

Episode 705

THE  
**SKEPTIC  
ZONE**  
PODCAST

10 April 2022

[www.skepticzone.tv](http://www.skepticzone.tv)



Bob Swanson



Adrienne Hill



Tim Mendham

Bob Swanson  
Critical Thinking Videos

Australian Skeptic News  
with Adrienne Hill

The Book of Tim  
Astrology - Astronomy

TROVE  
Astrology



1  
00:00:13,940 --> 00:00:09,190  
welcome to the skeptic zone the podcast

2  
00:00:16,840 --> 00:00:13,950  
from australia for science and reason

3  
00:00:23,429 --> 00:00:16,850  
[Applause]

4  
00:00:25,589 --> 00:00:23,439  
[Music]

5  
00:00:28,870 --> 00:00:25,599  
yes it's the skeptic's own podcast

6  
00:00:30,790 --> 00:00:28,880  
episode number 705 for the 10th of april

7  
00:00:32,790 --> 00:00:30,800  
2022

8  
00:00:34,790 --> 00:00:32,800  
richard saunders coming to you from a

9  
00:00:36,069 --> 00:00:34,800  
sunny for a change a sunny sydney

10  
00:00:37,750 --> 00:00:36,079  
australia

11  
00:00:39,430 --> 00:00:37,760  
we've had so much rain recently that

12  
00:00:41,510 --> 00:00:39,440  
when it does rain

13  
00:00:43,270 --> 00:00:41,520

just a moderate shower there's a

14

00:00:44,950 --> 00:00:43,280

flooding straight away because the

15

00:00:46,150 --> 00:00:44,960

ground is saturated

16

00:00:48,389 --> 00:00:46,160

but you don't want to hear about

17

00:00:50,310 --> 00:00:48,399

saturated ground you want to hear about

18

00:00:52,069 --> 00:00:50,320

what's coming up on this week's episode

19

00:00:53,670 --> 00:00:52,079

of the skeptic zone we're going to kick

20

00:00:54,709 --> 00:00:53,680

off we're going to start with an

21

00:00:57,350 --> 00:00:54,719

interview

22

00:00:59,029 --> 00:00:57,360

i conducted in the last week with a a

23

00:01:02,630 --> 00:00:59,039

very interesting fellow indeed bob

24

00:01:05,109 --> 00:01:02,640

swanson now bob is from the

25

00:01:07,830 --> 00:01:05,119

department of physics and astronomy at

26

00:01:10,390 --> 00:01:07,840

mississippi state university

27

00:01:12,390 --> 00:01:10,400

now why am i talking to bob well he has

28

00:01:13,590 --> 00:01:12,400

done a series of videos about critical

29

00:01:15,830 --> 00:01:13,600

thinking

30

00:01:18,550 --> 00:01:15,840

and one of them

31

00:01:21,030 --> 00:01:18,560

revolves around the claims of power

32

00:01:22,469 --> 00:01:21,040

balance the old wristbands

33

00:01:25,030 --> 00:01:22,479

increase your balance your strength and

34

00:01:27,109 --> 00:01:25,040

your flexibility and he looks at this

35

00:01:29,190 --> 00:01:27,119

claim from a critical point of view and

36

00:01:31,670 --> 00:01:29,200

a physics point of view and sort of

37

00:01:33,350 --> 00:01:31,680

deconstructs what's happening in those

38

00:01:37,510 --> 00:01:33,360

classic famous

39

00:01:39,190 --> 00:01:37,520

uh sham as we know now sham tests

40

00:01:42,389 --> 00:01:39,200

it's great to know that after all these

41

00:01:44,550 --> 00:01:42,399

years that i was investigating the power

42

00:01:46,469 --> 00:01:44,560

balance over 10 years now

43

00:01:48,469 --> 00:01:46,479

10 years ago that

44

00:01:51,510 --> 00:01:48,479

the lessons are still being

45

00:01:53,429 --> 00:01:51,520

learned and used or used and learned

46

00:01:55,670 --> 00:01:53,439

anyway coming up at the top of the show

47

00:01:56,630 --> 00:01:55,680

interview with bob swanson and i will

48

00:01:58,709 --> 00:01:56,640

link

49

00:02:00,389 --> 00:01:58,719

to his series of critical thinking

50

00:02:02,870 --> 00:02:00,399

videos

51  
00:02:05,910 --> 00:02:02,880  
following that it's the australian

52  
00:02:08,790 --> 00:02:05,920  
skeptics newsletter read once again with

53  
00:02:10,389 --> 00:02:08,800  
elegance and poise by adrian hill in

54  
00:02:11,510 --> 00:02:10,399  
canada of course it all makes sense of

55  
00:02:14,309 --> 00:02:11,520  
course the australian skeptics

56  
00:02:15,350 --> 00:02:14,319  
newsletter should be read from canada

57  
00:02:17,830 --> 00:02:15,360  
i think

58  
00:02:19,190 --> 00:02:17,840  
then it's tim menden back with a book of

59  
00:02:21,110 --> 00:02:19,200  
tim

60  
00:02:24,550 --> 00:02:21,120  
and an item

61  
00:02:27,190 --> 00:02:24,560  
about the history of astrology and

62  
00:02:29,910 --> 00:02:27,200  
astronomy and this is called an eye to

63  
00:02:32,229 --> 00:02:29,920

the sky written by tim harding so tim

64

00:02:34,710 --> 00:02:32,239

mendom bringing you that report a bit

65

00:02:36,710 --> 00:02:34,720

later on in the book of tim

66

00:02:39,030 --> 00:02:36,720

and to round off the show it's a dive

67

00:02:41,910 --> 00:02:39,040

into the trove archives once again and

68

00:02:44,229 --> 00:02:41,920

staying with our astrology theme from uh

69

00:02:46,070 --> 00:02:44,239

tim mendem we're going to

70

00:02:48,390 --> 00:02:46,080

wander through the digital archives and

71

00:02:51,589 --> 00:02:48,400

look at references here in australia to

72

00:02:54,150 --> 00:02:51,599

that oldie that goldy the oldie the

73

00:02:55,350 --> 00:02:54,160

goldy but oldie the older goldie the

74

00:02:57,270 --> 00:02:55,360

evergreen

75

00:02:59,270 --> 00:02:57,280

the thing that won't go away

76

00:03:02,390 --> 00:02:59,280

astrology

77

00:03:04,390 --> 00:03:02,400

i noticed that uh in this state in new

78

00:03:06,710 --> 00:03:04,400

south wales and victoria too and i think

79

00:03:09,190 --> 00:03:06,720

other states i'm not sure it's holiday

80

00:03:11,110 --> 00:03:09,200

time for school students

81

00:03:12,229 --> 00:03:11,120

which is lots of fun for my nieces and

82

00:03:14,710 --> 00:03:12,239

nephews

83

00:03:16,229 --> 00:03:14,720

and it's also holiday time well as much

84

00:03:18,630 --> 00:03:16,239

as they can have a holiday for the

85

00:03:20,790 --> 00:03:18,640

teachers out there the teachers who have

86

00:03:23,509 --> 00:03:20,800

just started their little break

87

00:03:25,430 --> 00:03:23,519

good luck to you i'm thinking about you

88

00:03:29,190 --> 00:03:25,440

because i know what a

89

00:03:30,789 --> 00:03:29,200

what a difficult job teaching really is

90

00:03:33,830 --> 00:03:30,799

i think you deserve all the breaks you

91

00:03:34,710 --> 00:03:33,840

can get so to all my teacher friends out

92

00:03:36,869 --> 00:03:34,720

there

93

00:03:37,910 --> 00:03:36,879

hopefully hopefully putting their feet

94

00:03:39,670 --> 00:03:37,920

up

95

00:03:41,830 --> 00:03:39,680

with a cat on the lap

96

00:03:43,990 --> 00:03:41,840

i'm thinking about you

97

00:03:46,949 --> 00:03:44,000

have a nice break

98

00:03:49,270 --> 00:03:46,959

stay tuned at the end of the episode for

99

00:03:50,550 --> 00:03:49,280

another announcement from me

100

00:03:51,990 --> 00:03:50,560

but now it's time for me to run

101  
00:03:53,589 --> 00:03:52,000  
downstairs

102  
00:03:57,350 --> 00:03:53,599  
and without a question

103  
00:03:59,910 --> 00:03:57,360  
it's a poached egg on toast sort of day

104  
00:04:01,700 --> 00:03:59,920  
why i go and enjoy that i hope you enjoy

105  
00:04:20,949 --> 00:04:01,710  
the skeptic zone

106  
00:04:22,790 --> 00:04:20,959  
[Music]

107  
00:04:24,790 --> 00:04:22,800  
and joining me now all the way from the

108  
00:04:27,189 --> 00:04:24,800  
department of physics and astronomy at

109  
00:04:29,670 --> 00:04:27,199  
mississippi state university oh i'd like

110  
00:04:32,390 --> 00:04:29,680  
to visit that campus i really would it's

111  
00:04:34,469 --> 00:04:32,400  
bob swanson hello bob hello richard nice

112  
00:04:37,830 --> 00:04:34,479  
to see you yes nice to see you too of

113  
00:04:39,590 --> 00:04:37,840

course these days it's great to video

114

00:04:41,510 --> 00:04:39,600

video people you were just talking to me

115

00:04:43,030 --> 00:04:41,520

before we went on air about

116

00:04:44,870 --> 00:04:43,040

you asking me what it's like to live in

117

00:04:46,629 --> 00:04:44,880

the future and sometimes when i think of

118

00:04:48,230 --> 00:04:46,639

how easy it is to video people from

119

00:04:50,710 --> 00:04:48,240

around the world that you and i are both

120

00:04:53,030 --> 00:04:50,720

now living in the future right exactly

121

00:04:55,430 --> 00:04:53,040

yeah i've always valued living

122

00:04:56,950 --> 00:04:55,440

i've lived a university life yeah

123

00:04:59,270 --> 00:04:56,960

working at universities and i've always

124

00:05:00,469 --> 00:04:59,280

valued the fact that you get a chance to

125

00:05:02,230 --> 00:05:00,479

especially in the science department

126

00:05:03,909 --> 00:05:02,240

meet people from all around the world

127

00:05:05,909 --> 00:05:03,919

you know all you know many times the

128

00:05:07,189 --> 00:05:05,919

faculty or the tas are you know it's an

129

00:05:09,990 --> 00:05:07,199

international

130

00:05:11,350 --> 00:05:10,000

you know kind of thing and uh you know

131

00:05:12,310 --> 00:05:11,360

now that we're

132

00:05:13,909 --> 00:05:12,320

zooming

133

00:05:15,110 --> 00:05:13,919

it's so nice to be able to touch base

134

00:05:17,670 --> 00:05:15,120

with folks you know halfway around the

135

00:05:18,950 --> 00:05:17,680

world you know so easily it it it's

136

00:05:21,110 --> 00:05:18,960

fantastic

137

00:05:22,230 --> 00:05:21,120

now why am i talking to you well you

138

00:05:24,710 --> 00:05:22,240

heard me

139

00:05:25,749 --> 00:05:24,720

uh having a chat on another podcast was

140

00:05:27,830 --> 00:05:25,759

that the

141

00:05:29,909 --> 00:05:27,840

the atheist experience i think that was

142

00:05:31,270 --> 00:05:29,919

correct yes i was on there with my

143

00:05:32,790 --> 00:05:31,280

friend rob palmer to talk about the

144

00:05:35,350 --> 00:05:32,800

great australian psychic prediction

145

00:05:37,510 --> 00:05:35,360

project you heard that and your interest

146

00:05:39,430 --> 00:05:37,520

was picked because and it's it's a bit

147

00:05:41,029 --> 00:05:39,440

of a story here folks it's a bit of a

148

00:05:42,310 --> 00:05:41,039

tangled web

149

00:05:44,390 --> 00:05:42,320

but you

150

00:05:45,990 --> 00:05:44,400

have done a series of videos i'd like to

151  
00:05:48,870 --> 00:05:46,000  
chat to you about about critical

152  
00:05:50,550 --> 00:05:48,880  
thinking and why this all ties in

153  
00:05:52,150 --> 00:05:50,560  
is i think

154  
00:05:53,270 --> 00:05:52,160  
one of the first ones if not the first

155  
00:05:55,830 --> 00:05:53,280  
one was

156  
00:05:58,150 --> 00:05:55,840  
concentrating on the good old power

157  
00:06:00,629 --> 00:05:58,160  
balance wristband from

158  
00:06:02,070 --> 00:06:00,639  
2009-2010

159  
00:06:03,670 --> 00:06:02,080  
uh era

160  
00:06:05,510 --> 00:06:03,680  
exactly

161  
00:06:06,870 --> 00:06:05,520  
and i was delighted when you contacted

162  
00:06:08,469 --> 00:06:06,880  
me and i had a look at your videos i

163  
00:06:10,469 --> 00:06:08,479

thought wow look at that because you

164

00:06:12,469 --> 00:06:10,479

brought up some interesting insights

165

00:06:14,469 --> 00:06:12,479

that i'd never thought about but what's

166

00:06:17,029 --> 00:06:14,479

let's get back to basics

167

00:06:18,629 --> 00:06:17,039

why did you start doing this and why did

168

00:06:20,469 --> 00:06:18,639

you concentrate on the power balance and

169

00:06:21,830 --> 00:06:20,479

the claims of the power balance

170

00:06:23,990 --> 00:06:21,840

wristband

171

00:06:25,749 --> 00:06:24,000

right yeah i i'll give you kind of a

172

00:06:27,350 --> 00:06:25,759

brief biography in the sense that i've

173

00:06:29,350 --> 00:06:27,360

been a teacher twice i started out in

174

00:06:31,350 --> 00:06:29,360

the mid 90s out of college as a high

175

00:06:32,950 --> 00:06:31,360

school science teacher did that for a

176

00:06:34,150 --> 00:06:32,960

couple of years left it went back to

177

00:06:36,070 --> 00:06:34,160

graduate school got a degree in

178

00:06:39,029 --> 00:06:36,080

meteorology i spent a decade as a

179

00:06:40,950 --> 00:06:39,039

meteorologist then around 2010 i came

180

00:06:42,950 --> 00:06:40,960

back to teaching moved mississippi and

181

00:06:45,110 --> 00:06:42,960

got into teaching and i was teaching at

182

00:06:46,790 --> 00:06:45,120

a community college

183

00:06:48,309 --> 00:06:46,800

and the very first semester i was

184

00:06:49,589 --> 00:06:48,319

teaching was when power balance bands

185

00:06:51,110 --> 00:06:49,599

were all the rage

186

00:06:53,670 --> 00:06:51,120

and i was teaching a physical science

187

00:06:55,510 --> 00:06:53,680

class this is a a conceptual physics

188

00:06:58,150 --> 00:06:55,520

class it's kind of

189

00:07:00,309 --> 00:06:58,160

physics for non-science majors so a lot

190

00:07:01,990 --> 00:07:00,319

of the math is stripped away you know

191

00:07:03,830 --> 00:07:02,000

it's really just students are there to

192

00:07:05,430 --> 00:07:03,840

get a science credit quite often these

193

00:07:06,629 --> 00:07:05,440

are students who have not been turned on

194

00:07:08,629 --> 00:07:06,639

there's a reason why they're not science

195

00:07:10,550 --> 00:07:08,639

majors in college because they weren't

196

00:07:12,309 --> 00:07:10,560

inspired in high school and so they've

197

00:07:14,629 --> 00:07:12,319

gone you know or maybe they've got a

198

00:07:17,589 --> 00:07:14,639

passion for history or whatever but

199

00:07:18,870 --> 00:07:17,599

they're taking my class and i had a

200

00:07:21,189 --> 00:07:18,880

couple of students who were wearing

201  
00:07:23,430 --> 00:07:21,199  
these power balance bands yeah and they

202  
00:07:25,749 --> 00:07:23,440  
wanted to know do they really work and i

203  
00:07:27,029 --> 00:07:25,759  
i first of all had to i was kind of

204  
00:07:28,790 --> 00:07:27,039  
caught flat-footed because i'd never

205  
00:07:31,110 --> 00:07:28,800  
seen them before so they did the

206  
00:07:32,790 --> 00:07:31,120  
demonstrations for me and

207  
00:07:34,230 --> 00:07:32,800  
i thought that was interesting and then

208  
00:07:35,670 --> 00:07:34,240  
pretty soon i started to notice that

209  
00:07:36,950 --> 00:07:35,680  
there were flyers up on campus and

210  
00:07:39,029 --> 00:07:36,960  
people were selling these things and i

211  
00:07:41,270 --> 00:07:39,039  
thought nice i started to notice them on

212  
00:07:42,230 --> 00:07:41,280  
people's wrists more i'm sure as well i

213  
00:07:45,029 --> 00:07:42,240

thought

214

00:07:46,390 --> 00:07:45,039

i need to address this and so i actually

215

00:07:48,230 --> 00:07:46,400

started to investigate them and that's

216

00:07:51,350 --> 00:07:48,240

actually when i stumbled across

217

00:07:53,430 --> 00:07:51,360

the uh there's a tv report

218

00:07:55,189 --> 00:07:53,440

that you were part of yes that's where

219

00:07:56,550 --> 00:07:55,199

you first hit my radar screen because

220

00:07:59,029 --> 00:07:56,560

you were part of

221

00:08:00,790 --> 00:07:59,039

my research in trying to figure these

222

00:08:02,629 --> 00:08:00,800

things out that's why i was so delighted

223

00:08:05,270 --> 00:08:02,639

when when you are recently appeared on

224

00:08:07,110 --> 00:08:05,280

the atheist experience uh with seth

225

00:08:09,350 --> 00:08:07,120

andrews and uh

226

00:08:11,080 --> 00:08:09,360

you know heard you heard your voice and

227

00:08:14,710 --> 00:08:11,090

i thought wow ten years on you

228

00:08:17,830 --> 00:08:14,720

[Laughter]

