

The Skeptic Zone
Show 279 - 23 Feb 2014



Dr Neil deGrasse Tyson - Ann Druyan

1
00:00:10,070 --> 00:00:05,670
this is the cosmos

2
00:00:12,629 --> 00:00:10,080
a network of a hundred billion galaxies

3
00:00:31,750 --> 00:00:12,639
and it's the greatest story science has

4
00:00:36,229 --> 00:00:33,910
life on earth is one of the unsolved

5
00:00:37,350 --> 00:00:36,239
mysteries of science

6
00:00:38,470 --> 00:00:37,360
come with me

7
00:01:06,469 --> 00:00:38,480
our journey

8
00:01:22,550 --> 00:01:09,109
welcome to the skeptic zone the podcast

9
00:01:29,270 --> 00:01:24,870
welcome to the skeptic zone episode

10
00:01:31,030 --> 00:01:29,280
number 279 for the 23rd of february 2013

11
00:01:33,270 --> 00:01:31,040
richard saunders here with you from

12
00:01:35,190 --> 00:01:33,280
sydney australia and yes that clip

13
00:01:36,390 --> 00:01:35,200

before the theme music might have given

14

00:01:37,670 --> 00:01:36,400

you a hint

15

00:01:40,710 --> 00:01:37,680

a clue

16

00:01:42,390 --> 00:01:40,720

an inkling an insight into what's coming

17

00:01:45,510 --> 00:01:42,400

up on this week's show we have an

18

00:01:48,389 --> 00:01:45,520

interview with dr neil degrasse tyson

19

00:01:52,230 --> 00:01:48,399

and anderin all about the new

20

00:01:55,830 --> 00:01:52,240

cosmos tv series i was very fortunate to

21

00:01:57,429 --> 00:01:55,840

meet uh anne and neil as they insisted i

22

00:02:00,230 --> 00:01:57,439

call them

23

00:02:02,550 --> 00:02:00,240

in sydney in the last few days

24

00:02:05,350 --> 00:02:02,560

brought here by the wonderful people at

25

00:02:07,190 --> 00:02:05,360

the national geographic channel

26

00:02:09,430 --> 00:02:07,200

and a big shout out to the national

27

00:02:11,589 --> 00:02:09,440

geographic channel especially cassie

28

00:02:13,750 --> 00:02:11,599

crofts at the nat geo

29

00:02:15,750 --> 00:02:13,760

who was so helpful

30

00:02:16,550 --> 00:02:15,760

in providing me information and other

31

00:02:18,869 --> 00:02:16,560

things

32

00:02:20,630 --> 00:02:18,879

and getting this interview together

33

00:02:23,670 --> 00:02:20,640

now for those people in australia the

34

00:02:25,670 --> 00:02:23,680

big news is cosmos starts showing on the

35

00:02:30,630 --> 00:02:25,680

national geographic channel

36

00:02:32,229 --> 00:02:30,640

sunday the 16th of march at 7 30 pm

37

00:02:34,869 --> 00:02:32,239

and for our listeners elsewhere in the

38

00:02:37,270 --> 00:02:34,879

world especially in the us

39

00:02:38,710 --> 00:02:37,280

to read from the uh

40

00:02:41,270 --> 00:02:38,720

the press release

41

00:02:44,470 --> 00:02:41,280

fox network's group announces the first

42

00:02:47,990 --> 00:02:44,480

ever simultaneous cross network global

43

00:02:49,030 --> 00:02:48,000

premiere event for cosmos a space time

44

00:02:51,589 --> 00:02:49,040

odyssey

45

00:02:54,070 --> 00:02:51,599

on sunday march 9th now this will

46

00:02:57,030 --> 00:02:54,080

premiere across 10 us networks including

47

00:02:58,470 --> 00:02:57,040

fox national geographic channel

48

00:03:05,190 --> 00:02:58,480

fx

49

00:03:08,790 --> 00:03:05,200

fox sports 1 fox sports 2 net geo wild

50

00:03:11,350 --> 00:03:08,800

net geo mundo and fox live

51
00:03:13,030 --> 00:03:11,360
multi network simulcast sponsored by

52
00:03:15,190 --> 00:03:13,040
samsung galaxy

53
00:03:17,270 --> 00:03:15,200
and the chrysler brand well thank you to

54
00:03:19,430 --> 00:03:17,280
those people so that's the date to

55
00:03:20,949 --> 00:03:19,440
remember for the people in the u.s and

56
00:03:23,430 --> 00:03:20,959
some other countries

57
00:03:26,550 --> 00:03:23,440
check your local uh guides as they say

58
00:03:28,550 --> 00:03:26,560
march 9th is the date in australia it's

59
00:03:30,710 --> 00:03:28,560
march 16th

60
00:03:32,390 --> 00:03:30,720
now if you want to win a cosmos pack

61
00:03:35,030 --> 00:03:32,400
including an autographed copy of the

62
00:03:37,270 --> 00:03:35,040
cosmos book autographed by neil degrasse

63
00:03:39,350 --> 00:03:37,280

tyson and anderin

64

00:03:40,869 --> 00:03:39,360

download next week's episode of the

65

00:03:43,509 --> 00:03:40,879

skeptic zone 4

66

00:03:45,830 --> 00:03:43,519

details of a new competition

67

00:03:48,789 --> 00:03:45,840

first prize of course that wonderful

68

00:03:50,789 --> 00:03:48,799

cosmos prize pack courtesy of the

69

00:03:53,110 --> 00:03:50,799

national geographic channel

70

00:03:55,750 --> 00:03:53,120

after the cosmos interviews it's a week

71

00:04:00,630 --> 00:03:55,760

in science from the royal institution of

72

00:04:05,030 --> 00:04:02,710

and then to round off the show it's dr

73

00:04:07,270 --> 00:04:05,040

rachie reports now a couple of weeks ago

74

00:04:10,070 --> 00:04:07,280

on the show we had the story of dr ken

75

00:04:12,869 --> 00:04:10,080

harvey and why he resigned his position

76

00:04:15,350 --> 00:04:12,879

at la trobe university over the deal

77

00:04:17,749 --> 00:04:15,360

with the swiss vitamin company

78

00:04:20,469 --> 00:04:17,759

dr raichi interviews ken and finds out

79

00:04:22,150 --> 00:04:20,479

more about his uh decision and more

80

00:04:23,749 --> 00:04:22,160

about the whole controversy and it's

81

00:04:27,110 --> 00:04:23,759

really turned into a

82

00:04:29,510 --> 00:04:27,120

quite a story that's dr raichi reports

83

00:04:31,030 --> 00:04:29,520

to round off this week's episode now

84

00:04:34,230 --> 00:04:31,040

before we get stuck into the show a

85

00:04:36,070 --> 00:04:34,240

quick couple of notes in 2012 and 2013

86

00:04:39,990 --> 00:04:36,080

it was my great pleasure to attend the

87

00:04:43,270 --> 00:04:40,000

qed question explore discover convention

88

00:04:45,430 --> 00:04:43,280

in manchester in the in the uk

89

00:04:48,150 --> 00:04:45,440

that's coming up again that will be held

90

00:04:51,590 --> 00:04:48,160

at the palace hotel in manchester on the

91

00:04:53,909 --> 00:04:51,600

12th and 13th of april 2014

92

00:04:56,629 --> 00:04:53,919

tickets are going fast this is a

93

00:04:58,790 --> 00:04:56,639

convention not to be missed it's simply

94

00:05:00,390 --> 00:04:58,800

one of the best ones i've ever attended

95

00:05:01,670 --> 00:05:00,400

around the world and i've certainly seen

96

00:05:04,710 --> 00:05:01,680

my share

97

00:05:07,909 --> 00:05:04,720

uh best thing to do is quickly head to

98

00:05:12,790 --> 00:05:09,830

if you're going to be in the uk around

99

00:05:14,310 --> 00:05:12,800

april it's worth a side trip

100

00:05:15,749 --> 00:05:14,320

in fact it's worth a trip from the other

101
00:05:19,110 --> 00:05:15,759
side of the planet

102
00:05:22,310 --> 00:05:19,120
wow and what a lineup they have for

103
00:05:24,469 --> 00:05:22,320
this year including paul zenin he's a

104
00:05:26,870 --> 00:05:24,479
really fabulous entertainer and magician

105
00:05:28,710 --> 00:05:26,880
and a good skeptic too dr richard

106
00:05:31,430 --> 00:05:28,720
wiseman who was on the show last week

107
00:05:33,029 --> 00:05:31,440
always entertaining we have people oh

108
00:05:35,189 --> 00:05:33,039
one of my favorite people in the world

109
00:05:37,350 --> 00:05:35,199
in fact uh susan gerbic from gorilla

110
00:05:40,150 --> 00:05:37,360
skepticism will be there

111
00:05:41,749 --> 00:05:40,160
robert llewellyn from red dwarf he's

112
00:05:42,629 --> 00:05:41,759
going to be making appearance mark

113
00:05:44,950 --> 00:05:42,639

edward

114

00:05:48,390 --> 00:05:44,960

sanal atamataku

115

00:05:50,950 --> 00:05:48,400

the list goes on don't miss it qed

116

00:05:52,950 --> 00:05:50,960

this april in manchester

117

00:05:55,270 --> 00:05:52,960

and one last plug before we get into the

118

00:05:58,230 --> 00:05:55,280

show don't forget you can get your

119

00:05:59,830 --> 00:05:58,240

weekly fix of our reporter maynard you

120

00:06:01,909 --> 00:05:59,840

don't have to hear him on the zone he's

121

00:06:05,510 --> 00:06:01,919

not on every week what a pity

122

00:06:07,830 --> 00:06:05,520

head to maynard.com dot a u for crazy

123

00:06:09,749 --> 00:06:07,840

interviews music and more and now it's

124

00:06:12,309 --> 00:06:09,759

time to run downstairs and have a nice

125

00:06:25,749 --> 00:06:12,319

cup of hot chocolate this week while we

126
00:06:28,790 --> 00:06:27,270
the cosmos

127
00:06:30,390 --> 00:06:28,800
is all it is

128
00:06:33,270 --> 00:06:30,400
or ever was

129
00:06:33,280 --> 00:06:36,390
come with me

130
00:06:41,110 --> 00:06:38,629
a generation ago the astronomer carl

131
00:06:44,070 --> 00:06:41,120
sagan stood here and launched hundreds

132
00:06:46,390 --> 00:06:44,080
of millions of us on a great adventure

133
00:06:48,469 --> 00:06:46,400
the exploration of the universe revealed

134
00:06:52,230 --> 00:06:48,479
by science

135
00:06:56,070 --> 00:06:53,990
we're about to begin a journey that will

136
00:06:58,629 --> 00:06:56,080
take us from the infinitesimal to the

137
00:07:00,070 --> 00:06:58,639
infinite from the dawn of time to the

138
00:07:02,629 --> 00:07:00,080

distant future

139

00:07:03,830 --> 00:07:02,639

we'll explore galaxies and suns and

140

00:07:06,950 --> 00:07:03,840

worlds

141

00:07:09,589 --> 00:07:06,960

surf the gravity waves of space-time

142

00:07:10,710 --> 00:07:09,599

encounter beings that live in fire and

143

00:07:13,189 --> 00:07:10,720

ice

144

00:07:14,550 --> 00:07:13,199

explore the planets of stars that never

145

00:07:17,430 --> 00:07:14,560

die

146

00:07:21,110 --> 00:07:17,440

discover atoms as massive as suns and

147

00:07:24,790 --> 00:07:21,120

universes smaller than atoms

148

00:07:27,510 --> 00:07:24,800

cosmos is also a story about us

149

00:07:29,670 --> 00:07:27,520

it's the saga of how wandering bands of

150

00:07:33,270 --> 00:07:29,680

hunters and gatherers found their way to

151

00:07:44,150 --> 00:07:34,550

one adventure

152

00:07:48,469 --> 00:07:46,550

well i'm delighted to be here in uh a

153

00:07:50,150 --> 00:07:48,479

wonderful what a wonderful view my

154

00:07:52,629 --> 00:07:50,160

goodness me i'm looking at the sydney

155

00:07:54,550 --> 00:07:52,639

harbour bridge out the window but

156

00:07:56,309 --> 00:07:54,560

certainly the uh company i'm keeping

157

00:07:58,710 --> 00:07:56,319

right now is just as wonderful as the

158

00:08:00,869 --> 00:07:58,720

view i'm with dr neil degrasse tyson

159

00:08:03,029 --> 00:08:00,879

welcome to australia thank you my i'm

160

00:08:04,869 --> 00:08:03,039

only my second time here and the first

161

00:08:06,309 --> 00:08:04,879

time where i'm spending any meaningful

162

00:08:09,430 --> 00:08:06,319

time so it's great everybody's been

163

00:08:10,950 --> 00:08:09,440

friendly the view is gorgeous it's it's

164

00:08:13,189 --> 00:08:10,960

more beautiful than the already

165

00:08:15,830 --> 00:08:13,199

beautiful images that we all know

166

00:08:17,270 --> 00:08:15,840

uh represent sydney it's almost like

167

00:08:19,430 --> 00:08:17,280

it's in the states it's like a postcard

168

00:08:22,710 --> 00:08:19,440

looking out there and i'm with andrea

169

00:08:25,430 --> 00:08:22,720

hello hello how are you i'm i'm beside

170

00:08:27,589 --> 00:08:25,440

myself i must admit and

171

00:08:30,950 --> 00:08:27,599

right sitting next to me right here is a

172

00:08:33,589 --> 00:08:30,960

15 year old boy yep who stayed up late

173

00:08:35,110 --> 00:08:33,599

in country australia the countryside

174

00:08:38,469 --> 00:08:35,120

little country town

175

00:08:40,790 --> 00:08:38,479

to watch a show called cosmos in 1981

176
00:08:41,750 --> 00:08:40,800
and couldn't believe how great how great

177
00:08:42,709 --> 00:08:41,760
it was

178
00:08:44,230 --> 00:08:42,719
thank you

179
00:08:46,630 --> 00:08:44,240
well i'm i'm

180
00:08:47,910 --> 00:08:46,640
completely gratified and very proud on

181
00:08:51,509 --> 00:08:47,920
behalf of

182
00:08:53,670 --> 00:08:51,519
carl and myself that it has such a place

183
00:08:55,509 --> 00:08:53,680
in your heart it certainly does and i

184
00:08:57,910 --> 00:08:55,519
would not be here and i would not be in

185
00:08:59,590 --> 00:08:57,920
the position i am in in life if it

186
00:09:00,870 --> 00:08:59,600
wasn't for that [h__\h]

