way we have

3552
02:24:02,630 --> 02:23:58,840
them underwater because

3553
02:24:04,630 --> 02:24:02,640
um it's thought that complex life arose

3554
02:24:07,590 --> 02:24:04,640
as there is on the interface between

3555
02:24:09,670 --> 02:24:07,600
rock and liquid water and

3556
02:24:10,870 --> 02:24:09,680
that was essential to develop complex

3557
02:24:12,870 --> 02:24:10,880
life and

3558
02:24:15,030 --> 02:24:12,880
there might not be enough

3559
02:24:17,590 --> 02:24:15,040
concentration of nutrients

3560
02:24:19,830 --> 02:24:17,600
in the ocean to allow very complex forms

3561
02:24:22,710 --> 02:24:19,840
of life to form on their own

3562
02:24:23,750 --> 02:24:22,720
uh the other thing to keep in mind is if

3563
02:24:25,670 --> 02:24:23,760

you

3564

02:24:28,469 --> 02:24:25,680

make intelligence

3565

02:24:29,670 --> 02:24:28,479

underwater and there is an ice layer

3566

02:24:31,830 --> 02:24:29,680

above you

3567

02:24:33,349 --> 02:24:31,840

you would never see the stars you would

3568

02:24:35,510 --> 02:24:33,359

never know

3569

02:24:37,590 --> 02:24:35,520

what is out there so as far as you're

3570

02:24:39,349 --> 02:24:37,600

concerned the entire universe is the

3571

02:24:41,030 --> 02:24:39,359

ocean that you live in

3572

02:24:43,750 --> 02:24:41,040

because there is nothing that you can

3573

02:24:45,349 --> 02:24:43,760

see beyond you know beyond the ocean

3574

02:24:47,270 --> 02:24:45,359

that you live in and

3575

02:24:49,270 --> 02:24:47,280

if if there is intelligence there it

3576

02:24:51,670 --> 02:24:49,280

will be i mean the creatures would be

3577

02:24:54,710 --> 02:24:51,680

quite narrow-minded they might think

3578

02:24:56,710 --> 02:24:54,720

that's our universe it's a water

3579

02:24:58,870 --> 02:24:56,720

made universe

3580

02:25:01,190 --> 02:24:58,880

and that's pretty much what there is

3581

02:25:03,990 --> 02:25:01,200

only if one of them would go through

3582

02:25:06,389 --> 02:25:04,000

a geyser out of the cracks

3583

02:25:08,630 --> 02:25:06,399

uh into the open

3584

02:25:10,790 --> 02:25:08,640

environment above the eyes they would

3585

02:25:13,190 --> 02:25:10,800

realize that there are stars far away

3586

02:25:16,230 --> 02:25:13,200

now wouldn't you consider

3587

02:25:19,270 --> 02:25:16,240

like an octopus or a dolphin

3588

02:25:21,030 --> 02:25:19,280

that's sentient right that's intelligent

3589

02:25:23,110 --> 02:25:21,040

is it possible for something like that

3590

02:25:24,469 --> 02:25:23,120

to be on europa

3591

02:25:26,710 --> 02:25:24,479

well so

3592

02:25:28,790 --> 02:25:26,720

it's believed that complex life on earth

3593

02:25:31,830 --> 02:25:28,800

arose because you know there were

3594

02:25:33,110 --> 02:25:31,840

puddles uh on rock that concentrated the

3595

02:25:35,429 --> 02:25:33,120

chemicals

3596

02:25:39,110 --> 02:25:35,439

uh so you really need the interface

3597

02:25:41,190 --> 02:25:39,120

between rock and liquid water to allow

3598

02:25:43,830 --> 02:25:41,200

for concentration of nutrients and

3599

02:25:46,150 --> 02:25:43,840

chemicals and make complex life that's

3600

02:25:48,710 --> 02:25:46,160

that's a very popular view

3601

02:25:50,950 --> 02:25:48,720

um and if you don't have that

3602

02:25:54,150 --> 02:25:50,960

rock that is bare rock

3603

02:25:56,230 --> 02:25:54,160

in contact with water perhaps complex

3604

02:25:57,190 --> 02:25:56,240

life does not evolve so

3605

02:25:59,910 --> 02:25:57,200

you know

3606

02:26:02,469 --> 02:25:59,920

we don't know that for sure uh of course

3607

02:26:04,870 --> 02:26:02,479

uh one way to find out is to search

3608

02:26:07,429 --> 02:26:04,880

whether there is complex life under the

3609

02:26:10,630 --> 02:26:07,439

ice in europa or enceladus i want to

3610

02:26:11,830 --> 02:26:10,640

thank you avi not only uh for tonight

3611

02:26:14,230 --> 02:26:11,840

again

3612

02:26:16,550 --> 02:26:14,240

for this great conversation but for your

3613

02:26:19,670 --> 02:26:16,560

contributions uh to the people of this

3614

02:26:22,710 --> 02:26:19,680

planet it's extraordinary the journey

3615

02:26:24,790 --> 02:26:22,720

that you have taken so i do

3616

02:26:26,550 --> 02:26:24,800

want to thank you but you are

3617

02:26:27,910 --> 02:26:26,560

going to make that announcement it's

3618

02:26:29,510 --> 02:26:27,920

going to happen

3619

02:26:31,429 --> 02:26:29,520

and you're going to buy me that steak

3620

02:26:33,349 --> 02:26:31,439

dinner i'm just telling you right now i

3621

02:26:36,389 --> 02:26:33,359

will call you out on it how can

3622

02:26:38,230 --> 02:26:36,399

everybody go and get involved with the

3623

02:26:40,230 --> 02:26:38,240

galileo project

3624

02:26:42,950 --> 02:26:40,240

just go to the website of the galileo

3625

02:26:44,870 --> 02:26:42,960

project at harvard university and

3626

02:26:47,510 --> 02:26:44,880

if you are interested in contributing

3627

02:26:50,070 --> 02:26:47,520

there is a link there of how to

3628

02:26:52,710 --> 02:26:50,080

contribute either using your expertise

3629

02:26:55,750 --> 02:26:52,720

or financially as well and

3630

02:26:57,990 --> 02:26:55,760

we very much welcome engagement by

3631

02:27:00,950 --> 02:26:58,000

anyone another great conversation thank

3632

02:27:02,469 --> 02:27:00,960

you so much avi and enjoy the rest of

3633

02:27:04,630 --> 02:27:02,479

the holiday season

3634

02:27:08,469 --> 02:27:04,640

believe it or not we made it through

3635

02:27:12,790 --> 02:27:11,190

we've got 20 22 to look forward to and

3636

02:27:13,670 --> 02:27:12,800

all of your hard work thank you so much

3637

02:27:15,670 --> 02:27:13,680

avi

3638

02:27:18,230 --> 02:27:15,680

thanks for hosting me you're the best

3639

02:27:20,070 --> 02:27:18,240

avi loeb i'm going to take a quick break

3640

02:27:21,110 --> 02:27:20,080

this is fade to black i'm yours jimmy

3641

02:27:24,810 --> 02:27:21,120

church

3642

02:27:46,309 --> 02:27:24,820

we'll be right back

3643

02:27:49,990 --> 02:27:48,469

you're listening to jimmy church and

3644

02:27:54,950 --> 02:27:50,000

fade to black

3645

02:28:00,150 --> 02:27:57,270

hey what up y'all biblical fox here and

3646

02:28:04,469 --> 02:28:00,160

you are listening to my boy jimmy church

3647

02:28:11,349 --> 02:28:07,030

despite popular opinion

3648

02:28:15,429 --> 02:28:13,530

but listening to jimmy church will

3649

02:28:17,830 --> 02:28:15,439

[Applause]

