

1  
00:00:06,120 --> 00:00:13,699  
welcome to the skeptic zone the podcast

2  
00:00:09,119 --> 00:00:13,699  
from Australia for science and reason

3  
00:00:22,589 --> 00:00:29,528  
hello and welcome to the skeptic zone

4  
00:00:25,449 --> 00:00:32,529  
episode number 257 for the 22nd of sep

5  
00:00:29,528 --> 00:00:35,738  
tember 2013 Richard Saunders here with

6  
00:00:32,529 --> 00:00:38,920  
you from Sydney Australia on this week's

7  
00:00:35,738 --> 00:00:44,198  
show I speak to a scientist who wants to

8  
00:00:38,920 --> 00:00:46,989  
die on Mars well he wants to go to Mars

9  
00:00:44,198 --> 00:00:50,320  
and part of the deal is if you go to

10  
00:00:46,988 --> 00:00:53,169  
Mars you don't come back hmm I'm going

11  
00:00:50,320 --> 00:00:56,409  
to be speaking to a friend of mine besh

12  
00:00:53,170 --> 00:00:59,800  
sub is currently in working in

13  
00:00:56,409 --> 00:01:04,838  
Switzerland about his our hope and goal

14  
00:00:59,799 --> 00:01:06,789  
to travel to Mars on a one-way trip what

15  
00:01:04,838 --> 00:01:08,759  
an interesting interesting thing to do

16  
00:01:06,789 --> 00:01:11,109  
that's coming up at the top of the show

17  
00:01:08,759 --> 00:01:12,189  
following that it's a week inside so

18  
00:01:11,109 --> 00:01:17,228  
that good friends from the Royal

19  
00:01:12,189 --> 00:01:21,819  
Institution of Australia w WR I a u.s.

