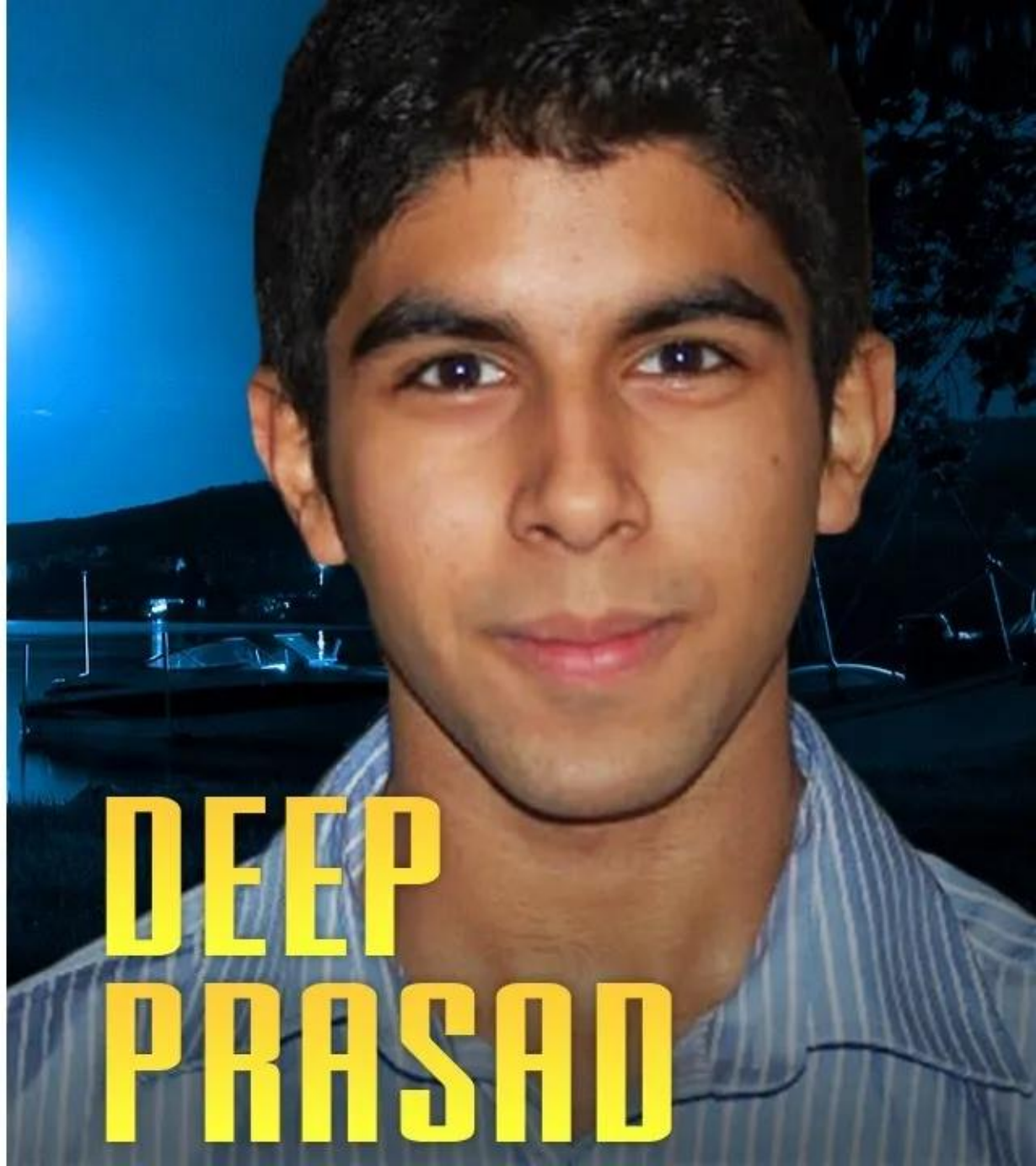


**JEFF  
BENNETT**



**DEEP  
PRASAD**

1  
00:00:36,930 --> 00:00:06,430

[Music]