3650

02:28:20,870 --> 02:28:17,840

this is jimmy church and i personally

3651
02:28:23,429 --> 02:28:20,880
invite you to the 2022 conscious life

3652
02:28:26,469 --> 02:28:23,439
expo this february 4th through the 7th

3653
02:28:28,710 --> 02:28:26,479
live at the lax hilton in los angeles

3654
02:28:31,270 --> 02:28:28,720
california this year we have the most

3655
02:28:34,710 --> 02:28:31,280
exciting speakers including whitley

3656
02:28:37,910 --> 02:28:34,720
strieber adam apollo billy carson daryl

3657
02:28:41,349 --> 02:28:37,920
inca and bashar william henry caroline

3658
02:28:44,469 --> 02:28:41,359
corey susan slaughter danien brinkley jj

3659
02:28:47,270 --> 02:28:44,479
and desiree hertox sarah bressman cosme

3660
02:28:49,750 --> 02:28:47,280
george nori gayle thackray and many many

3661
02:28:52,070 --> 02:28:49,760
more i will be hosting all weekend long

3662
02:28:54,469 --> 02:28:52,080
including the keynote ancient secrets

3663
02:28:56,710 --> 02:28:54,479

panel on friday night five vendor and

3664

02:28:59,190 --> 02:28:56,720

exhibit halls three floors of speakers

3665

02:29:01,429 --> 02:28:59,200

panels and celebration this is the

3666

02:29:04,510 --> 02:29:01,439

biggest event of the year and early bird

3667

02:29:06,630 --> 02:29:04,520

passes are available now just go to

3668

02:29:08,550 --> 02:29:06,640

consciouslifeexpo.com for the schedule

3669

02:29:11,510 --> 02:29:08,560

speakers and information that's

3670

02:29:13,270 --> 02:29:11,520

consciouslifeexpo.com

3671

02:29:16,070 --> 02:29:13,280

this is jimmy church of fade to black

3672

02:29:19,190 --> 02:29:16,080

and i take life change t supplements

3673

02:29:20,710 --> 02:29:19,200

every single day it's what i do

3674

02:29:23,270 --> 02:29:20,720

click on their banner at

3675

02:29:24,950 --> 02:29:23,280

jimmychurchradio

3676

02:29:27,590 --> 02:29:24,960

are you ready to read about true

3677

02:29:30,389 --> 02:29:27,600

paranormal events unex media publishes

3678

02:29:32,790 --> 02:29:30,399

non-fiction books about ufos ghosts and

3679

02:29:36,070 --> 02:29:32,800

haunted places time anomalies cryptid

3680

02:29:38,230 --> 02:29:36,080

creatures and more just like kunx db

3681

02:29:41,230 --> 02:29:38,240

radio it's all about unexplained

3682

02:29:43,190 --> 02:29:41,240

phenomena visit

3683

02:29:45,429 --> 02:29:43,200

www.unxmedia.com to see our list of

3684

02:29:47,990 --> 02:29:45,439

great book titles by debbie zigglemeyer

3685

02:29:50,550 --> 02:29:48,000

gene walker devin listrom wayne lawrence

3686

02:29:55,670 --> 02:29:50,560

bill spicer and yours truly margie k

3687

02:30:00,469 --> 02:29:57,830

when you take the beans from central

3688

02:30:02,870 --> 02:30:00,479

america with dashes of indonesian and

3689

02:30:06,070 --> 02:30:02,880

african mixed in and then roasted to the

3690

02:30:08,550 --> 02:30:06,080

dark side of fade to black you create

3691

02:30:11,510 --> 02:30:08,560

the ultimate brew of fringe

3692

02:30:14,790 --> 02:30:11,520

introducing the fade to black blend from

3693

02:30:17,590 --> 02:30:14,800

river moon coffee yes river moon's

3694

02:30:20,389 --> 02:30:17,600

darkest customized roast was created for

3695

02:30:23,030 --> 02:30:20,399

the love of fade to black

3696

02:30:25,590 --> 02:30:23,040

the alchemy of masterful roasting and

3697

02:30:29,190 --> 02:30:25,600

smoking the beans is in every sip of

3698

02:30:32,150 --> 02:30:29,200

this full-bodied dark java i need my

3699

02:30:34,389 --> 02:30:32,160

coffee doc deep with distinct

3700

02:30:37,190 --> 02:30:34,399

bittersweet chocolate highlights just

3701

02:30:39,750 --> 02:30:37,200

like the bunker leaning further into the

3702

02:30:42,870 --> 02:30:39,760

darkness of the roast is fade to black

3703

02:30:45,030 --> 02:30:42,880

blend from river moon coffee just click

3704

02:30:48,710 --> 02:30:45,040

on the banner at jimmychurchradio.com

3705

02:30:52,710 --> 02:30:48,720

and use the promo code f2b blend for 15

3706

02:30:57,830 --> 02:30:54,550

this is billy carson with forbidden

3707

02:30:59,830 --> 02:30:57,840

knowledge dot tv forbidden knowledge tv

3708

02:31:03,030 --> 02:30:59,840

has just reached its one year

3709

02:31:05,270 --> 02:31:03,040

anniversary that's right one year and as

3710

02:31:08,070 --> 02:31:05,280

a show of appreciation we are giving all

3711

02:31:11,190 --> 02:31:08,080

new subscribers a free 30-day trial of

3712

02:31:14,309 --> 02:31:11,200

forbidden knowledge dot tv that's 30

3713

02:31:16,870 --> 02:31:14,319

days to binge watch thousands of movies

3714

02:31:19,830 --> 02:31:16,880

documentaries conferences workshops

3715

02:31:22,469 --> 02:31:19,840

lectures yoga classes meditation courses

3716

02:31:24,790 --> 02:31:22,479

and so much more so log on to forbidden

3717

02:31:26,950 --> 02:31:24,800

knowledge dot tv from your computer or

3718

02:31:31,590 --> 02:31:26,960

mobile device or get the forbidden

3719

02:31:34,630 --> 02:31:31,600

knowledge tv app on apple tv roku amazon

3720

02:31:38,230 --> 02:31:34,640

itunes or google play today and use

3721

02:31:40,710 --> 02:31:38,240

coupon code 30 days free that's coupon

3722

02:31:43,900 --> 02:31:40,720

code 30 days free on forbidden knowledge

3723

02:31:47,030 --> 02:31:43,910

dot tv today

3724

02:31:49,190 --> 02:31:47,040

[Music]

3725

02:31:52,070 --> 02:31:49,200

are you intrigued by paranormal talk

3726
02:31:54,790 --> 02:31:52,080
radio you love the new paranormal radio

3727
02:31:56,550 --> 02:31:54,800
app from talk stream live

3728
02:31:59,349 --> 02:31:56,560
you'll find a great selection of talk

3729
02:32:01,990 --> 02:31:59,359
shows covering ufos ghosts strange

3730
02:32:04,230 --> 02:32:02,000
phenomena and much more download the

3731
02:32:06,309 --> 02:32:04,240
paranormal radio app now and start

3732
02:32:08,550 --> 02:32:06,319
listening to the very best in paranormal

3733
02:32:10,230 --> 02:32:08,560
talk entertainment including the network

3734
02:32:13,510 --> 02:32:10,240
you're listening to right now the

3735
02:32:24,150 --> 02:32:13,520
paranormal radio app free in google play

3736
02:32:30,950 --> 02:32:27,270
it's not a lifestyle we chose we were

3737
02:32:34,730 --> 02:32:30,960
born this way this is kjcr

3738
02:32:34,740 --> 02:32:47,990

[Music]

