

SOMEWHERE IN THE SKIES



**WEIRD SCIENCE
WITH CHRISTOPHER PLAIN**

1
00:00:04,150 --> 00:00:01,990

[Music]

2
00:00:07,430 --> 00:00:04,160

hey guys ryan here the summer in the

3
00:00:09,589 --> 00:00:07,440

skies podcast is a labor of love every

4
00:00:12,070 --> 00:00:09,599

week and with that comes many different

5
00:00:14,709 --> 00:00:12,080

costs to keep the show running that's

6
00:00:16,790 --> 00:00:14,719

where our patreon campaign comes in you

7
00:00:19,109 --> 00:00:16,800

give what you think the show is worth

8
00:00:21,029 --> 00:00:19,119

there's different rewards available all

9
00:00:23,590 --> 00:00:21,039

the time including shout outs on the

10
00:00:26,390 --> 00:00:23,600

show early editions of main episodes

11
00:00:28,950 --> 00:00:26,400

bonus episodes and content and very soon

12
00:00:32,229 --> 00:00:28,960

monthly patron hangouts where we sit

13
00:00:33,990 --> 00:00:32,239

back and chat all things ufos so i hope

14

00:00:36,549 --> 00:00:34,000

you'll consider becoming a patreon

15

00:00:39,830 --> 00:00:36,559

subscriber today to learn more and to

16

00:00:42,069 --> 00:00:39,840

join visit patreon.com

17

00:00:49,250 --> 00:00:42,079

somewhereskies thank you for your

18

00:00:49,260 --> 00:00:58,790

[Music]

19

00:01:06,190 --> 00:01:01,670

this is somewhere in the skies with ryan

20

00:01:22,550 --> 00:01:20,870

[Music]