229

00:08:20,150 --> 00:08:17,840

i haven't i haven't quit yet

230

00:08:22,150 --> 00:08:20,160

you saw these things on campus

231

00:08:24,950 --> 00:08:22,160

you decided um

232

00:08:26,309 --> 00:08:24,960

at some stage or other to do a critical

233

00:08:28,230 --> 00:08:26,319

thinking course which you've put on

234

00:08:30,869 --> 00:08:28,240

youtube

235

00:08:32,389 --> 00:08:30,879

now what was your approach how did you

236

00:08:33,589 --> 00:08:32,399

manage to

237

00:08:35,750 --> 00:08:33,599

um

238

00:08:38,230 --> 00:08:35,760

weave in the power balance into your

239

00:08:41,190 --> 00:08:38,240

critical thinking videos yeah the the

240

00:08:43,029 --> 00:08:41,200

original version of it i i just thought

241

00:08:44,949 --> 00:08:43,039

the the students there they came to me

242

00:08:47,269 --> 00:08:44,959

asking for my explanation they looked at

243

00:08:49,590 --> 00:08:47,279

me as the physicist to explain this

244

00:08:51,269 --> 00:08:49,600

phenomenon and you know they seemed

245

00:08:52,630 --> 00:08:51,279

sincere and

246

00:08:53,910 --> 00:08:52,640

i thought it was interesting the more i

247

00:08:55,430 --> 00:08:53,920

looked into it i thought you know wow

248

00:08:57,509 --> 00:08:55,440

this is really interesting

249

00:08:59,590 --> 00:08:57,519

and i never really you know

250

00:09:01,110 --> 00:08:59,600

probed the psychology of it you know for

251  
00:09:02,470 --> 00:09:01,120  
me was just trying to answer a physics

252  
00:09:04,470 --> 00:09:02,480  
question right and teach a little bit

253  
00:09:06,550 --> 00:09:04,480  
about torque and that sort of thing yes

254  
00:09:07,829 --> 00:09:06,560  
but i think the original version of the

255  
00:09:10,310 --> 00:09:07,839  
video was much more straight you know

256  
00:09:11,750 --> 00:09:10,320  
kind of physics and and but that then

257  
00:09:13,750 --> 00:09:11,760  
when i found your

258  
00:09:15,350 --> 00:09:13,760  
your report where was the double blind

259  
00:09:16,870 --> 00:09:15,360  
experiment i thought this is really a

260  
00:09:18,389 --> 00:09:16,880  
good way of you know talking about

261  
00:09:21,350 --> 00:09:18,399  
what's the difference between a

262  
00:09:22,389 --> 00:09:21,360  
demonstration versus an experiment yes

263  
00:09:27,030 --> 00:09:22,399

and

264

00:09:28,949 --> 00:09:27,040

my students doing it

265

00:09:31,670 --> 00:09:28,959

you know and doing these tests on each

266

00:09:32,790 --> 00:09:31,680

other these demonstrations on each other

267

00:09:33,910 --> 00:09:32,800

you know of course they weren't in it

268

00:09:35,269 --> 00:09:33,920

for the money they were you know they

269

00:09:37,350 --> 00:09:35,279

weren't they weren't themselves

270

00:09:39,509 --> 00:09:37,360

profiting from these you know it really

271

00:09:41,509 --> 00:09:39,519

was a good

272

00:09:43,910 --> 00:09:41,519

example of the psychology of it you know

273

00:09:45,030 --> 00:09:43,920

when when you are expecting a result you

274

00:09:47,350 --> 00:09:45,040

will

275

00:09:49,350 --> 00:09:47,360

subconsciously affect the way you do the

276

00:09:52,790 --> 00:09:49,360

test yeah so that's what double blind is

277

00:09:55,110 --> 00:09:52,800

so so really uh so important and

278

00:09:57,670 --> 00:09:55,120

really a good example way of

279

00:09:59,430 --> 00:09:57,680

really bringing this home to my students

280

00:10:01,910 --> 00:09:59,440

that's great because

281

00:10:03,670 --> 00:10:01,920

it's a classic it's set itself itself up

282

00:10:05,509 --> 00:10:03,680

so well for a double-blind test because

283

00:10:07,509 --> 00:10:05,519

it's a it's a straightforward claim

284

00:10:08,870 --> 00:10:07,519

where this device and this will happen

285

00:10:10,310 --> 00:10:08,880

this will happen and this will happen

286

00:10:12,790 --> 00:10:10,320

your balance and your strength and your

287

00:10:14,870 --> 00:10:12,800

flexibility will increase

288

00:10:17,110 --> 00:10:14,880

don't wear it and you'll have less

289

00:10:18,870 --> 00:10:17,120

balance less strength less flexibility

290

00:10:21,269 --> 00:10:18,880

and i like you i noticed that on the

291

00:10:22,550 --> 00:10:21,279

promotional videos and in your video you

292

00:10:24,069 --> 00:10:22,560

referenced one of these promotional

293

00:10:25,190 --> 00:10:24,079

videos

294

00:10:29,350 --> 00:10:25,200

it's

295

00:10:32,389 --> 00:10:29,360

course both the

296

00:10:34,790 --> 00:10:32,399

person doing the test and the person

297

00:10:36,069 --> 00:10:34,800

undergoing the test both know when

298

00:10:41,350 --> 00:10:36,079

or

299

00:10:43,110 --> 00:10:41,360

so my approach was well simple let's

300

00:10:45,030 --> 00:10:43,120

just take that out of the equation if it

301  
00:10:47,350 --> 00:10:45,040  
works it would work regardless of

302  
00:10:49,670 --> 00:10:47,360  
whether the people knew

303  
00:10:50,949 --> 00:10:49,680  
this device was around

304  
00:10:55,190 --> 00:10:50,959  
and

305  
00:10:57,350 --> 00:10:55,200  
well the results were

306  
00:10:59,509 --> 00:10:57,360  
quite obvious but i really enjoyed

307  
00:11:00,389 --> 00:10:59,519  
watching your video about this because i

308  
00:11:04,550 --> 00:11:00,399  
learned

309  
00:11:06,389 --> 00:11:04,560  
you talk briefly about a couple of

310  
00:11:09,509 --> 00:11:06,399  
things the center of gravity the

311  
00:11:11,269 --> 00:11:09,519  
direction of force and torque and

312  
00:11:12,870 --> 00:11:11,279  
moment arm which i found were

313  
00:11:14,949 --> 00:11:12,880

fascinating

314

00:11:17,430 --> 00:11:14,959

right i usually explain

315

00:11:19,110 --> 00:11:17,440

moment arm and torque to my students by

316

00:11:20,710 --> 00:11:19,120

just opening a door

317

00:11:23,110 --> 00:11:20,720

you know when you grab the door handle

318

00:11:26,150 --> 00:11:23,120

yeah and i talk about you how easy is it

319

00:11:27,509 --> 00:11:26,160

to open a door pretty easy um

320

00:11:29,910 --> 00:11:27,519

and which direction are you applying

321

00:11:32,470 --> 00:11:29,920

your force so you're applying your force

322

00:11:34,710 --> 00:11:32,480

perpendicular to the actual door itself

323

00:11:36,310 --> 00:11:34,720

because you and you're you're producing

324

00:11:38,550 --> 00:11:36,320

rotation

325

00:11:40,710 --> 00:11:38,560

of the door around the hinges yeah but

326

00:11:41,910 --> 00:11:40,720

it's a whole lot easier when you do it

327

00:11:43,269 --> 00:11:41,920

far out on the door as opposed to if

328

00:11:44,550 --> 00:11:43,279

you're trying to push right next to the

329

00:11:46,230 --> 00:11:44,560

hinges yes

330

00:11:47,750 --> 00:11:46,240

you know you don't get nearly the

331

00:11:49,750 --> 00:11:47,760

leverage and of course a lot of students

332

00:11:51,110 --> 00:11:49,760

are even at that point pretty familiar

333

00:11:52,790 --> 00:11:51,120

with leverage you know but this is a

334

00:11:55,269 --> 00:11:52,800

good way of into introducing torque and

335

00:11:58,550 --> 00:11:55,279

rotational motion and that sort of thing

336

00:12:00,470 --> 00:11:58,560

and that really is you know folks can

337

00:12:03,269 --> 00:12:00,480

you watch the video in its entirety but

338

00:12:05,590 --> 00:12:03,279

that's really the key is that um

339

00:12:08,069 --> 00:12:05,600

depending on how you apply your force on

340

00:12:11,430 --> 00:12:08,079

the on a test subject in doing the power

341

00:12:13,509 --> 00:12:11,440

balance bands you know just a a small

342

00:12:15,590 --> 00:12:13,519

force that's perpendicular to their

343

00:12:18,230 --> 00:12:15,600

moment arm will cause them to rotate

344

00:12:20,230 --> 00:12:18,240

yeah if you're pushing perpendicular i'm

345

00:12:21,829 --> 00:12:20,240

sorry parallel to their moment arm you

346

00:12:24,710 --> 00:12:21,839

cause no rotation just like if you were

347

00:12:25,829 --> 00:12:24,720

to pull on a door yeah or push on a door

348

00:12:27,030 --> 00:12:25,839

toward the hinges or away from the

349

00:12:28,710 --> 00:12:27,040

hinges

350

00:12:30,710 --> 00:12:28,720

the door doesn't move it doesn't rotate

351  
00:12:32,949 --> 00:12:30,720  
either but when you you know just push

352  
00:12:33,750 --> 00:12:32,959  
perpendicular you cause rotation that's

353  
00:12:35,509 --> 00:12:33,760  
really

354  
00:12:38,230 --> 00:12:35,519  
i think the physics at the heart of the

355  
00:12:39,829 --> 00:12:38,240  
power balance demonstrations absolutely

356  
00:12:41,750 --> 00:12:39,839  
and in your video which i'll reference

357  
00:12:43,829 --> 00:12:41,760  
to folks if you want to check out uh

358  
00:12:45,350 --> 00:12:43,839  
bob's video i'll be adding a link in

359  
00:12:48,150 --> 00:12:45,360  
this week's show notes

360  
00:12:50,150 --> 00:12:48,160  
so it's fantastic for me because you

361  
00:12:51,990 --> 00:12:50,160  
know all these years i i knew what was

362  
00:12:54,710 --> 00:12:52,000  
going on i knew it was the direction of

363  
00:12:56,550 --> 00:12:54,720

the force applied to the arm

364

00:12:58,629 --> 00:12:56,560

towards or away from the center of

365

00:13:01,190 --> 00:12:58,639

gravity was really where it's the heart

366

00:13:02,550 --> 00:13:01,200

of the trick but i was really grateful

367

00:13:03,990 --> 00:13:02,560

to have it explained to me with all

368

00:13:06,550 --> 00:13:04,000

these extra things like the talk and the

369

00:13:09,030 --> 00:13:06,560

moment arm which i i certainly learned a

370

00:13:10,230 --> 00:13:09,040

lot by by looking at that now you

371

00:13:11,509 --> 00:13:10,240

noticed

372

00:13:13,269 --> 00:13:11,519

in in your

373

00:13:15,190 --> 00:13:13,279

part of the world as i noticed here that

374

00:13:17,190 --> 00:13:15,200

this band was popular with football

375

00:13:19,350 --> 00:13:17,200

players your american football players

376

00:13:22,230 --> 00:13:19,360

and our australian football players it

377

00:13:25,190 --> 00:13:22,240

was really marketed towards um you know

378

00:13:28,710 --> 00:13:25,200

increase your sporting prowess wasn't it

379

00:13:29,670 --> 00:13:28,720

right and what was funny was

380

00:13:31,750 --> 00:13:29,680

you

381

00:13:33,110 --> 00:13:31,760

no sooner had i gotten the video and the

382

00:13:34,949 --> 00:13:33,120

lecture together

383

00:13:36,870 --> 00:13:34,959

and you know by the spring semester or

384

00:13:38,790 --> 00:13:36,880

maybe a year on i wasn't seeing these

385

00:13:40,389 --> 00:13:38,800

things around as much

386

00:13:42,629 --> 00:13:40,399

and i would kid my students i would say

387

00:13:45,430 --> 00:13:42,639

oh it's because i gave such a convincing

388

00:13:47,509 --> 00:13:45,440

lecture that everyone told their friends

389

00:13:49,350 --> 00:13:47,519

and neighbors you know oh it's all

390

00:13:51,030 --> 00:13:49,360

physics

391

00:13:54,629 --> 00:13:51,040

you know of course i say this

392

00:13:56,470 --> 00:13:54,639

uh facetiously um the reason why they

393

00:13:58,790 --> 00:13:56,480

become why they i didn't weren't i

394

00:14:00,829 --> 00:13:58,800

wasn't seeing them anymore was because

395

00:14:03,350 --> 00:14:00,839

when i first was introduced to them it

396

00:14:05,430 --> 00:14:03,360

was the kids that could spend thirty

397

00:14:06,949 --> 00:14:05,440

dollars on a plastic band you know so

398

00:14:08,629 --> 00:14:06,959

it's the rich kids and it was the

399

00:14:10,550 --> 00:14:08,639

athletes they were you know there was an

400

00:14:12,710 --> 00:14:10,560

exclusive group there was an exclusivity

401  
00:14:14,710 --> 00:14:12,720  
to these things and then six months

402  
00:14:16,790 --> 00:14:14,720  
later they were showing up

403  
00:14:18,150 --> 00:14:16,800  
at i was living in tupelo mississippi at

404  
00:14:20,230 --> 00:14:18,160  
the time they were at the tupelo flea

405  
00:14:22,069 --> 00:14:20,240  
market three for five dollars and

406  
00:14:23,590 --> 00:14:22,079  
everyone was wearing them you know and

407  
00:14:25,430 --> 00:14:23,600  
and that was you know that was the end

408  
00:14:27,350 --> 00:14:25,440  
of the fad yeah once they become

409  
00:14:28,870 --> 00:14:27,360  
ubiquitous then you know there's nothing

410  
00:14:31,269 --> 00:14:28,880  
special about them

411  
00:14:32,870 --> 00:14:31,279  
that mirrors what happened here i found

412  
00:14:35,110 --> 00:14:32,880  
a whole barrel full full of them in the

413  
00:14:36,949 --> 00:14:35,120

flea market myself one day

414

00:14:38,710 --> 00:14:36,959

and i missed out on what as i was

415

00:14:40,310 --> 00:14:38,720

researching these when i was originally

416

00:14:43,189 --> 00:14:40,320

coming up with the lecture i did find a

417

00:14:45,509 --> 00:14:43,199

few folks on like health and fitness

418

00:14:47,750 --> 00:14:45,519

blogs and such who were

419

00:14:49,350 --> 00:14:47,760

complaining you know oh you know my band

420

00:14:50,710 --> 00:14:49,360

doesn't seem to be working anymore so

421

00:14:52,470 --> 00:14:50,720

i'm not you know

422

00:14:54,870 --> 00:14:52,480

and i missed out on the opportunity to

423

00:14:57,670 --> 00:14:54,880

invent the power balance band recharging

424

00:15:02,150 --> 00:15:00,150

you could have done it it might

425

00:15:04,949 --> 00:15:02,160

it might interest you to know

426

00:15:08,310 --> 00:15:04,959

that uh around the two

427

00:15:10,829 --> 00:15:08,320

2009 2010 uh those bands were selling

428

00:15:15,110 --> 00:15:10,839

here in australia for 60

429

00:15:16,389 --> 00:15:15,120

each and they sold they sold quite a lot

430

00:15:19,670 --> 00:15:16,399

of them

431

00:15:21,110 --> 00:15:19,680

and so in my i think i'm not sure if in

432

00:15:23,030 --> 00:15:21,120

the web video i think maybe the web

433

00:15:24,550 --> 00:15:23,040

version of my video i don't include i it

434

00:15:26,470 --> 00:15:24,560

gives me a chance to talk about pyramid

435

00:15:28,069 --> 00:15:26,480

schemes as well all right because there

436

00:15:29,350 --> 00:15:28,079

were some that were sold kind of in a

437

00:15:31,030 --> 00:15:29,360

pyramid you know

438

00:15:32,069 --> 00:15:31,040

it's really tough to talk somebody out

439

00:15:33,430 --> 00:15:32,079  
of 60

440

00:15:35,189 --> 00:15:33,440  
for a piece of plastic around their

441

00:15:37,189 --> 00:15:35,199  
wrist yeah it's a lot easier to find

442

00:15:38,949 --> 00:15:37,199  
your friends and family and convince

443

00:15:41,030 --> 00:15:38,959  
them that this is a worthwhile product

444

00:15:42,949 --> 00:15:41,040  
and get and get them to buy their stash

445

00:15:45,670 --> 00:15:42,959  
of inventory and then of course that