187
00:09:02,710 --> 00:09:00,880
there's no two ways about it you know

188
00:09:04,790 --> 00:09:02,720

there's lots of influences on one's life

189

00:09:06,150 --> 00:09:04,800

over the years but that certainly is one

190

00:09:07,829 --> 00:09:06,160

of the major ones

191

00:09:10,630 --> 00:09:07,839

for me but this is something you must

192

00:09:13,670 --> 00:09:10,640

have heard by now well you know i've

193

00:09:14,790 --> 00:09:13,680

thought for decades of doing an actual

194

00:09:17,430 --> 00:09:14,800

census

195

00:09:20,470 --> 00:09:17,440

of sending out the word perhaps through

196

00:09:23,590 --> 00:09:20,480

one of the scientific organizations and

197

00:09:27,750 --> 00:09:23,600

saying please let us know if you

198

00:09:29,750 --> 00:09:27,760

uh read science teach science do science

199

00:09:32,710 --> 00:09:29,760

are connected in any way to the

200

00:09:35,269 --> 00:09:32,720

scientific enterprise as a result

201
00:09:36,550 --> 00:09:35,279
of cosmos or something else that carl

202
00:09:39,670 --> 00:09:36,560
sagan did

203
00:09:41,430 --> 00:09:39,680
and i think that would be a very an

204
00:09:42,790 --> 00:09:41,440
astronomical number

205
00:09:44,470 --> 00:09:42,800
i suspect you're right because the

206
00:09:46,150 --> 00:09:44,480
original series and we'll get to the new

207
00:09:47,750 --> 00:09:46,160
series in a moment the original series

208
00:09:49,750 --> 00:09:47,760
was viewed by a staggering amount of

209
00:09:52,230 --> 00:09:49,760
people wasn't it yes i mean i think we

210
00:09:54,630 --> 00:09:52,240
stopped counting once we could make the

211
00:09:57,829 --> 00:09:54,640
case for three quarters of a billion

212
00:09:58,710 --> 00:09:57,839
with a b of as in billions and billions

213
00:10:01,670 --> 00:09:58,720

people

214

00:10:04,470 --> 00:10:01,680

worldwide and i think that number must

215

00:10:07,990 --> 00:10:04,480

have been overtaken because cosmos still

216

00:10:09,670 --> 00:10:08,000

lives in so many different formats and

217

00:10:11,990 --> 00:10:09,680

and the audience now for the original

218

00:10:14,790 --> 00:10:12,000

series is very young

219

00:10:17,110 --> 00:10:14,800

by the way just to amend what ann said

220

00:10:18,949 --> 00:10:17,120

one could take a poll and find out who

221

00:10:20,230 --> 00:10:18,959

brought science or any part of its

222

00:10:21,910 --> 00:10:20,240

enterprise into their professional

223

00:10:24,630 --> 00:10:21,920

identity either others teachers or

224

00:10:26,150 --> 00:10:24,640

researchers or lab technicians this sort

225

00:10:28,470 --> 00:10:26,160

of thing but there's another sort of

226

00:10:31,030 --> 00:10:28,480

hidden dimension to this and that is the

227

00:10:33,509 --> 00:10:31,040

power of something such as cosmos to

228

00:10:35,750 --> 00:10:33,519

affect people even if they're not

229

00:10:38,230 --> 00:10:35,760

scientists or have no such ambition

230

00:10:39,190 --> 00:10:38,240

because it can change your outlook

231

00:10:43,670 --> 00:10:39,200

on

232

00:10:46,230 --> 00:10:43,680

now become a politician but you saw

233

00:10:48,069 --> 00:10:46,240

cosmos you will think differently when

234

00:10:49,030 --> 00:10:48,079

the vote comes up about how you allocate

235

00:10:51,110 --> 00:10:49,040

money

236

00:10:53,350 --> 00:10:51,120

is it to the war machine is it to

237

00:10:55,590 --> 00:10:53,360

science research is it to to

238

00:10:57,829 --> 00:10:55,600

humanitarian causes and so i'd like to

239

00:10:59,509 --> 00:10:57,839

think of the influences of cosmos not

240

00:11:01,269 --> 00:10:59,519

only

241

00:11:02,790 --> 00:11:01,279

can it transform

242

00:11:04,389 --> 00:11:02,800

whether you become a scientist or not

243

00:11:05,509 --> 00:11:04,399

but can transform

244

00:11:08,150 --> 00:11:05,519

our culture

245

00:11:09,750 --> 00:11:08,160

in such a way that science can be

246

00:11:11,990 --> 00:11:09,760

embraced

247

00:11:13,350 --> 00:11:12,000

by everyone whether or not you made it

248

00:11:15,829 --> 00:11:13,360

your career

249

00:11:17,509 --> 00:11:15,839

absolutely it works on so many levels

250

00:11:19,509 --> 00:11:17,519

when you look at it at that respect what

251

00:11:21,350 --> 00:11:19,519

dragged me in if that's the right turn

252

00:11:22,230 --> 00:11:21,360

what captivated me

253

00:11:24,550 --> 00:11:22,240

um

254

00:11:26,550 --> 00:11:24,560

from the very first episode was

255

00:11:28,790 --> 00:11:26,560

carl sagan sitting in this spaceship

256

00:11:31,750 --> 00:11:28,800

with the imagination here we go

257

00:11:34,230 --> 00:11:31,760

and suddenly oh stars die yeah and stars

258

00:11:36,389 --> 00:11:34,240

are born and this happens

259

00:11:37,829 --> 00:11:36,399

then came uh if

260

00:11:39,670 --> 00:11:37,839

and you may correct me here of course in

261

00:11:41,350 --> 00:11:39,680

the original series in the first episode

262

00:11:43,030 --> 00:11:41,360

i think carl sagan

263

00:11:45,269 --> 00:11:43,040

visited a recreation of the library of

264

00:11:47,590 --> 00:11:45,279

alexandria absolutely correct

265

00:11:49,590 --> 00:11:47,600

which was fascinating and he lamented

266

00:11:52,790 --> 00:11:49,600

the fact that these this was lost to

267

00:11:54,710 --> 00:11:52,800

history now in the new series we have uh

268

00:11:56,550 --> 00:11:54,720

dr neil degrasse tyson in the spaceship

269

00:11:59,030 --> 00:11:56,560

of the imagination somewhat more

270

00:12:03,829 --> 00:11:59,040

modernized i must say it's very sexy and

271

00:12:09,829 --> 00:12:06,550

actually designed by ryan church who's

272

00:12:12,550 --> 00:12:09,839

famous for designing the spacecraft for

273

00:12:15,350 --> 00:12:12,560

j.j abrams and various other blockbuster

274

00:12:18,310 --> 00:12:15,360

movies one of the many cinematic talents

275

00:12:19,269 --> 00:12:18,320

attracted to the new cosmos series

276

00:12:21,350 --> 00:12:19,279

out of

277

00:12:23,750 --> 00:12:21,360

love and admiration for the original

278

00:12:25,269 --> 00:12:23,760

yeah and by the way it's badass but it

279

00:12:27,750 --> 00:12:25,279

doesn't get in the way

280

00:12:30,629 --> 00:12:27,760

it's it's a remarkable combination of it

281

00:12:33,030 --> 00:12:30,639

is sheer beauty to behold it

282

00:12:34,790 --> 00:12:33,040

but when we're telling the story

283

00:12:37,190 --> 00:12:34,800

you're not thinking about the ship

284

00:12:39,430 --> 00:12:37,200

the ship is just kind of

285

00:12:42,150 --> 00:12:39,440

framing for how we're getting to where

286

00:12:44,150 --> 00:12:42,160

we're going and and you could imagine a

287

00:12:47,110 --> 00:12:44,160

ship that was all about the ship

288

00:12:49,750 --> 00:12:47,120

and then that would be a distraction and

289

00:12:51,910 --> 00:12:49,760

so it's a very clever

290

00:12:53,829 --> 00:12:51,920

response to anne's description of what

291

00:12:56,550 --> 00:12:53,839

this ship needed to be

292

00:12:59,190 --> 00:12:56,560

in the script and so

293

00:13:01,990 --> 00:12:59,200

uh i'm happy to say that

294

00:13:03,829 --> 00:13:02,000

yes it's a bit of futuristic technology

295

00:13:06,310 --> 00:13:03,839

but it's not really about that

296

00:13:08,389 --> 00:13:06,320

well it's it's it's not only a way for

297

00:13:09,670 --> 00:13:08,399

you to have a look at these things but

298

00:13:11,030 --> 00:13:09,680

we're having a look at these things

299

00:13:13,430 --> 00:13:11,040

because you're having a look at these

300

00:13:14,949 --> 00:13:13,440

things and the only way

301
00:13:16,870 --> 00:13:14,959
we can realistically have a look at

302
00:13:18,150 --> 00:13:16,880
these things if we pretend we're in a

303
00:13:21,509 --> 00:13:18,160
spaceship having a look at these things

304
00:13:22,949 --> 00:13:21,519
and i must say i got a laugh uh

305
00:13:24,949 --> 00:13:22,959
when you're

306
00:13:28,790 --> 00:13:24,959
plowing through the solar system and you

307
00:13:32,150 --> 00:13:30,629
that was quite funny and it was a

308
00:13:33,190 --> 00:13:32,160
beautiful thing because then we saw the

309
00:13:34,389 --> 00:13:33,200
disc

310
00:13:36,389 --> 00:13:34,399
the very famous

311
00:13:39,990 --> 00:13:36,399
disc with the music and the imagery on

312
00:13:42,870 --> 00:13:40,000
it there are many moments in episode one

313
00:13:43,990 --> 00:13:42,880

that pre-figure

314

00:13:46,069 --> 00:13:44,000

events

315

00:13:48,470 --> 00:13:46,079

and experiences that will come much

316

00:13:50,230 --> 00:13:48,480

later and so wow

317

00:13:52,310 --> 00:13:50,240

it's not just establishing our

318

00:13:54,069 --> 00:13:52,320

coordinates in space and time the

319

00:13:56,870 --> 00:13:54,079

address yes the address our cosmic

320

00:14:00,310 --> 00:13:56,880

address yes yeah but uh and the cosmic

321

00:14:02,629 --> 00:14:00,320

calendar but also it's a way of

322

00:14:04,710 --> 00:14:02,639

beginning a kind of um

323

00:14:05,750 --> 00:14:04,720

a series of adventures

324

00:14:07,590 --> 00:14:05,760

that

325

00:14:10,069 --> 00:14:07,600

some of which uh

326

00:14:12,069 --> 00:14:10,079

you know we will we'll return to in

327

00:14:13,350 --> 00:14:12,079

later episodes

328

00:14:16,870 --> 00:14:13,360

my favorite

329

00:14:19,189 --> 00:14:16,880

bit of the coming upon voyager was you

330

00:14:20,389 --> 00:14:19,199

get close enough to it to see yes not

331

00:14:21,990 --> 00:14:20,399

only that there's the record there and

332

00:14:22,710 --> 00:14:22,000

you hear some of the sounds

333

00:14:25,750 --> 00:14:22,720

but

334

00:14:26,870 --> 00:14:25,760

it's a little tattered yes it's a little

335

00:14:27,670 --> 00:14:26,880

i was getting weather beaten but of

336

00:14:29,350 --> 00:14:27,680

course

337

00:14:31,430 --> 00:14:29,360

in space

338

00:14:33,430 --> 00:14:31,440

there are micro meteoroids that that

339

00:14:35,590 --> 00:14:33,440

will sort of nick and ding

340

00:14:37,670 --> 00:14:35,600

your otherwise freshly launched shiny

341

00:14:39,829 --> 00:14:37,680

surface yeah and so you got the sense

342

00:14:41,670 --> 00:14:39,839

that this this has been traveling a

343

00:14:44,310 --> 00:14:41,680

while that you're not going no that's

344

00:14:45,110 --> 00:14:44,320

exactly what we had in mind and the idea

345

00:14:46,629 --> 00:14:45,120

was

346

00:14:49,189 --> 00:14:46,639

that you know

347

00:14:51,590 --> 00:14:49,199

because of the record and because of it

348

00:14:53,110 --> 00:14:51,600

that the fact that it was my honor to be

349

00:14:54,949 --> 00:14:53,120

the creative director of the

350

00:14:57,110 --> 00:14:54,959

interstellar message

351
00:14:59,910 --> 00:14:57,120
uh i

352
00:15:01,110 --> 00:14:59,920
many nights of the year i lie awake

353
00:15:03,910 --> 00:15:01,120
imagining

354
00:15:05,910 --> 00:15:03,920
where voyager where both voyagers really

355
00:15:07,430 --> 00:15:05,920
are and what it would be like to ride

356
00:15:09,269 --> 00:15:07,440
alongside them

357
00:15:11,350 --> 00:15:09,279
and really feel

358
00:15:14,389 --> 00:15:11,360
you know what they

359
00:15:17,350 --> 00:15:14,399
cannot feel but if they were human what

360
00:15:20,389 --> 00:15:17,360
it would be like and i've imagined this

361
00:15:21,509 --> 00:15:20,399
countless times in the last 35 years

362
00:15:24,310 --> 00:15:21,519
knowing

363
00:15:27,110 --> 00:15:24,320

these are the most distant objects ever

364

00:15:29,030 --> 00:15:27,120

touched by humans yes yes and and not

365

00:15:32,150 --> 00:15:29,040

only that that they have a future shelf

366

00:15:35,430 --> 00:15:32,160

life of a thousand million years and

367

00:15:36,310 --> 00:15:35,440

that shelf life has been determined

368

00:15:40,310 --> 00:15:36,320

by

369

00:15:43,269 --> 00:15:40,320

the genius engineers and designers uh

370

00:15:45,670 --> 00:15:43,279

and mathematicians who designed the

371

00:15:47,269 --> 00:15:45,680

trajectories of the mission

372

00:15:49,670 --> 00:15:47,279

they were

373

00:15:52,790 --> 00:15:49,680

saying that their spacecraft would last

