

1
00:00:05,980 --> 00:00:13,679
welcome to the skeptic zone the podcast

2
00:00:09,099 --> 00:00:13,679
from Australia for science and reason

3
00:00:23,390 --> 00:00:31,350
hello and welcome to the skeptics are an

4
00:00:26,129 --> 00:00:33,600
episode number 381 47th of every 2016

5
00:00:31,350 --> 00:00:35,670
Richard Saunders here with you from

6
00:00:33,600 --> 00:00:37,829
Sydney Australia coming up on this

7
00:00:35,670 --> 00:00:40,590
week's show what a treat what a special

8
00:00:37,829 --> 00:00:43,140
treat my old friend dr. Phil Plait known

9
00:00:40,590 --> 00:00:44,670
as the bad astronomer having caught up

10
00:00:43,140 --> 00:00:46,289
with Phil for a while we're going to be

11
00:00:44,670 --> 00:00:49,010
talking about the passing of the

12
00:00:46,289 --> 00:00:52,649
astronaut edgar mitchell and some of the

13
00:00:49,009 --> 00:00:54,599
well far-fetched things he believed in

14
00:00:52,649 --> 00:00:57,658
Phil's going to talk to us also about

15
00:00:54,600 --> 00:01:00,300
exploring the universe and UFOs and all

16
00:00:57,658 --> 00:01:03,210
sorts of good space things like that the

17
00:01:00,299 --> 00:01:05,219
bad astronomer dr. Phil Plait kicking

18
00:01:03,210 --> 00:01:07,260
off this week's episode of the skeptic

19
00:01:05,219 --> 00:01:09,329
zone following notes a week in science

20
00:01:07,260 --> 00:01:14,130
from the Royal Institution of Australia

21
00:01:09,329 --> 00:01:18,478
w WR ia us ova you keeping with the

22
00:01:14,129 --> 00:01:23,219
space theme are we talking about the

23
00:01:18,478 --> 00:01:25,109
roundness of planet Earth is it flat yes

24
00:01:23,219 --> 00:01:27,480
somebody in the media has been saying

25
00:01:25,109 --> 00:01:30,329
recently find out with a week in science

26
00:01:27,480 --> 00:01:32,790
well in this round it's not flat just

27
00:01:30,329 --> 00:01:35,219
thought I'd let you know after that a

28
00:01:32,790 --> 00:01:38,160
brief report from me about this mark

29

00:01:35,219 --> 00:01:40,170
zuckerberg story where he took his

30
00:01:38,159 --> 00:01:43,500
daughter to get her vaccination shots

31
00:01:40,170 --> 00:01:47,280
and the anti-vaccination crowd came out

32
00:01:43,500 --> 00:01:49,890
of the woodwork and left a very nasty

33
00:01:47,280 --> 00:01:52,769
but telling comments on social media

34
00:01:49,890 --> 00:01:54,299
I'll be reading out some of those then

35
00:01:52,769 --> 00:01:56,729
to round off the show it's Sydney

36
00:01:54,299 --> 00:01:58,979
skeptics in the pub where I'll be asking

37
00:01:56,730 --> 00:02:02,090
the question if you had a magic wand if

38
00:01:58,980 --> 00:02:04,620
skeptics had a magic wand or some way to

39
00:02:02,090 --> 00:02:09,140
make people see our point of view would

40
00:02:04,620 --> 00:02:11,908
we do it would we just dispense with

41
00:02:09,139 --> 00:02:15,179
hours of argument and reasoning and

42
00:02:11,908 --> 00:02:18,179
logic and examples or would we just like

43
00:02:15,180 --> 00:02:20,219

to wave our magic one also during the

44

00:02:18,180 --> 00:02:21,780

flow the ebb and flow of skeptics in the

45

00:02:20,219 --> 00:02:24,419

pub for some reason we end up talking

46

00:02:21,780 --> 00:02:26,189

about ghost hunting but that skeptics in

47

00:02:24,419 --> 00:02:29,518

the pub for you folks especially the one

48

00:02:26,189 --> 00:02:31,318

here in sydney wow what fun it is just

49

00:02:29,519 --> 00:02:33,599

lots of interesting people talking about

50

00:02:31,318 --> 00:02:34,329

whatever we want to talk about the first

51

00:02:33,598 --> 00:02:35,979

Thursday

52

00:02:34,330 --> 00:02:38,860

of the month if you're in Sydney at the

53

00:02:35,979 --> 00:02:41,560

Crown Hotel which is near museum station

54

00:02:38,860 --> 00:02:46,450

more details at skeptics calm today you

55

00:02:41,560 --> 00:02:47,770

or just look it up on meetup com thank

56

00:02:46,449 --> 00:02:49,509

you to all those listeners thank you

57

00:02:47,770 --> 00:02:51,730

very much indeed who have been sending

58
00:02:49,509 --> 00:02:54,370
me very kind and heartfelt messages

59
00:02:51,729 --> 00:02:56,979
about Fred the cat miss Fred the cat

60
00:02:54,370 --> 00:02:59,080
very much you should be right here right

61
00:02:56,979 --> 00:03:02,289
now in this office either sitting on my

62
00:02:59,080 --> 00:03:07,150
keyboard or at my feet looking at me

63
00:03:02,289 --> 00:03:08,679
saying come on time for food it's just

64
00:03:07,150 --> 00:03:09,939
not the same without Fred the cat the

65
00:03:08,680 --> 00:03:12,159
skeptic zone isn't quite the same

66
00:03:09,939 --> 00:03:14,229
without frantic at gotta admit it but

67
00:03:12,159 --> 00:03:16,030
yes thank you so much so many kind

68
00:03:14,229 --> 00:03:18,699
messages have been coming and I even got

69
00:03:16,030 --> 00:03:21,340
a card can you believe it it is so sweet

70
00:03:18,699 --> 00:03:23,560
thank you yes Fred will long be

71
00:03:21,340 --> 00:03:27,069
remembered pronounce time for me to run

72
00:03:23,560 --> 00:03:30,159
downstairs and to commemorate Fred I

73
00:03:27,069 --> 00:03:31,989
might have a Vegemite sandwich there is

74
00:03:30,159 --> 00:03:33,669
reasoning behind this every time I had a

75
00:03:31,990 --> 00:03:37,420
Vegemite sandwich Fred would suddenly

76
00:03:33,669 --> 00:03:40,569
appear on the chair next to me look at

77
00:03:37,419 --> 00:03:43,449
me and he was waiting for you to dab a

78
00:03:40,569 --> 00:03:46,689
little bit of Vegemite on my finger and

79
00:03:43,449 --> 00:03:49,988
Abby's poor and look at his poor that Oh

80
00:03:46,689 --> 00:03:52,000
a bit of Vegemite and lick it up that

81
00:03:49,989 --> 00:03:55,650
was Fred while I do that I hope you

82
00:03:52,000 --> 00:03:55,650
enjoy the skeptic zone

83
00:04:15,659 --> 00:04:20,949
joining me now on the line from well

84
00:04:18,610 --> 00:04:22,720
sort of outside boulder colorado in the

85
00:04:20,949 --> 00:04:25,389
countryside there with a few goats and

86

00:04:22,720 --> 00:04:28,030
things floating about it's my old friend

87
00:04:25,389 --> 00:04:29,500
dr. Phil Plait otherwise known and I

88
00:04:28,029 --> 00:04:32,859
think you're still known as the bad

89
00:04:29,500 --> 00:04:35,470
astronomer hello Phil I Richard hello

90
00:04:32,860 --> 00:04:37,540
Richards listeners there's been a while

91
00:04:35,470 --> 00:04:41,050
it's been a while Phil now we've known

92
00:04:37,540 --> 00:04:42,520
each other Oh since about 2003-2004

93
00:04:41,050 --> 00:04:44,460
something like that in fact you were

94
00:04:42,519 --> 00:04:46,389
against here in Australia at the

95
00:04:44,459 --> 00:04:50,289
Australian skeptics National Convention

96
00:04:46,389 --> 00:04:53,469
way back in 2004 we flew you out that

97
00:04:50,290 --> 00:04:55,600
was a highlight of my life that was my

98
00:04:53,470 --> 00:04:57,760
first trip to Australia and I just had

99
00:04:55,600 --> 00:04:59,050
the best time I was just thinking about

100
00:04:57,759 --> 00:05:01,209

that meeting the other day as a matter

101

00:04:59,050 --> 00:05:04,449

of fact I had so much fun it was great

102

00:05:01,209 --> 00:05:06,159

and the last time we caught up was was

103

00:05:04,449 --> 00:05:08,560

it not last year but maybe the year

104

00:05:06,160 --> 00:05:10,990

before in Sydney you're out here to give

105

00:05:08,560 --> 00:05:14,589

a talk or two and we had the pleasure of

106

00:05:10,990 --> 00:05:17,980

visiting the Sydney Observatory right

107

00:05:14,589 --> 00:05:19,299

that was fun that was amazing I have a

108

00:05:17,980 --> 00:05:21,250

lot of friends in Australia a lot of

109

00:05:19,300 --> 00:05:23,829

astronomers and just other folks and so

110

00:05:21,250 --> 00:05:25,060

it was nice to catch up with a few and

111

00:05:23,829 --> 00:05:27,370

we caught up with a few there at the

112

00:05:25,060 --> 00:05:31,990

observatory and it was a gorgeous night

113

00:05:27,370 --> 00:05:34,420

and we went out and I got to look at the

114

00:05:31,990 --> 00:05:38,050

sky which is so different down there

115
00:05:34,420 --> 00:05:39,189
that hemisphere than up here and if you

116
00:05:38,050 --> 00:05:43,840
remember looking through the telescope

117
00:05:39,189 --> 00:05:45,759
at oh my gosh ada Carinae and all these

118
00:05:43,839 --> 00:05:48,789
different objects ada Carinae is a a

119
00:05:45,759 --> 00:05:51,310
star on the verge of exploding famous

120
00:05:48,790 --> 00:05:52,870
Hubble picture of that and and I've seen

121
00:05:51,310 --> 00:05:54,459
a million pictures of all these objects

122
00:05:52,870 --> 00:05:57,280
but to actually stand at the eyepiece

123
00:05:54,459 --> 00:05:59,379
and see them that was pretty cool that

124
00:05:57,279 --> 00:06:01,269
was cool and it's one of the great

125
00:05:59,379 --> 00:06:03,399
advantages of knowing someone like you

126
00:06:01,269 --> 00:06:06,609
feel if we turn up that the observatory

127
00:06:03,399 --> 00:06:09,009
we often get them a special pass to see

128
00:06:06,610 --> 00:06:10,408
areas where normal normal humans don't

129
00:06:09,009 --> 00:06:13,139
get to go now Phil

130
00:06:10,408 --> 00:06:15,149
oh yeah that's true all those years ago

131
00:06:13,139 --> 00:06:17,550
of course you were famous and and I

132
00:06:15,149 --> 00:06:21,059
first heard about you because of bad

133
00:06:17,550 --> 00:06:24,528
astronomy and your writings especially

134
00:06:21,059 --> 00:06:26,999
on the so-called moon landing hoax and

135
00:06:24,528 --> 00:06:28,528
things like the face on Mars and things

136
00:06:26,999 --> 00:06:30,539
like that and I was just thinking the

137
00:06:28,528 --> 00:06:34,079
other day when I will get to this topic

138
00:06:30,538 --> 00:06:38,968
soon the passing of the astronaut edgar

139
00:06:34,079 --> 00:06:41,308
mitchell that this is one thorn in our

140
00:06:38,968 --> 00:06:44,218
side that's more or less God away you

141
00:06:41,309 --> 00:06:46,529
hardly ever hear about the moon landing

142
00:06:44,218 --> 00:06:51,058
hoax anymore are you responsible for

143

00:06:46,528 --> 00:06:54,478