446

00:15:47,269 --> 00:15:45,680  
percolates up to you um you know so it's

447

00:15:49,590 --> 00:15:47,279  
a good way of introducing you know

448

00:15:51,509 --> 00:15:49,600  
multi-level marketing schemes as well uh

449

00:15:53,910 --> 00:15:51,519  
to have my students you know college-age

450

00:15:56,470 --> 00:15:53,920  
students are all too often roped into

451  
00:15:58,389 --> 00:15:56,480  
mlms of any number of varieties so it's

452  
00:16:00,870 --> 00:15:58,399  
a good introduction to it yeah it's it's

453  
00:16:03,110 --> 00:16:00,880  
a classic of skepticism too is is our

454  
00:16:05,269 --> 00:16:03,120  
examination of all these multi-level

455  
00:16:06,389 --> 00:16:05,279  
marketing um

456  
00:16:09,590 --> 00:16:06,399  
schemes

457  
00:16:11,749 --> 00:16:09,600  
over the years now i noticed too that

458  
00:16:13,590 --> 00:16:11,759  
you know this is this is ancient history

459  
00:16:15,189 --> 00:16:13,600  
in a way i mean this is all a decade ago

460  
00:16:17,670 --> 00:16:15,199  
that i did these tests and the power

461  
00:16:19,030 --> 00:16:17,680  
balance was was very popular

462  
00:16:21,110 --> 00:16:19,040  
but uh

463  
00:16:22,710 --> 00:16:21,120

perusing tick tock not so long ago i

464

00:16:25,110 --> 00:16:22,720

came across a woman

465

00:16:27,509 --> 00:16:25,120

selling a product which was um

466

00:16:30,150 --> 00:16:27,519

insoles for your shoes and the way she

467

00:16:31,269 --> 00:16:30,160

demonstrated it on her tik tok was the

468

00:16:33,030 --> 00:16:31,279

same

469

00:16:35,430 --> 00:16:33,040

sort of uh

470

00:16:37,350 --> 00:16:35,440

idea of these power balance in other

471

00:16:39,629 --> 00:16:37,360

words she had her

472

00:16:41,430 --> 00:16:39,639

her subject stand there and

473

00:16:43,350 --> 00:16:41,440

interestingly enough she did it

474

00:16:45,590 --> 00:16:43,360

backwards in other words she had the

475

00:16:47,670 --> 00:16:45,600

product first and she said

476

00:16:49,749 --> 00:16:47,680

stand on the product and look how strong

477

00:16:51,350 --> 00:16:49,759

you are now step off the product oh off

478

00:16:52,870 --> 00:16:51,360

the balance you go and i sent it to you

479

00:16:54,230 --> 00:16:52,880

and you could see as i could see that

480

00:16:55,350 --> 00:16:54,240

she's just applying her force

481

00:16:57,030 --> 00:16:55,360

differently

482

00:16:58,949 --> 00:16:57,040

exactly right yeah once once you know

483

00:17:01,110 --> 00:16:58,959

what to look for you know and that but

484

00:17:01,910 --> 00:17:01,120

it's it's so it's so subtle because even

485

00:17:04,230 --> 00:17:01,920

you know

486

00:17:06,470 --> 00:17:04,240

the guys that i videoed they would have

487

00:17:08,069 --> 00:17:06,480

sworn to sworn to me you know that they

488

00:17:09,590 --> 00:17:08,079

were doing it exactly the same way every

489

00:17:13,029 --> 00:17:09,600

time yeah it wasn't until they saw the

490

00:17:13,909 --> 00:17:13,039

video that they're like oh yeah

491

00:17:15,990 --> 00:17:13,919

it's it's

492

00:17:17,350 --> 00:17:16,000

actually i i would love to track those

493

00:17:19,909 --> 00:17:17,360

guys down

494

00:17:21,750 --> 00:17:19,919

and and find out you know a decade on

495

00:17:23,270 --> 00:17:21,760

you know whether whether this was an

496

00:17:24,949 --> 00:17:23,280

impressive you know whether this left

497

00:17:26,630 --> 00:17:24,959

any memory in their minds you know as

498

00:17:28,549 --> 00:17:26,640

you know they were 18 year old 19 year

499

00:17:30,710 --> 00:17:28,559

old but whether or not

500

00:17:32,310 --> 00:17:30,720

such an exploration had any impact in

501  
00:17:34,789 --> 00:17:32,320  
their critical thinking skills i've

502  
00:17:37,029 --> 00:17:34,799  
become much more explicit in the in the

503  
00:17:39,190 --> 00:17:37,039  
in the subsequent decade you know this

504  
00:17:41,510 --> 00:17:39,200  
this was kind of the start it was indeed

505  
00:17:43,350 --> 00:17:41,520  
the first of my series but you know just

506  
00:17:44,710 --> 00:17:43,360  
when things have kind of struck me that

507  
00:17:47,110 --> 00:17:44,720  
i think this would be an interesting

508  
00:17:48,950 --> 00:17:47,120  
exploration and i would like to to talk

509  
00:17:50,549 --> 00:17:48,960  
about confirmation bias with my students

510  
00:17:52,630 --> 00:17:50,559  
or something of the sort i've created

511  
00:17:54,549 --> 00:17:52,640  
these little videos uh you know which i

512  
00:17:56,150 --> 00:17:54,559  
deploy in class it's not it's not a

513  
00:17:58,390 --> 00:17:56,160

critical thinking class it's either a

514

00:18:00,470 --> 00:17:58,400

descriptive astronomy class or it's a

515

00:18:01,830 --> 00:18:00,480

physical science class but

516

00:18:03,270 --> 00:18:01,840

it's a way of

517

00:18:04,630 --> 00:18:03,280

bringing

518

00:18:07,750 --> 00:18:04,640

skepticism

519

00:18:08,710 --> 00:18:07,760

to my non-science majors and essentially

520

00:18:11,990 --> 00:18:08,720

you know teaching them about the

521

00:18:13,590 --> 00:18:12,000

scientific method but without using that

522

00:18:14,950 --> 00:18:13,600

those words because

523

00:18:17,590 --> 00:18:14,960

i think that especially these

524

00:18:18,870 --> 00:18:17,600

non-science majors they think that oh if

525

00:18:21,270 --> 00:18:18,880

it's a scientific they've heard the

526

00:18:22,710 --> 00:18:21,280

scientific method before somewhere in

527

00:18:24,870 --> 00:18:22,720

their educational background but they

528

00:18:26,630 --> 00:18:24,880

think oh you need to be wearing goggles

529

00:18:28,070 --> 00:18:26,640

and a white lab

530

00:18:30,070 --> 00:18:28,080

for this to be important you know i

531

00:18:30,789 --> 00:18:30,080

don't need to know this but i'm trying

532

00:18:32,070 --> 00:18:30,799

to

533

00:18:34,230 --> 00:18:32,080

really

534

00:18:37,350 --> 00:18:34,240

impress upon them that

535

00:18:39,350 --> 00:18:37,360

skepticism you know everyone should be

536

00:18:42,549 --> 00:18:39,360

applying skepticism in there we all do

537

00:18:44,789 --> 00:18:42,559

in our daily lives um and

538

00:18:46,630 --> 00:18:44,799

i i've become increasingly concerned as

539

00:18:47,909 --> 00:18:46,640

you probably have as well

540

00:18:50,870 --> 00:18:47,919

about

541

00:18:52,710 --> 00:18:50,880

this almost epidemic of certainty that

542

00:18:55,190 --> 00:18:52,720

we find in our world you know all too

543

00:18:56,710 --> 00:18:55,200

often people are way out over their skis

544

00:18:58,310 --> 00:18:56,720

do you have that expression no i don't

545

00:18:59,990 --> 00:18:58,320

know that one that's an interesting one

546

00:19:01,110 --> 00:19:00,000

way out actually it's a good center of

547

00:19:02,470 --> 00:19:01,120

gravity or

548

00:19:03,590 --> 00:19:02,480

when you're way out over your ski when

549

00:19:05,430 --> 00:19:03,600

you're when you've got your weight way

550

00:19:06,870 --> 00:19:05,440

over your ski tips right you're going to

551  
00:19:08,310 --> 00:19:06,880  
fall over

552  
00:19:10,230 --> 00:19:08,320  
and that's

553  
00:19:12,390 --> 00:19:10,240  
all too often i think a lot of folks are

554  
00:19:16,950 --> 00:19:12,400  
wet overly

555  
00:19:19,830 --> 00:19:16,960  
confident yes in ideas yes um and and

556  
00:19:22,789 --> 00:19:19,840  
don't have the skills to examine

557  
00:19:24,789 --> 00:19:22,799  
how those are founded um and so i it's

558  
00:19:27,430 --> 00:19:24,799  
become part of my my teaching mission i

559  
00:19:28,789 --> 00:19:27,440  
suppose it sounds like a very um a very

560  
00:19:30,470 --> 00:19:28,799  
human thing

561  
00:19:32,950 --> 00:19:30,480  
it does it sounds like a very human

562  
00:19:35,990 --> 00:19:32,960  
thing we all get like that i'm sure

563  
00:19:37,990 --> 00:19:36,000

i'm i'm sure we do and um

564

00:19:40,630 --> 00:19:38,000

and that's several of my videos are

565

00:19:41,830 --> 00:19:40,640

actually and i actually i've

566

00:19:43,830 --> 00:19:41,840

because i don't want to brow beat

567

00:19:46,230 --> 00:19:43,840

students and i don't want to

568

00:19:48,549 --> 00:19:46,240

appear to be picking on students so in

569

00:19:50,390 --> 00:19:48,559

many cases you know i'm the patsy you

570

00:19:51,190 --> 00:19:50,400

know i find things that i have taught

571

00:19:53,190 --> 00:19:51,200

wrong

572

00:19:54,070 --> 00:19:53,200

last week i found something i found a

573

00:19:56,470 --> 00:19:54,080

video

574

00:19:57,990 --> 00:19:56,480

veritasium is the is the

575

00:19:59,909 --> 00:19:58,000

channel yeah it's a great great series

576

00:20:01,990 --> 00:19:59,919

very very attaching enjoy it very much

577

00:20:04,149 --> 00:20:02,000

he's got it he's got a video about it's

578

00:20:05,270 --> 00:20:04,159

energy does not

579

00:20:07,110 --> 00:20:05,280

travel in

580

00:20:09,830 --> 00:20:07,120

something like that fascinating yeah

581

00:20:11,270 --> 00:20:09,840

it's exactly and and

582

00:20:12,549 --> 00:20:11,280

i watched that last week i've never seen

583

00:20:14,149 --> 00:20:12,559

it before so that last week and i've

584

00:20:15,909 --> 00:20:14,159

just been finished i was just finishing

585

00:20:17,750 --> 00:20:15,919

up teaching about electricity i realized

586

00:20:19,029 --> 00:20:17,760

ooh

587

00:20:21,350 --> 00:20:19,039

there's some sketchy things that i'm

588

00:20:23,750 --> 00:20:21,360

teaching you know i i need to re-examine

589

00:20:25,190 --> 00:20:23,760

and that's great and i i came into class

590

00:20:27,190 --> 00:20:25,200

on friday and i told my story i showed

591

00:20:29,190 --> 00:20:27,200

him the video yeah i said i'm so excited

592

00:20:30,549 --> 00:20:29,200

because

593

00:20:32,470 --> 00:20:30,559

once you discover that you're wrong

594

00:20:34,230 --> 00:20:32,480

you're not wrong anymore and that's

595

00:20:36,470 --> 00:20:34,240

that's a very empowering kind of a

596

00:20:38,390 --> 00:20:36,480

feeling um and i won't teach it the same

597

00:20:39,350 --> 00:20:38,400

way next semester

598

00:20:40,710 --> 00:20:39,360

those students will get a different

599

00:20:41,750 --> 00:20:40,720

product than what i what i put out this

600

00:20:43,270 --> 00:20:41,760

semester

601  
00:20:46,390 --> 00:20:43,280  
um and what i most love about the

602  
00:20:48,710 --> 00:20:46,400  
veritasium video is and near the end

603  
00:20:49,669 --> 00:20:48,720  
he's talking with some other experts and

604  
00:20:51,350 --> 00:20:49,679  
he says

605  
00:20:53,510 --> 00:20:51,360  
how soon will it be until i get called

606  
00:20:55,110 --> 00:20:53,520  
out on this yes and they're like oh

607  
00:20:57,590 --> 00:20:55,120  
you're going to get called out

608  
00:20:59,190 --> 00:20:57,600  
and that's science that's science that's

609  
00:21:01,029 --> 00:20:59,200  
right that is

610  
00:21:02,630 --> 00:21:01,039  
the other video i liked

611  
00:21:05,110 --> 00:21:02,640  
really enjoyed was the one where he

612  
00:21:08,310 --> 00:21:05,120  
sails faster than the wind

613  
00:21:09,990 --> 00:21:08,320

have you seen that one he's on he's on

614

00:21:12,710 --> 00:21:10,000

jibbing or whatever yeah yeah he's he's

615

00:21:15,270 --> 00:21:12,720

on a land say a a land vehicle with

616

00:21:16,630 --> 00:21:15,280

wheels and the vehicles is going faster

617

00:21:19,350 --> 00:21:16,640

than the wind is pushing or something

618

00:21:21,990 --> 00:21:19,360

it's just fascinating look folks i will

619

00:21:23,510 --> 00:21:22,000

link not only to the the video about the

620

00:21:25,270 --> 00:21:23,520

power balance which is very interesting

621

00:21:27,750 --> 00:21:25,280

and as i said i learned a lot about

622

00:21:29,990 --> 00:21:27,760

moment arm and talk and things like that

623

00:21:32,549 --> 00:21:30,000

but a whole series that bob has done on

624

00:21:33,909 --> 00:21:32,559

youtube and i would especially recommend

625

00:21:35,830 --> 00:21:33,919

all the teachers out there science

626

00:21:38,470 --> 00:21:35,840

teachers physics teachers have a look

627

00:21:40,070 --> 00:21:38,480

have a look i think you'll get a lot out

628

00:21:41,510 --> 00:21:40,080

of this well bob thank you very much for

629

00:21:43,110 --> 00:21:41,520

sparing some time for the skeptic zone

630

00:21:44,870 --> 00:21:43,120

and thank you for reaching out and

631

00:21:46,149 --> 00:21:44,880

sending me a note

632

00:21:47,190 --> 00:21:46,159

oh this has been this has been a dream

633

00:21:48,470 --> 00:21:47,200

come true i've

634

00:21:50,549 --> 00:21:48,480

i've wanted to get a chance to talk to

635

00:21:51,830 --> 00:21:50,559

you for a decade now i finally have well

636

00:21:54,230 --> 00:21:51,840

there you go

637

00:21:55,750 --> 00:21:54,240

all right bob swanson from the

638

00:21:57,990 --> 00:21:55,760

department of physics and astronomy

639

00:21:59,110 --> 00:21:58,000

mississippi state university thank you

640

00:22:02,100 --> 00:21:59,120

very much

641

00:22:13,680 --> 00:22:02,110

thank you richard

642

00:22:17,270 --> 00:22:15,190

[Music]

643

00:22:18,470 --> 00:22:17,280

hi i'm abhijeet from the rationable

644

00:22:21,029 --> 00:22:18,480

podcast

645

00:22:21,830 --> 00:22:21,039

we all have beliefs that we hold dear

646

00:22:23,590 --> 00:22:21,840

like

647

00:22:26,470 --> 00:22:23,600

evolution is true

648

00:22:29,270 --> 00:22:26,480

alternative medicine is quackery and the

649

00:22:32,549 --> 00:22:29,280

ketogenic diet is a fad and so on

650

00:22:34,870 --> 00:22:32,559

but what if we were wrong

651  
00:22:37,430 --> 00:22:34,880  
on the next skeptics in the pub i'll be

652  
00:22:39,590 --> 00:22:37,440  
talking about five instances where i

653  
00:22:42,230 --> 00:22:39,600  
tested my beliefs against the evidence

654  
00:22:44,310 --> 00:22:42,240  
and discovered that proving myself wrong

655  
00:22:46,950 --> 00:22:44,320  
was the right thing to do

656  
00:22:49,350 --> 00:22:46,960  
and why as skeptics this is something we

657  
00:22:50,870 --> 00:22:49,360  
all need to do more in our lives

658  
00:22:53,990 --> 00:22:50,880  
see you at skeptics in the pub on the

659  
00:23:00,940 --> 00:22:54,000  
14th of april at 7 pm sydney time and 2

660  
00:23:23,830 --> 00:23:21,669  
[Music]

661  
00:23:26,310 --> 00:23:23,840  
hello everyone it's adrian hill from

662  
00:23:28,390 --> 00:23:26,320  
canada here to read the highlights from

663  
00:23:30,230 --> 00:23:28,400

the australian skeptics newsletter

664

00:23:33,510 --> 00:23:30,240

[Music]

665

00:23:35,430 --> 00:23:33,520

this is newsletter number 145.