3739

02:32:52,950 --> 02:32:50,550

all right welcome back fade to black i

3740

02:32:55,670 --> 02:32:52,960

am your host jimmy church

3741

02:32:59,190 --> 02:32:55,680

i want to thank avi loeb it was just a

3742

02:33:03,590 --> 02:32:59,200

great conversation that was recorded

3743

02:33:06,469 --> 02:33:03,600

right before the show tonight and uh

3744

02:33:07,429 --> 02:33:06,479

the whole thing with avi every time he's

3745

02:33:09,270 --> 02:33:07,439

on

3746

02:33:11,910 --> 02:33:09,280

he he teaches

3747

02:33:15,670 --> 02:33:11,920

and he's up early and he's on the east

3748

02:33:18,550 --> 02:33:15,680

coast and there's just no way for him to

3749

02:33:20,630 --> 02:33:18,560

uh do a live show and uh we talked about

3750

02:33:23,270 --> 02:33:20,640

that today off the air

3751

02:33:25,510 --> 02:33:23,280

that one day

3752

02:33:27,750 --> 02:33:25,520

one day he's going to be on live with us

3753

02:33:29,429 --> 02:33:27,760

and uh and i said it's going to be a

3754

02:33:31,910 --> 02:33:29,439

totally different vibe

3755

02:33:33,990 --> 02:33:31,920

i told him today i said that

3756

02:33:37,349 --> 02:33:34,000

when i record

3757

02:33:40,630 --> 02:33:37,359

to my ears it sounds like

3758

02:33:42,550 --> 02:33:40,640

all things considered on npr

3759

02:33:44,870 --> 02:33:42,560

i've got a different vibe and i'm not

3760

02:33:46,230 --> 02:33:44,880

you know there's an adrenaline rush that

3761

02:33:48,710 --> 02:33:46,240

you have

3762

02:33:50,309 --> 02:33:48,720

and and things are uh at a different

3763

02:33:51,670 --> 02:33:50,319

level when you're live and he's i

3764

02:33:54,710 --> 02:33:51,680

totally get it

3765

02:33:58,150 --> 02:33:54,720

and uh he said jimmy just act like

3766

02:34:00,710 --> 02:33:58,160

you're live i said i try avi i try

3767

02:34:03,670 --> 02:34:00,720

he said uh when when i'm on the west

3768

02:34:06,469 --> 02:34:03,680

coast i am doing a live show with you

3769

02:34:09,830 --> 02:34:06,479

and i said okay cool he is just great

3770

02:34:11,190 --> 02:34:09,840

and and and i know that uh we talked

3771

02:34:12,150 --> 02:34:11,200

about this today

3772

02:34:14,469 --> 02:34:12,160

um

3773

02:34:16,870 --> 02:34:14,479

with with fade to black it it's

3774

02:34:19,590 --> 02:34:16,880

different from for him

3775

02:34:21,670 --> 02:34:19,600

than on other shows he said it's just a

3776

02:34:25,110 --> 02:34:21,680

totally different conversation

3777

02:34:26,550 --> 02:34:25,120

and and he really enjoys it and and so

3778

02:34:27,510 --> 02:34:26,560

and that goes right out to the fate or

3779

02:34:30,230 --> 02:34:27,520

not

3780

02:34:33,910 --> 02:34:30,240

so he really appreciates the show that

3781

02:34:34,790 --> 02:34:33,920

was a great conversation uh today now

3782

02:34:37,670 --> 02:34:34,800

uh

3783

02:34:39,030 --> 02:34:37,680

what where was i go oh so

3784

02:34:42,230 --> 02:34:39,040

for me

3785

02:34:45,110 --> 02:34:42,240

hanging out in the chat tonight uh was a

3786

02:34:46,150 --> 02:34:45,120

whole lot of fun and

3787

02:34:48,790 --> 02:34:46,160

uh

3788

02:34:52,150 --> 02:34:48,800

i i wish there was a way to do that more

3789

02:34:54,070 --> 02:34:52,160

often it's impossible i do a live show

3790

02:34:56,309 --> 02:34:54,080

i'm focusing on the guests i'm doing a

3791

02:34:58,150 --> 02:34:56,319

live show there's other things to do

3792

02:35:00,070 --> 02:34:58,160

but a couple of times a year when we

3793

02:35:02,630 --> 02:35:00,080

have bobby on

3794

02:35:04,550 --> 02:35:02,640

i'm able to jump into the chat and so

3795

02:35:05,270 --> 02:35:04,560

for those of you listening right now

3796

02:35:10,550 --> 02:35:05,280

that

3797

02:35:11,429 --> 02:35:10,560

with us tonight

3798

02:35:13,510 --> 02:35:11,439

uh

3799

02:35:16,870 --> 02:35:13,520

talked to ufos

3800

02:35:18,630 --> 02:35:16,880

we talked motorcycles and we talked

3801

02:35:20,790 --> 02:35:18,640

guitars and food

3802

02:35:23,670 --> 02:35:20,800

all night long in the chat while

3803

02:35:24,870 --> 02:35:23,680

listening to avi it was so much fun you

3804

02:35:27,910 --> 02:35:24,880

guys are

3805

02:35:30,870 --> 02:35:27,920

amazing over there in the chat so anyway

3806

02:35:34,550 --> 02:35:30,880

big big shout out to avilo that was a an

3807

02:35:38,230 --> 02:35:34,560

amazing conversation today and we had um

3808

02:35:41,110 --> 02:35:38,240

uh there's there's something else here

3809

02:35:43,830 --> 02:35:41,120

i want everybody to know that this

3810

02:35:46,150 --> 02:35:43,840

what you heard tonight

3811

02:35:47,270 --> 02:35:46,160

was the entire conversation there's no

3812

02:35:50,309 --> 02:35:47,280

edits

3813

02:35:51,750 --> 02:35:50,319

and we just uh took the breaks at the

3814

02:35:54,790 --> 02:35:51,760

proper time

3815

02:35:56,630 --> 02:35:54,800

came in and out and there was nothing

3816

02:35:57,429 --> 02:35:56,640

left on the cutting room floor that was

3817

02:36:04,070 --> 02:35:57,439

it

3818

02:36:06,950 --> 02:36:04,080

uh today but that was really interesting

3819

02:36:10,070 --> 02:36:06,960

uh for me to go back and listen

3820

02:36:12,710 --> 02:36:10,080

uh to the conversation because

3821

02:36:14,630 --> 02:36:12,720

i i pushed avi into a couple of

3822

02:36:16,710 --> 02:36:14,640

directions that he doesn't normally

3823

02:36:18,309 --> 02:36:16,720

discuss in fact i did that throughout

3824

02:36:20,630 --> 02:36:18,319

the show tonight

3825

02:36:22,469 --> 02:36:20,640

and it was really interesting to hear

3826

02:36:25,429 --> 02:36:22,479

his answers

3827

02:36:28,389 --> 02:36:25,439

avi completely

3828

02:36:31,590 --> 02:36:28,399

is engaged not only with the with the

3829

02:36:34,630 --> 02:36:31,600

ufo community but the politics that are

3830

02:36:37,429 --> 02:36:34,640

going on he is fully aware of what the

3831

02:36:40,630 --> 02:36:37,439

senate is dealing with and congress

3832

02:36:42,230 --> 02:36:40,640

um the efforts of louis lozando and and

3833

02:36:43,830 --> 02:36:42,240

chris mellon

3834

02:36:45,830 --> 02:36:43,840

and of course

3835

02:36:47,590 --> 02:36:45,840

uh the department of defense and the

3836

02:36:49,750 --> 02:36:47,600

odni

3837

02:36:52,389 --> 02:36:49,760

very interesting to hear those comments

3838

02:36:53,590 --> 02:36:52,399

uh tonight uh from avi so i hope you

3839

02:36:56,790 --> 02:36:53,600

enjoyed

3840

02:36:58,710 --> 02:36:56,800

uh the conversation because i really did

3841

02:37:00,710 --> 02:36:58,720

with that i've opened up the phone lines

3842

02:37:02,550 --> 02:37:00,720

i only have enough time for uh

3843

02:37:04,070 --> 02:37:02,560

two or three calls here before the end

3844

02:37:05,990 --> 02:37:04,080

of the show i would announce that the

3845

02:37:07,030 --> 02:37:06,000

phone lines are open but i've got calls

3846

02:37:10,550 --> 02:37:07,040

already

3847

02:37:12,150 --> 02:37:10,560

lined up on hold let's see who is up

3848

02:37:14,550 --> 02:37:12,160

first hi you're live on fade to black

3849

02:37:18,870 --> 02:37:14,560

who's calling

3850

02:37:21,030 --> 02:37:18,880

hey jimmy it's fran hey fran how are you

3851

02:37:22,710 --> 02:37:21,040

i'm good how are you

3852

02:37:25,110 --> 02:37:22,720

now that i'm talking to you

3853

02:37:27,670 --> 02:37:25,120

i'm in a really great mood what is

3854

02:37:31,670 --> 02:37:27,680

cracking young lady

3855

02:37:33,429 --> 02:37:31,680

hey um i really enjoyed the show tonight

3856

02:37:36,309 --> 02:37:33,439

that was awesome

3857

02:37:38,870 --> 02:37:36,319

i missed the beginning but i caught most

3858

02:37:39,750 --> 02:37:38,880

of the middle and end

3859

02:37:40,950 --> 02:37:39,760

and

3860

02:37:42,950 --> 02:37:40,960

that was

3861

02:37:46,150 --> 02:37:42,960

phenomenal

3862

02:37:49,429 --> 02:37:46,160

he's he's really he's

3863

02:37:53,110 --> 02:37:49,439

yeah and and so did i friend and

3864

02:37:56,230 --> 02:37:53,120

i think that everybody can tell that uh

3865

02:37:58,070 --> 02:37:56,240

he enjoys the opportunity

3866

02:38:00,630 --> 02:37:58,080

uh to just sit down and have an open

3867

02:38:02,230 --> 02:38:00,640

conversation he he really does he knows

3868

02:38:05,110 --> 02:38:02,240

that there's exactly there's nothing

3869

02:38:06,790 --> 02:38:05,120

prepared uh there's another element to

3870

02:38:08,469 --> 02:38:06,800

this um

3871

02:38:11,110 --> 02:38:08,479

you know avi and i

3872

02:38:14,309 --> 02:38:11,120

can see each other on the video

3873

02:38:17,110 --> 02:38:14,319

and and he

3874

02:38:18,870 --> 02:38:17,120

was laughing he's got such a great laugh

3875

02:38:22,550 --> 02:38:18,880

and a great smile

3876
02:38:23,910 --> 02:38:22,560
and you guys don't get to see that but

3877
02:38:36,389 --> 02:38:23,920
he

3878
02:38:38,150 --> 02:38:36,399
alien

3879
02:38:40,230 --> 02:38:38,160
that was uh

3880
02:38:42,950 --> 02:38:40,240
that was that was just awesome okay so

3881
02:38:46,070 --> 02:38:42,960
uh you had something else what's up

3882
02:38:47,750 --> 02:38:46,080
oh no i i was basically just calling in

3883
02:38:51,030 --> 02:38:47,760
to say hey

3884
02:38:53,270 --> 02:38:51,040
you know how you doing and oh i saw the

3885
02:38:55,270 --> 02:38:53,280
pictures of your new house and it's

3886
02:38:58,020 --> 02:38:55,280
gorgeous and

3887
02:39:00,469 --> 02:38:58,030
you you need a decorator

3888
02:39:02,950 --> 02:39:00,479

[Laughter]

