

Episode **585**

THE
**SKEPTIC
ZONE**
PODCAST

www.skepticzone.tv

29 December 2019

Dr Eugenie Scott
with news of SkeptiCal 2020

Maynard interviews from
Skepticon 2019. This week...
Thomas Westbrook from
Holy Koolaid

The Book of Tim
Citizen Science



The Skeptic Zone Podcast
Episode 585 - 29 December 2019



1
00:00:06,710 --> 00:00:03,280

[Music]

2
00:00:09,110 --> 00:00:06,720

hi this is susan gerbic from gso w

3
00:00:11,690 --> 00:00:09,120

that's guerrilla skepticism on Wikipedia

4
00:00:14,360 --> 00:00:11,700

I want to thank everyone who via the

5
00:00:16,790 --> 00:00:14,370

skeptic zone podcast has contacted me to

6
00:00:19,279 --> 00:00:16,800

become an editor on Wikipedia together

7
00:00:21,920 --> 00:00:19,289

we have worked on or created over 1200

8
00:00:23,660 --> 00:00:21,930

wikipedia pages countless thousands of

9
00:00:26,990 --> 00:00:23,670

people all of the world access those

10
00:00:30,050 --> 00:00:27,000

pages each day in fact we're over 52

11
00:00:32,150 --> 00:00:30,060

million page views like many listeners I

12
00:00:33,440 --> 00:00:32,160

also give back to the skeptic zone via

13
00:00:35,299 --> 00:00:33,450

monthly micropayments

14

00:00:37,220 --> 00:00:35,309

and I want to encourage you to do the

15

00:00:39,319 --> 00:00:37,230

same is the information and

16

00:00:42,139 --> 00:00:39,329

entertainment you get each week from the

17

00:00:45,860 --> 00:00:42,149

show with 5 or \$10 a month I sure think

18

00:00:48,470 --> 00:00:45,870

it is follow the link at skeptic zone TV

19

00:01:01,459 --> 00:00:48,480

and show your practical support thank

20

00:01:04,160 --> 00:01:01,469

you welcome to the skipped observe the

21

00:01:04,780 --> 00:01:04,170

podcast from Australia for science and

22

00:01:06,850 --> 00:01:04,790

reason

23

00:01:09,820 --> 00:01:06,860

[Music]

24

00:01:15,200 --> 00:01:09,830

[Applause]

25

00:01:17,760 --> 00:01:15,210

[Music]

26

00:01:21,570 --> 00:01:17,770

yes it's the skeptic zone podcast

27

00:01:24,570 --> 00:01:21,580

episode number 585 for the 29th of

28

00:01:26,999 --> 00:01:24,580

December 2019 richardsaunders he with

29

00:01:29,550 --> 00:01:27,009

you from the San Francisco Bay Area

30

00:01:35,609 --> 00:01:29,560

this is the last skeptic zone podcast

31

00:01:38,609 --> 00:01:35,619

there for 2019 2020 2020 I told my niece

32

00:01:41,520 --> 00:01:38,619

the other day who's only 10 that soon

33

00:01:43,980 --> 00:01:41,530

it's going to be the 20s and she's going

34

00:01:46,499 --> 00:01:43,990

to be turning into a teenager during the

35

00:01:48,660 --> 00:01:46,509

20s and I suggested to her that she

36

00:01:51,330 --> 00:01:48,670

should learn to dance the Charleston and

37

00:01:54,150 --> 00:01:51,340

I showed her some old YouTube videos

38

00:01:56,790 --> 00:01:54,160

movies he should have seen the look on

39

00:01:59,730 --> 00:01:56,800

her face coming up on this week's

40

00:02:01,800 --> 00:01:59,740

episode of the skeptic zone Maynard back

41

00:02:04,680 --> 00:02:01,810

again Maynard with more interviews from

42

00:02:06,660 --> 00:02:04,690

skeptic on 2019 in Melbourne and this

43

00:02:10,380 --> 00:02:06,670

week may not interviews Thomas Westbrook

44

00:02:13,320 --> 00:02:10,390

from holy kool-aid the YouTube channel

45

00:02:15,750 --> 00:02:13,330

holy kool-aid tackling conspiracy

46

00:02:17,300 --> 00:02:15,760

theories and anti science it was really

47

00:02:20,280 --> 00:02:17,310

nice to meet Thomas Westbrook at the

48

00:02:22,110 --> 00:02:20,290

skeptic on in Melbourne as well as many

49

00:02:24,390 --> 00:02:22,120

other people there and I'm sure you'll

50

00:02:27,360 --> 00:02:24,400

find this interview very interesting

51
00:02:30,840 --> 00:02:27,370
after that I catch up once again with my

52
00:02:32,850 --> 00:02:30,850
dear dear dear friend dr. eugenie Scott

53
00:02:36,300 --> 00:02:32,860
we take a walk through the streets of

54
00:02:39,660 --> 00:02:36,310
Auckland in California and chat about

55
00:02:42,030 --> 00:02:39,670
the upcoming skeptic al which will be

56
00:02:43,830 --> 00:02:42,040
held next year in the Bay Area if you

57
00:02:47,789 --> 00:02:43,840
haven't been to skeptical it's the one

58
00:02:50,160 --> 00:02:47,799
day Northern Californian sceptical event

59
00:02:52,560 --> 00:02:50,170
then I can sincerely recommend it I hope

60
00:02:57,000 --> 00:02:52,570
to be there myself who knows find out

61
00:03:01,470 --> 00:02:57,010
more coming up including including I

62
00:03:04,199 --> 00:03:01,480
discover a rare book written by James

63
00:03:07,110 --> 00:03:04,209

Bond manda round off the show it's Tim

64

00:03:12,090 --> 00:03:07,120

Mendham a reading from the book of Tim

65

00:03:14,460 --> 00:03:12,100

Tim looks at citizen science the vital

66

00:03:16,979 --> 00:03:14,470

role everyday people have played through

67

00:03:19,979 --> 00:03:16,989

the decades and the centuries in the

68

00:03:22,409 --> 00:03:19,989

advancement of science and of course

69

00:03:25,020 --> 00:03:22,419

this is again taken from the pages of

70

00:03:26,860 --> 00:03:25,030

the skeptic the journal from Australian

71

00:03:29,170 --> 00:03:26,870

skeptics not to be confused with

72

00:03:32,170 --> 00:03:29,180

any other magazine around the world that

73

00:03:33,520 --> 00:03:32,180

happens to call itself the skeptic well

74

00:03:35,830 --> 00:03:33,530

that's all from me at the moment it's

75

00:03:37,780 --> 00:03:35,840

time for me to run upstairs run upstairs

76

00:03:39,699 --> 00:03:37,790

and I can't help but think what the

77

00:03:42,130 --> 00:03:39,709

skeptic zone cats are doing back in

78

00:03:44,589 --> 00:03:42,140

Australia at the moment keeping cool I

79

00:03:46,539 --> 00:03:44,599

hope because I hear on the news that

80

00:03:48,430 --> 00:03:46,549

it's going to be another scorching hot

81

00:03:52,119 --> 00:03:48,440

day in Sydney Australia here in the Bay

82

00:03:53,259 --> 00:03:52,129

Area it's nice and crispy cool anyway

83

00:03:57,869 --> 00:03:53,269

I'm gonna run up the stairs

84

00:03:59,110 --> 00:03:57,879

have a marshmallow icing or a biscuit

85

00:04:01,270 --> 00:03:59,120

hmm

86

00:04:03,600 --> 00:04:01,280

sounds good to me while I do that I hope

87

00:04:11,900 --> 00:04:03,610

you enjoy the skeptic zone

88

00:04:17,020 --> 00:04:11,910

[Music]