666

00:23:37,350 --> 00:23:35,440

you can subscribe to this newsletter and

667

00:23:39,270 --> 00:23:37,360

get it delivered to your inbox every

668

00:23:41,190 --> 00:23:39,280

other week complete with links to all

669

00:23:46,149 --> 00:23:41,200

these stories just visit

670

00:23:51,669 --> 00:23:48,149

but now let's get to the newsletter and

671

00:23:54,149 --> 00:23:51,679

see what tim endum has lined up for us

672

00:23:56,149 --> 00:23:54,159

hi all says tim

673

00:23:58,470 --> 00:23:56,159

must have been a quieter fortnight as

674

00:24:02,470 --> 00:23:58,480

there are fewer items though covid

675

00:24:04,950 --> 00:24:02,480

maintains its presence worst luck

676  
00:24:07,669 --> 00:24:04,960  
on the plus side the anti-vaxx movement

677  
00:24:10,230 --> 00:24:07,679  
is apparently having hard times

678  
00:24:12,630 --> 00:24:10,240  
and there's always the hybrid of psychic

679  
00:24:13,909 --> 00:24:12,640  
astrology and culinary arts to tickle

680  
00:24:15,110 --> 00:24:13,919  
your taste buds

681  
00:24:18,789 --> 00:24:15,120  
read on

682  
00:24:22,710 --> 00:24:21,269  
australia's anti-vaccine movement is

683  
00:24:23,909 --> 00:24:22,720  
collapsing

684  
00:24:25,590 --> 00:24:23,919  
crikey

685  
00:24:28,950 --> 00:24:25,600  
oh i'm so happy to get to say this

686  
00:24:31,830 --> 00:24:28,960  
non-canadian word a crikey article looks

687  
00:24:33,830 --> 00:24:31,840  
at australia's anti-vaccine activists

688  
00:24:35,990 --> 00:24:33,840

having seized on the covid outbreaks as

689

00:24:38,230 --> 00:24:36,000

a rallying point quote the once

690

00:24:40,310 --> 00:24:38,240

energetic and active movement is now in

691

00:24:41,430 --> 00:24:40,320

trouble as their cause is falling apart

692

00:24:43,909 --> 00:24:41,440

end quote

693

00:24:45,830 --> 00:24:43,919

key organizations are short of funds and

694

00:24:47,470 --> 00:24:45,840

taking desperate actions to build

695

00:24:50,470 --> 00:24:47,480

relevance

696

00:24:53,750 --> 00:24:50,480

[Music]

697

00:24:55,510 --> 00:24:53,760

man gets 87 covid jabs in anti-vaxx

698

00:24:57,510 --> 00:24:55,520

fraud scheme

699

00:24:59,510 --> 00:24:57,520

authorities in germany discovered a man

700

00:25:02,149 --> 00:24:59,520

had been visiting vaccine facilities

701  
00:25:05,350 --> 00:25:02,159  
three times a day as part of a suspected

702  
00:25:07,350 --> 00:25:05,360  
scheme to resell proof of vaccination to

703  
00:25:10,549 --> 00:25:07,360  
anti-vaxxers

704  
00:25:13,590 --> 00:25:10,559  
another indication of the uh high

705  
00:25:14,390 --> 00:25:13,600  
ethical standards and the low scientific

706  
00:25:15,720 --> 00:25:14,400  
literacy

707  
00:25:19,269 --> 00:25:15,730  
of that movement

708  
00:25:21,269 --> 00:25:19,279  
[Music]

709  
00:25:23,269 --> 00:25:21,279  
who is most likely to believe in the

710  
00:25:25,430 --> 00:25:23,279  
paranormal

711  
00:25:27,350 --> 00:25:25,440  
a long article from psychology today

712  
00:25:29,029 --> 00:25:27,360  
tackles the question of why women are

713  
00:25:31,269 --> 00:25:29,039

more likely than men to believe in

714

00:25:33,510 --> 00:25:31,279

supernatural phenomena

715

00:25:35,909 --> 00:25:33,520

is it that women are more empathetic

716

00:25:38,230 --> 00:25:35,919

than men a trait that lends itself to

717

00:25:40,160 --> 00:25:38,240

belief or at least the acceptance of the

718

00:25:42,470 --> 00:25:40,170

possibility of the paranormal

719

00:25:44,390 --> 00:25:42,480

[Music]

720

00:25:47,430 --> 00:25:44,400

how wellness influencers became

721

00:25:49,510 --> 00:25:47,440

cheerleaders for putin's war

722

00:25:52,390 --> 00:25:49,520

another long article this one from

723

00:25:55,510 --> 00:25:52,400

mother jones that pulls together online

724

00:25:58,630 --> 00:25:55,520

influencers promoting political views q

725

00:26:01,190 --> 00:25:58,640

anon supporters of putin quote he is

726

00:26:04,470 --> 00:26:01,200

standing in the way of the global reset

727

00:26:07,190 --> 00:26:04,480

end quote and how unvaccinated people

728

00:26:11,510 --> 00:26:07,200

are far less likely to want to support

729

00:26:16,149 --> 00:26:11,520

the ukraine in its battle with russia

730

00:26:18,310 --> 00:26:16,159

pseudoscience of excited delirium

731

00:26:21,269 --> 00:26:18,320

never heard of that before

732

00:26:24,630 --> 00:26:21,279

a new york-based advocacy organization

733

00:26:26,549 --> 00:26:24,640

position for human rights or phr has

734

00:26:29,029 --> 00:26:26,559

released a report on the lack of

735

00:26:32,070 --> 00:26:29,039

scientific grounding for excited

736

00:26:33,990 --> 00:26:32,080

delirium which has been repeatedly cited

737

00:26:35,350 --> 00:26:34,000

as a cause of death in fatal police

738

00:26:37,029 --> 00:26:35,360

encounters

739

00:26:39,190 --> 00:26:37,039

the very long report concludes that the

740

00:26:41,510 --> 00:26:39,200

term cannot be disentangled from its

741

00:26:45,830 --> 00:26:41,520

racist and unscientific origins

742

00:26:50,149 --> 00:26:45,840

[Music]

743

00:26:52,470 --> 00:26:50,159

gimbal ufo a new analysis

744

00:26:54,710 --> 00:26:52,480

ufo researcher mick west has continued

745

00:26:56,950 --> 00:26:54,720

his investigations into perhaps the most

746

00:27:00,310 --> 00:26:56,960

popular and most cited video in support

747

00:27:02,070 --> 00:27:00,320

of alien craft the gimbal ufo

748

00:27:04,470 --> 00:27:02,080

while the exact aircraft in question

749

00:27:06,789 --> 00:27:04,480

cannot be identified there's simply no

750

00:27:09,269 --> 00:27:06,799

good reason to suspect it is of alien

751  
00:27:11,430 --> 00:27:09,279  
origin it then makes you wonder why tv

752  
00:27:13,510 --> 00:27:11,440  
specials keep trotting it out as if it

753  
00:27:20,630 --> 00:27:13,520  
were still somehow evidence for alien

754  
00:27:26,149 --> 00:27:23,830  
the march 2022 issue of the skeptic is

755  
00:27:28,470 --> 00:27:26,159  
out and it features a look at the ticks

756  
00:27:30,630 --> 00:27:28,480  
and tactics of high-level athletes to

757  
00:27:32,549 --> 00:27:30,640  
improve their performance a combination

758  
00:27:35,190 --> 00:27:32,559  
of superstition and pseudoscience that

759  
00:27:38,549 --> 00:27:35,200  
is nonetheless very influential on fans

760  
00:27:43,909 --> 00:27:41,029  
the issue also features articles on what

761  
00:27:46,549 --> 00:27:43,919  
exactly is agenda 21 what

762  
00:27:48,710 --> 00:27:46,559  
do your own research entails how a

763  
00:27:50,710 --> 00:27:48,720

well-known critic of parapsychology had

764

00:27:54,230 --> 00:27:50,720

a change of heart

765

00:27:56,230 --> 00:27:54,240

sort of and much more

766

00:27:58,389 --> 00:27:56,240

you can read that ticks and tactics

767

00:27:59,669 --> 00:27:58,399

piece as a sample article from the march

768

00:28:01,750 --> 00:27:59,679

issue

769

00:28:03,470 --> 00:28:01,760

and if you haven't subscribed yet now is

770

00:28:07,029 --> 00:28:03,480

the time to do so

771

00:28:09,830 --> 00:28:07,039

[Music]

772

00:28:13,830 --> 00:28:09,840

items of interest

773

00:28:16,310 --> 00:28:13,840

psychics cooking by the stars

774

00:28:18,630 --> 00:28:16,320

peter marks a quote world-renowned

775

00:28:20,549 --> 00:28:18,640

psychic medium astrologer intuitive

776

00:28:22,789 --> 00:28:20,559

medium personality and accomplished

777

00:28:25,590 --> 00:28:22,799

author end quote whom we have never

778

00:28:28,070 --> 00:28:25,600

heard of has released the gourmet

779

00:28:30,230 --> 00:28:28,080

cookbook for astrology lovers

780

00:28:32,470 --> 00:28:30,240

recipes are tailored for each of the 12

781

00:28:35,750 --> 00:28:32,480

different astrological signs

782

00:28:38,149 --> 00:28:35,760

poor old africans go hungry apparently

783

00:28:39,990 --> 00:28:38,159

for example taureans are considered

784

00:28:42,389 --> 00:28:40,000

gourmet eaters because they have

785

00:28:44,310 --> 00:28:42,399

sensitive taste buds a libran loves

786

00:28:45,830 --> 00:28:44,320

sweets because of their rich sugary

787

00:28:48,410 --> 00:28:45,840

texture

788

00:28:49,830 --> 00:28:48,420

was that the food or the person

789

00:28:52,549 --> 00:28:49,840

[Music]

790

00:28:54,549 --> 00:28:52,559

a sagittarius will try exotic dishes

791

00:28:57,110 --> 00:28:54,559

because of their daring and adventurous

792

00:28:58,389 --> 00:28:57,120

nature and if you really want an amazing

793

00:29:00,389 --> 00:28:58,399

indication of the

794

00:29:03,750 --> 00:29:00,399

world renowned psychic mediums

795

00:29:05,750 --> 00:29:03,760

intelligence and insight quote did you

796

00:29:07,990 --> 00:29:05,760

know that some of the world's best known

797

00:29:10,310 --> 00:29:08,000

chefs are born under the sign of cancer

798

00:29:12,630 --> 00:29:10,320

end quote

799

00:29:17,190 --> 00:29:12,640

and i'm betting that some of the worst

800

00:29:24,149 --> 00:29:20,470

silliest story of the week

801  
00:29:26,789 --> 00:29:24,159  
16th century conquistador encountered by

802  
00:29:31,510 --> 00:29:26,799  
pennsylvania deer hunter

803  
00:29:33,590 --> 00:29:31,520  
i think maybe someone got seriously lost

804  
00:29:35,990 --> 00:29:33,600  
that's all for now until next time this

805  
00:29:37,210 --> 00:29:36,000  
is adrian hill from sunny canada signing

806  
00:30:00,810 --> 00:29:37,220  
off

807  
00:30:00,820 --> 00:30:06,710  
[Music]

808  
00:30:06,720 --> 00:30:11,940  
in argentina

809  
00:30:11,950 --> 00:30:31,350  
[Music]

810  
00:30:31,360 --> 00:30:36,240  
ciao

811  
00:30:36,250 --> 00:30:46,950  
[Music]

812  
00:30:50,390 --> 00:30:48,230  
and now

813  
00:30:53,110 --> 00:30:50,400

a reading from the book of tim

814

00:30:54,220 --> 00:30:53,120

[Music]

815

00:31:02,470 --> 00:30:54,230

with tim mendom

816

00:31:04,470 --> 00:31:02,480

[Music]

817

00:31:06,470 --> 00:31:04,480

hi my name is tim mendel i'm the editor

818

00:31:09,110 --> 00:31:06,480

of australian skeptics magazine the

819

00:31:10,630 --> 00:31:09,120

skeptic and executive officer

820

00:31:11,669 --> 00:31:10,640

and today i'll be reading an article

821

00:31:13,269 --> 00:31:11,679

from the

822

00:31:17,430 --> 00:31:13,279

skeptic magazine

823

00:31:18,789 --> 00:31:17,440

from december 2013 which is volume 33

824

00:31:20,310 --> 00:31:18,799

number four

825

00:31:21,909 --> 00:31:20,320

this is an article written by tim

826

00:31:23,830 --> 00:31:21,919

harding who's a regular correspondent

827

00:31:25,350 --> 00:31:23,840

with a magazine and he's looking between

828

00:31:27,990 --> 00:31:25,360

the split between

829

00:31:29,909 --> 00:31:28,000

ancient astronomy and astrology and

830

00:31:32,630 --> 00:31:29,919

that's how our view of the universe

831

00:31:36,430 --> 00:31:32,640

evolved and he called this an eye to the

832

00:31:40,149 --> 00:31:38,630

[Music]