3889

02:39:05,590 --> 02:39:02,960

you know uh

3890

02:39:08,550 --> 02:39:05,600

it was looking really sparse and it's

3891

02:39:11,990 --> 02:39:08,560

probably gonna stay that way i kind of

3892

02:39:13,910 --> 02:39:12,000

like that okay yeah i kind of like that

3893

02:39:16,870 --> 02:39:13,920

i do i would too

3894

02:39:19,590 --> 02:39:16,880

yeah i kind of like that i i i know it

3895

02:39:21,030 --> 02:39:19,600

it sounds a little strange

3896

02:39:22,950 --> 02:39:21,040

it does

3897

02:39:26,230 --> 02:39:22,960

but i like

3898

02:39:28,230 --> 02:39:26,240

yeah i like i i like that it's a feeling

3899

02:39:30,230 --> 02:39:28,240

more than it is a look

3900

02:39:33,349 --> 02:39:30,240

you know i like the feeling i like the

3901
02:39:34,070 --> 02:39:33,359
feeling of that so it's all open and

3902
02:39:36,630 --> 02:39:34,080
yeah

3903
02:39:39,110 --> 02:39:36,640
yep yep yep yep yep yep i can do

3904
02:39:41,590 --> 02:39:39,120
whatever i want in here

3905
02:39:44,309 --> 02:39:41,600
and nothing at all if i don't want to

3906
02:39:46,389 --> 02:39:44,319
yeah that's exactly that's exactly it

3907
02:39:47,910 --> 02:39:46,399
and uh but it's cool thank you for that

3908
02:39:48,870 --> 02:39:47,920
though thank you

3909
02:39:51,349 --> 02:39:48,880
yeah

3910
02:39:54,230 --> 02:39:51,359
all right now i i just wanted to say

3911
02:39:57,110 --> 02:39:54,240
happy holidays for

3912
02:39:59,510 --> 02:39:57,120
merry christmas or whatever

3913
02:40:01,110 --> 02:39:59,520

you know people have all this political

3914

02:40:03,590 --> 02:40:01,120

agenda about

3915

02:40:05,510 --> 02:40:03,600

holidays and i don't

3916

02:40:06,550 --> 02:40:05,520

i don't really care

3917

02:40:10,389 --> 02:40:06,560

so

3918

02:40:12,070 --> 02:40:10,399

whatever the appropriate term is

3919

02:40:14,550 --> 02:40:12,080

for

3920

02:40:18,070 --> 02:40:14,560

have a great winter

3921

02:40:19,750 --> 02:40:18,080

yeah i know and and today uh

3922

02:40:21,750 --> 02:40:19,760

really strange the leaves started

3923

02:40:23,990 --> 02:40:21,760

turning here uh

3924

02:40:25,910 --> 02:40:24,000

last week or the week before

3925

02:40:29,030 --> 02:40:25,920

and and i was kind of noticing it but

3926

02:40:32,150 --> 02:40:29,040

over the last like 24 hours it's like

3927

02:40:36,950 --> 02:40:32,160

strange everything turned

3928

02:40:38,389 --> 02:40:36,960

and uh my yard is covered in leaves

3929

02:40:41,030 --> 02:40:38,399

and it was

3930

02:40:44,150 --> 02:40:41,040

yeah it was just a really i mean it was

3931

02:40:46,309 --> 02:40:44,160

raining leaves today i mean everywhere

3932

02:40:48,870 --> 02:40:46,319

just just constantly

3933

02:40:52,070 --> 02:40:48,880

and uh and it just gives you that

3934

02:40:53,910 --> 02:40:52,080

feeling right that that fall the fall

3935

02:40:55,670 --> 02:40:53,920

and winter and

3936

02:40:57,349 --> 02:40:55,680

i know i'm in southern california and

3937

02:40:59,510 --> 02:40:57,359

i'm in the desert but we do have a

3938

02:41:02,550 --> 02:40:59,520

little bit of seasons and

3939

02:41:05,349 --> 02:41:02,560

and it will snow i can't wait to post

3940

02:41:08,550 --> 02:41:05,359

pictures of of snow here in the desert

3941

02:41:09,670 --> 02:41:08,560

it gets really cold

3942

02:41:12,550 --> 02:41:09,680

i know

3943

02:41:15,750 --> 02:41:12,560

uh i feel the same way about here in

3944

02:41:18,950 --> 02:41:15,760

arizona when we get snow it's like

3945

02:41:20,790 --> 02:41:18,960

what yeah yep yep where'd that come from

3946

02:41:22,070 --> 02:41:20,800

yep it's going to snow i was talking to

3947

02:41:24,790 --> 02:41:22,080

my neighbors and they were saying no it

3948

02:41:26,790 --> 02:41:24,800

snows every year here i was like okay i

3949

02:41:29,110 --> 02:41:26,800

can't wait for that you know i don't

3950

02:41:31,510 --> 02:41:29,120

know you know i'm not talking about i'm

3951

02:41:32,710 --> 02:41:31,520

not going to be outside making a snowman

3952

02:41:35,030 --> 02:41:32,720

maybe

3953

02:41:36,790 --> 02:41:35,040

you know i don't but but uh but it's

3954

02:41:38,389 --> 02:41:36,800

going to be a pretty cool feeling and

3955

02:41:40,469 --> 02:41:38,399

and when it does happen

3956

02:41:41,269 --> 02:41:40,479

uh i'll post pictures before it melts

3957

02:41:42,870 --> 02:41:41,279

off

3958

02:41:44,790 --> 02:41:42,880

thank you so much friend i don't know

3959

02:41:47,670 --> 02:41:44,800

what i'm gonna see you again but i

3960

02:41:49,429 --> 02:41:47,680

really look forward uh to the next time

3961

02:41:51,670 --> 02:41:49,439

uh when we can sit down and break out

3962

02:41:53,830 --> 02:41:51,680

the shot glasses

3963

02:41:56,070 --> 02:41:53,840

you betcha

3964

02:41:58,630 --> 02:41:56,080

thank you so much friends soon again

3965

02:42:00,550 --> 02:41:58,640

behave and be well

3966

02:42:01,670 --> 02:42:00,560

i can't promise

3967

02:42:04,469 --> 02:42:01,680

behaving

3968

02:42:07,349 --> 02:42:04,479

friend it's time to fade to black friend

3969

02:42:10,550 --> 02:42:07,359

enjoy the rest of your night you betcha

3970

02:42:11,510 --> 02:42:10,560

okay you too right on right on

3971

02:42:13,510 --> 02:42:11,520

fran

3972

02:42:15,030 --> 02:42:13,520

that's og

3973

02:42:24,469 --> 02:42:15,040

right there

3974

02:42:26,389 --> 02:42:24,479

and uh let's see who is up next

3975

02:42:27,990 --> 02:42:26,399

let's go here

3976

02:42:32,070 --> 02:42:28,000

hi you're live on fade to black who's

3977

02:42:32,080 --> 02:42:35,110