89

00:04:24,500 --> 00:04:21,640

here's Maynard spooky action at a

90

00:04:30,390 --> 00:04:27,140

here in the media room in the rather

91

00:04:32,340 --> 00:04:30,400

overcrowded sort of I know what it's a

92

00:04:33,480 --> 00:04:32,350

Prius that we're in really it's got that

93

00:04:35,070 --> 00:04:33,490

sort of feel about it it's all white

94

00:04:37,260 --> 00:04:35,080

inside who have we got here now

95

00:04:39,240 --> 00:04:37,270

hi my name is Thomas Westbrook from the

96

00:04:40,860 --> 00:04:39,250

holy kool-aid youtube channel what

97

00:04:44,190 --> 00:04:40,870

inspired you to get your YouTube channel

98

00:04:46,470 --> 00:04:44,200

started well I had been most of my life

99

00:04:48,110 --> 00:04:46,480

I was extremely religious my parents

100

00:04:51,690 --> 00:04:48,120

were missionaries

101
00:04:53,129 --> 00:04:51,700
Mormon and actually evangelical so

102
00:04:55,140 --> 00:04:53,139
Christmas has been difficult of life

103
00:04:56,520 --> 00:04:55,150
usually when I'm around family I try to

104
00:04:58,980 --> 00:04:56,530
keep the peace and I don't really bring

105
00:04:59,670 --> 00:04:58,990
it up and at the same time there's

106
00:05:01,200 --> 00:04:59,680
always that little bit of

107
00:05:03,150 --> 00:05:01,210
passive-aggressive preaching that you

108
00:05:05,070 --> 00:05:03,160
get just for being in the presence of

109
00:05:07,500 --> 00:05:05,080
people who make religion the focal point

110
00:05:10,800 --> 00:05:07,510
of their lives vague warnings of Hell I

111
00:05:12,060 --> 00:05:10,810
do get that mmm so tell us for people

112
00:05:13,440 --> 00:05:12,070
who are having a family dinner and

113
00:05:16,170 --> 00:05:13,450

everyone's kind of religious when when

114

00:05:17,610 --> 00:05:16,180

they bow with the heads and say grace or

115

00:05:18,719 --> 00:05:17,620

something like that you just quietly bow

116

00:05:20,219 --> 00:05:18,729

your head and say nothing what's the

117

00:05:22,290 --> 00:05:20,229

best way or do you stand up and start

118

00:05:24,300 --> 00:05:22,300

loudly making a martini or something

119

00:05:27,000 --> 00:05:24,310

what's the best way do you handle it I

120

00:05:29,070 --> 00:05:27,010

just I keep my eyes open and I look over

121

00:05:30,570 --> 00:05:29,080

at my little nephews and nieces and I

122

00:05:32,100 --> 00:05:30,580

make goofy faces at them during the

123

00:05:35,280 --> 00:05:32,110

prayer because they kind of pick him

124

00:05:36,540 --> 00:05:35,290

back at ya ya hang on my god he's got

125

00:05:37,950 --> 00:05:36,550

something going on over there yeah I

126
00:05:39,659 --> 00:05:37,960
mean they're kind of looking around like

127
00:05:42,450 --> 00:05:39,669
what's going on why are we doing this

128
00:05:44,850 --> 00:05:42,460
this who are we talking to and so is

129
00:05:47,040 --> 00:05:44,860
religion your your skepticism target

130
00:05:49,560 --> 00:05:47,050
normally or is it a range of things well

131
00:05:50,969 --> 00:05:49,570
initially I started off wanting to just

132
00:05:52,920 --> 00:05:50,979
share my story I wanted to tell the

133
00:05:54,210 --> 00:05:52,930
story of how I went from believing all

134
00:05:55,710 --> 00:05:54,220
of that stuff to then

135
00:05:57,150 --> 00:05:55,720
you know asking how does the world

136
00:05:58,620 --> 00:05:57,160
actually work because I believe that if

137
00:06:00,710 --> 00:05:58,630
something is true truth withstand

138
00:06:02,430 --> 00:06:00,720

scrutiny so I set out to basically

139

00:06:03,810 --> 00:06:02,440

scrutinize the truth look for the

140

00:06:06,540 --> 00:06:03,820

evidence and share that journey in that

141

00:06:07,980 --> 00:06:06,550

process but as I started making these

142

00:06:10,560 --> 00:06:07,990

videos I realized that what I was really

143

00:06:12,060 --> 00:06:10,570

in love with was science and technology

144

00:06:13,980 --> 00:06:12,070

and and making the world a better place

145

00:06:16,230 --> 00:06:13,990

solving the most difficult problems that

146

00:06:18,540 --> 00:06:16,240

face humanity and I don't think religion

147

00:06:20,790 --> 00:06:18,550

is necessarily the biggest hindrance to

148

00:06:23,909 --> 00:06:20,800

that it can be sometimes people will use

149

00:06:25,320 --> 00:06:23,919

religion in order to say back up a

150

00:06:27,060 --> 00:06:25,330

position like climate change denial

151
00:06:28,409 --> 00:06:27,070
because they'll say that God has given

152
00:06:30,150 --> 00:06:28,419
us dominion over the earth you would

153
00:06:32,070 --> 00:06:30,160
never let us destroy it or Jesus is

154
00:06:33,779 --> 00:06:32,080
coming back soon so I think in certain

155
00:06:36,790 --> 00:06:33,789
areas religion can be extremely harmful

156
00:06:38,230 --> 00:06:36,800
but my biggest thing is whether

157
00:06:39,850 --> 00:06:38,240
psychics who claim that they can talk to

158
00:06:41,350 --> 00:06:39,860
your dead family and they're conning you

159
00:06:43,210 --> 00:06:41,360
out of millions of dollars and they're

160
00:06:45,339 --> 00:06:43,220
slowing humanity down with all this woe

161
00:06:47,619 --> 00:06:45,349
and nonsense or whether it's flat

162
00:06:51,159 --> 00:06:47,629
earthers who just don't understand how

163
00:06:54,420 --> 00:06:51,169

to actually think critically and examine

164

00:06:56,890 --> 00:06:54,430

the facts or whatever the case may be I

165

00:06:58,749 --> 00:06:56,900

want to tackle it I want to uncover how

166

00:07:00,249 --> 00:06:58,759

the world works I want to see where the

167

00:07:03,999 --> 00:07:00,259

evidence leads and teach people how to

168

00:07:06,279 --> 00:07:04,009

actually not just be a skeptic but how

169

00:07:08,430 --> 00:07:06,289

to use science coupled with skepticism

170

00:07:10,240 --> 00:07:08,440

to actually get to the most likely

171

00:07:10,629 --> 00:07:10,250

answers to the problems that we're

172

00:07:12,520 --> 00:07:10,639

facing

173

00:07:13,659 --> 00:07:12,530

what is the episode that you've tried to

174

00:07:15,219 --> 00:07:13,669

get something across and it's almost

175

00:07:16,930 --> 00:07:15,229

stumped you it's been a difficult one to

176

00:07:19,600 --> 00:07:16,940

get across even in a visual form on

177

00:07:21,040 --> 00:07:19,610

YouTube abiogenesis was very challenging

178

00:07:24,790 --> 00:07:21,050

hang on xarna

179

00:07:29,589 --> 00:07:24,800

ooh hang on how life came from geology

180

00:07:32,230 --> 00:07:29,599

kind of well from chemistry because it's

181

00:07:33,760 --> 00:07:32,240

it certainly is that there's there's an

182

00:07:35,740 --> 00:07:33,770

interaction between the geosphere and

183

00:07:37,779 --> 00:07:35,750

the biosphere for sure so when you look

184

00:07:39,670 --> 00:07:37,789

at you know geology and you look at

185

00:07:43,629 --> 00:07:39,680

rocks and stuff some people who want to

186

00:07:44,950 --> 00:07:43,639

strawman the not even the atheist

187

00:07:46,719 --> 00:07:44,960

position but the naturalist position

188

00:07:47,980 --> 00:07:46,729

will say oh you just believe that we

189

00:07:49,420 --> 00:07:47,990

came from a rock that takes more faith

190

00:07:51,010 --> 00:07:49,430

than to believe that God made it which

191

00:07:55,450 --> 00:07:51,020

is funny because Genesis says that we

192

00:07:58,120 --> 00:07:55,460

came from mud but when you actually look

193

00:08:00,010 --> 00:07:58,130

at the position that he almost

194

00:08:01,420 --> 00:08:00,020

biochemists put forth based off of a

195

00:08:03,309 --> 00:08:01,430

laboratory test where they're trying to

196

00:08:05,740 --> 00:08:03,319

recreate the early environment type

197

00:08:07,570 --> 00:08:05,750

scenarios you know they don't say that

198

00:08:09,820 --> 00:08:07,580

we came from Iraq because Iraq is

199

00:08:12,969 --> 00:08:09,830

usually it's it's in a solid form it's

200

00:08:14,529 --> 00:08:12,979

not a organic molecule you know they're

201
00:08:16,899 --> 00:08:14,539
saying you know we came from chemistry

202
00:08:19,659 --> 00:08:16,909
but it's things like you know hydrogen

203
00:08:21,939 --> 00:08:19,669
and you know oxygen and you know that

204
00:08:23,730 --> 00:08:21,949
these are elements that are found in our

205
00:08:26,920 --> 00:08:23,740
bodies that we know that every single

206
00:08:28,450 --> 00:08:26,930
living organism is made of and these are

207
00:08:31,779 --> 00:08:28,460
the components the building blocks

208
00:08:33,430 --> 00:08:31,789
carbon you know that that are holding us

209
00:08:34,870 --> 00:08:33,440
together they're the what make up our

210
00:08:36,909 --> 00:08:34,880
amino acids they're what make up our

211
00:08:38,500 --> 00:08:36,919
nucleic acids you know our carbohydrate

212
00:08:41,589 --> 00:08:38,510
so you know all of these things that our

213
00:08:42,880 --> 00:08:41,599

building blocks for life we know are the

214

00:08:44,290 --> 00:08:42,890

most common elements throughout the

215

00:08:45,550 --> 00:08:44,300

universe and I think that's something

216

00:08:47,980 --> 00:08:45,560

that you don't have to be a scientist to

217

00:08:50,800 --> 00:08:47,990

understand is that we see these elements

218

00:08:53,980 --> 00:08:50,810

forming together in stars

219

00:08:55,500 --> 00:08:53,990

see you know a nuclear fusion happening

220

00:08:57,880 --> 00:08:55,510

and you can examine this using

221

00:09:00,760 --> 00:08:57,890

spectroscopy we have tools that can look

222

00:09:02,800 --> 00:09:00,770

out into space and figure out what

223

00:09:05,170 --> 00:09:02,810

different planets and stars and stuff

224

00:09:07,269 --> 00:09:05,180

nebulae what gases they're made of what

225

00:09:09,730 --> 00:09:07,279

they're composed of and we see these all

226

00:09:11,380 --> 00:09:09,740

over everywhere that we look and then we

227

00:09:13,269 --> 00:09:11,390

start examining you know further on the

228

00:09:14,620 --> 00:09:13,279

cosmos we see how planets are forming

229

00:09:16,360 --> 00:09:14,630

accretion disks and they're coming

230

00:09:18,190 --> 00:09:16,370

together with gravity or as we're seeing

231

00:09:19,450 --> 00:09:18,200

all this happening naturally and then

232

00:09:21,760 --> 00:09:19,460

we're like okay but how can we get to

233

00:09:25,000 --> 00:09:21,770

life that's where it gets challenging

234

00:09:28,060 --> 00:09:25,010

because biochemistry is a hard hard hard

235

00:09:30,250 --> 00:09:28,070

topic it's extremely like extremely

236

00:09:33,010 --> 00:09:30,260

complex so when I was studying that I

237

00:09:35,290 --> 00:09:33,020

actually had several different experts

238

00:09:36,970 --> 00:09:35,300

PhDs in biochemistry who I was balancing

239

00:09:39,700 --> 00:09:36,980

these scripts off of as I was

240

00:09:41,500 --> 00:09:39,710

researching it on my own as a layman and

241

00:09:42,970 --> 00:09:41,510

and then trying to get their feedback

242

00:09:44,260 --> 00:09:42,980

and trying to understand it so that's

243

00:09:45,910 --> 00:09:44,270

where it gets challenging is first I

244

00:09:48,370 --> 00:09:45,920

have to understand it but then I have to

245

00:09:49,900 --> 00:09:48,380

communicate those aha moments in a way

246

00:09:52,960 --> 00:09:49,910

that is both accurate but also

247

00:09:54,519 --> 00:09:52,970

understandable and visually display it

248

00:09:56,579 --> 00:09:54,529

in a way that they can actually grasp

249

00:10:00,190 --> 00:09:56,589

because you couple the visuals with the

250

00:10:01,750 --> 00:10:00,200

educational audio now what how many

251
00:10:04,060 --> 00:10:01,760
different kinds of she'll have you been

252
00:10:05,770 --> 00:10:04,070
accused of being and you're you're in

253
00:10:07,450 --> 00:10:05,780
the pocket of big biochemistry in the

254
00:10:12,220 --> 00:10:07,460
pocket of big pharma how many of you

255
00:10:14,170 --> 00:10:12,230
been accused of I've been told that yeah

