

1
00:00:05,929 --> 00:00:13,699
welcome to the skeptic zone the podcast

2
00:00:09,089 --> 00:00:13,699
from Australia for science and reason

3
00:00:21,919 --> 00:00:31,099
hello and welcome to the skeptic zone

4
00:00:24,899 --> 00:00:35,219
episode 305 for the 24th of August 2014

5
00:00:31,099 --> 00:00:37,710
happy birthday nephew Rory Richardson's

6
00:00:35,219 --> 00:00:40,980
here with you from Sydney Australia well

7
00:00:37,710 --> 00:00:42,780
this week shows I am out and about sort

8
00:00:40,979 --> 00:00:47,629
of show it's a live sort of experience

9
00:00:42,780 --> 00:00:51,179
show you'll understand by the end of it

10
00:00:47,630 --> 00:00:53,570
because I take you behind the scenes a

11
00:00:51,179 --> 00:00:56,609
little bit of the mystery investigators

12
00:00:53,570 --> 00:00:58,770
my friend Ian Bryce and I were

13
00:00:56,609 --> 00:01:01,140
performing this week at the Australian

14
00:00:58,770 --> 00:01:03,000
Museum for school groups doing our

15
00:01:01,140 --> 00:01:05,879
mystery investigators show bed of nails

16
00:01:03,000 --> 00:01:08,640
water divining power balance optical

17
00:01:05,879 --> 00:01:10,560
illusions big shout out and thank you to

18
00:01:08,640 --> 00:01:13,859
Richard Wiseman who gave me permission

19
00:01:10,560 --> 00:01:15,450
to use one of his videos in the live

20
00:01:13,859 --> 00:01:18,060
mystery investigators show about

21
00:01:15,450 --> 00:01:21,150
perceptions thank you Richard Eyre much

22
00:01:18,060 --> 00:01:23,400
appreciated and the students really got

23
00:01:21,150 --> 00:01:25,228
a kick out of it and thank you once

24
00:01:23,400 --> 00:01:28,320
again to the Australian Museum for

25
00:01:25,228 --> 00:01:29,728
booking the mystery investigators and

26
00:01:28,319 --> 00:01:32,579
after that it's a week in science from

27
00:01:29,728 --> 00:01:36,118
the Royal Institution of Australia w WR

28
00:01:32,579 --> 00:01:39,989
ia us or go today you and thank you too

29

00:01:36,118 --> 00:01:44,519
Paul Willis dr. Paul Willis he gave a

30
00:01:39,989 --> 00:01:46,769
talk in Canberra during the week and he

31
00:01:44,519 --> 00:01:49,199
and my dear friend Lauren Cochrane the

32
00:01:46,769 --> 00:01:52,048
president of the Canberra skeptics took

33
00:01:49,200 --> 00:01:54,810
the ice bucket challenge good on him

34
00:01:52,049 --> 00:01:58,049
poured cold water all over themselves on

35
00:01:54,810 --> 00:02:00,450
video and earlier in the week my good

36
00:01:58,049 --> 00:02:02,759
friend and skeptics own reporter dr.