2  
00:00:39,780 --> 00:00:36,940

hello and welcome to the show on Martin

3  
00:00:40,410 --> 00:00:39,790

Willis treehouse and a couple of

4  
00:00:42,180 --> 00:00:40,420

announcements

5  
00:00:44,160 --> 00:00:42,190

first of all Alejandro was not on the

6  
00:00:46,650 --> 00:00:44,170

show and this time was my choice

7  
00:00:48,990 --> 00:00:46,660

actually and nothing against him at all

8  
00:00:52,320 --> 00:00:49,000

of course he and I are good friends is

9  
00:00:54,090 --> 00:00:52,330

just that I have a wonderful guest in

10  
00:00:56,580 --> 00:00:54,100

our one I want to make sure I had him

11  
00:01:00,090 --> 00:00:56,590

for the whole hour Jeff Bennett is

12  
00:01:02,069 --> 00:01:00,100

coming up in a minute and very excited

13  
00:01:05,460 --> 00:01:02,079

to have him on he was on the show I

14

00:01:07,380 --> 00:01:05,470

think the number of years ago and he was

15

00:01:09,749 --> 00:01:07,390

on my other show that I did for a short

16

00:01:12,690 --> 00:01:09,759

while I think we were talking about

17

00:01:14,430 --> 00:01:12,700

other subjects other than UFOs and

18

00:01:17,520 --> 00:01:14,440

things like that tonight we will touch

19

00:01:20,730 --> 00:01:17,530

on other subjects as well as the UFO

20

00:01:23,160 --> 00:01:20,740

topic as well in my second hour I have

21

00:01:25,680 --> 00:01:23,170

deep Prasad on and he is going to be

22

00:01:28,950 --> 00:01:25,690

talking about all kinds of things

23

00:01:32,460 --> 00:01:28,960

including extraterrestrial artifacts if

24

00:01:35,550 --> 00:01:32,470

that's such a thing and quantum

25

00:01:38,010 --> 00:01:35,560

computing and all kinds of very

26

00:01:40,080 --> 00:01:38,020

interesting things so hang in there for

27

00:01:42,960 --> 00:01:40,090

our two as well

28

00:01:46,980 --> 00:01:42,970

blogs last week I forgot to announce our

29

00:01:48,840 --> 00:01:46,990

blog and that is was titled UFOs over

30

00:01:52,920 --> 00:01:48,850

Massachusetts check that out over at

31

00:01:56,340 --> 00:01:52,930

podcast UFO calm and this week is not so

32

00:01:59,250 --> 00:01:56,350

ancient UFOs and I learned something by

33

00:02:01,950 --> 00:01:59,260

reading that blog myself only about oh I

34

00:02:05,429 --> 00:02:01,960

don't know 15 20 minutes away from where

35

00:02:10,620 --> 00:02:05,439

I live in a town called Camden Maine

36

00:02:13,350 --> 00:02:10,630

there was a 1808 UFO sighting in a diary

37

00:02:17,220 --> 00:02:13,360

it's really quite interesting and really

38

00:02:19,680 --> 00:02:17,230

detailed a school teacher wrote that up

39

00:02:22,440 --> 00:02:19,690

all the way back in 1808 and so

40

00:02:25,500 --> 00:02:22,450

basically that blog covers through the

41

00:02:27,030 --> 00:02:25,510

centuries you know mostly from the 18th

42

00:02:31,350 --> 00:02:27,040

century when he's saying not so ancient

43

00:02:33,000 --> 00:02:31,360

UFOs 18th century forward and little

44

00:02:34,860 --> 00:02:33,010

tidbits here and there of different

45

00:02:37,470 --> 00:02:34,870

sightings that's very interesting so

46

00:02:37,800 --> 00:02:37,480

check that out I want to thank everyone

47

00:02:40,949 --> 00:02:37,810

that

48

00:02:43,860 --> 00:02:40,959

salt with this show race over kgr a

49

00:02:45,540 --> 00:02:43,870

radio we also have Keith over at the

50

00:02:47,160 --> 00:02:45,550

Dark Matter digital network

51  
00:02:50,570 --> 00:02:47,170  
I've been running over there for a long

52  
00:02:54,180 --> 00:02:50,580  
time and we have people that help out

53  
00:02:57,570 --> 00:02:54,190  
behind the scenes for from graphics to

54  
00:03:00,540 --> 00:02:57,580  
you name it to the Facebook page we have

55  
00:03:02,520 --> 00:03:00,550  
a lot of UFO news so check that out

56  
00:03:05,250 --> 00:03:02,530  
there's something new up there every

57  
00:03:09,240 --> 00:03:05,260  
single day whether it's space related or

58  
00:03:12,780 --> 00:03:09,250  
ufo-related and so my first guest I'm

59  
00:03:13,440 --> 00:03:12,790  
gonna bring them on right now is Jeff

60  
00:03:16,440 --> 00:03:13,450  
Bennett

61  
00:03:19,830 --> 00:03:16,450  
welcome to the show Jeff thank you very

62  
00:03:25,050 --> 00:03:19,840  
much Jeff you are an astrophysicist and

63  
00:03:30,990 --> 00:03:25,060

to me that that's brain numbing I just

64

00:03:32,309 --> 00:03:31,000

call it astronomer instead okay and this

65

00:03:35,940 --> 00:03:32,319

is only what we see when we want to

66

00:03:38,070 --> 00:03:35,950

impress people I see okay and so we're

67

00:03:40,199 --> 00:03:38,080

gonna be talking about different topics

68

00:03:42,150 --> 00:03:40,209

this evening and one of the things I

69

00:03:44,759 --> 00:03:42,160

remember when you were on the last time

70

00:03:46,560 --> 00:03:44,769

and I think it was something like maybe

71

00:03:50,009 --> 00:03:46,570

five years ago or something like that

72

00:03:51,960 --> 00:03:50,019

and we talked about the Big Bang Theory

73

00:03:54,120 --> 00:03:51,970

and you know I was trying to argue

74

00:03:57,350 --> 00:03:54,130

against and you had I think you said

75

00:03:59,520 --> 00:03:57,360

there were three lines of evidence and

76

00:04:01,680 --> 00:03:59,530

relativity is based on it but I have a

77

00:04:04,400 --> 00:04:01,690

question for you as far as relativity

78

00:04:07,319 --> 00:04:04,410

goes if the universe was actually

79

00:04:11,819 --> 00:04:07,329

contracting instead of expanding with

80

00:04:14,970 --> 00:04:11,829

relativity still hold well so first I

81

00:04:17,699 --> 00:04:14,980

would turn that around the idea of the

82

00:04:19,500 --> 00:04:17,709

Big Bang and how we understand it is we

83

00:04:21,930 --> 00:04:19,510

understand it through relativity but

84

00:04:24,330 --> 00:04:21,940

relativity is not dependent on the Big

85

00:04:25,710 --> 00:04:24,340

Bang Theory at all relativity is

86

00:04:28,860 --> 00:04:25,720

completely independent and was

87

00:04:31,200 --> 00:04:28,870

discovered long before the idea of the

88

00:04:33,540 --> 00:04:31,210

Big Bang came out now what Einstein did

89

00:04:37,469 --> 00:04:33,550

discover with relativity which he at

90

00:04:40,469 --> 00:04:37,479

first didn't himself recognize and took

91

00:04:42,870 --> 00:04:40,479

him later to realize it what it was

92

00:04:44,820 --> 00:04:42,880

actually proven by some other folks that

93

00:04:49,440 --> 00:04:44,830

the theory of relativity is not

94

00:04:50,969 --> 00:04:49,450

compatible with a static universe so the

95

00:04:51,760 --> 00:04:50,979

great universe under right didn't you

96

00:04:55,930 --> 00:04:51,770

say that it was

97

00:04:57,790 --> 00:04:55,940

greatest blunder yes yeah yes and so he

98

00:05:00,879 --> 00:04:57,800

should have recognized it himself so

99

00:05:04,510 --> 00:05:00,889

relativity actually predicts that the

100

00:05:07,330 --> 00:05:04,520

universe has to be either expanding or

101  
00:05:09,520 --> 00:05:07,340  
contracting so either one of those

102  
00:05:12,040 --> 00:05:09,530  
possibilities would be okay within

103  
00:05:14,409 --> 00:05:12,050  
relativity but just standing still is

104  
00:05:17,589 --> 00:05:14,419  
not because of the way gravity works and

105  
00:05:18,520 --> 00:05:17,599  
so when Hubble discovered the expansion

106  
00:05:21,189 --> 00:05:18,530  
of the universe

107  
00:05:23,920 --> 00:05:21,199  
Einstein called it his greatest blunder

108  
00:05:25,839 --> 00:05:23,930  
not to have recognized that his theory

109  
00:05:28,629 --> 00:05:25,849  
had actually essentially predicted that

110  
00:05:32,080 --> 00:05:28,639  
before Hubble discovered it I see

111  
00:05:33,159 --> 00:05:32,090  
now this is probably an odd question you

112  
00:05:35,620 --> 00:05:33,169  
probably have never been asked this

113  
00:05:38,260 --> 00:05:35,630

question before but is it possible that

114

00:05:41,469 --> 00:05:38,270

there's a polar opposite of the Big Bang

115

00:05:43,180 --> 00:05:41,479

in other words where the universe can

116

00:05:46,050 --> 00:05:43,190

expand so far and all of a sudden

117

00:05:50,320 --> 00:05:46,060

something like we don't really know what

118

00:05:53,020 --> 00:05:50,330

happened to make the Big Bang happen

119

00:05:57,219 --> 00:05:53,030

could the opposite happen and then the

120

00:05:58,689 --> 00:05:57,229

universe start contracting instead well

121

00:06:02,439 --> 00:05:58,699

that's actually a very common question

122

00:06:04,779 --> 00:06:02,449

oh and so we know the universe is

123

00:06:07,330 --> 00:06:04,789

expanding and basically your question is

124

00:06:09,129 --> 00:06:07,340

could it be that someday the expansion

125

00:06:10,600 --> 00:06:09,139

will stop and it will turn around and

126

00:06:13,390 --> 00:06:10,610

end and we even have a name for it

127

00:06:18,029 --> 00:06:13,400

called the Big Crunch when it all comes

128

00:06:20,740 --> 00:06:18,039

crashing back together and the answer is

129

00:06:24,670 --> 00:06:20,750

we don't know I mean certainly that is

130

00:06:29,850 --> 00:06:24,680

one possibility the evidence today is

131

00:06:31,930 --> 00:06:29,860

pointing to continued expansion forever

132

00:06:33,159 --> 00:06:31,940

particularly in light of the discovery

133

00:06:34,839 --> 00:06:33,169

that the expansion is actually

134

00:06:36,580 --> 00:06:34,849

accelerating which makes it even seemed

135

00:06:39,070 --> 00:06:36,590

more like nothing could ever turn it

136

00:06:41,409 --> 00:06:39,080

around but I like to point out that when

137

00:06:43,930 --> 00:06:41,419

we say it will continue forever that

138

00:06:45,279 --> 00:06:43,940

also means we have forever to discover

139

00:06:49,709 --> 00:06:45,289

something new that might change our

140

00:06:52,240 --> 00:06:49,719

minds about that Wow yeah and so if it

141

00:06:55,809 --> 00:06:52,250

you know the black I think of like black

142

00:06:57,399 --> 00:06:55,819

holes and like the more and more black

143

00:07:02,529 --> 00:06:57,409

holes that are like to say if it was

144

00:07:05,769 --> 00:07:02,539

contracting you know I mean is it

145

00:07:08,679 --> 00:07:05,779

possible that all of a sudden

146

00:07:12,009 --> 00:07:08,689

the black holes out there could gather

147

00:07:13,899 --> 00:07:12,019

more and more material and you know is

148

00:07:18,279 --> 00:07:13,909

that part of the big crunch and in other

149

00:07:21,339 --> 00:07:18,289

words I'm thoughts of it it would be it

150

00:07:24,549 --> 00:07:21,349

would occur as part of the Big Crunch

151

00:07:28,149 --> 00:07:24,559

process it's not causing it in of itself

152

00:07:30,369 --> 00:07:28,159

if you remember black holes are just a

153

00:07:31,989 --> 00:07:30,379

source of gravity and the only

154

00:07:33,429 --> 00:07:31,999

difference between them and any other

155

00:07:35,350 --> 00:07:33,439

source is that when you get really

156

00:07:37,749 --> 00:07:35,360

really close to them really strange

157

00:07:39,729 --> 00:07:37,759

stuff is happening to space and time but

158

00:07:43,179 --> 00:07:39,739

from a distance there's no difference

159

00:07:46,509 --> 00:07:43,189

between say a 1 million mass black hole

160

00:07:48,879 --> 00:07:46,519

and a 1 million 1 million stars their

161

00:07:51,759 --> 00:07:48,889

gravity would be the same at a distance

162

00:07:54,039 --> 00:07:51,769

and so if there is a Big Crunch if the

163

00:07:57,159 --> 00:07:54,049

universe starts contracting then at some

164

00:07:59,199 --> 00:07:57,169

point as it gets very small the black

165

00:08:01,539 --> 00:07:59,209

hole's would find it easier to consume

166

00:08:04,419 --> 00:08:01,549

nearby matter and grow and then

167

00:08:06,939 --> 00:08:04,429

ultimately they would all merge together

168

00:08:09,249 --> 00:08:06,949

and you may be aware that the idea of

169

00:08:10,659 --> 00:08:09,259

two black holes merging is something

170

00:08:13,779 --> 00:08:10,669

we've already discovered through

171

00:08:18,519 --> 00:08:13,789

gravitational waves yeah yeah not all

172

00:08:21,819 --> 00:08:18,529

that long ago now when I've heard people

173

00:08:24,850 --> 00:08:21,829

say that or people say or I've seen a

174

00:08:28,179 --> 00:08:24,860

documentary on this that I think if you

175

00:08:29,949 --> 00:08:28,189

took all the space out of every atom in

176

00:08:31,749 --> 00:08:29,959

your body you would be down to like on a

177

00:08:35,230 --> 00:08:31,759

pinhead or something ridiculous really

178

00:08:37,569 --> 00:08:35,240

really tiny is that what happens when a

179

00:08:44,619 --> 00:08:37,579

in a black hole the matter just gets

180

00:08:47,619 --> 00:08:44,629

condensed in in a Tomic structure well

181

00:08:50,769 --> 00:08:47,629

actually it's beyond that so when when a

182

00:08:52,119 --> 00:08:50,779

star when gravity takes over so this can

183

00:08:55,150 --> 00:08:52,129

happen for example at the end of a

184

00:08:58,720 --> 00:08:55,160

star's life so when a star has no more

185

00:09:00,699 --> 00:08:58,730

fuel for generating energy that energy

186

00:09:02,079 --> 00:09:00,709

in its core is generating heat and

187

00:09:04,809 --> 00:09:02,089

pressure and that's what's keeping

188

00:09:07,179 --> 00:09:04,819

gravity at bay preventing gravity from

189

00:09:09,129 --> 00:09:07,189

collapsing the star down once that's

190

00:09:12,189 --> 00:09:09,139

gone at the end of the star's life then

191

00:09:14,769 --> 00:09:12,199

that core will collapse and depending on

192

00:09:19,569 --> 00:09:17,139

the question is who wins between gravity

193

00:09:23,650 --> 00:09:19,579

and the collapsing core so four stars

194

00:09:28,650 --> 00:09:23,660

like the Sun gravity ultimately fails

195

00:09:32,019 --> 00:09:28,660

once the core collapses to a size where

196

00:09:37,050 --> 00:09:32,029

the electrons are as closely compressed

197

00:09:39,699 --> 00:09:37,060

as they can be without themselves

198

00:09:41,679 --> 00:09:39,709

disintegrating and that's what we call a

199

00:09:44,379 --> 00:09:41,689

white dwarf and so there you have an

200

00:09:46,809 --> 00:09:44,389

object that was the mass the size of the

201  
00:09:48,759 --> 00:09:46,819  
Sun collapsed down to an object the size

202  
00:09:52,689 --> 00:09:48,769  
of an earth so that's a thousand times

203  
00:09:55,240 --> 00:09:52,699  
smaller in diameter if not if a star has

204  
00:09:58,809 --> 00:09:55,250  
even more mass than that the electrons

205  
00:09:59,550 --> 00:09:58,819  
can no longer exist as independent

206  
00:10:02,079 --> 00:09:59,560  
entities

207  
00:10:04,780 --> 00:10:02,089  
it's little complex to explain but it

208  
00:10:06,340 --> 00:10:04,790  
has to do with the way the strength of

209  
00:10:09,699 --> 00:10:06,350  
the electromagnetic force and so they

210  
00:10:12,189 --> 00:10:09,709  
combine with protons and become neutrons

211  
00:10:15,160 --> 00:10:12,199  
form neutrons so at that point the

212  
00:10:17,470 --> 00:10:15,170  
entire object collapses down until it's

213  
00:10:19,360 --> 00:10:17,480

just a ball of neutrons so that's kind

214

00:10:22,119 --> 00:10:19,370

of what you were asking about sort of

215

00:10:23,619 --> 00:10:22,129

subatomic particles it's all neutrons

216

00:10:26,319 --> 00:10:23,629

and there you've got something that was

217

00:10:28,030 --> 00:10:26,329

larger and mass and the Sun compressed

218

00:10:31,569 --> 00:10:28,040

down to something that's only a few

219

00:10:34,509 --> 00:10:31,579

miles across now it turns out that good

220

00:10:37,809 --> 00:10:34,519

with even more mass even the neutrons

221

00:10:40,840 --> 00:10:37,819

can't fend off gravity and at that point

222

00:10:43,299 --> 00:10:40,850

there is no form of matter that exists

223

00:10:45,790 --> 00:10:43,309

it just keeps compressing itself down

224

00:10:47,590 --> 00:10:45,800

out of existence to what we call a

225

00:10:48,819 --> 00:10:47,600

singularity and that's when you've made

226

00:10:54,069 --> 00:10:48,829

a black hole around

227

00:10:55,749 --> 00:10:54,079

well now would say there's a star that

228

00:10:59,139 --> 00:10:55,759

collapsed down - it was big enough to

229

00:11:02,290 --> 00:10:59,149

collapse down to a black hole with the

230

00:11:05,769 --> 00:11:02,300

gravity effect of that be no different

231

00:11:09,280 --> 00:11:05,779

than it was in its original form in

232

00:11:11,530 --> 00:11:09,290

other words at a distance it would be

233

00:11:13,629 --> 00:11:11,540

and in fact we know lots of such black

234

00:11:16,689 --> 00:11:13,639

holes these are black holes and binary

235

00:11:18,999 --> 00:11:16,699

star systems and so you see another star

236

00:11:21,160 --> 00:11:19,009

in a normal binary star system you see

237

00:11:23,230 --> 00:11:21,170

two stars orbiting each other here you

238

00:11:25,960 --> 00:11:23,240

see one stop star orbiting something

239

00:11:28,639 --> 00:11:25,970

else and you see lots of material from

240

00:11:31,069 --> 00:11:28,649

That star being pulled into that hidden

241

00:11:33,559 --> 00:11:31,079

something else giving off lots of x-ray

242

00:11:36,710 --> 00:11:33,569

peas because it's heated up very hot as

243

00:11:38,449 --> 00:11:36,720

its as gravity brings it in and creates

244

00:11:41,119 --> 00:11:38,459

friction as it orbits down to that

245

00:11:43,129 --> 00:11:41,129

unseen something else and from the mass

246

00:11:44,960 --> 00:11:43,139

of that unseen something else you know

247

00:11:46,609 --> 00:11:44,970

it's a black hole because there's

248

00:11:50,419 --> 00:11:46,619

nothing else that could be that small

249

00:11:52,069 --> 00:11:50,429

and that massive well and so we know

250

00:11:55,970 --> 00:11:52,079

that we have a black hole in the center

251  
00:11:58,359 --> 00:11:55,980  
of our galaxy and drink all galaxies

252  
00:12:00,439 --> 00:11:58,369  
that is that what makes a galaxy happen

253  
00:12:02,540 --> 00:12:00,449  
basically at all that's a really good

254  
00:12:05,239 --> 00:12:02,550  
question so first I should say there's

255  
00:12:08,900 --> 00:12:05,249  
basically two different classes of black

256  
00:12:11,299 --> 00:12:08,910  
holes one is the type that formed when a

257  
00:12:14,119 --> 00:12:11,309  
star died so their masses are gonna be

258  
00:12:16,040 --> 00:12:14,129  
just a few times that of the Sun and we

259  
00:12:17,960 --> 00:12:16,050  
see those all over the place you know in

260  
00:12:19,759 --> 00:12:17,970  
these binary systems like I was

261  
00:12:22,249 --> 00:12:19,769  
mentioning giving off lots of x-rays

262  
00:12:24,499 --> 00:12:22,259  
that's how you find them the other are

263  
00:12:26,660 --> 00:12:24,509

black holes that are millions to

264

00:12:29,239 --> 00:12:26,670

billions of times the mass of the Sun

265

00:12:31,340 --> 00:12:29,249

and those are found in the Centers of

266

00:12:34,040 --> 00:12:31,350

galaxies so the one in the centre of the

267

00:12:36,079 --> 00:12:34,050

Milky Way has four million times the

268

00:12:39,369 --> 00:12:36,089

mass of the Sun which is actually pretty

269

00:12:42,290 --> 00:12:39,379

lightweight compared to many others

270

00:12:45,799 --> 00:12:42,300

there is pretty strong evidence that

271

00:12:48,530 --> 00:12:45,809

most if not all galaxies have a black

272

00:12:50,480 --> 00:12:48,540

hole at their center but one of the big

273

00:12:52,549 --> 00:12:50,490

questions is the chicken-or-egg question

274

00:12:56,090 --> 00:12:52,559

which is which came first did the black

275

00:12:59,090 --> 00:12:56,100

hole form first and lead to the galaxies

276

00:13:01,129 --> 00:12:59,100

collecting around it with its gravity or

277

00:13:02,900 --> 00:13:01,139

is it the other way around the galaxy

278

00:13:04,819 --> 00:13:02,910

forms first and matter down and the

279

00:13:06,499 --> 00:13:04,829

center collapses to make the black hole

280

00:13:12,590 --> 00:13:06,509

and no one knows the answer to that

281

00:13:17,299 --> 00:13:12,600

question well how how safe are we as far

282

00:13:19,929 --> 00:13:17,309

as like a super nova actually getting us

283

00:13:23,929 --> 00:13:19,939

someday you know I mean I've listened to

284

00:13:29,989 --> 00:13:26,539

Fraser over there says something like

285

00:13:33,710 --> 00:13:29,999

the universe is out to kill us in so

286

00:13:37,129 --> 00:13:33,720

many different ways you know I mean it's

287

00:13:38,889 --> 00:13:37,139

possible right that I mean but is it in

288

00:13:41,079 --> 00:13:38,899

our galaxy that we have to worry about

289

00:13:43,869 --> 00:13:41,089

no further than that right

290

00:13:46,869 --> 00:13:43,879

um it would have to be quite close

291

00:13:51,849 --> 00:13:46,879

within our galaxy to pose any real

292

00:13:54,179 --> 00:13:51,859

danger so we know the kinds of stars

293

00:13:57,549 --> 00:13:54,189

that supernova they're very big bright

294

00:13:59,439 --> 00:13:57,559

stars so if there were any near us we

295

00:14:03,219 --> 00:13:59,449

would know about them and the closest

296

00:14:05,859 --> 00:14:03,229

star that is likely to go supernova

297

00:14:09,039 --> 00:14:05,869

anytime in the next few thousand years

298

00:14:12,189 --> 00:14:09,049

is baitul juice oh yeah in the shoulder

299

00:14:14,529 --> 00:14:12,199

of Orion and it's it turns out for

300

00:14:16,389 --> 00:14:14,539

complex reasons it's really difficult to

301  
00:14:18,849 --> 00:14:16,399  
determine the exact distance of baitul

302  
00:14:23,169 --> 00:14:18,859  
juice but it's probably about 600 light

303  
00:14:25,119 --> 00:14:23,179  
years away now at that distance the

304  
00:14:28,119 --> 00:14:25,129  
radiation and the particles from the

305  
00:14:30,399 --> 00:14:28,129  
supernova explosion could potentially

306  
00:14:32,589 --> 00:14:30,409  
have some impact on earth you know

307  
00:14:35,529 --> 00:14:32,599  
causing mutations and living organisms

308  
00:14:38,469 --> 00:14:35,539  
and so on but but I would not expect it

309  
00:14:40,299 --> 00:14:38,479  
to be a major influence it wouldn't be

310  
00:14:41,829 --> 00:14:40,309  
much different than you know for example

311  
00:14:46,119 --> 00:14:41,839  
the effects of when we had the ozone

312  
00:14:48,219 --> 00:14:46,129  
hole forming back a few decades ago now

313  
00:14:51,339 --> 00:14:48,229

if there were a supernova to happen much

314

00:14:54,729 --> 00:14:51,349

closer that could have more significant

315

00:14:57,129 --> 00:14:54,739

biological effects there is nothing

316

00:14:59,229 --> 00:14:57,139

there are no stars close enough to do

317

00:15:00,699 --> 00:14:59,239

that right now but if you go millions

318

00:15:03,369 --> 00:15:00,709

and millions of years in the future

319

00:15:05,049 --> 00:15:03,379

because we're all orbiting in the Milky

320

00:15:06,819 --> 00:15:05,059

Way stars are moving relative to one

321

00:15:08,769 --> 00:15:06,829

another there will be times in the

322

00:15:11,049 --> 00:15:08,779

future when there are stars that go

323

00:15:13,119 --> 00:15:11,059

supernova nearby and there have been

324

00:15:16,089 --> 00:15:13,129

times in the distant past when that's

325

00:15:17,889 --> 00:15:16,099

happened and there are some scientists

326

00:15:19,989 --> 00:15:17,899

who wonder if you know some of the big

327

00:15:22,299 --> 00:15:19,999

events we see in evolution when you get

328

00:15:24,519 --> 00:15:22,309

increases in the mutation rate you know

329

00:15:26,379 --> 00:15:24,529