256
00:10:14,500 --> 00:10:14,180
I'm part of the Illuminati that's a good

257
00:10:18,550 --> 00:10:14,510
one

258
00:10:20,980 --> 00:10:18,560
I've been told that nASA has paying me

259
00:10:25,450 --> 00:10:20,990
because you know I'm saying that the

260
00:10:27,280 --> 00:10:25,460
earth is not flat you've been accused

261
00:10:28,390 --> 00:10:27,290
so I guess every time you do a show they

262
00:10:31,090 --> 00:10:28,400
assume that you're in the pocket of

263
00:10:33,640 --> 00:10:31,100

whatever's in that show yeah yeah it

264

00:10:35,770 --> 00:10:33,650

depends so I just did a video on how are

265

00:10:37,270 --> 00:10:35,780

the pyramids made and you know I'm

266

00:10:40,240 --> 00:10:37,280

talking about the history of the

267

00:10:42,340 --> 00:10:40,250

pyramids and stuff and I actually as a

268

00:10:44,199 --> 00:10:42,350

part of that video one of the things

269

00:10:45,730 --> 00:10:44,209

that I discovered because I was up to my

270

00:10:47,949 --> 00:10:45,740

elbows in ancient Egyptian history for

271

00:10:50,320 --> 00:10:47,959

about two months and I was like okay

272

00:10:52,180 --> 00:10:50,330

it's not aliens it's not UFOs we know

273

00:10:54,640 --> 00:10:52,190

that much we also know it wasn't Jewish

274

00:10:56,530 --> 00:10:54,650

slaves so the the story that's put forth

275

00:10:58,870 --> 00:10:56,540

in you know the Pentateuch the first

276

00:11:00,730 --> 00:10:58,880

five books of the Bible is that you know

277

00:11:02,320 --> 00:11:00,740

the Jews were slaves in Israel the Bible

278

00:11:03,319 --> 00:11:02,330

never says that they built the pyramid

279

00:11:06,710 --> 00:11:03,329

so even if it

280

00:11:08,119 --> 00:11:06,720

was accurate it's still the timeline is

281

00:11:09,650 --> 00:11:08,129

completely off because the pyramids were

282

00:11:11,179 --> 00:11:09,660

made a thousand years earlier than any

283

00:11:13,100 --> 00:11:11,189

Bible scholar says that the Jews were in

284

00:11:15,079 --> 00:11:13,110

Israel now one of the theories of hood

285

00:11:16,519 --> 00:11:15,089

and it's a bit out there is that there

286

00:11:18,319 --> 00:11:16,529

was a little bit more water going on

287

00:11:20,900 --> 00:11:18,329

there and then they were able to sort of

288

00:11:22,100 --> 00:11:20,910

have a water floating the around the

289

00:11:23,840 --> 00:11:22,110

pyramids there over the Builder the

290

00:11:25,400 --> 00:11:23,850

thing around so you'd have water and the

291

00:11:27,970 --> 00:11:25,410

blocks were like raised in a sort of

292

00:11:30,769 --> 00:11:27,980

dock thing I've seen that that

293

00:11:34,519 --> 00:11:30,779

hypothesis and on night water then I

294

00:11:38,600 --> 00:11:34,529

find it's highly unlikely and one of the

295

00:11:39,859 --> 00:11:38,610

reasons being is I that the the

296

00:11:42,160 --> 00:11:39,869

mechanisms that they would have had to

297

00:11:44,389 --> 00:11:42,170

create who created would have been

298

00:11:45,559 --> 00:11:44,399

almost as complicated as the pyramid

299

00:11:47,269 --> 00:11:45,569

itself they'd have to have locking

300

00:11:48,799 --> 00:11:47,279

mechanism some type of hydraulic palm

301
00:11:50,059 --> 00:11:48,809
something you know why don't one of the

302
00:11:51,859 --> 00:11:50,069
theories is that there's a massive

303
00:11:54,199 --> 00:11:51,869
bucket bucket brigade and stuff that

304
00:11:56,359 --> 00:11:54,209
they had going to the top and moving all

305
00:11:58,400 --> 00:11:56,369
this water and it's like you know maybe

306
00:11:59,989 --> 00:11:58,410
like that it's it's physically possible

307
00:12:03,769 --> 00:11:59,999
some of the methods that they put forth

308
00:12:06,289 --> 00:12:03,779
but it's it lacks the evidence I think

309
00:12:07,489 --> 00:12:06,299
that's required for such a claim and

310
00:12:09,289 --> 00:12:07,499
there's other methods that they could

311
00:12:10,639 --> 00:12:09,299
have used so it's only slightly ahead of

312
00:12:12,229 --> 00:12:10,649
they were able to move the blocks with

313
00:12:14,179 --> 00:12:12,239

sonic waves which is the other one I

314

00:12:15,859 --> 00:12:14,189

kind of like too because the guy in

315

00:12:17,539 --> 00:12:15,869

Florida built a thing down there that

316

00:12:19,309 --> 00:12:17,549

Rick and dad whatever that the coral

317

00:12:21,169 --> 00:12:19,319

palace or something that there's the

318

00:12:23,299 --> 00:12:21,179

place where he reckons he used the same

319

00:12:24,859 --> 00:12:23,309

way to make his Coral palace or whatever

320

00:12:26,539 --> 00:12:24,869

I forget what it is I'm sorry but ya

321

00:12:27,019 --> 00:12:26,549

know yes he had the secrets of the

322

00:12:31,340 --> 00:12:27,029

ancient

323

00:12:33,019 --> 00:12:31,350

sonic yeah yeah well and so getting back

324

00:12:34,489 --> 00:12:33,029

to the the claims that I'm being paid

325

00:12:37,100 --> 00:12:34,499

though is when I when I made that video

326

00:12:39,259 --> 00:12:37,110

about about the pyramids I also actually

327

00:12:41,689 --> 00:12:39,269

was just in Israel giving a talk at UM

328

00:12:43,220 --> 00:12:41,699

in Tel Aviv at the Israeli atheist

329

00:12:46,220 --> 00:12:43,230

Association has a conference there every

330

00:12:47,900 --> 00:12:46,230

year and while I was there one of the

331

00:12:49,220 --> 00:12:47,910

things that I really wanted to see is

332

00:12:51,979 --> 00:12:49,230

there's something called the Rameses

333

00:12:53,960 --> 00:12:51,989

gate which is it's it's part it's a

334

00:12:57,559 --> 00:12:53,970

remnant of an Egyptian fortress in

335

00:12:59,419 --> 00:12:57,569

Israel and so you know the reason that I

336

00:13:00,949 --> 00:12:59,429

found this particularly fascinating is

337

00:13:03,559 --> 00:13:00,959

that that period of time that that

338

00:13:06,169 --> 00:13:03,569

building was built was there was several

339

00:13:08,119 --> 00:13:06,179

hundred years where all of the land of

340

00:13:10,249 --> 00:13:08,129

Canaan which is modern-day Israel was

341

00:13:11,509 --> 00:13:10,259

under Egyptian domain and like it was

342

00:13:13,429 --> 00:13:11,519

under the rule and control of the

343

00:13:15,470 --> 00:13:13,439

Egyptian Empire and that is the

344

00:13:17,210 --> 00:13:15,480

timeframe that

345

00:13:19,640 --> 00:13:17,220

biblical scholars say that the exodus

346

00:13:21,110 --> 00:13:19,650

happened so my question is okay we know

347

00:13:22,840 --> 00:13:21,120

that it was under Egyptian rule not just

348

00:13:25,820 --> 00:13:22,850

because of the fortress there's also

349

00:13:27,500 --> 00:13:25,830

there's their steal a that depict the

350

00:13:29,060 --> 00:13:27,510

conquest of the Egyptians like the

351

00:13:30,860 --> 00:13:29,070

Battle of Megiddo you're conquering the

352

00:13:32,390 --> 00:13:30,870

land of Canaan there's diplomatic

353

00:13:34,970 --> 00:13:32,400

correspondences that we have multiple

354

00:13:36,560 --> 00:13:34,980

tablets written back and forth you know

355

00:13:37,940 --> 00:13:36,570

we have we even found part of us Fink's

356

00:13:41,210 --> 00:13:37,950

and Israel there's like all these little

357

00:13:42,230 --> 00:13:41,220

pieces of evidence that we know that the

358

00:13:44,390 --> 00:13:42,240

land of Canaan was under Egyptian

359

00:13:46,400 --> 00:13:44,400

control and yet there's this claim that

360

00:13:49,850 --> 00:13:46,410

the Exodus story that they fled from

361

00:13:51,170 --> 00:13:49,860

Egypt to Kaman and so it was part of a

362

00:13:53,000 --> 00:13:51,180

gyped at the time so they wouldn't even

363

00:13:54,980 --> 00:13:53,010

go in anyway yeah why would they flee

364

00:13:56,660 --> 00:13:54,990

from Egypt to more Egypt if they're

365

00:13:58,850 --> 00:13:56,670

trying to get away from Egypt it makes

366

00:14:00,920 --> 00:13:58,860

no sense and so these are the things

367

00:14:03,500 --> 00:14:00,930

that you know when you hear an expert

368

00:14:05,570 --> 00:14:03,510

say or a historian say oh yeah no

369

00:14:07,310 --> 00:14:05,580

there's there's no evidence for you know

370

00:14:09,140 --> 00:14:07,320

that the Jewish Exodus ever happening

371

00:14:11,150 --> 00:14:09,150

and there's you know evidence you would

372

00:14:13,790 --> 00:14:11,160

expect to find as well as you know

373

00:14:16,280 --> 00:14:13,800

there's no we have millions of different

374

00:14:17,930 --> 00:14:16,290

pieces of archaeological findings in

375

00:14:20,510 --> 00:14:17,940

Egypt there were meticulous record

376

00:14:22,550 --> 00:14:20,520

keepers and there's there's no evidence

377

00:14:24,020 --> 00:14:22,560

whatsoever of a massive Jewish slave

378

00:14:25,340 --> 00:14:24,030

population that would have been you know

379

00:14:26,630 --> 00:14:25,350

millions of people over the course of

380

00:14:28,850 --> 00:14:26,640

you know a couple hundred years that

381

00:14:30,110 --> 00:14:28,860

they were allegedly in Egypt but the

382

00:14:32,000 --> 00:14:30,120

thing is when people when an expert

383

00:14:33,650 --> 00:14:32,010

tells you oh no you know there's no

384

00:14:35,300 --> 00:14:33,660

evidence word or we don't buy it they

385

00:14:36,890 --> 00:14:35,310

don't usually tell you why they don't

386

00:14:38,300 --> 00:14:36,900

usually walk you through all the pieces

387

00:14:39,830 --> 00:14:38,310

of evidence that they've they've

388

00:14:41,990 --> 00:14:39,840

gathered and their findings to get to

389

00:14:44,120 --> 00:14:42,000

this conclusion so my goal is to take

390

00:14:46,430 --> 00:14:44,130

that in a laser focus sometimes often

391

00:14:47,780 --> 00:14:46,440

animated video and just break it down in

392

00:14:50,330 --> 00:14:47,790

five to ten minutes in a way that people

393

00:14:52,400 --> 00:14:50,340

can understand but I'm probably gonna be

394

00:14:54,410 --> 00:14:52,410

told you know because I went to Israel

395

00:14:55,610 --> 00:14:54,420

that I'm a you know Jewish Hill because

396

00:14:57,500 --> 00:14:55,620

I'm also doing a video saying that the

397

00:15:01,210 --> 00:14:57,510

Holocaust happened and there's Holocaust

398

00:15:03,680 --> 00:15:01,220

deniers and you say you'd be a Zionist

399

00:15:05,210 --> 00:15:03,690

disinformation agent there yeah that's

400

00:15:06,460 --> 00:15:05,220

the only way it's something like that

401

00:15:08,930 --> 00:15:06,470

which is funny because I'm

402

00:15:10,940 --> 00:15:08,940

simultaneously you know a Zionist

403

00:15:12,740 --> 00:15:10,950

disinformation agent and at the same

404

00:15:15,410 --> 00:15:12,750

time I'm also going against the biblical

405

00:15:17,290 --> 00:15:15,420

narrative that they're you know a lost

406

00:15:19,280 --> 00:15:17,300

last question for this one is it done as

407

00:15:20,630 --> 00:15:19,290

someone who was religious there what do

408

00:15:22,340 --> 00:15:20,640

you reckon as a critical thinker is a

409

00:15:23,180 --> 00:15:22,350

the best book of the Bible to read and

410

00:15:25,040 --> 00:15:23,190

go hang on a minute

411

00:15:26,300 --> 00:15:25,050

I was always a big Revelations fan but

412

00:15:28,570 --> 00:15:26,310

lately I've been getting drawn to

413

00:15:31,400 --> 00:15:28,580

Ezekiel because it's pretty out there

414

00:15:32,510 --> 00:15:31,410

it's not just one book there's stories

415

00:15:34,430 --> 00:15:32,520

here and there like you look at the Book

416

00:15:36,920 --> 00:15:34,440

of Jonah and they'll say like oh yeah

417

00:15:38,030 --> 00:15:36,930

you know he was you know you say that's

418

00:15:39,260 --> 00:15:38,040

impossible to be swallowed by a whale

419

00:15:41,030 --> 00:15:39,270

and they usually come back with it

420

00:15:42,410 --> 00:15:41,040

wasn't a whale it was a big fish I'm

421

00:15:44,600 --> 00:15:42,420

like oh so that makes it more likely

422

00:15:46,040 --> 00:15:44,610