you're live

3978

02:42:42,630 --> 02:42:38,550

three two did i not uh

3979

02:42:46,710 --> 02:42:44,389

you're live

3980

02:42:49,590 --> 02:42:46,720

oh hi jimmy hi

3981

02:42:51,830 --> 02:42:49,600

it's deb you know what from sacramento

3982

02:42:53,429 --> 02:42:51,840

how are you dear i'm doing good how are

3983

02:42:56,469 --> 02:42:53,439

you

3984

02:42:58,309 --> 02:42:56,479

bucketing rain outside here but

3985

02:43:00,150 --> 02:42:58,319

sometimes we get a like dusting of snow

3986

02:43:01,269 --> 02:43:00,160

too even in sacramento and when it

3987

02:43:02,950 --> 02:43:01,279

happens

3988

02:43:04,150 --> 02:43:02,960

i mean this year i'm going to videotape

3989

02:43:06,550 --> 02:43:04,160

it

3990

02:43:08,550 --> 02:43:06,560

but this weekend i was out videotaping i

3991

02:43:11,190 --> 02:43:08,560

posted some pics early in the show in

3992

02:43:13,110 --> 02:43:11,200

the sandbox of stills but i have videos

3993

02:43:15,349 --> 02:43:13,120

of some houses that i got that are all

3994

02:43:17,190 --> 02:43:15,359

decked out and lights i mean there's one

3995

02:43:19,349 --> 02:43:17,200

really good one i had to tape in like

3996

02:43:22,150 --> 02:43:19,359

four different sections and i posted

3997

02:43:24,070 --> 02:43:22,160

them all the videos so fader knots those

3998

02:43:25,429 --> 02:43:24,080

who follow me and if you don't if you

3999

02:43:26,950 --> 02:43:25,439

follow my thread you guys can catch

4000

02:43:28,630 --> 02:43:26,960

those videos but they're really cool

4001
02:43:31,030 --> 02:43:28,640
we've got a lot of great lights going up

4002
02:43:33,590 --> 02:43:31,040
already yeah right on

4003
02:43:35,670 --> 02:43:33,600
and speaking of lights jimmy did you

4004
02:43:37,990 --> 02:43:35,680
start putting up your lights no you said

4005
02:43:40,389 --> 02:43:38,000
you're going to no it was it's it

4006
02:43:42,550 --> 02:43:40,399
sounded like a good plan

4007
02:43:45,349 --> 02:43:42,560
but i've just i'm running out of time

4008
02:43:47,670 --> 02:43:45,359
i'm going to be out of town this weekend

4009
02:43:50,630 --> 02:43:47,680
i've got plans next weekend and the

4010
02:43:52,790 --> 02:43:50,640
weekend after that is christmas

4011
02:43:55,510 --> 02:43:52,800
and i just i've i've just run out of

4012
02:43:58,950 --> 02:43:55,520
time i've i've i've run i i don't know

4013
02:44:01,110 --> 02:43:58,960

when i can possibly pull it off

4014

02:44:02,870 --> 02:44:01,120

but you know what you can do even if you

4015

02:44:04,790 --> 02:44:02,880

just do one string of lights in your

4016

02:44:06,710 --> 02:44:04,800

window and a wreath on the door that way

4017

02:44:08,870 --> 02:44:06,720

you won't get the um

4018

02:44:10,550 --> 02:44:08,880

the title of the new scrooge in the

4019

02:44:12,070 --> 02:44:10,560

neighborhood yeah i know

4020

02:44:15,190 --> 02:44:12,080

if you put up nothing you're gonna be

4021

02:44:17,510 --> 02:44:15,200

the scrooge yeah i would want that i was

4022

02:44:20,710 --> 02:44:17,520

i was at trader joe's uh the other day

4023

02:44:22,469 --> 02:44:20,720

and they had the fresh wreaths out front

4024

02:44:24,389 --> 02:44:22,479

man i really need to do that i don't

4025

02:44:26,230 --> 02:44:24,399

need to be the scrooge so maybe i'll

4026
02:44:27,190 --> 02:44:26,240
maybe i'll at least get something up on

4027
02:44:29,990 --> 02:44:27,200
the door

4028
02:44:33,110 --> 02:44:30,000
but uh yeah yeah yeah

4029
02:44:35,269 --> 02:44:33,120
something it's a plan so the last

4030
02:44:36,469 --> 02:44:35,279
yeah i mean anything you know anything

4031
02:44:37,990 --> 02:44:36,479
is good otherwise you're going to be

4032
02:44:39,030 --> 02:44:38,000
labeled the scrooge in the neighborhood

4033
02:44:41,030 --> 02:44:39,040
and you said all your neighbors are

4034
02:44:42,630 --> 02:44:41,040
putting their stuff up hey last time we

4035
02:44:44,630 --> 02:44:42,640
talked it was on thanksgiving night we

4036
02:44:47,269 --> 02:44:44,640
talked about if you could only pick one

4037
02:44:49,670 --> 02:44:47,279
side dish i figured out since then what

4038
02:44:51,750 --> 02:44:49,680

one thing you cannot do without even if

4039

02:44:53,429 --> 02:44:51,760

you have every other thing you love the

4040

02:44:56,150 --> 02:44:53,439

one thing that you have to have

4041

02:45:00,550 --> 02:44:56,160

otherwise the whole plate is a no-go you

4042

02:45:04,870 --> 02:45:02,790

the gravy's missing then the whole meal

4043

02:45:07,030 --> 02:45:04,880

is black yeah i'll tip the table over

4044

02:45:10,309 --> 02:45:07,040

crucial thing you have to have yeah i i

4045

02:45:12,710 --> 02:45:10,319

tip the table over and walk out

4046

02:45:14,550 --> 02:45:12,720

i i would that's what i would do hey deb

4047

02:45:16,870 --> 02:45:14,560

enjoy the rest of your night and thank

4048

02:45:18,630 --> 02:45:16,880

you for calling

4049

02:45:20,550 --> 02:45:18,640

hey i'm theater night if i have time i

4050

02:45:21,910 --> 02:45:20,560

have a great time travel story that i

4051
02:45:23,750 --> 02:45:21,920
want to tell i know there's no time

4052
02:45:25,830 --> 02:45:23,760
tonight but if i can get through on

4053
02:45:27,190 --> 02:45:25,840
thursday i've got a wonderful time

4054
02:45:29,110 --> 02:45:27,200
travel that i really want to share with

4055
02:45:30,870 --> 02:45:29,120
the faders okay all right we'll see you

4056
02:45:33,750 --> 02:45:30,880
on thursday

4057
02:45:36,070 --> 02:45:33,760
okay take care jimmy good night or not

4058
02:45:39,590 --> 02:45:36,080
let's love you guys

4059
02:45:42,309 --> 02:45:39,600