374

00:15:54,710 --> 00:15:52,800

for perhaps 10 or 15 years and here 35

375

00:15:56,310 --> 00:15:54,720

years later it's still teaching us

376

00:15:58,310 --> 00:15:56,320

things so who knows if a thousand

377

00:15:59,749 --> 00:15:58,320

million years even covers the whole

378

00:16:01,990 --> 00:15:59,759

future of voyager and we're still

379

00:16:04,310 --> 00:16:02,000

getting uh communications from them and

380

00:16:07,990 --> 00:16:04,320

we still have weak though

381

00:16:11,350 --> 00:16:08,000

i mean we call across 19 18 19 light

382

00:16:13,829 --> 00:16:11,360

hours to voyager and then 18 19 light

383

00:16:16,269 --> 00:16:13,839

hours later we get a return signal

384

00:16:19,430 --> 00:16:16,279

that's how brilliant with this early

385

00:16:21,350 --> 00:16:19,440

1970s technology of course yes of course

386

00:16:23,269 --> 00:16:21,360

unbelievable and by the way at the time

387

00:16:25,030 --> 00:16:23,279

the original cosmos aired voyager had

388

00:16:27,670 --> 00:16:25,040

not really gotten anywhere yet i mean it

389

00:16:29,590 --> 00:16:27,680

was launched in 1977 and it was an

390

00:16:31,910 --> 00:16:29,600

entire there was a tour of the planets

391

00:16:33,829 --> 00:16:31,920

that was sort of fortuitously juxtaposed

392

00:16:35,749 --> 00:16:33,839

so that you would slingshot around one

393

00:16:37,509 --> 00:16:35,759

it would aim you to the next planet

394

00:16:40,230 --> 00:16:37,519

slingshot around that get you to the

395

00:16:42,790 --> 00:16:40,240

next one and so the original cosmos did

396

00:16:44,710 --> 00:16:42,800

not have the benefit of celebrating

397

00:16:47,189 --> 00:16:44,720

the full voyage that cosmos would take

398

00:16:51,269 --> 00:16:47,199

but no it did it did no no but i mean

399

00:16:55,670 --> 00:16:53,269

it had been to some interesting places

400

00:16:57,110 --> 00:16:55,680

isn't there a scene and i'm sure there

401
00:16:58,550 --> 00:16:57,120
is and you know exactly what i'm about

402
00:17:00,470 --> 00:16:58,560
to say

403
00:17:02,150 --> 00:17:00,480
the picture it gets back to the jet

404
00:17:04,069 --> 00:17:02,160
propulsion laboratory from the outer

405
00:17:05,990 --> 00:17:04,079
cell so the benefit

406
00:17:09,350 --> 00:17:06,000
you may not have seen it or saw the

407
00:17:11,429 --> 00:17:09,360
scene some time ago uh dr sagan is in in

408
00:17:13,110 --> 00:17:11,439
a lab he's at the jet propulsion level

409
00:17:15,270 --> 00:17:13,120
laboratory and he's saying and this

410
00:17:25,909 --> 00:17:15,280
picture has arrived now and yeah there

411
00:17:32,870 --> 00:17:29,110
and it's in an episode called travelers

412
00:17:35,990 --> 00:17:32,880
and it was um you know carl just

413
00:17:36,950 --> 00:17:36,000

absolutely so brilliant in explaining a

414

00:17:38,789 --> 00:17:36,960

very

415

00:17:41,350 --> 00:17:38,799

uh complex

416

00:17:43,590 --> 00:17:41,360

idea of how a picture gets back from the

417

00:17:46,070 --> 00:17:43,600

outer solar system it was a delightful

418

00:17:48,390 --> 00:17:46,080

scene because it's it was so dramatic in

419

00:17:50,310 --> 00:17:48,400

a way it's not set up it's not uh

420

00:17:52,549 --> 00:17:50,320

reversed let's do this it's like i was

421

00:17:54,230 --> 00:17:52,559

there you're absolutely right

422

00:17:55,270 --> 00:17:54,240

there were no chase scenes or explosions

423

00:17:56,710 --> 00:17:55,280

or anything

424

00:17:59,590 --> 00:17:56,720

no and nobody

425

00:18:01,350 --> 00:17:59,600

nobody nobody hits anyone it's really

426
00:18:03,110 --> 00:18:01,360
amazing yeah how's that even possible

427
00:18:05,270 --> 00:18:03,120
yeah but but that's an interesting point

428
00:18:07,110 --> 00:18:05,280
you bring up because um

429
00:18:09,350 --> 00:18:07,120
one of the things that captivated me in

430
00:18:11,029 --> 00:18:09,360
the original series was uh

431
00:18:12,150 --> 00:18:11,039
the special effects and i have to you

432
00:18:13,750 --> 00:18:12,160
know i'll be upfront about that of

433
00:18:16,870 --> 00:18:13,760
course i was a 15 year old kid it looked

434
00:18:18,870 --> 00:18:16,880
like i was in space and watching the

435
00:18:21,990 --> 00:18:18,880
first series uh the first episode of the

436
00:18:24,150 --> 00:18:22,000
new series there is a wonderful moment

437
00:18:25,750 --> 00:18:24,160
and i don't think it lasts more than

438
00:18:27,270 --> 00:18:25,760

five or six seconds

439

00:18:30,070 --> 00:18:27,280

where you're hovering above the great

440

00:18:33,190 --> 00:18:30,080

red spot on jupiter and it's got depth

441

00:18:34,470 --> 00:18:33,200

oh yes and i nearly fell off my chair if

442

00:18:36,549 --> 00:18:34,480

you look if you look and the clouds are

443

00:18:37,750 --> 00:18:36,559

turning yeah yeah so if you if you look

444

00:18:40,230 --> 00:18:37,760

carefully

445

00:18:42,230 --> 00:18:40,240

everything there is in motion yeah so

446

00:18:44,150 --> 00:18:42,240

they're like turbulent eddies what we

447

00:18:47,350 --> 00:18:44,160

learned from our close approaches to the

448

00:18:50,710 --> 00:18:47,360

outer planets is that yes the great red

449

00:18:52,710 --> 00:18:50,720

spot is a coherent turning system but on

450

00:18:54,710 --> 00:18:52,720

the boundary between the red spot and

451

00:18:57,270 --> 00:18:54,720

the outer areas there are these like

452

00:18:58,789 --> 00:18:57,280

turbulent little eddies that represent

453

00:19:01,430 --> 00:18:58,799

many little

454

00:19:03,750 --> 00:19:01,440

circular circulation systems and and in

455

00:19:05,830 --> 00:19:03,760

that view you if you watch it carefully

456

00:19:07,590 --> 00:19:05,840

you will see them turn and and let me

457

00:19:10,470 --> 00:19:07,600

say that for the first seven or eight

458

00:19:13,110 --> 00:19:10,480

versions of that shot they didn't turn

459

00:19:15,350 --> 00:19:13,120

and reiner gambos who's our vfx

460

00:19:16,950 --> 00:19:15,360

supervisor and who's done a absolutely

461

00:19:19,750 --> 00:19:16,960

brilliant job you know he'd show it to

462

00:19:21,830 --> 00:19:19,760

me and say they're not turning you know

463

00:19:24,390 --> 00:19:21,840

and he he

464

00:19:26,549 --> 00:19:24,400

created something magnificent and they

465

00:19:28,390 --> 00:19:26,559

now they now turn

466

00:19:30,470 --> 00:19:28,400

because you know if you're looking in a

467

00:19:33,190 --> 00:19:30,480

world and it's not turning or you're

468

00:19:37,190 --> 00:19:33,200

looking at a you know a cloud a system

469

00:19:39,430 --> 00:19:37,200

or a storm system it's not moving

470

00:19:41,990 --> 00:19:39,440

you and that your ability to suspend

471

00:19:45,110 --> 00:19:42,000

disbelief fractures you got to get the

472

00:19:48,630 --> 00:19:45,120

physics right and what we've tried very

473

00:19:51,350 --> 00:19:48,640

hard with bran and braga and uh director

474

00:19:54,150 --> 00:19:51,360

one and and bill pope and with writer

475

00:19:54,950 --> 00:19:54,160

gumbos and these geniuses

476
00:19:55,990 --> 00:19:54,960
is

477
00:20:00,390 --> 00:19:56,000
to

478
00:20:02,710 --> 00:20:00,400
right so that you really have the

479
00:20:04,789 --> 00:20:02,720
fullness of being out

480
00:20:06,390 --> 00:20:04,799
in the universe well that scene did it

481
00:20:09,510 --> 00:20:06,400
for me i mean i was enjoying the show

482
00:20:12,150 --> 00:20:09,520
but just that brief moment of of the

483
00:20:13,190 --> 00:20:12,160
depth yeah by the way even if you didn't

484
00:20:15,190 --> 00:20:13,200
notice

485
00:20:18,150 --> 00:20:15,200
that the clouds were in motion

486
00:20:19,590 --> 00:20:18,160
you're consciously your brain would have

487
00:20:20,470 --> 00:20:19,600
and because if it's a if they're not

488
00:20:22,870 --> 00:20:20,480

moving

489

00:20:25,750 --> 00:20:22,880

you know intuitively just by life

490

00:20:28,070 --> 00:20:25,760

experience that it must be just a static

491

00:20:30,870 --> 00:20:28,080

photo in the backdrop and we're just

492

00:20:33,510 --> 00:20:30,880

trying to juxtapose it and fool you

493

00:20:36,149 --> 00:20:33,520

it's the tiniest little movement your

494

00:20:40,390 --> 00:20:36,159

brain recognizes that it's not just a

495

00:20:42,070 --> 00:20:40,400

faked photo juxtaposition that it's real

496

00:20:43,350 --> 00:20:42,080

and you were really there i'm sure you

497

00:20:45,029 --> 00:20:43,360

were really there and you were really

498

00:20:46,830 --> 00:20:45,039

you actually you did the rest of the

499

00:20:50,149 --> 00:20:46,840

heavy lifting

500

00:20:51,510 --> 00:20:50,159

persuading us the viewer everyone yeah i

501
00:20:52,870 --> 00:20:51,520
keep having to ask bill pope the

502
00:20:54,470 --> 00:20:52,880
director of talking okay where's the

503
00:20:56,310 --> 00:20:54,480
spot right now

504
00:20:58,070 --> 00:20:56,320
this way they put a little x on the

505
00:20:59,909 --> 00:20:58,080
green screen okay right that's the spot

506
00:21:02,149 --> 00:20:59,919
let me go there right that don't that

507
00:21:04,390 --> 00:21:02,159
must actors know that well yeah i know i

508
00:21:06,230 --> 00:21:04,400
was very new to this yeah yeah

509
00:21:08,789 --> 00:21:06,240
a couple of the other things that

510
00:21:10,630 --> 00:21:08,799
i really i really stood out for me in

511
00:21:12,070 --> 00:21:10,640
the new uh episode because i am very

512
00:21:13,590 --> 00:21:12,080
familiar with the

513
00:21:15,270 --> 00:21:13,600

the the original series of course

514

00:21:17,669 --> 00:21:15,280

clearly you are um

515

00:21:19,590 --> 00:21:17,679

was the the new uh bits and pieces that

516

00:21:21,830 --> 00:21:19,600

we being dropped in like the rogue

517

00:21:24,390 --> 00:21:21,840

planets i found completely fascinating

518

00:21:26,149 --> 00:21:24,400

and that's a bit of new science i mean

519

00:21:28,630 --> 00:21:26,159

the idea of rogue planets

520

00:21:31,350 --> 00:21:28,640

uh uh let me when did that begin in mid

521

00:21:33,110 --> 00:21:31,360

80s i would say there was a

522

00:21:35,990 --> 00:21:33,120

an attempt to

523

00:21:37,029 --> 00:21:36,000

create a solar system from scratch okay

524

00:21:39,029 --> 00:21:37,039

and

525

00:21:40,390 --> 00:21:39,039

when you do that everyone said it

526
00:21:43,190 --> 00:21:40,400
probably would look like our solar

527
00:21:44,390 --> 00:21:43,200
system because why would we be unusual

528
00:21:47,190 --> 00:21:44,400
in this exercise

529
00:21:48,230 --> 00:21:47,200
yeah then we start discovering but sorry

530
00:21:49,909 --> 00:21:48,240
this

531
00:21:52,230 --> 00:21:49,919
in the 80s we're making other solar

532
00:21:54,390 --> 00:21:52,240
systems other stars that look like ours

533
00:21:56,789 --> 00:21:54,400
in the 1990s

534
00:21:58,870 --> 00:21:56,799
we start discovering other star systems

535
00:22:00,470 --> 00:21:58,880
because exoplanets were found and we

536
00:22:02,789 --> 00:22:00,480
found out that they're jupiter-sized

537
00:22:04,070 --> 00:22:02,799
planets orbiting really close to the

538
00:22:06,230 --> 00:22:04,080

host stars

539

00:22:09,110 --> 00:22:06,240

who ordered that that never came out of

540

00:22:10,789 --> 00:22:09,120

anything and then so they revisited the

541

00:22:13,110 --> 00:22:10,799

models the computer models of this and

542

00:22:15,350 --> 00:22:13,120

realized that there's episodes of planet

543

00:22:17,110 --> 00:22:15,360

migration that go on at the beginning of

544

00:22:19,830 --> 00:22:17,120

the formation of a solar system and that

545

00:22:22,549 --> 00:22:19,840

the largest planet can end up migrating

546

00:22:25,190 --> 00:22:22,559

inward at the cost of flinging other

547

00:22:28,789 --> 00:22:25,200

planets out of the solar system and in

548

00:22:31,270 --> 00:22:28,799

fact solar system star systems may be

549

00:22:33,510 --> 00:22:31,280

created with twice as many planets as

550

00:22:36,230 --> 00:22:33,520

are ultimately stable

551

00:22:38,310 --> 00:22:36,240

in their mature lives and so we have

552

00:22:39,830 --> 00:22:38,320

eight planets now we might have had 20.