that I take full credit you know we all

144
00:06:51,059 --> 00:06:56,129
played our parts everybody who stood up

145
00:06:54,478 --> 00:06:58,050
and said listen this idea is ridiculous

146
00:06:56,129 --> 00:07:00,479
of course we went to the moon and here's

147
00:06:58,050 --> 00:07:02,668
why yeah and here's where the arguments

148
00:07:00,478 --> 00:07:05,519
are wrong from the people who believe

149
00:07:02,668 --> 00:07:07,918
the landings were faked and yeah back

150
00:07:05,519 --> 00:07:11,158
back in around the time you and I first

151
00:07:07,918 --> 00:07:13,378
met in the early 2000s uh gosh the web

152
00:07:11,158 --> 00:07:16,829
was young and new all the electrons were

153
00:07:13,379 --> 00:07:18,718
still shiny and be indented but back

154
00:07:16,829 --> 00:07:21,569
then I I actually wrote up a web page

155
00:07:18,718 --> 00:07:25,019
about this because fox TV and aaron a

156
00:07:21,569 --> 00:07:27,449
special called conspiracy theory did we

157
00:07:25,019 --> 00:07:29,249

land on the moon and if they just said

158

00:07:27,449 --> 00:07:31,528

yes it would have been a very short TV

159

00:07:29,249 --> 00:07:33,269

show but they put on all these

160

00:07:31,528 --> 00:07:35,428

ridiculous claims and I wound up writing

161

00:07:33,269 --> 00:07:37,259

about it and when I went to Australia I

162

00:07:35,428 --> 00:07:38,938

gave several talks about that was so

163

00:07:37,259 --> 00:07:41,819

much fun especially at the Parkes radio

164

00:07:38,939 --> 00:07:44,159

observatory and at parts they're very

165

00:07:41,819 --> 00:07:46,649

proud of their involvement with the

166

00:07:44,158 --> 00:07:50,368

Apollo missions so that was a real treat

167

00:07:46,649 --> 00:07:52,949

to go there but yeah you know over the

168

00:07:50,369 --> 00:07:54,629

years like most silly conspiracy

169

00:07:52,949 --> 00:07:57,959

theories that are very specific at least

170

00:07:54,629 --> 00:08:00,088

its kind of died off and most of the the

171

00:07:57,959 --> 00:08:02,610

hardcore people are still around yeah

172
00:08:00,088 --> 00:08:04,678
the sort of the hangers on the people

173
00:08:02,610 --> 00:08:06,209
that might just kind of sort of believe

174
00:08:04,678 --> 00:08:09,918
it and talk about it I've kind of died

175
00:08:06,209 --> 00:08:13,918
off I think and there are still a few

176
00:08:09,918 --> 00:08:16,889
really strongly opinionated people out

177
00:08:13,918 --> 00:08:20,698
there but their audience has basically

178
00:08:16,889 --> 00:08:22,468
disappeared yeah and and things like new

179
00:08:20,699 --> 00:08:24,030
high-resolution photographs of the

180
00:08:22,468 --> 00:08:26,610
landing sites came

181
00:08:24,029 --> 00:08:28,619
away some years ago now and there were

182
00:08:26,610 --> 00:08:30,480
even the Mythbusters got into the act

183
00:08:28,620 --> 00:08:33,659
and they had a special all about some of

184
00:08:30,480 --> 00:08:35,850
the the moon landing conspiracies but I

185
00:08:33,659 --> 00:08:38,069
remember the talks you gave in that era

186
00:08:35,850 --> 00:08:40,320
were fascinating and I learned a lot

187
00:08:38,070 --> 00:08:42,330
from those talks because i was able then

188
00:08:40,320 --> 00:08:44,220
to engage with other people said or how

189
00:08:42,330 --> 00:08:46,350
can you explain the two shadows or the

190
00:08:44,220 --> 00:08:47,639
no shadows or I'm sorry not the two

191
00:08:46,350 --> 00:08:49,080
shadows the shadows at different angles

192
00:08:47,639 --> 00:08:51,689
and all this sort break they're not

193
00:08:49,080 --> 00:08:53,009
parallel they're not parallel and how do

194
00:08:51,690 --> 00:08:55,530
you explain this that and the other way

195
00:08:53,009 --> 00:08:57,019
your talk did exactly that and at the

196
00:08:55,529 --> 00:09:00,350
time I think it was the perfect

197
00:08:57,019 --> 00:09:02,730
skeptical investigation of a of an issue

198
00:09:00,350 --> 00:09:07,200
well thank you that's very kind of you

199
00:09:02,730 --> 00:09:12,480
and for me the as aggravating as it all

200

00:09:07,200 --> 00:09:14,520
was as difficult as as it was to keep my

201
00:09:12,480 --> 00:09:16,740
cool sometimes when been confronting

202
00:09:14,519 --> 00:09:18,809
these people the beauty of it was that I

203
00:09:16,740 --> 00:09:21,629
learned so much about the moon I learned

204
00:09:18,809 --> 00:09:23,429
about the Apollo missions I learned

205
00:09:21,629 --> 00:09:25,980
about all the missions previous and

206
00:09:23,429 --> 00:09:29,129
subsequent to them about the moon itself

207
00:09:25,980 --> 00:09:30,240
and and also just and you know anytime

208
00:09:29,129 --> 00:09:35,100
you you investigate something

209
00:09:30,240 --> 00:09:37,379
skeptically you find avenues of insight

210
00:09:35,100 --> 00:09:39,300
for example the shadows not being

211
00:09:37,379 --> 00:09:41,129
parallel why why is that well it's

212
00:09:39,299 --> 00:09:42,929
perspective and you see this all the

213
00:09:41,129 --> 00:09:44,759
time but your brain is just kind of

214
00:09:42,929 --> 00:09:47,069

wired to ignore it and then when you

215

00:09:44,759 --> 00:09:49,710

when you see it it's like opening your

216

00:09:47,070 --> 00:09:51,870

eyes for the first time and so for me

217

00:09:49,710 --> 00:09:54,810

that was it was it was lovely it was

218

00:09:51,870 --> 00:09:58,679

just a new way of investigating the

219

00:09:54,809 --> 00:10:02,339

world and learning how to dig down into

220

00:09:58,679 --> 00:10:05,969

a conspiracy theory into pseudoscience

221

00:10:02,340 --> 00:10:09,629

and figure out how to disrupt it it was

222

00:10:05,970 --> 00:10:11,879

and it was just a such a joy to see that

223

00:10:09,629 --> 00:10:16,590

talk and your wonderful illustrations

224

00:10:11,879 --> 00:10:18,539

and you you reproduced to some extent

225

00:10:16,590 --> 00:10:20,759

some of the famous photographs here on

226

00:10:18,539 --> 00:10:23,519

earth and showed how reflections from

227

00:10:20,759 --> 00:10:26,129

the landscape can lighten things and how

228

00:10:23,519 --> 00:10:27,779

shadows work it was a well-done Phil cop

229
00:10:26,129 --> 00:10:28,980
mark thank you it was fun to put it

230
00:10:27,779 --> 00:10:31,169
together it's fun to put it together

231
00:10:28,980 --> 00:10:34,019
they're talking about Apollo let's get

232
00:10:31,169 --> 00:10:37,740
back to the recent passing of a snore

233
00:10:34,019 --> 00:10:39,090
astronaut edgar mitchell now

234
00:10:37,740 --> 00:10:40,980
been reading a lot of comments about him

235
00:10:39,090 --> 00:10:42,570
lately over the last day the news has

236
00:10:40,980 --> 00:10:45,360
only really just come out that he he

237
00:10:42,570 --> 00:10:47,100
passed away he was on Apollo 14 he was

238
00:10:45,360 --> 00:10:50,129
one of the men who walked on the moon

239
00:10:47,100 --> 00:10:51,420
but he's also he's quite a double sword

240
00:10:50,129 --> 00:10:54,809
double-edged sword because he's also

241
00:10:51,419 --> 00:10:56,699
known for his what shall we say somewhat

242
00:10:54,809 --> 00:10:59,759
far-fetched conspiracy theories belief

243

00:10:56,700 --> 00:11:03,420
in aliens and he was famous for

244

00:10:59,759 --> 00:11:06,740
conducting unofficial ESP tests from

245

00:11:03,419 --> 00:11:12,329
orbit it was quite quite a mixed bag

246

00:11:06,740 --> 00:11:14,399
yeah this is it's an interesting it's an

247

00:11:12,330 --> 00:11:17,310
interesting topic you know we all have

248

00:11:14,399 --> 00:11:20,009
these contradictory beliefs and

249

00:11:17,309 --> 00:11:21,899
hopefully when it's shown when they're

250

00:11:20,009 --> 00:11:23,189
shown to us and you say you believe this

251

00:11:21,899 --> 00:11:24,870
but you also believe this and then you

252

00:11:23,190 --> 00:11:27,990
look at them and go oh yeah one of these

253

00:11:24,870 --> 00:11:30,810
must be wrong that happens but sometimes

254

00:11:27,990 --> 00:11:32,930
it doesn't and sometimes you can really

255

00:11:30,809 --> 00:11:35,939
dig in and that can happen to anybody

256

00:11:32,929 --> 00:11:38,779
and it certainly it certainly happened

257

00:11:35,940 --> 00:11:41,460
in Mitchell's case here's a man who

258
00:11:38,779 --> 00:11:45,750
walked on the moon ii was the 6th human

259
00:11:41,460 --> 00:11:49,820
being to walk on the moon and look you

260
00:11:45,750 --> 00:11:52,980
know let's be clear for me ESP is a

261
00:11:49,820 --> 00:11:54,900
scientific hypothesis you you have a you

262
00:11:52,980 --> 00:11:57,509
have some scattered evidence which

263
00:11:54,899 --> 00:11:59,850
indicates that perhaps people can

264
00:11:57,509 --> 00:12:01,470
communicate telepathically or you can

265
00:11:59,850 --> 00:12:04,129
move things with your mind or something

266
00:12:01,470 --> 00:12:08,639
like that that's a perfectly acceptable

267
00:12:04,129 --> 00:12:10,950
scientific hypothesis say some place to

268
00:12:08,639 --> 00:12:14,250
start but then that's the place to start

269
00:12:10,950 --> 00:12:16,950
you have to test it and back then back

270
00:12:14,250 --> 00:12:21,419
at apollo 14 which was in the early

271
00:12:16,950 --> 00:12:23,910

1970s um that's a that was a time when

272

00:12:21,419 --> 00:12:26,370

it was it was sort of really popular i

273

00:12:23,909 --> 00:12:27,870

was yes absolutely yes that was the time

274

00:12:26,370 --> 00:12:30,210

were you together and all that sort of

275

00:12:27,870 --> 00:12:32,669

stuff Oh exactly and people were testing

276

00:12:30,210 --> 00:12:33,990

it but the tests were terrible and as

277

00:12:32,669 --> 00:12:37,199

far as I'm concerned you know you can

278

00:12:33,990 --> 00:12:38,970

say it when you're when you're testing a

279

00:12:37,200 --> 00:12:41,310

scientific hypothesis you say listen I

280

00:12:38,970 --> 00:12:42,720

can hold up a card and there's somebody

281

00:12:41,309 --> 00:12:44,129

across the room and maybe they can tell

282

00:12:42,720 --> 00:12:45,779

what card I'm holding up because we're

283

00:12:44,129 --> 00:12:48,419