37
00:02:00,450 --> 00:02:05,129
Rachel Dunlop also took the ice bucket

38
00:02:02,759 --> 00:02:07,459
challenge then to round off the show

39
00:02:05,129 --> 00:02:11,430
it's a long series of interviews with

40
00:02:07,459 --> 00:02:14,459
Maynard Maynard i went to just last

41
00:02:11,430 --> 00:02:16,290
night went to the powerhouse museum here

42
00:02:14,459 --> 00:02:20,030
in Sydney where they had a wonderful

43
00:02:16,289 --> 00:02:22,049

night of science had all sorts of

44

00:02:20,030 --> 00:02:24,568

scientists turn up to talk to the

45

00:02:22,050 --> 00:02:27,870

general public and they have a stage

46

00:02:24,568 --> 00:02:30,019

show featuring featuring the singing

47

00:02:27,870 --> 00:02:32,810

astronaut Chris had the

48

00:02:30,020 --> 00:02:35,900

and wow didn't the crowd loved his talk

49

00:02:32,810 --> 00:02:37,550

about going up into space and living on

50

00:02:35,900 --> 00:02:39,680

the space station what it's like to come

51

00:02:37,550 --> 00:02:42,830

back and his scientific outreach

52

00:02:39,680 --> 00:02:44,569

fantastic fantastic however I was there

53

00:02:42,830 --> 00:02:47,990

at the request of Frankie Lee at the

54

00:02:44,569 --> 00:02:50,030

powerhouse museum to well entertain the

55

00:02:47,990 --> 00:02:53,240

crowd sort of between sessions which I

56

00:02:50,030 --> 00:02:56,419

did with the spoon bending and we did

57

00:02:53,240 --> 00:02:58,070

water divining tests and demonstrated

58
00:02:56,419 --> 00:03:02,509
power balance sort of like a mini

59
00:02:58,069 --> 00:03:04,189
mystery investigators show and Maynard

60
00:03:02,509 --> 00:03:06,709
was there to do interviews and also take

61
00:03:04,189 --> 00:03:09,650
part in the show as well he's sort of

62
00:03:06,710 --> 00:03:11,240
the mystery investigator in training and

63
00:03:09,650 --> 00:03:15,170
we'll be doing some more live shows

64
00:03:11,240 --> 00:03:17,090
there in about a week's time so it may

65
00:03:15,169 --> 00:03:19,549
not church to all sorts of people at the

66
00:03:17,090 --> 00:03:22,340
big night of science at the powerhouse

67
00:03:19,550 --> 00:03:24,800
museum what a wonderful thing it was to

68
00:03:22,340 --> 00:03:26,439
what a what a great outreach program

69
00:03:24,800 --> 00:03:30,110
they have there at the powerhouse museum

70
00:03:26,439 --> 00:03:32,419
here in Sydney now a quick note from our

71
00:03:30,110 --> 00:03:34,190
friends in Melbourne i think i mentioned

72
00:03:32,419 --> 00:03:37,039
last week there's a dinner coming up

73
00:03:34,189 --> 00:03:39,829
with Lawrence Krauss Lawrence Krauss

74
00:03:37,039 --> 00:03:45,199
yeah dinner coming up dinner and a talk

75
00:03:39,830 --> 00:03:47,540
and it's almost sold out almost in fact

76
00:03:45,199 --> 00:03:51,589
as i'm recording this i believe there

77
00:03:47,539 --> 00:03:52,909
may be one or two tickets left now if

78
00:03:51,590 --> 00:03:55,310
you're in melbourne or you can be in

79
00:03:52,909 --> 00:04:00,259
melbourne on the twenty-ninth of august

80
00:03:55,310 --> 00:04:01,689
rush to vic skeptics wordpress com not

81
00:04:00,259 --> 00:04:04,099
only to find out more about the

82
00:04:01,689 --> 00:04:05,599
goings-on of the Victorian skeptics but

83
00:04:04,099 --> 00:04:09,259
to see if there are still tickets left

84
00:04:05,599 --> 00:04:11,659
for this dinner inquire try to get in

85
00:04:09,259 --> 00:04:14,149
see what they can do for you because the

86

00:04:11,659 --> 00:04:16,459
tickets our sales have to close on

87
00:04:14,150 --> 00:04:18,918
monday which is the day after this

88
00:04:16,459 --> 00:04:22,430
podcast goes outside be quick be quick

89
00:04:18,918 --> 00:04:24,889
and you might just sneak in now a big

90
00:04:22,430 --> 00:04:28,329
shout out in a very big thank you to a

91
00:04:24,889 --> 00:04:32,659
lovely lady i met at the amazing meeting

92
00:04:28,329 --> 00:04:34,668
celestia ward and she was just one of

93
00:04:32,660 --> 00:04:37,130
the fun people who go to the amazing

94
00:04:34,668 --> 00:04:38,689
meeting tam in las vegas and I really

95
00:04:37,129 --> 00:04:42,319
didn't know where I didn't twig where I

96
00:04:38,689 --> 00:04:43,540
was too busy to comprehend what she

97
00:04:42,319 --> 00:04:46,000
really and

98
00:04:43,540 --> 00:04:48,370
or does for a living she's an artist and

99
00:04:46,000 --> 00:04:50,500
a particularly good artist at that

100
00:04:48,370 --> 00:04:52,870

particularly fine doing caricatures

101

00:04:50,500 --> 00:04:55,329

amongst other things and I was until I

102

00:04:52,870 --> 00:04:57,310

got home and I was looking round

103

00:04:55,329 --> 00:05:00,339

facebook that i saw some examples of her

104

00:04:57,310 --> 00:05:03,069

her artwork and i was so impressed that

105

00:05:00,339 --> 00:05:05,229

I begged her I begged her with offers of

106

00:05:03,069 --> 00:05:08,560

origami earrings and all sorts of things

107

00:05:05,230 --> 00:05:11,259

for her to do a caricature of me which

108

00:05:08,560 --> 00:05:13,569

she did and I was completely blown away

109

00:05:11,259 --> 00:05:16,360

it was fantastic it's on my facebook

110

00:05:13,569 --> 00:05:19,629

page if you're interested wow what a

111

00:05:16,360 --> 00:05:23,530

great caricature it is so I am pleased

112

00:05:19,629 --> 00:05:26,230

to promote what she does because she is

113

00:05:23,529 --> 00:05:32,469

obviously very talented and you can head

114

00:05:26,230 --> 00:05:37,360

to www had studio scom that's a numeral

115
00:05:32,470 --> 00:05:39,820
two two heads studios com through to

116
00:05:37,360 --> 00:05:42,910
check out what she does she lives in Las

117
00:05:39,819 --> 00:05:46,990
Vegas and she does caricatures by

118
00:05:42,910 --> 00:05:49,180
Commission she'll turn up at events and

119
00:05:46,990 --> 00:05:53,350
things like that and I can personally

120
00:05:49,180 --> 00:05:56,350
recommend her she um not only because

121
00:05:53,350 --> 00:05:59,020
she sort of did it feel a very funny

122
00:05:56,350 --> 00:06:01,390
caricature of me but in the other ones

123
00:05:59,019 --> 00:06:04,629
I've seen she really captures the

124
00:06:01,389 --> 00:06:06,789
essence of people I think it's quite

125
00:06:04,629 --> 00:06:08,800
remarkable Thank You Celestia I really

126
00:06:06,790 --> 00:06:10,150
appreciate that and everybody else if

127
00:06:08,800 --> 00:06:12,579
you're looking for someone to do a

128
00:06:10,149 --> 00:06:15,879
caricature of you I can certainly

129
00:06:12,579 --> 00:06:19,029
recommend this fine artist and thank you

130
00:06:15,879 --> 00:06:22,209
also to spoon equine who I met at the

131
00:06:19,029 --> 00:06:24,099
amazing meeting another artist she drew

132
00:06:22,209 --> 00:06:26,469
a scene from the audio adventure solar

133
00:06:24,100 --> 00:06:29,650
flare and if you've heard so lovely you

134
00:06:26,470 --> 00:06:31,930
might remember the the part where the

135
00:06:29,649 --> 00:06:34,349
crew lands on the whoo class planet and

136
00:06:31,930 --> 00:06:37,720
we're all attacked by flying monkeys

137
00:06:34,350 --> 00:06:39,850
well Spooky actually drew that scene and

138
00:06:37,720 --> 00:06:43,120
she sent it to me in the post well how

139
00:06:39,850 --> 00:06:44,890
touching is it sir that's definitely

140
00:06:43,120 --> 00:06:48,069
going on a frame on the wall thank you

141
00:06:44,889 --> 00:06:50,139
Spooky it's very nice of you and just

142
00:06:48,069 --> 00:06:51,579
before we get stuck into the skeptics

143

00:06:50,139 --> 00:06:54,639
and a big thank you to all those people

144
00:06:51,579 --> 00:06:56,789
around the world who have been helping

145
00:06:54,639 --> 00:06:59,139
me out with sending in

146
00:06:56,790 --> 00:07:01,450
subtitles for the vaccination chronicles

147
00:06:59,139 --> 00:07:04,209
the little documentary I put up on

148
00:07:01,449 --> 00:07:05,649
YouTube that documentary now has

149
00:07:04,209 --> 00:07:07,959
subtitles in I wonder if I can remember

150
00:07:05,649 --> 00:07:11,469
them all english of course Russian

151
00:07:07,959 --> 00:07:14,579
Portuguese Danish German Italian and

152
00:07:11,470 --> 00:07:20,200
Dutch with more on the way including

153
00:07:14,579 --> 00:07:22,899
Turkish and well we'll see what what

154
00:07:20,199 --> 00:07:24,490
arrives fantastic work people around the

155
00:07:22,899 --> 00:07:27,239
world and thank you to susan goreck for

156
00:07:24,490 --> 00:07:29,829
helping put all that activity together

157
00:07:27,240 --> 00:07:31,449

but that's enough from me right now I'm

158

00:07:29,829 --> 00:07:34,569

going to run downstairs open up the

159

00:07:31,449 --> 00:07:37,689

cupboard see if I can find some couscous

160

00:07:34,569 --> 00:07:45,099

hmm Chris Chris with a little bit of

161

00:07:37,689 --> 00:07:48,639

chili sauce and tuna he was chili sauce

162

00:07:45,100 --> 00:07:50,830

and tuna hmm while I drift away thinking

163

00:07:48,639 --> 00:07:52,979

about that I hope you enjoy the skeptics

164

00:07:50,829 --> 00:07:52,979

are

165

00:08:14,220 --> 00:08:19,090

it's time once again for the mystery

166

00:08:16,839 --> 00:08:20,939

investigators this week it's myself

167

00:08:19,089 --> 00:08:23,439

Richard Saunders in my friend Ian Bryce

168

00:08:20,939 --> 00:08:26,259

performing at the Australian Museum for

169

00:08:23,439 --> 00:08:27,610

groups of high school students the

170

00:08:26,259 --> 00:08:30,250

mystery investigators show has been

171

00:08:27,610 --> 00:08:33,370

going now for about 11 years we explore

172
00:08:30,250 --> 00:08:35,288
the strange the mysterious the spooky if

173
00:08:33,370 --> 00:08:37,149
you want to put it that way using

174
00:08:35,288 --> 00:08:38,830
science we do water divining we have a

175
00:08:37,149 --> 00:08:41,620
bed of nails we explain the tricks

176
00:08:38,830 --> 00:08:45,009
behind power balance I'm in the

177
00:08:41,620 --> 00:08:46,899
backstage area the backstage area and

178
00:08:45,009 --> 00:08:49,480
just on the other side of a very flimsy

179
00:08:46,899 --> 00:08:51,639
curtain is a whole Hall full of

180
00:08:49,480 --> 00:08:53,950
scientific exhibitions and stalls and

181
00:08:51,639 --> 00:08:56,919
things which you can probably hear

182
00:08:53,950 --> 00:09:00,140
jam-packed full of students I'm going to

183
00:08:56,919 --> 00:09:04,979
put my head around the corner here

184
00:09:00,139 --> 00:09:06,809
we have a robot large row button running

185
00:09:04,980 --> 00:09:11,100
around the floor here doesn't look like

186
00:09:06,809 --> 00:09:14,839
a robot but it is we have a display of

187
00:09:11,100 --> 00:09:16,889
physics here with one of those

188
00:09:14,840 --> 00:09:19,530
generators are static electricity

189
00:09:16,889 --> 00:09:21,449
generators we have all the Australian

190
00:09:19,529 --> 00:09:22,980
Defence Force ahir recruiting a career

191
00:09:21,450 --> 00:09:26,700
in science and the Defence Force that's

192
00:09:22,980 --> 00:09:28,680
a noble thing I think Sydney water is

193
00:09:26,700 --> 00:09:30,870
here we've got the university of

194
00:09:28,679 --> 00:09:33,479
technology sydney with their scientific

195
00:09:30,870 --> 00:09:38,220
outreach lots of students wandering past

196
00:09:33,480 --> 00:09:40,250
me at the moment sydney water is showing

197
00:09:38,220 --> 00:09:42,480
how they clean up the waterways

198
00:09:40,250 --> 00:09:45,360
university of new south wales chemistry

199
00:09:42,480 --> 00:09:48,330
department is here the jenolan caves

200

00:09:45,360 --> 00:09:51,180
which is a very famous natural k

201
00:09:48,330 --> 00:09:53,520
formation west of Sydney the victor

202
00:09:51,179 --> 00:09:56,519
chain cardiac research institute is also

203
00:09:53,519 --> 00:09:59,309
represented the age of fishes museum at

204
00:09:56,519 --> 00:10:00,929
caloundra New South Wales I went there

205
00:09:59,309 --> 00:10:06,259
once and I was in that area and I found

206
00:10:00,929 --> 00:10:11,039
some I found some fossilized

207
00:10:06,259 --> 00:10:13,350
trilobite which is very satisfying

208
00:10:11,039 --> 00:10:16,139
walking around the corner here so many

209
00:10:13,350 --> 00:10:17,670
students from so many schools here the

210
00:10:16,139 --> 00:10:21,060
australian museum itself has an

211
00:10:17,669 --> 00:10:25,639
exhibition which is good to see and stir

212
00:10:21,059 --> 00:10:25,638
the atomic reactor is here

213
00:10:26,499 --> 00:10:29,499
demonstrating

214
00:10:29,870 --> 00:10:36,139

just walk around lots of kids it's great

215

00:10:32,179 --> 00:10:38,149

to see so many students have come in to

216

00:10:36,139 --> 00:10:40,879

experience all this interesting science

217

00:10:38,149 --> 00:10:42,699

and to ask questions and soon a lot of

218

00:10:40,879 --> 00:10:45,860

them will be coming into the theatre s

219

00:10:42,700 --> 00:10:49,720

to watch the mystery investigators show

220

00:10:45,860 --> 00:10:49,720

which I'm quite pleased about

221

00:10:50,000 --> 00:10:55,929

now 12 back now towards the back area

222

00:10:57,309 --> 00:11:00,429

the kids are trying out the static

223

00:10:59,080 --> 00:11:03,700

generator here they're all holding hands

224

00:11:00,429 --> 00:11:06,969

in a big circle i think they're getting

225

00:11:03,700 --> 00:11:08,770

to it they anticipated too much the idea

226

00:11:06,970 --> 00:11:10,028

is of course the electrical charge will

227

00:11:08,769 --> 00:11:11,860

go right around the whole circuit of

228

00:11:10,028 --> 00:11:15,639

students they're going to try it one

229
00:11:11,860 --> 00:11:17,940
more time here we go all holding hands

230
00:11:15,639 --> 00:11:17,939
and

231
00:11:19,320 --> 00:11:23,160
every now and then from the backstage

232
00:11:21,600 --> 00:11:24,920
area we're hearing these shrieks of

233
00:11:23,159 --> 00:11:28,889
students which is quite good quite good

234
00:11:24,919 --> 00:11:31,379
well the time is now approaching the end

235
00:11:28,889 --> 00:11:34,769
of the current talk in the hafstrom

236
00:11:31,379 --> 00:11:36,299
theatre at the theatre and when that

237
00:11:34,769 --> 00:11:39,269
talks over the doors will be flung open

238
00:11:36,299 --> 00:11:41,009
on this side so in Bryce and I can set

239
00:11:39,269 --> 00:11:43,740
up our mystery investigators performance

240
00:11:41,009 --> 00:11:47,610
and of all the things I do in the

241
00:11:43,740 --> 00:11:49,889
skeptical realm I must keep a list one

242
00:11:47,610 --> 00:11:51,870
day I think the mystery investigators is

243
00:11:49,889 --> 00:11:54,000
probably one of the most satisfying it's

244
00:11:51,870 --> 00:11:57,799
a lot of fun it's good to perform for

245
00:11:54,000 --> 00:12:01,559
kids and after all these years I think a

246
00:11:57,799 --> 00:12:03,889
lot of students thousands I guess have

247
00:12:01,559 --> 00:12:06,509
learned about water divining and

248
00:12:03,889 --> 00:12:11,970
investigations and they're learnt that

249
00:12:06,509 --> 00:12:17,850
there are skeptical groups out there so

250
00:12:11,970 --> 00:12:19,740
on with the show it's ian brush high and

251
00:12:17,850 --> 00:12:21,180
we're here in the stage area in the

252
00:12:19,740 --> 00:12:22,680
theater area we've set up the mr.