21

00:01:24,710 --> 00:01:22,560

welcome everyone to somewhere in the

22

00:01:27,749 --> 00:01:24,720

skies as always i am your host ryan

23

00:01:31,270 --> 00:01:27,759

sprague and today we have with us yet

24

00:01:34,149 --> 00:01:31,280

again the head science writer at the

25

00:01:35,429 --> 00:01:34,159

debrief.org so you know what that means

26

00:01:39,190 --> 00:01:35,439

we're going to be talking all about

27

00:01:41,990 --> 00:01:39,200

space and tech and ufos and aliens and

28

00:01:43,670 --> 00:01:42,000

everything in between so let's not waste

29

00:01:45,670 --> 00:01:43,680

any time we're gonna break down a ton of

30

00:01:49,030 --> 00:01:45,680

his new exciting articles over at the

31

00:01:49,990 --> 00:01:49,040

debrief so with us again is christopher

32

00:01:52,710 --> 00:01:50,000

plane

33

00:01:54,710 --> 00:01:52,720

of the debrief welcome back my man ryan

34

00:01:56,630 --> 00:01:54,720

thanks for having me on my good man hey

35

00:01:59,270 --> 00:01:56,640

anytime you send me that message that

36

00:02:01,830 --> 00:01:59,280

says i'm doing the hot guy show i need

37

00:02:04,709 --> 00:02:01,840

another hot guy to join me i always tell

38

00:02:06,389 --> 00:02:04,719

you i'm there for you so uh we can we

39

00:02:08,630 --> 00:02:06,399

can give the fans what they always

40

00:02:10,949 --> 00:02:08,640

really want which is just you and i sit

41

00:02:13,030 --> 00:02:10,959

here looking good together our mugs i

42

00:02:15,430 --> 00:02:13,040

knew it and we could say anything

43

00:02:16,949 --> 00:02:15,440

doesn't matter but no we're gonna say

44

00:02:20,150 --> 00:02:16,959

some uh we're gonna talk about some

45

00:02:22,309 --> 00:02:20,160

really cool stuff you know um we've got

46

00:02:25,670 --> 00:02:22,319

a ton of stuff going on in the world of

47

00:02:28,710 --> 00:02:25,680

um emerging tech and oh yeah and space

48

00:02:31,270 --> 00:02:28,720

exploration um so i kind of would love

49

00:02:34,070 --> 00:02:31,280

to just hop in with one of your most

50

00:02:37,509 --> 00:02:34,080

recent stories and that was this one uh

51
00:02:41,110 --> 00:02:37,519
exploring venus in a manta ray inspired

52
00:02:43,750 --> 00:02:41,120
spacecraft so i'm not going to even try

53
00:02:45,830 --> 00:02:43,760
to summarize this you are the man of the

54
00:02:47,670 --> 00:02:45,840
hour you're the one who wrote about this

55
00:02:49,750 --> 00:02:47,680
so why don't you tell us about this

56
00:02:52,150 --> 00:02:49,760
first one if you don't mind what is this

57
00:02:54,309 --> 00:02:52,160
craft that they're hoping to get over uh

58
00:02:57,270 --> 00:02:54,319
over to our neighbor venus

59
00:02:59,430 --> 00:02:57,280
so this is really really cool piece of

60
00:03:01,030 --> 00:02:59,440
technology ryan basically what happened

61
00:03:05,110 --> 00:03:01,040
about a week ago

62
00:03:06,949 --> 00:03:05,120
is nasa the nasa institute for advanced

63
00:03:10,390 --> 00:03:06,959

concepts niacc

64

00:03:11,670 --> 00:03:10,400

announced a round of about 13 grants so

65

00:03:13,190 --> 00:03:11,680

this is something they're actually

66

00:03:15,190 --> 00:03:13,200

putting money into

67

00:03:17,270 --> 00:03:15,200

and some of these grants are for

68

00:03:18,790 --> 00:03:17,280

advanced radar systems

69

00:03:20,470 --> 00:03:18,800

some are for them are for different

70

00:03:23,350 --> 00:03:20,480

mission proposals

71

00:03:26,470 --> 00:03:23,360

this grant is to explore building and

72

00:03:29,830 --> 00:03:26,480

designing exactly what you said it looks

73

00:03:32,070 --> 00:03:29,840

like a triangle like a manta ray

74

00:03:34,070 --> 00:03:32,080

and not only does it look like it it's

75

00:03:37,030 --> 00:03:34,080

actually what they call bio-inspired

76
00:03:38,710 --> 00:03:37,040
technology which means the design of it

77
00:03:40,789 --> 00:03:38,720
the way it works

78
00:03:43,589 --> 00:03:40,799
is inspired by

79
00:03:46,390 --> 00:03:43,599
a manta ray so imagine this you're

80
00:03:49,270 --> 00:03:46,400
inside the ocean right and you see a

81
00:03:51,750 --> 00:03:49,280
manta ray swimming now it's not

82
00:03:53,830 --> 00:03:51,760
traveling the same way a bird does

83
00:03:56,869 --> 00:03:53,840
through the sky even though it has these

84
00:03:59,670 --> 00:03:56,879
big wings essentially

85
00:04:01,589 --> 00:03:59,680
the way it travels is it's

86
00:04:03,910 --> 00:04:01,599
muscles and bones

87
00:04:06,789 --> 00:04:03,920
inside the wings

88
00:04:09,830 --> 00:04:06,799

uh kind of like ripple and like create a

89

00:04:12,470 --> 00:04:09,840

waving effect to create propulsion

90

00:04:15,270 --> 00:04:12,480

and move through the water

91

00:04:18,069 --> 00:04:15,280

that's exactly what they're using this

92

00:04:21,349 --> 00:04:18,079

nasa grant for this niacc grant

93

00:04:23,590 --> 00:04:21,359

is to try and develop and build exactly

94

00:04:25,510 --> 00:04:23,600

one of these things i forget the exact

95

00:04:27,110 --> 00:04:25,520

research university i didn't look it up

96

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

it's right there in the article but

97

00:04:31,270 --> 00:04:29,520

that's what these grants do is they fund

98

00:04:32,469 --> 00:04:31,280

these really cutting edge advanced

99

00:04:35,749 --> 00:04:32,479

things

100

00:04:37,749 --> 00:04:35,759

the reason this is so important

101

00:04:39,270 --> 00:04:37,759

is because there have been a lot of

102

00:04:40,710 --> 00:04:39,280

proposals

103

00:04:43,749 --> 00:04:40,720

about sending

104

00:04:44,870 --> 00:04:43,759

you know a lighter than air balloon if

105

00:04:47,350 --> 00:04:44,880

you will

106

00:04:50,150 --> 00:04:47,360

to the clouds of venus and of course we

107

00:04:51,749 --> 00:04:50,160

all know uh last year there was this big

108

00:04:54,310 --> 00:04:51,759

announcement that they had found

109