communicating telepathically and if it

284

00:12:45,779 --> 00:12:49,919

doesn't work you can say well maybe

285

00:12:48,419 --> 00:12:51,299

didn't work because there are too many

286

00:12:49,919 --> 00:12:54,240

other people around in

287

00:12:51,299 --> 00:12:56,429

with the signal so hey you know what a

288

00:12:54,240 --> 00:12:58,110

good control experiment would be to take

289

00:12:56,429 --> 00:13:00,329

a human being and put them a hundred

290

00:12:58,110 --> 00:13:03,269

thousand miles away from the earth right

291

00:13:00,330 --> 00:13:06,570

yeah so so you know in effect the idea

292

00:13:03,269 --> 00:13:09,149

of testing this idea of telepathically

293

00:13:06,570 --> 00:13:11,790

communicating with people through ESP uh

294

00:13:09,149 --> 00:13:13,919

and doing that on board an Apollo

295

00:13:11,789 --> 00:13:16,679

capsule on the way to and from the moon

296

00:13:13,919 --> 00:13:19,439

that's a great idea I kind of like it i

297

00:13:16,679 --> 00:13:21,509

can imagine nasa with their their

298

00:13:19,440 --> 00:13:26,459

knickers in a twist guys were so

299

00:13:21,509 --> 00:13:29,370

straight-laced uh but still it's not a

300
00:13:26,458 --> 00:13:32,278
bad idea from what i've read and what

301
00:13:29,370 --> 00:13:34,230
I've heard now and I should say Edgar

302
00:13:32,278 --> 00:13:36,360
Mitchell did this he got together with

303
00:13:34,230 --> 00:13:38,850
some some people and they they won this

304
00:13:36,360 --> 00:13:42,149
out James Oberg who was a space

305
00:13:38,850 --> 00:13:43,620
historian and and has written about many

306
00:13:42,149 --> 00:13:45,629
of these things has said that in fact

307
00:13:43,620 --> 00:13:47,940
Mitchell's tests weren't very good they

308
00:13:45,629 --> 00:13:49,679
weren't controlling carefully and so

309
00:13:47,940 --> 00:13:52,410
they really didn't wind up showing much

310
00:13:49,679 --> 00:13:55,199
and he he claimed i think that there was

311
00:13:52,409 --> 00:13:56,549
a 25-percent hit rate but that this

312
00:13:55,200 --> 00:13:58,649
would you know that basically twenty

313
00:13:56,549 --> 00:14:00,088
five percent of the of the guesses were

314

00:13:58,649 --> 00:14:02,809
accurate way more than to expect from

315
00:14:00,089 --> 00:14:05,610
random chance but according to Oberg

316
00:14:02,809 --> 00:14:07,559
this claim is probably exaggerated that

317
00:14:05,610 --> 00:14:08,940
the tests weren't is carefully

318
00:14:07,559 --> 00:14:11,069
controlled as they should have been yeah

319
00:14:08,940 --> 00:14:14,370
yeah well but I know I take your point

320
00:14:11,070 --> 00:14:16,320
that why not and inspect especially in

321
00:14:14,370 --> 00:14:20,070
that day and age in the early 70s where

322
00:14:16,320 --> 00:14:22,770
ah there was a almost a broad acceptance

323
00:14:20,070 --> 00:14:24,778
that these things were real it's strange

324
00:14:22,769 --> 00:14:26,730
Who am I mean I was only a very little

325
00:14:24,778 --> 00:14:29,610
kid at the time but even I remember that

326
00:14:26,730 --> 00:14:32,100
that feeling the the press were

327
00:14:29,610 --> 00:14:33,899
certainly that's how they treated think

328
00:14:32,100 --> 00:14:36,930

scientists were investigating it so from

329

00:14:33,899 --> 00:14:38,009

that point of view actually I and I sort

330

00:14:36,929 --> 00:14:41,399

of tend to agree with what you're saying

331

00:14:38,009 --> 00:14:43,379

well why not but in more recent times

332

00:14:41,399 --> 00:14:45,198

he's been I guess he's been more known

333

00:14:43,379 --> 00:14:47,610

for his conspiracy theories regarding

334

00:14:45,198 --> 00:14:49,409

friendly aliens or aliens looking at our

335

00:14:47,610 --> 00:14:52,980

military processes or things like that

336

00:14:49,409 --> 00:14:55,078

and attracts me is quite interesting and

337

00:14:52,980 --> 00:14:56,970

I wonder how some of the conspiracy

338

00:14:55,078 --> 00:14:59,159

theories treated him because there'd be

339

00:14:56,970 --> 00:15:00,690

a mindset of people who didn't believe

340

00:14:59,159 --> 00:15:01,948

that people went to the moon but we're

341

00:15:00,690 --> 00:15:04,560

quite happy to believe that Edgar

342

00:15:01,948 --> 00:15:05,189

Mitchell says there are aliens what yeah

343
00:15:04,559 --> 00:15:08,039
there's a

344
00:15:05,190 --> 00:15:12,720
there's a lot of interesting internal

345
00:15:08,039 --> 00:15:15,750
contradictions there for example I wrote

346
00:15:12,720 --> 00:15:18,629
about Edgar Mitchell this week shortly

347
00:15:15,750 --> 00:15:21,149
after after he died I met him at a

348
00:15:18,629 --> 00:15:23,610
meeting a few years ago Ryan and I

349
00:15:21,149 --> 00:15:25,199
chatted with him briefly about the moon

350
00:15:23,610 --> 00:15:26,370
hoax most of the Apollo astronauts don't

351
00:15:25,200 --> 00:15:28,140
like talking about it because they're

352
00:15:26,370 --> 00:15:29,909
sick of it yeah it makes them angry you

353
00:15:28,139 --> 00:15:32,069
know you dedicated your life to this

354
00:15:29,909 --> 00:15:33,480
incredible achievement that's one of the

355
00:15:32,070 --> 00:15:37,620
greatest things humans have ever done

356
00:15:33,480 --> 00:15:39,870
and and some some go ah comes along

357
00:15:37,620 --> 00:15:42,360
thinking much and says I don't believe

358
00:15:39,870 --> 00:15:43,679
you walked on the moon and so he was

359
00:15:42,360 --> 00:15:46,399
very clear about this if that was all

360
00:15:43,679 --> 00:15:50,099
nonsense and and mind you the moon hoax

361
00:15:46,399 --> 00:15:53,220
idea is based on this this idea that

362
00:15:50,100 --> 00:15:56,100
NASA faked the moon landings yes spiracy

363
00:15:53,220 --> 00:15:59,370
that NASA did it on the other hand when

364
00:15:56,100 --> 00:16:01,200
you've got UFOs and and ed Mitchell was

365
00:15:59,370 --> 00:16:03,539
very clear about this he felt that NASA

366
00:16:01,200 --> 00:16:05,129
was covering up the evidence of alien

367
00:16:03,539 --> 00:16:09,089
spaceships and that aliens were coming

368
00:16:05,129 --> 00:16:11,490
and doing all this but in fact I mean we

369
00:16:09,090 --> 00:16:13,950
know we've all seen the evidence and the

370
00:16:11,490 --> 00:16:15,330
evidence is very poor the more you look

371

00:16:13,950 --> 00:16:19,410
at the evidence of flying saucers

372
00:16:15,330 --> 00:16:22,200
landing the more you find that they're

373
00:16:19,409 --> 00:16:27,419
just misinterpretations or whatever

374
00:16:22,200 --> 00:16:29,790
exaggerations over time uh and and forty

375
00:16:27,419 --> 00:16:31,019
years ago whatever when when we didn't

376
00:16:29,789 --> 00:16:33,599
have digital cameras we didn't have the

377
00:16:31,019 --> 00:16:34,769
internet yeah sure it was much easier to

378
00:16:33,600 --> 00:16:37,889
believe in that kind of thing but the

379
00:16:34,769 --> 00:16:40,980
longer we have everybody on earth

380
00:16:37,889 --> 00:16:43,220
walking around with a camera and and

381
00:16:40,980 --> 00:16:47,190
still not seeing good evidence of this

382
00:16:43,220 --> 00:16:48,330
the less likely it is for me to want to

383
00:16:47,190 --> 00:16:50,190
think that this is the stuff that's

384
00:16:48,330 --> 00:16:51,660
happening the only way you can believe

385
00:16:50,190 --> 00:16:55,080

this is happening is if there is some

386

00:16:51,659 --> 00:16:57,299

sort of cover-up where these aliens

387

00:16:55,080 --> 00:17:00,389

aren't coming that often so that people

388

00:16:57,299 --> 00:17:02,129

don't see them but the military and nasa

389

00:17:00,389 --> 00:17:04,588

and government knows madam is covering

390

00:17:02,129 --> 00:17:06,029

them up but I still just don't I just

391

00:17:04,588 --> 00:17:08,759

don't see that I don't see the evidence

392

00:17:06,029 --> 00:17:11,099

I don't see the reasoning behind it it's

393

00:17:08,759 --> 00:17:13,099

kind of a it's in sort of a logical

394

00:17:11,099 --> 00:17:17,129

cul-de-sac it's removed itself from

395

00:17:13,099 --> 00:17:18,658

evidence and and fact-finding and I just

396

00:17:17,130 --> 00:17:20,009

I just don't buy into it anymore

397

00:17:18,659 --> 00:17:22,049

but it's fascinating that somebody like

398

00:17:20,009 --> 00:17:23,729

Edgar Mitchell could believe it when he

399

00:17:22,048 --> 00:17:25,558

would discount other NASA conspiracies

400
00:17:23,729 --> 00:17:27,538
like the moon landing absolutely yes

401
00:17:25,558 --> 00:17:29,668
separate compartments in the brain for

402
00:17:27,538 --> 00:17:32,098
things like that well yes well with

403
00:17:29,669 --> 00:17:34,889
course said to see another Apollo

404
00:17:32,098 --> 00:17:37,739
astronaut no longer with us and we we

405
00:17:34,888 --> 00:17:40,048
keep weren't wondering is what it at the

406
00:17:37,739 --> 00:17:41,729
end of the movie Apollo 13 Tom Hanks

407
00:17:40,048 --> 00:17:45,479
said and you know we wonder when we'll

408
00:17:41,729 --> 00:17:48,509
go back words to that effect yeah it's

409
00:17:45,479 --> 00:17:50,700
some that's a that's a whole thing um

410
00:17:48,509 --> 00:17:53,970
it's a longer we have long intervals in

411
00:17:50,700 --> 00:17:56,298
them yeah we've had we've had 12 humans

412
00:17:53,970 --> 00:17:58,649
walk on the moon Mitchell was the sixth

413
00:17:56,298 --> 00:18:01,200
seven of these Apollo astronauts are

414
00:17:58,648 --> 00:18:02,608
still alive I'm not sure how old the

415
00:18:01,200 --> 00:18:06,569
youngest one is but they're well into

416
00:18:02,608 --> 00:18:08,220
their 70s and it's going to be years

417
00:18:06,569 --> 00:18:11,428
before we can put human beings on the

418
00:18:08,220 --> 00:18:16,798
moon again but maybe not too many years

419
00:18:11,429 --> 00:18:18,960
um I think that between NASA space X the

420
00:18:16,798 --> 00:18:20,970
Chinese certainly the Chinese have

421
00:18:18,960 --> 00:18:22,108
talked about this the Russians and I

422
00:18:20,970 --> 00:18:23,548
don't know if I can ever trust the

423
00:18:22,108 --> 00:18:26,579
Russian space program they say things

424
00:18:23,548 --> 00:18:27,989