that you can swim and stomach acid for

423

00:15:48,080 --> 00:15:46,050

all this time that you could have an

424

00:15:49,910 --> 00:15:48,090

oxygen-free environment that you're you

425

00:15:51,980 --> 00:15:49,920

know not gonna suffocate and die in in a

426

00:15:53,480 --> 00:15:51,990

matter of minutes you know but but as

427

00:15:55,100 --> 00:15:53,490

far as a specific book I think the book

428

00:15:57,620 --> 00:15:55,110

of Genesis if you understand even but

429

00:15:59,450 --> 00:15:57,630

the simplest it's hard going because

430

00:16:01,640 --> 00:15:59,460

Tom's up so I'm gonna read the Bible and

431

00:16:02,900 --> 00:16:01,650

I cannot get through that but if you

432

00:16:05,210 --> 00:16:02,910

understand that even though the most

433

00:16:07,070 --> 00:16:05,220

simple elements of science you you take

434

00:16:09,170 --> 00:16:07,080

one look at the first chapter of Genesis

435

00:16:11,270 --> 00:16:09,180

and it's just it's it's out there it's

436

00:16:12,620 --> 00:16:11,280

completely out there and yeah by the

437

00:16:14,750 --> 00:16:12,630

time you get to the flood story and

438

00:16:17,000 --> 00:16:14,760

stuff it's it's like come on you mean to

439

00:16:19,310 --> 00:16:17,010

tell me that every single animal you

440

00:16:20,990 --> 00:16:19,320

know millions of 10 million species were

441

00:16:23,180 --> 00:16:21,000

all you know oh no it wasn't species it

442

00:16:25,640 --> 00:16:23,190

was kinds okay but then did evolution

443

00:16:27,080 --> 00:16:25,650

happen at this insane pace right after

444

00:16:29,690 --> 00:16:27,090

the flood and then it slowed down and

445

00:16:31,850 --> 00:16:29,700

stopped like you know it did everyone

446

00:16:33,800 --> 00:16:31,860

not die of methane poisoning with the

447

00:16:35,720 --> 00:16:33,810

one window not being able to ventilate a

448

00:16:37,490 --> 00:16:35,730

boat that's you know you know

449

00:16:38,690 --> 00:16:37,500

unimpressive Lee tiny that but it was

450

00:16:40,550 --> 00:16:38,700

still big enough to not be able to

451
00:16:42,530 --> 00:16:40,560
withstand these you know raging waters

452
00:16:44,180 --> 00:16:42,540
lovely got a hawk in Canada with you

453
00:16:46,550 --> 00:16:44,190
sometime that would be a great visit

454
00:16:48,970 --> 00:16:46,560
yeah well I have I have two videos on my

455
00:16:52,220 --> 00:16:48,980
channel that I made a couple years ago

456
00:16:53,690 --> 00:16:52,230
about the Noah's Ark story and their

457
00:16:55,160 --> 00:16:53,700
animated Bible myths and I tell the

458
00:16:56,710 --> 00:16:55,170
story like it's actually true but

459
00:16:59,060 --> 00:16:56,720
they're in a really tongue-in-cheek

460
00:17:00,800 --> 00:16:59,070
esoterical way you know and then God hid

461
00:17:03,110 --> 00:17:00,810
all the fossils and you know you know

462
00:17:04,550 --> 00:17:03,120
layered the fossil layer in such a way

463
00:17:06,050 --> 00:17:04,560

is to test our faith to make it look

464

00:17:09,080 --> 00:17:06,060

like it was actually you know millions

465

00:17:11,630 --> 00:17:09,090

of years instead of just a giant flood

466

00:17:13,430 --> 00:17:11,640

that you know made some type of you know

467

00:17:16,130 --> 00:17:13,440

geological stew out of it that you would

468

00:17:18,110 --> 00:17:16,140

expect well I have a great time here at

469

00:17:19,820 --> 00:17:18,120

skeptic home 2019 and where can we find

470

00:17:21,440 --> 00:17:19,830

your show on youtube as well as a

471

00:17:24,680 --> 00:17:21,450

landing page for your more general stuff

472

00:17:27,230 --> 00:17:24,690

that we might find online so I have my

473

00:17:29,960 --> 00:17:27,240

channels called holy kool-aid I'm at

474

00:17:32,210 --> 00:17:29,970

holy kool-aid on Twitter most of my

475

00:17:34,030 --> 00:17:32,220

stuff is videos but I I have it all

476
00:17:37,000 --> 00:17:34,040
aggregated on holy kool-aid calm I also

477
00:17:40,160 --> 00:17:37,010
put together the first ever and only

478
00:17:41,420 --> 00:17:40,170
atheist YouTube conference in Dallas

479
00:17:42,980 --> 00:17:41,430
well I think this year were doing it in

480
00:17:45,320 --> 00:17:42,990
Austin Texas called the faithless forum

481
00:17:46,370 --> 00:17:45,330
so we get a lot of the youtubers and

482
00:17:47,960 --> 00:17:46,380
stuff that don't necessarily get

483
00:17:49,520 --> 00:17:47,970
speaking slots but they know how to

484
00:17:51,950 --> 00:17:49,530
entertain they have a massive audience

485
00:17:53,660 --> 00:17:51,960
they promote skepticism in science and

486
00:17:55,340 --> 00:17:53,670
we get them all in one place how do you

487
00:17:57,950 --> 00:17:55,350
feel about the whole YouTube deep

488
00:17:59,630 --> 00:17:57,960

platforming thing I mean obviously it's

489

00:18:01,130 --> 00:17:59,640

removing people from getting them an

490

00:18:02,360 --> 00:18:01,140

audience do you think that because

491

00:18:03,860 --> 00:18:02,370

there's a whole First Amendment thing

492

00:18:06,110 --> 00:18:03,870

going on the US but then it is a

493

00:18:07,670 --> 00:18:06,120

privately owned company YouTube so how

494

00:18:09,260 --> 00:18:07,680

do you feel about people being bumped

495

00:18:10,910 --> 00:18:09,270

off that have got ideas that I'm not

496

00:18:14,330 --> 00:18:10,920

seen as being a good idea to be shared

497

00:18:15,620 --> 00:18:14,340

so typically and obviously like it

498

00:18:17,390 --> 00:18:15,630

depends on who we're talking about you

499

00:18:19,190 --> 00:18:17,400

know if someone is getting on you know

500

00:18:20,720 --> 00:18:19,200

having calls for violence or something

501
00:18:21,200 --> 00:18:20,730
you know there are you know legal issues

502
00:18:23,180 --> 00:18:21,210
and stuff

503
00:18:24,860 --> 00:18:23,190
YouTube is within their legal rights

504
00:18:27,020 --> 00:18:24,870
they have you know it is a private

505
00:18:28,940 --> 00:18:27,030
platform so if you violate their terms

506
00:18:30,440 --> 00:18:28,950
of service they can terminate the

507
00:18:31,910 --> 00:18:30,450
platform or terminate you from the

508
00:18:34,190 --> 00:18:31,920
platform an example of that was there's

509
00:18:35,930 --> 00:18:34,200
the new independent fundamental Baptist

510
00:18:37,070 --> 00:18:35,940
Church was having to make America

511
00:18:39,050 --> 00:18:37,080
straight again conference and they were

512
00:18:43,520 --> 00:18:39,060
calling for the death penalty for all

513
00:18:45,650 --> 00:18:43,530

people in the LGBTQ community and the

514

00:18:47,450 --> 00:18:45,660

family plead case of yeah yeah and and

515

00:18:50,690 --> 00:18:47,460

they got there a lot of their accounts

516

00:18:52,580 --> 00:18:50,700

were moved for calling for violence at

517

00:18:53,570 --> 00:18:52,590

the same time if someone is just coming

518

00:18:55,610 --> 00:18:53,580

on and saying something that's

519

00:18:57,830 --> 00:18:55,620

controversial I you know I grew up like

520

00:19:01,190 --> 00:18:57,840

a flat earth or something yeah I grew up

521

00:19:04,040 --> 00:19:01,200

in the former Soviet Union and I I tend

522

00:19:06,560 --> 00:19:04,050

to lean much much much more strongly in

523

00:19:08,180 --> 00:19:06,570

the in favor of free speech and you know

524

00:19:10,070 --> 00:19:08,190

sunlight being the best disinfectant

525

00:19:11,570 --> 00:19:10,080

that if we really educate people and

526

00:19:13,160 --> 00:19:11,580

present good ideas and we teach them how

527

00:19:15,230 --> 00:19:13,170

to think critically that we can

528

00:19:16,520 --> 00:19:15,240

inoculate them against bad ideas I don't

529

00:19:17,930 --> 00:19:16,530

say you know hey no one can teach

530

00:19:20,210 --> 00:19:17,940

religion I say no teach them all the

531

00:19:22,100 --> 00:19:20,220

religions so that they you know see just

532

00:19:24,140 --> 00:19:22,110

how similar but crazy and different they

533

00:19:26,390 --> 00:19:24,150

all are at the same time and then they

534

00:19:27,710 --> 00:19:26,400

can come to a more logical conclusion if

535

00:19:30,100 --> 00:19:27,720

we actually teach them logic and

536

00:19:31,940 --> 00:19:30,110

critical thinking it doesn't always work

537

00:19:33,560 --> 00:19:31,950

you see the rise of the Flat Earth

538

00:19:35,150 --> 00:19:33,570

movement you see the rise of you know

539

00:19:36,860 --> 00:19:35,160

alternative medicine and conspiracy

540

00:19:38,780 --> 00:19:36,870

theories and stuff but I think that's

541

00:19:40,460 --> 00:19:38,790

why we need more people to be active in

542

00:19:42,310 --> 00:19:40,470

teaching good science and teaching

543

00:19:46,899 --> 00:19:42,320

critical thinking and teaching

544

00:19:48,549 --> 00:19:46,909

skepticism and it's

545

00:19:52,450 --> 00:19:48,559

it's it's it's a complex complicated

546

00:19:55,149 --> 00:19:52,460

issue but I do tend to lean more heavily

547

00:19:57,009 --> 00:19:55,159

away from authoritarian control and

548

00:20:14,699 --> 00:19:57,019

speech policing and more in favor of

549

00:20:19,359 --> 00:20:17,680

hello this is Rob Palmer you may have

550

00:20:21,159 --> 00:20:19,369

heard of me lately I've been

551
00:20:22,810 --> 00:20:21,169
interviewing scientists skeptics and

552
00:20:24,399 --> 00:20:22,820
other critical thinkers from around the

553
00:20:27,190 --> 00:20:24,409
world for my column in The Skeptical

554
00:20:31,959 --> 00:20:27,200
Inquirer and recently some for the

555
00:20:33,849 --> 00:20:31,969
skeptics in my written interviews have

556
00:20:35,949 --> 00:20:33,859
included Jana Vela from the skeptics

557
00:20:38,169 --> 00:20:35,959
guide to the universe mass psychogenic

558
00:20:40,859 --> 00:20:38,179
illness expert Robert Bartholomew

559
00:20:44,279 --> 00:20:40,869
Celeste you award from squaring strange

560
00:20:46,899 --> 00:20:44,289
psychic busted Private Eye bod Nygaard

561
00:20:49,719 --> 00:20:46,909
skeptical activist Michael Marshall of

562
00:20:51,310 --> 00:20:49,729
the UK and even secular activists Bailey

563
00:20:53,799 --> 00:20:51,320

Harris and John de Lancie

564

00:20:55,569 --> 00:20:53,809

that's Q from Star Trek I even

565

00:20:56,019 --> 00:20:55,579

interviewed Believe It or Not a Magic

566

00:20:58,869 --> 00:20:56,029

Dragon

567

00:21:01,930 --> 00:20:58,879

and another really well-known skeptic

568

00:21:04,569 --> 00:21:01,940

Richard Saunders you can find my online

569

00:21:07,119 --> 00:21:04,579

column with these interviews and more by

570

00:21:10,119 --> 00:21:07,129

googling the well-known skeptic plus

571

00:21:12,009 --> 00:21:10,129

skeptical Inquirer also follow me on

572

00:21:13,630 --> 00:21:12,019

Facebook at the well-known skeptic

573

00:21:27,680 --> 00:21:13,640

Cheers

574

00:21:35,210 --> 00:21:31,850

poor folks over the course of 2019 and

575

00:21:37,970 --> 00:21:35,220

probably 2018 and 2017 going back you've

576

00:21:39,620 --> 00:21:37,980

had regular updates from dr. eugenie

577

00:21:41,560 --> 00:21:39,630

Scott at the National Center for science

578

00:21:44,450 --> 00:21:41,570

education and we've just had a wonderful

579

00:21:47,450 --> 00:21:44,460

career unch here in Oakland I'm walking

580

00:21:51,110 --> 00:21:47,460

down what street is this now Broadway

581

00:21:51,560 --> 00:21:51,120

with Jeanne Scott hello Haley reverie

582

00:21:54,860 --> 00:21:51,570

buddy

583

00:21:57,050 --> 00:21:54,870

nice to catch up with you once again and

584

00:21:58,310 --> 00:21:57,060

it's good to see things are going well

585

00:22:00,530 --> 00:21:58,320

at the National Center for science

586

00:22:02,240 --> 00:22:00,540

education but you also very much involve

587

00:22:05,530 --> 00:22:02,250

the course of the Bay Area skeptics and

588

00:22:07,640 --> 00:22:05,540

you're just letting me on a few little

589

00:22:10,160 --> 00:22:07,650

little secrets there about the upcoming

590