00:04:57,350 --> 00:04:54,320

phosphine gas or the the signs of

110

00:04:58,950 --> 00:04:57,360

phosphine gas at a certain altitude i

111

00:05:01,430 --> 00:04:58,960

think it was about 50 kilometer you know

112

00:05:03,830 --> 00:05:01,440

like 30 35 miles

113

00:05:06,150 --> 00:05:03,840

above the surface of the planet

114

00:05:08,870 --> 00:05:06,160

in this cloudy region and the reason

115

00:05:12,469 --> 00:05:08,880

that was a big deal is

116

00:05:14,950 --> 00:05:12,479

phosphine gas on earth and and other

117

00:05:18,790 --> 00:05:14,960

where we know it's created is typically

118

00:05:21,830 --> 00:05:18,800

created uh in small volumes by some

119

00:05:24,550 --> 00:05:21,840

geological processes but in the volumes

120

00:05:25,990 --> 00:05:24,560

they found it and at the altitude they

121

00:05:30,950 --> 00:05:26,000

found it

122

00:05:32,070 --> 00:05:30,960

that way here on earth that would be

123

00:05:34,950 --> 00:05:32,080

from

124

00:05:39,350 --> 00:05:34,960

an anaerobic life a type of extremophile

125

00:05:43,430 --> 00:05:39,360

a microbiology biological uh organism

126
00:05:46,790 --> 00:05:43,440
that doesn't use oxygen and instead and

127
00:05:47,830 --> 00:05:46,800
therefore creates this phosphene gas

128
00:05:49,990 --> 00:05:47,840
and

129
00:05:53,990 --> 00:05:50,000
the other reason that's interesting

130
00:05:56,390 --> 00:05:54,000
even before that signal was detected

131
00:05:58,550 --> 00:05:56,400
there was there was this uh

132
00:06:00,390 --> 00:05:58,560
many models showed that that's the one

133
00:06:02,550 --> 00:06:00,400
area in venus that you could have

134
00:06:04,870 --> 00:06:02,560
something living is this certain

135
00:06:07,430 --> 00:06:04,880
elevation where the the atmospheric

136
00:06:08,950 --> 00:06:07,440
pressures and the solar radiation and

137
00:06:10,710 --> 00:06:08,960
all the things the temperature all of

138
00:06:12,550 --> 00:06:10,720

that is just right

139

00:06:15,350 --> 00:06:12,560

that you could have life

140

00:06:16,950 --> 00:06:15,360

and then boom we see this gas there that

141

00:06:17,909 --> 00:06:16,960

seems to indicate at least there's a

142

00:06:20,070 --> 00:06:17,919

chance

143

00:06:22,070 --> 00:06:20,080

that that is what we've seen so we've

144

00:06:24,070 --> 00:06:22,080

come up with these different missions to

145

00:06:25,749 --> 00:06:24,080

go there like i said like balloons that

146

00:06:27,749 --> 00:06:25,759

would float around

147

00:06:30,070 --> 00:06:27,759

but those balloons are all pretty much

148

00:06:32,070 --> 00:06:30,080

dependent on the winds

149

00:06:33,670 --> 00:06:32,080

at those altitude like like a hot air

150

00:06:35,029 --> 00:06:33,680

balloon you just gotta ride where the

151
00:06:38,070 --> 00:06:35,039
wind takes you

152
00:06:41,029 --> 00:06:38,080
these manta ray craft are not that they

153
00:06:42,550 --> 00:06:41,039
can maneuver through those clouds

154
00:06:45,270 --> 00:06:42,560
and you see it they're in that artist

155
00:06:47,909 --> 00:06:45,280
rendering the same way a manta ray

156
00:06:49,830 --> 00:06:47,919
maneuvers through the fluid of the ocean

157
00:06:52,550 --> 00:06:49,840
and if they spot something interesting

158
00:06:55,430 --> 00:06:52,560
in the clouds they can circle back to it

159
00:06:57,589 --> 00:06:55,440
they can hover over a specific spot they

160
00:07:00,469 --> 00:06:57,599
can actually maneuver and it's all done

161
00:07:02,950 --> 00:07:00,479
internally all these uh it's almost like

162
00:07:05,110 --> 00:07:02,960
an endoskeleton that

163
00:07:07,749 --> 00:07:05,120

moves all that

164

00:07:10,390 --> 00:07:07,759

and because of that none of the joints

165

00:07:12,950 --> 00:07:10,400

nothing's exposed to the corrosive

166

00:07:15,110 --> 00:07:12,960

effects of the atmosphere so as long as

167

00:07:17,270 --> 00:07:15,120

the outer surface is durable enough to

168

00:07:19,029 --> 00:07:17,280

take the effects of the atmosphere

169

00:07:22,390 --> 00:07:19,039

that internal mechanisms are all

170

00:07:24,070 --> 00:07:22,400

protected the one other really

171

00:07:25,749 --> 00:07:24,080

interesting piece of technology that

172

00:07:27,430 --> 00:07:25,759

they're testing under this grant for

173

00:07:29,749 --> 00:07:27,440

that program

174

00:07:32,309 --> 00:07:29,759

is the idea that the uh the thing could

175

00:07:34,070 --> 00:07:32,319

deflate itself to some degree

176

00:07:36,950 --> 00:07:34,080

and that would let it sink you know

177

00:07:39,510 --> 00:07:36,960

think of a ball in the in the water and

178

00:07:41,350 --> 00:07:39,520

as it slowly loses water air at some

179

00:07:43,749 --> 00:07:41,360

point it'll sink to the bottom even with

180

00:07:45,749 --> 00:07:43,759

a little bit of air in it so that's

181

00:07:46,629 --> 00:07:45,759

what's happening with this craft they

182

00:07:48,469 --> 00:07:46,639

can

183

00:07:51,110 --> 00:07:48,479

manipulate it to go lower in the

184

00:07:53,990 --> 00:07:51,120

atmosphere and then expand it back up to

185

00:07:57,430 --> 00:07:54,000

go up higher in the atmosphere so it has

186

00:07:59,990 --> 00:07:57,440

this full maneuvering capability to

187

00:08:02,070 --> 00:08:00,000

really go up there and really scope

188

00:08:04,469 --> 00:08:02,080

around and they have a suite of

189

00:08:07,670 --> 00:08:04,479

instruments they want to put on it and

190

00:08:10,070 --> 00:08:07,680

sensors and stuff really a cutting-edge

191

00:08:12,469 --> 00:08:10,080

concept that nasa feels interested

192

00:08:13,670 --> 00:08:12,479

enough to put some real money behind

193

00:08:16,150 --> 00:08:13,680

wow

194

00:08:18,629 --> 00:08:16,160

so cool man just think if there is some

195

00:08:20,550 --> 00:08:18,639

sort of intelligent life on venus we're

196

00:08:23,510 --> 00:08:20,560

now going to be the ufos they're going

197

00:08:26,629 --> 00:08:23,520