20  
00:01:17,228 --> 00:01:24,519  
or GA you and this week's week in

21  
00:01:21,819 --> 00:01:26,409  
science is read by dr. Paul Willis and

22  
00:01:24,519 --> 00:01:28,359  
I'm delighted to say I've just learned

23  
00:01:26,409 --> 00:01:31,209  
that dr. Paul bullets will be attending

24  
00:01:28,359 --> 00:01:35,469  
and speaking at the National skeptics

25  
00:01:31,209 --> 00:01:37,750  
convention in November in Canberra and

26  
00:01:35,469 --> 00:01:41,228  
you've only got about a week left before

27  
00:01:37,750 --> 00:01:42,609  
the early bird tickets are disappear if

28  
00:01:41,228 --> 00:01:44,799  
you want to come to the National

29

00:01:42,609 --> 00:01:47,228  
skeptics convention in Canberra in

30  
00:01:44,799 --> 00:01:49,689  
November here dr. Paul Willis and many

31  
00:01:47,228 --> 00:01:53,079  
other fine people run to national

32  
00:01:49,689 --> 00:01:55,840  
skeptics convention org now is the time

33  
00:01:53,079 --> 00:01:58,118  
to book those tickets following a week

34  
00:01:55,840 --> 00:02:00,399  
in science it's Maynard spooky action

35  
00:01:58,118 --> 00:02:02,049  
Maynard will also be at the National

36  
00:02:00,399 --> 00:02:05,170  
skeptics convention he's trying to find

37  
00:02:02,049 --> 00:02:10,000  
out some interesting and fun things to

38  
00:02:05,170 --> 00:02:12,340  
do sort of extra special extracurricular

39  
00:02:10,000 --> 00:02:14,709  
you might say activities anyway more

40  
00:02:12,340 --> 00:02:16,870  
about that soon but Maynard's back with

41  
00:02:14,709 --> 00:02:19,209  
spooky action with a follow-up interview

42  
00:02:16,870 --> 00:02:22,360  
with dr. Pamela gay who was only in

43  
00:02:19,209 --> 00:02:24,159

Sydney last weekend now this was

44

00:02:22,360 --> 00:02:26,920

recorded at a special skeptics in the

45

00:02:24,159 --> 00:02:28,689

pub and after may not speaks to Pamela

46

00:02:26,919 --> 00:02:31,119

he's going to be speaking to some people

47

00:02:28,689 --> 00:02:33,759

at the pub and the round off the show

48

00:02:31,120 --> 00:02:34,759

it's the horoscope your horoscope for

49

00:02:33,759 --> 00:02:39,078

September

50

00:02:34,759 --> 00:02:41,870

with our astrologer dr. do Fe keV yeah

51

00:02:39,079 --> 00:02:43,250

can't wait for that before we start the

52

00:02:41,870 --> 00:02:45,829

show I must see how much I've been

53

00:02:43,250 --> 00:02:49,280

enjoying watching the Curiosity show

54

00:02:45,829 --> 00:02:52,219

dvds if you go to curiosity show calm

55

00:02:49,280 --> 00:02:54,590

day you and click the youtube link well

56

00:02:52,219 --> 00:02:57,620

such wonderful memories from the the

57

00:02:54,590 --> 00:03:01,299

1980s how to do things how to make

58  
00:02:57,620 --> 00:03:04,519  
things and my nephews and nieces are now

59  
00:03:01,299 --> 00:03:06,769  
absolutely enjoying learning so much

60  
00:03:04,519 --> 00:03:10,700  
from the curiosity show it's fantastic

61  
00:03:06,769 --> 00:03:12,709  
if you've got young children you could

62  
00:03:10,699 --> 00:03:14,959  
do a lot worse than visiting curiosity

63  
00:03:12,709 --> 00:03:17,989  
show calm today you learn how to make

64  
00:03:14,959 --> 00:03:20,180  
things how things work really good stuff

65  
00:03:17,989 --> 00:03:23,569  
but for now I'm going to run downstairs

66  
00:03:20,180 --> 00:03:26,230  
open up the pantry grab a couple of mums

67  
00:03:23,568 --> 00:03:29,810  
famous peanut butter cookies oh yeah

68  
00:03:26,229 --> 00:03:32,378  
well I'm doing that I hope you enjoy the

69  
00:03:29,810 --> 00:03:32,378  
skeptic zone

70  
00:03:49,280 --> 00:03:54,000  
now you may have once thought to

71  
00:03:52,530 --> 00:03:56,240  
yourself wouldn't it be nice to visit

72  
00:03:54,000 --> 00:03:58,860  
another planet just like in the movies

73  
00:03:56,240 --> 00:04:01,409  
didn't jump into a spaceship and visit

74  
00:03:58,860 --> 00:04:02,910  
another planet come home well i'm going

75  
00:04:01,409 --> 00:04:06,150  
to talking to a man in the moment who

76  
00:04:02,909 --> 00:04:09,599  
has the same sort of dream except forget

77  
00:04:06,150 --> 00:04:11,819  
about that the coming home part see i'm

78  
00:04:09,599 --> 00:04:14,549  
talking to a man now who wants to go to

79  
00:04:11,819 --> 00:04:17,430  
Mars which may be a possibility on the

80  
00:04:14,550 --> 00:04:19,770  
line all the way from Switzerland is a

81  
00:04:17,430 --> 00:04:22,379  
friend of mine who I met in the Czech

82  
00:04:19,769 --> 00:04:26,399  
Republic earlier in the year bish sharp

83  
00:04:22,379 --> 00:04:27,870  
hello Besh Irish area I'm not doing too

84  
00:04:26,399 --> 00:04:31,500  
badly at the moment I mean I'm

85  
00:04:27,870 --> 00:04:34,590  
earthbound I'll put it that way before

86

00:04:31,500 --> 00:04:37,170  
we get on to your extraordinary desire

87  
00:04:34,589 --> 00:04:38,549  
to go to another planet I was very happy

88  
00:04:37,170 --> 00:04:39,960  
to meet you earlier in the year in the

89  
00:04:38,550 --> 00:04:44,069  
Czech Republic's we were both together

90  
00:04:39,959 --> 00:04:47,099  
the remotes film festival where we were

91  
00:04:44,069 --> 00:04:49,800  
on the international jury what what do

92  
00:04:47,100 --> 00:04:54,150  
you do in real life we might say I'm a

93  
00:04:49,800 --> 00:04:55,740  
neuroscientist I primarily work on

94  
00:04:54,149 --> 00:04:57,810  
investigating molecules and brain

95  
00:04:55,740 --> 00:05:00,750  
regions that underlie memory formation

96  
00:04:57,810 --> 00:05:03,420  
as well as the drive to explore and

97  
00:05:00,750 --> 00:05:05,879  
learn and I also started to get into

98  
00:05:03,420 --> 00:05:09,120  
research which examines how brains

99  
00:05:05,879 --> 00:05:12,329  
respond differentially distress so what

100  
00:05:09,120 --> 00:05:14,280

is it about some people for example that

101

00:05:12,329 --> 00:05:17,009  
would respond to stress in a very

102

00:05:14,279 --> 00:05:18,659  
negative way and be impacted it impacted

103

00:05:17,009 --> 00:05:21,420  
by stress such that they have problems

104

00:05:18,660 --> 00:05:23,370  
in their life afterwards whereas other

105

00:05:21,420 --> 00:05:25,230  
people will respond to stress in very

106

00:05:23,370 --> 00:05:27,990  
positive ways and grow from it and in

107

00:05:25,230 --> 00:05:29,939  
fact thrive during stressful experiences

108

00:05:27,990 --> 00:05:33,060  
more so than when they are not being

109

00:05:29,939 --> 00:05:38,160  
challenged when an interesting field of

110

00:05:33,060 --> 00:05:40,470  
research and I guess it really does know

111

00:05:38,160 --> 00:05:43,110  
I think about it it might tie in very

112

00:05:40,470 --> 00:05:46,740  
well with what you're hoping to achieve

113

00:05:43,110 --> 00:05:48,240  
and this is to be one of the I guess

114

00:05:46,740 --> 00:05:48,900  
you'd say one of the volunteers to

115  
00:05:48,240 --> 00:05:51,360  
travel

116  
00:05:48,899 --> 00:05:54,719  
Mazz how on earth did you get interested

117  
00:05:51,360 --> 00:05:57,689  
in this it actually stems from an

118  
00:05:54,720 --> 00:05:59,520  
evening or a friend and I were lying on

119  
00:05:57,689 --> 00:06:02,879  
the beach in the summer time this was in

120  
00:05:59,519 --> 00:06:05,519  
Toronto or nearby Toronto and we were

121  
00:06:02,879 --> 00:06:07,800  
lying down on the sand and falling

122  
00:06:05,519 --> 00:06:09,180  
asleep under the stars he suggested to

123  
00:06:07,800 --> 00:06:10,919  
me at one point x we're staring up at

124  
00:06:09,180 --> 00:06:13,288  
the stars and watching and all things go

125  
00:06:10,918 --> 00:06:15,120  
by and so forth and he's like so you

126  
00:06:13,288 --> 00:06:17,490  
might be a good candidate to join the

127  
00:06:15,120 --> 00:06:20,100  
space program become an astronaut and I

128  
00:06:17,490 --> 00:06:21,780  
had never really given much thought to

129  
00:06:20,100 --> 00:06:25,500  
being an astronaut as a career option

130  
00:06:21,779 --> 00:06:26,909  
and clearly virtually every child dreams

131  
00:06:25,500 --> 00:06:30,269  
about the possibility of going up into

132  
00:06:26,910 --> 00:06:33,120  
space now that we know that this is not

133  
00:06:30,269 --> 00:06:36,089  
routine but it is certainly doable by

134  
00:06:33,120 --> 00:06:37,079  
many different nations but but I haven't

135  
00:06:36,089 --> 00:06:39,000  
really considered it as a career

136  
00:06:37,079 --> 00:06:40,620  
opportunity until I was doing my PhD in

137  
00:06:39,000 --> 00:06:42,180  
neuroscience and I had I was doing

138  
00:06:40,620 --> 00:06:43,800  
triathlons at the time and I was quite

139  
00:06:42,180 --> 00:06:45,449  
fit and and I had done a lot of

140  
00:06:43,800 --> 00:06:47,430  
experiences and rock climbing and all

141  
00:06:45,449 --> 00:06:48,598  
this stuff and I thought about it I was

142  
00:06:47,430 --> 00:06:51,030  
like yeah maybe they might be a

143

00:06:48,598 --> 00:06:52,288  
reasonable candidate but that kind of

144  
00:06:51,029 --> 00:06:54,000  
got me thinking about the idea of going

145  
00:06:52,288 --> 00:06:58,740  
into space and when I started to put a

146  
00:06:54,000 --> 00:07:00,300  
personal feel towards it and think of it

147  
00:06:58,740 --> 00:07:03,300  
as a career option I was like why would

148  
00:07:00,300 --> 00:07:05,699  
I do that and and I thought to myself

149  
00:07:03,300 --> 00:07:07,348  
you know my research I think is actually

150  
00:07:05,699 --> 00:07:10,169  
more important for the planet than me

151  
00:07:07,348 --> 00:07:12,060  
going up and floating around in a little

152  
00:07:10,168 --> 00:07:14,180  
too looking around the earth I didn't

153  
00:07:12,060 --> 00:07:16,740  
really see what was what was so

154  
00:07:14,180 --> 00:07:20,310  
important about it until I thought about

155  
00:07:16,740 --> 00:07:22,740  
how fragile our planet really is in

156  
00:07:20,310 --> 00:07:25,129  
terms of the cosmos in the universe now

157  
00:07:22,740 --> 00:07:29,150

I thought okay well if I were to go to

158

00:07:25,129 --> 00:07:32,129

space I would only do so in order to

159

00:07:29,149 --> 00:07:35,038

increase the chance of life survival as

160

00:07:32,129 --> 00:07:36,180

in inhabit another planet but at that

161

00:07:35,038 --> 00:07:38,219

time I didn't really know that was

162

00:07:36,180 --> 00:07:39,870

really Oscar getting interested in the

163

00:07:38,220 --> 00:07:41,639

idea and then a friend of mine gave me

164

00:07:39,870 --> 00:07:43,889

this book called the case for Mars which

165

00:07:41,639 --> 00:07:46,348

is written by Robert Zubrin and it's a

166

00:07:43,889 --> 00:07:51,210

really fantastic book that came out a

167

00:07:46,348 --> 00:07:53,158

decade ago or so and it describes not

168

00:07:51,209 --> 00:07:55,529

only why we would want to go to Mars and

169

00:07:53,158 --> 00:07:57,329

become a multiplanetary species and have

170

00:07:55,529 --> 00:07:59,399

life distributed over to plan is to

171

00:07:57,329 --> 00:08:02,379

increase our chances of survival but it

172  