and do things and then drop it so who

425
00:18:26,579 --> 00:18:30,358
knows but the Russians have claimed they

426
00:18:27,989 --> 00:18:32,129
want to go back we could we could put

427
00:18:30,358 --> 00:18:34,978
people on the moon probably within 10

428

00:18:32,128 --> 00:18:36,478
years if we wanted to do it in a hurry

429
00:18:34,979 --> 00:18:38,278
if we want to do it right it would

430
00:18:36,479 --> 00:18:40,859
probably take a little bit more where

431
00:18:38,278 --> 00:18:42,298
you you build a sustainable you know so

432
00:18:40,858 --> 00:18:44,460
you don't just go there plaintiff like

433
00:18:42,298 --> 00:18:47,069
come home you go there and plant a

434
00:18:44,460 --> 00:18:53,278
building call you a base where people

435
00:18:47,069 --> 00:18:56,579
can go I just I I would love to see some

436
00:18:53,278 --> 00:18:58,528
some Apollo astronauts be able to

437
00:18:56,579 --> 00:19:01,949
witness that to be able to witness a

438
00:18:58,528 --> 00:19:04,950
young man or woman stepping foot on the

439
00:19:01,950 --> 00:19:07,558
moon and saying we do this to provide

440
00:19:04,950 --> 00:19:09,808
continuity yeah XD Asian about of space

441
00:19:07,558 --> 00:19:11,668
yeah that would be something and I hope

442
00:19:09,808 --> 00:19:15,928

I live to see that too because I was I

443

00:19:11,669 --> 00:19:18,119
saw the first one me too you do yeah we

444

00:19:15,929 --> 00:19:20,399
get you and I saw the first one I'd love

445

00:19:18,118 --> 00:19:23,158
to see the next one whenever that may be

446

00:19:20,398 --> 00:19:27,209
whenever that may be now let's look

447

00:19:23,159 --> 00:19:29,369
further afield Phil before we wind this

448

00:19:27,210 --> 00:19:32,590
up and let's look as bad as far as we

449

00:19:29,368 --> 00:19:34,178
can go will recently anyway which was

450

00:19:32,589 --> 00:19:36,939
Pluto and how exciting was that

451

00:19:34,179 --> 00:19:39,400
encounter last yeah what do you mean

452

00:19:36,940 --> 00:19:41,140
what do you mean there but if it were a

453

00:19:39,400 --> 00:19:46,509
planet it would have been more exciting

454

00:19:41,140 --> 00:19:50,710
um no I thought I was amazing that I

455

00:19:46,509 --> 00:19:55,319
don't think anybody was expecting Pluto

456

00:19:50,710 --> 00:19:57,490
to be so bizarre isn't it yeah and and

457
00:19:55,319 --> 00:19:59,379
you can you can look at the planets in

458
00:19:57,490 --> 00:20:02,079
the solar system and they're all they

459
00:19:59,380 --> 00:20:03,520
all have a lot of diversity even though

460
00:20:02,079 --> 00:20:04,658
maybe at first glance you look at Mars

461
00:20:03,519 --> 00:20:06,609
and you think well it's just red and

462
00:20:04,659 --> 00:20:09,850
Dustin it's like well no in fact it's

463
00:20:06,609 --> 00:20:12,129
got volcanoes and basins and dune sand

464
00:20:09,849 --> 00:20:14,469
dunes on it and every planets like that

465
00:20:12,130 --> 00:20:17,799
Merc even mercury has a little bit of

466
00:20:14,470 --> 00:20:20,350
diversity not much but some but you know

467
00:20:17,798 --> 00:20:22,450
Pluto is going to be an ice ball that

468
00:20:20,349 --> 00:20:24,730
formed long time ago and has been

469
00:20:22,450 --> 00:20:26,500
relatively unmodified for billions of

470
00:20:24,730 --> 00:20:29,169
years and then we get there and it turns

471
00:20:26,500 --> 00:20:31,599
out it's crazy it's got mountains of

472
00:20:29,169 --> 00:20:35,409
water ice and planes that look like they

473
00:20:31,599 --> 00:20:36,699
were uh basins basically like like ocean

474
00:20:35,409 --> 00:20:41,850
beds but they're filled with frozen

475
00:20:36,700 --> 00:20:44,740
nitrogen those red spots and pits and

476
00:20:41,849 --> 00:20:47,109
evidence now the most recent news that

477
00:20:44,740 --> 00:20:50,169
came out is where the mountains meet the

478
00:20:47,109 --> 00:20:52,449
nitrogen planes it looks like some of

479
00:20:50,169 --> 00:20:54,429
the mountains of crumbled and are are

480
00:20:52,450 --> 00:20:57,100
basically the water ice is less dense

481
00:20:54,429 --> 00:20:58,899
than the nitrogen ice and so as the

482
00:20:57,099 --> 00:21:02,740
nitrogen ice moves around it sweeps

483
00:20:58,898 --> 00:21:05,349
these gigantic boulders which are you

484
00:21:02,740 --> 00:21:06,759
know many many hundreds or thousands of

485

00:21:05,349 --> 00:21:08,490
meters of thousands of meters across

486
00:21:06,759 --> 00:21:10,839
hundreds of millions hundreds okay and

487
00:21:08,490 --> 00:21:13,149
moving them around on the plane so

488
00:21:10,839 --> 00:21:15,069
they're sticking up out of the ice it's

489
00:21:13,148 --> 00:21:16,959
just it's as weird as it could possibly

490
00:21:15,069 --> 00:21:21,129
be and none of us could have imagined

491
00:21:16,960 --> 00:21:23,829
this so fluto is dynamic it is it is in

492
00:21:21,130 --> 00:21:25,450
the sense that it's changing yeah very

493
00:21:23,829 --> 00:21:27,788
very slowly I don't think it's changing

494
00:21:25,450 --> 00:21:30,519
over like you know days but certainly

495
00:21:27,788 --> 00:21:32,500
years and decades good having fun and

496
00:21:30,519 --> 00:21:34,929
it's just weird I mean you can stand on

497
00:21:32,500 --> 00:21:36,250
one spot on Pluto and and stand in

498
00:21:34,929 --> 00:21:38,860
another spot and they would be as

499
00:21:36,250 --> 00:21:41,679

different as night and day that yeah and

500

00:21:38,859 --> 00:21:44,979

the the imagery coming back still coming

501

00:21:41,679 --> 00:21:46,400

back is just breathtaking and it reminds

502

00:21:44,980 --> 00:21:48,259

me of the old saying that

503

00:21:46,400 --> 00:21:50,710

you said or somebody said years ago

504

00:21:48,259 --> 00:21:53,119

which is stuck with me that when

505

00:21:50,710 --> 00:21:56,299

investigating the the solar system

506

00:21:53,119 --> 00:21:59,119

expect the unexpected I think everybody

507

00:21:56,299 --> 00:22:02,240

said that it's so and and we're not done

508

00:21:59,119 --> 00:22:05,479

there's another object about a billion

509

00:22:02,240 --> 00:22:07,460

kilometers out past Pluto that they're

510

00:22:05,480 --> 00:22:11,470

going to pass by what's called a Kuiper

511

00:22:07,460 --> 00:22:15,410

belt object basically a giant icy chunk

512

00:22:11,470 --> 00:22:16,910

that Pluto is sort of kind of related to

513

00:22:15,410 --> 00:22:18,470

it's like one of the biggest ones of

514
00:22:16,910 --> 00:22:21,080
these things this one's going to be much

515
00:22:18,470 --> 00:22:24,049
smaller but we've never seen one of

516
00:22:21,079 --> 00:22:27,079
these that far out up close and it's

517
00:22:24,049 --> 00:22:28,819
it's New Horizons the spacecraft is

518
00:22:27,079 --> 00:22:30,799
going to pass very close to this object

519
00:22:28,819 --> 00:22:32,119
if they get the everything right really

520
00:22:30,799 --> 00:22:34,069
there's no reason to expect they won't

521
00:22:32,119 --> 00:22:35,779
so you know we're not done that's not

522
00:22:34,069 --> 00:22:37,399
going to be for three years there so I

523
00:22:35,779 --> 00:22:39,440
was wondering what the time scale was

524
00:22:37,400 --> 00:22:43,280
three yeah I understood that nice big

525
00:22:39,440 --> 00:22:44,870
the space is big I understood from doing

526
00:22:43,279 --> 00:22:48,529
a little bit research on your horizons

527
00:22:44,869 --> 00:22:51,409
that it was it's traveling at tremendous

528
00:22:48,529 --> 00:22:53,269
speed and in fact if I'm right once it

529
00:22:51,410 --> 00:22:55,820
left the earth had passed the moon in

530
00:22:53,269 --> 00:22:58,369
record time it was traveling so quickly

531
00:22:55,819 --> 00:23:00,409
I think so yeah basically they made the

532
00:22:58,369 --> 00:23:03,289
lightest possible spacecraft they could

533
00:23:00,410 --> 00:23:04,910
and launched it on a rocket that could

534
00:23:03,289 --> 00:23:07,579
give it the biggest kick and good and

535
00:23:04,910 --> 00:23:10,279
even then they picked up a little bit of

536
00:23:07,579 --> 00:23:12,529
a boost from Jupiter which shaved I

537
00:23:10,279 --> 00:23:14,779
think a year or two off of the trip Wow

538
00:23:12,529 --> 00:23:15,950
it was nine in nine and a half years to

539
00:23:14,779 --> 00:23:18,230
get from here to pluto because that's

540
00:23:15,950 --> 00:23:21,490
how far away Pluto is yeah yeah and it's

541
00:23:18,230 --> 00:23:25,250
it's currently moving I think from Earth

542

00:23:21,490 --> 00:23:27,170
14 kilometers per second wow so you know

543
00:23:25,250 --> 00:23:28,849
that a rifle bullets only about one

544
00:23:27,170 --> 00:23:30,380
kilometer per second so that things it's

545
00:23:28,849 --> 00:23:34,129
really it's really moving that's

546
00:23:30,380 --> 00:23:36,680
incredible and it's reminds me again of

547
00:23:34,130 --> 00:23:38,990
getting back to UFOs and aliens visit

548
00:23:36,680 --> 00:23:41,900
visiting and things like that is one of

549
00:23:38,990 --> 00:23:44,180
the arguments is people generally don't

550
00:23:41,900 --> 00:23:46,400
have a true understanding of the scale

551
00:23:44,180 --> 00:23:49,549
of space and if there is another

552
00:23:46,400 --> 00:23:51,440
civilization within anywhere near us at

553
00:23:49,549 --> 00:23:54,710
all it's still going to be a long way

554
00:23:51,440 --> 00:23:56,870
away right you the other thing about

555
00:23:54,710 --> 00:23:58,789
aliens too is that you have to make so

556
00:23:56,869 --> 00:23:59,369

many assumptions for them to exist in

557

00:23:58,789 --> 00:24:01,649
becoming

558

00:23:59,369 --> 00:24:03,089
mmm and you really can't get around that

559

00:24:01,650 --> 00:24:07,050
they'd have to travel faster than light

560

00:24:03,089 --> 00:24:08,519
because a hundred light-years is your

561

00:24:07,049 --> 00:24:10,409
next door neighbor as far as the galaxy

562

00:24:08,519 --> 00:24:12,180
is concerned yeah but at the speed of

563

00:24:10,410 --> 00:24:14,400
light that takes a century to get here

564

00:24:12,180 --> 00:24:17,070
yeah yeah so you know they're long-lived

565