to be reporting these manta ray-shaped

198

00:08:29,189 --> 00:08:26,639

craft to their uh local news we saw a

199

00:08:30,309 --> 00:08:29,199

black triangle in the sky the other day

200

00:08:32,389 --> 00:08:30,319

right

201

00:08:35,350 --> 00:08:32,399

and it was biological i swear it was

202

00:08:37,110 --> 00:08:35,360

like moving like an actual creature yeah

203

00:08:39,829 --> 00:08:37,120

right that's pretty cool

204

00:08:42,389 --> 00:08:39,839

yeah a very cool concept and like i said

205

00:08:44,870 --> 00:08:42,399

a real one it's one that the niacc the

206

00:08:46,949 --> 00:08:44,880

nasa innovative advanced concepts

207

00:08:49,590 --> 00:08:46,959

uh uh has actually put a little bit of

208

00:08:50,949 --> 00:08:49,600

money into so it may be something we see

209

00:08:53,190 --> 00:08:50,959

i mentioned in that article that there

210

00:08:55,670 --> 00:08:53,200

are some other missions planned to venus

211

00:08:58,070 --> 00:08:55,680

uh and nasa has some for the end of this

212

00:09:00,230 --> 00:08:58,080

decade uh called davinci plus and

213

00:09:02,790 --> 00:09:00,240

veritas they're working on there's a

214

00:09:05,430 --> 00:09:02,800

private group sending a probe up later

215

00:09:07,030 --> 00:09:05,440

next year called the venus life finder

216

00:09:09,750 --> 00:09:07,040

missions and it's really designed to

217

00:09:12,230 --> 00:09:09,760

kind of drop a little parachute craft

218

00:09:14,070 --> 00:09:12,240

through those cloud layers and see what

219

00:09:16,550 --> 00:09:14,080

it can pick up as far as confirming

220

00:09:18,949 --> 00:09:16,560

those phosphine gas and signs of life

221

00:09:22,389 --> 00:09:18,959

but yeah this is the first

222

00:09:25,030 --> 00:09:22,399

concept of essentially like a drone that

223

00:09:27,910 --> 00:09:25,040

can fly around through those clouds and

224

00:09:30,150 --> 00:09:27,920

it is a really really neat and seemingly

225

00:09:32,949 --> 00:09:30,160

really viable concept

226

00:09:36,470 --> 00:09:32,959

love it absolutely love it well hey

227

00:09:38,870 --> 00:09:36,480

let's uh let's move from venus to mars

228

00:09:41,030 --> 00:09:38,880

this was another story that went viral

229

00:09:43,110 --> 00:09:41,040

maybe a week or so ago as we're

230

00:09:45,910 --> 00:09:43,120

recording this and this was the story

231

00:09:47,110 --> 00:09:45,920

about uh perseverance rover it spotted

232

00:09:50,389 --> 00:09:47,120

something

233

00:09:53,350 --> 00:09:50,399

on mars an artificial object and this

234

00:09:56,389 --> 00:09:53,360

started going got everyone's conspiracy

235

00:09:58,389 --> 00:09:56,399

theories going and um unfortunately

236

00:10:00,470 --> 00:09:58,399

doing your due diligence as the head

237

00:10:01,829 --> 00:10:00,480

science writer at the debrief you had to

238

00:10:03,910 --> 00:10:01,839

set us straight and tell us what it

239

00:10:05,430 --> 00:10:03,920

really was so why don't you tell us a

240

00:10:07,509 --> 00:10:05,440

little about this story if you don't

241

00:10:08,550 --> 00:10:07,519

mind chris yeah sure uh there's a i

242

00:10:11,110 --> 00:10:08,560

can't think of his name but there's a

243

00:10:13,350 --> 00:10:11,120

ufo researcher on instagram that kind of

244

00:10:15,590 --> 00:10:13,360

broke this story when it was first going

245

00:10:17,430 --> 00:10:15,600

around twitter and instagram and people

246

00:10:21,190 --> 00:10:17,440

were sharing this picture because we all

247

00:10:23,910 --> 00:10:21,200

know like dating back to the face on

248

00:10:26,069 --> 00:10:23,920

mars and the pyramids on mars in the

249

00:10:27,269 --> 00:10:26,079

cydonia region that there's this kind of

250

00:10:28,230 --> 00:10:27,279

history

251
00:10:30,949 --> 00:10:28,240
of

252
00:10:33,829 --> 00:10:30,959
the cameras from time to time

253
00:10:35,590 --> 00:10:33,839
picking up things on mars that at least

254
00:10:38,150 --> 00:10:35,600
at first glance look like there's

255
00:10:41,110 --> 00:10:38,160
something other than a natural formation

256
00:10:41,990 --> 00:10:41,120
so we've seen that a ton over the years

257
00:10:43,910 --> 00:10:42,000
uh

258
00:10:45,430 --> 00:10:43,920
i i know their guys i think it's mike

259
00:10:47,829 --> 00:10:45,440
barra you know they make a living

260
00:10:49,269 --> 00:10:47,839
writing books about this stuff

261
00:10:52,150 --> 00:10:49,279
so

262
00:10:54,389 --> 00:10:52,160
here we had a picture that when you look

263
00:10:56,470 --> 00:10:54,399

at that picture there's no doubt like

264

00:10:58,710 --> 00:10:56,480

that's a thing right like that's

265

00:11:00,389 --> 00:10:58,720

definitely not a rock and a little

266

00:11:01,990 --> 00:11:00,399

farther down in that article yeah you're

267

00:11:04,069 --> 00:11:02,000

zooming in i have a close-up on it a

268

00:11:06,310 --> 00:11:04,079

little farther down in the article

269

00:11:07,990 --> 00:11:06,320

but yeah this created a stir on the

270

00:11:10,389 --> 00:11:08,000

internet i know when i first saw it on

271

00:11:12,069 --> 00:11:10,399

twitter i was like oh that's a thing and

272

00:11:14,069 --> 00:11:12,079

then my first thought was it's probably

273

00:11:15,829 --> 00:11:14,079

one of our things and that was the

274

00:11:17,750 --> 00:11:15,839

ultimate conclusion of this researcher

275

00:11:18,949 --> 00:11:17,760

and that was what i found when i looked

276

00:11:20,310 --> 00:11:18,959

into it was

277

00:11:22,870 --> 00:11:20,320

there was a

278

00:11:25,190 --> 00:11:22,880

like a drill bit with a cover

279

00:11:26,470 --> 00:11:25,200

uh and and it was there to like protect

280

00:11:28,870 --> 00:11:26,480

another bit

281

00:11:30,470 --> 00:11:28,880

and it was something that it dumped back

282

00:11:33,110 --> 00:11:30,480

in like july

283

00:11:35,269 --> 00:11:33,120

and so this is just a picture of

284