00:07:59,399 --> 00:08:05,289  
also describes how to do it in very

173  
00:08:02,379 --> 00:08:07,769  
very practical terms using technology

174  
00:08:05,290 --> 00:08:12,490  
which has existed since the Apollo era

175  
00:08:07,769 --> 00:08:15,819  
so so so dr. Zuber does a really good

176  
00:08:12,490 --> 00:08:17,259  
job of making it seem doable and he

177  
00:08:15,819 --> 00:08:19,540  
breaks down everything in terms of the

178  
00:08:17,259 --> 00:08:21,459  
cost of going there and coming back and

179  
00:08:19,540 --> 00:08:23,379  
setting up a base and exactly Dodger I

180  
00:08:21,459 --> 00:08:26,049  
read his book with great great interest

181  
00:08:23,379 --> 00:08:28,870  
and then I was convinced I like this can

182  
00:08:26,050 --> 00:08:31,780  
be done and this is more important than

183  
00:08:28,870 --> 00:08:34,299  
my research and so I should shift

184  
00:08:31,779 --> 00:08:35,529  
efforts while not entirely theaters but

185  
00:08:34,299 --> 00:08:39,069  
I should I should really keep this in

186  
00:08:35,529 --> 00:08:42,339  
mind as something for me to do as a

187  
00:08:39,070 --> 00:08:45,820  
career option now at that time there was

188  
00:08:42,340 --> 00:08:48,580  
no projects that had any sort of

189  
00:08:45,820 --> 00:08:50,350  
timeline that made them realistic in

190  
00:08:48,580 --> 00:08:53,710  
terms of a project that would actually

191  
00:08:50,350 --> 00:08:56,320  
take people to Mars and then last year

192  
00:08:53,710 --> 00:08:58,450  
one such project was announced and so I

193  
00:08:56,320 --> 00:09:00,129  
became quite interested in that have

194  
00:08:58,450 --> 00:09:03,430  
applied like like two hundred thousand

195  
00:09:00,129 --> 00:09:05,980  
other people now I've seen your your

196  
00:09:03,429 --> 00:09:08,379  
application and what I might do now is

197  
00:09:05,980 --> 00:09:11,050  
for our audience I'd is I'll played the

198  
00:09:08,379 --> 00:09:13,960  
audio from your video application why

199  
00:09:11,049 --> 00:09:16,120  
you'd like to go to Mars if we believe

200

00:09:13,960 --> 00:09:18,400  
that life is good and let the universe

201  
00:09:16,120 --> 00:09:20,830  
and the soul of humanity are beautiful

202  
00:09:18,399 --> 00:09:23,230  
then we have a responsibility to blast

203  
00:09:20,830 --> 00:09:25,840  
off and settle Mars in order to foster

204  
00:09:23,230 --> 00:09:28,600  
these things playful would best describe

205  
00:09:25,840 --> 00:09:30,550  
my sense of humor and I tend to laugh a

206  
00:09:28,600 --> 00:09:31,870  
lot and this contributes to me being

207  
00:09:30,549 --> 00:09:34,029  
perfectly suited for the Mars one

208  
00:09:31,870 --> 00:09:37,360  
mission because it facilitates my

209  
00:09:34,029 --> 00:09:39,189  
abilities to adapt and indoor living on

210  
00:09:37,360 --> 00:09:40,870  
Mars is something that I have dreamed of

211  
00:09:39,190 --> 00:09:43,690  
and had been preparing to do for a

212  
00:09:40,870 --> 00:09:45,669  
decade after traversing various terrains

213  
00:09:43,690 --> 00:09:47,590  
and immersing myself and distinct

214  
00:09:45,669 --> 00:09:50,139

earthly cultures I have emerged the

215

00:09:47,590 --> 00:09:52,230  
skilled scientist a effective

216

00:09:50,139 --> 00:09:55,240  
communicator a

217

00:09:52,230 --> 00:09:58,389  
trusting team player physically and

218

00:09:55,240 --> 00:10:00,610  
mentally fit and ready to take on the

219

00:09:58,389 --> 00:10:04,449  
challenging adventure of making a new

220

00:10:00,610 --> 00:10:06,789  
home on Mars whenever it comes from me

221

00:10:04,450 --> 00:10:09,370  
the opportunity to live on Mars I found

222

00:10:06,789 --> 00:10:12,939  
out about this program called Mars one

223

00:10:09,370 --> 00:10:16,240  
day to 167 and so on I've been making

224

00:10:12,940 --> 00:10:18,460  
videos every day 4 430 two days since I

225

00:10:16,240 --> 00:10:21,278  
found out about Mars one to document my

226

00:10:18,460 --> 00:10:24,400  
dedication because I will go in a

227

00:10:21,278 --> 00:10:26,799  
heartbeat so that was your application

228

00:10:24,399 --> 00:10:28,360  
bish but you say there's a lot about the

229  
00:10:26,799 --> 00:10:30,609  
people and I've noticed on the website

230  
00:10:28,360 --> 00:10:32,980  
to a lot of other people out there who

231  
00:10:30,610 --> 00:10:39,629  
want to go to Mars do you think you've

232  
00:10:32,980 --> 00:10:42,700  
got the edge on the others I don't know

233  
00:10:39,629 --> 00:10:46,088  
certainly I think I'm a min up so

234  
00:10:42,700 --> 00:10:47,980  
certainly I think I'm able to make the

235  
00:10:46,089 --> 00:10:51,070  
mission succeed I think I'm the right

236  
00:10:47,980 --> 00:10:53,379  
type of person that gave the right skill

237  
00:10:51,070 --> 00:10:57,610  
set I gave the right biological build

238  
00:10:53,379 --> 00:11:00,429  
and mental build and to actually pull

239  
00:10:57,610 --> 00:11:02,980  
this off and I have been preparing for

240  
00:11:00,429 --> 00:11:06,250  
it thinking about it for a decade or so

241  
00:11:02,980 --> 00:11:07,360  
that and that means that I really

242  
00:11:06,250 --> 00:11:09,129  
thought about all the things that I'll

243  
00:11:07,360 --> 00:11:11,110  
leave behind and sacrifices i will make

244  
00:11:09,129 --> 00:11:12,669  
and so forth and I've been very real

245  
00:11:11,110 --> 00:11:14,470  
about it with my family and so forth

246  
00:11:12,669 --> 00:11:16,120  
it's not just something that I thought

247  
00:11:14,470 --> 00:11:19,778  
of recently and I'm like man that would

248  
00:11:16,120 --> 00:11:22,060  
be cool but on top of that i really am

249  
00:11:19,778 --> 00:11:23,769  
the kind of person that likes to be

250  
00:11:22,059 --> 00:11:25,689  
outside of my comfort zone so you can

251  
00:11:23,769 --> 00:11:27,699  
see by my comfort zone is somewhat

252  
00:11:25,690 --> 00:11:30,010  
limited this in that in that regard and

253  
00:11:27,700 --> 00:11:33,040  
i do perform better when what I've

254  
00:11:30,009 --> 00:11:35,528  
challenged it's just just kind of who I

255  
00:11:33,039 --> 00:11:36,909  
am and I think that if I examine all the

256  
00:11:35,528 --> 00:11:38,350  
different career options that I have you

257

00:11:36,909 --> 00:11:41,289  
know to be an athlete to be a scientist

258  
00:11:38,350 --> 00:11:44,560  
be settler on Mars I think that it's

259  
00:11:41,289 --> 00:11:47,889  
actually most suited for my for for who

260  
00:11:44,559 --> 00:11:52,239  
I am and for that reason it makes sense

261  
00:11:47,889 --> 00:11:54,370  
that I apply am I the only person who

262  
00:11:52,240 --> 00:11:57,339  
could be described like this I don't

263  
00:11:54,370 --> 00:11:58,870  
think so I I had never met anybody that

264  
00:11:57,339 --> 00:12:00,700  
I thought would be a good candidate to

265  
00:11:58,870 --> 00:12:02,828  
go to Mars that wanted to go to Mars and

266  
00:12:00,700 --> 00:12:04,800  
I still haven't met any but I've seen

267  
00:12:02,828 --> 00:12:06,539  
some of the other

268  
00:12:04,799 --> 00:12:09,419  
Kent's and their profiles and so forth

269  
00:12:06,539 --> 00:12:11,370  
and I certainly believe that out of the

270  
00:12:09,419 --> 00:12:15,479  
200,000 people that are applying there

271  
00:12:11,370 --> 00:12:19,080

must be at least another 100 or 1,000 or

272

00:12:15,480 --> 00:12:21,600

more like me and and so I'm quite

273

00:12:19,080 --> 00:12:24,300

confident they can find suitable people

274

00:12:21,600 --> 00:12:27,480

to go to Mars and whether or not I'm

275

00:12:24,299 --> 00:12:29,189

part of that is is a secondary point

276

00:12:27,480 --> 00:12:31,528

really the really important thing is

277

00:12:29,190 --> 00:12:33,360

that we do go I think I would be able to

278

00:12:31,528 --> 00:12:35,639

pull it off but if I don't go at least

279

00:12:33,360 --> 00:12:38,789

we went and then we start of this that's

280

00:12:35,639 --> 00:12:40,110

that's far more important and because I

281

00:12:38,789 --> 00:12:42,719

can do things here on earth and I can

282

00:12:40,110 --> 00:12:47,690

live a Wonderful Life I mean I'm quite

283

00:12:42,720 --> 00:12:50,970

fond of her affection I would like to

284

00:12:47,690 --> 00:12:53,820

encourage people to go to the Mars one

285

00:12:50,970 --> 00:12:56,070

website and take a look at type of

286  
00:12:53,820 --> 00:12:57,510  
people who've applied some of them might

287  
00:12:56,070 --> 00:12:59,250  
appear to be a little bit Coco but

288  
00:12:57,509 --> 00:13:01,980  
others are extremely serious and

289  
00:12:59,250 --> 00:13:03,929  
prepared to undertake this clinician to

290  
00:13:01,980 --> 00:13:06,300  
look at the timeline that they put in

291  
00:13:03,929 --> 00:13:08,129  
and potentially even become a supporter

292  
00:13:06,299 --> 00:13:11,278  
in terms of donations or purchase some

293  
00:13:08,129 --> 00:13:13,110  
merchandise or get in contact with them

294  
00:13:11,278 --> 00:13:14,789  
to see this way you can collaborate they

295  
00:13:13,110 --> 00:13:17,100  
really like collaborating with different

296  
00:13:14,789 --> 00:13:19,469  
educational institutions I mean in

297  
00:13:17,100 --> 00:13:22,920  
general just just think about what this

298  
00:13:19,470 --> 00:13:26,459  
means for not just the human race but

299  
00:13:22,919 --> 00:13:29,189  
all of life on Earth and how this puts

300  
00:13:26,458 --> 00:13:30,809  
us into context of the entire galaxy and

301  
00:13:29,190 --> 00:13:32,850  
the universe it's really truly something

302  
00:13:30,809 --> 00:13:34,259  
which is quite extraordinary I think

303  
00:13:32,850 --> 00:13:38,759  
that's a wonderful idea and what's the

304  
00:13:34,259 --> 00:13:44,120  
website people should visit ma RS dash 0

305  
00:13:38,759 --> 00:13:47,819  
n e.com so that's Mars Dashiell hyphen

306  
00:13:44,120 --> 00:13:49,828  
1.com um I'm an interesting thing

307  
00:13:47,820 --> 00:13:53,810  
happened here in Sydney Australia a few

308  
00:13:49,828 --> 00:13:56,278  
years ago we had a huge red dust storm

309  
00:13:53,809 --> 00:14:00,389  
dust in the outback because we had a

310  
00:13:56,278 --> 00:14:03,860  
very dry spell blue blue over Sydney and

311  
00:14:00,389 --> 00:14:07,860  
coated Sydney with this absolutely

312  
00:14:03,860 --> 00:14:10,769  
strange eerie red dust the sky was red

313  
00:14:07,860 --> 00:14:12,810  
the atmosphere was read the Sun was

314

00:14:10,769 --> 00:14:14,909  
looking read through the haze and I

315  
00:14:12,809 --> 00:14:16,649  
looked out on this strange world no you

316  
00:14:14,909 --> 00:14:18,389  
crossed my mind I wonder if I could

317  
00:14:16,649 --> 00:14:20,669  
tolerate this day after day

318  
00:14:18,389 --> 00:14:22,590  
today which is what you'd be facing of

319  
00:14:20,669 --> 00:14:27,750  
course on Mars because your outlook

320  
00:14:22,590 --> 00:14:29,519  
would be rather rum red yeah Mars

321  
00:14:27,750 --> 00:14:32,879  
definitely is red that's their oxide of

322  
00:14:29,519 --> 00:14:36,720  