553

00:22:42,789 --> 00:22:39,840

at the beginning where are they they are

554

00:22:44,470 --> 00:22:42,799

cast adrift wow the rogue planet rogue

555

00:22:46,630 --> 00:22:44,480

planet it's so romantic it's like the

556

00:22:47,590 --> 00:22:46,640

flying dutchman you know their idea oh

557

00:22:49,750 --> 00:22:47,600

my gosh

558

00:22:52,390 --> 00:22:49,760

great and a great analogy a world

559

00:22:54,149 --> 00:22:52,400

without a star is is really like a ship

560

00:22:56,789 --> 00:22:54,159

without a crew or a captain it's

561

00:22:58,950 --> 00:22:56,799

perpetual night time right yeah and it

562

00:23:00,710 --> 00:22:58,960

would have to be large enough

563

00:23:02,710 --> 00:23:00,720

of course we picked a rogue star that

564

00:23:04,149 --> 00:23:02,720

would be interesting to visit i mean a

565

00:23:06,070 --> 00:23:04,159

rogue planet that would be interesting

566

00:23:09,110 --> 00:23:06,080

to visit for

567

00:23:10,549 --> 00:23:09,120

for the rogue planet that we selected

568

00:23:13,110 --> 00:23:10,559

it has to be large enough to have

569

00:23:15,029 --> 00:23:13,120

retained its heat of formation

570

00:23:16,149 --> 00:23:15,039

so that you could have still sort of

571

00:23:17,029 --> 00:23:16,159

liquid

572

00:23:18,789 --> 00:23:17,039

um

573

00:23:20,310 --> 00:23:18,799

it could in a way be in its own

574

00:23:21,190 --> 00:23:20,320

goldilocks zone

575

00:23:23,990 --> 00:23:21,200

where

576

00:23:26,310 --> 00:23:24,000

the heat retained from its formation can

577

00:23:29,590 --> 00:23:26,320

melt whatever is frozen there because

578

00:23:31,190 --> 00:23:29,600

it's not near any local star wow and so

579

00:23:33,029 --> 00:23:31,200

it would otherwise be completely frozen

580

00:23:34,149 --> 00:23:33,039

work not for this retained heat it's the

581

00:23:36,070 --> 00:23:34,159

same heat in earth that makes the

582

00:23:37,990 --> 00:23:36,080

volcanoes and the plate tectonics yeah

583

00:23:40,630 --> 00:23:38,000

that none of that's traceable to the sun

584

00:23:42,390 --> 00:23:40,640

so imagine an earth cast adrift and

585

00:23:44,390 --> 00:23:42,400

which jupiter could do at the snap of a

586

00:23:46,149 --> 00:23:44,400

finger if jupiter started moving inward

587

00:23:47,830 --> 00:23:46,159

in the solar system earth would still

588

00:23:49,510 --> 00:23:47,840

have all this heat earth would have

589

00:23:52,390 --> 00:23:49,520

volcanoes and plate tectonics and all

590

00:23:53,669 --> 00:23:52,400

the rest of this and so we chose a large

591

00:23:55,190 --> 00:23:53,679

enough planet

592

00:23:56,710 --> 00:23:55,200

so that you can then have this

593

00:23:58,070 --> 00:23:56,720

interesting things to talk about there'd

594

00:24:00,149 --> 00:23:58,080

be smaller ones that would just be

595

00:24:01,510 --> 00:24:00,159

completely frozen over and be less

596

00:24:05,669 --> 00:24:01,520

interesting than the one we picked if

597

00:24:08,230 --> 00:24:07,110

yeah yes

598

00:24:09,590 --> 00:24:08,240

exactly

599

00:24:12,310 --> 00:24:09,600

and um

600

00:24:13,990 --> 00:24:12,320

the idea you know the rogue planet was a

601
00:24:16,630 --> 00:24:14,000
a twofer for us

602
00:24:18,549 --> 00:24:16,640
because it was also an ability to

603
00:24:20,549 --> 00:24:18,559
introduce the idea of seeing in

604
00:24:21,430 --> 00:24:20,559
different kinds of light

605
00:24:23,269 --> 00:24:21,440
and

606
00:24:25,269 --> 00:24:23,279
that's another theme that was good i

607
00:24:27,190 --> 00:24:25,279
understand of course most of these

608
00:24:28,230 --> 00:24:27,200
episodes yeah and i might say with great

609
00:24:29,750 --> 00:24:28,240
pride

610
00:24:32,230 --> 00:24:29,760
i do believe

611
00:24:34,710 --> 00:24:32,240
that in the original series uh steve

612
00:24:36,310 --> 00:24:34,720
soder carl sagan and i wrote

613
00:24:38,950 --> 00:24:36,320

that um

614

00:24:41,029 --> 00:24:38,960

this is before the very first exoplanet

615

00:24:43,669 --> 00:24:41,039

had ever been discovered

616

00:24:45,110 --> 00:24:43,679

that the planets likely outnumber the

617

00:24:46,710 --> 00:24:45,120

stars

618

00:24:48,310 --> 00:24:46,720

and um

619

00:24:49,990 --> 00:24:48,320

and that was going out on a limb and a

620

00:24:51,669 --> 00:24:50,000

lot of people said oh carl's sake it's

621

00:24:53,510 --> 00:24:51,679

so speculative

622

00:24:56,149 --> 00:24:53,520

but um

623

00:24:58,789 --> 00:24:56,159

that in global warming was

624

00:25:02,390 --> 00:24:58,799

another theme in the 1980 in the

625

00:25:03,669 --> 00:25:02,400

original series produced mostly in 1979

626
00:25:05,830 --> 00:25:03,679
that i think

627
00:25:08,230 --> 00:25:05,840
has held up so well

628
00:25:09,750 --> 00:25:08,240
my favorite line uh i've

629
00:25:10,710 --> 00:25:09,760
heard carl utter

630
00:25:13,350 --> 00:25:10,720
is that

631
00:25:16,230 --> 00:25:13,360
air molecules don't carry passports

632
00:25:18,390 --> 00:25:16,240
so they will go wherever the breezes

633
00:25:19,909 --> 00:25:18,400
take them and they're not if you pollute

634
00:25:21,750 --> 00:25:19,919
your air over your country you're

635
00:25:23,190 --> 00:25:21,760
polluting everybody's heir

636
00:25:24,950 --> 00:25:23,200
absolutely

637
00:25:27,190 --> 00:25:24,960
that's a very good point look i'll i'll

638
00:25:29,110 --> 00:25:27,200

round off by saying that uh i thoroughly

639

00:25:30,870 --> 00:25:29,120

enjoyed the

640

00:25:32,310 --> 00:25:30,880

first episode i've been very lucky

641

00:25:34,789 --> 00:25:32,320

really happy to hear that preview of

642

00:25:37,029 --> 00:25:34,799

that very nice

643

00:25:38,549 --> 00:25:37,039

not exactly a tribute to carl sagan i

644

00:25:40,310 --> 00:25:38,559

don't want to go that far in the first

645

00:25:42,149 --> 00:25:40,320

episode but an acknowledgement an

646

00:25:43,750 --> 00:25:42,159

important acknowledgement to carl sagan

647

00:25:46,470 --> 00:25:43,760

in the first episode which i thought was

648

00:25:49,110 --> 00:25:46,480

very well done because it could have

649

00:25:51,110 --> 00:25:49,120

gone too far right and then

650

00:25:53,029 --> 00:25:51,120

that wasn't the point but it's there and

651
00:25:55,029 --> 00:25:53,039
it's powerful uh

652
00:25:57,029 --> 00:25:55,039
i think that i think the goal

653
00:25:58,870 --> 00:25:57,039
was twofold it was

654
00:26:01,269 --> 00:25:58,880
in case you never knew who carl sagan

655
00:26:02,470 --> 00:26:01,279
was this in this very short of course

656
00:26:04,230 --> 00:26:02,480
montage

657
00:26:06,710 --> 00:26:04,240
uh we capture that

658
00:26:10,310 --> 00:26:06,720
but also

659
00:26:12,390 --> 00:26:10,320
why am i hosting

660
00:26:16,149 --> 00:26:12,400
is there any because you are absolutely

661
00:26:17,830 --> 00:26:16,159
without equal the best person on earth

662
00:26:20,310 --> 00:26:17,840
that's not working

663
00:26:22,789 --> 00:26:20,320

uh so the other guy wasn't available

664

00:26:32,789 --> 00:26:22,799

right now

665

00:26:36,789 --> 00:26:33,990

the point is

666

00:26:38,549 --> 00:26:36,799

there's a there's this sort of

667

00:26:40,789 --> 00:26:38,559

baton pass

668

00:26:41,830 --> 00:26:40,799

you get the sentence that or a torch

669

00:26:44,230 --> 00:26:41,840

passing

670

00:26:46,950 --> 00:26:44,240

that allows the viewer

671

00:26:49,510 --> 00:26:46,960

to recognize the content continuity of

672

00:26:50,870 --> 00:26:49,520

this exercise and

673

00:26:52,549 --> 00:26:50,880

and that there's an aspect of that

674

00:26:55,269 --> 00:26:52,559

that's manifest in the script

675

00:26:57,510 --> 00:26:55,279

where science is a is a never-ending

676
00:26:59,669 --> 00:26:57,520
yeah i i noticed that too yeah

677
00:27:00,789 --> 00:26:59,679
generational generation yeah i mean one

678
00:27:03,669 --> 00:27:00,799
of the things

679
00:27:05,590 --> 00:27:03,679
that uh i set out to accomplish and when

680
00:27:07,430 --> 00:27:05,600
we started writing i started writing

681
00:27:09,510 --> 00:27:07,440
these first drafts with steve soder who

682
00:27:11,510 --> 00:27:09,520
was our original co-writer on

683
00:27:12,390 --> 00:27:11,520
on the original cosmos series

684
00:27:13,510 --> 00:27:12,400
was

685
00:27:14,630 --> 00:27:13,520
to

686
00:27:16,070 --> 00:27:14,640
present

687
00:27:17,190 --> 00:27:16,080
to the world

688
00:27:21,750 --> 00:27:17,200

um

689

00:27:24,070 --> 00:27:21,760

a vision of the scientific enterprise as

690

00:27:26,149 --> 00:27:24,080

instead of you know it's the crazy guy

691

00:27:29,269 --> 00:27:26,159

who's going to kill us all who

692

00:27:30,950 --> 00:27:29,279

is the narcissistic dr faustus dr

693

00:27:32,870 --> 00:27:30,960

frankenstein

694

00:27:34,630 --> 00:27:32,880

you know who you know that that crazy

695

00:27:36,390 --> 00:27:34,640

scientist that's at the heart of so many

696

00:27:37,990 --> 00:27:36,400

blockbuster movies

697

00:27:40,310 --> 00:27:38,000

who's a threat to everything and doesn't

698

00:27:43,110 --> 00:27:40,320

have a human relationship with anyone

699

00:27:45,350 --> 00:27:43,120

what we what we wanted to do was to show

700

00:27:48,549 --> 00:27:45,360

this community of minds and the

701
00:27:51,510 --> 00:27:48,559
mentoring that goes on and the fact that

702
00:27:53,029 --> 00:27:51,520
it's never for any one generation to see

703
00:27:54,789 --> 00:27:53,039
the whole picture

704
00:27:56,470 --> 00:27:54,799
but it has to be you know

705
00:27:57,830 --> 00:27:56,480
if you if you're

706
00:27:59,190 --> 00:27:57,840
you know let's say you're a religious

707
00:28:01,590 --> 00:27:59,200
person

708
00:28:02,630 --> 00:28:01,600
chances are the doctrines that you are

709
00:28:04,630 --> 00:28:02,640
promoting

710
00:28:06,789 --> 00:28:04,640
have not changed very much for a couple

711
00:28:09,029 --> 00:28:06,799
of thousand years in

712
00:28:11,029 --> 00:28:09,039
despite what how the world has changed

713
00:28:12,950 --> 00:28:11,039

but if you're a scientist you have to be

714

00:28:14,630 --> 00:28:12,960

comfortable with change and you have to

715

00:28:17,590 --> 00:28:14,640

be willing to be wrong and you have to

716

00:28:19,750 --> 00:28:17,600

be willing to hand that baton off to the

717

00:28:21,990 --> 00:28:19,760

next generation because they are likely

718

00:28:23,029 --> 00:28:22,000

to see a little more clearly than you

719

00:28:24,549 --> 00:28:23,039

have seen

720

00:28:26,470 --> 00:28:24,559

and the relationship

721

00:28:28,789 --> 00:28:26,480

uh between

722

00:28:31,110 --> 00:28:28,799

you know carl and the very young neil

723

00:28:33,190 --> 00:28:31,120

degrasse tyson which was we don't want

724

00:28:35,190 --> 00:28:33,200

to overstate it it wasn't like they were

725

00:28:36,470 --> 00:28:35,200

best pals or anything like that you're

726

00:28:38,549 --> 00:28:36,480

drinking buddies

727

00:28:40,950 --> 00:28:38,559

no but that reaching out

728

00:28:43,830 --> 00:28:40,960

of the world famous scientists

729

00:28:45,830 --> 00:28:43,840

to the young man who would become world

730

00:28:48,149 --> 00:28:45,840

famous yeah yeah uh

731

00:28:49,750 --> 00:28:48,159

that's what's so beautiful is that or

732

00:28:52,549 --> 00:28:49,760

even famous in the same way that was

733

00:28:54,070 --> 00:28:52,559

kind of weird yeah i mean interestingly

734

00:28:55,510 --> 00:28:54,080

there are a lot of ways to become famous

735

00:28:57,430 --> 00:28:55,520

but yes but

736

00:28:59,669 --> 00:28:57,440