833

00:31:42,070 --> 00:31:40,159

today there are distinct boundaries

834

00:31:45,350 --> 00:31:42,080

between the modern science of astronomy

835

00:31:46,789 --> 00:31:45,360

and the pseudoscience known as astrology

836

00:31:49,110 --> 00:31:46,799

but in ancient times these boundaries

837

00:31:50,789 --> 00:31:49,120

were not so clear both fields of study

838

00:31:53,190 --> 00:31:50,799

used a common set of astronomical

839

00:31:54,630 --> 00:31:53,200

observations but for different purposes

840

00:31:57,029 --> 00:31:54,640

the practical purposes of ancient

841

00:31:59,350 --> 00:31:57,039

astronomy were celestial navigation and

842

00:32:01,430 --> 00:31:59,360

the development of calendars of seasonal

843

00:32:03,750 --> 00:32:01,440

dates and events such as the flooding of

844

00:32:06,470 --> 00:32:03,760

rivers for the planting of crops in

845

00:32:09,110 --> 00:32:06,480

contrast the purpose of astrology was to

846

00:32:11,430 --> 00:32:09,120

interpret celestial phenomena as signs

847

00:32:12,630 --> 00:32:11,440

of divine communications

848

00:32:14,710 --> 00:32:12,640

long before the invention of the

849

00:32:17,110 --> 00:32:14,720

telescope ancient observations and

850

00:32:19,350 --> 00:32:17,120

predictions could only be of celestial

851

00:32:21,029 --> 00:32:19,360

objects visible to the naked eye

852

00:32:23,430 --> 00:32:21,039

this restricted astronomical and

853

00:32:26,149 --> 00:32:23,440

astrological studies to the stars the

854

00:32:28,630 --> 00:32:26,159

sun the moon and five planets mercury

855

00:32:30,870 --> 00:32:28,640

venus mars jupiter and saturn the earth

856

00:32:32,710 --> 00:32:30,880

was not counted as a planet until much

857

00:32:34,389 --> 00:32:32,720

later

858

00:32:36,470 --> 00:32:34,399

in some locations early cultures

859

00:32:37,909 --> 00:32:36,480

assemble some structures that are

860

00:32:40,070 --> 00:32:37,919

thought to have astronomical

861

00:32:41,509 --> 00:32:40,080

observations as one of their purposes

862

00:32:43,669 --> 00:32:41,519

the best known of these structures is of

863

00:32:46,389 --> 00:32:43,679

course stonehenge in wheelchair england

864

00:32:47,509 --> 00:32:46,399

which commenced construction around 3100

865

00:32:50,070 --> 00:32:47,519

bce

866

00:32:52,310 --> 00:32:50,080

and went through several building phases

867

00:32:54,230 --> 00:32:52,320

as there are no written records to go by

868

00:32:56,310 --> 00:32:54,240

there are several theories as to various

869

00:32:57,830 --> 00:32:56,320

religions mystical and other purposes of

870

00:32:59,990 --> 00:32:57,840

stonehenge

871

00:33:02,149 --> 00:33:00,000

one of these theories has been proposed

872

00:33:03,350 --> 00:33:02,159

by well-known victorian skeptic dr lynn

873

00:33:05,269 --> 00:33:03,360

kelly

874

00:33:08,070 --> 00:33:05,279

cambridge university press is publishing

875

00:33:09,430 --> 00:33:08,080

an academic book based on her phd thesis

876

00:33:10,389 --> 00:33:09,440  
about the use of structures like

877

00:33:13,590 --> 00:33:10,399  
stonehenge

878

00:33:16,789 --> 00:33:13,600  
as mnemonic aids to ensure that the oral

879

00:33:19,830 --> 00:33:16,799  
knowledge of the culture is retained and

880

00:33:21,430 --> 00:33:19,840  
passed on to succeeding generations

881

00:33:23,029 --> 00:33:21,440  
kelly is now writing another book on the

882

00:33:24,710 --> 00:33:23,039  
topic for the general public and for

883

00:33:26,230 --> 00:33:24,720  
your information since this article was

884

00:33:28,389 --> 00:33:26,240  
published those books are out and very

885

00:33:30,630 --> 00:33:28,399  
worthwhile reading

886

00:33:32,630 --> 00:33:30,640  
the layout of stonehenge also includes a

887

00:33:34,070 --> 00:33:32,640  
celestial observatory function which

888

00:33:37,110 --> 00:33:34,080

would have allowed the prediction of

889

00:33:38,789 --> 00:33:37,120

eclipses solstice equinox and other

890

00:33:41,430 --> 00:33:38,799

celestial events

891

00:33:43,470 --> 00:33:41,440

important to a contemporary religion

892

00:33:46,070 --> 00:33:43,480

one of the world's earliest known

893

00:33:49,350 --> 00:33:46,080

archaeo-astronomical devices is a stone

894

00:33:51,350 --> 00:33:49,360

circle at nabta playa in southern egypt

895

00:33:53,350 --> 00:33:51,360

on the tropic of capricorn

896

00:33:56,070 --> 00:33:53,360

the site is between six thousand and

897

00:33:58,630 --> 00:33:56,080

sixty five hundred years old or about a

898

00:34:00,630 --> 00:33:58,640

thousand years older than stonehenge

899

00:34:02,230 --> 00:34:00,640

two pairs of upright stones stand

900

00:34:04,789 --> 00:34:02,240

directly across the circle from each

901  
00:34:07,430 --> 00:34:04,799  
other defining a view that would have

902  
00:34:09,669 --> 00:34:07,440  
marked sunrise at the summer solstice

903  
00:34:12,230 --> 00:34:09,679  
thus providing the beginnings of a

904  
00:34:14,109 --> 00:34:12,240  
prehistoric calendar

905  
00:34:17,589 --> 00:34:14,119  
the ancient egyptian calendar year was

906  
00:34:20,550 --> 00:34:17,599  
365 days long divided into 12 months of

907  
00:34:21,829 --> 00:34:20,560  
30 days each plus five extra days at the

908  
00:34:23,589 --> 00:34:21,839  
end of the year

909  
00:34:25,430 --> 00:34:23,599  
this was one quarter of a day shorter

910  
00:34:27,669 --> 00:34:25,440  
than the solar year

911  
00:34:30,470 --> 00:34:27,679  
leading to the problems of a

912  
00:34:33,270 --> 00:34:30,480  
wandering year as it's called requiring

913  
00:34:35,430 --> 00:34:33,280

frequent astronomical correction

914

00:34:36,869 --> 00:34:35,440

observation of stars was important in

915

00:34:39,349 --> 00:34:36,879

predicting the annual flooding of the

916

00:34:42,149 --> 00:34:39,359

nile for the allocation of resources to

917

00:34:44,310 --> 00:34:42,159

the planting of irrigated crops

918

00:34:46,470 --> 00:34:44,320

early egyptian astronomy was intertwined

919

00:34:48,869 --> 00:34:46,480

with astrology the sun was believed to

920

00:34:51,030 --> 00:34:48,879

be a major god named ra representing

921

00:34:53,030 --> 00:34:51,040

light warmth and growth

922

00:34:55,109 --> 00:34:53,040

ray was thought to travel on two solar

923

00:34:56,310 --> 00:34:55,119

boats one on his journey through the sky

924

00:34:57,990 --> 00:34:56,320

during the day

925

00:35:00,550 --> 00:34:58,000

and the other in a river flowing

926

00:35:02,950 --> 00:35:00,560

underneath the flat earth from west to

927

00:35:04,150 --> 00:35:02,960

east at night so he went around in the

928

00:35:06,550 --> 00:35:04,160

circle

929

00:35:08,630 --> 00:35:06,560

most egyptologists believe that the

930

00:35:11,430 --> 00:35:08,640

great pyramid of giza was built as a

931

00:35:12,550 --> 00:35:11,440

tomb for fourth dynasty egyptian pharaoh

932

00:35:15,670 --> 00:35:12,560

khufu

933

00:35:17,990 --> 00:35:15,680

also called chiops or keeps in greek

934

00:35:21,430 --> 00:35:18,000

over a thousand to twenty year period in

935

00:35:23,510 --> 00:35:21,440

concluding around 2560 bce

936

00:35:25,109 --> 00:35:23,520

although other dates have been suggested

937

00:35:27,270 --> 00:35:25,119

one theory is that this pyramid was

938

00:35:30,630 --> 00:35:27,280

carefully aligned towards the northern

939

00:35:32,870 --> 00:35:30,640

pole star which at the time was thuben

940

00:35:34,230 --> 00:35:32,880

but is now polaris due to the precession

941

00:35:36,710 --> 00:35:34,240

of the earth's

942

00:35:39,270 --> 00:35:36,720

rotational axis

943

00:35:40,950 --> 00:35:39,280

the ancient region known as mesopotamia

944

00:35:43,829 --> 00:35:40,960

comprised the plains of the tigris and

945

00:35:46,470 --> 00:35:43,839

euphrates river in what is now iraq plus

946

00:35:48,150 --> 00:35:46,480

a bits of syria turkey and iran

947

00:35:52,150 --> 00:35:48,160

the lower part between the rivers was

948

00:35:53,910 --> 00:35:52,160

known as sumer with babylon uruk and ur

949

00:35:55,829 --> 00:35:53,920

as its major cities

950

00:35:57,510 --> 00:35:55,839

the significance of this region is that

951  
00:36:01,510 --> 00:35:57,520  
it was the cradle of astronomy and

952  
00:36:04,310 --> 00:36:01,520  
astrology as organized fields of study

953  
00:36:06,710 --> 00:36:04,320  
sumi was also the birthplace of writing

954  
00:36:10,150 --> 00:36:06,720  
in the form of cuneiform clay tablets

955  
00:36:12,230 --> 00:36:10,160  
dating from the mid 4th millennium bce

956  
00:36:13,829 --> 00:36:12,240  
these tablets provide us with the first

957  
00:36:15,589 --> 00:36:13,839  
written evidence of astronomy and

958  
00:36:18,390 --> 00:36:15,599  
astrology in the west

959  
00:36:19,750 --> 00:36:18,400  
albeit in a fairly fragmentary nature

960  
00:36:21,510 --> 00:36:19,760  
they're clay tablets so they don't

961  
00:36:22,870 --> 00:36:21,520  
always survive well

962  
00:36:25,990 --> 00:36:22,880  
from these tablets we know that the

963  
00:36:28,870 --> 00:36:26,000

babylonians developed with a sexagesimal

964

00:36:31,430 --> 00:36:28,880

which is base 60 numerical system

965

00:36:34,390 --> 00:36:31,440

resulting in a current 60 minute hour 24

966

00:36:35,910 --> 00:36:34,400

hour day and 360 degree circle

967

00:36:38,150 --> 00:36:35,920

the babylonians were the first to

968

00:36:40,710 --> 00:36:38,160

recognize that astronomical phenomena

969

00:36:41,990 --> 00:36:40,720

are periodic and to apply mathematics to

970

00:36:43,750 --> 00:36:42,000

their predictions

971

00:36:46,150 --> 00:36:43,760

they develop the idea of a seven-day

972

00:36:48,150 --> 00:36:46,160

week in a 12-month calendar based on

973

00:36:50,069 --> 00:36:48,160

cycles of the moon together with the

974

00:36:52,230 --> 00:36:50,079

seasons of summer and winter

975

00:36:55,109 --> 00:36:52,240

the babylonians also measured variations

976

00:36:57,589 --> 00:36:55,119

in the length of the day every year

977

00:37:00,150 --> 00:36:57,599

at around 1800 bc the first

978

00:37:02,150 --> 00:37:00,160

star catalogues were compiled the

979

00:37:04,710 --> 00:37:02,160

babylonian astronomers noticed that a

980

00:37:06,550 --> 00:37:04,720

few stars later called planets

981

00:37:08,550 --> 00:37:06,560

wandered in relation to other fixed

982

00:37:09,829 --> 00:37:08,560

stars and even retrograded in their

983

00:37:11,910 --> 00:37:09,839

motions

984

00:37:14,470 --> 00:37:11,920

these movements were confined to a

985

00:37:16,230 --> 00:37:14,480

narrow belt at an angle of about 23

986

00:37:18,950 --> 00:37:16,240

degrees to the equator

987

00:37:21,109 --> 00:37:18,960

this belt called the zodiac was divided

988

00:37:23,190 --> 00:37:21,119

into 12 sections and each section was

989

00:37:25,109 --> 00:37:23,200

named after a constellation of fixed

990

00:37:27,109 --> 00:37:25,119

stars in the neighborhood

991

00:37:30,950 --> 00:37:27,119

the zodiac has also become one of the

992

00:37:32,950 --> 00:37:30,960

important features of western astrology

993

00:37:34,790 --> 00:37:32,960

we won't mention here ophiuchus which is

994

00:37:37,750 --> 00:37:34,800

actually the 13th sign in the zodiac

995

00:37:39,510 --> 00:37:37,760

because that just stuffed everything up

996

00:37:41,109 --> 00:37:39,520

in this early period astronomy consisted

997

00:37:43,510 --> 00:37:41,119

of observations calculations and

998

00:37:45,030 --> 00:37:43,520

predictions of events such as solstices

999

00:37:46,950 --> 00:37:45,040

and eclipses

1000

00:37:49,589 --> 00:37:46,960

as such astronomy at this stage was like

1001  
00:37:52,150 --> 00:37:49,599  
a branch of applied mathematics plus a

1002  
00:37:54,310 --> 00:37:52,160  
database of observations

1003  
00:37:55,670 --> 00:37:54,320  
there were no cosmological theories to

1004  
00:37:57,670 --> 00:37:55,680  
tie all the observations and

1005  
00:37:59,589 --> 00:37:57,680  
calculations together

1006  
00:38:02,390 --> 00:37:59,599  
and try to rationally explain them the

1007  
00:38:05,270 --> 00:38:02,400  
explanation vacuum was instead filled by

1008  
00:38:07,510 --> 00:38:05,280  
astrology which claimed to interpret

1009  
00:38:09,589 --> 00:38:07,520  
celestial events as religious or

1010  
00:38:12,310 --> 00:38:09,599  
mystical omens

1011  
00:38:14,470 --> 00:38:12,320  
the anuma anu enlil

1012  
00:38:18,230 --> 00:38:14,480  
in the days of the gods anu and ill with

1013  
00:38:19,670 --> 00:38:18,240

1600 bce is a major series of 68 or 70

1014

00:38:21,030 --> 00:38:19,680

tablets dealing with babylonian

1015

00:38:22,630 --> 00:38:21,040

astrology

1016

00:38:25,910 --> 00:38:22,640

the number of tablets varies according

1017

00:38:28,390 --> 00:38:25,920

to textual interpretations it comprises

1018

00:38:30,470 --> 00:38:28,400

a substantial collection of omens

1019

00:38:32,390 --> 00:38:30,480

estimated to number between sixty five

1020

00:38:34,630 --> 00:38:32,400

hundred and seven thousand which

1021

00:38:36,630 --> 00:38:34,640

interpret a wide variety of celestial

1022

00:38:40,230 --> 00:38:36,640

and atmospheric phenomena

1023

00:38:43,270 --> 00:38:40,240

in terms relevant to the king and state

1024

00:38:44,710 --> 00:38:43,280

known as mundane astrology meaning the

1025

00:38:46,870 --> 00:38:44,720

day daily

1026

00:38:49,030 --> 00:38:46,880

for example a typical astrological

1027

00:38:51,109 --> 00:38:49,040

report to the king reads if the moon

1028

00:38:53,829 --> 00:38:51,119

becomes visible on the first day

1029

00:38:55,829 --> 00:38:53,839

reliable speech the land will be happy

1030

00:38:58,390 --> 00:38:55,839

if the day reaches its normal length a

1031

00:39:00,550 --> 00:38:58,400

rain of long days if the moon as its

1032

00:39:02,550 --> 00:39:00,560

appearance worth a crown the king will

1033

00:39:03,990 --> 00:39:02,560

reach the highest rank

1034

00:39:05,510 --> 00:39:04,000

movements of the sun moon and five

1035

00:39:07,829 --> 00:39:05,520

planets were regarded as representing

1036

00:39:10,230 --> 00:39:07,839

the activity of the gods in question

1037

00:39:12,710 --> 00:39:10,240

evil celestial omens attached to any

1038

00:39:15,109 --> 00:39:12,720

particular planet were therefore seen as

1039

00:39:17,190 --> 00:39:15,119

indications of dissatisfaction or

1040

00:39:18,710 --> 00:39:17,200

disturbance of the god that planet

1041

00:39:20,310 --> 00:39:18,720

represented

1042

00:39:22,950 --> 00:39:20,320

during the eighth and seventh centuries

1043

00:39:25,430 --> 00:39:22,960

bce babylonian astronomers developed a

1044

00:39:27,349 --> 00:39:25,440

new theoretical approach to astronomy

1045

00:39:30,230 --> 00:39:27,359

they began to develop an internal logic

1046

00:39:32,950 --> 00:39:30,240

within their observational data systems

1047

00:39:34,710 --> 00:39:32,960

to improve their predictive power

1048

00:39:36,630 --> 00:39:34,720

this was an important contribution

1049

00:39:39,589 --> 00:39:36,640

towards the development of astronomy

1050

00:39:41,349 --> 00:39:39,599

from a database to a science

1051  
00:39:43,990 --> 00:39:41,359  
some scholars have thus referred to this

1052  
00:39:45,990 --> 00:39:44,000  
new approach as the first scientific

1053  
00:39:47,670 --> 00:39:46,000  
revolution

1054  
00:39:49,589 --> 00:39:47,680  
the new scientific approach to astronomy