course but because the atmosphere is so

323  
00:14:32,879 --> 00:14:38,100  
thin you need a hugely strong wind I

324  
00:14:36,720 --> 00:14:40,560  
mean I'm liking hundreds of kilometers

325  
00:14:38,100 --> 00:14:42,779  
an hour in order to lift that dust in

326  
00:14:40,559 --> 00:14:45,869  
any meaningful way and send spread it

327  
00:14:42,779 --> 00:14:47,939  
around so even though eventually storms

328  
00:14:45,870 --> 00:14:49,350

do formless while they that they form on

329

00:14:47,940 --> 00:14:52,920

Mars such that the whole place is

330

00:14:49,350 --> 00:14:57,690

encompassed in a cloud it only really

331

00:14:52,919 --> 00:14:59,549

looks fake and foggy from orbit or from

332

00:14:57,690 --> 00:15:03,080

an astronomer who's pointing a telescope

333

00:14:59,549 --> 00:15:06,509

to earth on the surface of Mars

334

00:15:03,080 --> 00:15:07,950

inhabitants there wouldn't be nearly as

335

00:15:06,509 --> 00:15:09,600

affected the visibility wouldn't be all

336

00:15:07,950 --> 00:15:11,190

that much all that affected because

337

00:15:09,600 --> 00:15:14,639

atmosphere so thin it's difficult to

338

00:15:11,190 --> 00:15:17,910

pick up the dust but it would be in many

339

00:15:14,639 --> 00:15:21,449

ways leak compared to earth right I mean

340

00:15:17,909 --> 00:15:23,429

Mars has wonderful craters and valleys

341

00:15:21,450 --> 00:15:26,370

and mountains and deserts and all these

342

00:15:23,429 --> 00:15:29,759

different formations similar to earth

343  
00:15:26,370 --> 00:15:32,220  
but it does not have life doesn't have

344  
00:15:29,759 --> 00:15:34,169  
waterfalls it doesn't have it doesn't

345  
00:15:32,220 --> 00:15:38,310  
have the same variety of cloud

346  
00:15:34,169 --> 00:15:41,370  
formations even so in some ways that it

347  
00:15:38,309 --> 00:15:44,639  
will be a little bit bleak but I don't

348  
00:15:41,370 --> 00:15:45,929  
think it will be all that red and dusty

349  
00:15:44,639 --> 00:15:48,809  
all the time I don't think that would be

350  
00:15:45,929 --> 00:15:50,370  
too much of a problem well though we do

351  
00:15:48,809 --> 00:15:52,649  
hear about it's interesting you should

352  
00:15:50,370 --> 00:15:55,769  
say that the winds on Mars would have to

353  
00:15:52,649 --> 00:15:58,889  
be quite strong we do see evidence from

354  
00:15:55,769 --> 00:16:00,720  
the rover's of the small tornadoes that

355  
00:15:58,889 --> 00:16:04,529  
go across the surface of Mars are

356  
00:16:00,720 --> 00:16:05,940  
periodically indeed I mean yeah Mars in

357  
00:16:04,529 --> 00:16:10,679  
many ways you know it's a smaller planet

358  
00:16:05,940 --> 00:16:12,060  
has much much more extreme geological

359  
00:16:10,679 --> 00:16:14,489  
features as well as weather weather

360  
00:16:12,059 --> 00:16:16,769  
patterns and whether characteristics so

361  
00:16:14,490 --> 00:16:18,480  
I mean on earth 100 kilometer or wind

362  
00:16:16,769 --> 00:16:21,659  
it's like that's that's serious right

363  
00:16:18,480 --> 00:16:24,539  
you know done on Mars it's not that it's

364  
00:16:21,659 --> 00:16:26,279  
actually not that serious but if they go

365  
00:16:24,539 --> 00:16:28,349  
much higher you can get a 500 club

366  
00:16:26,279 --> 00:16:30,209  
Maryland probably at the surface of Mars

367  
00:16:28,350 --> 00:16:32,259  
at some point in time although it would

368  
00:16:30,210 --> 00:16:34,660  
only feel like a 52 on Maryland

369  
00:16:32,259 --> 00:16:36,909  
it's not like that it boggles the mind

370  
00:16:34,659 --> 00:16:38,649  
just to think about it I mean there are

371

00:16:36,909 --> 00:16:42,068  
so many things to take into

372  
00:16:38,649 --> 00:16:44,649  
consideration assuming one gets through

373  
00:16:42,068 --> 00:16:47,438  
the selection process then you're facing

374  
00:16:44,649 --> 00:16:50,739  
quite a long space voyage even before

375  
00:16:47,438 --> 00:16:53,948  
you get anywhere near Mars yeah it seems

376  
00:16:50,739 --> 00:16:58,600  
like Mars one has chosen a transit of

377  
00:16:53,948 --> 00:17:00,008  
210 days now the lowest energy transfer

378  
00:16:58,600 --> 00:17:01,629  
that you can do so this is using the

379  
00:17:00,009 --> 00:17:06,099  
least amount of fuel which means the

380  
00:17:01,629 --> 00:17:08,380  
least expensive is what's called a hog

381  
00:17:06,099 --> 00:17:12,448  
man transfer I think it's also called a

382  
00:17:08,380 --> 00:17:16,209  
low energy transfer but that takes about

383  
00:17:12,449 --> 00:17:18,909  
260 days I think 258 or something like

384  
00:17:16,209 --> 00:17:21,159  
that if you were to go with a lot of

385  
00:17:18,909 --> 00:17:23,679

fuel you could also do this a similar

386

00:17:21,159 --> 00:17:25,630

type of transfer in about 150 days and

387

00:17:23,679 --> 00:17:27,100

anywhere between hundred and fifty and

388

00:17:25,630 --> 00:17:31,659

two hundred sixty depends on how much

389

00:17:27,099 --> 00:17:34,388

fuel you use 210 day one I think is a

390

00:17:31,659 --> 00:17:36,610

happy medium and that's a long time

391

00:17:34,388 --> 00:17:39,969

period in space you could not go down to

392

00:17:36,609 --> 00:17:41,469

180 and I imagine that if they get a

393

00:17:39,970 --> 00:17:46,450

significant amount of funding they will

394

00:17:41,470 --> 00:17:48,038

reduce it from 210 to to 180 but

395

00:17:46,450 --> 00:17:49,419

probably not much below that because at

396

00:17:48,038 --> 00:17:51,429

some point in time you actually have the

397

00:17:49,419 --> 00:17:54,250

opportunity to return to earth without

398

00:17:51,429 --> 00:17:55,870

any fuel at all so that looks like a

399

00:17:54,250 --> 00:17:57,579

free return mission which is what the

400  
00:17:55,869 --> 00:17:59,199  
Polo 13 did when they tried to go to the

401  
00:17:57,579 --> 00:18:00,428  
moon they want up swinging around the

402  
00:17:59,200 --> 00:18:02,230  
motive that coming back you can do the

403  
00:18:00,429 --> 00:18:06,038  
same thing on the way to Mars but only

404  
00:18:02,230 --> 00:18:08,860  
with certain only with certain transfer

405  
00:18:06,038 --> 00:18:11,440  
orbits so I'm not sure if the 210 one

406  
00:18:08,859 --> 00:18:13,240  
that they have planned for 20-22 is

407  
00:18:11,440 --> 00:18:15,340  
actually going to allow a free return

408  
00:18:13,240 --> 00:18:18,370  
but I think if they get enough funding

409  
00:18:15,339 --> 00:18:20,798  
then they will build that into the well

410  
00:18:18,369 --> 00:18:23,349  
build that into vidya apply well that

411  
00:18:20,798 --> 00:18:25,898  
sounds to me like an attractive option I

412  
00:18:23,349 --> 00:18:28,778  
think I'd sittin up a space capsule for

413  
00:18:25,898 --> 00:18:30,819  
that amount of time to swing around Mars

414  
00:18:28,778 --> 00:18:33,009  
and have a good look and then head back

415  
00:18:30,819 --> 00:18:35,349  
to earth and I emphasize their head back

416  
00:18:33,009 --> 00:18:38,648  
to earth but of course from what I

417  
00:18:35,349 --> 00:18:41,678  
understand is this is really a one-way

418  
00:18:38,648 --> 00:18:43,028  
trip is that right yeah it's it's one my

419  
00:18:41,679 --> 00:18:45,610  
trip I mean it's it's a practical

420  
00:18:43,028 --> 00:18:47,798  
approach and I agree with the

421  
00:18:45,609 --> 00:18:51,849  
the design it's quite something I

422  
00:18:47,798 --> 00:18:53,440  
suppose once the the rocket launches off

423  
00:18:51,849 --> 00:18:55,419  
and you're heading out that it's a bit

424  
00:18:53,440 --> 00:18:59,019  
late to change your mind then and what

425  
00:18:55,420 --> 00:19:02,350  
sort of environment what sort of living

426  
00:18:59,019 --> 00:19:05,558  
conditions would there be an eyesore on

427  
00:19:02,349 --> 00:19:07,089  
route well both I guess I think on the

428

00:19:05,558 --> 00:19:10,389  
way there it'll be similar to the

429  
00:19:07,089 --> 00:19:13,240  
International Space Station I think

430  
00:19:10,390 --> 00:19:15,490  
there will be next to zero gravity so

431  
00:19:13,240 --> 00:19:18,190  
there are options of introducing

432  
00:19:15,490 --> 00:19:20,230  
artificial gravity by tethering heart of

433  
00:19:18,190 --> 00:19:22,150  
the rocket that launched the craft by a

434  
00:19:20,230 --> 00:19:23,919  
cable to the actual craft on what you

435  
00:19:22,150 --> 00:19:26,650  
travel create a centrifugal force which

436  
00:19:23,919 --> 00:19:27,610  
then produces artificial gravity but I

437  
00:19:26,650 --> 00:19:29,320  
don't think they're going to build that

438  
00:19:27,609 --> 00:19:30,789  
ends it because it's not necessary

439  
00:19:29,319 --> 00:19:33,519  
anything that's not necessary is thrown

440  
00:19:30,789 --> 00:19:36,250  
out of the plans apriori so not having

441  
00:19:33,519 --> 00:19:39,190  
gravity for 210 days is going to have

442  
00:19:36,250 --> 00:19:41,079

effects our bodies right that's going to

443

00:19:39,190 --> 00:19:43,019

be crappy but it's more or less the

444

00:19:41,079 --> 00:19:45,909

living quarters will be like being in a

445

00:19:43,019 --> 00:19:49,980

relatively small apartment with three of

446

00:19:45,910 --> 00:19:55,029

their very interesting people having

447

00:19:49,980 --> 00:19:57,009

relatively leak food to eat um no

448

00:19:55,029 --> 00:19:59,529

showers I'm gonna be very very simple

449

00:19:57,009 --> 00:20:02,710

life and but but that's that's sort of a

450

00:19:59,529 --> 00:20:04,589

necessity once you get to Mars well now

451

00:20:02,710 --> 00:20:06,759

you have the option of actually leaving

452

00:20:04,589 --> 00:20:09,548

your habitats there'll be a bunch of

453

00:20:06,759 --> 00:20:11,109

habitats waiting for us on the surface

454

00:20:09,548 --> 00:20:12,940

and then when we get there eventually

455

00:20:11,109 --> 00:20:15,250

we'll get towed to that to that region

456

00:20:12,940 --> 00:20:17,140

by some robotic rover he sets the plan

457  
00:20:15,250 --> 00:20:19,390  
in a worst-case scenario I suppose we

458  
00:20:17,140 --> 00:20:21,340  
would walk then we have the option of

459  
00:20:19,390 --> 00:20:25,480  
going in and out and in addition to the

460  
00:20:21,339 --> 00:20:29,319  
to the hard have modules the proposed to

461  
00:20:25,480 --> 00:20:31,329  
in advance inflate some structures which

462  
00:20:29,319 --> 00:20:32,710  
they can then cover with soil to protect

463  
00:20:31,329 --> 00:20:34,569  
from the radiation so forth and these

464  
00:20:32,710 --> 00:20:37,029  
inflated structures could be rather

465  
00:20:34,569 --> 00:20:42,970  
large and we could use them to grow

466  
00:20:37,029 --> 00:20:46,178  
plants and to play ping-pong too I mean

467  
00:20:42,970 --> 00:20:48,519  
to just to just to live really in shorts

468  
00:20:46,179 --> 00:20:50,559  
and a t-shirt right it's that'll only be

469  
00:20:48,519 --> 00:20:52,808  
possible indoors on Mars at least for

470  
00:20:50,558 --> 00:20:54,220  
the next five to ten thousand years well

471  
00:20:52,808 --> 00:20:56,678  
let's let's take a very minor

472  
00:20:54,220 --> 00:20:59,009  