mass extinctions and things like that

330

00:15:31,449 --> 00:15:26,389

whether there could have been some ties

331

00:15:33,609 --> 00:15:31,459

to a supernova happening nearby it's an

332

00:15:34,899 --> 00:15:33,619

unanswered question my own guess is

333

00:15:38,469 --> 00:15:34,909

probably not

334

00:15:39,849 --> 00:15:38,479

I think as I usually tell people when

335

00:15:42,159 --> 00:15:39,859

they're weren't worrying about cosmic

336

00:15:43,989 --> 00:15:42,169

catastrophes like this we can't rule

337

00:15:45,789 --> 00:15:43,999

them completely out but we have much

338

00:15:47,979 --> 00:15:45,799

more to worry about in terms of what we

339

00:15:50,619 --> 00:15:47,989

do to ourselves than what the cosmos

340

00:15:53,169 --> 00:15:50,629

does to us right I think we're sort of

341

00:15:54,990 --> 00:15:53,179

undergoing a mass extinction right now

342

00:15:56,960 --> 00:15:55,000

we can talk we'll talk a little bit

343

00:15:59,190 --> 00:15:56,970

that when we're in a talk about

344

00:16:02,970 --> 00:15:59,200

something that you're been really

345

00:16:05,820 --> 00:16:02,980

working hard on later on in the show but

346

00:16:07,110 --> 00:16:05,830

before that I want to talk about last

347

00:16:10,140 --> 00:16:07,120

time I had you on you were talking about

348

00:16:13,050 --> 00:16:10,150

a project that you did where I think it

349

00:16:16,470 --> 00:16:13,060

was somewhere in Maryland or maybe even

350

00:16:18,600 --> 00:16:16,480

Washington DC where you set up a

351

00:16:22,530 --> 00:16:18,610

replication of what the solar system

352

00:16:23,190 --> 00:16:22,540

would be like with the Sun the size of a

353

00:16:25,740 --> 00:16:23,200

grapefruit

354

00:16:28,590 --> 00:16:25,750

and I remember earth was a size smaller

355

00:16:32,120 --> 00:16:28,600

than a ballpoint pen the point on a

356

00:16:37,380 --> 00:16:32,130

ballpoint pen yes very good memory and

357

00:16:41,400 --> 00:16:37,390

the nearest star the nearest star is in

358

00:16:44,630 --> 00:16:41,410

California right I'm at scale yes so

359

00:16:51,000 --> 00:16:44,640

that's that's a really good way to

360

00:16:54,990 --> 00:16:51,010

explain to anyone out there how far the

361

00:16:56,910 --> 00:16:55,000

nearest star is and Rhyno and as far as

362

00:16:59,640 --> 00:16:56,920

that goes what is that for about four

363

00:17:01,110 --> 00:16:59,650

light-years yes so I'm really glad you

364

00:17:03,420 --> 00:17:01,120

brought this up because it's something

365

00:17:04,740 --> 00:17:03,430

that we're actually after not working on

366

00:17:07,679 --> 00:17:04,750

it much for a while we're working very

367

00:17:08,760 --> 00:17:07,689

hard on right now so yes we've one of

368

00:17:10,650 --> 00:17:08,770

the big things that my career has been

369

00:17:12,480 --> 00:17:10,660

working on building these scale models

370

00:17:14,910 --> 00:17:12,490

of the solar system so we build it one

371

00:17:17,370 --> 00:17:14,920

to 10 billion scale and on that scale

372

00:17:19,230 --> 00:17:17,380

the Sun is about that big earth is

373

00:17:22,110 --> 00:17:19,240

smaller than the ball point in a pen the

374

00:17:24,120 --> 00:17:22,120

moon is that far to you know two and a

375

00:17:25,920 --> 00:17:24,130

half inches from Earth and the nearest

376

00:17:27,840 --> 00:17:25,930

star is the distance across the United

377

00:17:29,730 --> 00:17:27,850

States on the same scale but on that

378

00:17:32,520 --> 00:17:29,740

scale you can walk the solar system in a

379

00:17:33,900 --> 00:17:32,530

few minutes so we have the voyage scale

380

00:17:35,070 --> 00:17:33,910

model solar system the one you're

381

00:17:36,870 --> 00:17:35,080

mentioning is actually it's on the

382

00:17:38,880 --> 00:17:36,880

National Mall in Washington DC

383

00:17:42,180 --> 00:17:38,890

right outside the National Air and Space

384

00:17:45,330 --> 00:17:42,190

Museum we have a couple others in other

385

00:17:47,820 --> 00:17:45,340

cities and they were all actually based

386

00:17:49,530 --> 00:17:47,830

on the one we built first at the

387

00:17:51,000 --> 00:17:49,540

University of Colorado in Boulder and

388

00:17:52,590 --> 00:17:51,010

beforehand you were telling me that you

389

00:17:54,600 --> 00:17:52,600

actually lived around here yeah but we

390

00:17:57,480 --> 00:17:54,610

didn't have the model installed at that

391

00:17:58,410 --> 00:17:57,490

time but our Boulder model is now 32

392

00:18:00,570 --> 00:17:58,420

years old

393

00:18:02,820 --> 00:18:00,580

and we're getting ready to replace it

394

00:18:04,530 --> 00:18:02,830

with one of these voyage models and then

395

00:18:08,010 --> 00:18:04,540

we're hoping to replicate them all

396

00:18:08,940 --> 00:18:08,020

across the country because they are such

397

00:18:10,980 --> 00:18:08,950

a great learning to

398

00:18:13,670 --> 00:18:10,990

for so many things to get a sense of

399

00:18:17,280 --> 00:18:13,680

what the earth really looks like in

400

00:18:19,950 --> 00:18:17,290

space and so anyone can go to voyage

401  
00:18:22,950 --> 00:18:19,960  
solar system org and learned about how

402  
00:18:24,780 --> 00:18:22,960  
you can get your own voyage solar model

403  
00:18:26,850 --> 00:18:24,790  
voyage solar system in your community

404  
00:18:29,040 --> 00:18:26,860  
let me ask you how was how was that

405  
00:18:31,340 --> 00:18:29,050  
thing displayed because when you're

406  
00:18:33,780 --> 00:18:31,350  
picturing like something smaller than a

407  
00:18:36,240 --> 00:18:33,790  
ballpoint and a ballpoint pen how would

408  
00:18:38,460 --> 00:18:36,250  
you actually even position something

409  
00:18:41,730 --> 00:18:38,470  
like that yeah so they're they're

410  
00:18:43,380 --> 00:18:41,740  
attached to these structures that have

411  
00:18:45,120 --> 00:18:43,390  
you know some information and color

412  
00:18:47,550 --> 00:18:45,130  
pictures and information about each

413  
00:18:50,930 --> 00:18:47,560

planet as you go along and then the

414

00:18:53,310 --> 00:18:50,940

planets themselves are in Laser crystals

415

00:18:59,610 --> 00:18:53,320

some of your viewers can see me right

416

00:19:02,940 --> 00:18:59,620

here oh yeah yeah on YouTube yeah tube

417

00:19:05,940 --> 00:19:02,950

so I'm holding here a laser crystal that

418

00:19:08,700 --> 00:19:05,950

has all of the planets in it to scale

419

00:19:10,080 --> 00:19:08,710

and the Sun is the big outline here you

420

00:19:13,110 --> 00:19:10,090

probably can't see it too well

421

00:19:14,820 --> 00:19:13,120

huh yeah but when you go right up to it

422

00:19:17,370 --> 00:19:14,830

you can see the planets really clearly

423

00:19:19,230 --> 00:19:17,380

so each planet has its own laser crystal

424

00:19:22,740 --> 00:19:19,240

on its own pedestal at the correct

425

00:19:26,940 --> 00:19:22,750

distance from the bottle Sun in this

426

00:19:28,440 --> 00:19:26,950

exhibit yeah great thank you for that so

427

00:19:31,290 --> 00:19:28,450

I want to talk a little bit about the

428

00:19:33,630 --> 00:19:31,300

possibility of life out there and first

429

00:19:37,500 --> 00:19:33,640

of all just thinking about this in

430

00:19:42,330 --> 00:19:37,510

general the first spark of life is such

431

00:19:43,980 --> 00:19:42,340

a mystery and how you know do you I know

432

00:19:48,060 --> 00:19:43,990

you as a scientist you probably don't

433

00:19:51,450 --> 00:19:48,070

like to speculate too much but I mean do

434

00:19:54,240 --> 00:19:51,460

you or do people theorize in the science

435

00:19:57,120 --> 00:19:54,250

world that it was just a happenstance

436

00:19:59,310 --> 00:19:57,130

that the first life happened everything

437

00:20:02,880 --> 00:19:59,320

just was exactly right at the right time

438

00:20:05,220 --> 00:20:02,890

and to make the first spark of life well

439

00:20:06,630 --> 00:20:05,230

that's a really big question in in terms

440

00:20:08,850 --> 00:20:06,640

of you know that's why I was studying

441

00:20:11,790 --> 00:20:08,860

the possible origin of life is such a

442

00:20:13,980 --> 00:20:11,800

big part of the search for life beyond

443

00:20:16,890 --> 00:20:13,990

Earth because if that's a key question

444

00:20:18,630 --> 00:20:16,900

and the question is basically you can

445

00:20:21,300 --> 00:20:18,640

take it down to the fact that at this

446

00:20:22,740 --> 00:20:21,310

point thanks to the discoveries of the

447

00:20:24,750 --> 00:20:22,750

Kepler mission and not

448

00:20:26,880 --> 00:20:24,760

lots of telescopes around the world we

449

00:20:29,280 --> 00:20:26,890

now know that planets are very common in

450

00:20:32,580 --> 00:20:29,290

the universe star almost all stars have

451

00:20:35,790 --> 00:20:32,590

planets we also know that planets the

452

00:20:39,750 --> 00:20:35,800

size of Earth in earth-like orbits are

453

00:20:43,470 --> 00:20:39,760

very common and so now we essentially

454

00:20:45,030 --> 00:20:43,480

know for sure that planets of the right

455

00:20:46,920 --> 00:20:45,040

size at the right distance from the

456

00:20:50,280 --> 00:20:46,930

earth are all over the place so the

457

00:20:53,100 --> 00:20:50,290

question is then would they as happen on

458

00:20:55,050 --> 00:20:53,110

earth also get life how likely is that

459

00:20:58,140 --> 00:20:55,060

and to answer that question you need to

460

00:21:01,320 --> 00:20:58,150

look into how you would expect chemistry

461

00:21:03,870 --> 00:21:01,330

to work and whether it would naturally

462

00:21:07,260 --> 00:21:03,880

point in a direction of life or whether

463

00:21:09,440 --> 00:21:07,270

it takes some really odd lucky event to

464

00:21:12,900 --> 00:21:09,450

make life happen and I would say the

465

00:21:15,090 --> 00:21:12,910

general belief of the vast majority of

466

00:21:18,570 --> 00:21:15,100

the scientists who study this including

467

00:21:21,810 --> 00:21:18,580

myself is that the chemistry favours

468

00:21:24,060 --> 00:21:21,820

life I think most of us would say if you

469

00:21:27,150 --> 00:21:24,070

have one of these planets right size

470

00:21:29,070 --> 00:21:27,160

right distance from the Sun and we know

471

00:21:32,190 --> 00:21:29,080

there's lots of them out there that they

472

00:21:35,160 --> 00:21:32,200

are most likely going to have life on

473

00:21:37,380 --> 00:21:35,170

them I mentioned I think it was two

474

00:21:40,500 --> 00:21:37,390

shows ago maybe the last show caller

475

00:21:43,890 --> 00:21:40,510

called in was talking about life out

476

00:21:46,380 --> 00:21:43,900

there and I said that life is really

477

00:21:48,480 --> 00:21:46,390

fights to be here on this planet you

478

00:21:50,940 --> 00:21:48,490

know when you think of where they have

479

00:21:53,850 --> 00:21:50,950

found life actually since the last time

480

00:21:57,030 --> 00:21:53,860

we spoke I believe you know in acidic

481

00:22:01,140 --> 00:21:57,040

places and you know then deep below the

482

00:22:04,110 --> 00:22:01,150

Arctic you know we're yeah a photon or

483

00:22:06,210 --> 00:22:04,120

two a light may come down that way at

484

00:22:11,010 --> 00:22:06,220

some point but I mean it's just amazing

485

00:22:14,550 --> 00:22:11,020

where life will just fight to be here

486

00:22:16,890 --> 00:22:14,560

yeah you know yes and I think that's

487

00:22:20,370 --> 00:22:16,900

another thing that makes most of us

488

00:22:22,140 --> 00:22:20,380

think that life is almost you know we

489

00:22:24,540 --> 00:22:22,150

can't until we discover it we can't say

490

00:22:26,550 --> 00:22:24,550

for sure but but I think most of us

491

00:22:30,720 --> 00:22:26,560

expect that life is very common in the

492

00:22:32,940 --> 00:22:30,730

universe because it's favored yeah you

493

00:22:34,620 --> 00:22:32,950

know no I've always you know I've

494

00:22:35,920 --> 00:22:34,630

wondered things like I wonder what the

495

00:22:37,780 --> 00:22:35,930

equivalent of

496

00:22:40,330 --> 00:22:37,790

someone's first car out there or

497

00:22:42,040 --> 00:22:40,340

someone's first kiss out there maybe to

498

00:22:44,770 --> 00:22:42,050

another being you know it is really

499

00:22:46,420 --> 00:22:44,780

pretty nice to speculate all that we're

500

00:22:49,480 --> 00:22:46,430

going to go into break and we'll be

501  
00:22:52,270 --> 00:22:49,490  
picking this up when we come back my

502  
00:23:03,360 --> 00:22:52,280  
guest is Jeff Bennett and we'll be right

503  
00:23:07,350 --> 00:23:05,399  
we're clear Martin three minutes just

504  
00:23:08,549 --> 00:23:07,360  
over three minutes in this break three

505  
00:23:10,409 --> 00:23:08,559  
minutes okay thank you

506  
00:23:12,480 --> 00:23:10,419  
all right Jeff so we're still we're

507  
00:23:14,820 --> 00:23:12,490  
still one well we'll bring up another

508  
00:23:17,549 --> 00:23:14,830  
topic while we're here and break for

509  
00:23:22,019 --> 00:23:17,559  
this three minutes and so I'm just gonna

510  
00:23:25,019 --> 00:23:22,029  
ask you about UFOs in Colorado you know

511  
00:23:28,200 --> 00:23:25,029  
anything about UFO sightings in in

512  
00:23:29,279 --> 00:23:28,210  
Colorado or have you ever looked into

513  
00:23:32,909 --> 00:23:29,289

that topic at all

514

00:23:35,070 --> 00:23:32,919

no honestly I have not we were recently

515

00:23:36,779 --> 00:23:35,080

this summer we took a hiking trip down

516

00:23:42,930 --> 00:23:36,789

to the sand dunes and I saw there's some

517

00:23:45,590 --> 00:23:42,940

sort of a UFO place down there oh but oh

518

00:23:48,629 --> 00:23:45,600

yes Howard how you talk about the tower

519

00:23:51,930 --> 00:23:48,639

yeah yeah yeah yeah

520

00:23:54,720 --> 00:23:51,940

because I I know there's the I'm trying

521

00:23:58,649 --> 00:23:54,730

to remember exactly Chris O'Brien does a

522

00:24:02,549 --> 00:23:58,659

lot of work on it this sand guy can't

523

00:24:07,529 --> 00:24:02,559

Lois Lois Lois Valley and Lou Obispo

524

00:24:10,169 --> 00:24:07,539

thank you race yeah I mean there's a

525

00:24:13,529 --> 00:24:10,179

there's a that's a real hot spot you

526  
00:24:15,419 --> 00:24:13,539  
know as far as UFOs go and I know you

527  
00:24:18,149 --> 00:24:15,429  
know UFOs isn't really your thing

528  
00:24:20,879 --> 00:24:18,159  
but you're not you're not close-minded

529  
00:24:23,549 --> 00:24:20,889  
to the topic no I had a great discussion

530  
00:24:26,220 --> 00:24:23,559  
recently with them James Fox who you

531  
00:24:29,180 --> 00:24:26,230  
probably yeah yeah no he turns out to be

532  
00:24:32,639 --> 00:24:29,190  
the brother of a good friend of ours and

533  
00:24:35,460 --> 00:24:32,649  
yeah yeah we had a lot of fun fun

534  
00:24:38,850 --> 00:24:35,470  
chatting and stuff yep yeah his by the

535  
00:24:44,340 --> 00:24:38,860  
way up since you mentioned him his film

536  
00:24:45,600 --> 00:24:44,350  
was just purchased by 10:21 I think

537  
00:24:50,570 --> 00:24:45,610  
that's the name of it it's gonna be

538  
00:24:53,070 --> 00:24:50,580

released next June or July so excellent

539

00:24:56,340 --> 00:24:53,080

so that'll be that'll be great that's a

540

00:25:01,529 --> 00:24:56,350

rift in 1991 Martin Oh what did I say I

541

00:25:03,330 --> 00:25:01,539

did what anyone had 91 okay 91 orchard a

542

00:25:07,680 --> 00:25:03,340

trace why don't you just stay right here

543

00:25:10,619 --> 00:25:07,690

and help me through this I'm trying I'm

544

00:25:13,049 --> 00:25:10,629

trying I don't know yeah yeah thanks for

545

00:25:15,330 --> 00:25:13,059

that so anyway that will be coming out

546

00:25:17,270 --> 00:25:15,340

next year yeah James is James is a lot

547

00:25:22,670 --> 00:25:17,280

of fun he's really interesting

548

00:25:25,100 --> 00:25:22,680

and we shared a cab out in Phoenix a few

549

00:25:27,740 --> 00:25:25,110

months ago and had a really a lot of fun

550

00:25:29,630 --> 00:25:27,750

conversations he's he's great yep I

551  
00:25:30,610 --> 00:25:29,640  
don't think anyone works as hard as him

552  
00:25:32,960 --> 00:25:30,620  
either

553  
00:25:34,370 --> 00:25:32,970  
not too many people putting together a

554  
00:25:40,160 --> 00:25:34,380  
film like he does he does a really great

555  
00:25:43,880 --> 00:25:40,170  
job yeah and so I know that for instance

556  
00:25:47,480 --> 00:25:43,890  
in the whole Midwest there are a lot of

557  
00:25:50,300 --> 00:25:47,490  
UFO sightings and but I don't for to go

558  
00:25:53,150 --> 00:25:50,310  
back are you ready now yes okay I'm

559  
00:25:55,580 --> 00:25:53,160  
ready here too okay good good cuz we're

560  
00:25:58,150 --> 00:25:55,590  
ahead of schedule we're good all right

561  
00:26:03,410 --> 00:25:58,160  
that's good here we go in five four

562  
00:26:05,450 --> 00:26:03,420  
three two all right everyone welcome

563  
00:26:08,510 --> 00:26:05,460

back this is martin willis and my guest

564

00:26:11,050 --> 00:26:08,520

is jeff bennett and we were talking

565

00:26:15,590 --> 00:26:11,060

before the break we were talking about

566

00:26:21,080 --> 00:26:15,600

basically the solar system in the

567

00:26:24,410 --> 00:26:21,090

distance and between stars and and the

568

00:26:29,120 --> 00:26:24,420

likeliness of life happening out there

569

00:26:32,090 --> 00:26:29,130

and so I I think that is really

570

00:26:35,240 --> 00:26:32,100

interesting the fact that you know I

571

00:26:38,270 --> 00:26:35,250

mean life most likely is happening out

572

00:26:41,210 --> 00:26:38,280

there and intelligent life I think it

573

00:26:44,960 --> 00:26:41,220

was a you're saying that when it comes

574

00:26:48,140 --> 00:26:44,970

to intelligent life out there that can

575

00:26:51,290 --> 00:26:48,150

you can you tell me how that went that

576  
00:26:53,540 --> 00:26:51,300  
if a society and get through the

577  
00:26:57,140 --> 00:26:53,550  
bottleneck of technology how did that go

578  
00:26:59,720 --> 00:26:57,150  
exactly well so that there's two parts

579  
00:27:02,570 --> 00:26:59,730  
to this the first is while I think it's

580  
00:27:05,030 --> 00:27:02,580  
very commonly thought that life would be

581  
00:27:06,500 --> 00:27:05,040  
common among scientists the question of

582  
00:27:08,900 --> 00:27:06,510  
whether that life eventually becomes

583  
00:27:10,940 --> 00:27:08,910  
intelligent is more more difficult

584  
00:27:12,280 --> 00:27:10,950  
because you know on earth it took four

585  
00:27:16,010 --> 00:27:12,290  
and a half billion years before

586  
00:27:17,510 --> 00:27:16,020  
intelligence finally evolved so that

587  
00:27:19,940 --> 00:27:17,520  
might mean there's a lot less

588  
00:27:22,100 --> 00:27:19,950

intelligent life than just life playing

589

00:27:26,660 --> 00:27:22,110

but if you do get an intelligent

590

00:27:27,950 --> 00:27:26,670

civilization then the question is we're

591

00:27:29,540 --> 00:27:27,960

always going to get to the bottleneck

592

00:27:31,160 --> 00:27:29,550

that we're at today because the

593

00:27:33,260 --> 00:27:31,170

technology that we could use

594

00:27:36,440 --> 00:27:33,270

to communicate or to travel into space

595

00:27:38,690 --> 00:27:36,450

is the same technology technology that

596

00:27:41,450 --> 00:27:38,700

we can use to destroy ourselves so the

597

00:27:44,450 --> 00:27:41,460

question is do intelligent civilizations

598

00:27:46,040 --> 00:27:44,460

make it past this bottleneck it's a

599

00:27:47,690 --> 00:27:46,050

question we all want to know the answer

600

00:27:51,230 --> 00:27:47,700

to because we're in the bottleneck now

601  
00:27:53,240 --> 00:27:51,240  
right and my argument is that if we do

602  
00:27:55,730 --> 00:27:53,250  
get past this point if we can survive

603  
00:27:59,090 --> 00:27:55,740  
the next century and deal with problems

604  
00:28:02,270 --> 00:27:59,100  
like nuclear war and global warming and

605  
00:28:05,270 --> 00:28:02,280  
so on then at that point there's nothing

606  
00:28:08,930 --> 00:28:05,280  
that would stop us from eventually

607  
00:28:13,220 --> 00:28:08,940  
moving out exploring space traveling to

608  
00:28:15,410 --> 00:28:13,230  
the stars yes and they're the

609  
00:28:17,420 --> 00:28:15,420  
bottlenecks you know you mentioned

610  
00:28:18,860 --> 00:28:17,430  
global warming I know that's some of

611  
00:28:24,230 --> 00:28:18,870  
your study before we get into that

612  
00:28:27,140 --> 00:28:24,240  
though as far as the technology you know

613  
00:28:30,200 --> 00:28:27,150

we just talked about a star being as far

614

00:28:33,530 --> 00:28:30,210

from the east coast to California when

615

00:28:36,470 --> 00:28:33,540

the Sun is the size of a grapefruit

616

00:28:39,050 --> 00:28:36,480

the distances and as far as the

617

00:28:42,560 --> 00:28:39,060

technology that we have not discovered

618

00:28:49,160 --> 00:28:42,570

yet that would actually make us able to

619

00:28:50,330 --> 00:28:49,170

travel that type of space okay I have a

620

00:28:53,330 --> 00:28:50,340

point here I'm just trying to think

621

00:28:55,190 --> 00:28:53,340

where I'm going with this do you think

622

00:28:58,840 --> 00:28:55,200

that artificial intelligence is

623

00:29:01,640 --> 00:28:58,850

something that's going to be building

624

00:29:04,940 --> 00:29:01,650

something that will make this happen

625

00:29:07,670 --> 00:29:04,950

in other words you know that artificial

626

00:29:10,130 --> 00:29:07,680

intelligence someday may get to the

627

00:29:13,790 --> 00:29:10,140

point where it can replicate itself and

628

00:29:15,260 --> 00:29:13,800

then there's the quantum computing that

629

00:29:18,170 --> 00:29:15,270

I'll be talking on the next guest about

630

00:29:20,450 --> 00:29:18,180

and do you think that it's possible that

631

00:29:24,050 --> 00:29:20,460

that is what's gonna put us there

632

00:29:25,880 --> 00:29:24,060

instead of the human mind well certainly

633

00:29:28,430 --> 00:29:25,890

that's that's an interesting possibility

634

00:29:30,740 --> 00:29:28,440

and in fact going way back before people

635

00:29:34,060 --> 00:29:30,750

really even talk too much about this the

636

00:29:37,400 --> 00:29:34,070

famous mathematician John von Neumann

637

00:29:40,610 --> 00:29:37,410

back in like the 1920s or 30s I think

638

00:29:42,320 --> 00:29:40,620

had proposed that it wouldn't be people

639

00:29:44,570 --> 00:29:42,330

colonizing the Stars it would be

640

00:29:46,210 --> 00:29:44,580

machines cell-free self-replicating

641

00:29:49,690 --> 00:29:46,220

machine

642

00:29:51,610 --> 00:29:49,700

Wow and 1920s did you say I don't

643

00:29:53,860 --> 00:29:51,620

remember exactly when but it goes way

644

00:29:56,020 --> 00:29:53,870

way back I was talking about this this

645

00:29:57,880 --> 00:29:56,030

idea and you know you'll find a lot of

646

00:30:00,820 --> 00:29:57,890

stuff written about long numinous

647

00:30:02,230 --> 00:30:00,830

machines and whether they might be the

648

00:30:04,630 --> 00:30:02,240

things that we should be looking for

649

00:30:06,490 --> 00:30:04,640

colonizing the galaxy and it's just

650

00:30:09,640 --> 00:30:06,500

basically the idea that these voyages

651  
00:30:11,110 --> 00:30:09,650  
even with you know technology far beyond

652  
00:30:13,480 --> 00:30:11,120  
our own you're still talking about

653  
00:30:15,940 --> 00:30:13,490  
distances that because you're limited to

654  
00:30:18,220 --> 00:30:15,950  
slower than the speed of light travel as

655  
00:30:20,410 --> 00:30:18,230  
far as we know they're very very long