253
00:12:21,179 --> 00:12:24,419
investigation show the water divining

254
00:12:22,679 --> 00:12:26,429
test is all set up we've got the

255
00:12:24,419 --> 00:12:28,049
juggling balls ready the bed of nails is

256
00:12:26,429 --> 00:12:30,359
over there gee it's doing well for 11

257

00:12:28,049 --> 00:12:32,309
years old absolutely looks like a great

258
00:12:30,360 --> 00:12:33,899
show and the students some students are

259
00:12:32,309 --> 00:12:38,278
coming in and hello everybody I'm in

260
00:12:33,899 --> 00:12:44,759
good morning hey this is the mystery

261
00:12:38,278 --> 00:12:46,919
investigators oh okay do you know what

262
00:12:44,759 --> 00:12:51,600
did the show as you see no oh well there

263
00:12:46,919 --> 00:12:53,938
you are Kim bus well that's the sort of

264
00:12:51,600 --> 00:12:55,110
a date is the IMP it now all's well I

265
00:12:53,938 --> 00:12:56,639
hope these students are with us cuz

266
00:12:55,110 --> 00:12:58,589
they're filing in look at them all come

267
00:12:56,639 --> 00:13:06,089
in now we'd hate my kids what school you

268
00:12:58,589 --> 00:13:07,980
from urban girls radio Radio yes if you

269
00:13:06,089 --> 00:13:10,259
want unless your teacher says no I think

270
00:13:07,980 --> 00:13:13,769
you can what school are you from open

271
00:13:10,259 --> 00:13:15,659

yours as well excellent well I better

272

00:13:13,769 --> 00:13:18,360

put this away now and get ready for the

273

00:13:15,659 --> 00:13:19,919

show well all the shows went very well I

274

00:13:18,360 --> 00:13:22,110

think with the kids joining in and all

275

00:13:19,919 --> 00:13:24,769

sorts of things and towards the end of

276

00:13:22,110 --> 00:13:28,970

each show we have the bed of nails and

277

00:13:24,769 --> 00:13:32,308

we pick up the action where I've just

278

00:13:28,970 --> 00:13:35,040

carefully lowered myself down onto the

279

00:13:32,308 --> 00:13:38,568

bed of nails and Ian Bryce is about to

280

00:13:35,039 --> 00:13:38,568

step on my back

281

00:14:05,470 --> 00:14:09,910

one way to thank you

282

00:14:14,519 --> 00:14:16,519

ah

283

00:14:19,120 --> 00:14:29,799

alright will be everything that much so

284

00:14:26,879 --> 00:14:31,360

how is that possible how on earth can I

285

00:14:29,799 --> 00:14:35,889

lie on a bed of nails in hobby engine

286
00:14:31,360 --> 00:14:40,990
have Ian Stannard like your hands all

287
00:14:35,889 --> 00:14:43,870
that's a that's a meeting those of you

288
00:14:40,990 --> 00:14:46,750
didn't hear my weight was distributed

289
00:14:43,870 --> 00:14:49,028
months or almost all the nails so every

290
00:14:46,750 --> 00:14:51,970
individual nails only carrying a tiny

291
00:14:49,028 --> 00:14:54,070
living away and so I really couldn't be

292
00:14:51,970 --> 00:14:57,389
buncha ready what happened what would

293
00:14:54,070 --> 00:15:01,300
happen if they were saying five nights I

294
00:14:57,389 --> 00:15:03,399
would ask everybody not just you want to

295
00:15:01,299 --> 00:15:05,799
work unclassified off but that's just

296
00:15:03,399 --> 00:15:08,049
physics because it's my wife being

297
00:15:05,799 --> 00:15:10,329
distributed evenly amongst many males

298
00:15:08,049 --> 00:15:14,289
but for many years when we heard about

299
00:15:10,330 --> 00:15:16,830
males about the better balance it was

300
00:15:14,289 --> 00:15:19,719
just didn't make sense I'm computer

301
00:15:16,830 --> 00:15:20,570
scientific way until we discovered the

302
00:15:19,720 --> 00:15:23,509
denial

303
00:15:20,570 --> 00:15:25,400
closer together and you don't have to be

304
00:15:23,509 --> 00:15:28,000
in a special mystical tracks in there

305
00:15:25,399 --> 00:15:31,429
after five or six years ago any of that

306
00:15:28,000 --> 00:15:48,259
anybody can really learn mystery that

307
00:15:31,429 --> 00:15:50,599
scientist I welcome to a week in science

308
00:15:48,259 --> 00:15:53,059
from Arya's bringing you the sides you

309
00:15:50,600 --> 00:15:55,399
need to know with features like parking

310
00:15:53,059 --> 00:15:57,619
assist automated breaking and adaptive

311
00:15:55,399 --> 00:16:00,259
cruise control we're already well on our

312
00:15:57,620 --> 00:16:01,789
way to having driverless cars in fact

313
00:16:00,259 --> 00:16:06,669
manufacturers say that they'll be in

314

00:16:01,789 --> 00:16:06,669
stores by 2020 so how do they work

315
00:16:12,830 --> 00:16:18,300
prototypes from listen volvo Audi and

316
00:16:15,809 --> 00:16:20,279
Google use a variety of sensors mounted

317
00:16:18,299 --> 00:16:22,649
on the car to build a detailed picture

318
00:16:20,279 --> 00:16:24,809
of its surroundings one of the main

319
00:16:22,649 --> 00:16:27,600
sensors is a type of laser called

320
00:16:24,809 --> 00:16:29,819
lighter it sends out rapid pulses of non

321
00:16:27,600 --> 00:16:31,830
visible light and measures the time they

322
00:16:29,820 --> 00:16:33,840
take to bounce off objects and return

323
00:16:31,830 --> 00:16:36,420
because light moves at a constant speed

324
00:16:33,840 --> 00:16:39,090
we can then calculate the cars distance

325
00:16:36,419 --> 00:16:41,669
from that object and build a 3d image of

326
00:16:39,090 --> 00:16:43,800
its environment the data from later is

327
00:16:41,669 --> 00:16:45,750
combined with video and radar sensor

328
00:16:43,799 --> 00:16:47,819

information and is processed by an

329

00:16:45,750 --> 00:16:50,370

on-board computer that makes decisions

330

00:16:47,820 --> 00:16:53,220

about steering braking and acceleration

331

00:16:50,370 --> 00:16:55,529

this sophisticated programming requires

332

00:16:53,220 --> 00:16:57,600

the computer to self learn so that it

333

00:16:55,529 --> 00:17:02,429

can still choose the correct action when

334

00:16:57,600 --> 00:17:04,230

it encounters unexpected scenarios I can

335

00:17:02,429 --> 00:17:05,819

see the appeal of a driverless car

336

00:17:04,230 --> 00:17:07,410

allowing you to better use your

337

00:17:05,819 --> 00:17:09,029

commuting time and providing

338

00:17:07,410 --> 00:17:11,580

independence to people who couldn't

339

00:17:09,029 --> 00:17:14,009

otherwise drive plus they could save

340

00:17:11,579 --> 00:17:15,839

thousands of lives by removing human

341

00:17:14,009 --> 00:17:18,180

driver error which accounts for over

342

00:17:15,839 --> 00:17:20,069

ninety percent of crashes they could

343
00:17:18,180 --> 00:17:22,529
also benefit the environment by reducing

344
00:17:20,069 --> 00:17:24,569
the number of cars on the road one

345
00:17:22,529 --> 00:17:26,339
vehicle could serve the whole family by

346
00:17:24,569 --> 00:17:29,189
driving itself between pickups and

347
00:17:26,339 --> 00:17:31,319
drop-offs or in a reimagined taxi

348
00:17:29,190 --> 00:17:33,809
service rather than owning a car at all

349
00:17:31,319 --> 00:17:35,899
you could lodge a transport request and

350
00:17:33,809 --> 00:17:38,399
whatever car is closest will pick you up

351
00:17:35,900 --> 00:17:40,740
smart braking and acceleration could

352
00:17:38,400 --> 00:17:42,960
potentially increase fuel efficiency by

353
00:17:40,740 --> 00:17:44,880
twenty-five percent and communication

354
00:17:42,960 --> 00:17:47,069
between cars will mean that road space

355
00:17:44,880 --> 00:17:49,320
is used better and commuting times

356
00:17:47,069 --> 00:17:51,569
become shorter but there are some

357
00:17:49,319 --> 00:17:53,500
concerns so let's take a look at the top

358
00:17:51,569 --> 00:17:56,389
four

359
00:17:53,500 --> 00:17:58,819
first our concerns about licensing and

360
00:17:56,390 --> 00:18:01,850
legal issues if your driver Lascar is in

361
00:17:58,819 --> 00:18:03,798
a crash who is liable viruses and

362
00:18:01,849 --> 00:18:06,288
malfunctions in the software are another

363
00:18:03,798 --> 00:18:08,329
worry if we can't have bug free internet

364
00:18:06,288 --> 00:18:11,179
browsers is it even possible to make a

365
00:18:08,329 --> 00:18:13,220
bug free car a third potential impact is

366
00:18:11,179 --> 00:18:15,320
that the technology will encourage urban

367
00:18:13,220 --> 00:18:16,519
sprawl with people tolerating long

368
00:18:15,319 --> 00:18:19,609
commutes when they're not actually

369
00:18:16,519 --> 00:18:21,740
driving and finally the idea of someone

370
00:18:19,609 --> 00:18:24,199
being able to remotely hack your car

371

00:18:21,740 --> 00:18:26,899
raises some scary safety and even

372
00:18:24,200 --> 00:18:28,940
terrorism concerns that's it for this

373
00:18:26,898 --> 00:18:31,959
week in science for more information on

374
00:18:28,940 --> 00:18:35,360
driverless cars go to the RAS website RI

375
00:18:31,960 --> 00:18:38,538
aus org dot a you follow us on twitter

376
00:18:35,359 --> 00:18:41,979
at rars and like us on Facebook I'm cure

377
00:18:38,538 --> 00:18:41,980
and groom and we'll catch you next week

378
00:18:51,240 --> 00:18:55,329
do you want to get in touch with nature

379
00:18:53,440 --> 00:18:56,950
without the fallacies come along to

380
00:18:55,329 --> 00:18:59,379
camping skeptically organized by the

381
00:18:56,950 --> 00:19:00,970
Brisbane skeptics society spend two

382
00:18:59,380 --> 00:19:03,070
nights at the tool burrow chalet in the

383
00:19:00,970 --> 00:19:04,538
picturesque ammonia mountain enjoy the

384
00:19:03,069 --> 00:19:06,788
company of fellow skeptics with bush

385
00:19:04,538 --> 00:19:08,710

walks barbecues and pseudoscience movie

386

00:19:06,788 --> 00:19:10,509

night along with a few drinks it's only

387

00:19:08,710 --> 00:19:12,970

sixty dollars for two nights September

388

00:19:10,509 --> 00:19:14,950

12 to the 14th places are strictly

389

00:19:12,970 --> 00:19:29,400

limited so go to Brisbane skeptic stud

390

00:19:14,950 --> 00:19:34,880

org for more details here's main art

391

00:19:29,400 --> 00:19:39,050

spooky action at the distance

392

00:19:34,880 --> 00:19:40,550

oh I'm surrounded by all these really

393

00:19:39,049 --> 00:19:43,039

old inventions and all these ancient

394

00:19:40,549 --> 00:19:44,839

artifacts and for once I'm not at home

395

00:19:43,039 --> 00:19:46,159

but here's an ancient artifact for you

396

00:19:44,839 --> 00:19:48,230

boys and girls out there it's Richard

397

00:19:46,160 --> 00:19:49,759

Saunders yeah I knew that line was

398

00:19:48,230 --> 00:19:52,400

coming Maynard we are we're surrounded

399

00:19:49,759 --> 00:19:54,259

by oh here's a it's not a rickshaw what

400
00:19:52,400 --> 00:19:57,860
is it it's a young oh this is one of the

401
00:19:54,259 --> 00:19:59,150
chairs that I believe Dick Smith used to

402
00:19:57,859 --> 00:20:00,740
get other various members of the

403
00:19:59,150 --> 00:20:02,810
skeptics Australia to carry a room

404
00:20:00,740 --> 00:20:04,160
around it we did we get sedan share this

405
00:20:02,809 --> 00:20:05,750
is you'd get in people would lift you

406
00:20:04,160 --> 00:20:07,550
and carry you around the dick smith

407
00:20:05,750 --> 00:20:09,589
actually circumnavigated the world in

408
00:20:07,549 --> 00:20:11,599
this sedan chair the four people who are

409
00:20:09,589 --> 00:20:13,039
carrying him unfortunately no one can

410
00:20:11,599 --> 00:20:14,869
remember then I am now we're in the

411
00:20:13,039 --> 00:20:16,129
talks are going on sort of in the other

412
00:20:14,869 --> 00:20:20,449
room you can probably hear them in the

413
00:20:16,130 --> 00:20:21,800
background note that ever ah Chris Chris

414
00:20:20,450 --> 00:20:22,970
Hadfield is there thank you I just

415
00:20:21,799 --> 00:20:24,919
trying to think he was looking at

416
00:20:22,970 --> 00:20:26,809
canadian national of course and i would

417
00:20:24,920 --> 00:20:28,670
love to ask him if I got a chance that

418
00:20:26,809 --> 00:20:30,889
i'm told that you're not really nasty

419
00:20:28,670 --> 00:20:33,860
naught until you've done a number two in

420
00:20:30,890 --> 00:20:35,660
a space toilet in space I'd probably

421
00:20:33,859 --> 00:20:37,789
have to agree with your main I that then

422
00:20:35,660 --> 00:20:39,350
you know it yeah then you know yeah okay

423
00:20:37,789 --> 00:20:40,819
yep now I've done everything you'd say

424
00:20:39,349 --> 00:20:42,740
after done that because it's not easy in

425
00:20:40,819 --> 00:20:45,379
zero gravity it easy but you're you're

426
00:20:42,740 --> 00:20:46,970
um you're the cub mystery investigators

427
00:20:45,380 --> 00:20:49,190
a nightmare and you're in training

428

00:20:46,970 --> 00:20:51,950
that's right I'm in training helping you

429
00:20:49,190 --> 00:20:53,269
at all people about the the ideomotor

430
00:20:51,950 --> 00:20:54,289
effect i believe is one of the things

431
00:20:53,269 --> 00:20:56,389
we're going to be talking about I

432
00:20:54,289 --> 00:20:59,599
thought it was the idiot motor effect

433
00:20:56,390 --> 00:21:01,820
and I had my old 1963 Volkswagen outside

434