00:11:37,269 --> 00:11:35,279

you know unfortunately us going to

285

00:11:38,790 --> 00:11:37,279

another planet and doing what we do here

286

00:11:40,870 --> 00:11:38,800

which is

287

00:11:42,389 --> 00:11:40,880

leaving garbage on the side of the road

288

00:11:44,150 --> 00:11:42,399

right so

289

00:11:46,069 --> 00:11:44,160

no signatures baby

290

00:11:47,430 --> 00:11:46,079

oh yeah and you know i'll tell you ryan

291

00:11:49,269 --> 00:11:47,440

that one thing i thought was cool as

292

00:11:51,110 --> 00:11:49,279

they mentioned in the article is you

293

00:11:52,629 --> 00:11:51,120

know maybe 100 years from now or a

294

00:11:55,509 --> 00:11:52,639

thousand years from now

295

00:11:57,829 --> 00:11:55,519

these could be like national parks on

296

00:12:00,629 --> 00:11:57,839

mars or national parks on the moon these

297

00:12:03,030 --> 00:12:00,639

areas where we leave these little bits

298

00:12:04,790 --> 00:12:03,040

of human technology there may be a

299

00:12:07,509 --> 00:12:04,800

national park built around the whole

300

00:12:11,110 --> 00:12:07,519

perseverance area or around the spirit

301
00:12:13,030 --> 00:12:11,120
and opportunity areas or the curiosity

302
00:12:14,790 --> 00:12:13,040
rover because they're these little spots

303
00:12:17,190 --> 00:12:14,800
on the planet we think of them in these

304
00:12:19,190 --> 00:12:17,200
big areas but the the rover's only you

305
00:12:22,310 --> 00:12:19,200
know skirting a couple of miles

306
00:12:25,110 --> 00:12:22,320
of area there yeah they're these like

307
00:12:28,470 --> 00:12:25,120
historical zones with stuff there and

308
00:12:30,550 --> 00:12:28,480
that drill bit will probably be studied

309
00:12:32,470 --> 00:12:30,560
by students long after you and i are

310
00:12:34,069 --> 00:12:32,480
gone they're like oh here was the thing

311
00:12:36,389 --> 00:12:34,079
that you know was left behind and

312
00:12:38,790 --> 00:12:36,399
created a controversial photo so it was

313
00:12:40,470 --> 00:12:38,800

a neat picture and yeah my first thought

314

00:12:42,629 --> 00:12:40,480

was okay we really got something here

315

00:12:44,069 --> 00:12:42,639

this isn't the uh this isn't a rock

316

00:12:47,350 --> 00:12:44,079

formation

317

00:12:49,509 --> 00:12:47,360

yeah yep and the conspiracy theories

318

00:12:51,590 --> 00:12:49,519

flew i love it i love it well i'm glad

319

00:12:53,990 --> 00:12:51,600

we have an answer yeah yeah we'll see

320

00:12:56,310 --> 00:12:54,000

what uh we'll see what civilization

321

00:12:59,190 --> 00:12:56,320

builds up around it you know

322

00:13:01,350 --> 00:12:59,200

yeah right exactly

323

00:13:03,269 --> 00:13:01,360

the coke bottle and the gods must be

324

00:13:05,269 --> 00:13:03,279

crazy right

325

00:13:06,790 --> 00:13:05,279

exactly one piece of technology left

326

00:13:10,389 --> 00:13:06,800

behind

327

00:13:13,670 --> 00:13:10,399

yep well hey mars is sort of dusty

328

00:13:16,310 --> 00:13:13,680

terrain it reminds me a lot of uh a

329

00:13:18,470 --> 00:13:16,320

planet from our mutual favorite favorite

330

00:13:20,629 --> 00:13:18,480

universe and that is the star wars

331

00:13:22,790 --> 00:13:20,639

universe oh yeah so you know what comes

332

00:13:25,509 --> 00:13:22,800

next we have to talk about your your

333

00:13:28,949 --> 00:13:25,519

next article here tatooine like

334

00:13:30,710 --> 00:13:28,959

exoplanet confirmed we have an actual

335

00:13:33,990 --> 00:13:30,720

planet now where we could say luke

336

00:13:36,230 --> 00:13:34,000

skywalker is from so tell us about this

337

00:13:38,230 --> 00:13:36,240

one if you don't mind so i wrote about

338

00:13:40,710 --> 00:13:38,240

this first last year and then this

339

00:13:43,269 --> 00:13:40,720

latest article is like you said it's

340

00:13:46,150 --> 00:13:43,279

confirming it's there keep in mind when

341

00:13:49,030 --> 00:13:46,160

we find exoplanets whether it's the

342

00:13:51,670 --> 00:13:49,040

the test the transiting exoplanet survey

343

00:13:54,870 --> 00:13:51,680

satellite or the kepler missions or even

344

00:13:57,750 --> 00:13:54,880

with hubble when we find them uh it's

345

00:14:00,069 --> 00:13:57,760

typically just we're going through light

346

00:14:02,710 --> 00:14:00,079

spectra data and we're saying okay

347

00:14:04,949 --> 00:14:02,720

something moved in front of the planet

348

00:14:08,069 --> 00:14:04,959

or we're going on gravitational data and

349

00:14:10,710 --> 00:14:08,079

something caused the planet to wobble so

350

00:14:12,949 --> 00:14:10,720

this these uh

351
00:14:15,269 --> 00:14:12,959
even though we've confirmed maybe 5 000

352
00:14:17,829 --> 00:14:15,279
of these exoplanet there are thousands

353
00:14:19,590 --> 00:14:17,839
out there that we detected that signal

354
00:14:21,829 --> 00:14:19,600
said we think one's there but we're not

355
00:14:23,829 --> 00:14:21,839
quite sure and this was one of those

356
00:14:26,069 --> 00:14:23,839
this was a planet that last year we

357
00:14:28,150 --> 00:14:26,079
found and like you said the reason it's

358
00:14:31,030 --> 00:14:28,160
so cool

359
00:14:33,750 --> 00:14:31,040
is because it's a part of a binary star

360
00:14:36,389 --> 00:14:33,760
system so when if you were on this

361
00:14:38,550 --> 00:14:36,399
planet and you were to look up into the

362
00:14:40,150 --> 00:14:38,560
sky at the right time you would see what

363
00:14:42,550 --> 00:14:40,160

luke skywalker is saying in that picture

364

00:14:45,189 --> 00:14:42,560

right there you're seeing two

365

00:14:47,750 --> 00:14:45,199

two stars in the sky are two suns

366

00:14:49,829 --> 00:14:47,760

however from a search for life

367

00:14:52,629 --> 00:14:49,839

standpoint this is actually even more

368

00:14:55,509 --> 00:14:52,639

exciting and this the reason why is

369

00:14:58,230 --> 00:14:55,519

when you go through the cosmos

370

00:15:00,150 --> 00:14:58,240