deb from sacramento

4060
02:45:45,429 --> 02:45:42,319
and uh yeah i i just ran out of time the

4061
02:45:48,389 --> 02:45:45,439
the lights were a great plan

4062
02:45:51,670 --> 02:45:48,399
i i i had it figured out i mean that was

4063
02:45:53,750 --> 02:45:51,680

it and i just ran out of time i ran out

4064

02:45:55,590 --> 02:45:53,760

of time let's see who's up next hi

4065

02:45:57,429 --> 02:45:55,600

you're live i'm fade to black turn me

4066

02:46:00,870 --> 02:45:57,439

down in the background

4067

02:46:03,269 --> 02:46:00,880

okay you're live who's calling

4068

02:46:07,910 --> 02:46:03,279

how you doing this uh jimmy

4069

02:46:27,269 --> 02:46:08,630

i

4070

02:46:30,469 --> 02:46:27,279

really good

4071

02:46:31,750 --> 02:46:30,479

with abby yes yes

4072

02:46:33,910 --> 02:46:31,760

he is

4073

02:46:35,190 --> 02:46:33,920

pretty good it just stays listening to

4074

02:46:36,790 --> 02:46:35,200

him

4075

02:46:40,230 --> 02:46:36,800

and i just want to ask you a question on

4076

02:46:44,389 --> 02:46:42,550

i guess you're familiar with uh

4077

02:46:46,309 --> 02:46:44,399

richard hogland

4078

02:46:48,790 --> 02:46:46,319

richard hoagland

4079

02:46:51,349 --> 02:46:48,800

yeah yeah yeah yeah um yeah i just have

4080

02:46:53,910 --> 02:46:51,359

to question yeah i was listening he's

4081

02:46:55,590 --> 02:46:53,920

got stuff about the far side of the moon

4082

02:46:58,070 --> 02:46:55,600

and i don't want you know it take a tick

4083

02:46:59,750 --> 02:46:58,080

your time up but what do you think about

4084

02:47:02,230 --> 02:46:59,760

that he says there's all structures up

4085

02:47:05,590 --> 02:47:02,240

there and everything and now i always

4086

02:47:07,030 --> 02:47:05,600

read on uh google today that they had a

4087

02:47:09,030 --> 02:47:07,040

uh

4088

02:47:11,110 --> 02:47:09,040

well yesterday i should say

4089

02:47:12,389 --> 02:47:11,120

they found a cube

4090

02:47:14,230 --> 02:47:12,399

like a house

4091

02:47:17,830 --> 02:47:14,240

a square on the far side of the moon the

4092

02:47:19,110 --> 02:47:17,840

chinese yes with their rover yep

4093

02:47:20,710 --> 02:47:19,120

what

4094

02:47:22,389 --> 02:47:20,720

does anybody hear anything more about

4095

02:47:24,870 --> 02:47:22,399

that or is it what is it a rock

4096

02:47:27,030 --> 02:47:24,880

formation or is it

4097

02:47:28,309 --> 02:47:27,040

check it out a little bit more yeah i

4098

02:47:33,190 --> 02:47:28,319

saw

4099

02:47:35,510 --> 02:47:33,200

bill in the chat room put up the link

4100

02:47:37,590 --> 02:47:35,520

for it and i was asking about it there's

4101
02:47:39,510 --> 02:47:37,600
a couple of things okay so anyway i saw

4102
02:47:40,670 --> 02:47:39,520
it for the first time tonight

4103
02:47:44,550 --> 02:47:40,680
and

4104
02:47:46,550 --> 02:47:44,560
space.com which is you know that's a

4105
02:47:49,590 --> 02:47:46,560
extremely legit

4106
02:47:51,670 --> 02:47:49,600
uh site i go to space.com all the time

4107
02:47:53,750 --> 02:47:51,680
and they've got the video up

4108
02:47:54,550 --> 02:47:53,760
and so

4109
02:47:57,030 --> 02:47:54,560
uh

4110
02:47:58,389 --> 02:47:57,040
i forget the name of the chinese rover

4111
02:48:01,990 --> 02:47:58,399
that they've got on the dark side of the

4112
02:48:07,030 --> 02:48:04,710
and so i'm looking at the video and

4113
02:48:08,630 --> 02:48:07,040

they're calling it a hut some we're

4114

02:48:10,150 --> 02:48:08,640

calling it a cube

4115

02:48:12,630 --> 02:48:10,160

you can see

4116

02:48:15,349 --> 02:48:12,640

uh a structure now

4117

02:48:17,269 --> 02:48:15,359

this isn't the hoaglan stuff okay that's

4118

02:48:18,870 --> 02:48:17,279

that's a whole nother that's a whole

4119

02:48:20,550 --> 02:48:18,880

nother consideration

4120

02:48:22,309 --> 02:48:20,560

but he talks about other stuff over

4121

02:48:23,990 --> 02:48:22,319

there about being up on the far side of

4122

02:48:26,150 --> 02:48:24,000

the moon

4123

02:48:27,110 --> 02:48:26,160

structures that go all the way up right

4124

02:48:28,389 --> 02:48:27,120

i don't know

4125

02:48:31,910 --> 02:48:28,399

right all right what's he's talking

4126
02:48:33,269 --> 02:48:31,920
about that what so uh putting hogelin

4127
02:48:37,990 --> 02:48:33,279
aside

4128
02:48:40,550 --> 02:48:38,000
this video shows something um off in the

4129
02:48:41,429 --> 02:48:40,560
distance on the horizon of the moon

4130
02:48:45,590 --> 02:48:41,439
and

4131
02:48:48,630 --> 02:48:45,600
it looks like to me uh it looks like two

4132
02:48:50,950 --> 02:48:48,640
or three posts that are going i don't

4133
02:48:53,349 --> 02:48:50,960
know how to explain it but it is off in

4134
02:48:54,950 --> 02:48:53,359
the distance so it's got to be big

4135
02:48:57,269 --> 02:48:54,960
and it's

4136
02:48:58,550 --> 02:48:57,279
three things that are sticking up think

4137
02:49:00,230 --> 02:48:58,560
it looks like three i'm gonna have to go

4138
02:49:01,670 --> 02:49:00,240

back and look at it again

4139

02:49:04,630 --> 02:49:01,680

um now

4140

02:49:05,990 --> 02:49:04,640

you can't yeah you know you try to

4141

02:49:08,309 --> 02:49:06,000

like you know

4142

02:49:09,030 --> 02:49:08,319

magnify it and then it gets you know

4143

02:49:10,550 --> 02:49:09,040

like

4144

02:49:12,309 --> 02:49:10,560

messed up you really can't see it you

4145

02:49:14,950 --> 02:49:12,319

know yeah well they did that they did

4146

02:49:15,280 --> 02:49:14,960

that on space.com and

4147

02:49:16,469 --> 02:49:15,290

uh

4148

02:49:17,590 --> 02:49:16,479

[Music]