656  
00:30:22,480 --> 00:30:20,420  
voyages and people might not enjoy them

657  
00:30:24,730 --> 00:30:22,490  
that much but machines could handle them

658  
00:30:27,010 --> 00:30:24,740  
fine and they could get someplace and

659  
00:30:28,960 --> 00:30:27,020  
then start building copies of themselves

660  
00:30:33,460 --> 00:30:28,970  
and then move on to the next place and

661  
00:30:35,710 --> 00:30:33,470  
so on I think that we talked before the

662  
00:30:38,440 --> 00:30:35,720  
show I told you that I had Seth Shaw

663  
00:30:41,740 --> 00:30:38,450

stack on and I think that that is the

664

00:30:45,520 --> 00:30:41,750

only type of situation that he may think

665

00:30:47,980 --> 00:30:45,530

is a possibility that you know machines

666

00:30:49,960 --> 00:30:47,990

might be or could be traveling but not

667

00:30:52,720 --> 00:30:49,970

not beings I think he mentioned

668

00:30:55,630 --> 00:30:52,730

something along those lines and I

669

00:30:57,400 --> 00:30:55,640

understand that but also it is possible

670

00:30:59,920 --> 00:30:57,410

that there's something about the physics

671

00:31:01,720 --> 00:30:59,930

that we don't understand you mentioned

672

00:31:04,080 --> 00:31:01,730

that as far as we know we're limited by

673

00:31:09,330 --> 00:31:04,090

light speed but maybe we're not you know

674

00:31:11,970 --> 00:31:09,340

there's a warp drive yeah yeah there are

675

00:31:14,380 --> 00:31:11,980

possibilities is really interesting to

676  
00:31:16,540 --> 00:31:14,390  
you know contemplate that that whole

677  
00:31:18,370 --> 00:31:16,550  
thing right and

678  
00:31:20,370 --> 00:31:18,380  
okay another thing that's worth thinking

679  
00:31:22,630 --> 00:31:20,380  
about here when you bring up the

680  
00:31:25,180 --> 00:31:22,640  
artificial intelligence it's also the

681  
00:31:28,480 --> 00:31:25,190  
sort of virtual reality type of thing

682  
00:31:29,740 --> 00:31:28,490  
for example you could imagine in fact if

683  
00:31:32,500 --> 00:31:29,750  
you saw there was a Steven Spielberg

684  
00:31:34,420 --> 00:31:32,510  
movie about a video game ready player

685  
00:31:36,520 --> 00:31:34,430  
one you know where they had the whole

686  
00:31:39,760 --> 00:31:36,530  
suit sink and go into a virtual world

687  
00:31:43,560 --> 00:31:39,770  
where they not only saw like we do with

688  
00:31:45,970 --> 00:31:43,570

the masks today but felt and so on and

689

00:31:49,000 --> 00:31:45,980

so you can imagine that we send machines

690

00:31:51,130 --> 00:31:49,010

out to other stars and other planets and

691

00:31:56,470 --> 00:31:51,140

you don't even have to go but you can

692

00:31:58,270 --> 00:31:56,480

feel like you're there so that might be

693

00:31:58,780 --> 00:31:58,280

something that people would find more

694

00:32:00,970 --> 00:31:58,790

track

695

00:32:02,770 --> 00:32:00,980

getting in the spaceship themselves and

696

00:32:04,870 --> 00:32:02,780

traveling as well so it's hard to say

697

00:32:08,830 --> 00:32:04,880

yeah where the technology will take us

698

00:32:11,830 --> 00:32:08,840

yeah I know I would rather do that so

699

00:32:13,780 --> 00:32:11,840

dude do you think we're so you think

700

00:32:16,750 --> 00:32:13,790

we're kind of in a bottleneck right now

701  
00:32:19,690 --> 00:32:16,760  
as far as technology goes do you want to

702  
00:32:21,850 --> 00:32:19,700  
talk a little about that well yeah I

703  
00:32:23,380 --> 00:32:21,860  
think by that bottleneck I mean

704  
00:32:25,450 --> 00:32:23,390  
basically that we've reached the point

705  
00:32:28,240 --> 00:32:25,460  
where we have the technology to destroy

706  
00:32:30,040 --> 00:32:28,250  
our civilization you know run us back

707  
00:32:32,590 --> 00:32:30,050  
into the dark ages and there's multiple

708  
00:32:35,680 --> 00:32:32,600  
ways that we could do that you know the

709  
00:32:37,600 --> 00:32:35,690  
perhaps the simplest to understand and

710  
00:32:39,850 --> 00:32:37,610  
most obvious is blowing up lots of

711  
00:32:42,940 --> 00:32:39,860  
nuclear bombs right that would send us

712  
00:32:46,000 --> 00:32:42,950  
back into the dark ages for sure just

713  
00:32:47,890 --> 00:32:46,010

general hatred and tolerance civil wars

714

00:32:50,800 --> 00:32:47,900

around the world that could do it too

715

00:32:52,540 --> 00:32:50,810

but as you mentioned my big focus has

716

00:32:56,260 --> 00:32:52,550

been on global warming because I think

717

00:32:58,690 --> 00:32:56,270

that's the one that's most likely to

718

00:33:01,540 --> 00:32:58,700

create that problem for us primarily

719

00:33:03,490 --> 00:33:01,550

because it's one that's easy to ignore

720

00:33:05,140 --> 00:33:03,500

because it's been creeping up on us and

721

00:33:08,830 --> 00:33:05,150

you have people who try to pretend it's

722

00:33:10,450 --> 00:33:08,840

not real and so on and that makes it one

723

00:33:12,070 --> 00:33:10,460

that we're having you know nuclear

724

00:33:14,350 --> 00:33:12,080

weapons it's easy for everybody to say

725

00:33:17,470 --> 00:33:14,360

oh yeah that would be bad and we still

726

00:33:19,600 --> 00:33:17,480

have them but hopefully we're smart

727

00:33:21,820 --> 00:33:19,610

enough not to use them where's with

728

00:33:23,910 --> 00:33:21,830

global warming it's harder for people to

729

00:33:27,910 --> 00:33:23,920

see and therefore more likely to bite us

730

00:33:29,950 --> 00:33:27,920

you know I've had this subject of global

731

00:33:35,710 --> 00:33:29,960

warming between a few different friends

732

00:33:39,520 --> 00:33:35,720

and I get the comeback of oh well that's

733

00:33:42,490 --> 00:33:39,530

a liberal thing and and also there's

734

00:33:44,590 --> 00:33:42,500

people are making millions and billions

735

00:33:46,780 --> 00:33:44,600

of dollars on and that's what it's all

736

00:33:48,520 --> 00:33:46,790

about and so what's your what's your

737

00:33:50,860 --> 00:33:48,530

argument I'm sure people say something

738

00:33:53,710 --> 00:33:50,870

like that to you as well those are both

739

00:33:55,960 --> 00:33:53,720

very easy to answer the first terms of

740

00:33:58,090 --> 00:33:55,970

the liberal thing is just look back in

741

00:34:00,250 --> 00:33:58,100

time and find out who was the first

742

00:34:02,470 --> 00:34:00,260

major global leader to warn about the

743

00:34:04,830 --> 00:34:02,480

significant danger of this problem and

744

00:34:07,270 --> 00:34:04,840

it was actually Margaret Thatcher in

745

00:34:09,820 --> 00:34:07,280

1989 giving a speech to the United

746

00:34:11,890 --> 00:34:09,830

Nations about this topic that link is

747

00:34:12,370 --> 00:34:11,900

posted on my website you can watch it at

748

00:34:14,950 --> 00:34:12,380

global

749

00:34:18,580 --> 00:34:14,960

primer calm Margaret Thatcher was not a

750

00:34:21,070 --> 00:34:18,590

liberal and so it clearly was not a

751  
00:34:23,410 --> 00:34:21,080  
liberal issue and that's just a myth

752  
00:34:25,270 --> 00:34:23,420  
that's been manufactured and the same

753  
00:34:25,570 --> 00:34:25,280  
for the people making lots of money you

754  
00:34:27,550 --> 00:34:25,580  
know

755  
00:34:29,320 --> 00:34:27,560  
there's there are researchers who get

756  
00:34:31,660 --> 00:34:29,330  
grant money but I tell you none of them

757  
00:34:33,910 --> 00:34:31,670  
are getting rich research salaries are

758  
00:34:36,340 --> 00:34:33,920  
very low compared to what lots of people

759  
00:34:38,740 --> 00:34:36,350  
are earning in the private sector no

760  
00:34:40,890 --> 00:34:38,750  
one's getting rich off this topic in my

761  
00:34:44,260 --> 00:34:40,900  
case I've never received a cent for it

762  
00:34:46,450 --> 00:34:44,270  
and and that's true of the vast majority

763  
00:34:49,240 --> 00:34:46,460

of people who were focused on this and

764

00:34:50,470 --> 00:34:49,250

speaking out on it on the other side the

765

00:34:53,050 --> 00:34:50,480

people who are spreading the

766

00:34:55,420 --> 00:34:53,060

misinformation about it often times are

767

00:34:57,190 --> 00:34:55,430

coming from places where they're getting

768

00:34:58,960 --> 00:34:57,200

paid quite a lot of money by by

769

00:35:01,270 --> 00:34:58,970

companies that that have a vested

770

00:35:04,690 --> 00:35:01,280

interest there and can you do can you

771

00:35:06,460 --> 00:35:04,700

give us an example of that the Heartland

772

00:35:09,220 --> 00:35:06,470

Institute has been one of the major

773

00:35:11,410 --> 00:35:09,230

funders of disinformation on climate

774

00:35:14,380 --> 00:35:11,420

change I actually had the opportunity to

775

00:35:16,210 --> 00:35:14,390

debate someone funded by them who had

776

00:35:18,010 --> 00:35:16,220

they mail out these things to hundreds

777

00:35:20,920 --> 00:35:18,020

of thousands of teachers saying how the

778

00:35:22,960 --> 00:35:20,930

IPCC is all wrong and when I

779

00:35:25,330 --> 00:35:22,970

investigated it it in detail and I have

780

00:35:28,150 --> 00:35:25,340

a whole post on the website medium that

781

00:35:30,490 --> 00:35:28,160

people can look at for this it turns out

782

00:35:32,500 --> 00:35:30,500

that every study they cite they if you

783

00:35:33,700 --> 00:35:32,510

actually talk to the scientists who did

784

00:35:35,650 --> 00:35:33,710

those studies they say they've been

785

00:35:38,890 --> 00:35:35,660

grossly misinterpreted by these folks

786

00:35:42,040 --> 00:35:38,900

deliberately misinterpreted all right

787

00:35:46,780 --> 00:35:42,050

so how I've been worried about climate

788

00:35:49,780 --> 00:35:46,790

change for a while how and you know

789

00:35:52,540 --> 00:35:49,790

recently I think was last year there was

790

00:35:54,220 --> 00:35:52,550

a number like 12 you don't get our act

791

00:35:57,490 --> 00:35:54,230

together within 12 years or something

792

00:36:01,330 --> 00:35:57,500

like that we're basically screwed can

793

00:36:03,280 --> 00:36:01,340

you let us know what you have found out

794

00:36:06,040 --> 00:36:03,290

what will where are we what type of

795

00:36:08,220 --> 00:36:06,050

situation are we in right now well we

796

00:36:11,860 --> 00:36:08,230

are in an extremely dangerous situation

797

00:36:14,620 --> 00:36:11,870

the 12-year number is not a specific you

798

00:36:16,900 --> 00:36:14,630

know hit or miss thing the 12-year

799

00:36:20,050 --> 00:36:16,910

number is based on the models that's a

800

00:36:22,990 --> 00:36:20,060

certain level of warming that we could

801  
00:36:24,700 --> 00:36:23,000  
stave off if we act by that point if we

802  
00:36:25,870 --> 00:36:24,710  
don't we're gonna have more warming than

803  
00:36:27,729 --> 00:36:25,880  
that

804  
00:36:30,819 --> 00:36:27,739  
in terms of at what point were you

805  
00:36:32,949 --> 00:36:30,829  
facing a really serious crisis to our

806  
00:36:35,620 --> 00:36:32,959  
future to our kids and grandkids future

807  
00:36:37,569 --> 00:36:35,630  
my answer would be we're already there

808  
00:36:40,719 --> 00:36:37,579  
that warming that we could stave off a

809  
00:36:43,359 --> 00:36:40,729  
12 years to me is already gonna lead to

810  
00:36:46,419 --> 00:36:43,369  
very very serious consequences for our

811  
00:36:48,699 --> 00:36:46,429  
kids and grandkids so I think the sooner

812  
00:36:51,189 --> 00:36:48,709  
we do something the better and the

813  
00:36:52,659 --> 00:36:51,199

longer the wait the more severe of

814

00:36:54,699 --> 00:36:52,669

consequences we'll have to deal with

815

00:36:57,069 --> 00:36:54,709

before we get the opportunity to

816

00:37:00,729 --> 00:36:57,079

hopefully turn it around and what we're

817

00:37:02,949 --> 00:37:00,739

turning it around involve and it seems

818

00:37:04,979 --> 00:37:02,959

like we're all gonna be sacrificing and

819

00:37:07,749 --> 00:37:04,989

that's what people do not want to do

820

00:37:10,599 --> 00:37:07,759

correct you know I think that's false

821

00:37:12,099 --> 00:37:10,609

actually and that's one of the things I

822

00:37:13,659 --> 00:37:12,109

would like to really emphasize are you

823

00:37:17,979 --> 00:37:13,669

still hearing me because uplay is not

824

00:37:20,259 --> 00:37:17,989

okay yeah good you know what it involves

825

00:37:22,689 --> 00:37:20,269

is we have to not be using fossil fuels

826

00:37:24,880 --> 00:37:22,699

for our energy anymore coal oil and gas

827

00:37:28,109 --> 00:37:24,890

which means we need to switch to other

828

00:37:30,819 --> 00:37:28,119

energy sources better efficiency

829

00:37:34,870 --> 00:37:30,829

renewables nuclear power none of those

830

00:37:36,969 --> 00:37:34,880

give off any greenhouse gases and the

831

00:37:41,140 --> 00:37:36,979

fact is when you look at the subsidies

832

00:37:42,909 --> 00:37:41,150

that we give to fossil fuels which have

833

00:37:45,339 --> 00:37:42,919

been estimated by conservative

834

00:37:47,140 --> 00:37:45,349

economists from the IMF in the US and so

835

00:37:49,839 --> 00:37:47,150

honored a trillion dollars per year in

836

00:37:52,089 --> 00:37:49,849

the United States we're actually

837

00:37:54,370 --> 00:37:52,099

spending much more money for our fossil

838

00:37:56,559 --> 00:37:54,380

fuel energy than we would be if we were

839

00:37:58,709 --> 00:37:56,569

using these other sources so it'd

840

00:38:02,559 --> 00:37:58,719

actually be a net benefit to the economy

841

00:38:05,319 --> 00:38:02,569

as opposed to a sacrifice if we were to

842

00:38:07,779 --> 00:38:05,329

switch over and one of the best examples

843

00:38:09,309 --> 00:38:07,789

of the analysis done by this is by a

844

00:38:12,099 --> 00:38:09,319

group I've mentioned to you beforehand I

845

00:38:13,659 --> 00:38:12,109

got to meet George Shultz a little over

846

00:38:15,849 --> 00:38:13,669

a week ago who was Ronald Reagan's

847

00:38:17,380 --> 00:38:15,859

Secretary of State and he's formed a

848

00:38:19,359 --> 00:38:17,390

whole group of former Republican

849

00:38:21,370 --> 00:38:19,369

administration officials who've done

850

00:38:23,319 --> 00:38:21,380

this economic analysis and if you look

851  
00:38:26,409 --> 00:38:23,329  
at the cover of their report you'll see

852  
00:38:28,329 --> 00:38:26,419  
it says that this changeover not only

853  
00:38:30,609 --> 00:38:28,339  
solves the problem of global warming but

854  
00:38:32,649 --> 00:38:30,619  
it strengthens the economy reduces

855  
00:38:36,009 --> 00:38:32,659  
regulation benefits working-class

856  
00:38:37,510 --> 00:38:36,019  
Americans and and so on that this is

857  
00:38:40,070 --> 00:38:37,520  
actually something that

858  
00:38:42,620 --> 00:38:40,080  
even if you don't believe it's real we

859  
00:38:44,810 --> 00:38:42,630  
still benefit from solving it but do you

860  
00:38:46,940 --> 00:38:44,820  
think I know this is way off and I I

861  
00:38:48,380 --> 00:38:46,950  
hope the listener will hang in there

862  
00:38:50,630 --> 00:38:48,390  
because I know this is way off the topic

863  
00:38:54,290 --> 00:38:50,640

we usually talk about but I really think

864

00:38:56,480 --> 00:38:54,300

it's important to talk about and do you

865

00:39:01,460 --> 00:38:56,490

think that there has to be like a

866

00:39:04,250 --> 00:39:01,470

complete breakdown of the system you

867

00:39:06,290 --> 00:39:04,260

know I mean for like the oil companies

868

00:39:07,910 --> 00:39:06,300

and everyone involved in fossil fuels

869

00:39:11,630 --> 00:39:07,920

they're not going to give up easy

870

00:39:13,460 --> 00:39:11,640

they're not gonna go away easy you know

871

00:39:15,740 --> 00:39:13,470

actually the vast majority of fossil

872

00:39:18,170 --> 00:39:15,750

fuel companies already understand this

873

00:39:19,580 --> 00:39:18,180

problem and know it needs a solution and

874

00:39:22,160 --> 00:39:19,590

they're actually advocating for

875

00:39:24,500 --> 00:39:22,170

solutions because they need the business

876

00:39:26,330 --> 00:39:24,510

incentives that will allow them to make

877

00:39:29,180 --> 00:39:26,340

the change in their business structure

878

00:39:31,010 --> 00:39:29,190

away from those fuels toward other ones

879

00:39:33,380 --> 00:39:31,020

I mean the same companies that are doing

880

00:39:35,599 --> 00:39:33,390

fossil fuels now are in the best

881

00:39:38,540 --> 00:39:35,609

position to do renewables nuclear and so

882

00:39:41,870 --> 00:39:38,550

on so they want to make that change most

883

00:39:43,940 --> 00:39:41,880

of them not all of them and so they're

884

00:39:46,430 --> 00:39:43,950

advocating for the same carbon tax that

885

00:39:48,560 --> 00:39:46,440

George Shultz's group is advocating for

886

00:39:51,740 --> 00:39:48,570

the citizens climate Lobby because that

887

00:39:55,099 --> 00:39:51,750

provides the the market incentive to

888

00:39:56,359 --> 00:39:55,109

help them make that transition and I'll

889

00:39:58,520 --> 00:39:56,369

just point out for anybody who's got

890

00:40:02,270 --> 00:39:58,530

more questions on this my a whole book

891

00:40:04,670 --> 00:40:02,280

and show is posted for free online at

892

00:40:06,680 --> 00:40:04,680

global warming primer calm and it's in

893

00:40:08,570 --> 00:40:06,690

question and answer format and I'll

894

00:40:10,550 --> 00:40:08,580

probably answer any question anyone has

895

00:40:14,089 --> 00:40:10,560

on it and just to tie it back to our

896

00:40:17,240 --> 00:40:14,099

ufo's discussion if there are people

897

00:40:19,820 --> 00:40:17,250

visiting us in ufos they went through a

898

00:40:22,640 --> 00:40:19,830

time in their civilization when they

899

00:40:24,560 --> 00:40:22,650

would have faced the same type of threat

900

00:40:26,780 --> 00:40:24,570

maybe not in the exact same form but

901  
00:40:28,940 --> 00:40:26,790  
fossil fuels probably exist on any

902  
00:40:31,849 --> 00:40:28,950  
planet that gets a civilization and

903  
00:40:33,829 --> 00:40:31,859  
they're easy to tap into so they would

904  
00:40:36,650 --> 00:40:33,839  
have presumably had to have solved this

905  
00:40:39,020 --> 00:40:36,660  
problem just as we're faced with solving

906  
00:40:41,079 --> 00:40:39,030  
it now so it'd be really nice to talk to

907  
00:40:43,339 --> 00:40:41,089  
them and find out how they did it Wow

908  
00:40:45,620 --> 00:40:43,349  
something I certainly have never thought

909  
00:40:47,839 --> 00:40:45,630  
of that's really interesting oh I'm not

910  
00:40:50,900 --> 00:40:47,849  
an advocate of nuclear power myself and

911  
00:40:54,440 --> 00:40:50,910  
that is you know for the number

912  
00:40:57,230 --> 00:40:54,450  
one thing for me as though not just the

913  
00:41:00,200 --> 00:40:57,240

danger of it but the waste we put on our

914

00:41:02,779 --> 00:41:00,210

future of you 5000 generations of our

915

00:41:05,000 --> 00:41:02,789

future to take care of you know and I

916

00:41:06,710 --> 00:41:05,010

don't think there's any real good answer

917

00:41:09,109 --> 00:41:06,720

for the waste when it comes to that well

918

00:41:12,650 --> 00:41:09,119

that's true but but I can tell you for

919

00:41:15,410 --> 00:41:12,660

example if you want to know where most

920

00:41:18,440 --> 00:41:15,420

nuclear waste is being generated right

921

00:41:20,240 --> 00:41:18,450

now it's actually from coal plants coal

922

00:41:22,520 --> 00:41:20,250

plants are spewing something like a

923

00:41:24,470 --> 00:41:22,530

hundred times as much uranium into the

924

00:41:26,750 --> 00:41:24,480

atmosphere because there is uranium in

925

00:41:29,480 --> 00:41:26,760

coal then is produced by nuclear power

926

00:41:31,730 --> 00:41:29,490

plants and at with a nuclear power plant

927

00:41:33,049 --> 00:41:31,740

you take that waste and you store it in

928

00:41:35,539 --> 00:41:33,059

one place where you can in principle

929

00:41:36,950 --> 00:41:35,549

keep an eye on it with the coal plants

930

00:41:39,680 --> 00:41:36,960

it's just being spewed out into the

931

00:41:42,410 --> 00:41:39,690

atmosphere or it's affecting all of us

932

00:41:44,210 --> 00:41:42,420

so there's actually a greater total

933

00:41:47,410 --> 00:41:44,220

radiation danger from our current

934

00:41:50,660 --> 00:41:47,420

sources than wow I got in an argument in

935

00:41:52,940 --> 00:41:50,670

Los Alamos at my sister's house and

936

00:41:54,680 --> 00:41:52,950

brother-in-law's house many years ago

937

00:41:56,690 --> 00:41:54,690

with the scientists out there that was

938

00:42:04,849 --> 00:41:56,700

saying the same thing and I was calling

939

00:42:06,740 --> 00:42:04,859

MDS he has to it after all nope and I'm

940

00:42:08,059 --> 00:42:06,750

not necessarily advocating for nuclear

941

00:42:09,620 --> 00:42:08,069

I'm just saying it's a potential

942

00:42:12,380 --> 00:42:09,630

solution to this problem that we should

943

00:42:15,170 --> 00:42:12,390

consider but I think no energy source

944

00:42:17,480 --> 00:42:15,180

will ever be completely benign and so

945

00:42:20,269 --> 00:42:17,490

you have to look at trade-offs and in my

946

00:42:22,519 --> 00:42:20,279

opinion that one's a lot safer than the

947

00:42:24,920 --> 00:42:22,529

ones we're currently using renewables

948

00:42:27,230 --> 00:42:24,930

might be even better or might not be

949

00:42:30,440 --> 00:42:27,240

depending on various things like what

950

00:42:32,990 --> 00:42:30,450

goes into the mining and so on as far as

951  
00:42:36,400 --> 00:42:33,000  
the renewables what is what do you think

952  
00:42:40,130 --> 00:42:36,410  
is is it Germany what what country is

953  
00:42:42,230 --> 00:42:40,140  
relying mostly on on you know solar and

954  
00:42:45,019 --> 00:42:42,240  
wind and there's one country that almost

955  
00:42:46,880 --> 00:42:45,029  
switched right over right well nobody's

956  
00:42:48,470 --> 00:42:46,890  
been able to make a super-fast

957  
00:42:50,750 --> 00:42:48,480  
transition there's been a lot of people

958  
00:42:53,210 --> 00:42:50,760  
talking about doing it you know the real

959  
00:42:56,720 --> 00:42:53,220  
limiting factor at the moment for solar

960  
00:42:58,519 --> 00:42:56,730  
and wind is storage right batteries or

961  
00:43:00,109 --> 00:42:58,529  
some other form of storage for when the

962  
00:43:02,779 --> 00:43:00,119  
winds not blowing and when it's

963  
00:43:04,819 --> 00:43:02,789

nighttime or cloudy and that problem has

964

00:43:05,989 --> 00:43:04,829

not been fully solved

965

00:43:08,329 --> 00:43:05,999

which is part of why I think we

966

00:43:10,219 --> 00:43:08,339

shouldn't rule out nuclear before we

967

00:43:12,829 --> 00:43:10,229

solve that problem but if we do then

968

00:43:14,269 --> 00:43:12,839

that might be another way to go um you

969

00:43:17,719 --> 00:43:14,279

know we have we have about ten minutes

970

00:43:19,160 --> 00:43:17,729

left i I can I can take a call if

971

00:43:21,079 --> 00:43:19,170

someone would like to call in would you

972

00:43:21,880 --> 00:43:21,089

like to take up would you like to take a

973

00:43:24,469 --> 00:43:21,890

call

974

00:43:28,219 --> 00:43:24,479

sure all right so I'm gonna put that

975

00:43:30,229 --> 00:43:28,229

number up on the screen and that's goin

976  
00:43:33,440 --> 00:43:30,239  
over there right now and that number is

977  
00:43:36,019 --> 00:43:33,450  
eight five five four seven two five four

978  
00:43:37,190 --> 00:43:36,029  
eight three so we only got about ten

979  
00:43:41,180 --> 00:43:37,200  
minutes if let someone would like to

980  
00:43:42,890 --> 00:43:41,190  