binary star systems are the most common

371

00:15:02,470 --> 00:15:00,160

they're about half of the star systems

372

00:15:06,069 --> 00:15:02,480

maybe a hair over at least in the milky

373

00:15:07,750 --> 00:15:06,079

way galaxy so these binary star systems

374

00:15:08,949 --> 00:15:07,760

are everywhere

375

00:15:12,230 --> 00:15:08,959

and

376

00:15:15,350 --> 00:15:12,240

finding planets in them we found a few

377

00:15:17,509 --> 00:15:15,360

in other binary systems like this

378

00:15:20,389 --> 00:15:17,519

and they're almost always in the

379

00:15:21,189 --> 00:15:20,399

habitable zone of the two planets

380

00:15:24,389 --> 00:15:21,199

so

381

00:15:26,710 --> 00:15:24,399

every time we find a binary star system

382

00:15:28,870 --> 00:15:26,720

and with a planet or multiple planet

383

00:15:31,749 --> 00:15:28,880

candidates like this one in it

384

00:15:34,870 --> 00:15:31,759

that's a brand new exciting

385

00:15:37,030 --> 00:15:34,880

high quality place to look for life it

386

00:15:40,069 --> 00:15:37,040

may even be the case

387

00:15:42,629 --> 00:15:40,079

as we find signs of life assuming we do

388

00:15:44,790 --> 00:15:42,639

around other planets because of the

389

00:15:46,870 --> 00:15:44,800

prevalence of this type and because of

390

00:15:48,310 --> 00:15:46,880

their favoring having planets in the

391

00:15:50,710 --> 00:15:48,320

habitable zone

392

00:15:54,310 --> 00:15:50,720

it may be more common to look up in the

393

00:15:56,629 --> 00:15:54,320

sky on your home planet and see two sons

394

00:15:58,629 --> 00:15:56,639

then it is where we look up and see what

395

00:16:00,470 --> 00:15:58,639

may that just may be the more common

396

00:16:03,910 --> 00:16:00,480

scenario

397

00:16:06,629 --> 00:16:03,920

that's so cool i know i i dream of that

398

00:16:09,749 --> 00:16:06,639

day i can uh i can look over a mountain

399

00:16:12,949 --> 00:16:09,759

like luke there and just see two suns or

400

00:16:14,310 --> 00:16:12,959

or two moons not an iconic shot i seem

401
00:16:17,430 --> 00:16:14,320
to remember

402
00:16:19,590 --> 00:16:17,440
reading or hearing that uh it was like a

403
00:16:22,069 --> 00:16:19,600
mistake and it was like an effect of the

404
00:16:24,069 --> 00:16:22,079
camera lens and it really is something

405
00:16:26,310 --> 00:16:24,079
that was originally intentional and then

406
00:16:27,189 --> 00:16:26,320
when they looked at it george lucas was

407
00:16:28,150 --> 00:16:27,199
like

408
00:16:30,150 --> 00:16:28,160
wow

409
00:16:31,749 --> 00:16:30,160
uh i know you know i don't want to

410
00:16:33,670 --> 00:16:31,759
confirm that that's the case you know

411
00:16:35,990 --> 00:16:33,680
i've read a lot about star wars in the

412
00:16:38,790 --> 00:16:36,000
last 40 plus years so i don't want to

413
00:16:41,749 --> 00:16:38,800

i'm pretty sure that's the origin story

414

00:16:42,870 --> 00:16:41,759

of this the two suns in the on the

415

00:16:45,030 --> 00:16:42,880

sunset

416

00:16:47,030 --> 00:16:45,040

and the reason it's so amazing of a shot

417

00:16:48,629 --> 00:16:47,040

in the movie i mean when i was writing

418

00:16:51,030 --> 00:16:48,639

this article i showed the picture to my

419

00:16:53,030 --> 00:16:51,040

wife and she's not a star wars nerd by

420

00:16:55,030 --> 00:16:53,040

any means but she's like oh yeah i

421

00:16:57,030 --> 00:16:55,040

remember that shot from the movie

422

00:16:59,749 --> 00:16:57,040

because

423

00:17:02,230 --> 00:16:59,759

it's epic and you know romantic and

424

00:17:04,309 --> 00:17:02,240

potent and it's just got all these like

425

00:17:06,710 --> 00:17:04,319

you know and it's totally for it like

426

00:17:08,069 --> 00:17:06,720

it's like no sunset we've ever seen on

427

00:17:10,150 --> 00:17:08,079

ours so you're like

428

00:17:12,949 --> 00:17:10,160

this is in the galaxy far far away so

429

00:17:15,029 --> 00:17:12,959

yeah yeah finding that confirming that

430

00:17:17,350 --> 00:17:15,039

the little bit of extra news in that

431

00:17:19,270 --> 00:17:17,360

story is that they found it using the uh

432

00:17:21,429 --> 00:17:19,280

wobble method rather than the transit

433

00:17:24,230 --> 00:17:21,439

method which is how we find most pilot

434

00:17:26,390 --> 00:17:24,240

uh exoplanets so not only was it

435

00:17:28,150 --> 00:17:26,400

confirming it but it was confirming

436

00:17:30,549 --> 00:17:28,160

using a different method so when the

437

00:17:33,029 --> 00:17:30,559

planet was originally found a year ago

438

00:17:35,350 --> 00:17:33,039

it was spotted because of the transits

439

00:17:37,110 --> 00:17:35,360

in front of those two stars now it was

440

00:17:39,590 --> 00:17:37,120

spotted because the gravitational

441

00:17:41,590 --> 00:17:39,600

effects the planet has on the stars so

442

00:17:42,870 --> 00:17:41,600

we're pretty darn sure that planet is

443

00:17:45,590 --> 00:17:42,880

there

444

00:17:46,390 --> 00:17:45,600

that's amazing man i love it absolutely

445

00:17:48,710 --> 00:17:46,400

love it

446

00:17:51,110 --> 00:17:48,720

doing incredible work well let's let's

447

00:17:52,390 --> 00:17:51,120

piggyback off of that to some more work

448

00:17:54,789 --> 00:17:52,400

that nasa

449

00:17:56,789 --> 00:17:54,799

is doing and that's the story you did on

450

00:17:59,270 --> 00:17:56,799

um there's a rocket that's ready to

451

00:18:01,909 --> 00:17:59,280

chase pulsating aurora

452

00:18:04,950 --> 00:18:01,919

this is so cool so explain to me if you

453

00:18:07,110 --> 00:18:04,960

don't mind um what is this aurora that

454

00:18:09,190 --> 00:18:07,120

they they want to chase and why what

455

00:18:10,549 --> 00:18:09,200

what what what purpose do they see in

456

00:18:12,549 --> 00:18:10,559

doing this

457

00:18:14,070 --> 00:18:12,559

uh if you've been i've never seen it in

458

00:18:16,470 --> 00:18:14,080