consideration into account here what

473  
00:20:56,679 --> 00:21:01,960  
about oxygen oxygen

474  
00:20:59,009 --> 00:21:03,640  
can be produced on Mars like breathable

475  
00:21:01,960 --> 00:21:05,620  
are chillin can be produced on Mars from

476  
00:21:03,640 --> 00:21:08,710  
the from carbon dioxide that's in the

477  
00:21:05,619 --> 00:21:11,109  
atmosphere that will be done in advance

478  
00:21:08,710 --> 00:21:16,120  
of us going there I think they plan to

479  
00:21:11,109 --> 00:21:17,799  
have I don't know how many lung capacity

480  
00:21:16,119 --> 00:21:19,629  
is worth but but is significant I'm out

481  
00:21:17,799 --> 00:21:21,639  
there so that we could live for a long

482  
00:21:19,630 --> 00:21:22,960  
time with that that oxygen but you can

483  
00:21:21,640 --> 00:21:25,540  
continually make it if you have a power

484  
00:21:22,960 --> 00:21:27,549  
source so solar panels would be enough

485

00:21:25,539 --> 00:21:29,470  
even from the from the carbon dioxide

486  
00:21:27,549 --> 00:21:31,629  
that's in the Martian atmosphere already

487  
00:21:29,470 --> 00:21:34,809  
good heavens it's all been really really

488  
00:21:31,630 --> 00:21:36,250  
well thought out well planned wish I

489  
00:21:34,809 --> 00:21:37,779  
don't know whether to wish you luck or

490  
00:21:36,250 --> 00:21:40,750  
not because I quite enjoy your company

491  
00:21:37,779 --> 00:21:43,180  
with which we were together in the Czech

492  
00:21:40,750 --> 00:21:45,819  
Republic we had a very good time indeed

493  
00:21:43,180 --> 00:21:47,890  
and what a wonderful festival that was

494  
00:21:45,819 --> 00:21:50,349  
but i guess i will wish you luck because

495  
00:21:47,890 --> 00:21:53,050  
what a what an incredible thing it would

496  
00:21:50,349 --> 00:21:57,849  
be to be one of the first humans to

497  
00:21:53,049 --> 00:21:59,559  
reach another planet it I guess it's an

498  
00:21:57,849 --> 00:22:02,799  
opportunity many people as you say

499  
00:21:59,559 --> 00:22:05,319

thousands of people are jumping at yeah

500

00:22:02,799 --> 00:22:07,450

i think it's it's it's it's really cool

501

00:22:05,319 --> 00:22:10,230

but I mean again I emphasize I don't I

502

00:22:07,450 --> 00:22:12,430

don't I really don't do this because

503

00:22:10,230 --> 00:22:13,660

because I could be the first or whatever

504

00:22:12,430 --> 00:22:15,730

and I want to be the first to see this

505

00:22:13,660 --> 00:22:17,710

and all those things are amazing and

506

00:22:15,730 --> 00:22:19,029

when I do my research I get that feeling

507

00:22:17,710 --> 00:22:20,519

once in a while where I see a piece of

508

00:22:19,029 --> 00:22:23,740

data and I'm like I'm my first person

509

00:22:20,519 --> 00:22:26,349

you know probably in history of the

510

00:22:23,740 --> 00:22:27,960

world to realize this truth about

511

00:22:26,349 --> 00:22:30,699

biology and that's that's very exciting

512

00:22:27,960 --> 00:22:32,500

but but really it's more just I just

513

00:22:30,700 --> 00:22:34,900

think it's right it's a proper fit for

514  
00:22:32,500 --> 00:22:36,700  
me and it's it's it's my responsibility

515  
00:22:34,900 --> 00:22:40,840  
to do what I can and this is what I

516  
00:22:36,700 --> 00:22:42,100  
think I'm Matt to do so well then bish I

517  
00:22:40,839 --> 00:22:46,569  
really hope you're one of the first

518  
00:22:42,099 --> 00:22:50,079  
Martians thank you very much well Besh

519  
00:22:46,569 --> 00:22:55,629  
sob all the best and send back some mush

520  
00:22:50,079 --> 00:22:58,539  
and rock for me ok send back some ice

521  
00:22:55,630 --> 00:23:01,060  
and rock yeah that's that's a

522  
00:22:58,539 --> 00:23:06,490  
billion-dollar and ever how are you do

523  
00:23:01,059 --> 00:23:11,159  
it for me won't you of course it low

524  
00:23:06,490 --> 00:23:11,160  
Richard of course I long thanks bitch

525  
00:23:12,210 --> 00:23:20,409  
mars-1 will establish human settlement

526  
00:23:15,579 --> 00:23:24,449  
on Mars in 2023 in that year the first

527  
00:23:20,409 --> 00:23:27,789  
group of four humans will land on Mars

528  
00:23:24,450 --> 00:23:30,069  
every two years after that another group

529  
00:23:27,788 --> 00:23:31,599  
will join the settlement my first

530  
00:23:30,069 --> 00:23:35,428  
impression was that this is an

531  
00:23:31,599 --> 00:23:39,908  
extraordinary project by people with

532  
00:23:35,429 --> 00:23:42,220  
vision imagination but my first reaction

533  
00:23:39,909 --> 00:23:44,528  
was I think like anyone who will be

534  
00:23:42,220 --> 00:23:49,079  
confronted in such an idea this will

535  
00:23:44,528 --> 00:23:51,909  
never work now look listen more closely

536  
00:23:49,079 --> 00:23:54,788  
this is really something that can be

537  
00:23:51,909 --> 00:23:57,179  
achieved I think this might become a

538  
00:23:54,788 --> 00:24:01,839  
most spectacular media event ever

539  
00:23:57,179 --> 00:24:04,028  
watched by everyone on the globe 1972

540  
00:24:01,839 --> 00:24:09,759  
was the last time that humans worked on

541  
00:24:04,028 --> 00:24:14,888  
the moon no human has ever gone as far

542

00:24:09,759 --> 00:24:16,839  
as Mars Mars one has designed a mission

543  
00:24:14,888 --> 00:24:19,689  
that is much simpler than previous

544  
00:24:16,839 --> 00:24:22,148  
designs for Mars missions the most

545  
00:24:19,690 --> 00:24:25,000  
significant simplification is that the

546  
00:24:22,148 --> 00:24:27,038  
crew is actually going to stay and live

547  
00:24:25,000 --> 00:24:30,190  
on Mars with the intention to remain

548  
00:24:27,038 --> 00:24:31,990  
there for the rest of their lives we

549  
00:24:30,190 --> 00:24:34,120  
will finance this mission by creating

550  
00:24:31,990 --> 00:24:35,950  
the biggest media event ever around it

551  
00:24:34,119 --> 00:24:37,508  
everybody in the world can see

552  
00:24:35,950 --> 00:24:41,288  
everything that will happen in the

553  
00:24:37,509 --> 00:24:45,548  
preparations endl Mars this is going to

554  
00:24:41,288 --> 00:24:47,919  
be media spectacle Big Brother will pale

555  
00:24:45,548 --> 00:24:51,329  
in comparison the whole world will be

556  
00:24:47,919 --> 00:24:54,100

watching and experience this journey

557

00:24:51,329 --> 00:24:57,069

Mars-1 paid visits to major aerospace

558

00:24:54,099 --> 00:24:59,469

companies around the world in these

559

00:24:57,069 --> 00:25:02,259

meetings they confirm to us that they

560

00:24:59,470 --> 00:25:04,450

can supply the required equipment for

561

00:25:02,259 --> 00:25:07,450

every component we have at least one

562

00:25:04,450 --> 00:25:09,549

potential supplier all these suppliers

563

00:25:07,450 --> 00:25:13,299

have written letters of interest for

564

00:25:09,549 --> 00:25:16,450

Mars one as for financing this is going

565

00:25:13,299 --> 00:25:18,940

to be a private enterprise only private

566

00:25:16,450 --> 00:25:22,990

firms are going to continue it no

567

00:25:18,940 --> 00:25:25,750

political mumbo-jumbo no taxpayers money

568

00:25:22,990 --> 00:25:27,009

will be involved only people like myself

569

00:25:25,750 --> 00:25:31,779

and many others who are enthusiastic

570

00:25:27,009 --> 00:25:34,869

about the program will contribute this

571  
00:25:31,779 --> 00:25:36,819  
is the plan in 2016 a communication

572  
00:25:34,869 --> 00:25:41,979  
satellite and a supply mission will be

573  
00:25:36,819 --> 00:25:44,500  
sent to Mars in 2018 a large planetary

574  
00:25:41,980 --> 00:25:46,450  
rover will be sent to Mars it will drive

575  
00:25:44,500 --> 00:25:50,950  
around on Mars to find the best location

576  
00:25:46,450 --> 00:25:54,250  
for the settlement in 2020 living units

577  
00:25:50,950 --> 00:25:57,100  
life support units a rover and more

578  
00:25:54,250 --> 00:25:59,109  
supplies will be sent to Mars the

579  
00:25:57,099 --> 00:26:01,899  
rover's will prepare the settlement for

580  
00:25:59,109 --> 00:26:04,259  
human arrival they will extract the

581  
00:26:01,900 --> 00:26:07,240  
inflatable section from the living unit

582  
00:26:04,259 --> 00:26:07,660  
the life support unit will prepare the

583  
00:26:07,240 --> 00:26:13,059  
out

584  
00:26:07,660 --> 00:26:16,660  
post for arrival of the humans the crew

585  
00:26:13,059 --> 00:26:18,460  
will depart in September 2022 when the

586  
00:26:16,660 --> 00:26:22,060  
settlement is fully operational and

587  
00:26:18,460 --> 00:26:24,819  
habitable they will be flying to Mars in

588  
00:26:22,059 --> 00:26:30,250  
a transit habitat with a lander attached

589  
00:26:24,819 --> 00:26:33,039  
to it seven months later in April 2023

590  
00:26:30,250 --> 00:26:36,039  
the humans will land on Mars the next

591  
00:26:33,039 --> 00:26:38,470  
giant leap for mankind this project

592  
00:26:36,039 --> 00:26:40,869  
seems to be the only way to fulfill

593  
00:26:38,470 --> 00:26:43,750  
humanity's dream to explore outer space

594  
00:26:40,869 --> 00:26:47,919  
it is going to be an exciting experiment

595  
00:26:43,750 --> 00:26:51,299  
let's get started Mars one invites you

596  
00:26:47,920 --> 00:26:58,200  
to join us in this great adventure for

597  
00:26:51,299 --> 00:26:58,200  
more information is it mars hyphen 1.com

598  
00:27:26,029 --> 00:27:31,200  
hi I'm audit oh yeah Kristen or evil

599

00:27:29,579 --> 00:27:32,909  
tips advice on logic lifted off the

600  
00:27:31,200 --> 00:27:34,620  
skeptical zone um skip the comedian or

601  
00:27:32,910 --> 00:27:36,060  
again that it's not a blog get upper

602  
00:27:34,619 --> 00:27:37,379  
bleph or podcast often and against

603  
00:27:36,059 --> 00:27:39,599  
capsis driven me you look if I'm ever

604  
00:27:37,380 --> 00:27:41,640  
doctor is mack center of escape system

605  
00:27:39,599 --> 00:27:43,649  
and loop or hardcover says the deep

606  
00:27:41,640 --> 00:27:45,360  
plane or textured and calendar or escape

607  
00:27:43,650 --> 00:27:47,040  
this car together or linked you to only

608  
00:27:45,359 --> 00:27:48,750  
escape this killer sausage escape this

609  
00:27:47,039 --> 00:27:50,430  
blog in okla 30m late Oh discrete areas

610  
00:27:48,750 --> 00:27:54,059  
have step escapes is for domestic inna

611  
00:27:50,430 --> 00:27:56,970  
de estado yourself skips a stop mo hello

612  
00:27:54,059 --> 00:27:58,409  
I'm moderate and I'm Kristin and we want

613  
00:27:56,970 --> 00:28:00,059

to let you know that there are lots of

614

00:27:58,410 --> 00:28:01,980

Norwegian skeptics for you to get to

615

00:28:00,059 --> 00:28:03,929

know there are blogs and pub mates and a

616

00:28:01,980 --> 00:28:05,370

podcast and the Norwegian skeptics also

617

00:28:03,930 --> 00:28:07,350

do paranormal tests and consumer

618

00:28:05,369 --> 00:28:09,539

activism to find out more Google

619

00:28:07,349 --> 00:28:12,439

Norwegian skeptics or visit skept

620

00:28:09,539 --> 00:28:12,440

seasonal

621

00:28:17,569 --> 00:28:23,240

welcome to a week in science from RI oz

622

00:28:20,809 --> 00:28:26,359

bringing you that science news you need

623

00:28:23,240 --> 00:28:29,779