00:20:59,599 --> 00:21:02,869
but that's completely things different

435
00:21:01,819 --> 00:21:05,149
idiot now you're going to be helping me

436
00:21:02,869 --> 00:21:07,429
with a water divining test the Power

437
00:21:05,150 --> 00:21:09,530
Balance demonstrations tonight and a bit

438
00:21:07,430 --> 00:21:11,060
of spoon bending at look and I'm going

439
00:21:09,529 --> 00:21:12,619
to be talking to a few people about the

440
00:21:11,059 --> 00:21:14,299
wisdom of Erich von Daniken as well I

441
00:21:12,619 --> 00:21:15,679
thought we might get a bit of really

442
00:21:14,299 --> 00:21:16,849

good alternative in there which is that

443

00:21:15,680 --> 00:21:18,470

what we're gonna be game about now we

444

00:21:16,849 --> 00:21:21,199

have to fill up the show somehow may not

445

00:21:18,470 --> 00:21:22,430

really and I had this I asked because

446

00:21:21,200 --> 00:21:24,440

all the scientists have got here like

447

00:21:22,430 --> 00:21:25,850

for example this science is here little

448

00:21:24,440 --> 00:21:28,160

area with all the sciences are going to

449

00:21:25,849 --> 00:21:30,609

sit and chat to people this is dr. olga

450

00:21:28,160 --> 00:21:32,660

Shimoni Chancellor postdoc your

451

00:21:30,609 --> 00:21:34,699

Chancellor's postdoctoral research

452

00:21:32,660 --> 00:21:37,820

fellow at UTS and you can ask her about

453

00:21:34,700 --> 00:21:40,210

nanotechnology and nano bots and as

454

00:21:37,819 --> 00:21:42,710

skeptics and listeners may remember Oh

455

00:21:40,210 --> 00:21:44,799

some months ago maybe almost a year ago

456

00:21:42,710 --> 00:21:47,120

I interviewed dr. Emma Johnston

457
00:21:44,799 --> 00:21:48,889
professor Emma Johnson

458
00:21:47,119 --> 00:21:52,189
university of new south wales marine

459
00:21:48,890 --> 00:21:54,080
ecologist XO toxicologist and TV

460
00:21:52,190 --> 00:21:56,390
presenter yeah i visited her at her

461
00:21:54,079 --> 00:21:58,399
research facility done on sydney harbour

462
00:21:56,390 --> 00:21:59,870
and we had a great interview down there

463
00:21:58,400 --> 00:22:01,820
so she's going to be here later on all

464
00:21:59,869 --> 00:22:03,619
these tables are set up around us Maino

465
00:22:01,819 --> 00:22:04,909
they're all got names on them a famous

466
00:22:03,619 --> 00:22:07,009
scientists with members of the public

467
00:22:04,910 --> 00:22:08,870
can come and chat to this is a great

468
00:22:07,009 --> 00:22:10,789
thing that the Powerhouse Museum of put

469
00:22:08,869 --> 00:22:12,709
on tonight well I was gonna get one to a

470
00:22:10,789 --> 00:22:14,930
table that said ask may not about

471
00:22:12,710 --> 00:22:16,940
anything because I won't know people go

472
00:22:14,930 --> 00:22:19,160
cuz I'll make stuff up that's the thing

473
00:22:16,940 --> 00:22:20,808
they should have a fake scientists and

474
00:22:19,160 --> 00:22:23,600
people could have tell which guy isn't

475
00:22:20,808 --> 00:22:26,329
that be me oh yes I believe that would

476
00:22:23,599 --> 00:22:28,159
be the square root of pie hang on a

477
00:22:26,329 --> 00:22:30,289
minute wait a minute tell me look it

478
00:22:28,160 --> 00:22:34,460
says UTS science here's a really weird

479
00:22:30,289 --> 00:22:36,589
son doctor doctor re right Rachel done

480
00:22:34,460 --> 00:22:39,019
dr. Rachel Dunlop oh that's got to be a

481
00:22:36,589 --> 00:22:40,609
gyp for outlook that effect they'd odd

482
00:22:39,019 --> 00:22:42,519
this this is a put on this is a put-on

483
00:22:40,609 --> 00:22:45,139
dr. Rachel Dunlop I've directed

484
00:22:42,519 --> 00:22:47,329
post-doctorate research fellow mentions

485

00:22:45,140 --> 00:22:49,340
nothing about drinking rachel is also

486
00:22:47,329 --> 00:22:52,069
interested in the pseudoscience claims

487
00:22:49,339 --> 00:22:53,480
of anti-vaccination movement Rachel be

488
00:22:52,069 --> 00:22:55,099
here dr. Rachel be here to answer

489
00:22:53,480 --> 00:22:56,690
questions from the public tonight isn't

490
00:22:55,099 --> 00:22:58,399
that great yeah I got a few questions

491
00:22:56,690 --> 00:23:00,289
for like how come she didn't pay last

492
00:22:58,400 --> 00:23:02,960
months rent that's a good question

493
00:23:00,289 --> 00:23:04,879
that's right but it is all very exciting

494
00:23:02,960 --> 00:23:06,500
where washy on Tuesday night I got

495
00:23:04,880 --> 00:23:08,270
questions I got lots for her I wonder if

496
00:23:06,500 --> 00:23:10,308
she can see those questions may not mean

497
00:23:08,269 --> 00:23:12,589
well i hope i can do well because she

498
00:23:10,308 --> 00:23:14,960
normally helps you out here so tonight

499
00:23:12,589 --> 00:23:17,000

the part of dr. rate she will be played

500

00:23:14,960 --> 00:23:18,079

by Manor it's true she's on Judy's night

501

00:23:17,000 --> 00:23:21,079

she can't be doing a mystery

502

00:23:18,079 --> 00:23:23,000

investigators she's got her duties here

503

00:23:21,079 --> 00:23:24,169

at the table at the science table so

504

00:23:23,000 --> 00:23:26,509

you're going to have to put on a dress

505

00:23:24,170 --> 00:23:27,500

and be dr. Reggie tonight I pretty good

506

00:23:26,509 --> 00:23:30,980

i haven't got the legs but I'll give it

507

00:23:27,500 --> 00:23:33,788

a go tonight we'll be special oh it's

508

00:23:30,980 --> 00:23:35,920

the singing s or not can hear that

509

00:23:33,788 --> 00:23:37,569

we

510

00:23:35,920 --> 00:23:40,120

let's pop our heads around the corner

511

00:23:37,569 --> 00:23:43,559

and listen to the senior

512

00:23:40,119 --> 00:23:43,559

to see your song

513

00:23:44,259 --> 00:23:46,319

I

514
00:23:48,049 --> 00:23:52,379
I'm here with someone who's just seeing

515
00:23:50,670 --> 00:23:55,230
Chris Hadfield do his talk what's your

516
00:23:52,380 --> 00:23:56,190
name little boy around segev hey haven't

517
00:23:55,230 --> 00:23:58,470
you got something to do with Australian

518
00:23:56,190 --> 00:24:01,049
skeptics I did yeah I think so because

519
00:23:58,470 --> 00:24:02,549
this shirt seems to skeptics honest I

520
00:24:01,049 --> 00:24:04,409
think so yeah I've heard of the

521
00:24:02,549 --> 00:24:06,480
organization how did you find Chris head

522
00:24:04,410 --> 00:24:10,500
fields talk pretty inspiring wasn't it

523
00:24:06,480 --> 00:24:12,480
he was it was I was awestruck I was just

524
00:24:10,500 --> 00:24:15,210
I mean it's not about the person it's

525
00:24:12,480 --> 00:24:18,299
just the way he talked that his attitude

526
00:24:15,210 --> 00:24:21,240
is just so inspirational that I spend i

527
00:24:18,299 --> 00:24:23,039
spent half my time through the talk with

528
00:24:21,240 --> 00:24:25,680
goosebumps and in with tears in my eyes

529
00:24:23,039 --> 00:24:26,909
he's just again it's not about being an

530
00:24:25,680 --> 00:24:28,740
astronaut it's not about being the

531
00:24:26,910 --> 00:24:31,500
commander as patient it's about he's

532
00:24:28,740 --> 00:24:34,440
attitude to following your dreams and to

533
00:24:31,500 --> 00:24:36,420
get it and not just about reaching the

534
00:24:34,440 --> 00:24:39,930
the end result what it is that you want

535
00:24:36,420 --> 00:24:44,039
to do but also why for this bein okay

536
00:24:39,930 --> 00:24:46,350
it's also about for the journey on your

537
00:24:44,039 --> 00:24:48,089
way to that goal what I liked was he

538
00:24:46,349 --> 00:24:50,009
said yes you think you might get there

539
00:24:48,089 --> 00:24:51,389
at some time but at the moment enjoy the

540
00:24:50,009 --> 00:24:53,339
time you're in enjoy what you're doing

541
00:24:51,390 --> 00:24:55,890
today enjoy going to the library enjoy

542

00:24:53,339 --> 00:24:57,899
the sunshine enjoy the little things on

543
00:24:55,890 --> 00:25:00,360
your way to perhaps going to where you

544
00:24:57,900 --> 00:25:03,240
might want to go it wasn't again it's

545
00:25:00,359 --> 00:25:06,179
not just about enjoying it's about it I

546
00:25:03,240 --> 00:25:08,940
think it's that combination of seeing

547
00:25:06,180 --> 00:25:10,230
your targets yes knowing that what

548
00:25:08,940 --> 00:25:12,269
you're doing is getting you to that

549
00:25:10,230 --> 00:25:14,819
target but that target is I think you

550
00:25:12,269 --> 00:25:16,559
say maybe one day I will get there so it

551
00:25:14,819 --> 00:25:18,839
was about yes enjoy what you're doing

552
00:25:16,559 --> 00:25:20,819
today and then have that vision have

553
00:25:18,839 --> 00:25:24,899
that goal in front of you at all times I

554
00:25:20,819 --> 00:25:27,000
think that's fantastic the we're just

555
00:25:24,900 --> 00:25:28,500
touching the velvet rope now and when

556
00:25:27,000 --> 00:25:29,819

you touch the velvet robe of course you

557

00:25:28,500 --> 00:25:32,970

meet a lot of people and who've we got

558

00:25:29,819 --> 00:25:35,579

here hi jack Isla Bureau I'm an

559

00:25:32,970 --> 00:25:38,670

ambassador for Space Camp USA and also

560

00:25:35,579 --> 00:25:40,889

an ambassador for Space Camp turkey this

561

00:25:38,670 --> 00:25:43,140

year I've been made the honeywell

562

00:25:40,890 --> 00:25:45,480

international ambassador for their

563

00:25:43,140 --> 00:25:47,700

educator at space Academy program in

564

00:25:45,480 --> 00:25:48,990

Huntsville Alabama and how many people

565

00:25:47,700 --> 00:25:51,420

from Australia are going to space camp

566

00:25:48,990 --> 00:25:53,700

this year this year I'm taking a group

567

00:25:51,420 --> 00:25:55,920

of 31 high school students and a few

568

00:25:53,700 --> 00:25:58,110

adults and a couple of teachers and we

569

00:25:55,920 --> 00:25:59,670

leave on the twenty-fifth September it

570

00:25:58,109 --> 00:26:03,269

was a rough idea what goes on a space

571
00:25:59,670 --> 00:26:04,800
cap space camp is about 70 simulators

572
00:26:03,269 --> 00:26:07,680
that simulate different astronaut

573
00:26:04,799 --> 00:26:10,019
activities you do missions you're in

574
00:26:07,680 --> 00:26:12,630
terms of 16 you do sir Bauer weightless

575
00:26:10,019 --> 00:26:15,000
environment construction you have NASA

576
00:26:12,630 --> 00:26:17,040
astronauts come and have a talk so it's

577
00:26:15,000 --> 00:26:20,190
basically six days of astronaut training

578
00:26:17,039 --> 00:26:22,529
for everyone from 92 99 but I focus on

579
00:26:20,190 --> 00:26:24,120
young children and young high school

580
00:26:22,529 --> 00:26:25,200
what's your favorite activity do they

581
00:26:24,119 --> 00:26:26,939
have that had the moment they have the

582
00:26:25,200 --> 00:26:28,650
really deep pool where they do the stuff

583
00:26:26,940 --> 00:26:30,750
in the deep pool what's that like yeah

584
00:26:28,650 --> 00:26:32,580
well the scoop is great you do get

585
00:26:30,750 --> 00:26:34,289
pyramid construction and stuff on the

586
00:26:32,579 --> 00:26:36,720
bottom of the scuba tank but I think my

587
00:26:34,289 --> 00:26:38,430
favorite activity was either climbing

588
00:26:36,720 --> 00:26:40,230
the 50-foot rock wall and jumping off

589
00:26:38,430 --> 00:26:42,150
with a zip line on your back or climbing

590
00:26:40,230 --> 00:26:44,250
the 38-foot pamper Pole or leaping off

591
00:26:42,150 --> 00:26:46,050
like Superman but I'm terrified of

592
00:26:44,250 --> 00:26:48,930
heights oh I kind of don't get those

593
00:26:46,049 --> 00:26:51,149
down perfectly but I think truly it's

594
00:26:48,930 --> 00:26:54,150
just an awesome place I love going there

595
00:26:51,150 --> 00:26:55,710
at some I would highly recommend it to

596
00:26:54,150 --> 00:26:58,259
everyone they even have visually

597
00:26:55,710 --> 00:27:00,120
impaired camp for blind children so

598
00:26:58,259 --> 00:27:02,190
three times a year they close the camp

599

00:27:00,119 --> 00:27:05,519
and they do Braille and I put the camp

600
00:27:02,190 --> 00:27:07,440
out in Braille so everybody if you have

601
00:27:05,519 --> 00:27:10,079
a dream if you want to go to Space Camp

602
00:27:07,440 --> 00:27:12,120
you should go and Kara dougherty from

603
00:27:10,079 --> 00:27:14,099
here is listed in the walk top one I

604
00:27:12,119 --> 00:27:16,250
think its first or second top places

605
00:27:14,099 --> 00:27:18,269
that she wants to be sit on the planet

606
00:27:16,250 --> 00:27:20,339
what's that website if you want to get a

607
00:27:18,269 --> 00:27:22,230
look at it serious like that and website

608
00:27:20,339 --> 00:27:24,209
is easy Space Camp doc home not that

609
00:27:22,230 --> 00:27:26,940
easy yeah that's very easy but also too

610
00:27:24,210 --> 00:27:28,500
I mean by your program if you want to

611
00:27:26,940 --> 00:27:30,450
get in contact with me I'll give these

612
00:27:28,500 --> 00:27:32,609
guys the card and you want to talk about

613
00:27:30,450 --> 00:27:34,170

it it's great it's the most awesome

614

00:27:32,609 --> 00:27:36,799

thing I've ever done in my life and

615