uh i

737

00:29:01,029 --> 00:28:59,679

what i learned from carl from seeing

738

00:29:03,830 --> 00:29:01,039

cosmos because i was already in graduate

739

00:29:06,549 --> 00:29:03,840

school at the time so the carl was not a

740

00:29:09,590 --> 00:29:06,559

force that got me into science carl for

741

00:29:11,190 --> 00:29:09,600

me was a force that demonstrated that

742

00:29:14,230 --> 00:29:11,200

it's possible to bring science to the

743

00:29:15,750 --> 00:29:14,240

public in a way where people feel like

744

00:29:17,430 --> 00:29:15,760

you're just in the living room with them

745

00:29:19,510 --> 00:29:17,440

and you just it's a fireside

746

00:29:21,590 --> 00:29:19,520

conversation about the universe you

747

00:29:25,029 --> 00:29:21,600

don't have to pontificate there's not a

748

00:29:26,630 --> 00:29:25,039

lecture it's not a it is it is let's sit

749

00:29:28,950 --> 00:29:26,640

down and let's just

750

00:29:32,630 --> 00:29:28,960

talk about the universe and to realize

751
00:29:33,830 --> 00:29:32,640
how successful that can be as a means of

752
00:29:35,909 --> 00:29:33,840
communicating

753
00:29:37,990 --> 00:29:35,919
uh told me that if i'm ever one day a

754
00:29:40,950 --> 00:29:38,000
communicator that's that's how i'm gonna

755
00:29:43,190 --> 00:29:40,960
do it because otherwise no one wants to

756
00:29:45,510 --> 00:29:43,200
be lectured to no one wants to be

757
00:29:47,510 --> 00:29:45,520
preached to you know you

758
00:29:50,230 --> 00:29:47,520
you people want to

759
00:29:52,870 --> 00:29:50,240
people want to feel like

760
00:29:55,110 --> 00:29:52,880
they're sort of an equal partner in the

761
00:29:57,029 --> 00:29:55,120
delivery of the information

762
00:29:58,230 --> 00:29:57,039
and the wisdom and the knowledge and the

763
00:30:00,230 --> 00:29:58,240

perspective

764

00:30:01,510 --> 00:30:00,240

it's a sense of wonder in the early

765

00:30:03,590 --> 00:30:01,520

1980s

766

00:30:05,909 --> 00:30:03,600

i was lucky enough to go on a wonderful

767

00:30:07,669 --> 00:30:05,919

trip with carl sagan through the cosmos

768

00:30:09,990 --> 00:30:07,679

in his spaceship of the imagination and

769

00:30:11,590 --> 00:30:10,000

now all these years later i can get my

770

00:30:13,510 --> 00:30:11,600

passport ready and jump on with neil

771

00:30:15,269 --> 00:30:13,520

degrasse tyson and continue that sense

772

00:30:16,950 --> 00:30:15,279

of wonder well then you understand

773

00:30:18,070 --> 00:30:16,960

exactly how i feel

774

00:30:20,230 --> 00:30:18,080

and by the way

775

00:30:21,990 --> 00:30:20,240

it doesn't require passport

776

00:30:24,470 --> 00:30:22,000

yes that's a very that's another nice

777

00:30:26,470 --> 00:30:24,480

thing no passport needed all you need is

778

00:30:27,269 --> 00:30:26,480

a beating heart and you're welcome on

779

00:30:28,710 --> 00:30:27,279

board

780

00:30:33,190 --> 00:30:28,720

the ship of the imagination we'll take

781

00:30:38,070 --> 00:30:35,350

and on that note i want to uh sincerely

782

00:30:40,630 --> 00:30:38,080

thank neil degrasse tyson for continuing

783

00:30:43,750 --> 00:30:40,640

this wonderful voyage and

784

00:30:46,470 --> 00:30:43,760

very sincerely thank you andrean for um

785

00:30:54,870 --> 00:30:46,480

kicking off this wonderful voyage with

786

00:31:09,350 --> 00:30:56,230

now

787

00:31:09,360 --> 00:32:00,389

oh

788

00:32:04,149 --> 00:32:02,070

hey this is jay novella from the

789

00:32:05,669 --> 00:32:04,159

skeptic's guide to the universe podcast

790

00:32:07,509 --> 00:32:05,679

did you know that there are thousands of

791

00:32:09,990 --> 00:32:07,519

skeptical reports interviews and

792

00:32:14,870 --> 00:32:10,000

investigations going back to 1981 free

793

00:32:18,549 --> 00:32:16,549

click the publications link and enjoy

794

00:32:20,630 --> 00:32:18,559

almost every back issue of the skeptic

795

00:32:22,389 --> 00:32:20,640

the journal from australian skeptics you

796

00:32:24,549 --> 00:32:22,399

can also subscribe online and get the

797

00:32:26,710 --> 00:32:24,559

latest digital or hard copy of this the

798

00:32:28,909 --> 00:32:26,720

world's second oldest skeptical magazine

799

00:32:30,789 --> 00:32:28,919

that's

800

00:32:40,070 --> 00:32:30,799

www.skeptics.com.edu or just google

801
00:32:44,230 --> 00:32:42,470
welcome to a week in science from ri oz

802
00:32:45,029 --> 00:32:44,240
bringing you the science you need to

803
00:32:47,509 --> 00:32:45,039
know

804
00:32:49,830 --> 00:32:47,519
it was one small step for an animal one

805
00:32:52,070 --> 00:32:49,840
giant leap for the animal kingdom but

806
00:32:54,230 --> 00:32:52,080
just how did the first vertebrates walk

807
00:32:56,789 --> 00:32:54,240
onto land and breathe air for the first

808
00:33:02,549 --> 00:32:56,799
time it's time to take a closer look at

809
00:33:07,269 --> 00:33:05,029
two recent papers reveal key insights

810
00:33:09,669 --> 00:33:07,279
into how the first vertebrates walked

811
00:33:11,669 --> 00:33:09,679
onto land and took their first breath

812
00:33:14,549 --> 00:33:11,679
the mechanism that determines whether

813
00:33:16,630 --> 00:33:14,559

you have fish fins or walking limbs is

814

00:33:18,630 --> 00:33:16,640

the rate at which a couple of hox genes

815

00:33:21,190 --> 00:33:18,640

are expressed hox genes are like

816

00:33:23,990 --> 00:33:21,200

orchestra conductors they regulate how a

817

00:33:26,070 --> 00:33:24,000

whole suite of other genes perform and

818

00:33:28,870 --> 00:33:26,080

changing its rate of expression can

819

00:33:30,630 --> 00:33:28,880

radically alter how an organism develops

820

00:33:32,950 --> 00:33:30,640

we learnt more about limb building when

821

00:33:36,149 --> 00:33:32,960

developmental embryologists switch the

822

00:33:38,389 --> 00:33:36,159

hox genes from a fish to a mouse

823

00:33:40,950 --> 00:33:38,399

the fish hox gene could not produce

824

00:33:42,870 --> 00:33:40,960

fingers and toes in mice thus the

825

00:33:45,590 --> 00:33:42,880

genetic apparatus required to make

826

00:33:48,870 --> 00:33:45,600

fingers and toes must have evolved after

827

00:33:53,430 --> 00:33:51,350

and we also now know how breathing

828

00:33:55,430 --> 00:33:53,440

developed for the first time and guess

829

00:33:57,909 --> 00:33:55,440

what we almost ended up breathing

830

00:34:00,149 --> 00:33:57,919

through our ears a team studied live

831

00:34:02,389 --> 00:34:00,159

polyterrain fish from africa

832

00:34:05,990 --> 00:34:02,399

these fish have a simple lung but no

833

00:34:08,149 --> 00:34:06,000

windpipe the team found that 93 of the

834

00:34:10,310 --> 00:34:08,159

air getting into the lung came through

835

00:34:13,349 --> 00:34:10,320

holes in the tops of the head called

836

00:34:15,430 --> 00:34:13,359

spiracles being surrounded by bone these

837

00:34:17,750 --> 00:34:15,440

structures are usually found in fossils

838

00:34:21,190 --> 00:34:17,760

of advanced fish and primitive walking

839

00:34:23,109 --> 00:34:21,200

vertebrates the tetrapods so now we can

840

00:34:25,589 --> 00:34:23,119

track how this early breathing mechanism

841

00:34:28,310 --> 00:34:25,599

developed in more advanced tetrapods

842

00:34:31,909 --> 00:34:28,320

like us the sphericals ended up becoming

843

00:34:34,869 --> 00:34:31,919

our ears and now four fast facts about

844

00:34:36,389 --> 00:34:34,879

walking on land

845

00:34:39,109 --> 00:34:36,399

while the standard body plan for

846

00:34:40,869 --> 00:34:39,119

tetrapods includes five fingers and toes

847

00:34:42,790 --> 00:34:40,879

at the ends of each limb

848

00:34:45,349 --> 00:34:42,800

some of the earliest land walkers had

849

00:34:47,349 --> 00:34:45,359

eight digits in recent years several

850

00:34:50,230 --> 00:34:47,359

fossil finds have completed the picture

851
00:34:52,869 --> 00:34:50,240
of every conceivable intermediate stage

852
00:34:54,790 --> 00:34:52,879
between advanced fish and the first land

853
00:34:57,109 --> 00:34:54,800
walking vertebrates the queensland

854
00:34:59,430 --> 00:34:57,119
lungfish while not an immediate ancestor

855
00:35:01,270 --> 00:34:59,440
to land walking vertebrates provides a

856
00:35:03,990 --> 00:35:01,280
clear picture of how air breathing

857
00:35:06,710 --> 00:35:04,000
evolved in fish before they walked onto

858
00:35:08,230 --> 00:35:06,720
the land and in case you're wondering

859
00:35:10,470 --> 00:35:08,240
queensland lungfish are supposed to

860
00:35:13,030 --> 00:35:10,480
taste like a very oily salmon and

861
00:35:14,630 --> 00:35:13,040
they're covered in a thick sticky mucus

862
00:35:16,950 --> 00:35:14,640
i know that because i had to throw my

863
00:35:19,190 --> 00:35:16,960

shirt away after handling one of them

864

00:35:21,270 --> 00:35:19,200

that's it for this week in science for

865

00:35:25,670 --> 00:35:21,280

more information on walking on land go

866

00:35:31,270 --> 00:35:29,030

follow us on twitter at rios and like us

867

00:35:39,109 --> 00:35:31,280

on facebook i'm paul willis and we'll

868

00:35:39,119 --> 00:35:46,710

in a world where the truth is

869

00:35:54,710 --> 00:35:49,510

where messages are received from beyond

870

00:36:00,470 --> 00:35:55,990

and reason

871

00:36:06,710 --> 00:36:03,670

only three men stand between the truth

872

00:36:09,109 --> 00:36:06,720

and a post-modernist abyss

873

00:36:10,630 --> 00:36:09,119

what date is it seven eighth seventh

874

00:36:12,069 --> 00:36:10,640

eighth this is impressive it's these

875

00:36:15,030 --> 00:36:12,079

artists impressions they're not they're

876

00:36:16,710 --> 00:36:15,040

photographs of chinese lanterns

877

00:36:18,230 --> 00:36:16,720

we are not well researched yeah because

878

00:36:20,150 --> 00:36:18,240

good god we're full we don't discuss

879

00:36:22,870 --> 00:36:20,160

cryptozoology on the show very often

880

00:36:24,710 --> 00:36:22,880

because we don't know anything about it

881

00:36:26,310 --> 00:36:24,720

the price gets lower and lower and lower

882

00:36:30,069 --> 00:36:26,320

and then he hits the ceiling it's a

883

00:36:34,630 --> 00:36:31,670

skeptics with a k for the mercedes

884

00:36:39,670 --> 00:36:34,640

getting society finders on itunes or you

885

00:36:47,109 --> 00:36:42,710

now it's time for dr raichi reports with

886

00:36:50,790 --> 00:36:48,790

hello listeners and welcome to dr

887

00:36:53,670 --> 00:36:50,800

ritchie reports well this week i'm

888

00:36:56,069 --> 00:36:53,680

talking to dr ken harvey who famously

889

00:36:58,069 --> 00:36:56,079

recently quit his position as an adjunct

890

00:37:00,790 --> 00:36:58,079

professor at a university here in

891

00:37:03,270 --> 00:37:00,800

australia this was a direct result of

892

00:37:04,550 --> 00:37:03,280

latrobe universities getting on board

893

00:37:06,950 --> 00:37:04,560

with swiss

894

00:37:09,030 --> 00:37:06,960

a vitamin and supplement company who

895

00:37:10,790 --> 00:37:09,040

wants the university to demonstrate that

896

00:37:12,550 --> 00:37:10,800

their products work

897

00:37:14,870 --> 00:37:12,560

so just a little bit of background i'm

898

00:37:16,470 --> 00:37:14,880

dr ken harvey was an adjunct senior

899

00:37:18,470 --> 00:37:16,480

lecturer in the school of public health

900

00:37:21,510 --> 00:37:18,480

at la trobe university where he has

901
00:37:24,150 --> 00:37:21,520
worked for the last 20 years but to most

902
00:37:26,870 --> 00:37:24,160
australians he's most well known for his

903
00:37:28,630 --> 00:37:26,880
regular campaigning against what he sees