00:24:14,400 --> 00:24:18,690
and they can travel very rapidly or they

566

00:24:17,069 --> 00:24:20,039
live as long as we do but they can

567

00:24:18,690 --> 00:24:21,269
travel faster than light but as far as

568

00:24:20,039 --> 00:24:23,190
we know you can't travel faster than

569

00:24:21,269 --> 00:24:26,160
light so again you know you're making

570

00:24:23,190 --> 00:24:28,558
assumptions on assumption and each one

571
00:24:26,160 --> 00:24:30,930
kind of defies the laws of physics so at

572
00:24:28,558 --> 00:24:32,190
some point I'm like you know what if you

573
00:24:30,930 --> 00:24:35,640
want if you want me to believe in this

574
00:24:32,190 --> 00:24:37,830
you have to show me Klaatu spaceship

575
00:24:35,640 --> 00:24:40,320
landing in Washington DC I just watch

576
00:24:37,829 --> 00:24:42,599
that Gator Stood Still it's such a great

577
00:24:40,319 --> 00:24:46,439
movie the original you the original good

578
00:24:42,599 --> 00:24:48,539
yes therefore 1951 and that's what i

579
00:24:46,440 --> 00:24:51,509
need and i think that's not too much to

580
00:24:48,539 --> 00:24:53,940
ask it's not too much no no no you make

581
00:24:51,509 --> 00:24:55,470
an acclaim that extraordinary you better

582
00:24:53,940 --> 00:24:57,420
come up with evidence that's better than

583
00:24:55,470 --> 00:24:59,910
a fuzzy picture fuzzy due to act of

584
00:24:57,420 --> 00:25:02,160
documents fuzzy pictures my goodness me

585
00:24:59,910 --> 00:25:04,440
of insects and stars and and things like

586
00:25:02,160 --> 00:25:07,769
that oh it's it's fuzzy it must be UFO

587
00:25:04,440 --> 00:25:11,549
film we could talk about UFOs for the

588
00:25:07,769 --> 00:25:14,639
next three weeks I'm sure so you're

589
00:25:11,549 --> 00:25:16,409
happily living there in Colorado and I

590
00:25:14,640 --> 00:25:19,080
have had the pleasure of visiting you

591
00:25:16,410 --> 00:25:21,390
over the years and my goodness me what a

592
00:25:19,079 --> 00:25:23,279
wonderful state it is you and I went for

593
00:25:21,390 --> 00:25:25,170
a hike up into the mountains and that

594
00:25:23,279 --> 00:25:26,849
was all right that was such a wonderful

595
00:25:25,170 --> 00:25:29,519
experience although I got pretty badly

596
00:25:26,849 --> 00:25:31,439
sunburned I'm us oh yeah and you were

597
00:25:29,519 --> 00:25:33,359
you were doing better than I was walking

598
00:25:31,440 --> 00:25:35,490
up those hills I was exhausted and you

599

00:25:33,359 --> 00:25:37,469
were ready to go then all those other

600
00:25:35,490 --> 00:25:39,960
bull derides Boulder is well known as a

601
00:25:37,470 --> 00:25:41,970
city of people in very good shape i

602
00:25:39,960 --> 00:25:44,759
remember a woman who had just given

603
00:25:41,970 --> 00:25:46,740
birth and she had her baby on a backpack

604
00:25:44,759 --> 00:25:48,569
and the baby couldn't have been more

605
00:25:46,740 --> 00:25:50,130
than three months old and she went

606
00:25:48,569 --> 00:25:53,399
blowing past us like we were sitting

607
00:25:50,130 --> 00:25:55,650
still and i thought yeah I'm out of

608
00:25:53,400 --> 00:25:58,290
shape that was a wonderful experience

609
00:25:55,650 --> 00:26:00,540
Phil where can people catch up with you

610
00:25:58,289 --> 00:26:04,470
finally read your blog and follow your

611
00:26:00,539 --> 00:26:07,139
adventures well I write for slate slate

612
00:26:04,470 --> 00:26:10,289
com you just look up bad astronomy I'm

613
00:26:07,140 --> 00:26:12,850

bad astronomer on twitter you can find

614

00:26:10,289 --> 00:26:15,730
me on facebook and instagram

615

00:26:12,849 --> 00:26:16,779
about about me which is a good place to

616

00:26:15,730 --> 00:26:18,789
find me because I have links to

617

00:26:16,779 --> 00:26:21,789
everything else from there and I just

618

00:26:18,789 --> 00:26:24,309
finished a web series called crash

619

00:26:21,789 --> 00:26:28,420
course astronomy which was 46 episodes

620

00:26:24,309 --> 00:26:30,849
basically class two semesters of

621

00:26:28,420 --> 00:26:33,279
astronomy and that's on YouTube but last

622

00:26:30,849 --> 00:26:35,859
I checked we had 12 million views well

623

00:26:33,279 --> 00:26:37,389
yes that's fine nice I'm glad you told

624

00:26:35,859 --> 00:26:39,429
me about that I'm glad you've told that

625

00:26:37,390 --> 00:26:41,350
listeners folks i will add those links

626

00:26:39,430 --> 00:26:44,170
to the show notes for this week's

627

00:26:41,349 --> 00:26:46,389
episode but for now phil plait the bad

628
00:26:44,170 --> 00:26:48,460
astronomer still bad after all these

629
00:26:46,390 --> 00:27:12,009
years all the way from Colorado thank

630
00:26:48,460 --> 00:27:13,539
you very much thank you Richard well

631
00:27:12,009 --> 00:27:15,700
there's no danger of falling off the

632
00:27:13,539 --> 00:27:18,009
edge of the earth but as that thanks to

633
00:27:15,700 --> 00:27:20,440
the roundness of our home planet well

634
00:27:18,009 --> 00:27:24,930
not quite the ground beneath your feet

635
00:27:20,440 --> 00:27:24,930
is actually part of an oblate spheroid

636
00:27:30,720 --> 00:27:36,279
so what's an oblate spheroid well it's

637
00:27:34,269 --> 00:27:38,410
basically a sphere with a bulge around

638
00:27:36,279 --> 00:27:41,109
the middle because the planet spins

639
00:27:38,410 --> 00:27:43,300
rotational forces push mass outwards at

640
00:27:41,109 --> 00:27:45,549
the equator creating this odd shape in

641
00:27:43,299 --> 00:27:47,470
fact if you measure the earth across the

642
00:27:45,549 --> 00:27:49,119
poles you'll find that it's twelve

643
00:27:47,470 --> 00:27:51,610
thousand seven hundred and thirteen

644
00:27:49,119 --> 00:27:53,439
point six kilometres then if you measure

645
00:27:51,609 --> 00:27:55,419
the earth across the equator you'll get

646
00:27:53,440 --> 00:27:57,789
twelve thousand seven hundred fifty six

647
00:27:55,420 --> 00:28:01,450
point two kilometers that's a difference

648
00:27:57,789 --> 00:28:03,549
of forty two point six kilometers of the

649
00:28:01,450 --> 00:28:05,769
Earth's shape by using GPS sensors

650
00:28:03,549 --> 00:28:07,869
satellite laser ranging and very long

651
00:28:05,769 --> 00:28:09,490
baseline interferometry basically a

652
00:28:07,869 --> 00:28:12,199
bunch of different ways of monitoring

653
00:28:09,490 --> 00:28:15,089
the position of ground stations

654
00:28:12,200 --> 00:28:16,500
and of course how can the earth be round

655
00:28:15,089 --> 00:28:18,808
when it's covered in mountains and

656

00:28:16,500 --> 00:28:22,319
valleys the highest point above sea

657
00:28:18,808 --> 00:28:25,168
level Mount Everest reaches 8,848 meters

658
00:28:22,319 --> 00:28:27,148
but not Everest is not actually the

659
00:28:25,169 --> 00:28:29,940
point on earth furthest from the center

660
00:28:27,148 --> 00:28:33,898
that honor goes to Mount Chimborazo in

661
00:28:29,940 --> 00:28:35,909
Ecuador while its elevation is only 6268

662
00:28:33,898 --> 00:28:37,528
metres it's more than 2,000 meters

663
00:28:35,909 --> 00:28:39,840
further from the Earth's center than

664
00:28:37,528 --> 00:28:41,519
Everest and there's one last competitor

665
00:28:39,839 --> 00:28:43,798
for biggest mountain the Hawaiian

666
00:28:41,519 --> 00:28:46,109
volcano Mauna Kea which is more than

667
00:28:43,798 --> 00:28:47,788
10,000 meters from base to summit and

668
00:28:46,109 --> 00:28:49,888
here's the fact that might blow your

669
00:28:47,788 --> 00:28:52,048
mind if you shrunk the earth down to the

670
00:28:49,888 --> 00:28:53,969

same size it would be smoother than a

671

00:28:52,048 --> 00:28:55,829
billiard ball that's right billiard

672

00:28:53,970 --> 00:28:58,880
balls can have imperfections of up to

673

00:28:55,829 --> 00:29:02,158
0.32 percent but the earth only regions

674

00:28:58,880 --> 00:29:05,990
0.17 percent and now for fast facts

675

00:29:02,159 --> 00:29:09,389
about this oblate spheroid we call home

676

00:29:05,990 --> 00:29:11,278
sea level isn't actually level due to

677

00:29:09,388 --> 00:29:13,048
the Earth's uneven gravity field there

678

00:29:11,278 --> 00:29:15,240
are permanent hills and valleys in the

679

00:29:13,048 --> 00:29:17,579
ocean the circumference of the earth is

680

00:29:15,240 --> 00:29:19,528
40,000 and 75 kilometers around the

681

00:29:17,579 --> 00:29:21,990
equator than 40 thousand and eight

682

00:29:19,528 --> 00:29:24,240
kilometers around the poles every day

683

00:29:21,990 --> 00:29:25,859
the earth gains between 20 and 40 tons

684

00:29:24,240 --> 00:29:27,960
of mass due to collision with space

685
00:29:25,859 --> 00:29:29,879
debris at this rate it will take about

686
00:29:27,960 --> 00:29:32,519
four hundred and fifty trillion years

687
00:29:29,880 --> 00:29:34,350
for the earth to double in size want to

688
00:29:32,519 --> 00:29:36,210
find out more about the earth check out

689
00:29:34,349 --> 00:29:39,589
our website where we have some links and

690
00:29:36,210 --> 00:29:39,590
we'll see you right here next week

691
00:29:53,410 --> 00:29:55,470
you

692
00:30:02,049 --> 00:30:08,659
dr. Harriet hall md known to thousands

693
00:30:06,019 --> 00:30:10,940
as the skeptic a retired family

694
00:30:08,660 --> 00:30:14,060
physician and former Air Force flight

695
00:30:10,940 --> 00:30:15,380
surgeon she writes about medicine so

696
00:30:14,059 --> 00:30:18,980
called complementary and alternative

697
00:30:15,380 --> 00:30:22,310
medicine science hackery and critical

698
00:30:18,980 --> 00:30:24,589
thinking Harriet now has a free course a

699
00:30:22,309 --> 00:30:27,639
series of ten video lectures on science

700
00:30:24,589 --> 00:30:30,379
based medicine and alternative medicine

701
00:30:27,640 --> 00:30:32,630
the videos and an accompanying course

702
00:30:30,380 --> 00:30:36,740
guide can be found by following the link

703
00:30:32,630 --> 00:30:40,760
at skeptic dot info or by visiting web

704
00:30:36,740 --> 00:30:45,109
Randy's org slash educational dash

705
00:30:40,759 --> 00:30:48,230
modules dot HTML topics covered in the

706
00:30:45,109 --> 00:30:51,339
series are science-based medicine vs.