4149

02:49:24,150 --> 02:49:17,600

the

4150

02:49:27,110 --> 02:49:24,160

perfectly in focus probably because it's

4151
02:49:29,750 --> 02:49:27,120
at a great distance away um so you don't

4152
02:49:31,990 --> 02:49:29,760
have that and so when space.com has

4153
02:49:33,590 --> 02:49:32,000
blown up that section and and brought it

4154
02:49:36,309 --> 02:49:33,600
out now

4155
02:49:38,469 --> 02:49:36,319
i don't think that that's really that

4156
02:49:41,750 --> 02:49:38,479
big of a deal that it's out of focus

4157
02:49:43,110 --> 02:49:41,760
what is clear in this is that there is

4158
02:49:44,710 --> 02:49:43,120
something there

4159
02:49:46,710 --> 02:49:44,720
i don't know what it is though

4160
02:49:48,389 --> 02:49:46,720
uh could it be natural

4161
02:49:49,910 --> 02:49:48,399
i don't know

4162
02:49:50,630 --> 02:49:49,920
uh

4163
02:49:53,830 --> 02:49:50,640

is

4164

02:49:55,269 --> 02:49:53,840

if it's not natural holy crap we've got

4165

02:49:58,070 --> 02:49:55,279

something else here we've got a whole

4166

02:49:59,429 --> 02:49:58,080

other discussion um it was kind of

4167

02:50:00,309 --> 02:49:59,439

strange

4168

02:50:02,469 --> 02:50:00,319

uh

4169

02:50:04,950 --> 02:50:02,479

to me i'm kind of bummed out i just had

4170

02:50:06,790 --> 02:50:04,960

avi loeb on the show had i known this

4171

02:50:09,910 --> 02:50:06,800

earlier today i would have asked avi

4172

02:50:13,349 --> 02:50:10,870

but

4173

02:50:15,030 --> 02:50:13,359

i didn't i didn't hear about it till uh

4174

02:50:16,389 --> 02:50:15,040

until the show tonight it's very

4175

02:50:18,230 --> 02:50:16,399

interesting

4176
02:50:21,269 --> 02:50:18,240
i'm gonna go and take another look at it

4177
02:50:23,110 --> 02:50:21,279
uh after the show tonight and tomorrow

4178
02:50:24,950 --> 02:50:23,120
and i'll get everybody else's opinions

4179
02:50:27,429 --> 02:50:24,960
but it's uh it's pretty interesting i'm

4180
02:50:30,950 --> 02:50:27,439
wondering if there's other imaging

4181
02:50:33,750 --> 02:50:30,960
uh out there uh that is better than what

4182
02:50:36,710 --> 02:50:33,760
space.com had access to

4183
02:50:39,030 --> 02:50:36,720
um but yeah i'm going to uh take another

4184
02:50:40,950 --> 02:50:39,040
look at it's very interesting pete well

4185
02:50:43,429 --> 02:50:40,960
well you know that there's other like

4186
02:50:44,550 --> 02:50:43,439
where there's one site that that was on

4187
02:50:46,630 --> 02:50:44,560
you know

4188
02:50:48,469 --> 02:50:46,640

the site i was looking at and then they

4189

02:50:50,230 --> 02:50:48,479

all said they showed

4190

02:50:51,349 --> 02:50:50,240

square

4191

02:50:53,510 --> 02:50:51,359

of

4192

02:50:56,790 --> 02:50:53,520

what what could you say uh

4193

02:50:59,590 --> 02:50:56,800

it's like a a meteor landed on landed

4194

02:51:01,190 --> 02:50:59,600

there and it's like a rock landed there

4195

02:51:12,070 --> 02:51:01,200

that's what you're looking at but how

4196

02:51:15,510 --> 02:51:13,830

don't hold me to it

4197

02:51:17,190 --> 02:51:15,520

it's pretty far and then they're gonna

4198

02:51:20,630 --> 02:51:17,200

start looking at it they're gonna go

4199

02:51:23,510 --> 02:51:20,640

closer to it in the next few days oh man

4200

02:51:25,830 --> 02:51:23,520

yeah yeah hopefully the chinese

4201
02:51:27,269 --> 02:51:25,840
aren't going to hold back what they what

4202
02:51:29,030 --> 02:51:27,279
they find

4203
02:51:32,389 --> 02:51:29,040
you know that they're getting yeah that

4204
02:51:34,469 --> 02:51:32,399
set everything off yeah

4205
02:51:36,309 --> 02:51:34,479
right right right hey pete thank you for

4206
02:51:38,070 --> 02:51:36,319
the phone call man and we'll see you

4207
02:51:39,510 --> 02:51:38,080
tomorrow night

4208
02:51:41,510 --> 02:51:39,520
all right listen thanks a lot good

4209
02:51:43,349 --> 02:51:41,520
talking to you and it's uh i'll talk to

4210
02:51:46,790 --> 02:51:43,359
you again thanks a lot thank you so much

4211
02:51:48,309 --> 02:51:46,800
pete yeah and um there there was okay so

4212
02:51:50,550 --> 02:51:48,319
bill uh

4213
02:51:52,389 --> 02:51:50,560

sent me that video if anybody else has

4214

02:51:54,950 --> 02:51:52,399

got anything else that they can show me

4215

02:51:57,670 --> 02:51:54,960

on this uh post it up there on twitter i

4216

02:51:59,830 --> 02:51:57,680

would love to go and check it out i will

4217

02:52:02,150 --> 02:51:59,840

uh do the deep dive into this and then

4218

02:52:06,469 --> 02:52:02,160

there was another comment

4219

02:52:10,550 --> 02:52:06,479

in the chat room tonight uh about

4220

02:52:12,230 --> 02:52:10,560

uh an intern at a university i didn't

4221

02:52:16,469 --> 02:52:12,240

really catch all of it

4222

02:52:19,110 --> 02:52:16,479

um has accidentally found an object

4223

02:52:21,030 --> 02:52:19,120

uh that was heading towards saturn and

4224

02:52:22,710 --> 02:52:21,040

slowing down

4225

02:52:23,990 --> 02:52:22,720

i haven't heard anything about this

4226

02:52:24,950 --> 02:52:24,000

either

4227

02:52:26,870 --> 02:52:24,960

um

4228

02:52:29,349 --> 02:52:26,880

is is there anything to that i don't

4229

02:52:30,309 --> 02:52:29,359

know i i just saw it in the chat room

4230

02:52:32,469 --> 02:52:30,319

tonight

4231

02:52:35,030 --> 02:52:32,479

i don't know if this is just it you know

4232

02:52:38,550 --> 02:52:35,040

internet gossip or or something that's

4233

02:52:41,590 --> 02:52:38,560

made up or if it's if it's factual if

4234

02:52:43,269 --> 02:52:41,600

somebody can provide any information to

4235

02:52:45,830 --> 02:52:43,279

me on that

4236

02:52:48,150 --> 02:52:45,840

yeah here uh nelson is posting yeah

4237

02:52:50,230 --> 02:52:48,160

that's pretty interesting

4238

02:52:53,030 --> 02:52:50,240

yeah that's uh

4239

02:52:55,349 --> 02:52:53,040

okay so it's two

4240

02:52:56,710 --> 02:52:55,359

it's two not three i'm looking at this

4241

02:52:57,910 --> 02:52:56,720

enhancement here thank you for this

4242

02:52:59,910 --> 02:52:57,920

nelson

4243

02:53:02,230 --> 02:52:59,920

and uh looking at the second image it's

4244

02:53:04,309 --> 02:53:02,240

two with a with the top it looks like

4245

02:53:07,030 --> 02:53:04,319

stonehenge man

4246

02:53:08,830 --> 02:53:07,040

a section of stonehenge

4247

02:53:11,510 --> 02:53:08,840

that's pretty

4248

02:53:13,269 --> 02:53:11,520

interesting yeah

4249

02:53:15,910 --> 02:53:13,279

thank you for that nelson

4250

02:53:17,510 --> 02:53:15,920

and uh i'm gonna retweet this before the

4251
02:53:19,670 --> 02:53:17,520
end of the show i'm gonna just gonna do

4252
02:53:20,630 --> 02:53:19,680
this now

4253
02:53:23,990 --> 02:53:20,640
what

4254
02:53:25,670 --> 02:53:24,000
does everybody

4255
02:53:28,830 --> 02:53:25,680
think

4256
02:53:33,269 --> 02:53:28,840
about this

4257
02:53:35,910 --> 02:53:34,710
on the

4258
02:53:38,790 --> 02:53:35,920
dark

4259
02:53:41,030 --> 02:53:38,800
side of the moon

4260
02:53:43,510 --> 02:53:41,040
okay i want everybody's opinions i am