00:27:34,170 --> 00:27:38,570

that's been ten times that

616

00:27:36,799 --> 00:27:40,879

and Jackie just a quick question what is

617

00:27:38,569 --> 00:27:43,369

your favorite space movie or space TV

618

00:27:40,880 --> 00:27:44,660

show come on what's the only alike it

619

00:27:43,369 --> 00:27:46,609

doesn't have to be accurate just one

620

00:27:44,660 --> 00:27:48,680

that's your favorite actually my

621

00:27:46,609 --> 00:27:50,929

favorite I just saw a way to remember a

622

00:27:48,680 --> 00:27:53,060

straight boy you know danger and also I

623

00:27:50,930 --> 00:27:55,279

love me who doesn't want rocket in their

624

00:27:53,059 --> 00:27:57,769

boots Oh exactly in a zip zip zip up the

625

00:27:55,279 --> 00:28:01,190

cave awesome stuff you know it's just

626

00:27:57,769 --> 00:28:03,079

great yeah thank you thanks guys yes

627

00:28:01,190 --> 00:28:04,400

it's science week science science

628
00:28:03,079 --> 00:28:06,589
science and with the powerhouse museum

629
00:28:04,400 --> 00:28:07,970
and of course when you're talking about

630
00:28:06,589 --> 00:28:10,429
science where'd you find in there

631
00:28:07,970 --> 00:28:13,069
scientists like dr. Rachel Dunlop but at

632
00:28:10,430 --> 00:28:14,600
the bloody bar how are you hello Maynard

633
00:28:13,069 --> 00:28:16,429
I'm good thank you for your self a big

634
00:28:14,599 --> 00:28:18,379
bottle of aspartame there yes I have

635
00:28:16,430 --> 00:28:20,330
it's gonna give me disease or something

636
00:28:18,380 --> 00:28:21,530
I don't know now you can you get a

637
00:28:20,329 --> 00:28:23,029
little table over there we're gonna be

638
00:28:21,529 --> 00:28:24,680
talking to people are you ready for

639
00:28:23,029 --> 00:28:27,470
questions like what were you doing out

640
00:28:24,680 --> 00:28:29,090
so late on Tuesday night any questions

641
00:28:27,470 --> 00:28:31,819
I'll take any questions may know where

642
00:28:29,089 --> 00:28:33,379
was last month's rent oh you have to

643
00:28:31,819 --> 00:28:34,579
come and ask me join the key take a

644
00:28:33,380 --> 00:28:36,620
number and I'll answer all those

645
00:28:34,579 --> 00:28:39,109
questions for you things she says that

646
00:28:36,619 --> 00:28:40,909
such so often it is this time of night

647
00:28:39,109 --> 00:28:42,889
on a set day usually it's across the

648
00:28:40,910 --> 00:28:44,630
road superb object yeah join the queue

649
00:28:42,890 --> 00:28:47,210
tracking number it's like that kind of

650
00:28:44,630 --> 00:28:48,440
stuff and tell me what do people really

651
00:28:47,210 --> 00:28:50,480
want to know when they talk to you about

652
00:28:48,440 --> 00:28:52,430
your chosen field you know I have no

653
00:28:50,480 --> 00:28:54,049
idea i've never done this before and

654
00:28:52,430 --> 00:28:56,269
actually i was asked to do it and i

655
00:28:54,049 --> 00:28:59,269
didn't realize that i'd be sitting down

656

00:28:56,269 --> 00:29:01,309
at a table like a speed date so we

657
00:28:59,269 --> 00:29:02,210
actually have a chair across from me you

658
00:29:01,309 --> 00:29:04,039
thought it would be like the pleasure

659
00:29:02,210 --> 00:29:05,630
chest where there's a wall between and

660
00:29:04,039 --> 00:29:08,019
the people and there's a small hole and

661
00:29:05,630 --> 00:29:10,640
people go hello dr. 18 yes exactly

662
00:29:08,019 --> 00:29:12,829
mainul it's nothing like that it's not

663
00:29:10,640 --> 00:29:15,110
at all know so I have no idea what to

664
00:29:12,829 --> 00:29:18,099
expect but I think I'm gonna warm up I'm

665
00:29:15,109 --> 00:29:20,539
gonna go ask her about last Tuesday not

666
00:29:18,099 --> 00:29:22,429
you can do that mean that I can handle

667
00:29:20,539 --> 00:29:24,019
it and ago say congratulations on the

668
00:29:22,430 --> 00:29:26,390
ice bucket challenge you tip the bucket

669
00:29:24,019 --> 00:29:29,509
of ice over yourself and you called me

670
00:29:26,390 --> 00:29:31,820

out and who else dr. Paul Willis who has

671

00:29:29,509 --> 00:29:34,730

responded in fact I responded most bank

672

00:29:31,819 --> 00:29:36,950

know I've had I've had the bucket tipped

673

00:29:34,730 --> 00:29:38,779

over me enough lately if anyone knows

674

00:29:36,950 --> 00:29:40,250

the history but I can't go into it but I

675

00:29:38,779 --> 00:29:42,470

tell you what I will do I am going to

676

00:29:40,250 --> 00:29:44,150

donate some money to my charity which is

677

00:29:42,470 --> 00:29:45,710

the Bobby Goldsmith foundation well good

678

00:29:44,150 --> 00:29:47,330

for you may know but you know what i was

679

00:29:45,710 --> 00:29:48,559

thinking of when I nominated you I was

680

00:29:47,329 --> 00:29:50,629

thinking of you on the chocolate wheel

681

00:29:48,559 --> 00:29:52,220

in your gold hot pants and I was

682

00:29:50,630 --> 00:29:54,650

thinking if someone could throw I thank

683

00:29:52,220 --> 00:29:56,960

you like it was spinning around now if

684

00:29:54,650 --> 00:29:59,360

people look up Maynard's we love must be

685
00:29:56,960 --> 00:30:02,690
on YouTube they will see me doing that

686
00:29:59,359 --> 00:30:04,849
unfortunately i donated the i'm glad you

687
00:30:02,690 --> 00:30:06,769
brought this up i donated Maynard's

688
00:30:04,849 --> 00:30:08,839
Wheeler will speak to a mistress at the

689
00:30:06,769 --> 00:30:11,089
cross mistress anna i believe how

690
00:30:08,839 --> 00:30:12,740
quickly and i don't know if you're aware

691
00:30:11,089 --> 00:30:15,529
of the bondage device known as the

692
00:30:12,740 --> 00:30:17,150
spanish wheel no I'm not my god well she

693
00:30:15,529 --> 00:30:18,950
turned it into a Spanish wheel which is

694
00:30:17,150 --> 00:30:20,750
basically you can get strapped to it and

695
00:30:18,950 --> 00:30:22,279
get spun around in a bondage kind of way

696
00:30:20,750 --> 00:30:23,779
so it used to be all colorful and fluro

697
00:30:22,279 --> 00:30:25,639
now it's all black and dark and in a

698
00:30:23,779 --> 00:30:27,859
dungeon somewhere Kings Cross see

699
00:30:25,640 --> 00:30:29,780
mistress anna so i should have nominated

700
00:30:27,859 --> 00:30:32,539
mistress anna then more than ice bucket

701
00:30:29,779 --> 00:30:34,129
challenge yeah poor mistress tokyo

702
00:30:32,539 --> 00:30:35,750
actually because I'm bit of a fan of her

703
00:30:34,130 --> 00:30:36,830
work as well right i'm not familiar with

704
00:30:35,750 --> 00:30:39,049
her work but i trust your

705
00:30:36,829 --> 00:30:40,789
recommendations may not ok a bit look at

706
00:30:39,049 --> 00:30:42,079
so i will give i will donate some money

707
00:30:40,789 --> 00:30:43,759
and i will make sure that i get a

708
00:30:42,079 --> 00:30:44,869
receipt and take a photograph of it so

709
00:30:43,759 --> 00:30:46,279
we now have actually given some money

710
00:30:44,869 --> 00:30:48,259
into the Bobby Goldsmith foundation we

711
00:30:46,279 --> 00:30:50,269
trust you mean aren't we trust you yeah

712
00:30:48,259 --> 00:30:51,319
look and so what are you hoping to tell

713

00:30:50,269 --> 00:30:53,389
people what are you trying to get across

714
00:30:51,319 --> 00:30:56,089
how do you excite people about science

715
00:30:53,390 --> 00:30:57,290
well I am actually since you mentioned

716
00:30:56,089 --> 00:30:59,029
that ice bucket challenge i have my

717
00:30:57,289 --> 00:31:00,589
video tonight so i'll be playing that so

718
00:30:59,029 --> 00:31:03,440
people can laugh at me getting drenched

719
00:31:00,589 --> 00:31:05,329
and um I mean our research is really

720
00:31:03,440 --> 00:31:08,120
fascinating I don't really have to sex

721
00:31:05,329 --> 00:31:11,269
it up because it's about bats and algae

722
00:31:08,119 --> 00:31:13,339
and birds and so it's just really

723
00:31:11,269 --> 00:31:16,339
interesting on its own i think ok such a

724
00:31:13,339 --> 00:31:18,049
great story what's got it absolutely has

725
00:31:16,339 --> 00:31:20,149
no relationship whatsoever to ancient

726
00:31:18,049 --> 00:31:21,859
astronauts or you know ancient aliens so

727
00:31:20,150 --> 00:31:24,050

I mean help you haven't got the guy with

728

00:31:21,859 --> 00:31:25,579

the big hair they're helping it I know I

729

00:31:24,049 --> 00:31:26,779

know you're always asking me this

730

00:31:25,579 --> 00:31:29,359

question and you're always trying to

731

00:31:26,779 --> 00:31:31,940

find a link between ancient aliens on

732

00:31:29,359 --> 00:31:34,399

the history channel box turtle I have

733

00:31:31,940 --> 00:31:36,170

not pursued that Avenue yet but yep it's

734

00:31:34,400 --> 00:31:37,700

it's a very good suggestion and I might

735

00:31:36,170 --> 00:31:39,680

write a grant for it and then maybe we

736

00:31:37,700 --> 00:31:40,880

can investigate it remember that i think

737

00:31:39,680 --> 00:31:43,100

was michael shermer said that the

738

00:31:40,880 --> 00:31:46,040

paranormal can be a gateway drug to

739

00:31:43,099 --> 00:31:47,719

actual science so if there is someone

740

00:31:46,039 --> 00:31:50,000

that's interested in the Augie boogie on

741

00:31:47,720 --> 00:31:51,529

the Wu they could perhaps get into your

742
00:31:50,000 --> 00:31:52,700
field through that but your field Billy

743
00:31:51,529 --> 00:31:54,109
hasn't got a lot of that in it it's

744
00:31:52,700 --> 00:31:55,149
actually just got straight up science

745
00:31:54,109 --> 00:31:59,978
yeah

746
00:31:55,148 --> 00:32:01,418
oh I guess there's a bit of superstition

747
00:31:59,979 --> 00:32:03,219
in there and things like that I don't

748
00:32:01,419 --> 00:32:04,299
know I the one that one really got me is

749
00:32:03,219 --> 00:32:06,278
when you went to the middle of the

750
00:32:04,298 --> 00:32:07,358
desert and found that there was algae in

751
00:32:06,278 --> 00:32:10,868
the desert if you just poured some water

752
00:32:07,358 --> 00:32:13,239
yeah well that's the thing algae is 3.5

753
00:32:10,868 --> 00:32:15,548
billion years old as a species so it's

754
00:32:13,239 --> 00:32:18,788
evolved to grow just about anywhere yeah

755
00:32:15,548 --> 00:32:20,679
but did it ever win logi no I don't

756
00:32:18,788 --> 00:32:24,069
think it's ever won a low game for the

757
00:32:20,679 --> 00:32:25,629
best variety show algae no never you're

758
00:32:24,069 --> 00:32:27,460
right it's pretty crap isn't it really

759
00:32:25,628 --> 00:32:29,019
when you think about it look I was I was

760
00:32:27,460 --> 00:32:32,019
watching watching some alternative

761
00:32:29,019 --> 00:32:33,940
videos on on YouTube that said that

762
00:32:32,019 --> 00:32:35,499
there's no link between primates and man

763
00:32:33,940 --> 00:32:37,450
the missing link is still there can you

764
00:32:35,499 --> 00:32:39,579
be isn't there what do you like on the

765
00:32:37,450 --> 00:32:41,469
evolutionary science oh I'm not it's not

766
00:32:39,579 --> 00:32:43,178
my area of expertise Maynard I just I

767
00:32:41,469 --> 00:32:44,679
listen to the expert so I think this is

768
00:32:43,179 --> 00:32:47,528
a good piece of advice for everyone

769
00:32:44,679 --> 00:32:50,259
listening I'm done listening now take

770

00:32:47,528 --> 00:32:53,169
the advice of experts and take the

771
00:32:50,259 --> 00:32:55,450
advice of the consensus from experts so

772
00:32:53,169 --> 00:32:57,399
even within that expert community there

773
00:32:55,450 --> 00:32:59,288
might be one or two people that have

774
00:32:57,398 --> 00:33:01,178
different ideas but it's best to rely on

775
00:32:59,288 --> 00:33:03,548
the consensus and the consensus says

776
00:33:01,179 --> 00:33:05,919
that we are evolved from primates so I

777
00:33:03,548 --> 00:33:07,088
reckon they're probably right like I

778
00:33:05,919 --> 00:33:09,909
hate it when you beat me in an argument

779
00:33:07,088 --> 00:33:11,618
okay what about stuff that's on the edge

780
00:33:09,909 --> 00:33:13,299
of science stuff that's like history

781
00:33:11,618 --> 00:33:15,249
that has a lot of opinion in it and has

782
00:33:13,298 --> 00:33:16,808
the weight of various groups under there

783
00:33:15,249 --> 00:33:18,700
how do you work that one out yeah well

784
00:33:16,808 --> 00:33:20,408

see that's different because people's

785

00:33:18,700 --> 00:33:23,229

opinions are worthy of debate and a

786

00:33:20,409 --> 00:33:25,419

worthy of different opinions that can be

787

00:33:23,229 --> 00:33:28,298

debated but when it comes to evidence

788

00:33:25,419 --> 00:33:30,879

and science and facts there's no debate

789

00:33:28,298 --> 00:33:32,288

around evidence you know $2+2$ is 4 we can

790

00:33:30,878 --> 00:33:34,748

have a debate that it's five but it's

791

00:33:32,288 --> 00:33:36,338

just simply not so we must rely on facts

792

00:33:34,749 --> 00:33:38,588

and evidence when it comes to science

793

00:33:36,338 --> 00:33:40,329

what do you like it maths by the way dr.