call in and ask a question you know and

981  
00:43:44,630 --> 00:43:42,900  
while we're waiting I thought I might

982  
00:43:46,940 --> 00:43:44,640  
mention cuz you asked me before about

983  
00:43:48,650 --> 00:43:46,950  
the you know what if we do get through

984  
00:43:50,150 --> 00:43:48,660  
this bottleneck and I think it's worth a

985  
00:43:52,249 --> 00:43:50,160  
moment on that because it's something

986  
00:43:54,589 --> 00:43:52,259  
that ties in with global warming when

987  
00:43:56,959 --> 00:43:54,599  
I'm talking to kids also about what does

988  
00:43:59,059 --> 00:43:56,969

their future look like and yet remember

989

00:44:00,380 --> 00:43:59,069

like you know I met George Shultz I said

990

00:44:03,739 --> 00:44:00,390

he's 99 years old

991

00:44:07,039 --> 00:44:03,749

today's kids won't be 99 until well

992

00:44:09,589 --> 00:44:07,049

after the year 2100 so ask yourself when

993

00:44:12,170 --> 00:44:09,599

we survive this century what kind of

994

00:44:14,779 --> 00:44:12,180

technology will we have in the year 2100

995

00:44:17,239 --> 00:44:14,789

and you start to realize we should by

996

00:44:20,539 --> 00:44:17,249

then have things like nuclear fusion or

997

00:44:22,539 --> 00:44:20,549

solar energy from space and other things

998

00:44:26,689 --> 00:44:22,549

that would essentially give us free

999

00:44:27,949 --> 00:44:26,699

clean unlimited energy so when you talk

1000

00:44:30,380 --> 00:44:27,959

about wanting to start sending

1001  
00:44:34,219 --> 00:44:30,390  
spaceships off around the solar system

1002  
00:44:37,579 --> 00:44:34,229  
or eradicating poverty throughout the

1003  
00:44:41,180 --> 00:44:37,589  
world those all should be possible by

1004  
00:44:44,199 --> 00:44:41,190  
that time if we deal with our immediate

1005  
00:44:46,910 --> 00:44:44,209  
problems yeah it is immediate we have

1006  
00:44:48,259 --> 00:44:46,920  
vents on the line from Ohio Vince

1007  
00:44:53,839 --> 00:44:48,269  
welcome to the show you have a quest

1008  
00:44:57,339 --> 00:44:53,849  
question for Jeff Martin hi yes you know

1009  
00:45:00,319 --> 00:44:57,349  
I I hate that to hear that we you know

1010  
00:45:03,920 --> 00:45:00,329  
scientists think that we are limited by

1011  
00:45:07,910 --> 00:45:03,930  
our current physics knowledge and that I

1012  
00:45:10,370 --> 00:45:07,920  
was wondering if you guys thought that

1013  
00:45:15,079 --> 00:45:10,380

if we spent all the time and the money

1014

00:45:18,620 --> 00:45:15,089

the energy towards looking at the nuts

1015

00:45:21,349 --> 00:45:18,630

and bolts UFO technology

1016

00:45:23,390 --> 00:45:21,359

we have more answers than what we put

1017

00:45:25,160 --> 00:45:23,400

into trying to find a signal I know one

1018

00:45:27,559 --> 00:45:25,170

day I was listening to you and you

1019

00:45:29,930 --> 00:45:27,569

almost had Seth in a corner and he

1020

00:45:31,670 --> 00:45:29,940

didn't let you actually do it and I just

1021

00:45:33,740 --> 00:45:31,680

wondered if there would be more

1022

00:45:36,319 --> 00:45:33,750

information about disclosure if there

1023

00:45:37,910 --> 00:45:36,329

was more energy put towards it

1024

00:45:39,829 --> 00:45:37,920

I'll take my answer out here thank you

1025

00:45:44,839 --> 00:45:39,839

all right Vince thanks for the call

1026  
00:45:48,589 --> 00:45:44,849  
thanks you want to tackle that yeah sure

1027  
00:45:51,620 --> 00:45:48,599  
you know I mean I think the difficulty

1028  
00:45:53,529 --> 00:45:51,630  
with the the question for me is that we

1029  
00:45:55,579 --> 00:45:53,539  
have to have something to study

1030  
00:45:57,499 --> 00:45:55,589  
eyewitness reports are not something

1031  
00:45:59,870 --> 00:45:57,509  
that you can really study you would have

1032  
00:46:03,920 --> 00:45:59,880  
to have something in your hands to study

1033  
00:46:05,359 --> 00:46:03,930  
and I think if anyone had that and

1034  
00:46:06,890 --> 00:46:05,369  
actually could show that they had

1035  
00:46:08,990 --> 00:46:06,900  
something real in their hands I think

1036  
00:46:13,220 --> 00:46:09,000  
lots of people would be putting lots of

1037  
00:46:16,130 --> 00:46:13,230  
effort into studying it but so far you

1038  
00:46:18,529 --> 00:46:16,140

know to my understanding of scientists

1039

00:46:21,680 --> 00:46:18,539

who've looked at these claimed artifacts

1040

00:46:23,599 --> 00:46:21,690

and things carefully no one takes them

1041

00:46:25,190 --> 00:46:23,609

seriously yet so it's not a matter of

1042

00:46:26,420 --> 00:46:25,200

that we're not putting the effort into

1043

00:46:28,460 --> 00:46:26,430

studying it it's that we don't think

1044

00:46:31,160 --> 00:46:28,470

there's actually something there to

1045

00:46:34,519 --> 00:46:31,170

study but we would love it if there was

1046

00:46:36,289 --> 00:46:34,529

right that's the one thing that has we

1047

00:46:37,880 --> 00:46:36,299

have one more call I'm gonna take that

1048

00:46:39,890 --> 00:46:37,890

in just a second that's one of the

1049

00:46:41,599 --> 00:46:39,900

things that have has puzzled me about to

1050

00:46:43,640 --> 00:46:41,609

the Stars Academy I don't know if you

1051  
00:46:46,130 --> 00:46:43,650  
have even looked at that at all I

1052  
00:46:48,890 --> 00:46:46,140  
haven't so one of the things is they

1053  
00:46:52,789 --> 00:46:48,900  
were stating that they wanted to

1054  
00:46:56,749 --> 00:46:52,799  
replicate the technology by observing

1055  
00:46:58,849 --> 00:46:56,759  
and you know I just haven't been getting

1056  
00:47:01,220 --> 00:46:58,859  
that one understanding that one and just

1057  
00:47:04,339 --> 00:47:01,230  
to your point that you just made we have

1058  
00:47:11,680 --> 00:47:04,349  
Jim calling from British Columbia

1059  
00:47:17,539 --> 00:47:16,039  
yeah he's right here hi yeah I'm an

1060  
00:47:20,960 --> 00:47:17,549  
engineer metallurgist

1061  
00:47:25,039 --> 00:47:20,970  
I did work on nuclear generator clear

1062  
00:47:26,859 --> 00:47:25,049  
power and I learned a lot about it it

1063  
00:47:29,319 --> 00:47:26,869

wasn't my main job I worked for a

1064

00:47:34,769 --> 00:47:29,329

consulting firm and and some

1065

00:47:39,519 --> 00:47:37,660

I've given lectures on the difference

1066

00:47:41,799 --> 00:47:39,529

between the engineering method in the

1067

00:47:43,660 --> 00:47:41,809

scientific method and I find a lot of

1068

00:47:46,779 --> 00:47:43,670

scientists even nuclear scientists own

1069

00:47:48,959 --> 00:47:46,789

do not understand what's wrong with

1070

00:47:52,329 --> 00:47:48,969

nuclear power the problem is the risk

1071

00:47:54,819 --> 00:47:52,339

calculations actually you can't do the

1072

00:48:01,569 --> 00:47:54,829

risk calculations on nuclear and this is

1073

00:48:04,959 --> 00:48:01,579

why this is why nuclear power cannot get

1074

00:48:07,539 --> 00:48:04,969

insurance they cannot get insurance from

1075

00:48:08,829 --> 00:48:07,549

the private sector so all governments in

1076  
00:48:11,680 --> 00:48:08,839  
the world where they have nuclear power

1077  
00:48:15,099 --> 00:48:11,690  
the government's insure the nuclear

1078  
00:48:17,650 --> 00:48:15,109  
power liability insurance right and this

1079  
00:48:19,959 --> 00:48:17,660  
is because you can't do the risk

1080  
00:48:23,170 --> 00:48:19,969  
calculations and and the nuclear in this

1081  
00:48:25,029 --> 00:48:23,180  
re the insurance industry likes to do

1082  
00:48:27,549 --> 00:48:25,039  
their their risk calculations or else

1083  
00:48:30,519 --> 00:48:27,559  
they'd go broke and they do them

1084  
00:48:33,039 --> 00:48:30,529  
properly but but you can't do them on

1085  
00:48:35,650 --> 00:48:33,049  
nuclear you can't do it now just take a

1086  
00:48:38,259 --> 00:48:35,660  
look at Fukushima it's costing more and

1087  
00:48:41,949 --> 00:48:38,269  
more all the time it's not the the cost

1088  
00:48:45,519 --> 00:48:41,959

of the Fukushima disaster is going up

1089

00:48:48,489 --> 00:48:45,529

over time not down same thing with the

1090

00:48:52,329 --> 00:48:48,499

one in the Ukraine same deal the cost

1091

00:48:54,299 --> 00:48:52,339

goes up over time you know it just yeah

1092

00:48:57,189 --> 00:48:54,309

I know we're very moving on time so I'll

1093

00:49:00,549 --> 00:48:57,199

answer your question for now yeah we're

1094

00:49:02,620 --> 00:49:00,559

limited on time Jim so yeah so so you

1095

00:49:04,329 --> 00:49:02,630

know I'll again I'm not a nuclear expert

1096

00:49:05,829 --> 00:49:04,339

and I'm not saying we should do it I'm

1097

00:49:08,380 --> 00:49:05,839

saying we shouldn't take it off the

1098

00:49:10,059 --> 00:49:08,390

table as an option until we really look

1099

00:49:13,599 --> 00:49:10,069

into it and I think the key point here

1100

00:49:15,880 --> 00:49:13,609

again is the trade-offs and we also

1101

00:49:18,640 --> 00:49:15,890

can't do the risk calculations for

1102

00:49:20,620 --> 00:49:18,650

really almost any source very well but

1103

00:49:23,699 --> 00:49:20,630

you can look at the historical data and

1104

00:49:26,410 --> 00:49:23,709

we know for example that the fossil fuel

1105

00:49:28,749 --> 00:49:26,420

industry does cause air and water

1106

00:49:31,209 --> 00:49:28,759

pollution that we know about and that's

1107

00:49:34,109 --> 00:49:31,219

killing leading to an estimated

1108

00:49:36,549 --> 00:49:34,119

premature 10 million deaths per year

1109

00:49:38,920 --> 00:49:36,559

whereas in the entire history of the

1110

00:49:41,410 --> 00:49:38,930

nuclear industry there have been the

1111

00:49:42,460 --> 00:49:41,420

deaths from Chernobyl but none others

1112

00:49:44,260 --> 00:49:42,470

and

1113

00:49:46,839 --> 00:49:44,270

so you trade off ten million deaths per

1114

00:49:49,330 --> 00:49:46,849

year going on year after year after year

1115

00:49:51,130 --> 00:49:49,340

versus the historical record nuclear

1116

00:49:52,839 --> 00:49:51,140

safety record actually looks a lot

1117

00:49:55,089 --> 00:49:52,849

better than the safety record or fossil

1118

00:49:58,030 --> 00:49:55,099

fuels but again we do have to look going

1119

00:50:00,940 --> 00:49:58,040

forward and make the dude do the best we

1120

00:50:03,580 --> 00:50:00,950

can to look at it look at the economics

1121

00:50:06,520 --> 00:50:03,590

of it and then I would like to see a

1122

00:50:09,190 --> 00:50:06,530

carbon tax so that we're factoring in

1123

00:50:11,109 --> 00:50:09,200

the true costs of the fossil fuels and

1124

00:50:12,490 --> 00:50:11,119

then let the market figure it out if

1125

00:50:14,020 --> 00:50:12,500

somebody figures out how to do nuclear

1126

00:50:15,910 --> 00:50:14,030

and can prove that it's safe and

1127

00:50:17,560 --> 00:50:15,920

economical they'll do it if they don't

1128

00:50:19,089 --> 00:50:17,570

then we'll be getting our energy in

1129

00:50:22,780 --> 00:50:19,099

other ways from renewables or other

1130

00:50:25,599 --> 00:50:22,790

things a quick comment Jim because we

1131

00:50:30,210 --> 00:50:25,609

only have about two minutes left okay

1132

00:50:34,089 --> 00:50:30,220

okay Jeff you are way off way off

1133

00:50:36,010 --> 00:50:34,099

sorry I don't think so and you can go to

1134

00:50:39,070 --> 00:50:36,020

my website and you can see my actual

1135

00:50:41,920 --> 00:50:39,080

data there and I know I I have research

1136

00:50:44,859 --> 00:50:41,930

papers my friend I have research papers

1137

00:50:47,950 --> 00:50:44,869

I don't read websites and environmental

1138

00:50:52,900 --> 00:50:47,960

stuff I I read okay just make your make

1139

00:50:56,859 --> 00:50:52,910

your point if you have them my point yes

1140

00:50:59,710 --> 00:50:56,869

nuclear cost too much it's the risk is

1141

00:51:01,300 --> 00:50:59,720

too high and now you see you mentioned

1142

00:51:03,160 --> 00:51:01,310

Jeff you mentioned something about risk

1143

00:51:04,750 --> 00:51:03,170

calculations look at the aeronautical

1144

00:51:06,640 --> 00:51:04,760

engineering look at the problems getting

1145

00:51:08,650 --> 00:51:06,650

an airplane across Pacific Ocean and the

1146

00:51:11,680 --> 00:51:08,660

risk calculations that are not the risk

1147

00:51:13,329 --> 00:51:11,690

is down to ten to the negative seven ten

1148

00:51:15,370 --> 00:51:13,339

to the negative seven that's the risk

1149

00:51:17,079 --> 00:51:15,380

for nuclear will never be that low but

1150

00:51:19,150 --> 00:51:17,089

the question is what what is the risk

1151

00:51:21,790 --> 00:51:19,160

what are the consequences can you make

1152

00:51:24,040 --> 00:51:21,800

it so that it's much safer than it is

1153

00:51:26,230 --> 00:51:24,050

with today's power plants I believe the

1154

00:51:28,000 --> 00:51:26,240

answers to those questions are probably

1155

00:51:31,990 --> 00:51:28,010

yes I'm not a hundred percent oh you

1156

00:51:35,620 --> 00:51:32,000

can't that's my job exactly by job I

1157

00:51:37,570 --> 00:51:35,630

know I've talked to lots of people who

1158

00:51:39,280 --> 00:51:37,580

do this as their jobs and have done

1159

00:51:41,140 --> 00:51:39,290

nuclear and do research at some of the

1160

00:51:43,210 --> 00:51:41,150

biggest nuclear facilities of the in the

1161

00:51:45,609 --> 00:51:43,220

world and they would disagree with you

1162

00:51:47,349 --> 00:51:45,619

so you can I would suggest to the

1163

00:51:49,510 --> 00:51:47,359

listeners that they go take a look at

1164

00:51:52,990 --> 00:51:49,520

the actual research that's out there and

1165

00:51:55,150 --> 00:51:53,000

draw conclusions it's corrupt the

1166

00:51:56,380 --> 00:51:55,160

engineering is corrupt well so you are

1167

00:51:58,089 --> 00:51:56,390

now in a conspiracy

1168

00:52:00,789 --> 00:51:58,099

theory mode accusing the people I've

1169

00:52:03,130 --> 00:52:00,799

debated in tire engineers multiple times

1170

00:52:06,990 --> 00:52:03,140

my friend on this I have the research

1171

00:52:08,259 --> 00:52:07,000

papers all right I have okay Jim thank

1172

00:52:12,579 --> 00:52:08,269

thank you

1173

00:52:14,200 --> 00:52:12,589

yep so we have just one minute left and

1174

00:52:17,289 --> 00:52:14,210

one of the questions I wanted to ask you

1175

00:52:19,930 --> 00:52:17,299

as far as I mentioned to earlier on I

1176  
00:52:22,960 --> 00:52:19,940  
said something along the line as we are

1177  
00:52:27,579 --> 00:52:22,970  
in a mass extinction event right now

1178  
00:52:29,349 --> 00:52:27,589  
because of the rate is so high for

1179  
00:52:32,200 --> 00:52:29,359  
extinction and once something's gone

1180  
00:52:36,160 --> 00:52:32,210  
it's gone do you think that's also

1181  
00:52:36,509 --> 00:52:36,170  
global warming has a part in that as

1182  
00:52:40,630 --> 00:52:36,519  
well

1183  
00:52:43,569 --> 00:52:40,640  
um so far global warming has played a

1184  
00:52:45,220 --> 00:52:43,579  
relatively minor role in extinctions but

1185  
00:52:46,599 --> 00:52:45,230  
it could you know most of the

1186  
00:52:49,120 --> 00:52:46,609  
extinctions have been due to habitat

1187  
00:52:51,190 --> 00:52:49,130  
destruction so far the burning of the

1188  
00:52:54,250 --> 00:52:51,200

rainforests and things like that but

1189

00:52:56,319 --> 00:52:54,260

going forward global warming one of the

1190

00:52:58,779 --> 00:52:56,329

great fears with it is that it could

1191

00:53:02,019 --> 00:52:58,789

lead to much more extinction because if

1192

00:53:03,720 --> 00:53:02,029

climates migrate faster than trees can

1193

00:53:06,400 --> 00:53:03,730

migrate then you start to lose

1194

00:53:08,799 --> 00:53:06,410

ecosystems and then you lose the animals

1195

00:53:10,420 --> 00:53:08,809

that depend on them also so that's

1196

00:53:11,940 --> 00:53:10,430

actually one of the great fears with it

1197

00:53:14,289 --> 00:53:11,950

is that it will lead to further

1198

00:53:15,730 --> 00:53:14,299

furthering of this extinction event

1199

00:53:18,160 --> 00:53:15,740

that's going on well

1200

00:53:19,749 --> 00:53:18,170

alright Jeff well that's it for this

1201  
00:53:21,609 --> 00:53:19,759  
part of the show thank you so much it's

1202  
00:53:22,210 --> 00:53:21,619  
been a real pleasure always fun to talk

1203  
00:53:24,249 --> 00:53:22,220  
to you Jeff

1204  
00:53:25,779 --> 00:53:24,259  
thank you very much I really appreciate

1205  
00:53:28,390 --> 00:53:25,789  
it all right take care

1206  
00:53:29,589 --> 00:53:28,400  
you too alright everyone we're gonna be

1207  
00:53:32,400 --> 00:53:29,599  
going into a break and we'll be right

1208  
00:53:35,890 --> 00:53:32,410  
back right after these messages

1209  
00:53:39,130 --> 00:53:35,900  
all right welcome back and this is a

1210  
00:53:42,279 --> 00:53:39,140  
second hour of the show and my guest

1211  
00:53:46,870 --> 00:53:42,289  
this hour is Dee Prasad and welcome to

1212  
00:53:48,460 --> 00:53:46,880  
the show deep thank you and we're we're

1213  
00:53:50,740 --> 00:53:48,470

talking to you in Canada right Toronto

1214

00:53:52,359 --> 00:53:50,750

yes sir exactly

1215

00:53:56,220 --> 00:53:52,369

did I read something that you were

1216

00:53:58,509 --> 00:53:56,230

considering one time in the top 20 of

1217

00:54:01,089 --> 00:53:58,519

people under 20 or something like that

1218

00:54:01,450 --> 00:54:01,099

and Toronto where yeah that's right you

1219

00:54:06,579 --> 00:54:01,460

got it

1220

00:54:07,480 --> 00:54:06,589

you got that exactly right I believe it

1221

00:54:09,829 --> 00:54:07,490

was 2014

1222

00:54:14,029 --> 00:54:09,839

so yeah

1223

00:54:17,660 --> 00:54:14,039

I was 18 years old when I got it all

1224

00:54:19,939 --> 00:54:17,670

right and you've done a lot of work some

1225

00:54:22,249 --> 00:54:19,949

have said you're a prodigy but why don't

1226

00:54:24,499 --> 00:54:22,259

you give your basic background if you

1227

00:54:27,140 --> 00:54:24,509

would to the listener who's who doesn't

1228

00:54:29,839 --> 00:54:27,150

know anything about you basically okay

1229

00:54:32,929 --> 00:54:29,849

sure so I've always been a fan attic of

1230

00:54:35,989 --> 00:54:32,939

science from I don't know since

1231

00:54:38,299 --> 00:54:35,999

childhood and that expressed itself in

1232

00:54:40,819 --> 00:54:38,309

different ways in high school that

1233

00:54:43,189 --> 00:54:40,829

express itself through competitions and

1234

00:54:45,920 --> 00:54:43,199

science fair and then in university I

1235

00:54:47,749 --> 00:54:45,930

was kind of all over the place where I

1236

00:54:49,880 --> 00:54:47,759

switched from Electrical Engineering to

1237

00:54:52,819 --> 00:54:49,890

industrial engineering and moved from

1238

00:54:55,729 --> 00:54:52,829

hardware to learning about computational

1239

00:54:57,259 --> 00:54:55,739

math and kind of just applying that to

1240

00:55:00,650 --> 00:54:57,269

day to day life and I found that

1241

00:55:02,929 --> 00:55:00,660

intriguing and so I really developed a

1242

00:55:04,880 --> 00:55:02,939

strong AI and slash blockchain

1243

00:55:07,249 --> 00:55:04,890

background so for example I took the

1244

00:55:09,439 --> 00:55:07,259

first official blockchain like

1245

00:55:12,109 --> 00:55:09,449

University credit blockchain course in

1246

00:55:14,839 --> 00:55:12,119

Canada I'm on watch a and window sandy

1247

00:55:17,269 --> 00:55:14,849

what pardon me what is that exactly so

1248

00:55:21,650 --> 00:55:17,279

it's a very broad umbrella term at this

1249

00:55:24,199 --> 00:55:21,660

point but think about it as I would say

1250

00:55:28,400 --> 00:55:24,209

a transition or an evolution of the

1251

00:55:30,109 --> 00:55:28,410

Internet so in some extent you know how

1252

00:55:31,910 --> 00:55:30,119

the internet kind of digitized our

1253

00:55:34,370 --> 00:55:31,920

interactions with people and how we

1254

00:55:37,640 --> 00:55:34,380

store information blockchain takes that

1255

00:55:42,410 --> 00:55:37,650

and in a and you know apply steroids to

1256

00:55:45,499 --> 00:55:42,420

it yeah we can go deeper into it I'd be

1257

00:55:49,729 --> 00:55:45,509

happy to yeah yeah and you've also

1258

00:55:54,289 --> 00:55:49,739

gotten into quantum computing which is

1259

00:55:57,309 --> 00:55:54,299

essa' which is a really deep and I think

1260

00:56:00,769 --> 00:55:57,319

there's a I'm not sure exactly how many

1261

00:56:02,209 --> 00:56:00,779

supercomputers are are right now is how

1262

00:56:05,179 --> 00:56:02,219

many are I know they're building them

1263

00:56:07,419 --> 00:56:05,189

all the time and they're like three

1264

00:56:10,489 --> 00:56:07,429

major supercomputers something like that

1265

00:56:12,739 --> 00:56:10,499

yeah yeah there's lots of exactly

1266

00:56:14,120 --> 00:56:12,749

there's a loss of rankings of different

1267

00:56:17,269 --> 00:56:14,130

supercomputers and there's also

1268

00:56:19,400 --> 00:56:17,279

different metrics usually we're

1269

00:56:21,859 --> 00:56:19,410

interested in number of flops but

1270

00:56:23,330 --> 00:56:21,869

there's other ways of measuring how good

1271

00:56:25,940 --> 00:56:23,340

a computer is

1272

00:56:28,430 --> 00:56:25,950

how good a supercomputer is with that

1273

00:56:30,170 --> 00:56:28,440

said though there's probably I would say

1274

00:56:32,360 --> 00:56:30,180

thousands of what we would define suit

1275

00:56:33,980 --> 00:56:32,370

as supercomputers different groups

1276

00:56:36,230 --> 00:56:33,990

around the world kind of competing

1277

00:56:38,120 --> 00:56:36,240

whether they're big private

1278

00:56:40,220 --> 00:56:38,130

organizations like the IBM's of the

1279

00:56:44,570 --> 00:56:40,230

world or straight-up countries right

1280

00:56:48,290 --> 00:56:44,580

like the US or Canada Canada has I

1281

00:56:52,480 --> 00:56:48,300

believe shark net and some other yeah

1282

00:56:56,120 --> 00:56:52,490

like Canadian central supercomputers so

1283

00:56:59,630 --> 00:56:56,130

that being said there's a smaller number

1284

00:57:02,540 --> 00:56:59,640

of quantum computers I would say that

1285

00:57:04,610 --> 00:57:02,550

there's probably easily less than a

1286

00:57:07,190 --> 00:57:04,620

thousand maybe a couple hundred

1287

00:57:09,010 --> 00:57:07,200

depending on how lenient you are with

1288

00:57:12,380 --> 00:57:09,020

calling something a quantum computer

1289

00:57:16,100 --> 00:57:12,390

well what I meant when I said the three

1290

00:57:18,140 --> 00:57:16,110

I I think there's the top three right

1291

00:57:20,480 --> 00:57:18,150

isn't there like the top three that are

1292

00:57:22,760 --> 00:57:20,490

competing against each other as far as

1293

00:57:27,560 --> 00:57:22,770

being the top and you're talking about

1294

00:57:30,020 --> 00:57:27,570

the flops or whatever it is but these

1295

00:57:31,900 --> 00:57:30,030

things can calculate something like

1296

00:57:34,460 --> 00:57:31,910

close to a trillion

1297

00:57:36,590 --> 00:57:34,470

can you kind of leave it Salinas fall

1298

00:57:39,440 --> 00:57:36,600

they can probably calculate more

1299

00:57:40,760 --> 00:57:39,450

operations than that if you just looked

1300

00:57:43,010 --> 00:57:40,770

up you know the most powerful

1301  
00:57:45,380 --> 00:57:43,020  
supercomputers it's always changing I

1302  
00:57:47,300 --> 00:57:45,390  
believe if you can

1303  
00:57:49,940 --> 00:57:47,310  
yeah verify this I think it China

1304  
00:57:51,950 --> 00:57:49,950  
currently holds the lead for what that

1305  
00:57:55,040 --> 00:57:51,960  