00:22:11,750 --> 00:22:10,170

skeptical I mean it's not nailed down

591

00:22:13,730 --> 00:22:11,760

yet but the last one was very successful

592

00:22:16,640 --> 00:22:13,740

and we're looking forward to one next

593

00:22:19,820 --> 00:22:16,650

year oh you bet skeptical is the

594

00:22:22,730 --> 00:22:19,830

Northern California science and critical

595

00:22:25,190 --> 00:22:22,740

thinking skeptical conference we it's a

596

00:22:28,190 --> 00:22:25,200

one-day conference we try to keep the

597

00:22:30,830 --> 00:22:28,200

costs down by using local people and the

598

00:22:33,830 --> 00:22:30,840

Bay Area greater Bay Area basically

599

00:22:36,080 --> 00:22:33,840

Sacramento to Santa Cruz has a lot of

600

00:22:39,980 --> 00:22:36,090

scientists and journalists and other

601
00:22:42,590 --> 00:22:39,990
people who are quite worthwhile asking

602
00:22:46,940 --> 00:22:42,600
to speak but it looks like skeptical

603
00:22:48,980 --> 00:22:46,950
will be on Sunday June 7 so mark your

604
00:22:51,500 --> 00:22:48,990
calendars we'll be sending out a save

605
00:22:54,560 --> 00:22:51,510
the date for that fairly soon excellent

606
00:22:57,290 --> 00:22:54,570
course June nice toasty warm weather in

607
00:23:00,920 --> 00:22:57,300
the Bay Area hopefully I hope so but

608
00:23:03,950 --> 00:23:00,930
it's okay I won't be outdoors anyway now

609
00:23:07,370 --> 00:23:03,960
I was very lucky I went to skeptical to

610
00:23:09,530 --> 00:23:07,380
you last year though get sort of lost in

611
00:23:12,200 --> 00:23:09,540
the in the mists of time a couple years

612
00:23:14,360 --> 00:23:12,210
back at least I was at skeptic count I

613
00:23:16,340 --> 00:23:14,370

think it was I think it was seventeen

614

00:23:18,170 --> 00:23:16,350

twenty seventeen that sounds right and

615

00:23:20,390 --> 00:23:18,180

it's always a lot of fun to have you in

616

00:23:22,850 --> 00:23:20,400

skeptical er as a speaker for Bay Area

617

00:23:25,610 --> 00:23:22,860

skeptics or whenever we can snag you on

618

00:23:27,800 --> 00:23:25,620

the way by we're happy to try to get

619

00:23:29,540 --> 00:23:27,810

your reflections on what's going on in

620

00:23:31,520 --> 00:23:29,550

Australia and the skeptics movement yeah

621

00:23:34,100 --> 00:23:31,530

well of course last time I was here not

622

00:23:37,580 --> 00:23:34,110

so long ago I had a wonderful day at the

623

00:23:38,870 --> 00:23:37,590

Salone is strong we had a great day

624

00:23:41,450 --> 00:23:38,880

there we were right next to a Beatles

625

00:23:43,700 --> 00:23:41,460

tribute band but we plowed hunt we did

626

00:23:46,280 --> 00:23:43,710

psychic tests and and for me that was

627

00:23:48,410 --> 00:23:46,290

just fabulous and folks if you subscribe

628

00:23:50,390 --> 00:23:48,420

to the skeptic magazine from Australia

629

00:23:51,770 --> 00:23:50,400

you can read about my exploits actually

630

00:23:54,650 --> 00:23:51,780

I wrote a report there you go

631

00:23:56,720 --> 00:23:54,660

I've read it it was funny ya know the we

632

00:23:58,970 --> 00:23:56,730

had a great time at this big street

633

00:24:01,850 --> 00:23:58,980

festival called the Solano stroll and in

634

00:24:04,730 --> 00:24:01,860

the fall but we are the barrier skeptics

635

00:24:07,150 --> 00:24:04,740

also had another activity that you you

636

00:24:11,020 --> 00:24:07,160

weren't around for you know we

637

00:24:14,030 --> 00:24:11,030

participated in the San Francisco

638

00:24:16,040 --> 00:24:14,040

Exploratorium Museum which you've been

639

00:24:20,260 --> 00:24:16,050

to and Norwich it's a wonderful place

640

00:24:23,420 --> 00:24:20,270

it's a real hands-on minds-on type of

641

00:24:26,030 --> 00:24:23,430

Science Museum that for children of all

642

00:24:29,570 --> 00:24:26,040

ages literally yeah but they have a

643

00:24:32,300 --> 00:24:29,580

program called after dark which is an

644

00:24:34,310 --> 00:24:32,310

effort that museums have been doing

645

00:24:37,299 --> 00:24:34,320

around the world public to try to

646

00:24:40,310 --> 00:24:37,309

encourage young people to participate in

647

00:24:42,350 --> 00:24:40,320

ten museums and you know they serve

648

00:24:45,950 --> 00:24:42,360

alcohol and they have music and their

649

00:24:49,369 --> 00:24:45,960

their stuff you can do and one of the

650

00:24:53,419 --> 00:24:49,379

after darks a few months ago was on a

651
00:24:54,529 --> 00:24:53,429
topic of we better actually move aside a

652
00:24:56,389 --> 00:24:54,539
little bit we're getting turtle

653
00:24:58,399 --> 00:24:56,399
instructions oh that's all right that

654
00:25:00,529 --> 00:24:58,409
sounds yeah I like it

655
00:25:02,629 --> 00:25:00,539
no in fact I'll let the audience in on

656
00:25:05,060 --> 00:25:02,639
the secret here there's a huge

657
00:25:07,430 --> 00:25:05,070
construction in demolishing a giant

658
00:25:11,710 --> 00:25:07,440
building here it's all just rubble it's

659
00:25:13,430 --> 00:25:11,720
it's like something out of Robot Wars or

660
00:25:17,419 --> 00:25:13,440
transformers or something like that

661
00:25:20,180 --> 00:25:17,429
there are cranes and fire hoses twisted

662
00:25:22,340 --> 00:25:20,190
metal and concrete everywhere it's quite

663
00:25:24,739 --> 00:25:22,350

a sight look at that lifting up carrying

664

00:25:26,859 --> 00:25:24,749

a part of building Wow that's I've

665

00:25:30,560 --> 00:25:26,869

actually never seen one in process

666

00:25:32,989 --> 00:25:30,570

there's a there's a big crane with a

667

00:25:34,639 --> 00:25:32,999

bucket on the end holding up a wall

668

00:25:37,279 --> 00:25:34,649

holding up which I'm sure it's going to

669

00:25:39,739 --> 00:25:37,289

be pulling toward it but but notice me

670

00:25:41,610 --> 00:25:39,749

the hoses are I'm sure to keep the dust

671

00:25:44,980 --> 00:25:41,620

down yes yeah

672

00:25:47,620 --> 00:25:44,990

that's quite a son well we can duck

673

00:25:50,169 --> 00:25:47,630

under here the whoa

674

00:25:53,049 --> 00:25:50,179

the walkways covenant there will be a

675

00:25:57,730 --> 00:25:53,059

new building there next time you come

676

00:25:59,940 --> 00:25:57,740

from yeah so anyway the Bay Area

677

00:26:03,370 --> 00:25:59,950

skeptics were at the Exploratorium

678

00:26:06,909 --> 00:26:03,380

after-dark program where we and the East

679

00:26:11,289 --> 00:26:06,919

Bay skeptics had demos that people could

680

00:26:13,210 --> 00:26:11,299

stop by and try out so the various

681

00:26:16,180 --> 00:26:13,220

skeptics did reprise of that Solano

682

00:26:18,190 --> 00:26:16,190

stroll of psychokinesis demo which was a

683

00:26:20,560 --> 00:26:18,200

kick and the Bay Area skeptics header

684

00:26:24,909 --> 00:26:20,570

I'm sorry the East Bay skeptics had a

685

00:26:28,860 --> 00:26:24,919

really neat astrology demo that they did

686

00:26:32,200 --> 00:26:28,870

where people would would come up and

687

00:26:33,940 --> 00:26:32,210

choose which of two statements best

688

00:26:36,730 --> 00:26:33,950

represented what had happened in the

689

00:26:39,700 --> 00:26:36,740

previous week and one statement was

690

00:26:42,370 --> 00:26:39,710

their actual horoscope and the other was

691

00:26:46,270 --> 00:26:42,380

the six-month sixth month you know

692

00:26:51,190 --> 00:26:46,280

opposites as it were astrological sign

693

00:26:54,880 --> 00:26:51,200

and then they would we would plot Kip

694

00:26:57,130 --> 00:26:54,890

miss on a big diagram and by golly by

695

00:27:00,039 --> 00:26:57,140

the end of the evening everything was a

696

00:27:02,169 --> 00:27:00,049

lovely bimodal distribution as one would

697

00:27:05,860 --> 00:27:02,179

expect with the you know two part chance

698

00:27:10,390 --> 00:27:05,870

so is it we had fun exciting behind us

699

00:27:12,070 --> 00:27:10,400

that was about to go I think so that's

700

00:27:13,659 --> 00:27:12,080

that big moment we got to get we

701
00:27:16,730 --> 00:27:13,669
actually gonna beep through the fence

702
00:27:19,380 --> 00:27:16,740
here yeah yeah

703
00:27:22,020 --> 00:27:19,390
Wow

704
00:27:25,200 --> 00:27:22,030
it's nice remote it's actually drawing a

705
00:27:26,340 --> 00:27:25,210
bit of a crowd yes yeah sidewalk close

706
00:27:29,669 --> 00:27:26,350
all right we'll have to go out in the

707
00:27:33,870 --> 00:27:29,679
long way back this way yeah now Jeanne

708
00:27:35,150 --> 00:27:33,880
on the way here today I think they're

709
00:27:38,700 --> 00:27:35,160
chasing us

710
00:27:40,080 --> 00:27:38,710
that's quite dramatic from the BART

711
00:27:41,070 --> 00:27:40,090
station to the National Center for

712
00:27:44,549 --> 00:27:41,080
Science education

713
00:27:46,770 --> 00:27:44,559

I just by chance I walked past a

714

00:27:48,060 --> 00:27:46,780

fascinating bookstore and you'll be

715

00:27:53,419 --> 00:27:48,070

pleased to know there's lots of things

716

00:27:58,560 --> 00:27:53,429

in there like books on UFOs homeopathy

717

00:27:59,940 --> 00:27:58,570

all sorts of things and it's just up

718

00:28:01,560 --> 00:27:59,950

that in the next corner if you want to

719

00:28:04,100 --> 00:28:01,570

check it out let's check it out I

720

00:28:06,510 --> 00:28:04,110

haven't been there before a brief look

721

00:28:08,340 --> 00:28:06,520

it's a fascinating book shop and this is

722

00:28:11,400 --> 00:28:08,350

where and some people already know this

723

00:28:20,670 --> 00:28:11,410

I've discovered a book birds of the West

724

00:28:24,990 --> 00:28:23,070

we've come into the bookshop genie I had

725

00:28:27,240 --> 00:28:25,000

to do it I had to do it I'm going to buy

726

00:28:31,920 --> 00:28:27,250

birds of the West Indies fourth edition

727

00:28:33,630 --> 00:28:31,930

by James Bond how about that bond James

728

00:28:36,480 --> 00:28:33,640

Bond that's right and you're not

729

00:28:38,190 --> 00:28:36,490

surprised you've been talking yourself

730

00:28:40,740 --> 00:28:38,200

into this for the last couple of hours

731

00:28:43,650 --> 00:28:40,750

oh what a wonderful bookshop this is we

732

00:28:46,980 --> 00:28:43,660

must get the name of it as we we we

733

00:28:48,750 --> 00:28:46,990

leave it's good a great section on UFOs

734

00:28:50,220 --> 00:28:48,760

and homeopathy and all the rest of it

735

00:28:53,340 --> 00:28:50,230

but we just passed the birds and the

736

00:28:56,640 --> 00:28:53,350

bees so this is true really adjacent

737

00:28:58,620 --> 00:28:56,650

shelves in fact fascinating a love old

738

00:29:00,090 --> 00:28:58,630

book shops well great to catch up with

739

00:29:03,150 --> 00:29:00,100

you I'm sure I'll be seeing you over the

740

00:29:06,180 --> 00:29:03,160

next little while and folks if you can

741

00:29:10,759 --> 00:29:06,190

come to sceptical next year don't miss

742

00:29:16,639 --> 00:29:13,169

the bookshop by the way is called

743

00:29:19,349 --> 00:29:16,649

babbling mania and that's at 1816

744

00:29:24,160 --> 00:29:19,359

Telegraph Avenue Oakland California and

745

00:29:31,570 --> 00:29:29,570

[Music]

746

00:29:52,430 --> 00:29:31,580

www.wrc.org

747

00:29:59,360 --> 00:29:57,950

- okay Ellis Ellis table paola the

748

00:30:02,060 --> 00:29:59,370

Dallaire Moses with other Buenos Aires

749

00:30:04,460 --> 00:30:02,070

in Argentina when the couch ammos

750

00:30:07,610 --> 00:30:04,470

podcasts a cochamo mimic a couch a todo

751

00:30:10,040 --> 00:30:07,620

el mundo como the skeptics own ojala

752

00:30:11,930 --> 00:30:10,050

pueden venir a visit Ana's algun dia las

753

00:30:17,300 --> 00:30:11,940

esperamos con nuestra Ricky Sima comida

754

00:30:21,260 --> 00:30:18,820

[Music]

755

00:30:22,820 --> 00:30:21,270

mientras tanto sugandha fruit and OD

756

00:30:35,040 --> 00:30:22,830

pseudo C ciminelli ciencia de

757

00:30:42,600 --> 00:30:40,790

and now a reading from the book of Tim

758

00:30:51,640 --> 00:30:42,610

[Music]