1055  
00:39:51,109 --> 00:39:49,599  
was adopted and further developed in

1056  
00:39:53,190 --> 00:39:51,119  
greek astronomy

1057  
00:39:55,270 --> 00:39:53,200  
this process was considerably helped by

1058  
00:39:58,550 --> 00:39:55,280  
the conquest of babylon by alexander the

1059  
00:39:59,910 --> 00:39:58,560  
great in 331 bce

1060  
00:40:03,190 --> 00:39:59,920  
according to the late classical

1061  
00:40:05,510 --> 00:40:03,200  
philosopher simplicius of cilicia

1062  
00:40:08,150 --> 00:40:05,520  
492 560

1063  
00:40:10,150 --> 00:40:08,160

ce alexander ordered the translation of

1064

00:40:12,309 --> 00:40:10,160

the babylonian historical astronomical

1065

00:40:15,829 --> 00:40:12,319

records under supervision of his

1066

00:40:18,150 --> 00:40:15,839

chronicle calisthenics of olympus

1067

00:40:20,470 --> 00:40:18,160

who sent them to his uncle aristotle in

1068

00:40:22,870 --> 00:40:20,480

athens aristotle was also the teacher of

1069

00:40:24,470 --> 00:40:22,880

alexander until the age of 16. it's a

1070

00:40:26,550 --> 00:40:24,480

small world

1071

00:40:28,870 --> 00:40:26,560

the name planet comes from the greek

1072

00:40:31,190 --> 00:40:28,880

term asta planetes

1073

00:40:32,950 --> 00:40:31,200

meaning wandering star

1074

00:40:34,710 --> 00:40:32,960

the names of individual planets within

1075

00:40:37,190 --> 00:40:34,720

our solar system were drawn from greek

1076  
00:40:38,710 --> 00:40:37,200  
mythology but were later romanized

1077  
00:40:40,630 --> 00:40:38,720  
outside greece

1078  
00:40:42,630 --> 00:40:40,640  
references to identifiable stars and

1079  
00:40:45,030 --> 00:40:42,640  
constellations appear in the writings of

1080  
00:40:47,910 --> 00:40:45,040  
homer and hessia in the 7th or 8th

1081  
00:40:49,510 --> 00:40:47,920  
centuries bce however the first greek

1082  
00:40:52,150 --> 00:40:49,520  
attempts to rationally explain the

1083  
00:40:55,990 --> 00:40:52,160  
structure and behaviour of the cosmos

1084  
00:40:58,470 --> 00:40:56,000  
date from the period 600 to 450 bce

1085  
00:40:59,670 --> 00:40:58,480  
the anomalies in the motions of the

1086  
00:41:01,430 --> 00:40:59,680  
planets

1087  
00:41:03,589 --> 00:41:01,440  
bothered the early greeks who were

1088  
00:41:06,309 --> 00:41:03,599

culturally inclined to try to find

1089

00:41:08,190 --> 00:41:06,319

rational physical explanations for them

1090

00:41:11,270 --> 00:41:08,200

pythagoras of samos

1091

00:41:13,430 --> 00:41:11,280

570-495 bce was an ionian greek

1092

00:41:15,349 --> 00:41:13,440

philosopher and mathematician who

1093

00:41:17,430 --> 00:41:15,359

founded a philosophical movement known

1094

00:41:20,150 --> 00:41:17,440

as the pythagoreans

1095

00:41:22,710 --> 00:41:20,160

astronomy was listed by the pythagoreans

1096

00:41:26,390 --> 00:41:22,720

among the four mathematical arts

1097

00:41:29,510 --> 00:41:26,400

along with arithmetic geometry and music

1098

00:41:31,510 --> 00:41:29,520

hill diades of pontus was a pythagorean

1099

00:41:33,190 --> 00:41:31,520

who lived in the 4th century bce and

1100

00:41:35,910 --> 00:41:33,200

studied under plato

1101

00:41:38,390 --> 00:41:35,920

heraclitus held that the earth rotated

1102

00:41:40,550 --> 00:41:38,400

on its own axis which accounted for the

1103

00:41:42,150 --> 00:41:40,560

apparent procession of the stars across

1104

00:41:43,750 --> 00:41:42,160

the night sky

1105

00:41:46,470 --> 00:41:43,760

but did not explain the retrograde

1106

00:41:49,270 --> 00:41:46,480

motion of the planets

1107

00:41:50,950 --> 00:41:49,280

by now these anomalous planetary motions

1108

00:41:53,510 --> 00:41:50,960

had become the central problem of

1109

00:41:57,109 --> 00:41:53,520

astronomy and cosmology

1110

00:42:00,150 --> 00:41:57,119

plato encouraged eudoxus of kenitis

1111

00:42:02,630 --> 00:42:00,160

for tender 347 bce to develop a

1112

00:42:04,790 --> 00:42:02,640

two-sphere model with the earth at the

1113

00:42:07,670 --> 00:42:04,800

center and the planets occupying a

1114

00:42:11,510 --> 00:42:07,680

separate sphere to the stars

1115

00:42:13,750 --> 00:42:11,520

aristarchus of samos 310-230 bc has been

1116

00:42:16,470 --> 00:42:13,760

called the greek copernicus

1117

00:42:17,910 --> 00:42:16,480

because he proposed a heliocentric model

1118

00:42:20,150 --> 00:42:17,920

of the cosmos

1119

00:42:21,109 --> 00:42:20,160

with the sun as the center instead of

1120

00:42:25,109 --> 00:42:21,119

the earth

1121

00:42:27,030 --> 00:42:25,119

about 1800 years before copernicus did

1122

00:42:29,829 --> 00:42:27,040

so which of course copernicus suffered a

1123

00:42:32,390 --> 00:42:29,839

bit at the hands of the of the church

1124

00:42:34,150 --> 00:42:32,400

aristarchus also calculated the sizes of

1125

00:42:37,670 --> 00:42:34,160

the sun and the moon as well as their

1126

00:42:39,990 --> 00:42:37,680

distances from the earth in earth radii

1127

00:42:41,589 --> 00:42:40,000

aristarchus working drawings are the

1128

00:42:44,309 --> 00:42:41,599

relative sizes of the sun earth and the

1129

00:42:46,630 --> 00:42:44,319

moon are illustrated in the this issue

1130

00:42:48,390 --> 00:42:46,640

of the skeptic magazine so if we go back

1131

00:42:50,710 --> 00:42:48,400

to issue

1132

00:42:52,470 --> 00:42:50,720

33 number four

1133

00:42:55,990 --> 00:42:52,480

page 31 you can actually see the

1134

00:42:59,430 --> 00:42:56,000

illustrations that um he developed

1135

00:43:02,870 --> 00:42:59,440

eratosthenes of siren 276 to 195 or

1136

00:43:05,109 --> 00:43:02,880

perhaps 194 bce mathematician geographer

1137

00:43:07,270 --> 00:43:05,119

poet astronomer music theorist and

1138

00:43:08,710 --> 00:43:07,280

inventor of the word geography

1139

00:43:10,829 --> 00:43:08,720

calculated the circumference of the

1140

00:43:14,470 --> 00:43:10,839

earth by using a measuring system using

1141

00:43:16,870 --> 00:43:14,480

studies or the length of stadiums during

1142

00:43:19,190 --> 00:43:16,880

that time period depending on which form

1143

00:43:23,270 --> 00:43:19,200

of the study he used his calculation was

1144

00:43:24,710 --> 00:43:23,280

between 1.6 and 16.4 percent off the

1145

00:43:27,109 --> 00:43:24,720

actual distance

1146

00:43:29,510 --> 00:43:27,119

unfortunately aristarchus was unable to

1147

00:43:31,670 --> 00:43:29,520

persuade his contemporary colleagues of

1148

00:43:34,309 --> 00:43:31,680

the merits of his theory which was

1149

00:43:36,870 --> 00:43:34,319

largely forgotten until rediscovered by

1150

00:43:38,150 --> 00:43:36,880

copernicus in the 16th century

1151

00:43:40,550 --> 00:43:38,160

ce

1152

00:43:43,190 --> 00:43:40,560

so lucius of seleucia

1153

00:43:45,510 --> 00:43:43,200

born about 190 bc was the only greek

1154

00:43:48,069 --> 00:43:45,520

babylonian philosopher to support a

1155

00:43:49,510 --> 00:43:48,079

heliocentric sun-centered model of

1156

00:43:51,589 --> 00:43:49,520

planetary motion

1157

00:43:53,190 --> 00:43:51,599

he also correctly theorized that tides

1158

00:43:55,670 --> 00:43:53,200

were caused by the moon

1159

00:43:57,670 --> 00:43:55,680

a theory which was overlooked by galileo

1160

00:43:59,349 --> 00:43:57,680

1700 years later so in other words the

1161

00:44:01,270 --> 00:43:59,359

greeks were actually developing a lot of

1162

00:44:04,470 --> 00:44:01,280

these theories that we now accept a long

1163

00:44:05,750 --> 00:44:04,480

time ago they were dropped and revived

1164

00:44:08,950 --> 00:44:05,760

later on

1165

00:44:10,470 --> 00:44:08,960

hipparchus of nicaea 190-120 bce was a

1166

00:44:12,950 --> 00:44:10,480

greek astronomer geographer and

1167

00:44:14,630 --> 00:44:12,960

mathematician of the hellenistic period

1168

00:44:15,910 --> 00:44:14,640

he is considered the founder of

1169

00:44:17,829 --> 00:44:15,920

trigonometry

1170

00:44:21,589 --> 00:44:17,839

but is most famous for his incidental

1171

00:44:24,150 --> 00:44:21,599

discovery of precession of the equinoxes

1172

00:44:26,630 --> 00:44:24,160

he compiled a star catalogue recording

1173

00:44:28,390 --> 00:44:26,640

the position and brightness of the stars

1174

00:44:30,950 --> 00:44:28,400

which was used by astronomers for

1175

00:44:33,190 --> 00:44:30,960

centuries afterwards

1176

00:44:35,750 --> 00:44:33,200

as a result of the non-acceptance of

1177

00:44:37,589 --> 00:44:35,760

aristarchus heliocentric model

1178

00:44:39,510 --> 00:44:37,599

subsequent greek astronomers persisted

1179

00:44:41,510 --> 00:44:39,520

with trying to reconcile the anomalous

1180

00:44:43,589 --> 00:44:41,520

movements of the planets with a

1181

00:44:44,870 --> 00:44:43,599

geocentric earth centered model of the

1182

00:44:46,309 --> 00:44:44,880

cosmos

1183

00:44:47,470 --> 00:44:46,319

apollonius of

1184

00:44:50,390 --> 00:44:47,480

perga

1185

00:44:51,750 --> 00:44:50,400

262-190 bce introduced two new

1186

00:44:55,910 --> 00:44:51,760

mechanisms

1187

00:44:57,109 --> 00:44:55,920

the eccentric deferent and the epicycle

1188

00:44:59,589 --> 00:44:57,119

now we get to one of the most important

1189

00:45:01,510 --> 00:44:59,599

names in ancient astronomy uh claudius

1190

00:45:04,230 --> 00:45:01,520

ptolemy of alexandria he was a

1191

00:45:06,630 --> 00:45:04,240

greco-roman mathematician also known as

1192

00:45:08,390 --> 00:45:06,640

an astronomer geographer and astrologer

1193

00:45:10,390 --> 00:45:08,400

ptolemy explained how to predict the

1194

00:45:11,910 --> 00:45:10,400

behaviour of the planets by introducing

1195

00:45:13,349 --> 00:45:11,920

the equant

1196

00:45:15,750 --> 00:45:13,359

the basic elements of ptolemaic

1197

00:45:18,390 --> 00:45:15,760

cosmology indicate a planet rotating on

1198

00:45:20,150 --> 00:45:18,400

an epicycle which is itself rotating

1199

00:45:22,309 --> 00:45:20,160

around a deferent

1200

00:45:23,990 --> 00:45:22,319

inside a crystalline sphere starts

1201

00:45:26,390 --> 00:45:24,000

getting complicated

1202

00:45:27,750 --> 00:45:26,400

the earth is slightly off of the center

1203

00:45:30,150 --> 00:45:27,760

of this system

1204

00:45:31,750 --> 00:45:30,160

opposite the earth is an equine point

1205

00:45:34,390 --> 00:45:31,760

which is what the planetary deferent

1206

00:45:35,910 --> 00:45:34,400

would actually rotate around

1207

00:45:37,990 --> 00:45:35,920

ultimately these attempts at

1208

00:45:40,230 --> 00:45:38,000

retrofitting cosmological theory to

1209

00:45:43,750 --> 00:45:40,240

seemingly endless observational

1210

00:45:45,510 --> 00:45:43,760

anomalies just became too much

1211

00:45:47,589 --> 00:45:45,520

dislike of the equinet on top of the

1212

00:45:49,750 --> 00:45:47,599

deferent in the epicycle was a major

1213

00:45:52,390 --> 00:45:49,760

motivation for copernicus

1214

00:45:54,710 --> 00:45:52,400

to construct his heliocentric system

1215

00:45:57,190 --> 00:45:54,720

after the scientific renaissance some

1216

00:45:59,750 --> 00:45:57,200

1500 years later

1217

00:46:01,670 --> 00:45:59,760

although astrology was not as popular in

1218

00:46:03,349 --> 00:46:01,680

ancient greece as it was in egypt and

1219

00:46:05,109 --> 00:46:03,359

mesopotamia

1220

00:46:07,990 --> 00:46:05,119

belief in astrology continued through

1221

00:46:10,069 --> 00:46:08,000

the roman period in the middle ages

1222

00:46:12,550 --> 00:46:10,079

through most of its history astrology

1223

00:46:15,190 --> 00:46:12,560

was considered a scholarly tradition it

1224

00:46:17,510 --> 00:46:15,200

was accepted in political and academic

1225

00:46:19,829 --> 00:46:17,520

contexts and was connected with other

1226

00:46:22,150 --> 00:46:19,839

studies such as astronomy alchemy

1227

00:46:24,390 --> 00:46:22,160

meteorology and medicine

1228

00:46:26,150 --> 00:46:24,400

at the end of the 17th century new

1229

00:46:28,630 --> 00:46:26,160

scientific concepts in astronomy and

1230

00:46:30,790 --> 00:46:28,640

physics such as heliocentrism and

1231

00:46:33,430 --> 00:46:30,800

newtonian mechanics

1232

00:46:35,750 --> 00:46:33,440

called astrology into question

1233

00:46:37,510 --> 00:46:35,760

astrology thus lost its academic and

1234

00:46:39,750 --> 00:46:37,520

theoretical standing

1235

00:46:43,990 --> 00:46:39,760

and common belief in astrology has since

1236

00:46:48,550 --> 00:46:46,309

and that's the eye in the sky

1237

00:46:52,790 --> 00:46:48,560

from the skeptic magazine

1238

00:46:54,950 --> 00:46:52,800

december 2013 volume 33 number four and

1239

00:46:57,910 --> 00:46:54,960

you can read this article in full as

1240

00:46:59,829 --> 00:46:57,920

well as the entire issue the magazine

1241

00:47:02,150 --> 00:46:59,839

and most other issues of the skeptic

1242

00:47:05,750 --> 00:47:02,160

magazine for free to download from our

1243

00:47:08,350 --> 00:47:05,760

website skeptics.com

1244

00:47:12,790 --> 00:47:08,360

enjoy your reading

1245

00:47:12,800 --> 00:47:18,710

[Music]

1246

00:47:25,109 --> 00:47:21,510

hi there i'm abhijeet and i host the

1247

00:47:27,030 --> 00:47:25,119

rationable podcast on be rational.com

1248

00:47:29,030 --> 00:47:27,040

every couple of weeks i science the hell

1249

00:47:32,069 --> 00:47:29,040

out of alternative medicines health and

1250

00:47:35,510 --> 00:47:32,079

nutrition fads social media forwards

1251  
00:47:37,829 --> 00:47:35,520  
science news and lots more of course you

1252  
00:47:39,990 --> 00:47:37,839  
can find all of my articles podcast

1253  
00:47:43,990 --> 00:47:40,000  
episodes and lots more on

1254  
00:47:53,730 --> 00:47:46,150  
see you there and until then

1255  
00:47:59,380 --> 00:47:56,470  
[Music]

1256  
00:48:06,309 --> 00:47:59,390  
so

1257  
00:48:10,470 --> 00:48:08,150  
now it's time to dive back into the

1258  
00:48:13,589 --> 00:48:10,480  
digital trove the treasure trove of

1259  
00:48:15,030 --> 00:48:13,599  
trove at [trove.nla.gov.edu](http://trove.nla.gov.edu)

1260  
00:48:16,549 --> 00:48:15,040  
of course your online resource from the

1261  
00:48:18,549 --> 00:48:16,559  
australian government and the national

1262  
00:48:21,030 --> 00:48:18,559  
library of australia digitised

1263  
00:48:22,870 --> 00:48:21,040

newspapers gazettes periodicals and

1264

00:48:27,610 --> 00:48:22,880

magazines

1265

00:48:31,270 --> 00:48:29,109

[Music]

1266

00:48:35,109 --> 00:48:31,280

and this week we're going to revisit a

1267

00:48:36,549 --> 00:48:35,119

classic of skepticism one of the uh

1268

00:48:38,950 --> 00:48:36,559

one of the big classics one of the

1269

00:48:41,109 --> 00:48:38,960

pillars of skit i mean i wonder what you

1270

00:48:43,030 --> 00:48:41,119

could list if you were to list

1271

00:48:44,950 --> 00:48:43,040

the classical

1272

00:48:46,549 --> 00:48:44,960

things that skeptics are skeptical of

1273

00:48:48,549 --> 00:48:46,559

astrology would be

1274

00:48:49,990 --> 00:48:48,559

in the top five i guess

1275

00:48:51,349 --> 00:48:50,000

from a historical point of view

1276  
00:48:53,270 --> 00:48:51,359  
astrology

1277  
00:48:56,790 --> 00:48:53,280  
psychic powers

1278  
00:48:58,630 --> 00:48:56,800  
alien spaceships visiting earth

1279  
00:49:00,250 --> 00:48:58,640  
ghosts

1280  
00:49:01,910 --> 00:49:00,260  
yeah astrology's really up there

1281  
00:49:03,910 --> 00:49:01,920  
[Music]