for what it's worth I'm fairly certain

1306  
00:57:59,450 --> 00:57:55,050  
about that so yeah and and what type of

1307  
00:58:01,940 --> 00:57:59,460  
calculations per second so so so these

1308  
00:58:06,650 --> 00:58:01,950  
are basic operations we're talking like

1309  
00:58:08,090 --> 00:58:06,660  
addition subtraction division yeah which

1310  
00:58:10,400 --> 00:58:08,100  
is why so that there's different kinds

1311  
00:58:14,180 --> 00:58:10,410  
of metrics for calculating these

1312  
00:58:16,910 --> 00:58:14,190  
operations and how well computer

1313  
00:58:18,950 --> 00:58:16,920

performs for example you have the

1314

00:58:21,800 --> 00:58:18,960

complexity class right so you have

1315

00:58:24,470 --> 00:58:21,810

different ways of measuring how complex

1316

00:58:26,150 --> 00:58:24,480

the problem is how hard it is to come to

1317

00:58:29,750 --> 00:58:26,160

a solution and how hard it is to check

1318

00:58:32,630 --> 00:58:29,760

the solution so that's another way of

1319

00:58:35,660 --> 00:58:32,640

kind of measuring how good a computer

1320

00:58:37,160 --> 00:58:35,670

can perform yes it's a big task and do

1321

00:58:39,170 --> 00:58:37,170

they they're not

1322

00:58:41,900 --> 00:58:39,180

actually using binary or are they using

1323

00:58:43,220 --> 00:58:41,910

binary yeah these are all binary the

1324

00:58:47,779 --> 00:58:43,230

ones that I'm talking about like China

1325

00:58:50,680 --> 00:58:47,789

and everything it's all binary the the

1326

00:58:53,480 --> 00:58:50,690

here's a funny part the metrics for

1327

00:58:56,180 --> 00:58:53,490

comparing two quantum computers isn't as

1328

00:58:58,250 --> 00:58:56,190

well defined there's not necessarily in

1329

00:59:00,289 --> 00:58:58,260

the obvious way of comparing the like

1330

00:59:02,319 --> 00:59:00,299

different quantum computers with

1331

00:59:04,880 --> 00:59:02,329

classical computers and with each other

1332

00:59:08,359 --> 00:59:04,890

that being said though there are some

1333

00:59:09,589 --> 00:59:08,369

there minima and some you know some

1334

00:59:11,930 --> 00:59:09,599

results that we've all agreed on for

1335

00:59:14,329 --> 00:59:11,940

example Google's quantum supremacy

1336

00:59:17,539 --> 00:59:14,339

results you might have heard about that

1337

00:59:19,819 --> 00:59:17,549

in the news mm-hmm that's something that

1338

00:59:22,809 --> 00:59:19,829

there's decent consensus on was that it

1339

00:59:26,450 --> 00:59:22,819

is impressive it is indeed the real deal

1340

00:59:30,589 --> 00:59:26,460

Wow and so you're you're someone that's

1341

00:59:33,349 --> 00:59:30,599

actually considered the UFO topic as

1342

00:59:34,880 --> 00:59:33,359

well I've I've seen a couple things out

1343

00:59:38,630 --> 00:59:34,890

there and and so what are your thoughts

1344

00:59:41,900 --> 00:59:38,640

on that that in general yeah I believe

1345

00:59:44,480 --> 00:59:41,910

that they represent the greatest mystery

1346

00:59:46,700 --> 00:59:44,490

of our time and I think that is

1347

00:59:49,519 --> 00:59:46,710

pertinent that we figure out everything

1348

00:59:51,499 --> 00:59:49,529

we can about this topic knowing I this

1349

00:59:53,599 --> 00:59:51,509

is just my opinion knowing that we'll

1350

00:59:56,170 --> 00:59:53,609

never figure everything out about it

1351

01:00:00,470 --> 00:59:56,180

just like with anything else the science

1352

01:00:04,910 --> 01:00:00,480

yeah yeah certainly one of the one of

1353

01:00:07,099 --> 01:00:04,920

the the hang-ups of any science really

1354

01:00:10,339 --> 01:00:07,109

looking at it is that it's not something

1355

01:00:14,089 --> 01:00:10,349

that's that you can replicate it's it's

1356

01:00:16,190 --> 01:00:14,099

it's random it's a it's not something

1357

01:00:18,559 --> 01:00:16,200

that can be studied easily in any type

1358

01:00:23,690 --> 01:00:18,569

of way there are some people attempting

1359

01:00:27,049 --> 01:00:23,700

to do that in different ways but what do

1360

01:00:30,380 --> 01:00:27,059

you think also I saw that you have an

1361

01:00:33,440 --> 01:00:30,390

interest in metamaterials have you have

1362

01:00:35,870 --> 01:00:33,450

you looked into what people are stating

1363

01:00:39,289 --> 01:00:35,880

out there what they have found in

1364

01:00:41,539 --> 01:00:39,299

crashes and things like that yes yeah a

1365

01:00:44,900 --> 01:00:41,549

great deal of research at this point

1366

01:00:48,380 --> 01:00:44,910

into different claims by different

1367

01:00:49,730 --> 01:00:48,390

parties and yeah what would you like to

1368

01:00:50,930 --> 01:00:49,740

know what specific is there anything

1369

01:00:55,849 --> 01:00:50,940

have you

1370

01:00:59,329 --> 01:00:55,859

look at any of the materials that people

1371

01:01:03,800 --> 01:00:59,339

are claiming that yes oh really okay and

1372

01:01:06,490 --> 01:01:03,810

so how would you analyze something like

1373

01:01:09,020 --> 01:01:06,500

that what type of oven does it take

1374

01:01:11,900 --> 01:01:09,030

that's a great question

1375

01:01:15,170 --> 01:01:11,910

there's a wide variety of different

1376

01:01:17,780 --> 01:01:15,180

instruments and you really have to what

1377

01:01:20,420 --> 01:01:17,790

really what I found helps is knowing

1378

01:01:22,040 --> 01:01:20,430

what kind of questions your you need to

1379

01:01:24,440 --> 01:01:22,050

ask and what kind of things you're

1380

01:01:26,030 --> 01:01:24,450

looking at cord specifically so let's

1381

01:01:28,910 --> 01:01:26,040

say that somebody gives you a chunk of

1382

01:01:31,670 --> 01:01:28,920

metal and it looks engineered as an

1383

01:01:34,099 --> 01:01:31,680

example what do you do with it the first

1384

01:01:35,809 --> 01:01:34,109

steps is art is to figure out are there

1385

01:01:38,809 --> 01:01:35,819

anything you know interesting about the

1386

01:01:40,579 --> 01:01:38,819

isotopes or the isotopic ratios so you

1387

01:01:42,559 --> 01:01:40,589

would go to different labs then you

1388

01:01:44,450 --> 01:01:42,569

would get the specifics can be done and

1389

01:01:47,260 --> 01:01:44,460

there's a bunch of different instruments

1390

01:01:49,700 --> 01:01:47,270

different methods that will give you

1391

01:01:52,579 --> 01:01:49,710

ideally similar results or similar

1392

01:01:54,849 --> 01:01:52,589

enough we're gonna varying error within

1393

01:01:58,309 --> 01:01:54,859

a yeah acceptable margin of error so

1394

01:02:00,589 --> 01:01:58,319

that being said let's say that some of

1395

01:02:03,050 --> 01:02:00,599

these results do end up being anomalous

1396

01:02:04,550 --> 01:02:03,060

and the isotopes are weird the next

1397

01:02:06,740 --> 01:02:04,560

thing that you want to do is determine

1398

01:02:09,200 --> 01:02:06,750

whether you have a veto right or a

1399

01:02:10,640 --> 01:02:09,210

actual artifact in your hand right it's

1400

01:02:13,130 --> 01:02:10,650

something that might be manufactured

1401  
01:02:15,500 --> 01:02:13,140  
potentially off planet and that makes a

1402  
01:02:17,420 --> 01:02:15,510  
world of a difference and but that is

1403  
01:02:19,609 --> 01:02:17,430  
like the the Devils in the details

1404  
01:02:23,210 --> 01:02:19,619  
proving that something is engineered off

1405  
01:02:27,200 --> 01:02:23,220  
planet is actually insanely hard there's

1406  
01:02:29,120 --> 01:02:27,210  
so for example let's say that I have

1407  
01:02:31,550 --> 01:02:29,130  
this alloy right I put in our scanning

1408  
01:02:33,950 --> 01:02:31,560  
electron microscope and I see that okay

1409  
01:02:36,319 --> 01:02:33,960  
there's this continuous layering there

1410  
01:02:40,220 --> 01:02:36,329  
seems to be obvious manufacturing of

1411  
01:02:45,470 --> 01:02:40,230  
this metal right people could argue that

1412  
01:02:48,500 --> 01:02:45,480  
this is a natural or be somebody took a

1413  
01:02:50,569 --> 01:02:48,510

meteorite and then they engineered the

1414

01:02:52,670 --> 01:02:50,579

they extracted the metals from that

1415

01:02:54,589 --> 01:02:52,680

meteorite and then they engineered it

1416

01:02:56,870 --> 01:02:54,599

into what you're seeing so it wasn't

1417

01:02:58,160 --> 01:02:56,880

actually built somewhere off planet so

1418

01:03:01,970 --> 01:02:58,170

you see where I'm going with that so

1419

01:03:04,190 --> 01:03:01,980

it's very non-trivial the task yeah and

1420

01:03:06,190 --> 01:03:04,200

what would it take

1421

01:03:08,900 --> 01:03:06,200

would you think that it would take for

1422

01:03:10,970 --> 01:03:08,910

science to actually admit something was

1423

01:03:14,480 --> 01:03:10,980

actually manufactured as

1424

01:03:16,730 --> 01:03:14,490

extraterrestrial we would need something

1425

01:03:20,630 --> 01:03:16,740

that is obvious technological function

1426

01:03:22,400 --> 01:03:20,640

something that for example you know

1427

01:03:25,970 --> 01:03:22,410

imagine if you have something that

1428

01:03:27,859 --> 01:03:25,980

resembled a advanced alien microchip

1429

01:03:29,450 --> 01:03:27,869

so that's the complete analogy we would

1430

01:03:31,789 --> 01:03:29,460

never write we would never actually see

1431

01:03:35,030 --> 01:03:31,799

an microchip like that it would probably

1432

01:03:38,020 --> 01:03:35,040

be completely yeah

1433

01:03:40,460 --> 01:03:38,030

alien to us it just wouldn't be obvious

1434

01:03:42,589 --> 01:03:40,470

but if we found something that I was all

1435

01:03:44,900 --> 01:03:42,599

like that like that that would be cool

1436

01:03:46,819 --> 01:03:44,910

or like an imagined anti-gravity craft

1437

01:03:51,520 --> 01:03:46,829

or a fully functioning craft that's game

1438

01:03:55,520 --> 01:03:51,530

over so so you're saying that in an

1439

01:03:57,440 --> 01:03:55,530

anti-gravity anti-gravity craft itself

1440

01:04:01,460 --> 01:03:57,450

that that is that what you're just yes

1441

01:04:03,559 --> 01:04:01,470

yeah yes that would be like that would

1442

01:04:06,890 --> 01:04:03,569

be the greatest scientific discovery of

1443

01:04:11,599 --> 01:04:06,900

all time right right

1444

01:04:15,230 --> 01:04:11,609

what about though if a metal I guess

1445

01:04:18,230 --> 01:04:15,240

what I'm getting at is what would it

1446

01:04:20,030 --> 01:04:18,240

take for instance there's there's some

1447

01:04:23,839 --> 01:04:20,040

meta materials right now being studied

1448

01:04:27,710 --> 01:04:23,849

supposedly that people have been talking

1449

01:04:29,870 --> 01:04:27,720

about in the UFO field and you mentioned

1450

01:04:34,120 --> 01:04:29,880

okay someone could actually fake

1451

01:04:38,180 --> 01:04:34,130

something with a meteor meteorite

1452

01:04:42,200 --> 01:04:38,190

material on something like that but is

1453

01:04:44,809 --> 01:04:42,210

there going to be a point where someone

1454

01:04:47,480 --> 01:04:44,819

would just have to say this has to be

1455

01:04:50,750 --> 01:04:47,490

something made elsewhere by another

1456

01:04:53,990 --> 01:04:50,760

intelligent species you know I mean I

1457

01:04:55,730 --> 01:04:54,000

guess what I'm getting at is what type

1458

01:04:57,770 --> 01:04:55,740

of information would they need before

1459

01:05:01,490 --> 01:04:57,780

they would actually it would be accepted

1460

01:05:02,390 --> 01:05:01,500

by science okay yeah that's a fantastic

1461

01:05:04,520 --> 01:05:02,400

question

1462

01:05:07,670 --> 01:05:04,530

let's actually circle back to some of

1463

01:05:09,980 --> 01:05:07,680

the things that I've done or and some of

1464

01:05:12,559 --> 01:05:09,990

the things that I've seen right one of

1465

01:05:14,809 --> 01:05:12,569

the most common results you'll see are

1466

01:05:17,750 --> 01:05:14,819

the scanning electron microscopes now

1467

01:05:17,990 --> 01:05:17,760

this will give you only a certain amount

1468

01:05:21,980 --> 01:05:18,000

of

1469

01:05:24,830 --> 01:05:21,990

information but it doesn't necessarily

1470

01:05:28,580 --> 01:05:24,840

tell you the function of what you're

1471

01:05:32,210 --> 01:05:28,590

looking at so let's say that I took a

1472

01:05:35,720 --> 01:05:32,220

chunk of my laptop and I gave it to you

1473

01:05:37,220 --> 01:05:35,730

and this is in the 1940s um you would

1474

01:05:41,000 --> 01:05:37,230

still have to figure out right what

1475

01:05:44,360 --> 01:05:41,010

function was this for and it wouldn't be

1476

01:05:45,680 --> 01:05:44,370

obvious I think that your first guess I

1477

01:05:47,630 --> 01:05:45,690

don't think would be that it was part of

1478

01:05:50,830 --> 01:05:47,640

a keyboard and it was part of this

1479

01:05:54,770 --> 01:05:50,840

laptop so so but if you could do that

1480

01:05:57,500 --> 01:05:54,780

then now we're talking so that's what it

1481

01:06:00,740 --> 01:05:57,510

would take is if you can identify using

1482

01:06:03,380 --> 01:06:00,750

advanced scientific principles mix with

1483

01:06:07,070 --> 01:06:03,390

I guess really good design engineering

1484

01:06:08,930 --> 01:06:07,080

that people can accept and believe and

1485

01:06:12,230 --> 01:06:08,940

you can prove clearly that this is

1486

01:06:14,780 --> 01:06:12,240

useful tech yeah you're in the money so

1487

01:06:17,150 --> 01:06:14,790

it's not I guess what I'm trying to say

1488

01:06:21,290 --> 01:06:17,160

by the way is that no Menem materials

1489

01:06:22,970 --> 01:06:21,300

alone would prove that they are you know

1490

01:06:25,540 --> 01:06:22,980

they're engineered off planet unless

1491

01:06:27,440 --> 01:06:25,550

they could do something interesting

1492

01:06:33,080 --> 01:06:27,450

you mean they had an interesting

1493

01:06:35,770 --> 01:06:33,090

function basically exactly yeah yeah you

1494

01:06:38,780 --> 01:06:35,780

know people have said that there are

1495

01:06:41,060 --> 01:06:38,790

implants that people who have been

1496

01:06:44,090 --> 01:06:41,070

abducted have implants and there was

1497

01:06:47,290 --> 01:06:44,100

Roger Leir had who is a podiatrist

1498

01:06:49,760 --> 01:06:47,300

actually had removed a number of these

1499

01:06:51,710 --> 01:06:49,770

implants and supposedly they're being

1500

01:06:54,770 --> 01:06:51,720

stored somewhere and you know I've just

1501

01:06:58,990 --> 01:06:54,780

wondered if that is the case you know

1502

01:07:02,390 --> 01:06:59,000

why hasn't there been any study on that

1503

01:07:04,310 --> 01:07:02,400

have you ever looked at that part of of

1504

01:07:08,750 --> 01:07:04,320

the the field where people are claiming

1505

01:07:10,520 --> 01:07:08,760

they're getting implants I I have and

1506

01:07:12,020 --> 01:07:10,530

I'm actually specifically I think looked

1507

01:07:16,100 --> 01:07:12,030

at the claim that you're talking about

1508

01:07:19,040 --> 01:07:16,110

and I believe that at least as far as I

1509

01:07:20,330 --> 01:07:19,050

think creation 17 was concerned or you

1510

01:07:23,540 --> 01:07:20,340

know one of the patients that was

1511

01:07:26,060 --> 01:07:23,550

actually a scientist themselves one

1512

01:07:28,580 --> 01:07:26,070

thing that we need to note is that they

1513

01:07:30,720 --> 01:07:28,590

use Raman spectroscopy

1514

01:07:33,500 --> 01:07:30,730

in order to determine if there were

1515

01:07:35,910 --> 01:07:33,510

carbon nanotubes present inside these

1516

01:07:38,099 --> 01:07:35,920

quote alien transplants or elective

1517

01:07:40,470 --> 01:07:38,109

things that they thought so

1518

01:07:42,780 --> 01:07:40,480

the thing about Raman spectroscopy is

1519

01:07:44,700 --> 01:07:42,790

that you're looking at a graph and

1520

01:07:47,250 --> 01:07:44,710

you're looking at specific bumps and

1521

01:07:50,940 --> 01:07:47,260

absorption rates and based on those

1522

01:07:53,910 --> 01:07:50,950

absorption rates of where the Eleanore

1523

01:07:56,430 --> 01:07:53,920

the metal that you're interested in you

1524

01:07:59,460 --> 01:07:56,440

can infer with some probability whether

1525

01:08:01,290 --> 01:07:59,470

there are carbon nanotubes inside of it

1526

01:08:03,960 --> 01:08:01,300

because they'll absorb a specific

1527

01:08:05,940 --> 01:08:03,970

frequency and so that will show up but

1528

01:08:08,370 --> 01:08:05,950

that's not other things can do that and

1529

01:08:11,760 --> 01:08:08,380

also carbon nanotubes occur naturally in

1530

01:08:13,710 --> 01:08:11,770

nature so that was a big selling point

1531

01:08:15,150 --> 01:08:13,720

and I don't think it's good enough of a

1532

01:08:16,920 --> 01:08:15,160

selling point we can't even prove that

1533

01:08:18,780 --> 01:08:16,930

there are carbon nanotubes if you see

1534

01:08:20,490 --> 01:08:18,790

what I'm saying because I could the

1535

01:08:22,860 --> 01:08:20,500

spectroscopy 11 and the Raman

1536

01:08:25,050 --> 01:08:22,870

spectroscopy is not good enough that

1537

01:08:30,920 --> 01:08:25,060

being said there were interesting claims

1538

01:08:34,590 --> 01:08:30,930

about these certain implants that have a

1539

01:08:37,380 --> 01:08:34,600

radio wave frequency that they met so

1540

01:08:40,200 --> 01:08:37,390

that's pretty interesting that would be

1541

01:08:43,140 --> 01:08:40,210

something that's worth probing right

1542

01:08:47,700 --> 01:08:43,150

right well it would be interesting I

1543

01:08:51,090 --> 01:08:47,710

know it does it to me I've thought you

1544

01:08:52,349 --> 01:08:51,100

know this part of this part of it as far

1545

01:08:54,599 --> 01:08:52,359

as people looking into the meta

1546

01:08:56,280 --> 01:08:54,609

materials and all that is interesting

1547

01:08:59,400 --> 01:08:56,290

but I thought it would be extremely

1548

01:09:00,900 --> 01:08:59,410

difficult to actually pinpoint something

1549

01:09:04,519 --> 01:09:00,910

down but you made a really good point

1550

01:09:07,200 --> 01:09:04,529

the functionality part of it is is

1551

01:09:09,210 --> 01:09:07,210

something that we you know we wouldn't

1552

01:09:11,760 --> 01:09:09,220

be able to do if that was the case then

1553

01:09:13,280 --> 01:09:11,770

it would pretty much nail it but I don't

1554

01:09:17,039 --> 01:09:13,290

really don't have hope for what we have

1555

01:09:18,660 --> 01:09:17,049

so far I third right don't worry so

1556

01:09:20,970 --> 01:09:18,670

frankly like that was one of the

1557

01:09:23,400 --> 01:09:20,980

awakening moments after all my

1558

01:09:24,870 --> 01:09:23,410

investigation I think a lot of you know

1559

01:09:26,249 --> 01:09:24,880

decided to send back home might agree

1560

01:09:30,749 --> 01:09:26,259

with me but I'm not going to speak for

1561

01:09:33,840 --> 01:09:30,759

them is that I there's a lot of almost

1562

01:09:36,030 --> 01:09:33,850

all of this is impossible to prove et

1563

01:09:38,039 --> 01:09:36,040

life frankly like I could there's not a

1564

01:09:40,769 --> 01:09:38,049

single sample out there that I could say

1565

01:09:43,530 --> 01:09:40,779

that yes this is going to this is it

1566

01:09:44,490 --> 01:09:43,540

guys this is this closure it's not it's

1567

01:09:46,470 --> 01:09:44,500

no matter

1568

01:09:48,329 --> 01:09:46,480

what how close you look at it and it's

1569

01:09:50,309 --> 01:09:48,339

not that there's nothing that's weird

1570

01:09:53,490 --> 01:09:50,319

out there there is it's just not good

1571

01:09:56,850 --> 01:09:53,500

enough right right

1572

01:09:59,970 --> 01:09:56,860

one of the things I know that you talk

1573

01:10:03,660 --> 01:09:59,980

about or you have like this hypothetical

1574

01:10:06,480 --> 01:10:03,670

scenario that we may discover that we're

1575

01:10:07,380 --> 01:10:06,490

quarantine by an intelligent species do

1576

01:10:11,120 --> 01:10:07,390

you want to talk about that I think

1577

01:10:13,500 --> 01:10:11,130

that's pretty fascinating yeah sure so

1578

01:10:15,480 --> 01:10:13,510

one thing that I was just toying with is

1579

01:10:17,670 --> 01:10:15,490

the idea that okay

1580

01:10:20,370 --> 01:10:17,680

based on what Chris Mullin said in that

1581

01:10:23,520 --> 01:10:20,380

recent article about how you ApS have

1582

01:10:25,260 --> 01:10:23,530

become more brazen in their in their

1583

01:10:28,080 --> 01:10:25,270

incursions right they're becoming more

1584

01:10:30,810 --> 01:10:28,090

shameless and how they interact in more

1585

01:10:32,670 --> 01:10:30,820

interface so what that means to me I

1586

01:10:35,610 --> 01:10:32,680

think is that they have no regard for

1587

01:10:38,670 --> 01:10:35,620

our rules no regard for our laws or any

1588

01:10:39,900 --> 01:10:38,680

of that um so Tom DeLonge is technically

1589

01:10:42,720 --> 01:10:39,910

right in the sense that we don't have

1590

01:10:45,150 --> 01:10:42,730

sovereignty and to me I think that it's

1591

01:10:47,970 --> 01:10:45,160

not about politics it's probably that we

1592

01:10:49,590 --> 01:10:47,980

are quarantined we probably are you know

1593

01:10:51,990 --> 01:10:49,600

forced to follow these set of rules

1594

01:10:54,410 --> 01:10:52,000

there's this you know psychological wall

1595

01:10:57,810 --> 01:10:54,420

over us you could say that we don't see

1596

01:10:59,310 --> 01:10:57,820

and so what I what I was wondering is

1597

01:11:01,800 --> 01:10:59,320

that let's say that we do find ourselves

1598

01:11:05,940 --> 01:11:01,810

in this situation how do we negotiate

1599

01:11:08,130 --> 01:11:05,950

with a more intelligent civilization or

1600

01:11:10,860 --> 01:11:08,140

intelligent beings who have determined

1601

01:11:13,560 --> 01:11:10,870

that we're too dumb to you know how

1602

01:11:14,370 --> 01:11:13,570

complete sovereignty well that we just

1603

01:11:19,830 --> 01:11:14,380

don't deserve it

1604

01:11:22,650 --> 01:11:19,840

yeah well I could see that case I mean

1605

01:11:25,320 --> 01:11:22,660

you know as Stanton Friedman would say

1606

01:11:27,600 --> 01:11:25,330

you know we were involved in tribal

1607

01:11:31,430 --> 01:11:27,610

warfare you know and that's that's like

1608

01:11:35,520 --> 01:11:31,440

and that's in a way primitive you know

1609

01:11:40,080 --> 01:11:35,530

but it I also have talked about on this

1610

01:11:42,390 --> 01:11:40,090

show that you know it is the seeding

1611

01:11:45,900 --> 01:11:42,400

thing the whole seeding you know

1612

01:11:48,450 --> 01:11:45,910

situation is is pretty an interesting

1613

01:11:51,000 --> 01:11:48,460

theory as well you know if that if that

1614

01:11:56,520 --> 01:11:51,010

was the case you know if we're just a

1615

01:11:58,570 --> 01:11:56,530

test you know to watch over right and

1616

01:12:00,400 --> 01:11:58,580

with that explained

1617

01:12:02,530 --> 01:12:00,410

a lot of would you think that would

1618

01:12:09,790 --> 01:12:02,540

explain a lot of what we see is UFO

1619

01:12:13,690 --> 01:12:09,800

sightings in part yeah in part some of

1620

01:12:16,660 --> 01:12:13,700

it I think is just carelessness like it

1621

01:12:18,700 --> 01:12:16,670

could be species that just don't care

1622

01:12:20,590 --> 01:12:18,710

about our existence they don't care if

1623

01:12:23,500 --> 01:12:20,600

they see us they don't care if we

1624

01:12:29,130 --> 01:12:23,510

collect evidence but a lot are probably

1625

01:12:32,170 --> 01:12:29,140

more careful that's just my guess okay

1626

01:12:34,180 --> 01:12:32,180

I'm going to have to take a break

1627

01:12:35,500 --> 01:12:34,190

unfortunately I have not talked about

1628

01:12:37,060 --> 01:12:35,510

this but I've been really into the

1629

01:12:42,100 --> 01:12:37,070