794

00:33:38,588 --> 00:33:41,499

H oh I've asked you a lot of questions

795

00:33:40,329 --> 00:33:43,269

and believe you me lessons we have

796

00:33:41,499 --> 00:33:44,348

discussed a lot I've never actually

797

00:33:43,269 --> 00:33:45,940

asked you what do you like at

798

00:33:44,348 --> 00:33:48,819

mathematics because in your field is

799
00:33:45,940 --> 00:33:51,969
that necessarily required it is required

800
00:33:48,819 --> 00:33:54,848
because I do calculations every day and

801
00:33:51,969 --> 00:33:58,210
I'm unfortunately not very good at maths

802
00:33:54,848 --> 00:34:00,158
main art I love math though and I wish

803
00:33:58,210 --> 00:34:02,348
I'd proceed it further but I just wasn't

804
00:34:00,159 --> 00:34:03,729
very good at it but yes you do need math

805
00:34:02,348 --> 00:34:05,319
since I it's not as much in biology

806
00:34:03,729 --> 00:34:07,340
which is what I do if you're doing

807
00:34:05,319 --> 00:34:09,349
physics for example you know

808
00:34:07,339 --> 00:34:11,029
matix to me is just really hard maths

809
00:34:09,349 --> 00:34:12,559
get under the table yeah basically well

810
00:34:11,030 --> 00:34:14,990
it's applied maths too isn't it you know

811
00:34:12,559 --> 00:34:18,139
how would you fit this we love what we

812
00:34:14,989 --> 00:34:19,848
through this doorway if it's too big and

813
00:34:18,139 --> 00:34:21,169
you can write an equation and work it

814
00:34:19,849 --> 00:34:22,399
out and you got it and you can fit in a

815
00:34:21,168 --> 00:34:25,250
double-car garage have a look at that

816
00:34:22,398 --> 00:34:26,960
main adds a wheel of wispy on um it

817
00:34:25,250 --> 00:34:28,668
maynards wheel I think it's on YouTube

818
00:34:26,960 --> 00:34:29,780
there I'm going around in the over suit

819
00:34:28,668 --> 00:34:31,429
in the bongos and with the monkey

820
00:34:29,780 --> 00:34:33,830
underpants monkey Underpants very

821
00:34:31,429 --> 00:34:35,750
impressive now what do you know what are

822
00:34:33,829 --> 00:34:37,608
the rates of like women and girls

823
00:34:35,750 --> 00:34:38,869
getting into science at the moment is it

824
00:34:37,608 --> 00:34:40,639
pretty much even at the moment that we

825
00:34:38,869 --> 00:34:43,070
had a drop-off or was it increase what's

826
00:34:40,639 --> 00:34:45,710
it like no it's actually pretty even and

827

00:34:43,070 --> 00:34:48,050
in fact in the biological sciences it's

828
00:34:45,710 --> 00:34:50,000
weighted more towards females in the

829
00:34:48,050 --> 00:34:52,280
early stages of Korea and also

830
00:34:50,000 --> 00:34:53,750
undergraduate but as people progress to

831
00:34:52,280 --> 00:34:56,119
their careers women drop off

832
00:34:53,750 --> 00:34:59,929
significantly so this is a big problem

833
00:34:56,119 --> 00:35:01,280
which policy makers and leaders now

834
00:34:59,929 --> 00:35:03,440
field have been trying to address for a

835
00:35:01,280 --> 00:35:05,990
number of years is how to maintain and

836
00:35:03,440 --> 00:35:07,460
keep women in the field of science now

837
00:35:05,989 --> 00:35:09,319
why do they drop off is because they see

838
00:35:07,460 --> 00:35:11,269
the earning potential isn't there they

839
00:35:09,320 --> 00:35:13,338
go and do something else they they get

840
00:35:11,269 --> 00:35:15,588
married or was it well there are various

841
00:35:13,338 --> 00:35:18,320

reasons one is of course family gets in

842

00:35:15,588 --> 00:35:20,420

the way but also women for some reason

843

00:35:18,320 --> 00:35:22,970

tend not to apply for as many grants as

844

00:35:20,420 --> 00:35:24,588

men even though the evidence shows that

845

00:35:22,969 --> 00:35:26,419

when they do apply there just as likely

846

00:35:24,588 --> 00:35:29,480

to get awarded the grants in most cases

847

00:35:26,420 --> 00:35:31,570

so for some reason they just sort of get

848

00:35:29,480 --> 00:35:33,829

pushed out and left to the sidelines and

849

00:35:31,570 --> 00:35:35,720

it's a real big problem and people are

850

00:35:33,829 --> 00:35:37,699

trying to address it at the moment well

851

00:35:35,719 --> 00:35:41,029

because every woman i know is smarter

852

00:35:37,699 --> 00:35:44,358

than me hahaha really how many women do

853

00:35:41,030 --> 00:35:46,670

you know just me the air goes a bit but

854

00:35:44,358 --> 00:35:48,588

Gideon grant is really hard I mean even

855

00:35:46,670 --> 00:35:49,490

in the arts I mean the arts is really

856
00:35:48,588 --> 00:35:50,509
hard cuz you got to pretend you're

857
00:35:49,489 --> 00:35:52,969
something you gotta pretend you got an

858
00:35:50,510 --> 00:35:53,839
act for start so i guess in science

859
00:35:52,969 --> 00:35:55,219
that's what you're doing is all you

860
00:35:53,838 --> 00:35:57,889
you're pretending you've got an act or

861
00:35:55,219 --> 00:35:59,598
that be a scientific fact or i guess you

862
00:35:57,889 --> 00:36:01,848
know you've got one in science now well

863
00:35:59,599 --> 00:36:03,559
you you tend to know you've got

864
00:36:01,849 --> 00:36:07,070
something then you apply for a grant

865
00:36:03,559 --> 00:36:09,440
based on that that small idea and you

866
00:36:07,070 --> 00:36:11,210
apply for money to explore it further so

867
00:36:09,440 --> 00:36:13,490
it's pretty much as the same as an

868
00:36:11,210 --> 00:36:15,949
australian council grant really isn't

869
00:36:13,489 --> 00:36:18,139
really probably you know you're hard to

870
00:36:15,949 --> 00:36:20,109
get who's very competitive and very

871
00:36:18,139 --> 00:36:21,879
disheartening when you don't get them

872
00:36:20,110 --> 00:36:23,140
something that we used to have when I

873
00:36:21,880 --> 00:36:24,460
was in the cast net club when we did get

874
00:36:23,139 --> 00:36:26,139
australian council grants when that

875
00:36:24,460 --> 00:36:27,220
existed is the person that ran the

876
00:36:26,139 --> 00:36:29,679
ground would come and check out what

877
00:36:27,219 --> 00:36:31,480
we're doing and we all had to like being

878
00:36:29,679 --> 00:36:32,980
our best behavior does that happen when

879
00:36:31,480 --> 00:36:34,570
the ground people come around check you

880
00:36:32,980 --> 00:36:36,699
what he did you wear a wider look that

881
00:36:34,570 --> 00:36:38,980
let go than usual what do you do and so

882
00:36:36,699 --> 00:36:42,250
now legs instead of on our heads mane

883
00:36:38,980 --> 00:36:43,449
are that's what we do no we do we don't

884

00:36:42,250 --> 00:36:45,760
actually have them come and check on us

885
00:36:43,449 --> 00:36:47,769
but we do have to write reports over a

886
00:36:45,760 --> 00:36:49,660
period of time to demonstrate that we're

887
00:36:47,769 --> 00:36:51,759
not just faffing about in a wool of

888
00:36:49,659 --> 00:36:52,929
whoops be autumn oh that's a thing when

889
00:36:51,760 --> 00:36:54,640
you're doing an arts grant you can

890
00:36:52,929 --> 00:36:56,529
fathom it and that's about that's the

891
00:36:54,639 --> 00:36:58,420
whole idea yeah exactly i suppose so but

892
00:36:56,530 --> 00:37:00,280
that's not the aim in science is not to

893
00:36:58,420 --> 00:37:01,420
faff about really what i'm asking

894
00:37:00,280 --> 00:37:05,500
everyone here today what is your

895
00:37:01,420 --> 00:37:06,909
favorite space TV show or movie to do a

896
00:37:05,500 --> 00:37:08,170
space since we've got a space-themed

897
00:37:06,909 --> 00:37:10,299
here as science weekly what does your

898
00:37:08,170 --> 00:37:11,680

I've mentioned darkstar as being one of

899

00:37:10,300 --> 00:37:13,320

my favorite movies because it's a bit of

900

00:37:11,679 --> 00:37:15,819

an analog of the Vietnam experience

901

00:37:13,320 --> 00:37:18,730

quirk is a good TV show I thought that

902

00:37:15,820 --> 00:37:20,830

was pretty good as well I like beyond

903

00:37:18,730 --> 00:37:23,980

the shadow of the moon it's a

904

00:37:20,829 --> 00:37:26,349

documentary about the trip to the moon

905

00:37:23,980 --> 00:37:28,300

and the moon landings and it's I can't

906

00:37:26,349 --> 00:37:29,980

remember if Frank Zappa's son made it or

907

00:37:28,300 --> 00:37:31,630

something well that's cool I don't I

908

00:37:29,980 --> 00:37:33,429

don't remember but it's just a beautiful

909

00:37:31,630 --> 00:37:35,019

documentary and interviews all the

910

00:37:33,429 --> 00:37:37,169

astronauts and talks to them about their

911

00:37:35,019 --> 00:37:39,519

experiences and also interestingly

912

00:37:37,170 --> 00:37:41,139

delves into the fact that some of them

913
00:37:39,519 --> 00:37:42,579
came back and became quite religious

914
00:37:41,139 --> 00:37:45,099
because they found the experience so

915
00:37:42,579 --> 00:37:46,690
overwhelming and then it's the famous

916
00:37:45,099 --> 00:37:48,190
movie where they talk about just putting

917
00:37:46,690 --> 00:37:49,960
your thumb up to earth when you're

918
00:37:48,190 --> 00:37:52,840
standing on the moon and everything you

919
00:37:49,960 --> 00:37:55,150
know disappears in a second and how

920
00:37:52,840 --> 00:37:58,180
overwhelming that was for them but I

921
00:37:55,150 --> 00:38:00,730
also liked the dish is really in a dish

922
00:37:58,179 --> 00:38:03,849
it's a great film about space and muninn

923
00:38:00,730 --> 00:38:05,349
and space travel here I hope you have a

924
00:38:03,849 --> 00:38:07,239
good night tonight getting great

925
00:38:05,349 --> 00:38:08,679
questions I hope no one stumps you won't

926
00:38:07,239 --> 00:38:11,199
really be annoying if some like 12 your

927
00:38:08,679 --> 00:38:12,669
kid cameras God kid comes up and gas and

928
00:38:11,199 --> 00:38:14,649
have you got the equation to something

929
00:38:12,670 --> 00:38:17,170
you'll get a no little boy I don't and

930
00:38:14,650 --> 00:38:19,000
little boys gonna go hmm well that could

931
00:38:17,170 --> 00:38:20,320
probably happen may not because I'm a

932
00:38:19,000 --> 00:38:22,780
scientist therefore I don't know

933
00:38:20,320 --> 00:38:24,730
everything we're trying that men's a

934
00:38:22,780 --> 00:38:26,980
scientist is he yes what kind of

935
00:38:24,730 --> 00:38:28,630
scientist is he well look I've had his

936
00:38:26,980 --> 00:38:29,920
argument a few people a lot of people

937
00:38:28,630 --> 00:38:32,380
claim the Batman is in fact a

938
00:38:29,920 --> 00:38:33,550
technologist and sure yes he is but he's

939
00:38:32,380 --> 00:38:35,140
also a scientist

940
00:38:33,550 --> 00:38:37,120
if anyone has seen Adam West he's in the

941

00:38:35,139 --> 00:38:38,230
Batcave he's always doing he's must must

942
00:38:37,119 --> 00:38:40,000
have something in chemistry because he's

943
00:38:38,230 --> 00:38:41,500
mucked around in chemistry and he must

944
00:38:40,000 --> 00:38:43,539
have maybe he's got a degree in crime or

945
00:38:41,500 --> 00:38:45,699
so now that the green crime google crime

946
00:38:43,539 --> 00:38:47,559
fighting crime fighting I don't know and

947
00:38:45,699 --> 00:38:49,389
I rennes exceed have to have a degree in

948
00:38:47,559 --> 00:38:51,759
forensics it's not my area of expertise

949
00:38:49,389 --> 00:38:53,259
Batman's occupation or qualifications to

950
00:38:51,760 --> 00:38:57,280
main outside prefer i prefer not to

951
00:38:53,260 --> 00:39:00,190
comment in this situation oh look let's

952
00:38:57,280 --> 00:39:03,670
reveal now somebody tell myself look at

953
00:39:00,190 --> 00:39:05,559
that ah fan fantastic Scott look it's

954
00:39:03,670 --> 00:39:07,900
William Shatner William Shatner no

955
00:39:05,559 --> 00:39:09,549

William Shatner's done as more for

956

00:39:07,900 --> 00:39:10,840

science than I ever have but tell me so

957

00:39:09,550 --> 00:39:11,950

what's your degree and who are you and

958

00:39:10,840 --> 00:39:14,380

what are you doing here as part of

959

00:39:11,949 --> 00:39:16,299

science work I'll well I am here

960

00:39:14,380 --> 00:39:18,610

representing edster means we're a

961

00:39:16,300 --> 00:39:20,230

sponsor of this event since we do which

962

00:39:18,610 --> 00:39:22,750

stands for the Australian nuclear

963

00:39:20,230 --> 00:39:25,059

science technology organisation so we're

964

00:39:22,750 --> 00:39:27,190

here just to basically raise awareness

965

00:39:25,059 --> 00:39:29,380

of what we're doing in some we've got an

966

00:39:27,190 --> 00:39:32,500

activity here which is a science lab so

967

00:39:29,380 --> 00:39:35,440

as the night goes on you can grab a lab

968

00:39:32,500 --> 00:39:37,719

coat and jump into our Y 11 you'll get a

969

00:39:35,440 --> 00:39:39,490

strip of photos that you can take home

970
00:39:37,719 --> 00:39:40,659
as a bit of a moment ocean actually do

971
00:39:39,489 --> 00:39:43,569
that a bit later and what's your degree

972
00:39:40,659 --> 00:39:46,629
I have a degree in the very noble

973
00:39:43,570 --> 00:39:50,710
science of marketing get out hence a

974
00:39:46,630 --> 00:39:53,410
science lab look I reckon marketing can

975
00:39:50,710 --> 00:39:55,570
be as difficult as like men finding it

976
00:39:53,409 --> 00:39:58,269
amira conium from time to time but yeah

977
00:39:55,570 --> 00:40:00,430
well that's true it's true yes it can be

978
00:39:58,269 --> 00:40:02,259
very very easy or can be extremely

979
00:40:00,429 --> 00:40:03,819
difficult a little bit why you want to

980
00:40:02,260 --> 00:40:05,170
look at it well so so you can feel tough

981
00:40:03,820 --> 00:40:07,750
questions like how's that thorium

982
00:40:05,170 --> 00:40:09,490
reactor going how we going on that one

983
00:40:07,750 --> 00:40:11,710
is India way ahead of us on that one

984
00:40:09,489 --> 00:40:14,019
there oh well look you know we have a

985
00:40:11,710 --> 00:40:17,079
research reactor a tedster so we make

986
00:40:14,019 --> 00:40:19,570
nuclear medicines and do research ah not

987
00:40:17,079 --> 00:40:21,730
so concerned about power reactors like a

988
00:40:19,570 --> 00:40:25,059
for lan reactor would seat that's the

989
00:40:21,730 --> 00:40:26,380
right question see and but we do produce

990
00:40:25,059 --> 00:40:27,940
you know eighty-five percent of the

991
00:40:26,380 --> 00:40:29,619
country's nuclear medicine so these are

992
00:40:27,940 --> 00:40:31,780
medicines you would take you're going to

993
00:40:29,619 --> 00:40:34,480
have a scan to detect cancel any other

994
00:40:31,780 --> 00:40:36,760
disease so you know it's a very very

995
00:40:34,480 --> 00:40:39,969
important facility to have and in terms

996
00:40:36,760 --> 00:40:42,070
of research you know we produce neutrons

997
00:40:39,969 --> 00:40:44,169
out of our reactor and use those

998

00:40:42,070 --> 00:40:45,950
neutrons understand the atomic structure

999
00:40:44,170 --> 00:40:48,559
of all sorts of materials

1000
00:40:45,949 --> 00:40:50,838
so we have about 300 scientists working

1001
00:40:48,559 --> 00:40:53,328
there that in that particular field so

1002
00:40:50,838 --> 00:40:54,469
now is a tough question particularly for

1003
00:40:53,329 --> 00:40:56,780
someone in the field what's your

1004
00:40:54,469 --> 00:40:58,189
favorite element I'm appear on the bit

1005
00:40:56,780 --> 00:41:00,470
on the periodic table when you're

1006
00:40:58,190 --> 00:41:04,490