person but you've been lucky enough to

459

00:18:18,549 --> 00:18:16,480

be in a real northern latitude at the

460

00:18:21,430 --> 00:18:18,559

right time you can see the northern

461

00:18:24,310 --> 00:18:21,440

lights right that that those

462

00:18:27,510 --> 00:18:24,320

streaks of ribbon like colorful lights

463

00:18:30,549 --> 00:18:27,520

blues and greens and sometimes other

464

00:18:32,789 --> 00:18:30,559

components of the rainbow that happen up

465

00:18:35,430 --> 00:18:32,799

at these northern latitudes and it's an

466

00:18:37,190 --> 00:18:35,440

effective uh solar radiation in the

467

00:18:40,710 --> 00:18:37,200

atmosphere and other chemical effects

468

00:18:43,190 --> 00:18:40,720

really beautiful brilliant light show

469

00:18:44,390 --> 00:18:43,200

but what they found is every once in a

470

00:18:45,590 --> 00:18:44,400

while

471

00:18:48,070 --> 00:18:45,600

and

472

00:18:50,789 --> 00:18:48,080

these things seem to pulsate

473

00:18:52,230 --> 00:18:50,799

right there's like a pulsating

474

00:18:54,070 --> 00:18:52,240

component to it that they really

475

00:18:56,950 --> 00:18:54,080

couldn't quite understand

476

00:18:59,430 --> 00:18:56,960

and the first clue they had as to the

477

00:19:00,390 --> 00:18:59,440

origin if i remember this story right

478

00:19:03,029 --> 00:19:00,400

was

479

00:19:05,830 --> 00:19:03,039

during world war one

480

00:19:08,789 --> 00:19:05,840

radio operators in europe and northern

481

00:19:10,950 --> 00:19:08,799

latitudes were picking up these

482

00:19:14,390 --> 00:19:10,960

pulsating frequencies on their

483

00:19:16,390 --> 00:19:14,400

microphone on like radio receivers

484

00:19:18,549 --> 00:19:16,400

and they couldn't figure out what it was

485

00:19:21,909 --> 00:19:18,559

but it gave a clue

486

00:19:24,630 --> 00:19:21,919

that there was a a sound wave component

487

00:19:27,110 --> 00:19:24,640

to this electromagnetic phenomena

488

00:19:28,710 --> 00:19:27,120

so what they did was the the research

489

00:19:31,110 --> 00:19:28,720

team that's looking into this oh wow

490

00:19:32,950 --> 00:19:31,120

look that's a great picture so the

491

00:19:34,470 --> 00:19:32,960

research team that's looking into this

492

00:19:36,789 --> 00:19:34,480

what they did was

493

00:19:38,950 --> 00:19:36,799

they took a little rocket and they put a

494

00:19:41,350 --> 00:19:38,960

package of instruments on it

495

00:19:45,270 --> 00:19:41,360

based around that idea that there is

496

00:19:47,990 --> 00:19:45,280

this sonic component to the sound wave

497

00:19:50,310 --> 00:19:48,000

component to creating these uh um

498

00:19:53,750 --> 00:19:50,320

brilliant light shows and this pulsating

499

00:19:55,750 --> 00:19:53,760

effect in it and uh they hold it up

500

00:19:58,230 --> 00:19:55,760

there to where it's most commonly seen

501
00:19:59,990 --> 00:19:58,240
somewhere up i think in alaska possibly

502
00:20:01,110 --> 00:20:00,000
uh i don't remember exactly where

503
00:20:04,630 --> 00:20:01,120
because i write

504
00:20:06,549 --> 00:20:04,640
10 to 15 stories a week and uh

505
00:20:08,230 --> 00:20:06,559
but yeah they hold this rocket up there

506
00:20:11,270 --> 00:20:08,240
and that was last week and they

507
00:20:13,830 --> 00:20:11,280
positioned it so that the minute they

508
00:20:16,470 --> 00:20:13,840
picked up on this pulsating thing they

509
00:20:19,909 --> 00:20:16,480
can launch that thing have it fly right

510
00:20:22,710 --> 00:20:19,919
over the aurora and gather all kinds of

511
00:20:24,630 --> 00:20:22,720
information on it and really get to the

512
00:20:27,110 --> 00:20:24,640
bottom like what is making this thing

513
00:20:29,430 --> 00:20:27,120

pulsing so it's just kind of a neat

514

00:20:31,669 --> 00:20:29,440

science story you know it's not a it's

515

00:20:34,950 --> 00:20:31,679

not a search for life there's no aliens

516

00:20:36,470 --> 00:20:34,960

behind the pulsation uh but as far as

517

00:20:39,110 --> 00:20:36,480

like like

518

00:20:41,590 --> 00:20:39,120

what is causing it and the fact that

519

00:20:43,110 --> 00:20:41,600

again like radio operators in world war

520

00:20:45,029 --> 00:20:43,120

ii were picking this at world war one

521

00:20:46,149 --> 00:20:45,039

we're picking this up a hundred years

522

00:20:47,110 --> 00:20:46,159

ago

523

00:20:48,390 --> 00:20:47,120

right

524

00:20:50,710 --> 00:20:48,400

and

525

00:20:53,350 --> 00:20:50,720

now we finally have an answer so i

526

00:20:55,669 --> 00:20:53,360

believe if i remember that story right

527

00:20:58,230 --> 00:20:55,679

that rocket was poised to launch as

528

00:21:00,230 --> 00:20:58,240

early as february 24th that was kind of

529

00:21:02,470 --> 00:21:00,240

when the window opened

530

00:21:04,230 --> 00:21:02,480

and so my guess would be sitting here on

531

00:21:06,149 --> 00:21:04,240

this what second day of march the third

532

00:21:08,390 --> 00:21:06,159

day of march somewhere in the march here

533

00:21:10,630 --> 00:21:08,400

that it's probably already launched and

534

00:21:12,630 --> 00:21:10,640

they've already gathered the information

535

00:21:14,390 --> 00:21:12,640

but as is typical in the science world

536

00:21:16,870 --> 00:21:14,400

it'll probably be six months to 18

537

00:21:19,990 --> 00:21:16,880

months before we get a paper on what

538

00:21:21,990 --> 00:21:20,000

exactly they found but uh yeah that i

539

00:21:23,830 --> 00:21:22,000

believe that rocket is already shot up

540

00:21:25,590 --> 00:21:23,840

there and they've already got those

541

00:21:27,830 --> 00:21:25,600

readings so uh

542

00:21:29,990 --> 00:21:27,840

man it's just a beautiful i

543

00:21:32,710 --> 00:21:30,000

every once in a while when i'm writing a

544

00:21:34,710 --> 00:21:32,720

science story i have more fun digging

545

00:21:36,710 --> 00:21:34,720

through the pictures you know like every

546

00:21:38,630 --> 00:21:36,720