904
00:37:30,069 --> 00:37:28,640
as the shortfalls in australia's

905
00:37:31,430 --> 00:37:30,079
legislation

906
00:37:33,190 --> 00:37:31,440
surrounding alternative and

907
00:37:35,270 --> 00:37:33,200
complementary medicine

908
00:37:37,270 --> 00:37:35,280
dr harvey devotes a lot of his time

909
00:37:39,910 --> 00:37:37,280
speaking to local skeptical groups but

910
00:37:41,190 --> 00:37:39,920
also to the media on these issues and

911
00:37:43,990 --> 00:37:41,200
trying to

912
00:37:45,910 --> 00:37:44,000
reveal how it is legislation in

913
00:37:48,950 --> 00:37:45,920

australia that is the big problem in

914

00:37:51,190 --> 00:37:48,960

terms of regulating alternative medicine

915

00:37:53,510 --> 00:37:51,200

he's a frequent figure on tv radio and

916

00:37:56,069 --> 00:37:53,520

in print media discussing the health

917

00:37:57,990 --> 00:37:56,079

legal financial and regulatory dynamics

918

00:38:01,510 --> 00:37:58,000

peculiar to australia's apparent

919

00:38:02,950 --> 00:38:01,520

obsession with unproven and untested cam

920

00:38:05,109 --> 00:38:02,960

therapies

921

00:38:07,270 --> 00:38:05,119

and today i was very lucky to get some

922

00:38:09,589 --> 00:38:07,280

time from dr ken harvey on the line from

923

00:38:11,190 --> 00:38:09,599

skype in melbourne so welcome to the

924

00:38:12,870 --> 00:38:11,200

skeptic zone ken harvey and thank you

925

00:38:14,710 --> 00:38:12,880

for taking the time to talk to us i know

926
00:38:16,630 --> 00:38:14,720
you're very busy

927
00:38:18,950 --> 00:38:16,640
it's good to be here reggie

928
00:38:21,190 --> 00:38:18,960
so can you fill our listeners in briefly

929
00:38:22,710 --> 00:38:21,200
on what is going on and how you came to

930
00:38:25,430 --> 00:38:22,720
resign your position recently from

931
00:38:28,470 --> 00:38:25,440
latrobe university

932
00:38:30,870 --> 00:38:28,480
yes well uh swiss wellness and i love

933
00:38:33,270 --> 00:38:30,880
that name wellness um

934
00:38:35,589 --> 00:38:33,280
actually offered latrobe 15 million

935
00:38:37,750 --> 00:38:35,599
dollars over six years if they would

936
00:38:40,790 --> 00:38:37,760
scientifically examine the quality and

937
00:38:42,630 --> 00:38:40,800
the efficacy of their products

938
00:38:45,030 --> 00:38:42,640

and indeed the vice chancellor of

939

00:38:47,270 --> 00:38:45,040

research sort of said

940

00:38:49,270 --> 00:38:47,280

swiss products will continue to undergo

941

00:38:50,390 --> 00:38:49,280

rigorous and independent scientific

942

00:38:53,030 --> 00:38:50,400

assessment

943

00:38:56,069 --> 00:38:53,040

and that's rather amusing because

944

00:38:58,150 --> 00:38:56,079

swiss is well known to have had

945

00:38:59,990 --> 00:38:58,160

many of its products or many claims for

946

00:39:02,470 --> 00:39:00,000

its products breach the australian

947

00:39:04,630 --> 00:39:02,480

therapeutic goods advertising code uh

948

00:39:06,230 --> 00:39:04,640

indeed i've submitted some of those

949

00:39:09,030 --> 00:39:06,240

complaints myself

950

00:39:12,150 --> 00:39:09,040

uh for example a recent 71-page

951
00:39:14,790 --> 00:39:12,160
judgement um last year on 20 television

952
00:39:16,550 --> 00:39:14,800
advertisements for a variety of products

953
00:39:18,630 --> 00:39:16,560
from swiss

954
00:39:21,270 --> 00:39:18,640
in which the products claimed they were

955
00:39:22,790 --> 00:39:21,280
proven clinically proven scientifically

956
00:39:26,550 --> 00:39:22,800
shown

957
00:39:31,670 --> 00:39:28,630
the independent review found that most

958
00:39:33,510 --> 00:39:31,680
of the studies swiss used were weak

959
00:39:35,109 --> 00:39:33,520
they were not representative of general

960
00:39:37,190 --> 00:39:35,119
population

961
00:39:39,190 --> 00:39:37,200
they didn't support the representations

962
00:39:41,910 --> 00:39:39,200
that the products were clinically proven

963
00:39:43,990 --> 00:39:41,920

to do a variety of things and so as i

964

00:39:45,750 --> 00:39:44,000

say they were found to breach

965

00:39:47,670 --> 00:39:45,760

the therapeutic goods

966

00:39:48,630 --> 00:39:47,680

advertising code

967

00:39:51,430 --> 00:39:48,640

now

968

00:39:53,510 --> 00:39:51,440

interestingly um swiss swiss were

969

00:39:55,270 --> 00:39:53,520

requested to withdraw the advertisements

970

00:39:57,270 --> 00:39:55,280

uh the chief executive

971

00:39:59,990 --> 00:39:57,280

deemed a ruling ridiculous and he

972

00:40:01,990 --> 00:40:00,000

accused the panel of being unqualified

973

00:40:03,030 --> 00:40:02,000

and called for an immediate overhaul of

974

00:40:05,430 --> 00:40:03,040

the panel

975

00:40:06,390 --> 00:40:05,440

so that's pretty typical of this company

976
00:40:10,069 --> 00:40:06,400
i mean

977
00:40:12,150 --> 00:40:10,079
they have had a lot of complaints upheld

978
00:40:14,150 --> 00:40:12,160
they don't take them seriously the

979
00:40:16,950 --> 00:40:14,160
independent umpire seriously and they

980
00:40:19,190 --> 00:40:16,960
just keep on doing it so you can imagine

981
00:40:21,670 --> 00:40:19,200
my concern when

982
00:40:25,030 --> 00:40:21,680
the university wanted to get a

983
00:40:27,589 --> 00:40:25,040
partnership with this with this company

984
00:40:29,109 --> 00:40:27,599
in addition i mean it has transpired but

985
00:40:30,870 --> 00:40:29,119
a number of that approached a number of

986
00:40:33,750 --> 00:40:30,880
other universities who actually turned

987
00:40:34,870 --> 00:40:33,760
them down for a variety of good reasons

988
00:40:38,710 --> 00:40:34,880

um

989

00:40:40,470 --> 00:40:38,720

so again my concern was that if latrobe

990

00:40:42,710 --> 00:40:40,480

um indeed it was their chemistry

991

00:40:44,390 --> 00:40:42,720

department was going to provide the

992

00:40:47,589 --> 00:40:44,400

evaluations

993

00:40:49,190 --> 00:40:47,599

of swiss products that there was a would

994

00:40:51,430 --> 00:40:49,200

be a big pressure

995

00:40:53,910 --> 00:40:51,440

to actually find that these products

996

00:40:56,470 --> 00:40:53,920

work and we know that that's actually

997

00:40:58,950 --> 00:40:56,480

quite easy to do for example

998

00:41:01,190 --> 00:40:58,960

in one of the complaints that was upheld

999

00:41:03,270 --> 00:41:01,200

another university performed a battery

1000

00:41:04,950 --> 00:41:03,280

of 60 or more tests of mental

1001
00:41:07,109 --> 00:41:04,960
functioning

1002
00:41:09,470 --> 00:41:07,119
while looking at a swiss multivitamin

1003
00:41:12,710 --> 00:41:09,480
preparation uh they did use a

1004
00:41:15,109 --> 00:41:12,720
placebo-controlled uh trial uh but found

1005
00:41:17,670 --> 00:41:15,119
as you might imagine that running 60

1006
00:41:19,910 --> 00:41:17,680
tests they found about one or two

1007
00:41:22,150 --> 00:41:19,920
reach statistical significance which the

1008
00:41:24,870 --> 00:41:22,160
company made a big deal about

1009
00:41:27,510 --> 00:41:24,880
so in short i mean i think the company

1010
00:41:29,670 --> 00:41:27,520
is really wanting to use research in

1011
00:41:32,470 --> 00:41:29,680
university affiliation as a fig leaf of

1012
00:41:35,589 --> 00:41:32,480
respectability um i think it put

1013
00:41:37,430 --> 00:41:35,599

pressure on researchers to come up with

1014

00:41:39,349 --> 00:41:37,440

research designs that although they

1015

00:41:41,750 --> 00:41:39,359

might meet ethical approval and get

1016

00:41:43,589 --> 00:41:41,760

published in peer-reviewed journals

1017

00:41:45,829 --> 00:41:43,599

in fact are designed to produce a

1018

00:41:47,349 --> 00:41:45,839

positive result and we know that's a big

1019

00:41:49,349 --> 00:41:47,359

problem in research in the

1020

00:41:51,510 --> 00:41:49,359

pharmaceutical industry i mean we know

1021

00:41:54,069 --> 00:41:51,520

that industry sponsored research is much

1022

00:41:54,870 --> 00:41:54,079

more likely to produce positive outcomes

1023

00:41:56,710 --> 00:41:54,880

so

1024

00:41:58,150 --> 00:41:56,720

taking all of that into account how

1025

00:42:00,790 --> 00:41:58,160

could i remain

1026

00:42:03,430 --> 00:42:00,800

so i resigned but interestingly um it

1027

00:42:05,829 --> 00:42:03,440

has produced quite an interesting a lot

1028

00:42:07,430 --> 00:42:05,839

of publicity and debate about

1029

00:42:09,510 --> 00:42:07,440

universities and their relationships

1030

00:42:11,510 --> 00:42:09,520

with pharmaceutical companies given that

1031

00:42:13,270 --> 00:42:11,520

you are probably the most high profile

1032

00:42:14,790 --> 00:42:13,280

person in the country that does this

1033

00:42:16,710 --> 00:42:14,800

kind of stuff and you mentioned you

1034

00:42:19,190 --> 00:42:16,720

personally have reported some

1035

00:42:20,150 --> 00:42:19,200

advertisements of swiss to the tga were

1036

00:42:25,190 --> 00:42:20,160

you

1037

00:42:28,069 --> 00:42:25,200

out about it

1038

00:42:30,309 --> 00:42:28,079

well i read the press release which was

1039

00:42:31,750 --> 00:42:30,319

produced by the university and also by

1040

00:42:34,390 --> 00:42:31,760

swiss which are written very much like

1041

00:42:36,230 --> 00:42:34,400

an editorial for swiss actually

1042

00:42:37,910 --> 00:42:36,240

and that was the first i knew that a

1043

00:42:41,349 --> 00:42:37,920

memorandum of understanding had been

1044

00:42:44,309 --> 00:42:41,359

signed now yes i i had been

1045

00:42:46,870 --> 00:42:44,319

approached in may last year by the head

1046

00:42:49,829 --> 00:42:46,880

of the school of public health who sort

1047

00:42:51,349 --> 00:42:49,839

of said in an email look they understand

1048

00:42:53,030 --> 00:42:51,359

she understood that swiss was

1049

00:42:55,270 --> 00:42:53,040

approaching the university

1050

00:42:57,589 --> 00:42:55,280

uh with a possibility of doing research

1051

00:42:59,829 --> 00:42:57,599

and what did i think about it and i

1052

00:43:01,990 --> 00:42:59,839

wrote quite a long email which i pointed

1053

00:43:03,589 --> 00:43:02,000

out various things i pointed out that

1054

00:43:06,390 --> 00:43:03,599

this company did not have a good track

1055

00:43:09,589 --> 00:43:06,400

record that research specifically

1056

00:43:10,470 --> 00:43:09,599

designed to show their products work um

1057

00:43:12,790 --> 00:43:10,480

you know

1058

00:43:15,829 --> 00:43:12,800

ran a temptation of being gamed to

1059

00:43:17,589 --> 00:43:15,839

produce those results um and i did say

1060

00:43:19,030 --> 00:43:17,599

that you know there were better ways of

1061

00:43:20,790 --> 00:43:19,040

going about it

1062

00:43:22,950 --> 00:43:20,800

you know i'm not against i'm certainly a

1063

00:43:25,670 --> 00:43:22,960

supportive of research in complementary

1064

00:43:27,349 --> 00:43:25,680

medicine companies or for looking at

1065

00:43:29,910 --> 00:43:27,359

complementary medicines and i said that

1066

00:43:32,309 --> 00:43:29,920

i was supportive of it but my

1067

00:43:34,390 --> 00:43:32,319

idea was that if it was to be done

1068

00:43:37,670 --> 00:43:34,400

ideally it should be done with a number

1069

00:43:40,309 --> 00:43:37,680

of companies producing or offering money

1070

00:43:43,750 --> 00:43:40,319

for an independent center it shouldn't

1071

00:43:45,030 --> 00:43:43,760

be designed to test a company's products

1072

00:43:47,510 --> 00:43:45,040

and ideally

1073

00:43:49,270 --> 00:43:47,520

it would be set up through winners like

1074

00:43:50,710 --> 00:43:49,280

the australian research council which

1075

00:43:53,109 --> 00:43:50,720

does have

1076