looking at it you go man that just blows

1007
00:41:00,469 --> 00:41:05,959
my mind oh well I already claimed mine

1008
00:41:04,489 --> 00:41:07,729
and Mira conium I like it because the

1009
00:41:05,960 --> 00:41:09,380
things were very bold of them to name it

1010
00:41:07,730 --> 00:41:10,880
after the country quite selfish of them

1011
00:41:09,380 --> 00:41:12,588
but still just the same not about it i'm

1012
00:41:10,880 --> 00:41:16,670

going to give you a marketing answer

1013

00:41:12,588 --> 00:41:19,429

here so why ANSTO radiates about thirty

1014

00:41:16,670 --> 00:41:21,170

percent of the world's silicon so i'm

1015

00:41:19,429 --> 00:41:24,529

going to say silicon there's my favorite

1016

00:41:21,170 --> 00:41:26,838

elements and some the silicon is a step

1017

00:41:24,530 --> 00:41:30,349

in the production of silicon chips and

1018

00:41:26,838 --> 00:41:32,358

about everything yes yeah yes yeah yeah

1019

00:41:30,349 --> 00:41:36,200

there's nothing to shove the summon beer

1020

00:41:32,358 --> 00:41:37,400

as well well I hope so I hope so one my

1021

00:41:36,199 --> 00:41:38,689

favorite look I hope you're gonna go

1022

00:41:37,400 --> 00:41:40,280

well here and what are the kids mainly

1023

00:41:38,690 --> 00:41:41,780

get up to the that you take a photo of

1024

00:41:40,280 --> 00:41:43,640

them in the lab and they do that it's

1025

00:41:41,780 --> 00:41:46,190

not you guys haven't you come and have a

1026

00:41:43,639 --> 00:41:47,449

go so lots of different tell liquids now

1027
00:41:46,190 --> 00:41:49,760
are any of these normally available

1028
00:41:47,449 --> 00:41:51,828
after ten o'clock at a pub for example

1029
00:41:49,760 --> 00:41:53,180
is any this of still available in Kings

1030
00:41:51,829 --> 00:41:55,430
Cross which must have stuff being baby

1031
00:41:53,179 --> 00:41:57,769
now I think I'll a to the supermarkets

1032
00:41:55,429 --> 00:41:59,719
so food coloring right I've always been

1033
00:41:57,769 --> 00:42:01,159
I know that the red stuff makes you run

1034
00:41:59,719 --> 00:42:02,809
around like a nut if you have some but

1035
00:42:01,159 --> 00:42:04,578
but the blue stuff really washes your

1036
00:42:02,809 --> 00:42:07,460
hands get rid of 90 understand the germs

1037
00:42:04,579 --> 00:42:08,900
here well I don't know about that so if

1038
00:42:07,460 --> 00:42:10,970
you put some of that blue stuff on your

1039
00:42:08,900 --> 00:42:14,088
hands you can have blue hands for a few

1040
00:42:10,969 --> 00:42:15,559
days it looks pretty cool like this

1041
00:42:14,088 --> 00:42:17,568
looks like there's some genuine science

1042
00:42:15,559 --> 00:42:19,578
about to go on here all about cool thing

1043
00:42:17,568 --> 00:42:22,940
about this is you're going to get photos

1044
00:42:19,579 --> 00:42:25,690
and so we are going to say Richard put

1045
00:42:22,940 --> 00:42:29,150
this on your arm skeptics facebook site

1046
00:42:25,690 --> 00:42:30,710
and cook until now so I Twitter them as

1047
00:42:29,150 --> 00:42:32,329
well they would like to know what's the

1048
00:42:30,710 --> 00:42:34,159
website for you guys so we can find out

1049
00:42:32,329 --> 00:42:35,599
more about you and get to the get to the

1050
00:42:34,159 --> 00:42:38,059
bottom of that thorium issue that I've

1051
00:42:35,599 --> 00:42:39,140
been discussing well you can have a look

1052
00:42:38,059 --> 00:42:43,789
at all the other things that we're

1053
00:42:39,139 --> 00:42:48,318
working on so it is it is wwan co which

1054
00:42:43,789 --> 00:42:50,389
is a in st oak ave you and you ever take

1055

00:42:48,318 --> 00:42:53,329
guided tours through lucas lucas heights

1056
00:42:50,389 --> 00:42:55,608
guided tours every second saturday for

1057
00:42:53,329 --> 00:42:57,650
the general public and most days during

1058
00:42:55,608 --> 00:42:59,900
the school holidays as well too

1059
00:42:57,650 --> 00:43:02,389
so two and a half hour tour it's free

1060
00:42:59,900 --> 00:43:04,278
we'll show you our reactor will show you

1061
00:43:02,389 --> 00:43:05,509
our major scientific facilities we've

1062
00:43:04,278 --> 00:43:08,179
got other things like particle

1063
00:43:05,510 --> 00:43:10,250
accelerators there as well two different

1064
00:43:08,179 --> 00:43:12,108
environmental labs so we'll give you a

1065
00:43:10,250 --> 00:43:13,969
good look around the site and also tell

1066
00:43:12,108 --> 00:43:15,588
you all the amazing stuff that we do out

1067
00:43:13,969 --> 00:43:18,169
there right thanks a lot thank you very

1068
00:43:15,588 --> 00:43:19,519
much but we're just seeing over in the

1069
00:43:18,170 --> 00:43:21,769

background there Richard Saunders is

1070

00:43:19,519 --> 00:43:23,329

doing his stuff he's bending spoons he's

1071

00:43:21,769 --> 00:43:25,429

making people find water what's your

1072

00:43:23,329 --> 00:43:27,769

name Michelle and what did Richard

1073

00:43:25,429 --> 00:43:29,929

Saunders have you do then he just gave

1074

00:43:27,769 --> 00:43:32,989

me a divining rod went and hit some

1075

00:43:29,929 --> 00:43:34,219

water whilst I was not looking to get me

1076

00:43:32,989 --> 00:43:36,399

to see if I could find the water with

1077

00:43:34,219 --> 00:43:39,558

the divining rod and how did you go I

1078

00:43:36,400 --> 00:43:42,500

didn't quite make it no I was just one

1079

00:43:39,559 --> 00:43:44,390

box away but yeah I went with the way it

1080

00:43:42,500 --> 00:43:45,949

was pointing and it was definitely not

1081

00:43:44,389 --> 00:43:47,838

pointing for the water so for a moment

1082

00:43:45,949 --> 00:43:50,689

there you'd already spent that \$10,000

1083

00:43:47,838 --> 00:43:52,909

you could have one no actually i'm i'm

1084
00:43:50,690 --> 00:43:56,778
actually a regular follow of the

1085
00:43:52,909 --> 00:43:59,899
skeptics sign so I was actually already

1086
00:43:56,778 --> 00:44:01,460
pretty skeptical about it anyway okay so

1087
00:43:59,900 --> 00:44:03,349
what you were doing could have been an

1088
00:44:01,460 --> 00:44:05,028
example of cognitive dissonance maybe Oh

1089
00:44:03,349 --> 00:44:07,150
perhaps yeah maybe actually there is

1090
00:44:05,028 --> 00:44:11,420
avani but you didn't want it to happen

1091
00:44:07,150 --> 00:44:13,220
exactly my power of mind over ruled it

1092
00:44:11,420 --> 00:44:14,990
also yes I'm asking everyone tonight

1093
00:44:13,219 --> 00:44:16,909
because it's been a bit of space here

1094
00:44:14,989 --> 00:44:20,899
tonight what's your favorite space TV

1095
00:44:16,909 --> 00:44:23,298
show or movie it simply go oh my gosh um

1096
00:44:20,900 --> 00:44:25,509
I'm not necessarily meaning a realistic

1097
00:44:23,298 --> 00:44:28,389
one just one you like

1098
00:44:25,509 --> 00:44:30,039
oh god now you put me on the spot I'm

1099
00:44:28,389 --> 00:44:32,079
almost a big fan of anything of the work

1100
00:44:30,039 --> 00:44:34,329
of Shatner involved in it but of course

1101
00:44:32,079 --> 00:44:36,309
there's not a see if it came to books

1102
00:44:34,329 --> 00:44:39,609
out probably you know about sleep

1103
00:44:36,309 --> 00:44:42,729
douglas adams and Hitchhiker's Guide so

1104
00:44:39,608 --> 00:44:45,489
much volume which volume um actually the

1105
00:44:42,728 --> 00:44:47,918
first one is it's an and actually the

1106
00:44:45,489 --> 00:44:50,739
first two I really enjoyed the most I

1107
00:44:47,918 --> 00:44:53,199
think so the Dirk Gently detective

1108
00:44:50,739 --> 00:44:54,969
agency oh I actually I have to invoke

1109
00:44:53,199 --> 00:44:58,329
bookshelf but I've still yet to read it

1110
00:44:54,969 --> 00:44:59,409
so yeah I was lucky enough to meet him

1111
00:44:58,329 --> 00:45:01,568
once and interview him and he was a

1112

00:44:59,409 --> 00:45:03,398
lovely man and online if you search

1113
00:45:01,568 --> 00:45:04,989
Maynard and Douglas animals I don't that

1114
00:45:03,398 --> 00:45:06,308
one-hour interview with him oh that

1115
00:45:04,989 --> 00:45:07,659
would be amazing i look forward to

1116
00:45:06,309 --> 00:45:09,699
listening to it he was just the wildest

1117
00:45:07,659 --> 00:45:11,648
guy hey thank you for helping us here

1118
00:45:09,699 --> 00:45:14,019
tonight no thank you Reynard is they're

1119
00:45:11,648 --> 00:45:15,699
lovely to meet you good science wig here

1120
00:45:14,018 --> 00:45:16,958
at the powerhouse as I said and Hoover

1121
00:45:15,699 --> 00:45:20,168
got here what have you got a degree in

1122
00:45:16,958 --> 00:45:22,598
sir hello my name is Boyan I actually

1123
00:45:20,168 --> 00:45:24,129
have a degree in physics but I'm here to

1124
00:45:22,599 --> 00:45:27,189
talk about biology I'm here to talk

1125
00:45:24,130 --> 00:45:28,479
about elbow biofuels oh and how has it

1126
00:45:27,188 --> 00:45:32,648

been going so far what have people been

1127

00:45:28,478 --> 00:45:34,898

asking you very interesting questions

1128

00:45:32,648 --> 00:45:36,998

actually a lot about the future

1129

00:45:34,898 --> 00:45:39,429

potential for getting sustainable energy

1130

00:45:36,998 --> 00:45:42,129

in Australia so you know how much how

1131

00:45:39,429 --> 00:45:44,139

much space will we need to how much

1132

00:45:42,130 --> 00:45:46,179

space do we need to grow algae in order

1133

00:45:44,139 --> 00:45:48,489

to satisfy the energy requirements of

1134

00:45:46,179 --> 00:45:50,409

the country what are the advantages of

1135

00:45:48,489 --> 00:45:52,568

algae against traditional fuels like

1136

00:45:50,409 --> 00:45:54,489

crude oil so yeah it's been very

1137

00:45:52,568 --> 00:45:56,318

interesting so far and and if we were to

1138

00:45:54,489 --> 00:45:57,909

do it on a commercial scale what would

1139

00:45:56,318 --> 00:45:59,918

you have to do would you take over very

1140

00:45:57,909 --> 00:46:01,630

large area or would it be very how would

1141
00:45:59,918 --> 00:46:04,538
you do what would it look like a LG

1142
00:46:01,630 --> 00:46:06,939
factory it would it look quite

1143
00:46:04,539 --> 00:46:10,239
agriculture actually would be an you

1144
00:46:06,938 --> 00:46:12,098
would have salt water ponds on marginal

1145
00:46:10,239 --> 00:46:14,528
land so it can be desert it doesn't have

1146
00:46:12,099 --> 00:46:16,838
to be agricultural land and what you

1147
00:46:14,528 --> 00:46:19,239
would do is you choose a coastal region

1148
00:46:16,838 --> 00:46:20,528
and you dig up our groupings you'd fill

1149
00:46:19,239 --> 00:46:21,489
it with salt water and then you put

1150
00:46:20,528 --> 00:46:23,858
yourselves in there and they would just

1151
00:46:21,489 --> 00:46:27,699
grow and they use satellite to grow so

1152
00:46:23,858 --> 00:46:31,808
you and some minimal nutrients and you

1153
00:46:27,699 --> 00:46:33,369
need to satisfy the the crude oil demand

1154
00:46:31,809 --> 00:46:35,519
for Australia you'd need an area

1155
00:46:33,369 --> 00:46:37,289
approximately the size of Sydney

1156
00:46:35,519 --> 00:46:38,519
okay and that could be some area that's

1157
00:46:37,289 --> 00:46:40,650
not being used for anything else at the

1158
00:46:38,519 --> 00:46:44,400
moment exactly it could be a desert

1159
00:46:40,650 --> 00:46:45,930
region okay and what sort of what what's

1160
00:46:44,400 --> 00:46:47,670
been the largest scale production

1161
00:46:45,929 --> 00:46:50,909
distance gone on so far anywhere in the

1162
00:46:47,670 --> 00:46:53,430
world it's it's happening in the States

1163
00:46:50,909 --> 00:46:54,960
at the moment it's a new mexico and

1164
00:46:53,429 --> 00:46:56,909
they're looking at about 400 hectares

1165
00:46:54,960 --> 00:46:59,519
they're scaling up to about 400 hectares

1166
00:46:56,909 --> 00:47:01,379
at the moment okay and is it easy to

1167
00:46:59,519 --> 00:47:03,269
explain in layman's terms how you get it

1168
00:47:01,380 --> 00:47:06,750
from being the algae in the water to

1169

00:47:03,269 --> 00:47:08,940
being able to be a fuel in your car it

1170
00:47:06,750 --> 00:47:12,570
it's it's easy to explain it's a bit

1171
00:47:08,940 --> 00:47:14,490
harder to do and what you do is you need

1172
00:47:12,570 --> 00:47:15,780
to extract the algae from the water so

1173
00:47:14,489 --> 00:47:18,269
the algal cells are growing in

1174
00:47:15,780 --> 00:47:20,280
suspension in the water you need to pull

1175
00:47:18,269 --> 00:47:21,869
them out but then you need to squash

1176
00:47:20,280 --> 00:47:23,700
them to get the oils out of them and

1177
00:47:21,869 --> 00:47:27,539
eventually you need to chemically

1178
00:47:23,699 --> 00:47:29,489
convert those oils into fuels and the

1179
00:47:27,539 --> 00:47:32,820
oil is quite combustible is that correct

1180
00:47:29,489 --> 00:47:35,729
that's correct yes it's it's essentially

1181
00:47:32,820 --> 00:47:37,440
an analog for crude oil so once you get

1182
00:47:35,730 --> 00:47:39,780
yours out of the cells you send them to

1183
00:47:37,440 --> 00:47:42,360

a refinery and you process them the same

1184

00:47:39,780 --> 00:47:43,380

way as a traditional fuel and the reason

1185

00:47:42,360 --> 00:47:44,760

no one's doing this at the moment is

1186

00:47:43,380 --> 00:47:46,140

because there's quite a steep curve to

1187

00:47:44,760 --> 00:47:47,580

get it to the commercial level and no

1188

00:47:46,139 --> 00:47:49,289

one's willing to risk that is that what

1189

00:47:47,579 --> 00:47:51,090

it is that's exactly what it is it's a

1190

00:47:49,289 --> 00:47:52,949

question of scale so we work at the

1191

00:47:51,090 --> 00:47:56,100

laboratory scale at the moment a few

1192

00:47:52,949 --> 00:47:58,679

liters we need to get to the size of

1193

00:47:56,099 --> 00:48:00,329

Sydney and the question is when you go

1194

00:47:58,679 --> 00:48:02,429

to a pilot scale of a few thousand

1195

00:48:00,329 --> 00:48:03,750

liters who's going to invest in that

1196

00:48:02,429 --> 00:48:05,789

who's going to take that risk because

1197

00:48:03,750 --> 00:48:08,099

you you're not producing very much fuel

1198
00:48:05,789 --> 00:48:10,349
but you have significant construction

1199
00:48:08,099 --> 00:48:13,409
costs so somebody needs to take that

1200
00:48:10,349 --> 00:48:14,969
risk and so it's combustible as petrol

1201
00:48:13,409 --> 00:48:18,210
or diesel what sort of fuel you're

1202
00:48:14,969 --> 00:48:20,429
talking about all right so you would you

1203
00:48:18,210 --> 00:48:21,840
get crude oil and you separate the oil

1204
00:48:20,429 --> 00:48:24,000
into fractions you there would be a

1205
00:48:21,840 --> 00:48:26,910
diesel fraction a petrol fraction also

1206
00:48:24,000 --> 00:48:29,250
jet fuel fraction elements that you

1207
00:48:26,909 --> 00:48:32,279
could use to make plastics so you get

1208
00:48:29,250 --> 00:48:34,050
the whole spectrum of fuels so you just

1209
00:48:32,280 --> 00:48:35,430
opened up my eyes to a whole new world I

1210
00:48:34,050 --> 00:48:37,380
didn't know existed I didn't know it was

1211
00:48:35,429 --> 00:48:39,059
completely replaceable for hydrocarbons

1212
00:48:37,380 --> 00:48:40,410
that's amazing well I'm glad to hear

1213
00:48:39,059 --> 00:48:43,619
okay thank you very much have a good

1214
00:48:40,409 --> 00:48:45,079