1282  
00:49:07,349 --> 00:49:03,920  
my way of thinking i don't think you

1283  
00:49:09,750 --> 00:49:07,359  
hear as much about it now as you used to

1284  
00:49:12,150 --> 00:49:09,760  
hard to say

1285  
00:49:15,270 --> 00:49:12,160  
but there are certainly many

1286  
00:49:17,670 --> 00:49:15,280  
many many articles about astrology in

1287  
00:49:19,829 --> 00:49:17,680  
the pages of australian newspapers and

1288  
00:49:22,150 --> 00:49:19,839

magazines and so on

1289

00:49:23,910 --> 00:49:22,160

now way back in 2020 i did a trove

1290

00:49:25,349 --> 00:49:23,920

segment on astrology

1291

00:49:27,990 --> 00:49:25,359

which looked more or less at the

1292

00:49:30,549 --> 00:49:28,000

astrology astrological predictions and

1293

00:49:32,870 --> 00:49:30,559

the second world war

1294

00:49:35,430 --> 00:49:32,880

but uh well

1295

00:49:37,349 --> 00:49:35,440

there's a uh an embarrassment of riches

1296

00:49:39,349 --> 00:49:37,359

when it comes to picking items about

1297

00:49:42,630 --> 00:49:39,359

astrology and we turn

1298

00:49:44,790 --> 00:49:42,640

we turn to the south coast times

1299

00:49:48,390 --> 00:49:44,800

and wollongong argus

1300

00:49:50,230 --> 00:49:48,400

dated the 27th of march

1301  
00:49:51,510 --> 00:49:50,240  
1950

1302  
00:49:53,430 --> 00:49:51,520  
astrology

1303  
00:49:55,190 --> 00:49:53,440  
a fake science

1304  
00:49:56,710 --> 00:49:55,200  
taurus the bull

1305  
00:49:59,680 --> 00:49:56,720  
is right

1306  
00:50:02,309 --> 00:49:59,690  
by phil quine

1307  
00:50:04,309 --> 00:50:02,319  
[Music]

1308  
00:50:06,790 --> 00:50:04,319  
men at some time

1309  
00:50:09,589 --> 00:50:06,800  
masters of their fate the fault dear

1310  
00:50:12,710 --> 00:50:09,599  
brutus is not in the stars

1311  
00:50:16,390 --> 00:50:12,720  
but in ourselves

1312  
00:50:19,109 --> 00:50:16,400  
so spake the shrewd but crafty cassius

1313  
00:50:20,390 --> 00:50:19,119

and he sure said something there brutus

1314

00:50:21,990 --> 00:50:20,400

had just been

1315

00:50:25,270 --> 00:50:22,000

ear bashing him

1316

00:50:28,470 --> 00:50:25,280

about what a big shot julius caesar was

1317

00:50:31,030 --> 00:50:28,480

and what small potatoes he and cassius

1318

00:50:33,270 --> 00:50:31,040

were in comparison and it was then that

1319

00:50:35,670 --> 00:50:33,280

the latter tightly reminded him that

1320

00:50:38,390 --> 00:50:35,680

they only had themselves to blame

1321

00:50:40,069 --> 00:50:38,400

350 years have elapsed since shakespeare

1322

00:50:43,270 --> 00:50:40,079

put those immortal words in the mouth of

1323

00:50:45,510 --> 00:50:43,280

cassius and in that time not one

1324

00:50:47,750 --> 00:50:45,520

recognized scientist anywhere in the

1325

00:50:50,630 --> 00:50:47,760

world has expressed the slightest belief

1326  
00:50:52,710 --> 00:50:50,640  
in any connection between the stars and

1327  
00:50:54,309 --> 00:50:52,720  
man's destiny

1328  
00:50:56,470 --> 00:50:54,319  
thousands of people are born every year

1329  
00:50:57,910 --> 00:50:56,480  
on the same day hundreds of them at the

1330  
00:51:00,150 --> 00:50:57,920  
same hour

1331  
00:51:02,710 --> 00:51:00,160  
and yet how many of these people have

1332  
00:51:04,230 --> 00:51:02,720  
the identical characters and

1333  
00:51:05,109 --> 00:51:04,240  
personalities

1334  
00:51:06,630 --> 00:51:05,119  
not

1335  
00:51:07,750 --> 00:51:06,640  
one of them

1336  
00:51:09,910 --> 00:51:07,760  
there are

1337  
00:51:11,910 --> 00:51:09,920  
not even any two people in the world

1338  
00:51:14,150 --> 00:51:11,920

with identical fingerprints

1339

00:51:16,710 --> 00:51:14,160

if there were the entire fingerprinting

1340

00:51:19,750 --> 00:51:16,720

system would automatically break down

1341

00:51:23,030 --> 00:51:19,760

and surely the mind and character of an

1342

00:51:25,109 --> 00:51:23,040

individual is more intricate and complex

1343

00:51:27,829 --> 00:51:25,119

than the patterns on the tips of his

1344

00:51:29,270 --> 00:51:27,839

fingers how could a planet moving in its

1345

00:51:31,589 --> 00:51:29,280

a custom orb

1346

00:51:33,430 --> 00:51:31,599

hundreds of millions of miles away from

1347

00:51:34,630 --> 00:51:33,440

earth have any

1348

00:51:37,109 --> 00:51:34,640

possible

1349

00:51:39,589 --> 00:51:37,119

bearing on the life of say

1350

00:51:41,670 --> 00:51:39,599

bill jones of sydney

1351

00:51:44,309 --> 00:51:41,680

planets after all are only comprised of

1352

00:51:47,270 --> 00:51:44,319

various gases and metals and if a mass

1353

00:51:49,589 --> 00:51:47,280

of metal or an accumulation of gas can

1354

00:51:52,069 --> 00:51:49,599

influence a human being's life

1355

00:51:54,950 --> 00:51:52,079

it would be more logical for bill to

1356

00:51:58,790 --> 00:51:54,960

consult the sydney harbour bridge or the

1357

00:52:00,230 --> 00:51:58,800

gas works before engaging in his daily

1358

00:52:02,309 --> 00:52:00,240

affairs

1359

00:52:04,710 --> 00:52:02,319

another screwy feature of the

1360

00:52:07,109 --> 00:52:04,720

pseudoscience of astrology is that it

1361

00:52:10,150 --> 00:52:07,119

places all its emphasis on the moment of

1362

00:52:12,470 --> 00:52:10,160

birth bill jones for example is born on

1363

00:52:15,589 --> 00:52:12,480

april 22nd under taurus

1364

00:52:18,309 --> 00:52:15,599

the bull surely an apt name for a sign

1365

00:52:21,030 --> 00:52:18,319

of the zodiac his cousin tom smith is

1366

00:52:23,349 --> 00:52:21,040

born on april 18th four days earlier

1367

00:52:25,829 --> 00:52:23,359

under aries the ram

1368

00:52:28,150 --> 00:52:25,839

tom's horoscope and therefore his life

1369

00:52:31,510 --> 00:52:28,160

character opportunities etc

1370

00:52:33,910 --> 00:52:31,520

will be entirely different to bills yet

1371

00:52:35,750 --> 00:52:33,920

the fact remains that both bill and tom

1372

00:52:38,710 --> 00:52:35,760

may have been

1373

00:52:41,349 --> 00:52:38,720

conceived on the same day

1374

00:52:43,349 --> 00:52:41,359

surely even if the stars did influence

1375

00:52:45,510 --> 00:52:43,359

our lives it would be more reasonable to

1376

00:52:47,829 --> 00:52:45,520

assume that such influence would

1377

00:52:50,309 --> 00:52:47,839

commence at the moment of conception

1378

00:52:53,670 --> 00:52:50,319

which is the true moment of birth

1379

00:52:56,230 --> 00:52:53,680

rather than at the time of delivery

1380

00:52:58,870 --> 00:52:56,240

apparently if a doctor hastens the birth

1381

00:53:03,589 --> 00:52:58,880

by 24 hours to assist the mother

1382

00:53:05,030 --> 00:53:03,599

he is there by changing the destiny of

1383

00:53:07,349 --> 00:53:05,040

the world

1384

00:53:09,270 --> 00:53:07,359

another thing that must disconcert

1385

00:53:12,069 --> 00:53:09,280

followers of this particular faith is

1386

00:53:14,790 --> 00:53:12,079

that even its most prominent messiahs

1387

00:53:16,950 --> 00:53:14,800

cannot agree on the correct dates on

1388

00:53:19,510 --> 00:53:16,960

which the zodiacal signs commence and

1389

00:53:21,430 --> 00:53:19,520

finish as i write i have before me two

1390

00:53:23,349 --> 00:53:21,440

astrology columns culled from the

1391

00:53:24,950 --> 00:53:23,359

current issues of two popular women's

1392

00:53:27,349 --> 00:53:24,960

magazines

1393

00:53:30,069 --> 00:53:27,359

one says that ares runs from march 21st

1394

00:53:33,190 --> 00:53:30,079

to april 19th and tourists from april

1395

00:53:36,069 --> 00:53:33,200

20th to may 20th the other gives aries

1396

00:53:40,069 --> 00:53:36,079

is march 21st to april 21st with

1397

00:53:43,390 --> 00:53:40,079

tourists from april 22nd to may 21st

1398

00:53:46,069 --> 00:53:43,400

and so it goes with the dates differing

1399

00:53:48,150 --> 00:53:46,079

correspondingly in all other signs of

1400

00:53:50,309 --> 00:53:48,160

the zodiac a

1401  
00:53:52,950 --> 00:53:50,319  
true believer whose birthday falls on

1402  
00:53:56,069 --> 00:53:52,960  
one of the borderline dates

1403  
00:53:59,589 --> 00:53:56,079  
may be pardoned a little natural

1404  
00:54:02,870 --> 00:53:59,599  
confusion especially as in one paper

1405  
00:54:03,750 --> 00:54:02,880  
taurus are going to have a successful

1406  
00:54:05,589 --> 00:54:03,760  
week

1407  
00:54:07,270 --> 00:54:05,599  
and in the other

1408  
00:54:08,630 --> 00:54:07,280  
they're doomed to meet with

1409  
00:54:11,349 --> 00:54:08,640  
disappointments

1410  
00:54:13,910 --> 00:54:11,359  
and difficulties people who believe in

1411  
00:54:16,790 --> 00:54:13,920  
astrology and i am not speaking of those

1412  
00:54:20,470 --> 00:54:16,800  
who read it lightly for its amusement

1413  
00:54:22,950 --> 00:54:20,480

value but of the credulous simpletons

1414

00:54:25,910 --> 00:54:22,960

who actually guide their lives by the

1415

00:54:27,109 --> 00:54:25,920

trash have the mentality of backwards

1416

00:54:29,910 --> 00:54:27,119

morons

1417

00:54:33,349 --> 00:54:29,920

that's a little bit harsh

1418

00:54:35,190 --> 00:54:33,359

it is a moot point whether they should

1419

00:54:37,990 --> 00:54:35,200

be protected from themselves by

1420

00:54:42,150 --> 00:54:38,000

legislation or whether charlatans should

1421

00:54:44,630 --> 00:54:42,160

be allowed to prey on them unhampered

1422

00:54:47,589 --> 00:54:44,640

but as one leading journalist said

1423

00:54:51,109 --> 00:54:47,599

when he asked if he really believed in

1424

00:54:53,829 --> 00:54:51,119

astrology i'll say i do i get 20 quid a

1425

00:54:56,069 --> 00:54:53,839

week for writing the muck

1426  
00:54:58,950 --> 00:54:56,079  
so yes that was written by phil quine

1427  
00:55:01,349 --> 00:54:58,960  
way back in 1950 and

1428  
00:55:03,030 --> 00:55:01,359  
a little bit a little bit uh a little

1429  
00:55:04,630 --> 00:55:03,040  
bit harsh i think

1430  
00:55:06,460 --> 00:55:04,640  
and now we turn to a newspaper or a

1431  
00:55:08,109 --> 00:55:06,470  
magazine at the time in

1432  
00:55:11,030 --> 00:55:08,119  
[Music]