00:43:54,390 --> 00:43:53,119

grants available to support industry

1077

00:43:56,710 --> 00:43:54,400

cooperation

1078

00:43:58,550 --> 00:43:56,720

they're called arc linkage grants you

1079

00:44:00,309 --> 00:43:58,560

put up good protocols you usually have a

1080

00:44:02,630 --> 00:44:00,319

couple of two or more of industry

1081

00:44:04,630 --> 00:44:02,640

sponsors sometimes several universities

1082

00:44:05,589 --> 00:44:04,640

it's all open and above board and if it

1083

00:44:08,390 --> 00:44:05,599

gets up

1084

00:44:10,950 --> 00:44:08,400

then in fact you also get uh arc

1085

00:44:13,349 --> 00:44:10,960

government money as well and that was

1086

00:44:15,990 --> 00:44:13,359

the sort of approach that i recommended

1087

00:44:17,109 --> 00:44:16,000

but i had no idea how much of that was

1088

00:44:19,349 --> 00:44:17,119

conveyed

1089

00:44:20,550 --> 00:44:19,359

to the university hierarchy i heard

1090

00:44:23,270 --> 00:44:20,560

nothing more

1091

00:44:26,230 --> 00:44:23,280

until as i say the press release was

1092

00:44:28,550 --> 00:44:26,240

announced um and again my feeling was

1093

00:44:30,069 --> 00:44:28,560

well okay particularly ironic because

1094

00:44:32,950 --> 00:44:30,079

the university website has actually

1095

00:44:35,030 --> 00:44:32,960

published some of my papers criticizing

1096

00:44:37,990 --> 00:44:35,040

swiss but i presume they hadn't bothered

1097

00:44:40,150 --> 00:44:38,000

to read them so again i resigned

1098

00:44:41,670 --> 00:44:40,160

so um what do you think the university

1099

00:44:44,069 --> 00:44:41,680

hopes to achieve from this is it just

1100

00:44:46,390 --> 00:44:44,079

about them obtaining this 15 million

1101
00:44:47,670 --> 00:44:46,400
worth of funding because i can't see how

1102
00:44:50,150 --> 00:44:47,680
this would be a benefit to them

1103
00:44:52,150 --> 00:44:50,160
obviously to swiss it gives them an air

1104
00:44:53,910 --> 00:44:52,160
of legitimacy having they could stamp la

1105
00:44:55,589 --> 00:44:53,920
trobe on their products but what's the

1106
00:44:57,430 --> 00:44:55,599
benefit from the uni beyond the 15

1107
00:44:59,430 --> 00:44:57,440
million dollars

1108
00:45:01,589 --> 00:44:59,440
well that's a benefit there's no doubt

1109
00:45:04,309 --> 00:45:01,599
about it i mean australian universities

1110
00:45:06,550 --> 00:45:04,319
have been slashed and burned by

1111
00:45:08,230 --> 00:45:06,560
successive governments um their money

1112
00:45:11,109 --> 00:45:08,240
has been cut back they're very much

1113
00:45:12,550 --> 00:45:11,119

dependent upon full fee paying students

1114

00:45:15,990 --> 00:45:12,560

particularly overseas students

1115

00:45:17,990 --> 00:45:16,000

regrettably and it has produced a lot of

1116

00:45:21,510 --> 00:45:18,000

pressures on staff and the

1117

00:45:22,630 --> 00:45:21,520

administration to get money um

1118

00:45:25,030 --> 00:45:22,640

and so

1119

00:45:27,190 --> 00:45:25,040

i do believe that uh the 15 million

1120

00:45:29,589 --> 00:45:27,200

dollars was very attractive i mean i

1121

00:45:31,910 --> 00:45:29,599

think to be fair i think the university

1122

00:45:33,670 --> 00:45:31,920

probably felt that they were setting up

1123

00:45:35,430 --> 00:45:33,680

a center for complementary medicine

1124

00:45:38,150 --> 00:45:35,440

research that would

1125

00:45:40,870 --> 00:45:38,160

do some good they certainly said they

1126
00:45:41,910 --> 00:45:40,880
thought it would be independent um but

1127
00:45:44,710 --> 00:45:41,920
again

1128
00:45:47,670 --> 00:45:44,720
the deal with one company um the deal

1129
00:45:50,950 --> 00:45:47,680
that was particularly uh everyone says

1130
00:45:53,829 --> 00:45:50,960
was to prove that swiss products work um

1131
00:45:55,910 --> 00:45:53,839
no no i i think it had a number of flaws

1132
00:45:57,030 --> 00:45:55,920
in it but clearly it's hard to get

1133
00:45:58,870 --> 00:45:57,040
between

1134
00:46:00,470 --> 00:45:58,880
a vice chancellor of the university and

1135
00:46:02,630 --> 00:46:00,480
15 million

1136
00:46:04,870 --> 00:46:02,640
yeah that's a good point

1137
00:46:07,030 --> 00:46:04,880
so you you did touch on before i mean i

1138
00:46:09,829 --> 00:46:07,040

have read quite a lot of the publicity

1139

00:46:10,870 --> 00:46:09,839

surrounding um your resignation and of

1140

00:46:12,630 --> 00:46:10,880

course there have been a lot of

1141

00:46:14,950 --> 00:46:12,640

criticisms of you and one of those has

1142

00:46:16,230 --> 00:46:14,960

been that well therefore you don't

1143

00:46:18,069 --> 00:46:16,240

support

1144

00:46:19,430 --> 00:46:18,079

research into complementary medicine at

1145

00:46:21,910 --> 00:46:19,440

all now you just touched on that by

1146

00:46:24,390 --> 00:46:21,920

talking about arc discovery grants but

1147

00:46:27,109 --> 00:46:24,400

can you extrapolate a little bit about

1148

00:46:29,109 --> 00:46:27,119

your opinions on research into cam you

1149

00:46:31,030 --> 00:46:29,119

do support it don't you

1150

00:46:34,069 --> 00:46:31,040

look of course i do i support

1151

00:46:36,470 --> 00:46:34,079

appropriate research and clearly there's

1152

00:46:39,109 --> 00:46:36,480

a number of areas where research is

1153

00:46:41,750 --> 00:46:39,119

valuable i mean a number of good western

1154

00:46:44,069 --> 00:46:41,760

medicines have come out of traditional

1155

00:46:46,069 --> 00:46:44,079

medicines um you know did you tell us

1156

00:46:49,510 --> 00:46:46,079

out of foxglove aspirin out of willow

1157

00:46:51,190 --> 00:46:49,520

black more recently uh artemisin for uh

1158

00:46:53,430 --> 00:46:51,200

resistant false power and malaria has

1159

00:46:56,069 --> 00:46:53,440

come out of traditional chinese medical

1160

00:46:59,030 --> 00:46:56,079

knowledge so clearly we need to be

1161

00:47:00,870 --> 00:46:59,040

researching traditions and we need to be

1162

00:47:02,870 --> 00:47:00,880

researching

1163

00:47:05,750 --> 00:47:02,880

indigenous medical

1164

00:47:08,630 --> 00:47:05,760

knowledge but again uh there's equally a

1165

00:47:10,790 --> 00:47:08,640

lot of unproven uh stuff in traditional

1166

00:47:13,270 --> 00:47:10,800

st traditional stuff homeopathy is a

1167

00:47:14,950 --> 00:47:13,280

classic example of that um a lot of

1168

00:47:16,950 --> 00:47:14,960

stuff that's been proven not to work

1169

00:47:18,870 --> 00:47:16,960

homeopathy again is i think the evidence

1170

00:47:21,670 --> 00:47:18,880

is well in that

1171

00:47:24,630 --> 00:47:21,680

it has no scientific validity so it

1172

00:47:26,390 --> 00:47:24,640

needs good research now equally well one

1173

00:47:29,750 --> 00:47:26,400

of the problems we have in a system in

1174

00:47:31,670 --> 00:47:29,760

australia is that it's actually costs a

1175

00:47:34,309 --> 00:47:31,680

lot of time and money to

1176

00:47:37,030 --> 00:47:34,319

register complementary medicines and get

1177

00:47:38,790 --> 00:47:37,040

them independently validated by the

1178

00:47:41,270 --> 00:47:38,800

therapeutic goods administration you've

1179

00:47:43,510 --> 00:47:41,280

got to do a lot of good trials as have

1180

00:47:44,790 --> 00:47:43,520

prescription pharmaceuticals so put up

1181

00:47:46,790 --> 00:47:44,800

good data

1182

00:47:48,870 --> 00:47:46,800

and the complementary medicine industry

1183

00:47:51,030 --> 00:47:48,880

has found it's just not worth the effort

1184

00:47:53,910 --> 00:47:51,040

they would much prefer to spend money on

1185

00:47:56,150 --> 00:47:53,920

hype um celebrities much better return

1186

00:47:57,829 --> 00:47:56,160

on investment having said that there are

1187

00:48:00,150 --> 00:47:57,839

a couple of companies that have done the

1188

00:48:01,990 --> 00:48:00,160

hard yards in australia and got their

1189

00:48:03,829 --> 00:48:02,000

products registered by the therapeutic

1190

00:48:05,990 --> 00:48:03,839

goods administration which means they

1191

00:48:08,390 --> 00:48:06,000

spent a lot of time and effort and money

1192

00:48:10,309 --> 00:48:08,400

on good clinical trials to show their

1193

00:48:12,069 --> 00:48:10,319

products work now they're the sort of

1194

00:48:13,910 --> 00:48:12,079

companies i certainly believe that

1195

00:48:15,990 --> 00:48:13,920

universities should be working with and

1196

00:48:17,190 --> 00:48:16,000

of course again as i've said before that

1197

00:48:20,790 --> 00:48:17,200

we should be

1198

00:48:23,349 --> 00:48:20,800

doing fundamental research on indigenous

1199

00:48:25,430 --> 00:48:23,359

medicines and herbal products to try to

1200

00:48:26,950 --> 00:48:25,440

extract active ingredients so you

1201

00:48:28,470 --> 00:48:26,960

mentioned before that it was the

1202

00:48:30,470 --> 00:48:28,480

chemistry department at la trobe that

1203

00:48:31,910 --> 00:48:30,480

was planning to do these studies

1204

00:48:33,510 --> 00:48:31,920

i presume that means they're not doing

1205

00:48:35,030 --> 00:48:33,520

clinical trials or would they be

1206

00:48:37,190 --> 00:48:35,040

coordinating

1207

00:48:38,710 --> 00:48:37,200

clinical trials or just doing say

1208

00:48:40,870 --> 00:48:38,720

analysis of the products do you know

1209

00:48:43,349 --> 00:48:40,880

what that would be involved

1210

00:48:44,870 --> 00:48:43,359

it hasn't been at all clear

1211

00:48:46,470 --> 00:48:44,880

and

1212

00:48:48,230 --> 00:48:46,480

indeed i mean certainly the chemistry

1213

00:48:49,829 --> 00:48:48,240

department has been involved in clinical

1214

00:48:52,549 --> 00:48:49,839

trials of

1215

00:48:55,589 --> 00:48:52,559

foods and food extracts so presumably

1216

00:48:56,950 --> 00:48:55,599

they have the capabilities um i think if

1217

00:48:59,589 --> 00:48:56,960

they were trying to prove that swiss

1218

00:49:01,670 --> 00:48:59,599

products work it would be double blind

1219

00:49:03,430 --> 00:49:01,680

controlled trials and i think as i say

1220

00:49:06,549 --> 00:49:03,440

the only way to do it would be to game

1221

00:49:08,230 --> 00:49:06,559

the trial design uh which you know has

1222

00:49:10,710 --> 00:49:08,240

been done as i mentioned by other

1223

00:49:12,549 --> 00:49:10,720

universities so again it's so touch

1224

00:49:15,349 --> 00:49:12,559

ironic i mean i and others have pointed

1225

00:49:16,870 --> 00:49:15,359

out that you know latrobe really

1226
00:49:19,589 --> 00:49:16,880
although it's got expertise in a number

1227
00:49:21,109 --> 00:49:19,599
of areas really hasn't got expertise in

1228
00:49:23,670 --> 00:49:21,119
complementary medicines and clinical

1229
00:49:25,190 --> 00:49:23,680
trials there are other universities like

1230
00:49:27,030 --> 00:49:25,200
the university of western sydney and

1231
00:49:27,990 --> 00:49:27,040
others that have got a much better track

1232
00:49:30,069 --> 00:49:28,000
record

1233
00:49:31,990 --> 00:49:30,079
and again as i pointed out it has turned

1234
00:49:33,910 --> 00:49:32,000
out that a number of other universities

1235
00:49:36,150 --> 00:49:33,920
some with better track records in this

1236
00:49:38,470 --> 00:49:36,160
area than latrobe were approached and

1237
00:49:40,870 --> 00:49:38,480
turned down the swiss offer so the other

1238
00:49:43,750 --> 00:49:40,880

thing that um you mentioned before um

1239

00:49:45,829 --> 00:49:43,760

about how um swiss responded to your

1240

00:49:47,430 --> 00:49:45,839

complaints and from the panel from the

1241

00:49:49,589 --> 00:49:47,440

tga i also believe that there's

1242

00:49:52,470 --> 00:49:49,599