to know this week in science can comets

624

00:28:26,359 --> 00:28:32,449

create life small creatures see in slow

625

00:28:29,779 --> 00:28:40,609

mode and can a positive lifestyle make

626

00:28:32,450 --> 00:28:42,620

you live longer maybe just maybe the

627

00:28:40,609 --> 00:28:45,919

building blocks of life were created

628  
00:28:42,619 --> 00:28:48,769  
when comets and planets collided a team

629  
00:28:45,920 --> 00:28:51,500  
in England fired steel balls into ice

630  
00:28:48,769 --> 00:28:54,410  
that has the same composition as comets

631  
00:28:51,500 --> 00:28:56,390  
these violent impacts produced amino

632  
00:28:54,410 --> 00:28:58,670  
acids which are the building blocks of

633  
00:28:56,390 --> 00:29:00,710  
proteins similar collisions between

634  
00:28:58,670 --> 00:29:03,590  
comets and planets could have eventually

635  
00:29:00,710 --> 00:29:08,360  
led to the first sparks of life on Earth

636  
00:29:03,589 --> 00:29:12,159  
a new study has shown that smaller

637  
00:29:08,359 --> 00:29:14,689  
animals may see the world in slow motion

638  
00:29:12,160 --> 00:29:16,430  
researchers in Ireland studied a range

639  
00:29:14,690 --> 00:29:19,130  
of animals and measured how quickly

640  
00:29:16,430 --> 00:29:21,529  
their eyes processed light they found

641  
00:29:19,130 --> 00:29:24,230  
that insects birds and mice see more

642  
00:29:21,529 --> 00:29:26,809  
information in one second than larger

643  
00:29:24,230 --> 00:29:29,960  
animals meaning they perceive time more

644  
00:29:26,809 --> 00:29:32,240  
slowly the researchers even think this

645  
00:29:29,960 --> 00:29:34,579  
can be used by small animals to send

646  
00:29:32,240 --> 00:29:37,039  
signals to each other without larger

647  
00:29:34,579 --> 00:29:39,470  
predators seeing you're listening to a

648  
00:29:37,039 --> 00:29:43,539  
week in science from our iOS are now

649  
00:29:39,470 --> 00:29:46,309  
four sides headlines in 30 seconds

650  
00:29:43,539 --> 00:29:48,649  
earwax from whales can be used to

651  
00:29:46,309 --> 00:29:50,839  
determine their lifetime exposure to

652  
00:29:48,650 --> 00:29:53,120  
ocean pollutants making positive

653  
00:29:50,839 --> 00:29:55,220  
lifestyle changes may increase the

654  
00:29:53,119 --> 00:29:57,859  
length of telomeres that's the end of

655  
00:29:55,220 --> 00:30:00,589  
chromosomes that control aging and may

656

00:29:57,859 --> 00:30:02,569  
delay cell death spanish researchers

657  
00:30:00,589 --> 00:30:04,939  
have developed the first self-healing

658  
00:30:02,569 --> 00:30:07,579  
plastic that spontaneously repairs

659  
00:30:04,940 --> 00:30:11,059  
itself and just like the five taste

660  
00:30:07,579 --> 00:30:13,789  
categories bittersweet etc we have ten

661  
00:30:11,059 --> 00:30:17,779  
basic categories of smell one of which

662  
00:30:13,789 --> 00:30:19,789  
is popcorn the skynet celebrated its

663  
00:30:17,779 --> 00:30:21,799  
second birthday this week and we're not

664  
00:30:19,789 --> 00:30:24,889  
talking about the system from terminator

665  
00:30:21,799 --> 00:30:26,839  
the Skynet is a program that uses your

666  
00:30:24,890 --> 00:30:29,750  
computer during its quiet times to

667  
00:30:26,839 --> 00:30:31,039  
analyze astronomical data if you want to

668  
00:30:29,750 --> 00:30:33,009  
help astronomers around the

669  
00:30:31,039 --> 00:30:38,029  
world unlock the secrets of the universe

670  
00:30:33,009 --> 00:30:40,220

check out the sky net org that's it for

671

00:30:38,029 --> 00:30:41,990  
this a week in science for more

672

00:30:40,220 --> 00:30:44,690  
information on these and other science

673

00:30:41,990 --> 00:30:48,740  
news stories go to the IRS website are I

674

00:30:44,690 --> 00:30:51,710  
a u.s. orga you follow us on Twitter

675

00:30:48,740 --> 00:30:54,259  
using the hashtag week in sy and like us

676

00:30:51,710 --> 00:31:05,450  
on facebook i'm paul willis and i'll

677

00:30:54,259 --> 00:31:07,579  
catch you here next week the skeptic

678

00:31:05,450 --> 00:31:10,549  
magazine the journal from australian

679

00:31:07,579 --> 00:31:13,970  
skeptics subscribe online to the world's

680

00:31:10,549 --> 00:31:17,619  
second oldest skeptical magazine visit w

681

00:31:13,970 --> 00:31:20,750  
WC optics com au and click the

682

00:31:17,619 --> 00:31:25,129  
publications league you can also find

683

00:31:20,750 --> 00:31:28,220  
their over 30 years of back issues free

684

00:31:25,130 --> 00:31:41,230  
to download the skeptic magazine from

685  
00:31:28,220 --> 00:31:46,329  
Australian skeptics here's main art

686  
00:31:41,230 --> 00:31:46,329  
spooky action at a distance

687  
00:31:47,130 --> 00:31:51,100  
dr. Pamela gay what are you a doctor of

688  
00:31:49,509 --> 00:31:54,039  
again how many letters after your name

689  
00:31:51,099 --> 00:31:56,619  
are there I have a PhD in astronomy from

690  
00:31:54,039 --> 00:31:58,509  
the University of Texas and with more

691  
00:31:56,619 --> 00:32:00,819  
letters I have a Bachelor of Science and

692  
00:31:58,509 --> 00:32:02,859  
astrophysics and if I don't like someone

693  
00:32:00,819 --> 00:32:04,509  
i say astrophysics but i like you so

694  
00:32:02,859 --> 00:32:06,519  
i'll say astronomy you've got to be for

695  
00:32:04,509 --> 00:32:08,440  
the few other scientific doctrines for

696  
00:32:06,519 --> 00:32:09,819  
example philosophy i guess that's not

697  
00:32:08,440 --> 00:32:11,049  
really a scientific doctrine but you

698  
00:32:09,819 --> 00:32:13,329  
don't like philosophers because they

699  
00:32:11,049 --> 00:32:15,009  
reckon if the Andromeda galaxy falls in

700  
00:32:13,329 --> 00:32:17,409  
a forest and no one sees it's not really

701  
00:32:15,009 --> 00:32:20,950  
there there's times that philosophers

702  
00:32:17,410 --> 00:32:23,170  
are quite fun like 4am at a pub but when

703  
00:32:20,950 --> 00:32:24,670  
you're trying to teach science and you

704  
00:32:23,170 --> 00:32:28,480  
have someone from the back of the room

705  
00:32:24,670 --> 00:32:30,700  
as as has happened asking so if we were

706  
00:32:28,480 --> 00:32:32,710  
in India what physical laws would we be

707  
00:32:30,700 --> 00:32:34,559  
learning well physics is the same

708  
00:32:32,710 --> 00:32:37,059  
everywhere in the world and

709  
00:32:34,559 --> 00:32:39,369  
multiculturalism is very important for

710  
00:32:37,059 --> 00:32:41,139  
understanding that people from different

711  
00:32:39,369 --> 00:32:44,469  
cultures all have the same potential to

712  
00:32:41,140 --> 00:32:46,240  
learn and discover but that doesn't mean

713

00:32:44,470 --> 00:32:47,980  
their science is any better or worse

714  
00:32:46,240 --> 00:32:49,809  
because science is science and it should

715  
00:32:47,980 --> 00:32:51,579  
be the same for everyone no matter what

716  
00:32:49,809 --> 00:32:53,139  
their philosophical leanings on a

717  
00:32:51,579 --> 00:32:55,389  
personal level for someone who can

718  
00:32:53,140 --> 00:32:58,150  
understand the concept of Planck time as

719  
00:32:55,390 --> 00:32:59,470  
you can which I find fascinating why

720  
00:32:58,150 --> 00:33:02,620  
can't you get your head around an Excel

721  
00:32:59,470 --> 00:33:04,660  
spreadsheet and accounting I can get my

722  
00:33:02,619 --> 00:33:07,509  
head around an Excel spreadsheet and

723  
00:33:04,660 --> 00:33:10,269  
accounting I just don't like to the

724  
00:33:07,509 --> 00:33:14,019  
problem is I want to dedicate all my

725  
00:33:10,269 --> 00:33:17,200  
time to science to learning about our

726  
00:33:14,019 --> 00:33:19,539  
universe to helping other people be able

727  
00:33:17,200 --> 00:33:21,670

to learn and discover and when I'm doing

728

00:33:19,539 --> 00:33:23,980

accounting I have to face the realities

729

00:33:21,670 --> 00:33:28,330

that I've pay a nine hundred

730

00:33:23,980 --> 00:33:30,610

dollar-a-month server bill and I have to

731

00:33:28,329 --> 00:33:33,129

pay taxes that don't even cover the

732

00:33:30,609 --> 00:33:36,459

health insurance of my staff doing

733

00:33:33,130 --> 00:33:39,100

accounting it's time that brings me away

734

00:33:36,460 --> 00:33:41,950

from science and brings me into the

735

00:33:39,099 --> 00:33:43,419

realities that if I want to do science I

736

00:33:41,950 --> 00:33:45,789

have to figure out how to pay that nine

737

00:33:43,420 --> 00:33:47,830

hundred dollar-a-month server bill in an

738

00:33:45,789 --> 00:33:49,809

economy that's really suffering right

739

00:33:47,829 --> 00:33:51,579

now you said that in an economy that's

740

00:33:49,809 --> 00:33:53,379

suffering that still has two wars going

741

00:33:51,579 --> 00:33:54,139

on with a possible third one on the side

742  
00:33:53,380 --> 00:33:56,570  
there

743  
00:33:54,140 --> 00:33:58,130  
funding going to zero for most of the

744  
00:33:56,569 --> 00:33:59,839  
science fun during I imagined it was

745  
00:33:58,130 --> 00:34:01,460  
being reduced but I had no idea a lot of

746  
00:33:59,839 --> 00:34:03,169  
it was going to 0 could you explain that

747  
00:34:01,460 --> 00:34:05,120  
because non-american listeners might not

748  
00:34:03,170 --> 00:34:07,880  
know this it's science education in

749  
00:34:05,119 --> 00:34:10,849  
particular that's going to 0 under the

750  
00:34:07,880 --> 00:34:13,159  
present president's proposed budget the

751  
00:34:10,849 --> 00:34:16,039  
science education funding at NASA and

752  
00:34:13,159 --> 00:34:18,440  
many other organizations is being zeroed

753  
00:34:16,039 --> 00:34:20,239  
and the money is being redistributed to

754  
00:34:18,440 --> 00:34:23,300  
the Department of Education which

755  
00:34:20,239 --> 00:34:25,489  
specializes in formal education to the

756  
00:34:23,300 --> 00:34:27,890  
National Science Foundation but only to

757  
00:34:25,489 --> 00:34:31,219  
do research to the Smithsonian museums

758  
00:34:27,889 --> 00:34:34,609  
to do outreach these institutions don't

759  
00:34:31,219 --> 00:34:37,459  
have programs in place to ask people to

760  
00:34:34,610 --> 00:34:39,829  
apply for grants and so programs like

761  
00:34:37,460 --> 00:34:42,470  
mine and so many others that are paid

762  
00:34:39,829 --> 00:34:44,090  
for out of NASA out of the Department of

763  
00:34:42,469 --> 00:34:46,549  
Agriculture other the Department of

764  
00:34:44,090 --> 00:34:50,690  
Energy all of our programs are going

765  
00:34:46,550 --> 00:34:52,429  
away and a lot of very good educators

766  
00:34:50,690 --> 00:34:55,429  
and scientists are going to lose their

767  
00:34:52,429 --> 00:34:57,559  
jobs because science and education are

768  
00:34:55,429 --> 00:34:59,960  
getting completely split and programs

769  
00:34:57,559 --> 00:35:02,239  
that combine the two no one knows how to

770

00:34:59,960 --> 00:35:04,340  
fund EE annoying because it will also

771  
00:35:02,239 --> 00:35:05,779  
pit people against each other for what

772  
00:35:04,340 --> 00:35:07,280  
little funding there is as well and that

773  
00:35:05,780 --> 00:35:09,830  
could cause a division within the group