1433  
00:55:11,990 --> 00:55:11,040  
1941 the 17th of may

1434  
00:55:16,069 --> 00:55:12,000  
the

1435  
00:55:18,710 --> 00:55:16,079  
journal is called smith's weekly

1436  
00:55:21,670 --> 00:55:18,720  
and apparently this ran from 1919 to

1437  
00:55:23,910 --> 00:55:21,680  
1950 here in sydney

1438  
00:55:25,190 --> 00:55:23,920

and it seems to take a similar hard line

1439

00:55:28,150 --> 00:55:25,200

as the last

1440

00:55:29,349 --> 00:55:28,160

item we read astrology is just all

1441

00:55:30,470 --> 00:55:29,359

taurus

1442

00:55:32,710 --> 00:55:30,480

it is

1443

00:55:34,950 --> 00:55:32,720

a sheer impossibility to read the

1444

00:55:37,109 --> 00:55:34,960

australian woman's weekly

1445

00:55:39,349 --> 00:55:37,119

and sydney sunday telegraph both of

1446

00:55:41,109 --> 00:55:39,359

which come from the same office and have

1447

00:55:43,510 --> 00:55:41,119

faith if any

1448

00:55:44,950 --> 00:55:43,520

in astrology and i don't see a byline so

1449

00:55:47,349 --> 00:55:44,960

this would be a staff writer or the

1450

00:55:49,349 --> 00:55:47,359

editor i imagine

1451  
00:55:51,750 --> 00:55:49,359  
both these papers waste valuable

1452  
00:55:54,950 --> 00:55:51,760  
newsprint on phony predictions

1453  
00:55:57,750 --> 00:55:54,960  
but gentle june marsden

1454  
00:56:00,710 --> 00:55:57,760  
who fakes the future for the women's

1455  
00:56:03,510 --> 00:56:00,720  
weekly and barbara feyer

1456  
00:56:05,990 --> 00:56:03,520  
sunday telegraph seer can't agree on

1457  
00:56:08,630 --> 00:56:06,000  
what the stars foretell

1458  
00:56:11,910 --> 00:56:08,640  
marsden predicted for sagittarius born

1459  
00:56:13,829 --> 00:56:11,920  
between november 24th and december 22nd

1460  
00:56:16,230 --> 00:56:13,839  
last week was

1461  
00:56:18,230 --> 00:56:16,240  
not a spectacularly helpful time things

1462  
00:56:19,910 --> 00:56:18,240  
can prove difficult for a few weeks

1463  
00:56:23,270 --> 00:56:19,920

barbara feyer

1464

00:56:26,069 --> 00:56:23,280

most sagittarians should enjoy a week of

1465

00:56:27,910 --> 00:56:26,079

ease this morning is the best time for

1466

00:56:30,069 --> 00:56:27,920

starting new ventures

1467

00:56:31,750 --> 00:56:30,079

a week of ease is assured only to

1468

00:56:34,549 --> 00:56:31,760

barbara feyer

1469

00:56:35,910 --> 00:56:34,559

for being paid for fooling her puerile

1470

00:56:37,430 --> 00:56:35,920

public

1471

00:56:39,349 --> 00:56:37,440

old olive

1472

00:56:41,190 --> 00:56:39,359

oil stevens

1473

00:56:43,589 --> 00:56:41,200

of woman

1474

00:56:45,510 --> 00:56:43,599

differed altogether with

1475

00:56:46,710 --> 00:56:45,520

this week brings opportunities through

1476  
00:56:49,349 --> 00:56:46,720  
your job

1477  
00:56:50,549 --> 00:56:49,359  
she means her job which her dupes keep

1478  
00:56:53,270 --> 00:56:50,559  
going

1479  
00:56:56,150 --> 00:56:53,280  
of course most nitwits can only afford

1480  
00:56:58,710 --> 00:56:56,160  
one paper and so are unaware of the

1481  
00:57:01,430 --> 00:56:58,720  
tricks played on them preposterous june

1482  
00:57:03,829 --> 00:57:01,440  
marsden is at present sitting pretty as

1483  
00:57:04,470 --> 00:57:03,839  
is artful arthur

1484  
00:57:09,670 --> 00:57:04,480  
d

1485  
00:57:13,109 --> 00:57:09,680  
position of quote

1486  
00:57:15,589 --> 00:57:13,119  
biggest nut of them all then quote

1487  
00:57:17,109 --> 00:57:15,599  
each has a revolving line of

1488  
00:57:20,390 --> 00:57:17,119

sob stuff

1489

00:57:21,349 --> 00:57:20,400  
to churn out to catch mugs

1490

00:57:23,030 --> 00:57:21,359  
and i'll

1491

00:57:24,230 --> 00:57:23,040  
just stop here

1492

00:57:29,270 --> 00:57:24,240  
mugs

1493

00:57:32,390 --> 00:57:29,280  
is a english australian term

1494

00:57:33,829 --> 00:57:32,400  
um it means um

1495

00:57:37,270 --> 00:57:33,839  
a mark

1496

00:57:39,349 --> 00:57:37,280  
or a dupe or a fool

1497

00:57:41,109 --> 00:57:39,359  
somebody who can be easily taken

1498

00:57:42,870 --> 00:57:41,119  
advantage of

1499

00:57:45,589 --> 00:57:42,880  
we read on

1500

00:57:47,670 --> 00:57:45,599  
full of the milk of human kindness they

1501  
00:57:49,750 --> 00:57:47,680  
would have you believe them actually

1502  
00:57:51,190 --> 00:57:49,760  
they are both full of

1503  
00:57:52,630 --> 00:57:51,200  
taurus

1504  
00:57:56,630 --> 00:57:52,640  
other sunday

1505  
00:57:57,510 --> 00:57:56,640  
during one of her talks over 2gb and 2gb

1506  
00:57:59,829 --> 00:57:57,520  
is

1507  
00:58:01,349 --> 00:57:59,839  
a radio station still

1508  
00:58:04,549 --> 00:58:01,359  
2gb

1509  
00:58:06,309 --> 00:58:04,559  
sponsored by the woman's weekly june

1510  
00:58:08,549 --> 00:58:06,319  
told listeners that people had written

1511  
00:58:11,430 --> 00:58:08,559  
to her saying that they wept with

1512  
00:58:15,510 --> 00:58:11,440  
emotion at some of her stories

1513  
00:58:17,750 --> 00:58:15,520

poor boobs you must not cry counsel dune

1514

00:58:20,069 --> 00:58:17,760

people who have passed from this life

1515

00:58:23,030 --> 00:58:20,079

are hurt by our tears

1516

00:58:24,470 --> 00:58:23,040

but while her victims are here june

1517

00:58:27,190 --> 00:58:24,480

cashes in

1518

00:58:28,069 --> 00:58:27,200

she told a tale of her childhood

1519

00:58:29,990 --> 00:58:28,079

once

1520

00:58:33,349 --> 00:58:30,000

she thought she could fly

1521

00:58:35,589 --> 00:58:33,359

a symptom regarded seriously by doctors

1522

00:58:37,990 --> 00:58:35,599

jumped from a two-story house

1523

00:58:41,510 --> 00:58:38,000

and flattened her nose

1524

00:58:44,230 --> 00:58:41,520

she did not admit to any other injuries

1525

00:58:48,150 --> 00:58:44,240

but in this fall there is probably some

1526  
00:58:49,750 --> 00:58:48,160  
explanation for the bunkum she concocts

1527  
00:58:53,270 --> 00:58:49,760  
june claims to have made an important

1528  
00:58:55,190 --> 00:58:53,280  
discovery the bright star of the east

1529  
00:58:56,870 --> 00:58:55,200  
which led the shepherds to the infant

1530  
00:58:58,549 --> 00:58:56,880  
jesus was

1531  
00:59:01,829 --> 00:58:58,559  
in reality

1532  
00:59:03,510 --> 00:59:01,839  
three big stars getting together for an

1533  
00:59:05,030 --> 00:59:03,520  
important event

1534  
00:59:07,030 --> 00:59:05,040  
according to her

1535  
00:59:09,030 --> 00:59:07,040  
inside information

1536  
00:59:10,789 --> 00:59:09,040  
the three stars are going to get

1537  
00:59:13,990 --> 00:59:10,799  
together again soon

1538  
00:59:16,630 --> 00:59:14,000

although astronomers have their doubts

1539

00:59:17,430 --> 00:59:16,640

in melbourne boss cocky astrologer is

1540

00:59:19,190 --> 00:59:17,440

jay

1541

00:59:21,430 --> 00:59:19,200

vickers willis

1542

00:59:23,750 --> 00:59:21,440

of middle brighton

1543

00:59:26,549 --> 00:59:23,760

he does a lively business in social

1544

00:59:29,190 --> 00:59:26,559

circles by shaking a hand at a cocktail

1545

00:59:31,510 --> 00:59:29,200

party he has been able to tell the owner

1546

00:59:33,990 --> 00:59:31,520

of the hand that he would have to watch

1547

00:59:36,549 --> 00:59:34,000

out for kidney trouble

1548

00:59:39,510 --> 00:59:36,559

a long horoscope concocted by vickers

1549

00:59:42,390 --> 00:59:39,520

willis some time ago for a young man now

1550

00:59:44,390 --> 00:59:42,400

earning distinction with the r double af

1551  
00:59:45,670 --> 00:59:44,400  
that's the royal australian air force

1552  
00:59:48,950 --> 00:59:45,680  
overseas

1553  
00:59:52,390 --> 00:59:48,960  
has been handed to smith's

1554  
00:59:54,390 --> 00:59:52,400  
seer told him that he would lose rather

1555  
00:59:57,349 --> 00:59:54,400  
than gain if he traveled within two

1556  
00:59:59,589 --> 00:59:57,359  
years after the horoscope was cast and

1557  
01:00:00,630 --> 00:59:59,599  
warned him against having anything to do

1558  
01:00:02,069 --> 01:00:00,640  
with

1559  
01:00:03,990 --> 01:00:02,079  
the air

1560  
01:00:06,470 --> 01:00:04,000  
a young man borrowed some money and went

1561  
01:00:09,750 --> 01:00:06,480  
overseas immediately he obtained an

1562  
01:00:11,270 --> 01:00:09,760  
excellent job far better than any he had

1563  
01:00:14,470 --> 01:00:11,280

had in australia

1564

01:00:16,069 --> 01:00:14,480

within a year he had paid off the loan

1565

01:00:18,710 --> 01:00:16,079

when war broke out he returned to

1566

01:00:22,470 --> 01:00:18,720

australia and was immediately accepted

1567

01:00:25,829 --> 01:00:22,480

by the raf he is now overseas and has an

1568

01:00:28,789 --> 01:00:25,839

excellent record in the air

1569

01:00:29,829 --> 01:00:28,799

explanation for the failure of vicus

1570

01:00:32,390 --> 01:00:29,839

willis

1571

01:00:34,309 --> 01:00:32,400

forecasts is surely that the young man

1572

01:00:37,430 --> 01:00:34,319

did not supply the

1573

01:00:40,390 --> 01:00:37,440

exact hour of his birth

1574

01:00:42,630 --> 01:00:40,400

not one scientist of standing has any

1575

01:00:45,270 --> 01:00:42,640

kind of word for astrology it is a

1576

01:00:47,829 --> 01:00:45,280

wicked ramp designed to fleece the

1577

01:00:49,589 --> 01:00:47,839

superstitious and ignorant or both

1578

01:00:52,789 --> 01:00:49,599

federal and state governments should

1579

01:00:55,050 --> 01:00:52,799

declare the practice of astrology

1580

01:00:56,390 --> 01:00:55,060

criminal

1581

01:01:00,390 --> 01:00:56,400

[Music]

1582

01:01:04,710 --> 01:01:01,589

wow

1583

01:01:07,740 --> 01:01:04,720

very strong words from way back in

1584

01:01:13,270 --> 01:01:07,750

when was it 1941

1585

01:01:15,270 --> 01:01:13,280

[Music]

1586

01:01:17,829 --> 01:01:15,280

we heard about a woman called june

1587

01:01:19,990 --> 01:01:17,839

marsden who was an astrologer in the

1588

01:01:21,670 --> 01:01:20,000

australian woman's weekly

1589

01:01:25,829 --> 01:01:21,680

and so i did a little research and

1590

01:01:29,109 --> 01:01:25,839

here's an excerpt from 1940 the 23rd of

1591

01:01:30,710 --> 01:01:29,119

march from the australian woman's weekly

1592

01:01:33,430 --> 01:01:30,720

written in the stars

1593

01:01:36,789 --> 01:01:33,440

astrology by june marsden president

1594

01:01:39,910 --> 01:01:36,799

australian astrological research society

1595

01:01:43,270 --> 01:01:39,920

march 21 is an important date it ushers

1596

01:01:45,430 --> 01:01:43,280

in the astrological year

1597

01:01:47,910 --> 01:01:45,440

well i didn't know that

1598

01:01:49,910 --> 01:01:47,920

aries is the first sign of the zodiac

1599

01:01:53,030 --> 01:01:49,920

and people born between march 21 and

1600

01:01:54,950 --> 01:01:53,040

april 21 belong to the ranks of a race

1601

01:01:57,109 --> 01:01:54,960

extraordinary

1602

01:02:00,309 --> 01:01:57,119

true to their sign the first in the

1603

01:02:02,390 --> 01:02:00,319

zodiac they are pioneers and like to

1604

01:02:04,390 --> 01:02:02,400

lead others and to break into new and

1605

01:02:07,510 --> 01:02:04,400

sometimes difficult or dangerous fields

1606

01:02:10,870 --> 01:02:07,520

of endeavor in the preference to leading

1607

01:02:13,029 --> 01:02:10,880

a life of even partial monotony

1608

01:02:14,870 --> 01:02:13,039

astrology endows this sign with the

1609

01:02:17,990 --> 01:02:14,880

symbol of aries the ram

1610

01:02:21,270 --> 01:02:18,000

and this gives the indication of the

1611

01:02:23,430 --> 01:02:21,280

main characteristics of aryaans

1612

01:02:27,029 --> 01:02:23,440

just as the ram takes pride in his

1613

01:02:30,069 --> 01:02:27,039

position as head of the herd and enjoys

1614

01:02:33,029 --> 01:02:30,079

bossing things in a lordly manner

1615

01:02:36,549 --> 01:02:33,039

so do arjans crave authority and

1616

01:02:39,349 --> 01:02:36,559

independence accountable to none and to

1617

01:02:43,349 --> 01:02:39,359

secure positions to boss others around

1618

01:02:46,069 --> 01:02:43,359

when the mood or occasion demands

1619

01:02:50,150 --> 01:02:46,079

so there you go i won't read on it

1620

01:02:52,309 --> 01:02:50,160

goes on there you go people who consider

1621

01:02:54,309 --> 01:02:52,319

themselves aries look out

1622

01:02:55,670 --> 01:02:54,319

you i bet you didn't know that or maybe

1623

01:02:57,190 --> 01:02:55,680

you did

1624

01:02:58,950 --> 01:02:57,200

and right at the bottom of the article

1625

01:03:00,950 --> 01:02:58,960

it says the australian woman's weekly

1626

01:03:03,430 --> 01:03:00,960

presents this series of articles on

1627

01:03:05,589 --> 01:03:03,440

astrology as a matter of interest

1628

01:03:08,870 --> 01:03:05,599

without accepting responsibility for the

1629

01:03:11,670 --> 01:03:08,880

statements contained in them

1630

01:03:14,309 --> 01:03:11,680

june marston regrets that she is unable

1631

01:03:17,510 --> 01:03:14,319

to answer any letters

1632

01:03:19,510 --> 01:03:17,520

editor australian women's weekly

1633

01:03:21,829 --> 01:03:19,520

of course there are many hundreds if not

1634

01:03:23,910 --> 01:03:21,839

thousands or more items and articles and

1635

01:03:25,990 --> 01:03:23,920

bits and pieces concerning astrology

1636

01:03:27,190 --> 01:03:26,000

over the decades but you might have a

1637

01:03:29,270 --> 01:03:27,200

bit of fun

1638

01:03:30,829 --> 01:03:29,280

looking up some of those for yourself if

1639

01:03:33,829 --> 01:03:30,839

you visit trove at

1640

01:03:34,950 --> 01:03:33,839

trove.nla.gov today you

1641

01:03:36,230 --> 01:03:34,960

and

1642

01:03:41,920 --> 01:03:36,240

you never know

1643

01:03:41,930 --> 01:03:55,910

[Music]

1644

01:03:59,750 --> 01:03:57,430

thank you for listening to the skeptic

1645

01:04:01,510 --> 01:03:59,760

zone and as you heard in the skeptic

1646

01:04:03,990 --> 01:04:01,520

zone my friend abigail chunder from

1647

01:04:05,829 --> 01:04:04,000

india will be presenting at skeptics in

1648

01:04:07,510 --> 01:04:05,839

the pub here in sydney this thursday

1649

01:04:09,910 --> 01:04:07,520

night australian time

1650

01:04:11,990 --> 01:04:09,920

and you can just follow the link follow

1651

01:04:14,829 --> 01:04:12,000

the link in this week's show notes or if

1652

01:04:17,109 --> 01:04:14,839

you go to twitch twitch.com

1653

01:04:19,510 --> 01:04:17,119

australianskeptics that's the place to

1654

01:04:21,190 --> 01:04:19,520

go and you can see uh

1655

01:04:22,950 --> 01:04:21,200

abajid give his talk and i will be

1656

01:04:24,950 --> 01:04:22,960

hosting that event looking forward to

1657

01:04:27,510 --> 01:04:24,960

that a great deal

1658

01:04:29,829 --> 01:04:27,520

and also if you go to skepticzone.tv go

1659

01:04:32,630 --> 01:04:29,839

to the top of the page you'll see a

1660

01:04:34,870 --> 01:04:32,640

link an icon a link for tic toc because

1661

01:04:37,109 --> 01:04:34,880

the skeptic zone is also on tick tock

1662

01:04:38,069 --> 01:04:37,119

with a series called mystic minute where

1663

01:04:40,230 --> 01:04:38,079

i look at

1664

01:04:42,789 --> 01:04:40,240

various paranormal and supernatural

1665

01:04:44,230 --> 01:04:42,799

claims very briefly just give a very

1666

01:04:45,990 --> 01:04:44,240

brief overview

1667

01:04:46,870 --> 01:04:46,000

and for some reason the latest one i put

1668

01:04:49,109 --> 01:04:46,880

up there

1669

01:04:51,430 --> 01:04:49,119

all about spoon bending

1670

01:04:53,510 --> 01:04:51,440

has got more hits than any other

1671

01:04:57,670 --> 01:04:53,520

spoon bending eh if you want to see me

1672

01:05:01,029 --> 01:04:57,680

bend a spoon head to [skepticzone.tv](http://skepticzone.tv)

1673

01:05:02,710 --> 01:05:01,039

and click the tick tock link or indeed

1674

01:05:03,750 --> 01:05:02,720

if you are on tick tock if you're a tick

1675

01:05:05,190 --> 01:05:03,760

tocker

1676

01:05:08,150 --> 01:05:05,200

why not um

1677

01:05:09,349 --> 01:05:08,160

why not subscribe to my tik tok channel

1678

01:05:10,789 --> 01:05:09,359

but now it's time for me to run

1679

01:05:11,910 --> 01:05:10,799

downstairs and have a large drink of

1680

01:05:14,390 --> 01:05:11,920

water i think i don't know what's

1681

01:05:17,349 --> 01:05:14,400

happening to my voice today oh well but

1682

01:05:24,309 --> 01:05:17,359

for this week this is richard saunders

1683

01:05:27,510 --> 01:05:26,069

you've been listening to the skeptic

1684

01:05:28,950 --> 01:05:27,520

zone podcast

1685

01:05:32,150 --> 01:05:28,960

please visit our website at

1686

01:05:37,750 --> 01:05:35,190

for show notes contacts and to access

1687

01:05:39,990 --> 01:05:37,760

the back catalog of episodes going back

1688

01:05:41,910 --> 01:05:40,000

to 2008

1689

01:05:44,630 --> 01:05:41,920

you can follow the skeptic zone podcast

1690

01:05:46,789 --> 01:05:44,640

on twitter at skepticzone

1691

01:05:49,109 --> 01:05:46,799

visit our facebook page or leave a

1692

01:05:51,190 --> 01:05:49,119

review on itunes

1693

01:05:54,390 --> 01:05:51,200

you can also support the skeptic zone

1694

01:05:57,750 --> 01:05:54,400

via patreon or paypal the skeptic zone

1695

01:05:59,349 --> 01:05:57,760

podcast is an independent production the

1696

01:06:01,670 --> 01:05:59,359

views and opinions expressed on the

1697

01:06:04,230 --> 01:06:01,680

skeptic zone are not necessarily those