759

00:30:53,380 --> 00:30:51,650

with Tim Mendham hi my name is Tim

760

00:30:55,810 --> 00:30:53,390

Mendel I'm the executive officer of

761

00:30:59,230 --> 00:30:55,820

Austrian skeptic zinc and I'm the editor

762

00:31:01,560 --> 00:30:59,240

of our magazine the skeptic and today

763

00:31:05,260 --> 00:31:01,570

we'll be talking about citizen science

764

00:31:08,730 --> 00:31:05,270

the evolving phenomenon and this comes

765

00:31:12,940 --> 00:31:08,740

from the skeptic magazine of March 2019

766

00:31:20,850 --> 00:31:12,950

vol 39 number one we call the article

767

00:31:26,440 --> 00:31:24,340

in 1676 Isaac Newton wrote a letter to

768

00:31:29,050 --> 00:31:26,450

Robert Hooke mathematician philosopher

769

00:31:30,790 --> 00:31:29,060

the first curator of experiments with

770

00:31:33,730 --> 00:31:30,800

the Royal Society and a bit of a

771

00:31:36,010 --> 00:31:33,740

competitor D Newton in the letter Newton

772

00:31:38,290 --> 00:31:36,020

made the now famous statement that if I

773

00:31:41,110 --> 00:31:38,300

have seen further it is by standing on

774

00:31:43,330 --> 00:31:41,120

the shoulders of giants the concept

775

00:31:45,790 --> 00:31:43,340

wasn't new the version of the wording

776

00:31:48,420 --> 00:31:45,800

had been attributed to Bernard of shut

777

00:31:51,700 --> 00:31:48,430

in the 12th century john of salisbury

778

00:31:54,070 --> 00:31:51,710

writing about bernard at 1159 said

779

00:31:56,350 --> 00:31:54,080

bernard of shot used to compare us to

780

00:31:59,050 --> 00:31:56,360

dwarfs perched on the shoulders of

781

00:32:01,540 --> 00:31:59,060

giants he pointed out that we see more

782

00:32:03,670 --> 00:32:01,550

and farther than our predecessors not

783

00:32:06,040 --> 00:32:03,680

because we have keener vision or greater

784

00:32:09,930 --> 00:32:06,050

height because we are lifted up and

785

00:32:13,180 --> 00:32:09,940

borne aloft on their gigantic stature

786

00:32:15,610 --> 00:32:13,190

their reliance on others even if only as

787

00:32:18,700 --> 00:32:15,620

a push up to greater heights underpins

788

00:32:20,890 --> 00:32:18,710

everything that science is about the

789

00:32:22,900 --> 00:32:20,900

accumulation of knowledge building on

790

00:32:25,630 --> 00:32:22,910

previous discoveries and proposals and

791

00:32:28,780 --> 00:32:25,640

trying to see beyond your own limited

792

00:32:31,810 --> 00:32:28,790

horizon Galileo stressed the need for

793

00:32:34,030 --> 00:32:31,820

observation and experimentation but he

794

00:32:37,570 --> 00:32:34,040

owed much to another seminal figure born

795

00:32:39,720 --> 00:32:37,580

20 years earlier William Gilbert like

796

00:32:42,640 --> 00:32:39,730

Galileo Gilbert was a physician

797

00:32:44,860 --> 00:32:42,650

physicist and natural philosopher

798

00:32:48,610 --> 00:32:44,870

he's remembered today largely for his

799

00:32:50,410 --> 00:32:48,620

book de magnete 1600 and is credited as

800

00:32:53,470 --> 00:32:50,420

one of the originators of the term

801
00:32:55,150 --> 00:32:53,480
electricity he had been utilizing

802
00:32:58,780 --> 00:32:55,160
scientific method in his work and

803
00:33:01,720 --> 00:32:58,790
setting an example for his peers in his

804
00:33:04,060 --> 00:33:01,730
2002 book the scientists John Gribben

805
00:33:06,460 --> 00:33:04,070
said that although Galileo is one of the

806
00:33:09,100 --> 00:33:06,470
towering figures of science known by

807
00:33:11,500 --> 00:33:09,110
name to every educated person today and

808
00:33:12,330 --> 00:33:11,510
Gilbert is less well known than he

809
00:33:14,940 --> 00:33:12,340
deserves

810
00:33:16,870 --> 00:33:14,950
Gilbert had the earlier birthdate and

811
00:33:20,190 --> 00:33:16,880
chronologically speaking at least

812
00:33:22,600 --> 00:33:20,200
deserves the title of first scientist

813
00:33:24,400 --> 00:33:22,610

the word scientist was coined by

814

00:33:27,250 --> 00:33:24,410

Cambridge University historian and

815

00:33:30,400 --> 00:33:27,260

philosopher William waywell who used it

816

00:33:32,620 --> 00:33:30,410

in 1834 to describe someone who studies

817

00:33:34,660 --> 00:33:32,630

the structure and behavior of the

818

00:33:38,230 --> 00:33:34,670

physical and natural world through

819

00:33:40,000 --> 00:33:38,240

observation and experiment before that

820

00:33:42,669 --> 00:33:40,010

there were like Gilbert natural

821

00:33:44,740 --> 00:33:42,679

philosophers most had a scene occur that

822

00:33:47,440 --> 00:33:44,750

allowed them to apply themselves to a

823

00:33:49,150 --> 00:33:47,450

particular field of study like Newton's

824

00:33:51,370 --> 00:33:49,160

holding of the Lucasian chair of

825

00:33:53,470 --> 00:33:51,380

mathematics at Cambridge he was the

826

00:33:55,450 --> 00:33:53,480

second person to hold that role and was

827

00:33:58,270 --> 00:33:55,460

followed 300 years later by Stephen

828

00:34:00,790 --> 00:33:58,280

Hawking many early scientists were

829

00:34:03,490 --> 00:34:00,800

clergy like Roger Bacon Copernicus

830

00:34:04,960 --> 00:34:03,500

Mendel and William of Occam who were

831

00:34:07,720 --> 00:34:04,970

allowed to pursue their researchers

832

00:34:10,629 --> 00:34:07,730

under the benign gaze of their religious

833

00:34:11,919 --> 00:34:10,639

powers until they dared to suggest

834

00:34:14,070 --> 00:34:11,929

something that went against the

835

00:34:16,600 --> 00:34:14,080

established views of those power holders

836

00:34:19,149 --> 00:34:16,610

the many natural philosophers had other

837

00:34:21,399 --> 00:34:19,159

occupations and fulfilled their passions

838

00:34:24,850 --> 00:34:21,409

in the particular field of science with

839

00:34:26,680 --> 00:34:24,860

amateur and part-time investigation in

840

00:34:29,440 --> 00:34:26,690

fact that is the meaning of the word

841

00:34:32,649 --> 00:34:29,450

amateur someone who does something for

842

00:34:34,419 --> 00:34:32,659

the love of it the list of people who

843

00:34:36,550 --> 00:34:34,429

made major scientific discoveries

844

00:34:38,830 --> 00:34:36,560

without ever having a science degree is

845

00:34:41,830 --> 00:34:38,840

long including such luminaries as

846

00:34:44,290 --> 00:34:41,840

Leonardo da Vinci Ben Franklin William

847

00:34:47,290 --> 00:34:44,300

Herschel Michael Faraday Mary Anning

848

00:34:49,350 --> 00:34:47,300

Charles Goodyear and Thomas Edison not

849

00:34:53,530 --> 00:34:49,360

to mention Steve Jobs and Bill Gates

850

00:34:55,880 --> 00:34:53,540

both university dropouts Mary Anning is

851
00:34:57,800 --> 00:34:55,890
a particularly interesting case who

852
00:34:59,990 --> 00:34:57,810
anywhere Paul and collected fossils in

853
00:35:01,490 --> 00:35:00,000
the Lyme Regis region of England and

854
00:35:04,310 --> 00:35:01,500
sold what they found from a stall

855
00:35:07,220 --> 00:35:04,320
outside their home or later near a local

856
00:35:08,630 --> 00:35:07,230
pub to bring in an income Mary

857
00:35:11,120 --> 00:35:08,640
eventually took over the family business

858
00:35:13,000 --> 00:35:11,130
and devoted herself to finding and

859
00:35:15,500 --> 00:35:13,010
selling fossils to interested parties

860
00:35:16,510 --> 00:35:15,510
ranging from amateur researchers to the

861
00:35:19,820 --> 00:35:16,520
British Museum

862
00:35:21,380 --> 00:35:19,830
the tongue-twister she sells seashells

863
00:35:24,230 --> 00:35:21,390

by the seashore

864

00:35:26,150 --> 00:35:24,240

is possibly about her she is credited

865

00:35:29,170 --> 00:35:26,160

with the discovery of many important

866

00:35:32,810 --> 00:35:29,180

paleo logical finds the first complete

867

00:35:34,850 --> 00:35:32,820

Plesiosaurus and in 1828 the first

868

00:35:39,200 --> 00:35:34,860

British example of the flying reptiles

869

00:35:40,880 --> 00:35:39,210

known as pterosaurs in 2010 a hundred

870

00:35:43,760 --> 00:35:40,890

and sixty-three years after her death

871

00:35:45,800 --> 00:35:43,770

the Royal Society included Anning in the

872

00:35:47,570 --> 00:35:45,810

list of the ten British women who have

873

00:35:49,370 --> 00:35:47,580

most influenced the history of science

874

00:35:52,370 --> 00:35:49,380

there are those who have moved sideways

875

00:35:54,830 --> 00:35:52,380

in their scientific curious embryo

876

00:35:57,950 --> 00:35:54,840

transplants were pioneered by an

877

00:35:59,890 --> 00:35:57,960

industrialist genetics by a monk colour

878

00:36:02,840 --> 00:35:59,900

photography by two musicians

879

00:36:05,660 --> 00:36:02,850

photocopying by a lawyer automatic phone

880

00:36:08,540 --> 00:36:05,670

dialing by an undertaker Dunlop was a

881

00:36:11,240 --> 00:36:08,550

vet biro a sculptor and Herschel and

882

00:36:13,340 --> 00:36:11,250

organist these amateurs of these

883

00:36:15,950 --> 00:36:13,350

gentlemen scholars are the 17th to the

884

00:36:18,080 --> 00:36:15,960

19th centuries especially those not from

885

00:36:21,350 --> 00:36:18,090

the right families were often regarded

886

00:36:22,700 --> 00:36:21,360

with disdain as dadless particularly as

887

00:36:26,030 --> 00:36:22,710