4261
02:53:44,469 --> 02:53:43,520
posting this now

4262
02:53:46,550 --> 02:53:44,479
and

4263
02:53:49,830 --> 02:53:46,560

any other information you guys can send

4264

02:53:52,070 --> 02:53:49,840

my way i would really appreciate it

4265

02:53:54,950 --> 02:53:52,080

i would really appreciate it now so uh

4266

02:53:57,269 --> 02:53:54,960

this intern at a university

4267

02:53:59,590 --> 02:53:57,279

spotting an object that is approaching

4268

02:54:01,830 --> 02:53:59,600

saturn and slowing down

4269

02:54:05,349 --> 02:54:01,840

i immediately we're talking about this

4270

02:54:08,309 --> 02:54:05,359

in in uh in the chat room i immediately

4271

02:54:11,110 --> 02:54:08,319

think of rendezvous with rama arthur c

4272

02:54:12,630 --> 02:54:11,120

clarke a great series of books

4273

02:54:16,630 --> 02:54:12,640

and uh

4274

02:54:20,150 --> 02:54:16,640

that was i i'll never forget that page

4275

02:54:21,429 --> 02:54:20,160

uh in in rendezvous with rama said the

4276
02:54:24,309 --> 02:54:21,439
object

4277
02:54:27,269 --> 02:54:24,319
is slowing down what do you mean slowing

4278
02:54:30,309 --> 02:54:27,279
down kind of like independence day

4279
02:54:31,750 --> 02:54:30,319
uh nothing slows down

4280
02:54:35,429 --> 02:54:31,760
on its own

4281
02:54:37,750 --> 02:54:35,439
and now is there an actual object uh

4282
02:54:40,389 --> 02:54:37,760
approaching saturn i haven't heard

4283
02:54:42,389 --> 02:54:40,399
anything about this so if anybody out

4284
02:54:44,630 --> 02:54:42,399
there has got information that they can

4285
02:54:46,309 --> 02:54:44,640
provide to me you know my email to me at

4286
02:54:48,309 --> 02:54:46,319
jimmychurchradio.com

4287
02:54:51,429 --> 02:54:48,319
you can follow me on twitter at j church

4288
02:54:53,830 --> 02:54:51,439

radio post it up in hashtag f2b

4289

02:54:55,110 --> 02:54:53,840

and i will see it right there in the

4290

02:54:56,870 --> 02:54:55,120

sandbox

4291

02:54:58,389 --> 02:54:56,880

very interesting times that we find

4292

02:55:01,110 --> 02:54:58,399

ourselves in

4293

02:55:02,790 --> 02:55:01,120

this is uh pretty interesting this dark

4294

02:55:03,590 --> 02:55:02,800

side of the moon

4295

02:55:04,950 --> 02:55:03,600

uh

4296

02:55:08,389 --> 02:55:04,960

capture

4297

02:55:11,750 --> 02:55:08,399

is more than interesting

4298

02:55:13,670 --> 02:55:11,760

i have no idea and if these images are

4299

02:55:15,030 --> 02:55:13,680

even close to what

4300

02:55:18,230 --> 02:55:15,040

it could be

4301
02:55:20,710 --> 02:55:18,240
holy crap there is something on the dark

4302
02:55:23,429 --> 02:55:20,720
side of the moon and uh avi talked about

4303
02:55:25,349 --> 02:55:23,439
this i've only got 30 seconds avi talked

4304
02:55:28,550 --> 02:55:25,359
about this tonight on the show

4305
02:55:30,710 --> 02:55:28,560
when i i asked ah avi point blank i said

4306
02:55:33,030 --> 02:55:30,720
what would you think

4307
02:55:35,910 --> 02:55:33,040
if there was an object an archaeologist

4308
02:55:38,870 --> 02:55:35,920
some dig site you know pulls up a

4309
02:55:40,309 --> 02:55:38,880
hundred million year old uh

4310
02:55:42,070 --> 02:55:40,319
piece of tech

4311
02:55:43,110 --> 02:55:42,080
alien he said that wouldn't surprise me

4312
02:55:45,590 --> 02:55:43,120
at all

4313
02:55:48,309 --> 02:55:45,600

um it wouldn't he said but i'll tell you

4314

02:55:50,230 --> 02:55:48,319

what it's the moon

4315

02:55:52,309 --> 02:55:50,240

the moon

4316

02:55:54,790 --> 02:55:52,319

you know it sucks it in there's the

4317

02:55:57,269 --> 02:55:54,800

gravity that is there you can see all of

4318

02:55:58,950 --> 02:55:57,279

the impact sites all around the moon and

4319

02:56:01,590 --> 02:55:58,960

it wouldn't surprise me

4320

02:56:03,670 --> 02:56:01,600

if something was found on the moon first

4321

02:56:07,830 --> 02:56:03,680

that's what avi said today

4322

02:56:10,790 --> 02:56:07,840

and then boom we have uh the chinese

4323

02:56:13,190 --> 02:56:10,800

with this video and this this object

4324

02:56:15,030 --> 02:56:13,200

this anomaly this structure

4325

02:56:17,750 --> 02:56:15,040

on the dark side of the moon it is

4326

02:56:19,110 --> 02:56:17,760

absolutely fascinating what a great

4327

02:56:21,269 --> 02:56:19,120

night tonight on the show i want to

4328

02:56:23,590 --> 02:56:21,279

thank everybody hanging out

4329

02:56:26,230 --> 02:56:23,600

over in the chat room that was just so

4330

02:56:29,110 --> 02:56:26,240

much fun i wish i could do it more uh

4331

02:56:30,870 --> 02:56:29,120

tomorrow night here on fade to black it

4332

02:56:33,429 --> 02:56:30,880

is the return

4333

02:56:35,389 --> 02:56:33,439

of jason quit so you're not going to

4334

02:56:37,110 --> 02:56:35,399

want to miss that tomorrow night's not

4335

02:56:39,269 --> 02:56:37,120

conspiracy

4336

02:56:41,990 --> 02:56:39,279

no we've got other things to get caught

4337

02:56:44,790 --> 02:56:42,000

up on with jason so that is tomorrow

4338

02:56:46,790 --> 02:56:44,800

night right here on fade to black i am

4339

02:56:48,710 --> 02:56:46,800

your host jimmy church and then what are

4340

02:56:52,309 --> 02:56:48,720

we doing on

4341

02:56:55,110 --> 02:56:52,319

on wednesday on wednesday

4342

02:56:56,469 --> 02:56:55,120

i can't even remember now what are you

4343

02:56:58,150 --> 02:56:56,479

doing

4344

02:56:59,830 --> 02:56:58,160

wednesday night on the show i can't

4345

02:57:00,870 --> 02:56:59,840

remember

4346

02:57:07,590 --> 02:57:00,880

oh

4347

02:57:09,110 --> 02:57:07,600

jorge luis delgado from peru

4348

02:57:10,950 --> 02:57:09,120

you guys are not going to want to miss

4349

02:57:12,870 --> 02:57:10,960

that fade to black is produced by him j

4350

02:57:15,030 --> 02:57:12,880

palm renee dennis and kevin

4351
02:57:17,190 --> 02:57:15,040
announcers are steve harder gene vettel

4352
02:57:18,950 --> 02:57:17,200
mark t kovar webmasters drew the geek

4353
02:57:22,230 --> 02:57:18,960
music doug aldrige

4354
02:57:24,309 --> 02:57:22,240
intro spaceboy spaceboymusic.com

4355
02:57:25,750 --> 02:57:24,319
fade to black is produced by kjcr for

4356
02:57:29,990 --> 02:57:25,760
the game changer network and this

4357
02:57:31,429 --> 02:57:30,000
broadcast is own and copyrighted 2021 by

4358
02:57:33,750 --> 02:57:31,439
fade to black and the game changer

4359
02:57:35,510 --> 02:57:33,760
network inc it cannot be re-broadcast

4360
02:57:37,429 --> 02:57:35,520
downloaded copied or used anywhere in

4361
02:57:39,110 --> 02:57:37,439
the known universe without written

4362
02:57:40,950 --> 02:57:39,120
permission from fade to block of the

4363
02:57:45,990 --> 02:57:40,960

game changer network

4364

02:57:48,309 --> 02:57:46,000

i am off orange chicken and steamed rice

4365

02:57:50,710 --> 02:57:48,319

that's what's up next for me until

4366

02:57:51,830 --> 02:57:50,720

tomorrow night i want everybody to be

4367

02:58:05,590 --> 02:57:51,840

safe

4368

02:58:16,430 --> 02:58:08,110

so

4369

02:58:16,440 --> 02:58:22,389

[Music]