707
00:30:48,230 --> 00:30:54,759
evidence-based medicine what is cam

708
00:30:51,339 --> 00:30:57,949
chiropractic acupuncture homeopathy

709
00:30:54,759 --> 00:31:00,079
naturopathy and herbal medicine energy

710
00:30:57,950 --> 00:31:03,230
medicine miscellaneous alternatives

711
00:31:00,079 --> 00:31:06,549
pitfalls in research and science-based

712
00:31:03,230 --> 00:31:09,289
medicine in the media and politics

713

00:31:06,549 --> 00:31:11,839
Harriet covers each topic in a matter of

714
00:31:09,289 --> 00:31:17,559
fact no-nonsense way that shorter

715
00:31:11,839 --> 00:31:17,559
educate and entertain skeptic dot info

716
00:31:40,730 --> 00:31:44,880
as I've been saying for the last few

717
00:31:43,079 --> 00:31:48,089
weeks now the story was floating around

718
00:31:44,880 --> 00:31:50,040
that Mark Zuckerberg of Facebook Fame

719
00:31:48,089 --> 00:31:52,289
took his daughter to get her

720
00:31:50,039 --> 00:31:54,240
vaccinations a little baby daughter very

721
00:31:52,289 --> 00:31:56,250
sweet and there's a lovely photograph of

722
00:31:54,240 --> 00:31:59,220
Mark Zuckerberg in the waiting room

723
00:31:56,250 --> 00:32:02,660
daughter on his lap waiting to get the

724
00:31:59,220 --> 00:32:05,850
end the vaccinations well this sent the

725
00:32:02,660 --> 00:32:07,410
anti-vaccination people now you can use

726
00:32:05,849 --> 00:32:11,029
your own term here I'll using word

727
00:32:07,410 --> 00:32:13,980

people for the moment hmm into a frenzy

728

00:32:11,029 --> 00:32:15,920

absolutely and the conspiracy theories

729

00:32:13,980 --> 00:32:19,620

and the winters and the whiners and the

730

00:32:15,920 --> 00:32:21,990

quite frankly very nasty people came out

731

00:32:19,619 --> 00:32:24,869

of the woodwork here's some of the

732

00:32:21,990 --> 00:32:28,500

comments posted on Twitter and Facebook

733

00:32:24,869 --> 00:32:30,750

I feel sorry for his kid being hit up

734

00:32:28,500 --> 00:32:34,529

with toxins because daddy and mommy

735

00:32:30,750 --> 00:32:39,539

think they are too smart another comment

736

00:32:34,529 --> 00:32:42,779

I hope your kid dies so you will wake up

737

00:32:39,539 --> 00:32:48,059

and stop being a CIA puppet you piece of

738

00:32:42,779 --> 00:32:50,700

ugly dog the comment oh that's good be

739

00:32:48,059 --> 00:32:53,759

already has clothes for the baby in the

740

00:32:50,700 --> 00:32:57,630

autism colors that just might come in

741

00:32:53,759 --> 00:33:00,869

handy one day love her the kamid hope

742
00:32:57,630 --> 00:33:04,800
the shots kill his baby maybe then the

743
00:33:00,869 --> 00:33:07,769
stupid little jew will wake up consuming

744
00:33:04,799 --> 00:33:10,769
doesn't him here's one it'll be ironic

745
00:33:07,769 --> 00:33:13,319
if his kid ends up with autism epilepsy

746
00:33:10,769 --> 00:33:16,069
childhood cancer autoimmune disorder or

747
00:33:13,319 --> 00:33:20,009
whatever else can't possibly be related

748
00:33:16,069 --> 00:33:24,750
the comment poor child has to grow up

749
00:33:20,009 --> 00:33:27,000
with ignorant parents the comment too

750
00:33:24,750 --> 00:33:29,490
bad he and his wife can't do research on

751
00:33:27,000 --> 00:33:31,259
vaccines maybe it's because the dollar

752
00:33:29,490 --> 00:33:32,950
sign dollar sign dollar sign dollar sign

753
00:33:31,259 --> 00:33:35,950
got in the way poor

754
00:33:32,950 --> 00:33:37,538
Amy what implying that Mark Zuckerberg

755
00:33:35,950 --> 00:33:39,909
is doing something for the money one of

756
00:33:37,538 --> 00:33:41,710
the richest men in the world hmm but

757
00:33:39,909 --> 00:33:43,000
free cheers for Mark Zuckerberg for not

758
00:33:41,710 --> 00:33:45,370
only doing the right thing by his

759
00:33:43,000 --> 00:33:48,929
daughter getting their vaccinations up

760
00:33:45,369 --> 00:33:52,268
to date but publicizing the fact and

761
00:33:48,929 --> 00:33:54,159
well it's certainly telling some of

762
00:33:52,269 --> 00:33:56,769
these comments now they are the fringe

763
00:33:54,159 --> 00:34:01,330
of course they are the Looney fringe but

764
00:33:56,769 --> 00:34:03,720
they are nasty nasty people spreading

765
00:34:01,329 --> 00:34:07,319
lies and disinformation and just being

766
00:34:03,720 --> 00:34:07,319
really revolting

767
00:34:19,199 --> 00:34:23,048
today this is dr. Karl Karl Chris let's

768
00:34:21,699 --> 00:34:25,208
keep proud to be a skeptic and you can

769
00:34:23,048 --> 00:34:29,009
find out more about me at dr. Karl calm

770

00:34:25,208 --> 00:34:29,009
and get lots of free stuff there as well

771
00:34:42,269 --> 00:34:46,989
it's Sydney skeptics in the pub now

772
00:34:44,949 --> 00:34:48,339
normally of course it's Maynard running

773
00:34:46,989 --> 00:34:50,289
around here with these microphone may

774
00:34:48,340 --> 00:34:54,340
not having this skeptics in the pub off

775
00:34:50,289 --> 00:34:55,840
he's having a night off from skeptics in

776
00:34:54,340 --> 00:34:58,539
the pub never fear i'm here with my

777
00:34:55,840 --> 00:35:00,280
trusty microphone it's trish electrician

778
00:34:58,539 --> 00:35:02,650
today hello it you're an early bird

779
00:35:00,280 --> 00:35:05,860
tonight i am yeah nothing better to do I

780
00:35:02,650 --> 00:35:08,559
say when I say but all those people

781
00:35:05,860 --> 00:35:12,340
healthy it's an expression I don't mean

782
00:35:08,559 --> 00:35:15,039
you're an early bird is ending Sandy's

783
00:35:12,340 --> 00:35:17,410
English sitcom burn right I grew up with

784
00:35:15,039 --> 00:35:19,090

that it's fine anyway you here nice and

785

00:35:17,409 --> 00:35:22,690

early and we were just having a little

786

00:35:19,090 --> 00:35:24,220

chat before then the hordes come in the

787

00:35:22,690 --> 00:35:26,289

skeptics in the pub here is any because

788

00:35:24,219 --> 00:35:28,209

it is popular and tonight but it's going

789

00:35:26,289 --> 00:35:32,110

to be interesting because they always

790

00:35:28,210 --> 00:35:35,380

are now you're talking about what I

791

00:35:32,110 --> 00:35:37,539

called the long game skepticism and what

792

00:35:35,380 --> 00:35:39,700

was your comment about them just that it

793

00:35:37,539 --> 00:35:42,489

can be really frustrating for us because

794

00:35:39,699 --> 00:35:44,019

people expect us maybe to be able to fix

795

00:35:42,489 --> 00:35:46,659

things or to come up with an answer or

796

00:35:44,019 --> 00:35:48,969

to be able to kind of police things that

797

00:35:46,659 --> 00:35:50,829

we have absolutely no control over all

798

00:35:48,969 --> 00:35:52,419

we seem to do is talk and nothing ever

799
00:35:50,829 --> 00:35:54,819
happens which is obviously complete

800
00:35:52,420 --> 00:35:56,619
bollocks but well it can seem that way

801
00:35:54,820 --> 00:35:58,780
we do a lot of talking there's no doubt

802
00:35:56,619 --> 00:36:02,350
about that but things do happen but when

803
00:35:58,780 --> 00:36:04,750
I say it's the long game sometimes our

804
00:36:02,349 --> 00:36:06,309
investigations or campaigns can take a

805
00:36:04,750 --> 00:36:08,590
very long time and there is this

806
00:36:06,309 --> 00:36:10,480
perception out there and I get it and I

807
00:36:08,590 --> 00:36:12,579
some listeners might know what I mean

808
00:36:10,480 --> 00:36:14,500
people come up to us and say oh you

809
00:36:12,579 --> 00:36:17,090
skeptics you should do something about

810
00:36:14,500 --> 00:36:20,760
the psychic loser

811
00:36:17,090 --> 00:36:22,110
we can suddenly do you know and also if

812
00:36:20,760 --> 00:36:23,850
we did have that kind of power it be

813
00:36:22,110 --> 00:36:24,930
terrifying because if we decided to

814
00:36:23,849 --> 00:36:27,480
click on something would you actually

815
00:36:24,929 --> 00:36:30,119
fine yeah we could destroy it which is

816
00:36:27,480 --> 00:36:31,949
just not good it can be frustrating

817
00:36:30,119 --> 00:36:34,619
though I mean there is there are many

818
00:36:31,949 --> 00:36:37,319
things that I would like to waive my

819
00:36:34,619 --> 00:36:38,849
skeptical on and say haha you know if

820
00:36:37,320 --> 00:36:41,120
mind buddy wallet don't make a good

821
00:36:38,849 --> 00:36:43,409
grief yeah test it all after storm but

822
00:36:41,119 --> 00:36:45,900
sadly things just don't operate that way

823
00:36:43,409 --> 00:36:48,089
no they don't and there are procedures

824
00:36:45,900 --> 00:36:50,099
and it can be really frustrating but

825
00:36:48,090 --> 00:36:51,809
equally I think we are getting some

826
00:36:50,099 --> 00:36:53,610
pretty good winds internationally and

827

00:36:51,809 --> 00:36:54,750
the good thing is now with the age of

828
00:36:53,610 --> 00:36:56,460
the internet we can collaborate

829
00:36:54,750 --> 00:36:57,900
internationally as well so things are

830
00:36:56,460 --> 00:37:00,900
good thinking society back in the UK

831
00:36:57,900 --> 00:37:03,180
what oh what a great organization yeah

832
00:37:00,900 --> 00:37:04,950
and society is Michael Marshalls regular

833
00:37:03,179 --> 00:37:07,589
guest on this show and I also think

834
00:37:04,949 --> 00:37:10,199
about other organizations not just the

835
00:37:07,590 --> 00:37:11,760
Australian skeptics in this country we

836
00:37:10,199 --> 00:37:14,519
have the Friends of science and medicine

837
00:37:11,760 --> 00:37:16,350
yeah really easy really really

838
00:37:14,519 --> 00:37:18,449
knowledgeable people doing some really

839
00:37:16,349 --> 00:37:19,769
good work yeah ken harvey was a guest on

840
00:37:18,449 --> 00:37:21,960
the show last week oh yeah he's very

841
00:37:19,769 --> 00:37:23,730

good ya know you're a listener to the

842

00:37:21,960 --> 00:37:25,949

skip town and you said something very

843

00:37:23,730 --> 00:37:27,929

sweet to me when you walked in you you

844

00:37:25,949 --> 00:37:30,779

commiserated with me over Fred the cat

845

00:37:27,929 --> 00:37:34,199

yeah poor little Fred thank you it was

846

00:37:30,780 --> 00:37:35,730

very nice because uh as listeners know

847

00:37:34,199 --> 00:37:38,609

he was a regular little feature of the

848

00:37:35,730 --> 00:37:40,800

show he's got some fans he does he does

849

00:37:38,610 --> 00:37:42,030

but it's just a little secret between

850

00:37:40,800 --> 00:37:44,010

you and me and a couple of thousand

851

00:37:42,030 --> 00:37:47,760

listeners there might be some more

852

00:37:44,010 --> 00:37:52,230

little footprints around down skeptic

853

00:37:47,760 --> 00:37:55,080

zone for too long I mean without Fraden

854

00:37:52,230 --> 00:37:57,150

Adele who was the cat before fit it's

855

00:37:55,079 --> 00:38:00,299

just not a saint it's not the same but

856
00:37:57,150 --> 00:38:05,160
it can be different Thank You truth

857
00:38:00,300 --> 00:38:06,750
you're welcome well the evenings are

858
00:38:05,159 --> 00:38:09,629
warming up quite a lot the room is

859
00:38:06,750 --> 00:38:11,369
almost full it's good to see I can seize

860
00:38:09,630 --> 00:38:14,070