the concept of the professional

888

00:36:30,350 --> 00:36:26,040

scientist came to the fore and for some

889

00:36:33,080 --> 00:36:30,360

it has remained that way in 1996 in

890

00:36:36,020 --> 00:36:33,090

editorial in science proclaimed an end

891

00:36:37,970 --> 00:36:36,030

to amateur science modern science can no

892

00:36:40,910 --> 00:36:37,980

longer be done by gifted amateurs with a

893

00:36:44,510 --> 00:36:40,920

magnifying glass copper wires and jars

894

00:36:47,570 --> 00:36:44,520

filled with alcohol Forrest M Mims the

895

00:36:49,400 --> 00:36:47,580

third and amateur scientist himself in a

896

00:36:51,140 --> 00:36:49,410

contributor to science and nature and

897

00:36:53,750 --> 00:36:51,150

other journals including writing for the

898

00:36:56,480 --> 00:36:53,760

amateur scientist column in Scientific

899

00:36:58,730 --> 00:36:56,490

American pointed out a few home truths

900

00:37:02,240 --> 00:36:58,740

in a response published in science

901
00:37:04,820 --> 00:37:02,250
itself he said the journal science was

902
00:37:07,040 --> 00:37:04,830
begun by a famous amateur scientist and

903
00:37:09,050 --> 00:37:07,050
inventor although his methods were

904
00:37:09,740 --> 00:37:09,060
sometimes ridiculed by some scholarly

905
00:37:12,160 --> 00:37:09,750
sciences

906
00:37:15,410 --> 00:37:12,170
their names are long forgotten but

907
00:37:17,510 --> 00:37:15,420
everyone remembers Thomas Edison he

908
00:37:21,170 --> 00:37:17,520
began science as a private venture in

909
00:37:23,960 --> 00:37:21,180
1880 expelled from school at the age of

910
00:37:26,330 --> 00:37:23,970
seven for being Edison was

911
00:37:28,220 --> 00:37:26,340
taught at home by his mother his life

912
00:37:31,100 --> 00:37:28,230
changed forever when he found an old

913
00:37:33,710 --> 00:37:31,110

copy of Michael Faraday's experimental

914

00:37:35,540 --> 00:37:33,720

researchers in electricity and promptly

915

00:37:38,630 --> 00:37:35,550

built every project in the book

916

00:37:40,310 --> 00:37:38,640

thus the self-taught English amateur

917

00:37:43,720 --> 00:37:40,320

scientist who was also schooled at home

918

00:37:46,820 --> 00:37:43,730

passed the torch to the young American

919

00:37:49,250 --> 00:37:46,830

mims summed up the role of amateurs they

920

00:37:52,040 --> 00:37:49,260

quote do science because it's what they

921

00:37:54,650 --> 00:37:52,050

love to do without remuneration or

922

00:37:56,990 --> 00:37:54,660

reward enthusiastic amateurs survey

923

00:37:58,880 --> 00:37:57,000

birds tagged butterflies measures

924

00:38:02,030 --> 00:37:58,890

sunlight and studied transient solar

925

00:38:04,460 --> 00:38:02,040

eclipse phenomena others counts sunspots

926
00:38:07,370 --> 00:38:04,470
discovered comets monitor variable stars

927
00:38:09,710 --> 00:38:07,380
and invent instruments tapping into that

928
00:38:13,040 --> 00:38:09,720
love and passion can benefit science

929
00:38:15,730 --> 00:38:13,050
greatly the corollary of individual

930
00:38:18,170 --> 00:38:15,740
amateur scientists is the group effort

931
00:38:19,730 --> 00:38:18,180
crowdsourcing information doing the

932
00:38:21,880 --> 00:38:19,740
grunt work that allows the true

933
00:38:24,800 --> 00:38:21,890
scientists to get on with the job of

934
00:38:26,420 --> 00:38:24,810
hypothesizing and writing papers former

935
00:38:29,150 --> 00:38:26,430
Australian chief scientist Alan thing

936
00:38:30,560 --> 00:38:29,160
called describes such a case in colonial

937
00:38:34,760 --> 00:38:30,570
Australia in an article in the

938
00:38:37,340 --> 00:38:34,770

conversation in quote in 1847 a young

939

00:38:39,890 --> 00:38:37,350

German named Ferdinand von Muller came

940

00:38:41,750 --> 00:38:39,900

to Adelaide with a dream to be the

941

00:38:44,660 --> 00:38:41,760

botanist who catalogued every plant

942

00:38:46,400 --> 00:38:44,670

species in Australia off he went

943

00:38:48,560 --> 00:38:46,410

collecting plants from Queensland to

944

00:38:51,020 --> 00:38:48,570

Victoria up mountains and over deserts

945

00:38:52,820 --> 00:38:51,030

for the better part of a decade he

946

00:38:55,220 --> 00:38:52,830

demonstrated beyond any doubt that

947

00:38:58,160 --> 00:38:55,230

Australia was very large and had a lot

948

00:39:01,820 --> 00:38:58,170

of plants then inspiration dawned a

949

00:39:04,070 --> 00:39:01,830

collection of collectors Muller realized

950

00:39:05,540 --> 00:39:04,080

that the way to catalog plants wasn't to

951
00:39:07,910 --> 00:39:05,550
walk around Australia collecting them

952
00:39:10,910 --> 00:39:07,920
but to sit very comfortably in Melbourne

953
00:39:12,950 --> 00:39:10,920
collecting collectors that's exactly

954
00:39:14,380 --> 00:39:12,960
what he did he recruited through

955
00:39:16,940 --> 00:39:14,390
advertisements in the newspapers

956
00:39:19,340 --> 00:39:16,950
teachers in country schools and the

957
00:39:22,280 --> 00:39:19,350
contacts made on his travels over the

958
00:39:23,579 --> 00:39:22,290
next forty years more than 1300 amateur

959
00:39:25,109 --> 00:39:23,589
enthusiasts would

960
00:39:27,390 --> 00:39:25,119
contribute to Mueller's flora of

961
00:39:29,759 --> 00:39:27,400
Australia his Network spanned the

962
00:39:32,519 --> 00:39:29,769
continent decades before Australia was a

963
00:39:35,489 --> 00:39:32,529

country it included more than 200 women

964

00:39:37,859 --> 00:39:35,499

and 20 young girls the youngest just six

965

00:39:41,160 --> 00:39:37,869

years old when she sent Mueller her

966

00:39:45,180 --> 00:39:41,170

first plant another example beginning on

967

00:39:47,279 --> 00:39:45,190

Christmas Day \$1,900 Frank M Chapman an

968

00:39:50,130 --> 00:39:47,289

early officer of the then nascent

969

00:39:50,880 --> 00:39:50,140

Audubon Society proposed a new holiday

970

00:39:53,849 --> 00:39:50,890

tradition

971

00:39:56,279 --> 00:39:53,859

a Christmas Bird census that would count

972

00:39:57,839 --> 00:39:56,289

birds during the holidays rather than

973

00:40:00,479 --> 00:39:57,849

what was readily undertaken to the time

974

00:40:03,209 --> 00:40:00,489

hunting them the data collected by

975

00:40:05,190 --> 00:40:03,219

observers over the past century allow

976

00:40:07,709 --> 00:40:05,200

Audubon researchers conservation

977

00:40:09,839 --> 00:40:07,719

biologists wildlife agencies and other

978

00:40:12,059 --> 00:40:09,849

interested individuals to study the

979

00:40:14,940 --> 00:40:12,069

long-term health and status of bird

980

00:40:16,680 --> 00:40:14,950

populations across North America when

981

00:40:19,170 --> 00:40:16,690

combined with other surveys such as the

982

00:40:20,640 --> 00:40:19,180

breeding bird survey it provides a

983

00:40:23,459 --> 00:40:20,650

picture of how the continents bird

984

00:40:27,329 --> 00:40:23,469

population have changed in time and

985

00:40:29,309 --> 00:40:27,339

space over the past hundred years all of

986

00:40:32,339 --> 00:40:29,319

this activity by passionate amateurs on

987

00:40:35,700 --> 00:40:32,349

mass leads to the concept of citizen

988

00:40:37,650 --> 00:40:35,710

science the first use of the term

989

00:40:39,870 --> 00:40:37,660

citizen scientist can be found in the

990

00:40:43,349 --> 00:40:39,880

magazine New Scientist in an article

991

00:40:45,650 --> 00:40:43,359

from October 1979 about very skeptical

992

00:40:49,140 --> 00:40:45,660

the failure of the science of ufology

993

00:40:52,049 --> 00:40:49,150

written by skeptic James Oberg he says

994

00:40:54,180 --> 00:40:52,059

if you follow G is not a science what

995

00:40:55,920 --> 00:40:54,190

then is it it might be considered as a

996

00:40:56,789 --> 00:40:55,930

protest movement against the

997

00:40:59,039 --> 00:40:56,799

impersonality

998

00:41:01,709 --> 00:40:59,049

and specialization of modern science

999

00:41:04,079 --> 00:41:01,719

which has all but eliminated the role of

1000

00:41:06,479 --> 00:41:04,089

the citizen scientists the amateur

1001
00:41:08,370 --> 00:41:06,489
investigator who in the past contributed

1002
00:41:11,910 --> 00:41:08,380
substantially to the development of

1003
00:41:13,799 --> 00:41:11,920
science through part-time dabbling now

1004
00:41:16,200 --> 00:41:13,809
the oxford english dictionary recently

1005
00:41:18,180 --> 00:41:16,210
defined citizen science a scientific

1006
00:41:20,549 --> 00:41:18,190
work undertaken by members of the

1007
00:41:22,410 --> 00:41:20,559
general public often in collaboration

1008
00:41:24,779 --> 00:41:22,420
with or under the direction of

1009
00:41:28,829 --> 00:41:24,789
professional scientists and scientific

1010
00:41:30,390 --> 00:41:28,839
institutions a 30 from 2016 indicates

1011
00:41:32,599 --> 00:41:30,400
that the largest impact of citizen

1012
00:41:35,309 --> 00:41:32,609
science is in research on biology

1013
00:41:37,560 --> 00:41:35,319

conservation and ecology and is utilized

1014

00:41:40,620 --> 00:41:37,570

mainly as a methodology a collective

1015

00:41:42,210 --> 00:41:40,630

and classifying data and the increasing

1016

00:41:44,610 --> 00:41:42,220

amount of data that scientists and

1017