currently um potentially a defamation

1243

00:49:54,069 --> 00:49:52,480

case going on um against the the guys

1244

00:49:56,309 --> 00:49:54,079

who do the checkout on the abc and

1245

00:49:58,230 --> 00:49:56,319

you've been a guest on that show and

1246

00:49:59,589 --> 00:49:58,240

that was a result of criticism of their

1247

00:50:02,309 --> 00:49:59,599

products on the checkout do you know

1248

00:50:04,390 --> 00:50:02,319

much about um that

1249

00:50:05,750 --> 00:50:04,400

the checkout is a consumer affairs uh

1250

00:50:08,470 --> 00:50:05,760

program run by the australian

1251
00:50:10,390 --> 00:50:08,480
broadcasting commission it's uh it's

1252
00:50:12,790 --> 00:50:10,400
fast-paced it's hard-hitting it's very

1253
00:50:15,750 --> 00:50:12,800
funny and and yes i have been involved

1254
00:50:17,510 --> 00:50:15,760
both in helping to get those programs up

1255
00:50:20,309 --> 00:50:17,520
and i did appear very briefly with the

1256
00:50:21,190 --> 00:50:20,319
cameo appearance in one of them um

1257
00:50:26,950 --> 00:50:21,200
they

1258
00:50:28,710 --> 00:50:26,960
specifically at swiss and um its use of

1259
00:50:31,190 --> 00:50:28,720
celebrities and also

1260
00:50:32,390 --> 00:50:31,200
nicole kidman it was a case in point and

1261
00:50:33,670 --> 00:50:32,400
they also

1262
00:50:35,910 --> 00:50:33,680
went into quite

1263
00:50:37,349 --> 00:50:35,920

good detail about how in one of swiss's

1264

00:50:40,549 --> 00:50:37,359

products um

1265

00:50:42,390 --> 00:50:40,559

when the complaints were upheld

1266

00:50:44,950 --> 00:50:42,400

they simply

1267

00:50:47,430 --> 00:50:44,960

re-listed the complaint with a new label

1268

00:50:49,430 --> 00:50:47,440

which again is a fairly common technique

1269

00:50:51,589 --> 00:50:49,440

to handle complaints with the

1270

00:50:53,589 --> 00:50:51,599

therapeutic goods administration

1271

00:50:55,990 --> 00:50:53,599

if you're at risk of actually having

1272

00:50:57,829 --> 00:50:56,000

your product de-listed then you just

1273

00:50:59,910 --> 00:50:57,839

create a new one much the same

1274

00:51:02,630 --> 00:50:59,920

ingredients different name and away you

1275

00:51:04,710 --> 00:51:02,640

go and that was the topic of the of the

1276

00:51:07,109 --> 00:51:04,720

checkout program and indeed the uniform

1277

00:51:08,790 --> 00:51:07,119

resource locators are on my website and

1278

00:51:10,150 --> 00:51:08,800

it's very amusing

1279

00:51:11,190 --> 00:51:10,160

now

1280

00:51:14,309 --> 00:51:11,200

they

1281

00:51:17,270 --> 00:51:14,319

the uh the checkup guys copped a lawsuit

1282

00:51:19,910 --> 00:51:17,280

from the founder of swiss um

1283

00:51:22,309 --> 00:51:19,920

of defamation that's still

1284

00:51:24,309 --> 00:51:22,319

buttering on as lawsuits do proceeding

1285

00:51:27,030 --> 00:51:24,319

at slow rates although i'm fairly

1286

00:51:28,870 --> 00:51:27,040

confident that um it hasn't really got

1287

00:51:32,390 --> 00:51:28,880

any substance to it

1288

00:51:34,069 --> 00:51:32,400

and certainly the checkout boys are

1289

00:51:35,750 --> 00:51:34,079

certainly haven't been restrained

1290

00:51:37,910 --> 00:51:35,760

there's a new series of a checkout

1291

00:51:40,549 --> 00:51:37,920

coming up and there's a wonderful promo

1292

00:51:43,030 --> 00:51:40,559

which again takes off swiss uh for the

1293

00:51:44,950 --> 00:51:43,040

new series again well worth looking at

1294

00:51:47,430 --> 00:51:44,960

and you perhaps might put the uniform

1295

00:51:49,750 --> 00:51:47,440

resource location uh on your on your

1296

00:51:51,910 --> 00:51:49,760

website uh it's really very funny but

1297

00:51:53,349 --> 00:51:51,920

again it shows a company and indeed

1298

00:51:55,750 --> 00:51:53,359

they've taken the complaint resolution

1299

00:51:57,670 --> 00:51:55,760

panel uh to court too to me it's a sad

1300

00:51:59,910 --> 00:51:57,680

reflection on the regulatory system i

1301
00:52:03,030 --> 00:51:59,920
mean in the beginning um these products

1302
00:52:05,109 --> 00:52:03,040
had a very light touch regulation uh in

1303
00:52:08,150 --> 00:52:05,119
australia it's they're basically

1304
00:52:09,990 --> 00:52:08,160
self-certified by the sponsors that they

1305
00:52:11,990 --> 00:52:10,000
are doing the right things in terms of

1306
00:52:13,750 --> 00:52:12,000
low-risk ingredients manufactured under

1307
00:52:16,069 --> 00:52:13,760
good manufacturing practice and they

1308
00:52:17,270 --> 00:52:16,079
hold the evidence uh handle their heart

1309
00:52:18,870 --> 00:52:17,280
that they

1310
00:52:21,349 --> 00:52:18,880
they've got the evidence to back up the

1311
00:52:23,910 --> 00:52:21,359
claims now it's just it's a trust based

1312
00:52:26,549 --> 00:52:23,920
system and we know that it's just just

1313
00:52:29,030 --> 00:52:26,559

people ride roughshod right through it

1314

00:52:31,430 --> 00:52:29,040

um but limited but post marketing

1315

00:52:33,430 --> 00:52:31,440

surveillance has been done shows 90

1316

00:52:35,030 --> 00:52:33,440

non-compliance there's a paper just

1317

00:52:37,589 --> 00:52:35,040

recently out actually getting some

1318

00:52:39,910 --> 00:52:37,599

publicity again uh showing a lot of

1319

00:52:41,430 --> 00:52:39,920

products available for sale and haven't

1320

00:52:42,710 --> 00:52:41,440

gone even through the listing system

1321

00:52:45,030 --> 00:52:42,720

aren't on the australian register

1322

00:52:47,030 --> 00:52:45,040

therapy goods have different ingredients

1323

00:52:48,710 --> 00:52:47,040

to what they're meant to have

1324

00:52:50,150 --> 00:52:48,720

if you have a trust-based system it gets

1325

00:52:52,309 --> 00:52:50,160

abused and that's what's happened in

1326

00:52:54,150 --> 00:52:52,319

australia regrettably well ken i

1327

00:52:56,950 --> 00:52:54,160

congratulate you on taking an ethical

1328

00:52:58,950 --> 00:52:56,960

stance on this issue and i i wonder if

1329

00:53:01,190 --> 00:52:58,960

just on finishing up did you imagine you

1330

00:53:03,510 --> 00:53:01,200

would create such a funeral because to

1331

00:53:05,510 --> 00:53:03,520

our overseas listeners who haven't been

1332

00:53:08,069 --> 00:53:05,520

around here recently it's been all over

1333

00:53:10,069 --> 00:53:08,079

the press everywhere you've created a

1334

00:53:11,349 --> 00:53:10,079

huge amount of media about your

1335

00:53:13,030 --> 00:53:11,359

resignation

1336

00:53:15,430 --> 00:53:13,040

no i didn't think it would

1337

00:53:17,910 --> 00:53:15,440

it would go so well but clearly i've

1338

00:53:19,349 --> 00:53:17,920

touched a number of nerves and many many

1339

00:53:20,950 --> 00:53:19,359

colleagues have

1340

00:53:24,549 --> 00:53:20,960

sent emails or rang me up and

1341

00:53:27,750 --> 00:53:24,559

congratulated me um so it's clearly

1342

00:53:29,910 --> 00:53:27,760

touched um a nerve and some sore points

1343

00:53:31,910 --> 00:53:29,920

people have also said i only wish that

1344

00:53:34,069 --> 00:53:31,920

we weren't so dependent upon university

1345

00:53:37,589 --> 00:53:34,079

salary and building our superannuation

1346

00:53:39,190 --> 00:53:37,599

it's hard for us to resign um and again

1347

00:53:41,270 --> 00:53:39,200

there's a lot of advantage in being in

1348

00:53:43,510 --> 00:53:41,280

the twilight of your career having an

1349

00:53:47,190 --> 00:53:43,520

adjunct honorary non-salaried

1350

00:53:50,150 --> 00:53:47,200

appointment much easier to resign and to

1351

00:53:51,589 --> 00:53:50,160

speaking out at this point so yeah i'm

1352

00:53:53,349 --> 00:53:51,599

pleased i've done it and it certainly

1353

00:53:54,870 --> 00:53:53,359

created a stir

1354

00:53:57,190 --> 00:53:54,880

well you are our favorite cereal

1355

00:53:59,030 --> 00:53:57,200

complainer and consumer campaigner dr

1356

00:54:00,710 --> 00:53:59,040

ken harvey so we hope this isn't the

1357

00:54:03,030 --> 00:54:00,720

last we hear from you

1358

00:54:03,990 --> 00:54:03,040

no i'll keep on doing it okay thanks

1359

00:54:06,150 --> 00:54:04,000

again and thanks for being on the

1360

00:54:07,829 --> 00:54:06,160

skeptic zone ken hi

1361

00:54:09,349 --> 00:54:07,839

and for the links that ken was referring

1362

00:54:12,230 --> 00:54:09,359

to in that interview please head to our

1363

00:54:14,470 --> 00:54:12,240

website at skepticzone.tv

1364

00:54:23,990 --> 00:54:14,480

and until next time this has been dr h

1365

00:54:26,710 --> 00:54:25,750

you see that ufo sighting that made the

1366

00:54:28,150 --> 00:54:26,720

news

1367

00:54:30,309 --> 00:54:28,160

what did that latest study about

1368

00:54:32,230 --> 00:54:30,319

alternative treatments really say

1369

00:54:33,430 --> 00:54:32,240

is this photo making the rounds real or

1370

00:54:35,030 --> 00:54:33,440

a hoax

1371

00:54:36,790 --> 00:54:35,040

duffle news is a unique website

1372

00:54:39,030 --> 00:54:36,800

featuring news about pseudoscience the

1373

00:54:41,510 --> 00:54:39,040

paranormal anomalies and questionable

1374

00:54:43,750 --> 00:54:41,520

claims framed with the skeptical view

1375

00:54:45,670 --> 00:54:43,760

come visit doubtfulnews.com every day

1376

00:54:48,950 --> 00:54:45,680

for news about cryptozoology

1377

00:54:51,670 --> 00:54:48,960

conspiracies shams scams and more

1378

00:54:53,190 --> 00:54:51,680

follow us on twitter at doubtfulnews

1379

00:54:54,950 --> 00:54:53,200

critical thinking is essential in

1380

00:54:56,950 --> 00:54:54,960

assessing today's news

1381

00:55:11,430 --> 00:54:56,960

duffle news helps you decide can you

1382

00:55:15,430 --> 00:55:13,430

thank you for listening to the skeptic

1383

00:55:17,910 --> 00:55:15,440

zone and as mentioned on the top of the

1384

00:55:20,230 --> 00:55:17,920

show in next week's episode we'll be

1385

00:55:21,510 --> 00:55:20,240

having details of how you can win that

1386

00:55:23,589 --> 00:55:21,520

cosmos

1387

00:55:25,109 --> 00:55:23,599

prize pack courtesy of the national

1388

00:55:27,990 --> 00:55:25,119

geographic channel

1389

00:55:29,670 --> 00:55:28,000

and a note for sydney ciders the next

1390

00:55:31,910 --> 00:55:29,680

australian skeptics dinner meeting will

1391

00:55:34,309 --> 00:55:31,920

be on march 29th

1392

00:55:38,230 --> 00:55:34,319

all about technophobia

1393

00:55:42,750 --> 00:55:38,240

so called wind farm syndrome and more

1394

00:55:46,790 --> 00:55:44,710

www.skeptics.com.a you and don't forget

1395

00:55:48,470 --> 00:55:46,800

there's a special door prize one person

1396

00:55:49,990 --> 00:55:48,480

will have their dinner

1397

00:55:51,990 --> 00:55:50,000

free

1398

00:55:54,549 --> 00:55:52,000

and thank you to all those people as

1399

00:55:57,109 --> 00:55:54,559

wonderful people who chip in less than a

1400

00:56:00,549 --> 00:55:57,119

dollar a week to help the skeptic's own

1401
00:56:02,309 --> 00:56:00,559
uh stay online on air as it were and you

1402
00:56:05,109 --> 00:56:02,319
can uh chip in by visiting

1403
00:56:06,710 --> 00:56:05,119
www.skepticzone.tv

1404
00:56:09,030 --> 00:56:06,720
and

1405
00:56:09,829 --> 00:56:09,040
following the paypal links thank you

1406
00:56:11,589 --> 00:56:09,839
again

1407
00:56:13,190 --> 00:56:11,599
but for this week this is richard

1408
00:56:14,549 --> 00:56:13,200
saunders

1409
00:56:17,510 --> 00:56:14,559
looking

1410
00:56:23,990 --> 00:56:17,520
staring wistfully off into the cosmos

1411
00:56:27,190 --> 00:56:25,670
you've been listening to the skeptic

1412
00:56:32,069 --> 00:56:27,200
zone