various skeptics running around the room

861
00:38:11,369 --> 00:38:15,900
getting ready for tonight's talk and I'm

862
00:38:14,070 --> 00:38:18,350
in the presence of Ian Bryce the chief

863
00:38:15,900 --> 00:38:23,130
investigator for the Australian skeptics

864
00:38:18,349 --> 00:38:24,239
ian let me ask you the question tonight

865
00:38:23,130 --> 00:38:26,490
a sort of

866
00:38:24,239 --> 00:38:28,859
what is red what would it mean to

867
00:38:26,489 --> 00:38:31,559
skeptics if they had a magic wand and

868
00:38:28,860 --> 00:38:34,289
could change things what I mean by that

869
00:38:31,559 --> 00:38:36,210
is we come across a lot of quackery and

870
00:38:34,289 --> 00:38:37,949
woo and all the all sorts of things and

871
00:38:36,210 --> 00:38:39,780
a lot of people will come to us and say

872
00:38:37,949 --> 00:38:41,189
well why don't you skeptics just do

873
00:38:39,780 --> 00:38:43,080
something about it as if we could

874
00:38:41,190 --> 00:38:46,440
suddenly do something about it would you

875
00:38:43,079 --> 00:38:48,840
like to have the power to suddenly just

876
00:38:46,440 --> 00:38:51,360
do something about this the quackery of

877
00:38:48,840 --> 00:38:55,590
the week of ago oh yes that would be I

878
00:38:51,360 --> 00:38:57,480
often think about that but that was you

879
00:38:55,590 --> 00:38:59,789
get sick of arguing with people you

880
00:38:57,480 --> 00:39:01,920
think why not just have an expeditious

881
00:38:59,789 --> 00:39:04,469
solution to the problem but it happens

882
00:39:01,920 --> 00:39:05,940
to be illegal unfortunately and and not

883
00:39:04,469 --> 00:39:07,949
in a court of the laws of physics or the

884

00:39:05,940 --> 00:39:10,619
laws of the land so I tried to push that

885
00:39:07,949 --> 00:39:13,189
to the far corners of my brain well can

886
00:39:10,619 --> 00:39:16,250
we say also in that would be slightly

887
00:39:13,190 --> 00:39:19,409
immoral or counterproductive because

888
00:39:16,250 --> 00:39:21,510
what if we were wrong and we would waive

889
00:39:19,409 --> 00:39:24,089
our magic wand and change somebody's

890
00:39:21,510 --> 00:39:26,100
mind but we were wrong that's right what

891
00:39:24,090 --> 00:39:29,880
if what if Hitler had ever had have had

892
00:39:26,099 --> 00:39:32,159
a magic wand for Stalin or any tyrant

893
00:39:29,880 --> 00:39:35,700
they could have wiped us all out well

894
00:39:32,159 --> 00:39:38,190
Tony Abbott that's right scary scary is

895
00:39:35,699 --> 00:39:40,079
still say yes indeed so unfortunately

896
00:39:38,190 --> 00:39:42,300
that just remains a bit of a dream

897
00:39:40,079 --> 00:39:44,789
because we were talking earlier about

898
00:39:42,300 --> 00:39:47,130

what i call them long game in other

899

00:39:44,789 --> 00:39:49,579

words we can't change things suddenly or

900

00:39:47,130 --> 00:39:51,720

sometimes we can sometimes in the rare

901

00:39:49,579 --> 00:39:54,210

situation we can show something's wrong

902

00:39:51,719 --> 00:39:58,259

pretty quickly but other times it's a

903

00:39:54,210 --> 00:40:00,480

very very slow process yes indeed

904

00:39:58,260 --> 00:40:02,970

because some things we can do I remember

905

00:40:00,480 --> 00:40:05,579

a political exchange minh thi think it

906

00:40:02,969 --> 00:40:07,500

involved Paul Keating was giving some

907

00:40:05,579 --> 00:40:08,880

long apology for something and one of

908

00:40:07,500 --> 00:40:10,079

his colleagues realize it was kind of

909

00:40:08,880 --> 00:40:13,840

productive and he shouldn't get anything

910

00:40:10,079 --> 00:40:16,400

so he said just tell him to get stuffed

911

00:40:13,840 --> 00:40:18,980

say that's that's a logo that I could

912

00:40:16,400 --> 00:40:22,720

just about it that wouldn't mind on my

913
00:40:18,980 --> 00:40:25,760
tombstone just tell him to get stuff I

914
00:40:22,719 --> 00:40:30,289
will remember that he in for two zone

915
00:40:25,760 --> 00:40:32,660
thank you goodness me it's Ali Thea Dean

916
00:40:30,289 --> 00:40:35,000
and listeners may remember ilithya I

917
00:40:32,659 --> 00:40:38,750
she came with us on a ghost tour a

918
00:40:35,000 --> 00:40:41,690
couple of years ago you can go yeah you

919
00:40:38,750 --> 00:40:45,079
and me and Maynard wandering around a

920
00:40:41,690 --> 00:40:50,240
ghost just feel the symmetry how many

921
00:40:45,079 --> 00:40:53,539
good sweetie Richard hard to count 00

922
00:40:50,239 --> 00:40:56,929
sorry Kevin you know the question

923
00:40:53,539 --> 00:41:01,009
tonight I'm asking people is if skeptics

924
00:40:56,929 --> 00:41:03,139
had a magic wand to fix things we come

925
00:41:01,010 --> 00:41:05,090
across you and charlatans and quacks and

926
00:41:03,139 --> 00:41:07,039
all sorts of things will be thinking we

927
00:41:05,090 --> 00:41:08,809
could say right ma'am you change your

928
00:41:07,039 --> 00:41:12,159
thinking do you think we should use it

929
00:41:08,809 --> 00:41:16,340
or is it best to just do what we do

930
00:41:12,159 --> 00:41:18,319
would you like that power well yes cuz

931
00:41:16,340 --> 00:41:20,390
that's that's the easy way I mean I

932
00:41:18,320 --> 00:41:22,370
guess in real world we have to employ

933
00:41:20,389 --> 00:41:24,019
critical thinking as their only tool but

934
00:41:22,369 --> 00:41:26,599
if there is a shortcut which is what all

935
00:41:24,019 --> 00:41:29,659
these magic Shelton charlatans people

936
00:41:26,599 --> 00:41:31,750
one why not an employer surely that

937
00:41:29,659 --> 00:41:33,849
would be the sensible thanks to

938
00:41:31,750 --> 00:41:36,280
would you trust yourself from that power

939
00:41:33,849 --> 00:41:38,289
absolutely not take it away from me I

940
00:41:36,280 --> 00:41:40,090
would be power-hungry and irresponsible

941

00:41:38,289 --> 00:41:41,259
so you're saying we should use a but you

942
00:41:40,090 --> 00:41:45,430
shouldn't use I shouldn't use it

943
00:41:41,260 --> 00:41:48,600
absolutely not no and would you would

944
00:41:45,429 --> 00:41:51,429
you recommend goes to as you please Oh

945
00:41:48,599 --> 00:41:56,319
ghost tours perhaps but the ghost

946
00:41:51,429 --> 00:41:58,000
hunting trip that we did possibly not I

947
00:41:56,320 --> 00:42:01,539
think that's the hardcore hardcore

948
00:41:58,000 --> 00:42:03,010
interests only it was fun though in the

949
00:42:01,539 --> 00:42:05,860
end wasn't it it was fun because we were

950
00:42:03,010 --> 00:42:09,010
hanging out together but it was a lot of

951
00:42:05,860 --> 00:42:12,039
like holding a hand over a Ouija board

952
00:42:09,010 --> 00:42:15,100
while it didn't move but I I must admit

953
00:42:12,039 --> 00:42:17,159
I Olivia I did admire your patience you

954
00:42:15,099 --> 00:42:19,659
SAT there you went through the whole

955
00:42:17,159 --> 00:42:23,399

rigmarole and and you were very good I

956

00:42:19,659 --> 00:42:23,399

had my poker face on

957

00:42:23,420 --> 00:42:30,530

he's doing it's over oh goodness me it's

958

00:42:29,088 --> 00:42:32,960

jessica singer from the Australian

959

00:42:30,530 --> 00:42:35,660

skeptics committee Jessica the questions

960

00:42:32,960 --> 00:42:38,150

night is if skeptics had a magic wand to

961

00:42:35,659 --> 00:42:39,980

change people's thinking you know we

962

00:42:38,150 --> 00:42:42,680

come across ruined quack are in stuff

963

00:42:39,980 --> 00:42:45,170

and you can get into long arguments and

964

00:42:42,679 --> 00:42:46,909

sometimes you think I'll come on see it

965

00:42:45,170 --> 00:42:50,630

from my point of view would you be

966

00:42:46,909 --> 00:42:54,440

tempted to just use it oh definitely oh

967

00:42:50,630 --> 00:42:55,970

definitely yeah the magic magic wand

968

00:42:54,440 --> 00:42:58,730

that's what we what that's what we need

969

00:42:55,969 --> 00:43:02,539

just to just to get people to think

970
00:42:58,730 --> 00:43:07,670
critically question would you be would

971
00:43:02,539 --> 00:43:11,179
you be scared of the power so you can I

972
00:43:07,670 --> 00:43:16,789
swear can I can I oh yes you okay well

973
00:43:11,179 --> 00:43:19,789
that no oh no it's not oh I've learned

974
00:43:16,789 --> 00:43:21,139
something about Jessica tonight and what

975
00:43:19,789 --> 00:43:23,150
would you do what would you think could

976
00:43:21,139 --> 00:43:24,618
you would you use a magic power to make

977
00:43:23,150 --> 00:43:29,539
people change their mind when it comes

978
00:43:24,619 --> 00:43:31,039
to critical thinking most likely yes and

979
00:43:29,539 --> 00:43:33,318
you wouldn't be scared of the power you

980
00:43:31,039 --> 00:43:38,889
might wield you know absolute power

981
00:43:33,318 --> 00:43:42,079
corrupts they say it's in wise hands I

982
00:43:38,889 --> 00:43:43,670
see and if you had a magic power to

983
00:43:42,079 --> 00:43:45,079
change people's thinking would you use

984
00:43:43,670 --> 00:43:47,510
it right well that's a complex question

985
00:43:45,079 --> 00:43:49,880
because as a skeptic I should not have a

986
00:43:47,510 --> 00:43:53,809
magic power it should be scientifically

987
00:43:49,880 --> 00:43:55,519
based based on some known force so the

988
00:43:53,809 --> 00:43:57,319
answer is if I touch a power it would

989
00:43:55,519 --> 00:44:00,889
not be magical it'll be you know

990
00:43:57,318 --> 00:44:02,389
provable most in science and if I had a

991
00:44:00,889 --> 00:44:04,548
magical power I would not expect it to

992
00:44:02,389 --> 00:44:07,068
actually work because there is no real

993
00:44:04,548 --> 00:44:10,338
magic you know there's only things that

994
00:44:07,068 --> 00:44:11,420
appear to be magical so I'd say I'd be

995
00:44:10,338 --> 00:44:13,909
manipulating into some sort of

996
00:44:11,420 --> 00:44:15,619
persuasion technique to make them become

997
00:44:13,909 --> 00:44:19,098
more rational and they're thinking oh

998

00:44:15,619 --> 00:44:21,470
that's a good answer thank you gentlemen

999
00:44:19,099 --> 00:44:23,210
here's the question of the night here's

1000
00:44:21,469 --> 00:44:25,789
the question of the night if you had a

1001
00:44:23,210 --> 00:44:28,539
magic wand to change people's opinions

1002
00:44:25,789 --> 00:44:31,400
and their point of view instead of

1003
00:44:28,539 --> 00:44:34,130
spending hours a weeks or years or

1004
00:44:31,400 --> 00:44:36,108
whatever reasoning with them you could

1005
00:44:34,130 --> 00:44:38,019
make them change their mind and see your

1006
00:44:36,108 --> 00:44:43,130
point of view would you use that power

1007
00:44:38,019 --> 00:44:45,048
yes Oh quick answer absolutely but I'd

1008
00:44:43,130 --> 00:44:46,519
spend a long time to working out what

1009
00:44:45,048 --> 00:44:50,960
the funniest thing to make people

1010
00:44:46,519 --> 00:44:54,769
believe it well the other side of this

1011
00:44:50,960 --> 00:44:56,510
coin is what if you're wrong and you

1012
00:44:54,769 --> 00:44:59,030

make people change their minds but

1013

00:44:56,510 --> 00:45:01,579