774  
00:35:07,280 --> 00:35:12,740  
that's already happening it used to be

775  
00:35:09,829 --> 00:35:14,299  
that the grants i apply for might have

776  
00:35:12,739 --> 00:35:18,139  
one or two hundred people applying for

777  
00:35:14,300 --> 00:35:20,420  
maybe 20 or 30 grants now there's fewer

778  
00:35:18,139 --> 00:35:22,129  
dollars being spent fewer grants being

779  
00:35:20,420 --> 00:35:23,710  
funded and there might be six to eight

780  
00:35:22,130 --> 00:35:26,840  
hundred different groups applying

781  
00:35:23,710 --> 00:35:31,159  
layoffs are already starting the money's

782  
00:35:26,840 --> 00:35:32,390  
going away and it's hard I I personally

783  
00:35:31,159 --> 00:35:34,190  
am very worried I'm going to have to

784  
00:35:32,389 --> 00:35:36,529

start laying off staff in the new year

785

00:35:34,190 --> 00:35:38,630

and I'm trying everything I can to

786

00:35:36,530 --> 00:35:41,300

prevent that future would something like

787

00:35:38,630 --> 00:35:43,190

the Chinese putting a man on the moon in

788

00:35:41,300 --> 00:35:45,080

2020 spark things up a bit another

789

00:35:43,190 --> 00:35:47,990

Sputnik moment is that what's needed I

790

00:35:45,079 --> 00:35:51,650

don't know what what has me concerned is

791

00:35:47,989 --> 00:35:54,769

there's a mentality right now of men

792

00:35:51,650 --> 00:35:56,300

we don't care it's all about infighting

793

00:35:54,769 --> 00:35:59,210

between the different political parties

794

00:35:56,300 --> 00:36:00,800

it's it's people saying we don't need to

795

00:35:59,210 --> 00:36:03,440

do this because of that and we don't

796

00:36:00,800 --> 00:36:06,080

need to do that because of this and thus

797

00:36:03,440 --> 00:36:08,900

nothing getting done and perceived

798

00:36:06,079 --> 00:36:10,909

there's no votes in science I don't

799

00:36:08,900 --> 00:36:13,970  
think that it's no votes in science I

800

00:36:10,909 --> 00:36:15,920  
actually took time to go up on the hill

801

00:36:13,969 --> 00:36:18,079  
in washington and talk to my congressman

802

00:36:15,920 --> 00:36:20,960  
in the state of illinois and they were

803

00:36:18,079 --> 00:36:22,759  
all deeply passionate the problem is

804

00:36:20,960 --> 00:36:25,579  
that there's now in fighting over who

805

00:36:22,760 --> 00:36:27,770  
gets what money and at a certain point

806

00:36:25,579 --> 00:36:30,190  
it starts to become a dominance fight we

807

00:36:27,769 --> 00:36:33,650  
are pack animals at our heart and

808

00:36:30,190 --> 00:36:35,750  
everyone wants to win and the reality is

809

00:36:33,650 --> 00:36:38,389  
the science educators are losing is a

810

00:36:35,750 --> 00:36:40,159  
quick solution if we had queen pamela

811

00:36:38,389 --> 00:36:42,319  
guy in charge of the country what would

812

00:36:40,159 --> 00:36:44,389  
be the quick solution the quick solution

813  
00:36:42,320 --> 00:36:47,750  
to save today is a continuing resolution

814  
00:36:44,389 --> 00:36:50,299  
that says the US will continue with last

815  
00:36:47,750 --> 00:36:53,719  
year's budget into the future beyond

816  
00:36:50,300 --> 00:36:56,570  
that the long-term solution is we need

817  
00:36:53,719 --> 00:36:58,189  
people to understand that science and

818  
00:36:56,570 --> 00:37:00,830  
science education need to happen

819  
00:36:58,190 --> 00:37:03,170  
hand-in-hand that the department of

820  
00:37:00,829 --> 00:37:06,679  
education is very good for making sure

821  
00:37:03,170 --> 00:37:08,750  
that we have consistent education across

822  
00:37:06,679 --> 00:37:10,609  
the united states but if you want

823  
00:37:08,750 --> 00:37:12,619  
today's cutting-edge science to be in

824  
00:37:10,610 --> 00:37:14,420  
tomorrow's classroom you need the

825  
00:37:12,619 --> 00:37:17,000  
science educators working with the

826  
00:37:14,420 --> 00:37:18,740  
scientists have you had time to notice

827

00:37:17,000 --> 00:37:20,389  
the state of science education here in

828  
00:37:18,739 --> 00:37:22,189  
australia or people spoken to you about

829  
00:37:20,389 --> 00:37:23,929  
it at all i know from working with

830  
00:37:22,190 --> 00:37:26,929  
people at Swinburne University of

831  
00:37:23,929 --> 00:37:29,230  
Technology especially their astrophysics

832  
00:37:26,929 --> 00:37:32,149  
and super computing facility that

833  
00:37:29,230 --> 00:37:33,920  
astronomy here is still reasonably well

834  
00:37:32,150 --> 00:37:35,599  
funded this is one of the few places

835  
00:37:33,920 --> 00:37:37,909  
that in many ways is giving the

836  
00:37:35,599 --> 00:37:40,909  
opportunity to grow we have a big sky

837  
00:37:37,909 --> 00:37:44,509  
you have a big dark sky it's dark both

838  
00:37:40,909 --> 00:37:47,960  
light and in radio waves and you also

839  
00:37:44,510 --> 00:37:51,110  
have an education system that like ours

840  
00:37:47,960 --> 00:37:53,869  
is troubled in many ways but by and

841  
00:37:51,110 --> 00:37:56,690

large people are still trying to learn

842

00:37:53,869 --> 00:37:57,859

what science really is you stated it

843

00:37:56,690 --> 00:37:59,960

there when you're talking earlier

844

00:37:57,860 --> 00:38:01,980

Voyager has left the building it's

845

00:37:59,960 --> 00:38:03,480

actually left the solar system and its

846

00:38:01,980 --> 00:38:05,250

ten thousand miles an hour to travelling

847

00:38:03,480 --> 00:38:08,010

at is that right it's outside of the

848

00:38:05,250 --> 00:38:10,380

solar system it's carrying a record on

849

00:38:08,010 --> 00:38:13,140

it that contains the sound of a human

850

00:38:10,380 --> 00:38:14,849

heartbeat and rubbery and chuck berry

851

00:38:13,139 --> 00:38:16,469

but what I love is that human heartbeat

852

00:38:14,849 --> 00:38:20,039

is well someone's thinking of the

853

00:38:16,469 --> 00:38:21,959

concept of love and so someone's beating

854

00:38:20,039 --> 00:38:24,090

heart filled with love has left our

855

00:38:21,960 --> 00:38:27,690

solar system is it near the Oak cloud

856  
00:38:24,090 --> 00:38:29,608  
it's outside of the solar system so so

857  
00:38:27,690 --> 00:38:31,980  
it's the New Horizons mission that it's

858  
00:38:29,608 --> 00:38:34,230  
on its way to the Kuiper belt so it's

859  
00:38:31,980 --> 00:38:37,440  
even so it's actually passed the Oort

860  
00:38:34,230 --> 00:38:39,510  
cloud so I be confused the Oort cloud is

861  
00:38:37,440 --> 00:38:41,940  
ill-defined and no one can exactly say

862  
00:38:39,510 --> 00:38:43,859  
where it is except that the aliens from

863  
00:38:41,940 --> 00:38:45,358  
Independence Day that was when we first

864  
00:38:43,858 --> 00:38:50,639  
saw them when they came out of the Oort

865  
00:38:45,358 --> 00:38:53,250  
cloud yes but as a scientist we've only

866  
00:38:50,639 --> 00:38:55,949  
detected one possible Oort cloud object

867  
00:38:53,250 --> 00:38:57,539  
and that's the objects Edna all the rest

868  
00:38:55,949 --> 00:39:00,539  
of our understandings of the Oort cloud

869  
00:38:57,539 --> 00:39:02,099  
come from mathematical modeling so we

870  
00:39:00,539 --> 00:39:05,369  
have good reason to believe it's there

871  
00:39:02,099 --> 00:39:07,079  
it explains comets very well but I don't

872  
00:39:05,369 --> 00:39:09,150  
feel comfortable saying that we've

873  
00:39:07,079 --> 00:39:11,039  
definitely gone all the way past all the

874  
00:39:09,150 --> 00:39:13,530  
rogue pieces of ice that might be

875  
00:39:11,039 --> 00:39:15,599  
orbiting our solar system but in terms

876  
00:39:13,530 --> 00:39:18,660  
of how we measure our solar system based

877  
00:39:15,599 --> 00:39:21,900  
on the Sun pushing out on the material

878  
00:39:18,659 --> 00:39:23,879  
around our solar system Voyager has left

879  
00:39:21,900 --> 00:39:26,309  
the building before at launch left the

880  
00:39:23,880 --> 00:39:28,590  
atmosphere left the planets left the

881  
00:39:26,309 --> 00:39:30,389  
solar system I want to ask you about an

882  
00:39:28,590 --> 00:39:32,010  
object that I am fascinated by and

883  
00:39:30,389 --> 00:39:33,779  
that's the North Pole of Neptune the

884

00:39:32,010 --> 00:39:35,760  
square object that keeps turning up

885  
00:39:33,780 --> 00:39:38,550  
there and not turning up there can it

886  
00:39:35,760 --> 00:39:39,930  
possibly be an alien artifact now well

887  
00:39:38,550 --> 00:39:42,060  
that was an easy question thank you very

888  
00:39:39,929 --> 00:39:44,129  
much dr. Pamela gay thank you so much

889  
00:39:42,059 --> 00:39:45,659  
for having me on

890  
00:39:44,130 --> 00:39:46,950  
but we are having a night about

891  
00:39:45,659 --> 00:39:48,149  
astronomy tonight is there anything

892  
00:39:46,949 --> 00:39:49,980  
you're particularly looking interested

893  
00:39:48,150 --> 00:39:53,070  
to hearing about tonight about astronomy

894  
00:39:49,980 --> 00:39:54,599  
I just like to know that's everything

895  
00:39:53,070 --> 00:39:57,600  
Pamela learned the university was wrong

896  
00:39:54,599 --> 00:39:59,519  
oh yeah because she says her stuff now

897  
00:39:57,599 --> 00:40:01,199  
and well is that because it was a while

898  
00:39:59,519 --> 00:40:02,880

ago and everything's changed I thought

899

00:40:01,199 --> 00:40:05,699  
it'd you settled I think it's like 20

900

00:40:02,880 --> 00:40:07,950  
years ago wow so you a fan of the

901

00:40:05,699 --> 00:40:10,799  
podcast I am and what are you here for

902

00:40:07,949 --> 00:40:13,109  
tonight astronomy wise um I just come to

903

00:40:10,800 --> 00:40:15,480  
hopefully meet Pamela and he what she's

904

00:40:13,110 --> 00:40:18,000  
good to say and you're a fan of her

905

00:40:15,480 --> 00:40:20,010  
blogging and her podcast um oh

906

00:40:18,000 --> 00:40:22,349  
definitely a podcast are only found

907

00:40:20,010 --> 00:40:25,860  
skeptics skepticism through where I'm

908

00:40:22,349 --> 00:40:27,809  
astronomy car so yeah so did they say

909

00:40:25,860 --> 00:40:29,640  
something or do they lead you the path

910

00:40:27,809 --> 00:40:31,110  
of thinking critical thinking how did

911

00:40:29,639 --> 00:40:32,519  
you get into it through the podcast I

912

00:40:31,110 --> 00:40:34,019  
think they might have had Steve on the

913  
00:40:32,519 --> 00:40:35,130  
show or maybe just talked about it I

914  
00:40:34,019 --> 00:40:37,380  
can't quite remember but I remember

915  
00:40:35,130 --> 00:40:39,930  
definitely then going and finding

916  
00:40:37,380 --> 00:40:41,820  
skeptics guide and yeah finding

917  
00:40:39,929 --> 00:40:43,409  
everything else from there and actually

918  
00:40:41,820 --> 00:40:45,539  
what are your favorite skeptical

919  
00:40:43,409 --> 00:40:47,009  
podcasts or is it everyone has a

920  
00:40:45,539 --> 00:40:48,989  
slightly different list I've only just

921  
00:40:47,010 --> 00:40:51,750  
recently discovered a skeptic to the k

922  
00:40:48,989 --> 00:40:54,389  
out of Liverpool funny guys yep yep um

923  
00:40:51,750 --> 00:40:56,940  
incredulity very funny as well same guys

924  
00:40:54,389 --> 00:40:59,250  