night thank you look Luke we've got

1215
00:48:43,619 --> 00:48:46,829
three people here have just been

1216
00:48:45,079 --> 00:48:48,869
experiencing the Chris Hadfield

1217
00:48:46,829 --> 00:48:51,058
experience on stage what's it been like

1218
00:48:48,869 --> 00:48:55,019
oh it's being very fascinating actually

1219
00:48:51,059 --> 00:48:56,339
at it's great to hear all the little

1220
00:48:55,018 --> 00:48:58,679
things that you might be thinking about

1221
00:48:56,338 --> 00:49:01,018
in space that with it we don't know the

1222
00:48:58,679 --> 00:49:02,608
answers to and he's just been telling us

1223
00:49:01,018 --> 00:49:03,748
everything so that was one thing you

1224
00:49:02,608 --> 00:49:09,028
might have learned there that you gone

1225
00:49:03,748 --> 00:49:10,439
Wow um oh I've learned a few things and

1226

00:49:09,028 --> 00:49:12,150
now you've asked me that question and

1227
00:49:10,440 --> 00:49:14,220
it's popped out in my mind what did you

1228
00:49:12,150 --> 00:49:15,900
learn yeah what do you find out from his

1229
00:49:14,219 --> 00:49:19,199
space experience he thought gee I would

1230
00:49:15,900 --> 00:49:21,088
never thought that I actually really

1231
00:49:19,199 --> 00:49:22,469
hadn't considered how rough the landing

1232
00:49:21,088 --> 00:49:24,389
would be coming in because you sort of

1233
00:49:22,469 --> 00:49:26,578
you see that the shots of it and doesn't

1234
00:49:24,389 --> 00:49:28,858
always look that rough looks fairly

1235
00:49:26,579 --> 00:49:31,318
smooth I'd realized how jostle they get

1236
00:49:28,858 --> 00:49:32,909
not really quite surprised me yeah and

1237
00:49:31,318 --> 00:49:34,650
he gets rolled around before it comes to

1238
00:49:32,909 --> 00:49:36,058
stop yeah I thought that was amazing i

1239
00:49:34,650 --> 00:49:37,349
did like that he got an apple at the end

1240
00:49:36,059 --> 00:49:38,910

of her thought that was quite funny yeah

1241

00:49:37,349 --> 00:49:40,859

i like the fact that he could actually

1242

00:49:38,909 --> 00:49:42,989

feel the weight of his own tongue once a

1243

00:49:40,858 --> 00:49:44,909

gravity came back yeah that's right that

1244

00:49:42,989 --> 00:49:46,558

seemed to be it weird to me like you

1245

00:49:44,909 --> 00:49:48,598

would always think that you could feel

1246

00:49:46,559 --> 00:49:50,099

that it yeah you think you may be your

1247

00:49:48,599 --> 00:49:52,430

arm or your head or something but your

1248

00:49:50,099 --> 00:49:54,890

tongue yeah yeah that was a bit strange

1249

00:49:52,429 --> 00:49:57,509

how'd you find his presentation on stage

1250

00:49:54,889 --> 00:50:00,118

he's a fantastic speaker i really

1251

00:49:57,509 --> 00:50:03,119

enjoyed listening to him and is it one

1252

00:50:00,119 --> 00:50:05,130

fact that stuck out i think perhaps

1253

00:50:03,119 --> 00:50:08,789

there is magic thing that he brought up

1254

00:50:05,130 --> 00:50:10,619

was describing that moment just hanging

1255
00:50:08,789 --> 00:50:12,059
off the space station told to hang in

1256
00:50:10,619 --> 00:50:14,309
there for a few minutes and just letting

1257
00:50:12,059 --> 00:50:17,009
go and just the impact of that moment is

1258
00:50:14,309 --> 00:50:19,109
amazing what about when he was actually

1259
00:50:17,009 --> 00:50:20,519
in the Southern Lights he wasn't looking

1260
00:50:19,108 --> 00:50:22,949
at the Southern Lights it was part of

1261
00:50:20,518 --> 00:50:24,568
the Southern Lights yeah that not

1262
00:50:22,949 --> 00:50:26,998
something you'd ever think about better

1263
00:50:24,568 --> 00:50:28,858
yeah it'd be off his shoes and all that

1264
00:50:26,998 --> 00:50:30,899
sort of thing yeah it's just amazing it

1265
00:50:28,858 --> 00:50:32,909
would be such an experience made me very

1266
00:50:30,900 --> 00:50:34,650
jealous yeah of course say he's gonna do

1267
00:50:32,909 --> 00:50:36,088
the question section next what is one

1268
00:50:34,650 --> 00:50:38,670
question you would ask him if you gotta

1269
00:50:36,088 --> 00:50:41,849
go up there we were just discussing that

1270
00:50:38,670 --> 00:50:44,670
before and um I don't know just like the

1271
00:50:41,849 --> 00:50:46,440
little things about I think you were

1272
00:50:44,670 --> 00:50:48,989
saying something about what would you do

1273
00:50:46,440 --> 00:50:51,150
if you vomited in space well the thing

1274
00:50:48,989 --> 00:50:52,949
that I would like to ask him and they

1275
00:50:51,150 --> 00:50:54,420
say around NASA at around you know that

1276
00:50:52,949 --> 00:50:56,489
you're not really national until you've

1277
00:50:54,420 --> 00:50:59,700
actually used the space toilet inspire

1278
00:50:56,489 --> 00:51:03,479
and I'd like to ask him really is that

1279
00:50:59,699 --> 00:51:04,500
difficult to use yeah I I want to know

1280
00:51:03,480 --> 00:51:06,809
but I don't really want to think about

1281
00:51:04,500 --> 00:51:08,460
it yeah yeah it's an interesting fact

1282
00:51:06,809 --> 00:51:10,889
but not at this time of night yeah what

1283

00:51:08,460 --> 00:51:12,449
what do you think you'd ask him oh I

1284
00:51:10,889 --> 00:51:14,339
think I need a little longer to process

1285
00:51:12,449 --> 00:51:18,299
everything you said before I can come up

1286
00:51:14,340 --> 00:51:24,570
with a sensible question yeah look thank

1287
00:51:18,300 --> 00:51:26,850
you and enjoy your night we're shown in

1288
00:51:24,570 --> 00:51:29,519
cell culture that that's the voice of

1289
00:51:26,849 --> 00:51:31,650
dr. rachy there she is talking to yet

1290
00:51:29,519 --> 00:51:33,900
another potential science graduate about

1291
00:51:31,650 --> 00:51:36,480
the work that she does I don't

1292
00:51:33,900 --> 00:51:39,809
understand it myself but they appear

1293
00:51:36,480 --> 00:51:41,849
interested but John head down here John

1294
00:51:39,809 --> 00:51:43,110
hey going it has dr. Bochy bingo Mia

1295
00:51:41,849 --> 00:51:45,690
she's been fielding a few interesting

1296
00:51:43,110 --> 00:51:47,220
questions yeah I haven't been playing

1297
00:51:45,690 --> 00:51:48,840

too much close attention but she's

1298

00:51:47,219 --> 00:51:50,939

definitely had some interesting or

1299

00:51:48,840 --> 00:51:52,500

interested parties coming along and

1300

00:51:50,940 --> 00:51:54,090

asking her questions about her research

1301

00:51:52,500 --> 00:51:56,369

I like the way that she can demonstrate

1302

00:51:54,090 --> 00:51:59,940

the entire life cycle of any type of

1303

00:51:56,369 --> 00:52:01,680

algae through mime yes it has no bit of

1304

00:51:59,940 --> 00:52:04,980

dance it's fascinating you think

1305

00:52:01,679 --> 00:52:06,690

microbial life form how would you how

1306

00:52:04,980 --> 00:52:08,909

did you express that in mind well she

1307

00:52:06,690 --> 00:52:11,220

found a way she becomes it she becomes a

1308

00:52:08,909 --> 00:52:13,049

microbial life form and we've been

1309

00:52:11,219 --> 00:52:15,029

asking a few people of because we're

1310

00:52:13,050 --> 00:52:18,060

about space here tonight what is your

1311

00:52:15,030 --> 00:52:20,640

favorite space movie or TV thing of all

1312
00:52:18,059 --> 00:52:23,009
time and again as I'm telling people not

1313
00:52:20,639 --> 00:52:27,118
necessarily accurate I mean what is your

1314
00:52:23,010 --> 00:52:29,820
favorite one I think space 1999 martin

1315
00:52:27,119 --> 00:52:32,400
landau and where are our skivvies we are

1316
00:52:29,820 --> 00:52:34,260
like what 15 years past that now and we

1317
00:52:32,400 --> 00:52:36,180
haven't got any decent outfits like were

1318
00:52:34,260 --> 00:52:38,010
designed by Sylvia Anderson for that out

1319
00:52:36,179 --> 00:52:38,440
for that show we don't even have a moon

1320
00:52:38,010 --> 00:52:40,359
pie

1321
00:52:38,440 --> 00:52:41,769
what the hell yeah look if I were you

1322
00:52:40,358 --> 00:52:43,480
listener I would stop this right now

1323
00:52:41,769 --> 00:52:47,050
then go to youtube and just have a look

1324
00:52:43,480 --> 00:52:49,088
at the intro to space 1999 it's got one

1325
00:52:47,050 --> 00:52:52,030
of the funkiest themes of all time

1326
00:52:49,088 --> 00:52:54,909
hasn't it indeed it does he focused look

1327
00:52:52,030 --> 00:52:56,530
at your check it's beyond any porn film

1328
00:52:54,909 --> 00:52:58,739
music ever gonna hear it's just

1329
00:52:56,530 --> 00:53:01,540
fantastic there's one show that I

1330
00:52:58,739 --> 00:53:04,568
happened upon recently it's called UFO

1331
00:53:01,539 --> 00:53:06,400
oh and another one another Gerry

1332
00:53:04,568 --> 00:53:07,809
Anderson one where he's directing actors

1333
00:53:06,400 --> 00:53:09,700
but the good thing is they actually can

1334
00:53:07,809 --> 00:53:11,858
act they look like puppets it's an

1335
00:53:09,699 --> 00:53:14,739
amazing show up on YouTube it's

1336
00:53:11,858 --> 00:53:17,500
fantastic it features a daisy wheel

1337
00:53:14,739 --> 00:53:20,348
printer in the intro and it's set in the

1338
00:53:17,500 --> 00:53:21,639
futuristic year of 1984 and the great

1339
00:53:20,349 --> 00:53:23,980
thing is that I've got a jean paul

1340

00:53:21,639 --> 00:53:25,960
gaultier suit from 1990 that is

1341
00:53:23,980 --> 00:53:29,170
identical to what ed striker used to

1342
00:53:25,960 --> 00:53:31,539
wear and in UFO 984 it is a great show

1343
00:53:29,170 --> 00:53:33,280
some great costumes and I love love the

1344
00:53:31,539 --> 00:53:35,500
way when they're they're going off to

1345
00:53:33,280 --> 00:53:37,420
shoot the aliens and their their little

1346
00:53:35,500 --> 00:53:40,300
rocket ships they just dive into those

1347
00:53:37,420 --> 00:53:42,880
tubes it's amazing and the moonbase

1348
00:53:40,300 --> 00:53:45,010
girls with the purple wigs yes oh yes

1349
00:53:42,880 --> 00:53:47,200
not only do you have to wear a miniskirt

1350
00:53:45,010 --> 00:53:49,450
on the moon base as part of your uniform

1351
00:53:47,199 --> 00:53:51,939
let's just make it really sexist and

1352
00:53:49,449 --> 00:53:54,909
force you to wear purple wigs yes yes

1353
00:53:51,940 --> 00:53:57,700
until then well no because everyone

1354
00:53:54,909 --> 00:54:00,068

knows that 60s go-go dancers is the

1355

00:53:57,699 --> 00:54:02,189

exact outfit you'd want on the moon is

1356

00:54:00,068 --> 00:54:05,369

why this is why I think we should have a

1357

00:54:02,190 --> 00:54:08,139

moon base I mean then we'd have 60s

1358

00:54:05,369 --> 00:54:10,588

classes that's very good your logic is

1359

00:54:08,139 --> 00:54:10,588

infallible

1360

00:54:10,599 --> 00:54:15,400

that's great that's going on now I'm

1361

00:54:12,849 --> 00:54:18,869

glad I bet someone 1999 check out those

1362

00:54:15,400 --> 00:54:18,869

themes and the 1984 great

1363

00:54:29,230 --> 00:54:35,230

in a world where the truth is a battle

1364

00:54:37,360 --> 00:54:42,420

your messages are a seat for beyond

1365

00:54:45,349 --> 00:54:50,920

and reason is sidelined for magical sync

1366

00:54:51,088 --> 00:54:56,949

only three men stand between the truth

1367

00:54:54,349 --> 00:55:00,709

temples and modernist

1368

00:54:56,949 --> 00:55:02,418

what date is it 787 thing this is

1369
00:55:00,708 --> 00:55:04,068
impressive if these are system present

1370
00:55:02,418 --> 00:55:06,909
they're not their photographs of Chinese

1371
00:55:04,068 --> 00:55:09,199
anthem it's not we are not well received

1372
00:55:06,909 --> 00:55:10,848
good god we're fully don't discuss

1373
00:55:09,199 --> 00:55:12,739
cryptozoology on the show very often

1374
00:55:10,849 --> 00:55:15,259
because we don't know anything about how

1375
00:55:12,739 --> 00:55:17,298
the truth the price gets lower lower

1376
00:55:15,259 --> 00:55:21,528
lower and then he hits the ceiling it's

1377
00:55:17,298 --> 00:55:23,449
a ceiling for the room below for skeptic

1378
00:55:21,528 --> 00:55:28,179
to the cave and Moses has gifted society

1379
00:55:23,449 --> 00:55:28,179
find us on iTunes or you know don't

1380
00:55:37,460 --> 00:55:41,519
thank you for listening to the skeptic

1381
00:55:39,750 --> 00:55:43,050
zone now some information about the

1382
00:55:41,519 --> 00:55:46,409
upcoming Australian skeptics National

1383
00:55:43,050 --> 00:55:49,818
Convention and new information released

1384
00:55:46,409 --> 00:55:54,539
by Australian skeptics we got some new

1385
00:55:49,818 --> 00:55:57,150
guests to announce and the blurb says in

1386
00:55:54,539 --> 00:55:59,579
a special consumer affairs discussion

1387
00:55:57,150 --> 00:56:01,170
panel the 30th National Australian

1388
00:55:59,579 --> 00:56:03,990
skeptics convention will feature three

1389
00:56:01,170 --> 00:56:07,039
entertainers from the ABC satirical

1390
00:56:03,989 --> 00:56:10,679
programs that check out and the chaser

1391
00:56:07,039 --> 00:56:12,960
Julian mauro kristen Drysdale and Chaz

1392
00:56:10,679 --> 00:56:15,409
leach adela are known for their fearless

1393
00:56:12,960 --> 00:56:18,809
attacks on ignorance and double-dealing

1394
00:56:15,409 --> 00:56:22,469
wherever it might be politicians shonky

1395
00:56:18,809 --> 00:56:24,000
services or pseudoscience they will be

1396
00:56:22,469 --> 00:56:26,909
joined by two leading figures in

1397

00:56:24,000 --> 00:56:29,190
consumer protection in Australia Delia

1398
00:56:26,909 --> 00:56:31,409
Rickard Deputy Chair of the Australian

1399
00:56:29,190 --> 00:56:35,970
Competition and Consumer Commission a

1400
00:56:31,409 --> 00:56:39,348
Triple C and Alan Kirkland CEO of choice

1401
00:56:35,969 --> 00:56:41,879
magazine fantastic some really great

1402
00:56:39,349 --> 00:56:44,190
guests coming up are for the Asturian

1403
00:56:41,880 --> 00:56:48,358
skeptics National Convention for more

1404
00:56:44,190 --> 00:56:50,670
information go to ww convention skeptics

1405
00:56:48,358 --> 00:56:53,639
Comte you or skeptics calm today you

1406
00:56:50,670 --> 00:56:56,400
check it out now's the time to buy your

1407
00:56:53,639 --> 00:56:57,838
ticket secure your place it's going to

1408
00:56:56,400 --> 00:56:59,579
be a great convention one of the biggest

1409
00:56:57,838 --> 00:57:01,679
ones in this country for some years

1410
00:56:59,579 --> 00:57:04,318
can't wait to see the skeptics guide to

1411
00:57:01,679 --> 00:57:07,139

the universe gang George rub Sonya

1412

00:57:04,318 --> 00:57:09,480

Pemberton is also coming along a dr.

1413

00:57:07,139 --> 00:57:12,328

Carl dr. Cole worth the price of

1414

00:57:09,480 --> 00:57:14,250

admission alone can't wait for that see

1415

00:57:12,329 --> 00:57:18,269

you there at the end of november in

1416

00:57:14,250 --> 00:57:20,548

chatswood here in sydney but for now but

1417

00:57:18,269 --> 00:57:22,259

for this week I think I'll run

1418

00:57:20,548 --> 00:57:24,960

downstairs and finish off that couscous

1419

00:57:22,260 --> 00:57:27,049

a tuna this is Richard Saunders signing

1420

00:57:24,960 --> 00:57:27,048

off

1421

00:57:28,759 --> 00:57:36,179

you've been listening to the skeptic

1422

00:57:31,170 --> 00:57:39,959

zone visit our website at www.skeptics

1423

00:57:36,179 --> 00:57:42,889

on TV for comments contacts and extra

1424

00:57:39,958 --> 00:57:42,889

video reports