weather and I'm gonna have to take a

1630

01:12:45,790 --> 01:12:42,110

quick break so I'm just waiting to hear

1631

01:12:48,880 --> 01:12:45,800

back from race over there at kgr a radio

1632

01:12:53,290 --> 01:12:48,890

and and when we come back we can talk

1633

01:12:55,450 --> 01:12:53,300

about basically some other you know

1634

01:12:58,030 --> 01:12:55,460

questions along this line I think this

1635

01:13:01,000 --> 01:12:58,040

is uh this is interesting one of the

1636

01:13:03,430 --> 01:13:01,010

things you have said you know what do

1637

01:13:07,570 --> 01:13:03,440

you think is more important technology

1638

01:13:11,130 --> 01:13:07,580

or culture and so hang in everyone we'll

1639

01:13:14,530 --> 01:13:11,140

be right back right after these messages

1640

01:13:18,190 --> 01:13:14,540

right welcome back my guest is deep

1641

01:13:21,450 --> 01:13:18,200

Prasad and I do apologize as I mentioned

1642

01:13:27,370 --> 01:13:21,460

have been under the weather a bit and so

1643

01:13:30,030 --> 01:13:27,380

going back to our conversation what do

1644

01:13:33,310 --> 01:13:30,040

you think is more important as far as an

1645

01:13:36,850 --> 01:13:33,320

extraterrestrial intelligent society out

1646

01:13:39,760 --> 01:13:36,860

their culture or technology now my last

1647

01:13:42,310 --> 01:13:39,770

guest Jeff Bennett he kind of talks

1648

01:13:43,750 --> 01:13:42,320

about that you know getting through the

1649

01:13:46,360 --> 01:13:43,760

bottleneck of Technology without

1650

01:13:48,190 --> 01:13:46,370

bloating blowing ourselves up you know

1651

01:13:51,430 --> 01:13:48,200

that type of thing so what are your

1652

01:13:54,430 --> 01:13:51,440

thoughts on that yeah so my thoughts

1653

01:13:56,980 --> 01:13:54,440

definitely kind of echo those as well

1654

01:13:58,750 --> 01:13:56,990

it's that culture in a heartbeat is more

1655

01:14:01,780 --> 01:13:58,760

important than technology technology is

1656

01:14:04,780 --> 01:14:01,790

something that we can eventually get to

1657

01:14:06,940 --> 01:14:04,790

and actually use the question of if we

1658

01:14:09,250 --> 01:14:06,950

can even get there right like we need to

1659

01:14:12,100 --> 01:14:09,260

be able to survive at a specific point

1660

01:14:13,450 --> 01:14:12,110

in time and that's dependent on

1661

01:14:15,399 --> 01:14:13,460

culture and there's other things that

1662

01:14:17,320 --> 01:14:15,409

are independent on our culture that we

1663

01:14:19,990 --> 01:14:17,330

don't see and maybe we haven't

1664

01:14:22,899 --> 01:14:20,000

discovered yet so if you think about it

1665

01:14:25,270 --> 01:14:22,909

consider this eventually the way that

1666

01:14:27,790 --> 01:14:25,280

we're headed the Internet is a way of

1667

01:14:29,620 --> 01:14:27,800

you know transferring thought very fast

1668

01:14:31,689 --> 01:14:29,630

right it's something that we couldn't do

1669

01:14:34,479 --> 01:14:31,699

even a hundred years ago it was

1670

01:14:36,700 --> 01:14:34,489

impossible and so people influence each

1671

01:14:37,390 --> 01:14:36,710

other really quickly much faster than

1672

01:14:39,729 --> 01:14:37,400

ever before

1673

01:14:41,859 --> 01:14:39,739

and there's meant much more of us

1674

01:14:43,660 --> 01:14:41,869

there's millions and billions of us that

1675

01:14:45,970 --> 01:14:43,670

are connected to this almost hive mind

1676

01:14:49,270 --> 01:14:45,980

like state right where you can't have an

1677

01:14:50,770 --> 01:14:49,280

opinion other than that isn't formed by

1678

01:14:53,859 --> 01:14:50,780

everything else you've already seen

1679

01:14:55,899 --> 01:14:53,869

right on the internet aren't like so so

1680

01:14:58,330 --> 01:14:55,909

if you extrapolate that what I see is

1681

01:15:00,640 --> 01:14:58,340

that eventually our culture will be

1682

01:15:02,260 --> 01:15:00,650

super super connected even you know

1683

01:15:04,479 --> 01:15:02,270

there's neural link that's coming up

1684

01:15:06,910 --> 01:15:04,489

will be connected by the brain we will

1685

01:15:08,859 --> 01:15:06,920

become this potentially this hive mind

1686

01:15:11,020 --> 01:15:08,869

state like I know there's a lot of

1687

01:15:12,910 --> 01:15:11,030

negative connotations but realistically

1688

01:15:15,459 --> 01:15:12,920

I think that'll that's what will happen

1689

01:15:17,350 --> 01:15:15,469

and when and where if that happens

1690

01:15:20,229 --> 01:15:17,360

that's when culture matters even more

1691

01:15:23,770 --> 01:15:20,239

because now you have billions of minds

1692

01:15:26,229 --> 01:15:23,780

with varying degrees of tolerance for

1693

01:15:27,970 --> 01:15:26,239

each other's views and emotions and you

1694

01:15:30,550 --> 01:15:27,980

know you can transfer this stuff faster

1695

01:15:31,990 --> 01:15:30,560

and so like how do you manage that and

1696

01:15:34,870 --> 01:15:32,000

that kind of culture has to be

1697

01:15:36,910 --> 01:15:34,880

super-advanced and at that point I don't

1698

01:15:39,850 --> 01:15:36,920

think it becomes culture necessarily

1699

01:15:42,399 --> 01:15:39,860

become something more so what is this

1700

01:15:44,200 --> 01:15:42,409

what is what do you mean exactly by you

1701

01:15:46,209 --> 01:15:44,210

said something like a neuro-link like

1702

01:15:48,939 --> 01:15:46,219

we're linked to each other our minds are

1703

01:15:51,040 --> 01:15:48,949

so I was using neural link as an Elon

1704

01:15:55,180 --> 01:15:51,050

Musk example because like Elon Musk is

1705

01:15:58,359 --> 01:15:55,190

making the startup right so so he's

1706

01:16:01,780 --> 01:15:58,369

making neural link which essentially is

1707

01:16:03,399 --> 01:16:01,790

a brain - computer interface and it's a

1708

01:16:04,990 --> 01:16:03,409

right now it's a bunch of electrodes

1709

01:16:07,240 --> 01:16:05,000

that you can stick into your brain and

1710

01:16:10,450 --> 01:16:07,250

it listens to your brain cells like your

1711

01:16:13,209 --> 01:16:10,460

brain signals and so you can in theory

1712

01:16:15,669 --> 01:16:13,219

once it's a little bit better you would

1713

01:16:17,770 --> 01:16:15,679

be able to control your keyboard or you

1714

01:16:20,680 --> 01:16:17,780

could control you know your mouse just

1715

01:16:22,959 --> 01:16:20,690

by thinking because the electrodes are

1716

01:16:25,570 --> 01:16:22,969

implanted into your brain and the he

1717

01:16:26,049 --> 01:16:25,580

wants to make it eventually kind of like

1718

01:16:29,229 --> 01:16:26,059

lazy

1719

01:16:30,879 --> 01:16:29,239

i surgery like very simple like you get

1720

01:16:33,849 --> 01:16:30,889

these implants and then you're good to

1721

01:16:36,879 --> 01:16:33,859

go I'm saying that we're going to go

1722

01:16:38,500 --> 01:16:36,889

even farther than that but yeah neural

1723

01:16:40,089 --> 01:16:38,510

link is like clearly a step in that

1724

01:16:42,839 --> 01:16:40,099

direction Wow

1725

01:16:46,000 --> 01:16:42,849

and then there's a there's the

1726

01:16:48,339 --> 01:16:46,010

singularity you hear about you know what

1727

01:16:51,579 --> 01:16:48,349

is just an advanced advancement of all

1728

01:16:53,409 --> 01:16:51,589

that right yeah you got it so the

1729

01:16:55,689 --> 01:16:53,419

singularity is more like the high flight

1730

01:16:58,149 --> 01:16:55,699

kind of structure that I was talking

1731

01:17:02,739 --> 01:16:58,159

about where you know kind of just joined

1732

01:17:06,279 --> 01:17:02,749

as one hmm as it's big cybernetic being

1733

01:17:08,409 --> 01:17:06,289

yeah and you know do you think

1734

01:17:10,000 --> 01:17:08,419

eventually it will come down to the

1735

01:17:12,909 --> 01:17:10,010

point where our brains could be

1736

01:17:15,939 --> 01:17:12,919

downloaded into something and you know

1737

01:17:17,679 --> 01:17:15,949

we could live on an machine type of

1738

01:17:21,579 --> 01:17:17,689

thing you know like science fiction out

1739

01:17:24,099 --> 01:17:21,589

there yeah I think it's uh I think it's

1740

01:17:27,790 --> 01:17:24,109

a transient step it's not our end goal

1741

01:17:31,989 --> 01:17:27,800

there's other ways of storing who we are

1742

01:17:35,229 --> 01:17:31,999

that will be think about this way matter

1743

01:17:38,049 --> 01:17:35,239

is very weak it's not it matter will die

1744

01:17:40,419 --> 01:17:38,059

out if this universe dies out our

1745

01:17:42,609 --> 01:17:40,429

information dies with it so it's

1746

01:17:44,619 --> 01:17:42,619

officially advanced civilization I think

1747

01:17:46,419 --> 01:17:44,629

would learn how to store itself across

1748

01:17:48,759 --> 01:17:46,429

multiple realities it would have

1749

01:17:51,189 --> 01:17:48,769

redundant versions of itself it would be

1750

01:17:53,049 --> 01:17:51,199

a lot weirder than just being just a

1751

01:17:56,529 --> 01:17:53,059

digital computer that stores his

1752

01:17:58,689 --> 01:17:56,539

consciousness well interesting I think

1753

01:18:00,759 --> 01:17:58,699

I'm gonna start taking calls if someone

1754

01:18:02,889 --> 01:18:00,769

would like to call in that would

1755

01:18:06,579 --> 01:18:02,899

actually help me on my end a little bit

1756

01:18:07,659 --> 01:18:06,589

just because I'm not like I say I'm a

1757

01:18:10,209 --> 01:18:07,669

little bit under the weather and

1758

01:18:12,399 --> 01:18:10,219

wouldn't mind if someone would pitch in

1759

01:18:14,199 --> 01:18:12,409

a couple of questions this way so that

1760

01:18:17,379 --> 01:18:14,209

numbers up on the line it's eight five

1761

01:18:20,739 --> 01:18:17,389

five four seven two five four eight

1762

01:18:22,979 --> 01:18:20,749

three what do you think of the until the

1763

01:18:27,279 --> 01:18:22,989

callers call in what do you think about

1764

01:18:30,669 --> 01:18:27,289

the future of you know quantum computing

1765

01:18:33,699 --> 01:18:30,679

where can that lead where do you think

1766

01:18:36,669 --> 01:18:33,709

that that can actually I mean can it get

1767

01:18:38,820 --> 01:18:36,679

out of control like again like science

1768

01:18:44,830 --> 01:18:41,379

technically everything can get out of

1769

01:18:46,600 --> 01:18:44,840

control so I guess this is a question of

1770

01:18:49,149 --> 01:18:46,610

what will I'm more afraid personally

1771

01:18:51,820 --> 01:18:49,159

nukes and the fact that people with

1772

01:18:55,450 --> 01:18:51,830

basically a combination of buttons voice

1773

01:18:58,030 --> 01:18:55,460

commands can launch a nuke yeah so so so

1774

01:19:00,459 --> 01:18:58,040

yeah with that being said though I think

1775

01:19:02,979 --> 01:19:00,469

that in terms of where the future of

1776

01:19:06,729 --> 01:19:02,989

quantum computing is that it I think the

1777

01:19:08,649 --> 01:19:06,739

future of quantum is photonic I've

1778

01:19:12,220 --> 01:19:08,659

mentioned this before as well like

1779

01:19:14,500 --> 01:19:12,230

publicly I do believe that photons is

1780

01:19:16,930 --> 01:19:14,510

the best way of representing quantum

1781

01:19:19,030 --> 01:19:16,940

information for the sake of computation

1782

01:19:22,479 --> 01:19:19,040

as far as that's concerned

1783

01:19:25,120 --> 01:19:22,489

and naturally I think our some of our

1784

01:19:27,669 --> 01:19:25,130

quantum computing applications that are

1785

01:19:29,320 --> 01:19:27,679

really interesting involve quantum

1786

01:19:31,899 --> 01:19:29,330

gravity trying to simulate quantum

1787

01:19:34,899 --> 01:19:31,909

gravity in the lab which is right now

1788

01:19:36,750 --> 01:19:34,909

not possible can you explain that a

1789

01:19:40,899 --> 01:19:36,760

little more I don't I don't quite

1790

01:19:43,439 --> 01:19:40,909

understand gravity is a field of

1791

01:19:48,459 --> 01:19:43,449

theoretical physics that attempts to

1792

01:19:50,620 --> 01:19:48,469

unify and unify the gravitational and

1793

01:19:54,459 --> 01:19:50,630

quantum mechanical models of the

1794

01:19:58,270 --> 01:19:54,469

universe and those interactions so it

1795

01:20:02,500 --> 01:19:58,280

looks at how does relativity play a role

1796

01:20:05,709 --> 01:20:02,510

in the quantum world and vice-versa this

1797

01:20:07,840 --> 01:20:05,719

this is of course you can imagine I so

1798

01:20:10,270 --> 01:20:07,850

far impossible to do properly

1799

01:20:12,879 --> 01:20:10,280

no no physicists no branch of physics

1800

01:20:15,910 --> 01:20:12,889

has managed it but quantum gravity does

1801

01:20:19,209 --> 01:20:15,920

a really good job like it's not perfect

1802

01:20:20,649 --> 01:20:19,219

but it's getting there okay I'm just

1803

01:20:23,320 --> 01:20:20,659

looking on to see if we had any

1804

01:20:25,780 --> 01:20:23,330

questions up on the on the message board

1805

01:20:28,510 --> 01:20:25,790

so those lines are open eight five five

1806

01:20:32,820 --> 01:20:28,520

four seven two five four eight three

1807

01:20:37,840 --> 01:20:32,830

you're welcome to give our guests a call

1808

01:20:39,729 --> 01:20:37,850

so yeah the launch codes you know that

1809

01:20:43,300 --> 01:20:39,739

that is that it's kind of scary when you

1810

01:20:45,879 --> 01:20:43,310

think of it there there are several ways

1811

01:20:47,709 --> 01:20:45,889

of destroying ourselves and the last

1812

01:20:50,310 --> 01:20:47,719

guest you don't mention that we are

1813

01:20:53,729 --> 01:20:50,320

possibly on that road right now with

1814

01:20:56,939 --> 01:20:53,739

warming or I'm sorry climate change I

1815

01:21:01,319 --> 01:20:56,949

supposed to call a global warming anyway

1816

01:21:05,609 --> 01:21:01,329

I don't know you know that's that's it

1817

01:21:08,790 --> 01:21:05,619

seems like a possibility but that is

1818

01:21:10,260 --> 01:21:08,800

something that any culture is going to

1819

01:21:11,550 --> 01:21:10,270

have to go through in the last guest

1820

01:21:15,479 --> 01:21:11,560

made a really good point of it that

1821

01:21:18,689 --> 01:21:15,489

fossil fuels are very easy to interact

1822

01:21:21,089 --> 01:21:18,699

with and to use and you know could cause

1823

01:21:26,370 --> 01:21:21,099

you know a similar issue that we're

1824

01:21:28,439 --> 01:21:26,380

having right now in yeah I agree and

1825

01:21:31,890 --> 01:21:28,449

frankly you like when it comes down to

1826

01:21:34,560 --> 01:21:31,900

it fossil fuels and any known fuel

1827

01:21:37,979 --> 01:21:34,570

source we have they don't really have a

1828

01:21:41,069 --> 01:21:37,989

good enough energy density compared to

1829

01:21:43,709 --> 01:21:41,079

what we think is going on when it comes

1830

01:21:50,220 --> 01:21:43,719

to let's say the you ApS that were

1831

01:21:55,560 --> 01:21:50,230

observing and and about the what we're

1832

01:21:57,750 --> 01:21:55,570

observing if you had to guess where

1833

01:21:59,490 --> 01:21:57,760

they're coming from would you think that

1834

01:22:02,069 --> 01:21:59,500

they're extraterrestrial do you think

1835

01:22:04,080 --> 01:22:02,079

that's a like likelihood or do you have

1836

01:22:08,430 --> 01:22:04,090

a question about where they're coming

1837

01:22:14,540 --> 01:22:08,440

from I mean that's the million-dollar

1838

01:22:18,450 --> 01:22:14,550

question right I think some of them are

1839

01:22:20,990 --> 01:22:18,460

extraterrestrial but basically all of

1840

01:22:23,160 --> 01:22:21,000

them or some or a lot of them are

1841

01:22:25,770 --> 01:22:23,170

something that we don't have good enough

1842

01:22:26,160 --> 01:22:25,780

words for yet ultra treshelle doesn't

1843

01:22:27,870 --> 01:22:26,170

count

1844

01:22:30,390 --> 01:22:27,880

interdimensional isn't good enough I

1845

01:22:34,399 --> 01:22:30,400

think it's something that our physics

1846

01:22:38,790 --> 01:22:34,409

and philosophy hasn't quite you know

1847

01:22:44,520 --> 01:22:38,800

encompassed just yet and where do you

1848

01:22:47,760 --> 01:22:44,530

think that will lead in the future yeah

1849

01:22:51,149 --> 01:22:47,770

good question so basically it comes out

1850

01:22:54,479 --> 01:22:51,159

to on the physics side of things we

1851  
01:22:57,629 --> 01:22:54,489  
essentially need to understand how there

1852  
01:23:00,000 --> 01:22:57,639  
are how different kinds of life forms

1853  
01:23:01,859 --> 01:23:00,010  
may be able to live in higher

1854  
01:23:03,990 --> 01:23:01,869  
dimensional higher spatial dimensions

1855  
01:23:07,200 --> 01:23:04,000  
for example

1856  
01:23:09,990 --> 01:23:07,210  
and whether that's possible because one

1857  
01:23:12,960 --> 01:23:10,000  
thing that we're seeing almost time and

1858  
01:23:18,150 --> 01:23:12,970  
time again is that the nature the

1859  
01:23:20,730 --> 01:23:18,160  
encounters that we have happen anywhere

1860  
01:23:22,410 --> 01:23:20,740  
so they can happen in any state of mind

1861  
01:23:25,400 --> 01:23:22,420  
that you're in whether you're dreaming

1862  
01:23:29,490 --> 01:23:25,410  
you know you're on let's say DMT

1863  
01:23:31,140 --> 01:23:29,500

supposedly when you're on when you can

1864

01:23:32,910 --> 01:23:31,150

when you're completely wide awake you

1865

01:23:35,190 --> 01:23:32,920

can still have what's called an

1866

01:23:39,060 --> 01:23:35,200

abduction experience right like let's

1867

01:23:43,110 --> 01:23:39,070

say Travis Walton so all of these are

1868

01:23:47,460 --> 01:23:43,120

examples of something that is able to

1869

01:23:50,010 --> 01:23:47,470

exist everywhere which is weird and to

1870

01:23:53,880 --> 01:23:50,020

me that means that it sounds like

1871

01:23:56,610 --> 01:23:53,890

something that's spatially higher than

1872

01:23:58,920 --> 01:23:56,620

us because that's what I would think if

1873

01:24:01,680 --> 01:23:58,930

I was in flatland and somebody put like

1874

01:24:03,870 --> 01:24:01,690

their hand through my you know world

1875

01:24:06,540 --> 01:24:03,880

right I would see five different points

1876

01:24:07,950 --> 01:24:06,550

of the hand but it's all connected to

1877

01:24:11,760 --> 01:24:07,960

just one hand but it would seem like

1878

01:24:14,640 --> 01:24:11,770

they're all totally you know different

1879

01:24:17,430 --> 01:24:14,650

phenomena so to speak hmm

1880

01:24:21,240 --> 01:24:17,440

we have a caller we have Vince Vince

1881

01:24:24,900 --> 01:24:21,250

again or Vincent once again from Ohio

1882

01:24:28,350 --> 01:24:24,910

Martin hi I'm sorry I'm gonna I'm asking

1883

01:24:30,180 --> 01:24:28,360

the easy questions but I wondered what

1884

01:24:31,980 --> 01:24:30,190

does your guest think if he's familiar

1885

01:24:33,510 --> 01:24:31,990

with the manipulations that we had with

1886

01:24:34,650 --> 01:24:33,520

our nukes in the past what does he think

1887

01:24:39,890 --> 01:24:34,660

failed

1888

01:24:42,330 --> 01:24:39,900

oh you mean as far as UFOs and nukes yes

1889

01:24:46,050 --> 01:24:42,340

have you ever looked into that topic a

1890

01:24:47,700 --> 01:24:46,060

deep yes certainly I think that's an

1891

01:24:49,680 --> 01:24:47,710

important question right because like

1892

01:24:53,640 --> 01:24:49,690

we're spending billions of dollars in

1893

01:24:56,100 --> 01:24:53,650

the security of these ICBMs and here you

1894

01:24:59,370 --> 01:24:56,110

have these technologies that can hack it

1895

01:25:02,730 --> 01:24:59,380

but more importantly I think the message

1896

01:25:05,220 --> 01:25:02,740

is very clear we need to just stop

1897

01:25:06,510 --> 01:25:05,230

playing with them I it's it's obvious

1898

01:25:09,480 --> 01:25:06,520

that they don't want to bother talking

1899

01:25:11,850 --> 01:25:09,490

to us and therefore any kind of

1900

01:25:13,710 --> 01:25:11,860

interaction with something that might be

1901

01:25:16,200 --> 01:25:13,720

more intelligent than us is going to be

1902

01:25:17,890 --> 01:25:16,210

important so if they're just flying over

1903

01:25:21,310 --> 01:25:17,900

in shutting down our nukes

1904

01:25:23,050 --> 01:25:21,320

let's listen great thank you

1905

01:25:25,290 --> 01:25:23,060

you have no problem thanks for the

1906

01:25:28,950 --> 01:25:25,300

question yeah thanks for the call yeah

1907

01:25:30,790 --> 01:25:28,960

yeah that that's always been such a

1908

01:25:34,420 --> 01:25:30,800

interesting part of this whole

1909

01:25:36,880 --> 01:25:34,430

phenomenon that that part of it I think

1910

01:25:39,610 --> 01:25:36,890

I mentioned Stan Freeman earlier he said

1911

01:25:42,460 --> 01:25:39,620

the kids found the matches you know

1912

01:25:45,940 --> 01:25:42,470

that's what he that's what he puts right

1913

01:25:48,310 --> 01:25:45,950

you know as far as the nukes go and I

1914

01:25:50,410 --> 01:25:48,320

had heard about this you know before I

1915

01:25:53,530 --> 01:25:50,420

really looked into the UFO topic years

1916

01:25:58,960 --> 01:25:53,540

ago I had heard about you know nukes and

1917

01:26:02,320 --> 01:25:58,970

and and UFOs over them you know back in

1918

01:26:04,150 --> 01:26:02,330

the 1990's or something like that we

1919

01:26:10,150 --> 01:26:04,160

have another caller I'm going to take

1920

01:26:12,550 --> 01:26:10,160

that in just a minute and and so that

1921

01:26:15,640 --> 01:26:12,560

number is up on the screen eight five

1922

01:26:18,370 --> 01:26:15,650

five four seven two five four eight

1923

01:26:22,150 --> 01:26:18,380

three and we have Andy calling from

1924

01:26:25,120 --> 01:26:22,160

Connecticut welcome to the show Andy hi

1925

01:26:28,540 --> 01:26:25,130

guys thanks for taking my call sure I

1926

01:26:31,090 --> 01:26:28,550

wanted to ask deep great so I wanted to

1927

01:26:34,990 --> 01:26:31,100

ask deep real quick if he thinks that

1928

01:26:37,570 --> 01:26:35,000

Moore's Law where computer speed is

1929

01:26:39,070 --> 01:26:37,580

constantly increasing if that will

1930

01:26:41,500 --> 01:26:39,080

continue to be the case for the

1931

01:26:44,590 --> 01:26:41,510

foreseeable future or whether it'll

1932

01:26:46,300 --> 01:26:44,600

outpace you know the the traditional

1933

01:26:48,910 --> 01:26:46,310

standard we've seen over the last few

1934

01:26:50,830 --> 01:26:48,920

decades or just his thoughts on where

1935

01:26:53,080 --> 01:26:50,840

that's all headed and I'll take your

1936

01:26:57,130 --> 01:26:53,090

answer off the air thanks again guys

1937

01:27:00,550 --> 01:26:57,140

good show thank you Andy yeah thanks so

1938

01:27:03,040 --> 01:27:00,560

yeah essentially I think Moore's law at

1939

01:27:07,870 --> 01:27:03,050

this point is telling us that there's

1940

01:27:10,150 --> 01:27:07,880

almost no more ways to improve the

1941

01:27:13,150 --> 01:27:10,160

current size of our transistors and

1942

01:27:15,580 --> 01:27:13,160

therefore no more very little ways in

1943

01:27:18,940 --> 01:27:15,590

drilling ways of increase your computing

1944

01:27:21,730 --> 01:27:18,950

power without spending lots of money and

1945

01:27:24,520 --> 01:27:21,740

engineering just to increase it a little

1946

01:27:27,820 --> 01:27:24,530

bit so if you want to think of a

1947

01:27:31,780 --> 01:27:27,830

practical example consider transistors

1948

01:27:34,480 --> 01:27:31,790

that are that exist today

1949

01:27:37,840 --> 01:27:34,490

so we have transistors that are almost a

1950

01:27:39,820 --> 01:27:37,850

couple atoms big and when you get to

1951

01:27:41,740 --> 01:27:39,830

that scale quantum effects start

1952

01:27:43,870 --> 01:27:41,750

dominating and so you'll have these

1953

01:27:46,660 --> 01:27:43,880