yeah um and the questions on that are so

925  
00:40:56,940 --> 00:41:01,139  
tough sometimes aren't they yes well I

926  
00:40:59,250 --> 00:41:03,599  
think they might get a little bit of a

927  
00:41:01,139 --> 00:41:04,889  
heads up on that because we've got a ran

928  
00:41:03,599 --> 00:41:06,630  
down there on the floor with the big

929  
00:41:04,889 --> 00:41:08,339  
skeptics t-shirt giveaway have you been

930  
00:41:06,630 --> 00:41:10,680  
getting a teacher for yourself I have a

931  
00:41:08,340 --> 00:41:13,140  
few now what colors have you gone with

932  
00:41:10,679 --> 00:41:13,919  
light blue black and I'm hoping to get

933  
00:41:13,139 --> 00:41:16,170  
one of the blue ones over there

934  
00:41:13,920 --> 00:41:18,090  
Christmas gifts the family is it all for

935  
00:41:16,170 --> 00:41:19,409  
me oh you're not dressed unless you're

936  
00:41:18,090 --> 00:41:22,170  
wearing a skeptical t-shirt I've always

937  
00:41:19,409 --> 00:41:24,629  
said that Sheriff true Reggie and she

938  
00:41:22,170 --> 00:41:26,010  
got just got to X for once most of this

939  
00:41:24,630 --> 00:41:28,530  
stuff has come from your attic what have

940  
00:41:26,010 --> 00:41:30,510  
you got in your attic I'd rather not

941

00:41:28,530 --> 00:41:32,100  
talk about it police my police might do

942  
00:41:30,510 --> 00:41:34,350  
something about anything if I say too

943  
00:41:32,099 --> 00:41:35,549  
much you're the cat weasel of skeptical

944  
00:41:34,349 --> 00:41:38,429  
clothing

945  
00:41:35,550 --> 00:41:41,370  
actually I think it's uh what much what

946  
00:41:38,429 --> 00:41:42,989  
a cat weasel is but I've got I'm sorry

947  
00:41:41,369 --> 00:41:45,389  
we're gonna he a very dodgy wrestler

948  
00:41:42,989 --> 00:41:46,799  
that's correct right yes because I was

949  
00:41:45,389 --> 00:41:48,119  
thinking a cat weasel would actually be

950  
00:41:46,800 --> 00:41:51,090  
good thing because i actually have rats

951  
00:41:48,119 --> 00:41:53,190  
they're roaming around between the two

952  
00:41:51,090 --> 00:41:56,490  
monsters only these t-shirts retinoid

953  
00:41:53,190 --> 00:41:58,170  
nope Oh rat looped and nope they've

954  
00:41:56,489 --> 00:41:59,729  
major they've been well isolated from

955  
00:41:58,170 --> 00:42:02,369

the right okay we've been talking to a

956

00:41:59,730 --> 00:42:03,929

rounder ectomy basement now sir lineup

957

00:42:02,369 --> 00:42:06,509

you want some t-shirts do thank you may

958

00:42:03,929 --> 00:42:08,909

nod I'm going to go for my second round

959

00:42:06,510 --> 00:42:11,310

of Tam t-shirt what are you using them

960

00:42:08,909 --> 00:42:13,349

as tea towels or something no no no I'm

961

00:42:11,309 --> 00:42:15,119

just a sham the fact that I wasn't a tab

962

00:42:13,349 --> 00:42:16,610

well that's right did you can wear it

963

00:42:15,119 --> 00:42:20,359

and go y'all was there it was fantastic

964

00:42:16,610 --> 00:42:20,360

yeah that's a good

965

00:42:29,358 --> 00:42:34,348

hey fellow skeptics I'm Trent's the

966

00:42:32,338 --> 00:42:36,690

co-host of a podcast called seeds of

967

00:42:34,349 --> 00:42:39,469

doubt and creative a new project called

968

00:42:36,690 --> 00:42:39,469

drop Fox

969

00:42:45,670 --> 00:42:51,050

Dropbox is dedicated to providing new

970  
00:42:48,318 --> 00:42:52,940  
music for your radio show or podcast and

971  
00:42:51,050 --> 00:42:55,369  
to help support your cause through the

972  
00:42:52,940 --> 00:42:57,769  
sound waves the song you're listening to

973  
00:42:55,369 --> 00:43:00,740  
is called keep looking up and can be

974  
00:42:57,769 --> 00:43:03,699  
heard on the podcast oddments by college

975  
00:43:00,739 --> 00:43:03,699  
of curiosity

976  
00:43:09,110 --> 00:43:16,400  
they need some new music check me out

977  
00:43:11,880 --> 00:43:19,670  
facebook.com slash Dropbox that's gr 0 p

978  
00:43:16,400 --> 00:43:19,670  
fo x

979  
00:43:31,248 --> 00:43:39,679  
you will stars 4 sep tember 2013 with

980  
00:43:35,369 --> 00:43:42,900  
our stralla jure doctor do earth ekav

981  
00:43:39,679 --> 00:43:45,419  
areas flying around the world backwards

982  
00:43:42,900 --> 00:43:47,670  
through the International Date Line does

983  
00:43:45,420 --> 00:43:49,048  
wonders for your astrology if you play

984  
00:43:47,670 --> 00:43:52,380  
your cards right you can have two

985  
00:43:49,048 --> 00:43:55,259  
birthdays or none at all if this applies

986  
00:43:52,380 --> 00:43:59,160  
to you read this twice or ignore it

987  
00:43:55,259 --> 00:44:01,769  
altogether Gemini my dentist always

988  
00:43:59,159 --> 00:44:04,498  
works by the stars in fact he works

989  
00:44:01,768 --> 00:44:07,348  
outside at night this can make for some

990  
00:44:04,498 --> 00:44:10,709  
interesting and unexpected fillings and

991  
00:44:07,349 --> 00:44:15,359  
extractions you're lucky teeth are the

992  
00:44:10,710 --> 00:44:18,289  
ones still in your head cancer are you a

993  
00:44:15,358 --> 00:44:21,389  
one-trick pony maybe you're just an ass

994  
00:44:18,289 --> 00:44:24,028  
in any case your stars tell me you just

995  
00:44:21,389 --> 00:44:30,058  
watch everything up for a more positive

996  
00:44:24,028 --> 00:44:32,130  
reading send 4999 to my p.o box Leo be

997  
00:44:30,059 --> 00:44:34,528  
careful walking outside today as it'll

998

00:44:32,130 --> 00:44:38,400  
be raining cats and dogs if you step in

999  
00:44:34,528 --> 00:44:41,880  
a poodle oh hang on sorry I was reading

1000  
00:44:38,400 --> 00:44:46,588  
my joke book from 1965 still makes about

1001  
00:44:41,880 --> 00:44:49,108  
as much sense as astrology Virgo never

1002  
00:44:46,588 --> 00:44:51,449  
air your dirty laundry in public unless

1003  
00:44:49,108 --> 00:44:54,058  
you want people to giggle at your undies

1004  
00:44:51,449 --> 00:44:56,218  
cover your bases in your backside and

1005  
00:44:54,059 --> 00:45:00,089  
for that you'll need your undies which

1006  
00:44:56,219 --> 00:45:03,179  
should be clean by now libera drinking

1007  
00:45:00,088 --> 00:45:06,588  
to forget never works I remember the

1008  
00:45:03,179 --> 00:45:10,578  
time I drank to forget about the the

1009  
00:45:06,588 --> 00:45:13,958  
well whatever it was it didn't work also

1010  
00:45:10,579 --> 00:45:17,568  
drinking to forget never works

1011  
00:45:13,958 --> 00:45:19,429  
Scorpio if other people can hear the

1012  
00:45:17,568 --> 00:45:21,588

ringing in your head you're in more

1013

00:45:19,429 --> 00:45:24,498

trouble than you thought keep your

1014

00:45:21,588 --> 00:45:28,759

friends close and your enemies very very

1015

00:45:24,498 --> 00:45:30,618

far away Arthur UKISS this week you'll

1016

00:45:28,759 --> 00:45:33,978

see eye-to-eye with people of your own

1017

00:45:30,619 --> 00:45:38,568

height i wonderful here ear to ear at

1018

00:45:33,978 --> 00:45:41,649

the same time Sagittarius Mars is in

1019

00:45:38,568 --> 00:45:45,278

your seventh house you have seven houses

1020

00:45:41,650 --> 00:45:48,410

you have a house big enough for a planet

1021

00:45:45,278 --> 00:45:50,869

Capricorn take a deep breath but make

1022

00:45:48,409 --> 00:45:52,639

sure it's your own people born in your

1023

00:45:50,869 --> 00:45:55,298

star sign are known for their heavy

1024

00:45:52,639 --> 00:45:58,429

breathing especially after running

1025

00:45:55,298 --> 00:46:00,228

Aquarius the stars are unclear for you

1026

00:45:58,429 --> 00:46:03,078

this month going to the interference

1027  
00:46:00,228 --> 00:46:05,419  
from Reiki energy please use your aura

1028  
00:46:03,079 --> 00:46:10,640  
or something else to contact your

1029  
00:46:05,420 --> 00:46:13,880  
spirits gin is a nice spirit Pisces if a

1030  
00:46:10,639 --> 00:46:16,489  
tabby cat crosses your path bend over

1031  
00:46:13,880 --> 00:46:17,959  
and give it a little bit it might not be

1032  
00:46:16,489 --> 00:46:21,619  
your lucky day but the cat will

1033  
00:46:17,958 --> 00:46:23,838  
appreciate it those stars come to you

1034  
00:46:21,619 --> 00:46:25,568  
courtesy of the skeptic magazine the

1035  
00:46:23,838 --> 00:46:31,119  
journal from Australian skeptics

1036  
00:46:25,568 --> 00:46:33,788  
subscribe online at wwc optics com au

1037  
00:46:31,119 --> 00:46:36,789  
physical and digital subscriptions

1038  
00:46:33,789 --> 00:46:36,789  
available

1039  
00:46:43,769 --> 00:46:49,619  
in a world where the truth is a matter

1040  
00:46:51,460 --> 00:46:56,980  
your messages are a scene for beyond

1041  
00:46:59,809 --> 00:47:05,469  
and reason is sidelined for magical

1042  
00:47:03,170 --> 00:47:05,470  
thinking

1043  
00:47:05,949 --> 00:47:10,500  
only three men stand between the truth

1044  
00:47:11,519 --> 00:47:16,989  
what date is it 78 several thing this is

1045  
00:47:15,280 --> 00:47:18,609  
impressive it's these are system present

1046  
00:47:16,989 --> 00:47:21,338  
they're not their photographs of Chinese

1047  
00:47:18,608 --> 00:47:23,380  
anthem it's not we are not well received

1048  
00:47:21,338 --> 00:47:25,000  
is a good guard we're fully don't

1049  
00:47:23,380 --> 00:47:26,890  
discuss cryptozoology on the show very

1050  
00:47:25,000 --> 00:47:29,349  
often because we don't know anything

1051  
00:47:26,889 --> 00:47:30,969  
about how the truth the price gets lower

1052  
00:47:29,349 --> 00:47:32,619  
and lower and lower and then he hits the

1053  
00:47:30,969 --> 00:47:36,939  
ceiling it's just even for the room

1054  
00:47:32,619 --> 00:47:38,740  
below for skeptic to the K for the Most

1055

00:47:36,940 --> 00:47:42,720  
High skeptics society find us on iTunes

1056  
00:47:38,739 --> 00:47:42,719  
or you know don't

1057  
00:47:51,568 --> 00:47:56,170  
thank you for listening to the skeptic

1058  
00:47:54,219 --> 00:47:58,808  
zone and thank you to all those people

1059  
00:47:56,170 --> 00:48:01,389  
who chip in less than a dollar a week or

1060  
00:47:58,809 --> 00:48:04,509  
a bit more if you want at skeptic zone

1061  
00:48:01,389 --> 00:48:06,578  
TV it certainly helps keep the show

1062  
00:48:04,509 --> 00:48:10,269  
going in fact without those donations

1063  
00:48:06,579 --> 00:48:12,670  
the show just wouldn't go on at all very

1064  
00:48:10,268 --> 00:48:14,889  
much appreciated don't forget to book

1065  
00:48:12,670 --> 00:48:17,500  
your tickets for the National skeptics

1066  
00:48:14,889 --> 00:48:20,528  
convention national skeptics convention

1067  
00:48:17,500 --> 00:48:23,469  
org and I'll see you there in November

1068  
00:48:20,528 --> 00:48:27,518  
and you can keep up with the skeptic

1069  
00:48:23,469 --> 00:48:32,199

zone in my tweets Twitter's whatever at

1070

00:48:27,518 --> 00:48:34,598

at skeptic zone but for this week this

1071

00:48:32,199 --> 00:48:40,929

is Richard Saunders signing off from

1072

00:48:34,599 --> 00:48:45,119

Sydney Australia you've been listening

1073

00:48:40,929 --> 00:48:49,808

to the skeptic zone visit our website at

1074

00:48:45,119 --> 00:48:53,670

www skeptics on TV for comments contacts

1075

00:48:49,809 --> 00:48:53,670

and extra video reports