ultimately you're working under a false

1014

00:44:59,030 --> 00:45:03,680

assumption well it's just the same as if

1015

00:45:01,579 --> 00:45:06,650

I had convinced them by a longer to

1016

00:45:03,679 --> 00:45:08,909

longer be a processor and I was wrong I

1017

00:45:06,650 --> 00:45:11,139

mean

1018

00:45:08,909 --> 00:45:12,909

it's quite possible that they would then

1019

00:45:11,139 --> 00:45:15,069

by the magic potion to and convince me

1020

00:45:12,909 --> 00:45:17,949

back I make my mind back to what I hear

1021

00:45:15,070 --> 00:45:19,660

what they used to be but but bringing it

1022

00:45:17,949 --> 00:45:24,879

back to reality of course it's wrong

1023

00:45:19,659 --> 00:45:26,319

it's not funny if it's right and what

1024

00:45:24,880 --> 00:45:31,079

about an absolute power corrupts

1025

00:45:26,320 --> 00:45:33,580

absolutely I've never believed that I

1026

00:45:31,079 --> 00:45:35,199

don't think you should either it's only

1027
00:45:33,579 --> 00:45:36,429
if any of someone else has absolute

1028
00:45:35,199 --> 00:45:39,239
power that it crapped up to leave

1029
00:45:36,429 --> 00:45:41,559
absolute power then everything's fine

1030
00:45:39,239 --> 00:45:45,129
that's true that's Bette's been well

1031
00:45:41,559 --> 00:45:47,799
verified by experiment think of his Lord

1032
00:45:45,130 --> 00:45:49,300
of the Rings more of the Rings I'm

1033
00:45:47,800 --> 00:45:52,360
sitting opposite akin we talking about

1034
00:45:49,300 --> 00:45:58,240
absolute power I have nothing more than

1035
00:45:52,360 --> 00:46:01,240
add all those skeptics in the pub is

1036
00:45:58,239 --> 00:46:05,229
almost over Alethea is regaling as the

1037
00:46:01,239 --> 00:46:08,529
stories of ghost tours Alethea goes to

1038
00:46:05,230 --> 00:46:10,630
us this is ghost tourism versus ghost

1039
00:46:08,530 --> 00:46:13,630
hunters which is the hunch is what we

1040
00:46:10,630 --> 00:46:17,860
went on the hunt is when you go out with

1041
00:46:13,630 --> 00:46:21,190
your EVP machines and your various

1042
00:46:17,860 --> 00:46:22,630
magnetic recorders and you ask things up

1043
00:46:21,190 --> 00:46:25,090
the air and hope that something

1044
00:46:22,630 --> 00:46:27,099
interesting shows up which it didn't

1045
00:46:25,090 --> 00:46:29,740
when we went on one now I must admit I

1046
00:46:27,099 --> 00:46:31,900
did not but never ready it was a good

1047
00:46:29,739 --> 00:46:34,209
experience and it's a good thing for

1048
00:46:31,900 --> 00:46:37,690
skeptics to do is it goes to our ghost

1049
00:46:34,210 --> 00:46:40,150
hunters it's a good thing to do but I

1050
00:46:37,690 --> 00:46:43,179
would advise any skeptic who goes on one

1051
00:46:40,150 --> 00:46:46,329
to be respectful and open to the

1052
00:46:43,179 --> 00:46:48,489
experience and not to go there sneering

1053
00:46:46,329 --> 00:46:51,460
and judgey just go there and and to be

1054
00:46:48,489 --> 00:46:53,699
open to the experience but contrasting

1055

00:46:51,460 --> 00:46:57,010
this to the ghost tour which is

1056
00:46:53,699 --> 00:46:59,489
basically a historical tour with a lot

1057
00:46:57,010 --> 00:47:03,070
of spooky yarns turn in those are fun

1058
00:46:59,489 --> 00:47:05,319
there's a super fun and if anyone in

1059
00:47:03,070 --> 00:47:09,000
Sydney knows that this company is still

1060
00:47:05,320 --> 00:47:12,010
open i went on the Haunted hearse tours

1061
00:47:09,000 --> 00:47:14,800
ages go where there's two horses that

1062
00:47:12,010 --> 00:47:17,920
have been renovated and take you out to

1063
00:47:14,800 --> 00:47:20,810
all sydney underbelly location so you

1064
00:47:17,920 --> 00:47:23,150
know where r this is a spot words

1065
00:47:20,809 --> 00:47:26,320
k Tilly had something going on or

1066
00:47:23,150 --> 00:47:31,309
keightley so chilly divine and caitlin

1067
00:47:26,320 --> 00:47:35,150
and murders went on or someone committed

1068
00:47:31,309 --> 00:47:42,650
suicide or the old train station to the

1069
00:47:35,150 --> 00:47:46,460

necropolis have you ever been on a ghost

1070

00:47:42,650 --> 00:47:50,090

tour no I haven't you want to i do want

1071

00:47:46,460 --> 00:48:16,699

to now i do anyway why wouldn't I I want

1072

00:47:50,090 --> 00:48:18,500

to go in a hearse one day be reasonable

1073

00:48:16,699 --> 00:48:20,750

it's a podcast in a MERSEYSIDE skeptic

1074

00:48:18,500 --> 00:48:23,300

society hosted by Michael Marshall in

1075

00:48:20,750 --> 00:48:24,760

each monthly interview will examine

1076

00:48:23,300 --> 00:48:26,480

belief from outside of the mainstream

1077

00:48:24,760 --> 00:48:28,310

exploring how those views are

1078

00:48:26,480 --> 00:48:31,010

constructed and more evidence people

1079

00:48:28,309 --> 00:48:33,639

feel support their case on the latest

1080

00:48:31,010 --> 00:48:35,660

episode I speak with dr. pol burn a

1081

00:48:33,639 --> 00:48:39,679

pediatrician and prominent campaigner

1082

00:48:35,659 --> 00:48:43,219

against organ donation you use the word

1083

00:48:39,679 --> 00:48:45,339

market and yes it is market because the

1084
00:48:43,219 --> 00:48:48,949
organ transplant industry is a

1085
00:48:45,340 --> 00:48:52,370
multi-billion dollar industry and it all

1086
00:48:48,949 --> 00:48:54,649
depends on getting healthy organs and

1087
00:48:52,369 --> 00:48:57,019
the only place you get healthy organs

1088
00:48:54,650 --> 00:48:59,269
from living persons hey what Paul has to

1089
00:48:57,019 --> 00:49:01,400
say as well as downloading back issues

1090
00:48:59,269 --> 00:49:05,000
of the show by going to Merseyside

1091
00:49:01,400 --> 00:49:08,950
skeptics WK fold / podcasts or by

1092
00:49:05,000 --> 00:49:08,949
searching for be reasonable on iTunes

1093
00:49:23,150 --> 00:49:29,070
thank you for listening to the skeptic

1094
00:49:25,860 --> 00:49:30,630
zone and i really love i really love

1095
00:49:29,070 --> 00:49:33,150
those interviews with dr. Phil Plait

1096
00:49:30,630 --> 00:49:35,640
what an interesting man and thank you to

1097
00:49:33,150 --> 00:49:38,010
all those people who were at skeptics in

1098
00:49:35,639 --> 00:49:40,559
the pub as you can hear it's a it's a

1099
00:49:38,010 --> 00:49:42,210
really fun evening coming up on next

1100
00:49:40,559 --> 00:49:45,269
week's show we have another report from

1101
00:49:42,210 --> 00:49:46,920
the fabulous Joe alabaster we'll see if

1102
00:49:45,269 --> 00:49:48,269
we can get something from Maynard I

1103
00:49:46,920 --> 00:49:50,010
don't know what he's up to at the moment

1104
00:49:48,269 --> 00:49:52,980
running around with his microphone doing

1105
00:49:50,010 --> 00:49:55,110
something or other but as ever we really

1106
00:49:52,980 --> 00:49:59,250
don't know from week to week what

1107
00:49:55,110 --> 00:50:00,630
skeptical story will appear oh now thank

1108
00:49:59,250 --> 00:50:03,510
you to all those people who have been

1109
00:50:00,630 --> 00:50:08,640
leaving questions at the patched website

1110
00:50:03,510 --> 00:50:12,420
pa TCH apostrophe D that's on facebook i

1111
00:50:08,639 --> 00:50:14,400
should say patched is this little tiny

1112

00:50:12,420 --> 00:50:17,220
device you stick on your phone the claim

1113
00:50:14,400 --> 00:50:22,380
is it will protect you from that naughty

1114
00:50:17,219 --> 00:50:24,389
radiation and as i scroll down the

1115
00:50:22,380 --> 00:50:28,070
patched facebook site at the moment a

1116
00:50:24,389 --> 00:50:31,559
lot of it is dare I say fear mongering

1117
00:50:28,070 --> 00:50:33,750
stories like breast cancer in young

1118
00:50:31,559 --> 00:50:37,940
women with prolonged contact between

1119
00:50:33,750 --> 00:50:40,710
their breasts and cellular phones and

1120
00:50:37,940 --> 00:50:44,880
cell phones may damage male fertility

1121
00:50:40,710 --> 00:50:46,920
Israel study finds mm-hmm patched won't

1122
00:50:44,880 --> 00:50:49,320
reduce your hay fever but will reduce

1123
00:50:46,920 --> 00:50:51,690
radiation yeah little devices you stick

1124
00:50:49,320 --> 00:50:54,660
on your smartphone and all sorts of

1125
00:50:51,690 --> 00:50:56,130
claims being made but yes thank you to

1126
00:50:54,659 --> 00:50:58,019

the skeptics who have been going to that

1127

00:50:56,130 --> 00:50:59,940

site and simply asking questions about

1128

00:50:58,019 --> 00:51:03,329

the product how could it possibly work

1129

00:50:59,940 --> 00:51:05,010

and if you've got nothing else to do I

1130

00:51:03,329 --> 00:51:08,400

suggest you go there and read some of

1131

00:51:05,010 --> 00:51:10,770

the comments and read the well rather

1132

00:51:08,400 --> 00:51:13,619

pathetic replies from the patched

1133

00:51:10,769 --> 00:51:16,050

company if you scroll down on the left

1134

00:51:13,619 --> 00:51:18,239

you'll see where you two can leave a

1135

00:51:16,050 --> 00:51:21,930

comment and if you're going to a comment

1136

00:51:18,239 --> 00:51:24,449

or a question I keep it polite keep it

1137

00:51:21,929 --> 00:51:27,299

to the point and amber them with science

1138

00:51:24,449 --> 00:51:28,769

best best thing we can do but we'll be

1139

00:51:27,300 --> 00:51:31,500

keeping an eye on that story over the

1140

00:51:28,769 --> 00:51:34,340

coming months and another thank you to

1141
00:51:31,500 --> 00:51:35,639
the people who have been buying the

1142
00:51:34,340 --> 00:51:38,760
dependence they are

1143
00:51:35,639 --> 00:51:41,400
gummy pendants at mr. cats online store

1144
00:51:38,760 --> 00:51:43,710
mr. Katz origami pendants and all that

1145
00:51:41,400 --> 00:51:46,050
money helps to go to support the skeptic

1146
00:51:43,710 --> 00:51:48,329
zone well that's enough for me for now

1147
00:51:46,050 --> 00:51:50,370
so for this week this is Richard

1148
00:51:48,329 --> 00:51:56,489
Saunders signing off from Sydney

1149
00:51:50,369 --> 00:51:58,589
Australia you've been listening to the

1150
00:51:56,489 --> 00:52:02,819
skeptic zone podcast visit our website

1151
00:51:58,590 --> 00:52:06,120
at wwc a petting zoo TV for contacts an

1152
00:52:02,820 --> 00:52:09,300
archive of all episodes since 2008 and

1153
00:52:06,119 --> 00:52:11,339
our online store please support the

1154
00:52:09,300 --> 00:52:14,700
skeptic zone by following us on twitter

1155
00:52:11,340 --> 00:52:18,210
at skeptic zone liking us on facebook

1156
00:52:14,699 --> 00:52:19,710
and leaving a review on iTunes you can

1157
00:52:18,210 --> 00:52:23,550
also show your support by subscribing

1158
00:52:19,710 --> 00:52:26,579
via paypal for as little as 99 cents a

1159
00:52:23,550 --> 00:52:28,230
week the skeptic zone is an independent

1160
00:52:26,579 --> 00:52:30,659
production the views and opinions

1161
00:52:28,230 --> 00:52:32,280
expressed on the skeptic zone and not

1162
00:52:30,659 --> 00:52:35,159
necessarily those of Australian

1163
00:52:32,280 --> 00:52:37,970
skeptically or any other skeptical

1164
00:52:35,159 --> 00:52:37,969
organization

1165
00:52:38,119 --> 00:52:40,180
you