things like quantum tunneling that the

1954

01:27:49,450 --> 01:27:46,670

electrons will do that you don't have

1955

01:27:50,980 --> 01:27:49,460

with bigger systems but this quantum

1956

01:27:55,300 --> 01:27:50,990

tunneling is something that you don't

1957

01:27:58,810 --> 01:27:55,310

want so Moore's law is kind of at the

1958

01:28:01,540 --> 01:27:58,820

end of its tail where we've pushed it to

1959

01:28:02,980 --> 01:28:01,550

its limits and now it's time to look at

1960

01:28:07,090 --> 01:28:02,990

different ways of compute because

1961

01:28:09,880 --> 01:28:07,100

Moore's law was specifically for binary

1962

01:28:13,150 --> 01:28:09,890

classical computers and binary

1963

01:28:16,110 --> 01:28:13,160

processing techniques are there gonna be

1964

01:28:18,040 --> 01:28:16,120

other types of processing do you think

1965

01:28:20,080 --> 01:28:18,050

is that basically what you're saying

1966

01:28:20,500 --> 01:28:20,090

besides binary I know I mentioned that

1967

01:28:22,930 --> 01:28:20,510

earlier

1968

01:28:26,110 --> 01:28:22,940

exactly exactly there's already quantum

1969

01:28:27,670 --> 01:28:26,120

right quantum is one example and even

1970

01:28:30,400 --> 01:28:27,680

within quantum there's different kinds

1971

01:28:33,340 --> 01:28:30,410

of processing so there's qubits and then

1972

01:28:37,390 --> 01:28:33,350

there's Q modes qubits are super

1973

01:28:40,570 --> 01:28:37,400

positions of 0 to 2 to the N States

1974

01:28:43,090 --> 01:28:40,580

whereas with Q modes you have an

1975

01:28:45,610 --> 01:28:43,100

infinite number of possible states that

1976

01:28:47,920 --> 01:28:45,620

one human can take on so you have all

1977

01:28:50,890 --> 01:28:47,930

these different ways of representing

1978

01:28:53,800 --> 01:28:50,900

information even within quantum and I

1979

01:28:54,850 --> 01:28:53,810

feel eventually will go beyond quantum

1980

01:28:57,280 --> 01:28:54,860

as well right we'll have a different

1981

01:29:00,430 --> 01:28:57,290

model and I'll have its own computer

1982

01:29:05,350 --> 01:29:00,440

paradigm yeah which could almost be

1983

01:29:09,730 --> 01:29:05,360

scary yeah we have a bim calling from

1984

01:29:14,710 --> 01:29:09,740

california welcome to the show bim hi hi

1985

01:29:18,660 --> 01:29:14,720

I wanted to ask your guest do you know

1986

01:29:27,940 --> 01:29:18,670

of Lee Smolin and his new theory of time

1987

01:29:33,070 --> 01:29:27,950

no well there was alcohol great so

1988

01:29:34,960 --> 01:29:33,080

what's this a theory but oh he says well

1989

01:29:38,710 --> 01:29:34,970

if you look at general relativity you

1990

01:29:41,590 --> 01:29:38,720

know we live in space-time right and he

1991

01:29:43,510 --> 01:29:41,600

says the time the dimension of time is

1992

01:29:45,310 --> 01:29:43,520

the same as the other dimensions is just

1993

01:29:50,260 --> 01:29:45,320

that we

1994

01:29:51,729 --> 01:29:50,270

receive time differently and his name is

1995

01:29:54,220 --> 01:29:51,739

Lee Smolin

1996

01:29:59,550 --> 01:29:54,230

he's been put in the top five

1997

01:30:06,220 --> 01:30:04,030

but he says that we might have to throw

1998

01:30:08,950 --> 01:30:06,230

the scientific method because of this

1999

01:30:10,419 --> 01:30:08,960

because things don't happen in order you

2000

01:30:14,560 --> 01:30:10,429

have to do the scientific method in

2001  
01:30:17,470 --> 01:30:14,570  
order right but if time is not as we

2002  
01:30:20,919 --> 01:30:17,480  
perceive it then we have to throw the

2003  
01:30:26,520 --> 01:30:20,929  
scientific method even that that's one

2004  
01:30:29,290 --> 01:30:26,530  
of his one of his statements you know so

2005  
01:30:31,569 --> 01:30:29,300  
yeah I mean that's fantastic but you

2006  
01:30:33,520 --> 01:30:31,579  
bring up that theory I'm always cautious

2007  
01:30:34,930 --> 01:30:33,530  
when someone no matter who it is says

2008  
01:30:37,229 --> 01:30:34,940  
that we should throw away the scientific

2009  
01:30:41,709 --> 01:30:37,239  
method right like let's take for example

2010  
01:30:44,859 --> 01:30:41,719  
so I'm not too much into relativity like

2011  
01:30:46,359 --> 01:30:44,869  
I'm not relativistic relativist I would

2012  
01:30:48,310 --> 01:30:46,369  
say more of a quantum physicists and

2013  
01:30:50,229 --> 01:30:48,320

quantum computing scientists so in

2014

01:30:53,770 --> 01:30:50,239

quantum experiments in quantum mechanics

2015

01:30:55,629 --> 01:30:53,780

we all we do have experiments where you

2016

01:30:59,589 --> 01:30:55,639

have let's say the quantum eraser

2017

01:31:01,870 --> 01:30:59,599

experiment where it's as if causality

2018

01:31:04,270 --> 01:31:01,880

seems to be broken in the way that we

2019

01:31:06,339 --> 01:31:04,280

would normally expect it to so you can

2020

01:31:09,580 --> 01:31:06,349

have information that somehow can

2021

01:31:11,319 --> 01:31:09,590

seemingly travel backwards in time and

2022

01:31:13,240 --> 01:31:11,329

you could say that this is breaking the

2023

01:31:15,339 --> 01:31:13,250

scientific method or that it no longer

2024

01:31:19,899 --> 01:31:15,349

applies but I think it just means that

2025

01:31:22,060 --> 01:31:19,909

we need to get more creative okay that's

2026

01:31:27,310 --> 01:31:22,070

interesting yeah I'm trying to think of

2027

01:31:30,189 --> 01:31:27,320

some of his other quotes sure anyway he

2028

01:31:32,500 --> 01:31:30,199

says that he's trying to replace the

2029

01:31:35,260 --> 01:31:32,510

general relativity as Einstein replaced

2030

01:31:37,569 --> 01:31:35,270

Newtonian physics you know he says

2031

01:31:40,060 --> 01:31:37,579

that's how big his theory is his new

2032

01:31:42,609 --> 01:31:40,070

theory of time it's that that gigantic

2033

01:31:45,459 --> 01:31:42,619

you know and I'm not too much up on

2034

01:31:47,709 --> 01:31:45,469

quantum theory I don't know but it's

2035

01:31:54,129 --> 01:31:47,719

interesting but i I've done experiments

2036

01:31:55,780 --> 01:31:54,139

in consciousness when I've actually done

2037

01:31:57,819 --> 01:31:55,790

it and experienced it I've taught it to

2038

01:31:59,020 --> 01:31:57,829

others and they did it in front of me so

2039

01:32:03,220 --> 01:31:59,030

I've seen it I

2040

01:32:05,140 --> 01:32:03,230

I'm an engineer so I use that method you

2041

01:32:08,049 --> 01:32:05,150

know I I've seen it with my own eyes

2042

01:32:11,279 --> 01:32:08,059

where I hate so and add this this fits

2043

01:32:14,260 --> 01:32:11,289

into the whole UF ology thing because

2044

01:32:16,600 --> 01:32:14,270

and the native people - actually the

2045

01:32:19,390 --> 01:32:16,610

indigenous people of the world knew

2046

01:32:21,760 --> 01:32:19,400

about these things they knew about they

2047

01:32:26,560 --> 01:32:21,770

knew that consciousness was not local

2048

01:32:29,379 --> 01:32:26,570

and they used that to survive I study

2049

01:32:30,850 --> 01:32:29,389

anthropology as well and I have a lot of

2050

01:32:35,080 --> 01:32:30,860

native friends and so on I've learned

2051

01:32:37,240 --> 01:32:35,090

some of their tricks and so on and it's

2052

01:32:40,299 --> 01:32:37,250

it's a it's a different kind of

2053

01:32:42,430 --> 01:32:40,309

knowledge it's and it's it's not

2054

01:32:45,430 --> 01:32:42,440

scientific knowledge I guess not now it

2055

01:32:49,240 --> 01:32:45,440

could be some day but the the the USSR

2056

01:32:51,279 --> 01:32:49,250

did an amazing experiment where they

2057

01:32:53,410 --> 01:32:51,289

were killing baby rabbits I wonder if

2058

01:32:55,180 --> 01:32:53,420

you've ever heard of that now they found

2059

01:32:57,540 --> 01:32:55,190

that when they killed when they killed

2060

01:33:00,640 --> 01:32:57,550

the baby rabbits the mother rabbit

2061

01:33:03,220 --> 01:33:00,650

responded at the same time so they took

2062

01:33:05,830 --> 01:33:03,230

the baby rabbits into another room and

2063

01:33:09,220 --> 01:33:05,840

they wired up the mother rabbit brain

2064

01:33:10,689 --> 01:33:09,230

and they got a signal when the baby

2065

01:33:13,390 --> 01:33:10,699

rabbit was killed so they took the baby

2066

01:33:15,790 --> 01:33:13,400

rabbits down in a submarine down it as

2067

01:33:18,399 --> 01:33:15,800

deep as they could go and they killed

2068

01:33:22,270 --> 01:33:18,409

the baby rabbits down there on a secret

2069

01:33:24,220 --> 01:33:22,280

time schedule and up on the land where

2070

01:33:26,709 --> 01:33:24,230

the mother rabbit was her brain

2071

01:33:30,339 --> 01:33:26,719

responded at exactly the same time they

2072

01:33:33,220 --> 01:33:30,349

got the responses right and so what they

2073

01:33:36,299 --> 01:33:33,230

were trying to do is to show that this

2074

01:33:40,089 --> 01:33:36,309

connection between Minds this

2075

01:33:44,979 --> 01:33:40,099

communication between mine to mind is

2076

01:33:47,740 --> 01:33:44,989

not dependent on the electromagnetic

2077

01:33:49,209 --> 01:33:47,750

spectrum that's why they took the baby

2078

01:33:54,370 --> 01:33:49,219

rabbits down in the submarine to

2079

01:33:58,240 --> 01:33:54,380

eliminate electromagnetic the

2080

01:34:01,089 --> 01:33:58,250

electromagnetic spectrum so what they're

2081

01:34:06,160 --> 01:34:01,099

showing is that there might be some

2082

01:34:07,660 --> 01:34:06,170

other spectrum is that possible

2083

01:34:10,540 --> 01:34:07,670

other than the electromagnetic spectrum

2084

01:34:12,790 --> 01:34:10,550

I find humans are so focused on on the

2085

01:34:15,280 --> 01:34:12,800

EM spectrum right because spar

2086

01:34:17,740 --> 01:34:15,290

or mean cents but wouldn't that be

2087

01:34:20,560 --> 01:34:17,750

interesting if they were what is the

2088

01:34:22,540 --> 01:34:20,570

medium that carries the mind to mind

2089

01:34:24,280 --> 01:34:22,550

connection is a question I ask because

2090

01:34:26,530 --> 01:34:24,290

I've done it many times I can

2091

01:34:28,330 --> 01:34:26,540

communicate with wild animals and things

2092

01:34:29,770 --> 01:34:28,340

like that the Native people did this to

2093

01:34:33,580 --> 01:34:29,780

a they knew all about this stuff

2094

01:34:35,230 --> 01:34:33,590

and so I've demonstrated it to myself

2095

01:34:37,720 --> 01:34:35,240

and to others and I know other people

2096

01:34:41,020 --> 01:34:37,730

who can do these things as well so the

2097

01:34:43,180 --> 01:34:41,030

question becomes how how does this what

2098

01:34:45,280 --> 01:34:43,190

carries the mind to mind connection

2099

01:34:51,400 --> 01:34:45,290

that's that's the question I'm looking

2100

01:34:53,320 --> 01:34:51,410

at yeah well when it comes to let's say

2101

01:34:55,210 --> 01:34:53,330

anything you do consciousness one thing

2102

01:34:56,860 --> 01:34:55,220

that we should always do is make sure we

2103

01:34:59,740 --> 01:34:56,870

define what we mean by consciousness

2104

01:35:02,590 --> 01:34:59,750

right so for example I could cheat and

2105

01:35:04,960 --> 01:35:02,600

say that my consciousness is everything

2106

01:35:08,260 --> 01:35:04,970

in the universe including myself like

2107

01:35:10,690 --> 01:35:08,270

there's no separation so then I define

2108

01:35:12,670 --> 01:35:10,700

consciousness by saying I've dipped by

2109

01:35:16,060 --> 01:35:12,680

saying that it's equivalent to defining

2110

01:35:18,280 --> 01:35:16,070

the universe and suddenly you're getting

2111

01:35:20,770 --> 01:35:18,290

nowhere right so one thing though that I

2112

01:35:25,000 --> 01:35:20,780

was that I wanted to say though about

2113

01:35:26,530 --> 01:35:25,010

that rabbit experiment is that what

2114

01:35:28,540 --> 01:35:26,540

Albert Einstein would say in this kind

2115

01:35:30,610 --> 01:35:28,550

of situation is that they're still

2116

01:35:32,800 --> 01:35:30,620

hidden variables that you need to rule

2117

01:35:36,280 --> 01:35:32,810

out so let's say going back to the

2118

01:35:37,750 --> 01:35:36,290

rabbit I'm not saying this is possible

2119

01:35:40,660 --> 01:35:37,760

like there's a hundred percent chance

2120

01:35:42,490 --> 01:35:40,670

just as it's just an example the hidden

2121

01:35:45,610 --> 01:35:42,500

variable in that experiment would be

2122

01:35:49,360 --> 01:35:45,620

that the rabbits over time learned

2123

01:35:51,520 --> 01:35:49,370

English and eventually they overheard

2124

01:35:54,310 --> 01:35:51,530

because rabbits are good at hearing they

2125

01:35:57,490 --> 01:35:54,320

overheard the plan of killing her

2126

01:36:00,550 --> 01:35:57,500

children at a specific time so at that

2127

01:36:02,650 --> 01:36:00,560

time the rabbit knowing English having

2128

01:36:04,990 --> 01:36:02,660

learned it internally even you know what

2129

01:36:07,390 --> 01:36:05,000

I mean I knew that it was time for her

2130

01:36:12,640 --> 01:36:07,400

child to die so it might not be

2131

01:36:15,610 --> 01:36:12,650

connected I'm not saying that yeah there

2132

01:36:18,250 --> 01:36:15,620

there science was very good they used

2133

01:36:20,290 --> 01:36:18,260

random number generators to generate at

2134

01:36:23,320 --> 01:36:20,300

times for killing the baby rabbits and

2135

01:36:24,880 --> 01:36:23,330

put them in an envelope and you know

2136

01:36:29,920 --> 01:36:24,890

it's very well done

2137

01:36:32,050 --> 01:36:29,930

scrupulous we've done science well I

2138

01:36:34,510 --> 01:36:32,060

just I just want to say one thing who

2139

01:36:38,940 --> 01:36:34,520

could kill baby rabbits fur no yeah I

2140

01:36:42,670 --> 01:36:38,950

was incredibly Park yeah yeah anyway I

2141

01:36:45,100 --> 01:36:42,680

don't care all right Ben

2142

01:36:48,730 --> 01:36:45,110

thank you for the call fascinating

2143

01:36:51,640 --> 01:36:48,740

discussion alright interesting so we had

2144

01:36:54,810 --> 01:36:51,650

a question in a in the chatroom

2145

01:36:59,610 --> 01:36:54,820

let's see someone wanted to know where

2146

01:37:05,230 --> 01:37:02,800

okay so I'm not sure what they mean by

2147

01:37:08,350 --> 01:37:05,240

that per se like for example you could

2148

01:37:10,800 --> 01:37:08,360

have like quantum ram Q RAM or you could

2149

01:37:16,570 --> 01:37:10,810

have quantum processors but if you mean

2150

01:37:18,100 --> 01:37:16,580

but if you mean how do you how do you

2151  
01:37:21,400 --> 01:37:18,110  
leverage quantum data like for example

2152  
01:37:24,040 --> 01:37:21,410  
how is it even possible that we can

2153  
01:37:28,030 --> 01:37:24,050  
leverage quantum effects that's possible

2154  
01:37:30,340 --> 01:37:28,040  
when you specifically it depends on the

2155  
01:37:32,490 --> 01:37:30,350  
physics of your system the hardware so

2156  
01:37:35,620 --> 01:37:32,500  
let's take for example D waves

2157  
01:37:38,290 --> 01:37:35,630  
superconducting qubits so you have these

2158  
01:37:40,800 --> 01:37:38,300  
wires where you bring them you cool them

2159  
01:37:43,210 --> 01:37:40,810  
down to the point that they're

2160  
01:37:46,480 --> 01:37:43,220  
superconducting based on a specific

2161  
01:37:48,820 --> 01:37:46,490  
threshold temperature I usually it's a

2162  
01:37:51,640 --> 01:37:48,830  
very very cold temperature so we're

2163  
01:37:54,570 --> 01:37:51,650

talking about million kelvins so like

2164

01:37:59,920 --> 01:37:54,580

three or four thousandths of a Kelvin

2165

01:38:02,320 --> 01:37:59,930

just above absolute zero degrees so in

2166

01:38:04,840 --> 01:38:02,330

cases like that the quantum information

2167

01:38:08,170 --> 01:38:04,850

the quantum data so to speak that the

2168

01:38:11,680 --> 01:38:08,180

quantum computer is pulling from you can

2169

01:38:14,110 --> 01:38:11,690

say that's coming from the quantum state

2170

01:38:16,480 --> 01:38:14,120

that you've now created because you're

2171

01:38:19,270 --> 01:38:16,490

in this superconducting state and then

2172

01:38:22,530 --> 01:38:19,280

because you applied these Josephson

2173

01:38:26,140 --> 01:38:22,540

junctions and then you poster with

2174

01:38:30,040 --> 01:38:26,150

magnets to get your specific yeah

2175

01:38:34,870 --> 01:38:30,050

overall quantum state I see

2176  
01:38:37,180 --> 01:38:34,880  
so as far as your interest in UFOs we

2177  
01:38:38,590 --> 01:38:37,190  
have about five minutes left here and as

2178  
01:38:41,620 --> 01:38:38,600  
far as your interest in

2179  
01:38:45,040 --> 01:38:41,630  
UFOs what what part of the subject are

2180  
01:38:48,070 --> 01:38:45,050  
you looking into most have you actually

2181  
01:38:49,930 --> 01:38:48,080  
done any research of any cases in

2182  
01:38:54,070 --> 01:38:49,940  
particular or is it just a general

2183  
01:38:57,250 --> 01:38:54,080  
fascination yeah both like general

2184  
01:39:00,460 --> 01:38:57,260  
fascinate shouldn't I looking into the

2185  
01:39:04,120 --> 01:39:00,470  
tick-tock eye incident right so for

2186  
01:39:09,190 --> 01:39:04,130  
example yeah with the tic-tac I'm going

2187  
01:39:11,050 --> 01:39:09,200  
out to the Catalina island's with Kevin

2188  
01:39:13,390 --> 01:39:11,060

day and dr. Kevin Knuth and some other

2189

01:39:18,760 --> 01:39:13,400

guys you're part of that I didn't even

2190

01:39:20,730 --> 01:39:18,770

know that Wow though okay I'm the vice

2191

01:39:23,560 --> 01:39:20,740

president of technology for the

2192

01:39:26,200 --> 01:39:23,570

organization we're essentially another

2193

01:39:28,540 --> 01:39:26,210

study right so we're an evolution of

2194

01:39:32,680 --> 01:39:28,550

study that's how we're kind of framing

2195

01:39:35,920 --> 01:39:32,690

ourselves and my role will be to oversee

2196

01:39:38,380 --> 01:39:35,930

the technologies either integrating ones

2197

01:39:40,950 --> 01:39:38,390

that exist or developing new ones for

2198

01:39:44,650 --> 01:39:40,960

detecting and tracking these you ApS and

2199

01:39:48,600 --> 01:39:44,660

creating different technologies you know

2200

01:39:51,160 --> 01:39:48,610

that are related to the UAP topic

2201

01:39:52,990 --> 01:39:51,170

interesting well I'm glad you're a part

2202

01:39:55,450 --> 01:39:53,000

of that that's that's fascinating I

2203

01:39:58,060 --> 01:39:55,460

don't know if you what a number of

2204

01:40:00,310 --> 01:39:58,070

people have told me to watch this video

2205

01:40:02,530 --> 01:40:00,320

and I watched it recently and basically

2206

01:40:05,410 --> 01:40:02,540

it's a guy I think his last name is

2207

01:40:08,680 --> 01:40:05,420

Murray Michael Murray or something like

2208

01:40:11,950 --> 01:40:08,690

that is claiming that he was an Air

2209

01:40:14,410 --> 01:40:11,960

Force intelligence officer and that yeah

2210

01:40:17,020 --> 01:40:14,420

I was of it you watch some of that yeah

2211

01:40:20,800 --> 01:40:17,030

and that it was basically the Air Force

2212

01:40:22,060 --> 01:40:20,810

messin with the Navy and I just had sent

2213

01:40:26,110 --> 01:40:22,070

that to Kevin and wanted to get his

2214

01:40:30,520 --> 01:40:26,120

reaction and so what is the general

2215

01:40:33,100 --> 01:40:30,530

consensus of that I made a comment you

2216

01:40:34,360 --> 01:40:33,110

know I kind of thought there was a lot

2217

01:40:35,170 --> 01:40:34,370

of red flags that went up when I was

2218

01:40:36,400 --> 01:40:35,180

watching that

2219

01:40:39,270 --> 01:40:36,410

you know wonder what your thoughts right

2220

01:40:43,090 --> 01:40:39,280

yeah yeah no I I'm in complete agreement

2221

01:40:45,010 --> 01:40:43,100

so the part I listen to the one thing

2222

01:40:48,040 --> 01:40:45,020

that stood out to me is how much faith

2223

01:40:51,700 --> 01:40:48,050

he was putting into using the UFO

2224

01:40:52,569 --> 01:40:51,710

patents you know those patents yeah he

2225

01:40:55,060 --> 01:40:52,579

was saying

2226

01:40:57,819 --> 01:40:55,070

yeah so this is how this works in it was

2227

01:40:59,529 --> 01:40:57,829

completely superficial knowledge like he

2228

01:41:02,679 --> 01:40:59,539

clearly didn't understand what he was

2229

01:41:04,589 --> 01:41:02,689

talking about and that was a huge red

2230

01:41:07,449 --> 01:41:04,599

flag to me because he was using that to

2231

01:41:09,609 --> 01:41:07,459

confidently debunk the tic-tac so I'm

2232

01:41:11,319 --> 01:41:09,619

like all right this guy doesn't know

2233

01:41:13,750 --> 01:41:11,329

what he's talking about or he does and

2234

01:41:17,409 --> 01:41:13,760

he's purposely just trying to fool like

2235

01:41:19,540 --> 01:41:17,419

laziest percentage you know people yeah

2236

01:41:22,029 --> 01:41:19,550

so that was my food but I just I just

2237

01:41:25,149 --> 01:41:22,039

felt the vibe of overall nefariousness

2238

01:41:26,770 --> 01:41:25,159

for whatever reason yeah well there was

2239

01:41:29,799 --> 01:41:26,780

some fast talking and some technical

2240

01:41:34,000 --> 01:41:29,809

talking and and all that but I wasn't I

2241

01:41:36,569 --> 01:41:34,010

wasn't I don't know what there was a lot

2242

01:41:41,739 --> 01:41:36,579

of things that he said that made me

2243

01:41:44,319 --> 01:41:41,749

think that it wasn't too well to be

2244

01:41:46,329 --> 01:41:44,329

taken seriously and one of the things

2245

01:41:49,389 --> 01:41:46,339

you know when whenever he was asked

2246

01:41:51,159 --> 01:41:49,399

about anything specific he he acted like

2247

01:41:52,659 --> 01:41:51,169

I was classified he can't talk about

2248

01:41:54,939 --> 01:41:52,669

that but he could talk about everything

2249

01:41:58,359 --> 01:41:54,949

else you know I mean so as soon as he

2250

01:42:00,579 --> 01:41:58,369

got nailed down he anyway I don't know

2251

01:42:05,799 --> 01:42:00,589

if the listeners have paid attention to

2252

01:42:08,229 --> 01:42:05,809

that or not but anyway so where when de

2253

01:42:11,049 --> 01:42:08,239

is that actually the we're that's next

2254

01:42:12,429 --> 01:42:11,059

November so you're leaving next November

2255

01:42:15,969 --> 01:42:12,439

and it's gonna be you're gonna be on a

2256

01:42:18,520 --> 01:42:15,979

boat right exactly yeah for ten days Wow

2257

01:42:19,779 --> 01:42:18,530

well that's that's exciting I can't wait

2258

01:42:23,109 --> 01:42:19,789

for that to happen and I'm sure I'll

2259

01:42:25,179 --> 01:42:23,119

have probably have to have an on before

2260

01:42:27,579 --> 01:42:25,189

that happens well that's it for us

2261

01:42:30,849 --> 01:42:27,589

tonight thank you so much for for

2262

01:42:33,179 --> 01:42:30,859

joining us and thanks for hanging in I

2263

01:42:35,979 --> 01:42:33,189

three that are extra break we had to to

2264

01:42:38,349 --> 01:42:35,989

but I don't know it yeah alright

2265

01:42:40,989 --> 01:42:38,359

everyone so that's gonna be it for our

2266

01:42:43,599 --> 01:42:40,999

show thank you so much for for watching

2267

01:42:45,759 --> 01:42:43,609

and listening and we will be back next

2268

01:42:50,349 --> 01:42:45,769

week I can't wait for our guests next

2269

01:42:53,469 --> 01:42:50,359

week that is Bryce Zabel and he's always

2270

01:42:56,560 --> 01:42:53,479

very interesting and it should be a

2271

01:42:58,239 --> 01:42:56,570

great show next week so I want to thank

2272

01:43:02,109 --> 01:42:58,249

everyone else I want to thank everyone

2273

01:43:04,449 --> 01:43:02,119

that helps out with this show and again

2274

01:43:06,010 --> 01:43:04,459

we'll be back next week and remember to

2275

01:43:08,560 --> 01:43:06,020

keep your eyes

2276

01:43:14,700 --> 01:43:08,570

to the sky