00:41:46,500 --> 00:41:44,620

researchers need to deal with is a key

1018

00:41:49,320 --> 00:41:46,510

driver for the take-up of citizen

1019

00:41:51,360 --> 00:41:49,330

science for instance astronomical

1020

00:41:53,250 --> 00:41:51,370

observatories generate a staggering

1021

00:41:57,210 --> 00:41:53,260

amount of data the Hubble Space

1022

00:42:00,090 --> 00:41:57,220

Telescope operating since 1990 has made

1023

00:42:03,030 --> 00:42:00,100

over 1.3 million observations and

1024

00:42:05,610 --> 00:42:03,040

transmits around 20 gigabytes of raw

1025

00:42:08,160 --> 00:42:05,620

data every week the Atacama Large

1026

00:42:10,440 --> 00:42:08,170

millimeter array in Chile now

1027

00:42:13,800 --> 00:42:10,450

anticipates adding two terabytes of data

1028

00:42:16,080 --> 00:42:13,810

to its archives every day the large

1029

00:42:17,490 --> 00:42:16,090

synoptic survey telescope an optical

1030

00:42:21,300 --> 00:42:17,500

telescope currently under construction

1031

00:42:23,970 --> 00:42:21,310

in Chile will image the entire sky every

1032

00:42:26,700 --> 00:42:23,980

few nights it will be so sensitive that

1033

00:42:29,130 --> 00:42:26,710

will generate 10 million alerts per

1034

00:42:31,920 --> 00:42:29,140

night on new or transient sources

1035

00:42:35,220 --> 00:42:31,930

leading to a catalogue of over 15

1036

00:42:37,980 --> 00:42:35,230

petabytes after 10 years and the Square

1037

00:42:40,500 --> 00:42:37,990

Kilometre Array when completed in 2020

1038

00:42:42,840 --> 00:42:40,510

will be the most sensitive telescope in

1039

00:42:45,900 --> 00:42:42,850

the world in just one year of activity

1040

00:42:49,110 --> 00:42:45,910

it will generate more data than the

1041

00:42:51,120 --> 00:42:49,120

entire Internet this was a problem faced

1042

00:42:53,640 --> 00:42:51,130

by Edward Charles Pickering director of

1043

00:42:55,230 --> 00:42:53,650

the Harvard Observatory the prevalence

1044

00:42:57,900 --> 00:42:55,240

of photography at the observatory was

1045

00:42:59,970 --> 00:42:57,910

rising markedly with more data than

1046

00:43:02,340 --> 00:42:59,980

anyone had time to interpret the work

1047

00:43:04,110 --> 00:43:02,350

was tedious Duty's thought to lend

1048

00:43:06,150 --> 00:43:04,120

themselves to a cheaper and less

1049

00:43:08,190 --> 00:43:06,160

educated work force capable of

1050

00:43:12,000 --> 00:43:08,200

classifying stars rather than observing

1051
00:43:13,590 --> 00:43:12,010
them naturally this meant women during

1052
00:43:16,530 --> 00:43:13,600
bickerings tenure at the Harvard

1053
00:43:19,290 --> 00:43:16,540
Observatory from 1877 to his death in

1054
00:43:22,320 --> 00:43:19,300
1919 he gathered a crew of more than 80

1055
00:43:25,260 --> 00:43:22,330
women to catalog data some of these

1056
00:43:27,630 --> 00:43:25,270
women called computers would produce

1057
00:43:29,700 --> 00:43:27,640
significant work on their own some would

1058
00:43:32,520 --> 00:43:29,710
even earn a certain level of fame among

1059
00:43:34,410 --> 00:43:32,530
followers of female scientists but the

1060
00:43:37,370 --> 00:43:34,420
majority remembered not individually but

1061
00:43:41,460 --> 00:43:37,380
collectively by the demeaning moniker

1062
00:43:44,640 --> 00:43:41,470
Pickering's harem a speaker in knew he

1063
00:43:46,860 --> 00:43:44,650

needed help the harem were paid staff a

1064

00:43:48,200 --> 00:43:46,870

lot of scientific data was now readily

1065

00:43:50,569 --> 00:43:48,210

available online

1066

00:43:53,599 --> 00:43:50,579

which opens it up to bringing in amateur

1067

00:43:56,089 --> 00:43:53,609

researchers the tightening of resources

1068

00:43:58,970 --> 00:43:56,099

and limited funding for science and

1069

00:44:07,280 --> 00:43:58,980

research makes the concept of citizen

1070

00:44:09,319 --> 00:44:07,290

scientists almost a necessity that was

1071

00:44:15,710 --> 00:44:09,329

from the article people power from the

1072

00:44:22,900 --> 00:44:15,720

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1073

00:44:22,910 --> 00:44:32,130

[Music]

1074

00:44:40,330 --> 00:44:36,720

fatima ki te te te ricotta cast OA

1075

00:44:41,110 --> 00:44:40,340

Australia Cara the skip the chickpeas on

1076

00:44:44,650 --> 00:44:41,120

to you

1077

00:44:49,600 --> 00:44:44,660

cogito wrong we know what occurs two

1078

00:44:53,580 --> 00:44:49,610

days ago one sec I cheated sua ricotta

1079

00:44:57,910 --> 00:44:53,590

bad no Dottie deskah oh no autocast OA

1080

00:45:07,900 --> 00:44:57,920

euro Erina Cooney no kata bad a joke a

1081

00:45:11,760 --> 00:45:07,910

CMOS www.exim.gov she rabbit a homo

1082

00:45:15,760 --> 00:45:11,770

Pacino stop mad at me straw rizzuto

1083

00:45:19,150 --> 00:45:15,770

origami not kick-ass Osito you

1084

00:45:23,500 --> 00:45:19,160

Tsubasa no re butta Oh Calista

1085

00:45:27,730 --> 00:45:23,510

artis and RC no originally know origami

1086

00:45:28,290 --> 00:45:27,740

no horse toe-down rotisserie kata-kata

1087

00:45:45,450 --> 00:45:28,300

Chema's

1088

00:45:50,260 --> 00:45:47,710

thank you for listening to the skeptic

1089

00:45:51,970 --> 00:45:50,270

zone and as ever thank you to those

1090

00:45:56,500 --> 00:45:51,980

people who have come on board this year

1091

00:45:58,870 --> 00:45:56,510

and in the what nearly eleven twelve

1092

00:46:03,250 --> 00:45:58,880

years going back who have come on board

1093

00:46:04,870 --> 00:46:03,260

to help the skeptic zone stay on air on

1094

00:46:08,440 --> 00:46:04,880

the Internet

1095

00:46:10,510 --> 00:46:08,450

in your ears in your car while you're

1096

00:46:13,329 --> 00:46:10,520

jogging walking the dog doing the dishes

1097

00:46:16,720 --> 00:46:13,339

driving around picking up the kids from

1098

00:46:20,680 --> 00:46:16,730

school listening to the skeptic zone and

1099

00:46:25,539 --> 00:46:20,690

I guess my message for 2020 is lets you

1100

00:46:27,339 --> 00:46:25,549

and I slay some dragons in 2020 signing

1101
00:46:33,670 --> 00:46:27,349
off from the Bay Area San Francisco this

1102
00:46:35,740 --> 00:46:33,680
is Richard Saunders you've been

1103
00:46:42,670 --> 00:46:35,750
listening to the skeptic zone podcast

1104
00:46:45,130 --> 00:46:42,680
please visit our website at wwlp.com tax

1105
00:46:49,029 --> 00:46:45,140
and to access the bat catalog of

1106
00:46:50,890 --> 00:46:49,039
episodes going back to 2008 you can

1107
00:46:53,950 --> 00:46:50,900
follow the skeptic zone podcast on

1108
00:46:56,230 --> 00:46:53,960
twitter at skeptic zone visit our

1109
00:46:59,589 --> 00:46:56,240
facebook page or leave a review on

1110
00:47:02,950 --> 00:46:59,599
itunes you can also support the skeptic

1111
00:47:05,319 --> 00:47:02,960
zone via patreon or PayPal the skeptic

1112
00:47:07,089 --> 00:47:05,329
zone podcast is an independent

1113
00:47:09,460 --> 00:47:07,099

production the views and opinions

1114

00:47:11,620 --> 00:47:09,470

expressed on the skeptic zone are not

1115

00:47:14,540 --> 00:47:11,630

necessarily those of Australian skeptics

1116

00:47:24,759 --> 00:47:14,550

or any other skeptical organization

1117

00:47:30,799 --> 00:47:28,150

the concept was a new averting of

1118

00:47:38,569 --> 00:47:30,809

burning version of the wording it's out

1119

00:47:43,069 --> 00:47:38,579

of the new word the one start with the

1120

00:47:47,319 --> 00:47:43,079

concept yeah not to mention Steve Jobs

1121

00:47:53,150 --> 00:47:47,329

and Bill Gates both University dropouts

1122

00:48:02,029 --> 00:47:53,160

that was by this beat that was like

1123

00:48:05,450 --> 00:48:02,039

another that was you're fine brilliant I

1124

00:48:10,690 --> 00:48:05,460

never catch it again I have to put that

1125

00:48:14,710 --> 00:48:10,700

in the director's cut kraut was a temp

1126

00:48:17,690 --> 00:48:14,720

let's stay a sort of thumb yet ghosts

1127

00:48:18,259 --> 00:48:17,700

all right you diehard fans died and dice

1128

00:48:20,930 --> 00:48:18,269

get it

1129

00:48:23,799 --> 00:48:20,940

mmm-hmm here we go last time for this

1130

00:48:27,200 --> 00:48:23,809

year I got a d-10 10-sided dice with me

1131

00:48:29,089 --> 00:48:27,210

I'm gonna roll it three times and I'll

1132

00:48:31,759 --> 00:48:29,099

leave it up to you to guess or predict

1133

00:48:34,309 --> 00:48:31,769

or whatever you want to do in fact I

1134

00:48:37,009 --> 00:48:34,319

remember at skeptic on in Melbourne

1135

00:48:38,959 --> 00:48:37,019

I gave four or five or six I can't

1136

00:48:42,319 --> 00:48:38,969

remember I lost count people their own

1137

00:48:43,489 --> 00:48:42,329

skeptic zone 10-sided dice so maybe you

1138

00:48:45,380 --> 00:48:43,499

can play along with me too

1139

00:48:48,200 --> 00:48:45,390

can roll it three times predict what

1140

00:48:52,910 --> 00:48:48,210

numbers come up here we go are you

1141

00:48:56,319 --> 00:48:52,920

predicting here's the first number six

1142

00:48:59,299 --> 00:48:56,329

number six where's my skeptic zone pen

1143

00:49:02,019 --> 00:48:59,309

never mind just have to remember six

1144

00:49:07,160 --> 00:49:02,029

second number coming up here it is