once in a while as a kid it's just like

547

00:21:41,830 --> 00:21:38,640

yeah like that star wars picture from

548

00:21:43,830 --> 00:21:41,840

the one before uh i think mj banayas our

549

00:21:45,750 --> 00:21:43,840

editor picked that out for that for

550

00:21:47,990 --> 00:21:45,760

another article i wrote about the binary

551
00:21:50,710 --> 00:21:48,000
stars like a year ago so i was digging

552
00:21:53,350 --> 00:21:50,720
through pictures for this one and i i

553
00:21:56,149 --> 00:21:53,360
mean these northern lights images are so

554
00:21:58,870 --> 00:21:56,159
beautiful so yeah that this was just a

555
00:22:01,270 --> 00:21:58,880
fun one to dig into and write about

556
00:22:04,470 --> 00:22:01,280
cool cool you know and it reminds me

557
00:22:06,630 --> 00:22:04,480
actually uh this whole concept of like

558
00:22:09,350 --> 00:22:06,640
flying something in gathering data

559
00:22:11,430 --> 00:22:09,360
remember twister when they put the

560
00:22:13,830 --> 00:22:11,440
dorothy into the tornado to try to

561
00:22:14,950 --> 00:22:13,840
gather what's inside of a tornado what's

562
00:22:17,510 --> 00:22:14,960
going on

563
00:22:19,669 --> 00:22:17,520

it's another tornado so maybe within

564

00:22:22,310 --> 00:22:19,679

this aurora we're going to find another

565

00:22:24,630 --> 00:22:22,320

aurora or maybe we are going to find

566

00:22:28,310 --> 00:22:24,640

some signs of intelligence in there who

567

00:22:32,950 --> 00:22:30,070

that's the thing about unexplained

568

00:22:34,789 --> 00:22:32,960

things in science ryan they have an idea

569

00:22:37,270 --> 00:22:34,799

of what caused it because of those world

570

00:22:39,350 --> 00:22:37,280

war one radio pickups and then the fact

571

00:22:43,029 --> 00:22:39,360

that it's been picked up using radio

572

00:22:45,430 --> 00:22:43,039

technology since but yeah as of now it's

573

00:22:47,190 --> 00:22:45,440

an unknown uh cause that pulsating

574

00:22:49,350 --> 00:22:47,200

phenomenon

575

00:22:52,470 --> 00:22:49,360

uh well hey i'm looking forward to the

576

00:22:54,310 --> 00:22:52,480

results and uh and i can't wait man if

577

00:22:57,190 --> 00:22:54,320

anything this is a beautiful image that

578

00:23:01,350 --> 00:22:59,430

i'll admit i picked that one out i had

579

00:23:02,950 --> 00:23:01,360

about 10 of them and this one with the

580

00:23:05,029 --> 00:23:02,960

two people sitting there staring at i

581

00:23:07,270 --> 00:23:05,039

went that is just beauty that's it

582

00:23:09,430 --> 00:23:07,280

that's the one i love it well hey

583

00:23:12,630 --> 00:23:09,440

speaking of unexplained let's move to

584

00:23:15,110 --> 00:23:12,640

this really cool story that you did that

585

00:23:17,590 --> 00:23:15,120

really comforted me i know a lot of

586

00:23:19,029 --> 00:23:17,600

people out there you know they fear what

587

00:23:21,270 --> 00:23:19,039

comes after

588

00:23:23,270 --> 00:23:21,280

after you know we cease to be here on

589

00:23:25,990 --> 00:23:23,280

this planet and um

590

00:23:28,630 --> 00:23:26,000

this story kind of uh gave me some

591

00:23:30,870 --> 00:23:28,640

comfort and hope you know of like what

592

00:23:32,870 --> 00:23:30,880

happens and what could possibly happen

593

00:23:34,470 --> 00:23:32,880

and we might be getting closer to

594

00:23:36,710 --> 00:23:34,480

answering some of those questions you

595

00:23:38,870 --> 00:23:36,720

have people like uh robert bigelow

596

00:23:41,269 --> 00:23:38,880

looking into the science of um

597

00:23:43,110 --> 00:23:41,279

consciousness in the afterlife and and

598

00:23:45,590 --> 00:23:43,120

now you have these scientists looking

599

00:23:47,909 --> 00:23:45,600

into what actually flashes before your

600

00:23:51,029 --> 00:23:47,919

eyes we know that old cliché of your

601
00:23:53,830 --> 00:23:51,039
life flashes before your eyes and we're

602
00:23:55,909 --> 00:23:53,840
coming to realize that might actually be

603
00:23:58,549 --> 00:23:55,919
true so yeah would you mind telling us a

604
00:24:02,390 --> 00:23:58,559
little about does your brain replay your

605
00:24:05,430 --> 00:24:02,400
best life when you die yeah i first of

606
00:24:08,789 --> 00:24:05,440
all yeah this is uh a really interesting

607
00:24:10,070 --> 00:24:08,799
story to look into and uh basically what

608
00:24:12,390 --> 00:24:10,080
happened here

609
00:24:14,870 --> 00:24:12,400
is researchers had this patient he was

610
00:24:16,070 --> 00:24:14,880
87 years old

611
00:24:19,669 --> 00:24:16,080
he was having

612
00:24:21,190 --> 00:24:19,679
regular seizures and uh they knew he was

613
00:24:24,470 --> 00:24:21,200

in ill health and near the end of his

614

00:24:27,990 --> 00:24:24,480

life and so they had him hooked up to

615

00:24:31,110 --> 00:24:28,000

mri brain scan imaging type equipment

616

00:24:34,070 --> 00:24:31,120

to basically monitor these seizures

617

00:24:36,870 --> 00:24:34,080

to try and get an insight into

618

00:24:38,630 --> 00:24:36,880

what was causing the frequency and maybe

619

00:24:39,909 --> 00:24:38,640

even help him with some treatment as he

620

00:24:41,750 --> 00:24:39,919

was aging

621

00:24:43,590 --> 00:24:41,760

and what happened was is in the middle

622

00:24:46,070 --> 00:24:43,600

of one of these sessions he had a heart

623

00:24:47,990 --> 00:24:46,080

attack and passed away

624

00:24:49,669 --> 00:24:48,000

the the the as i point out the story

625

00:24:51,830 --> 00:24:49,679

that's the sad part of the story the

626
00:24:55,029 --> 00:24:51,840
interesting part

627
00:24:57,269 --> 00:24:55,039
is having a guy whose brain is hooked up

628
00:25:00,710 --> 00:24:57,279
to all this equipment

629
00:25:02,789 --> 00:25:00,720
at the moment he passes away provided

630
00:25:04,470 --> 00:25:02,799
this treasure trove of information that

631
00:25:07,190 --> 00:25:04,480
you can't plan for

632
00:25:08,950 --> 00:25:07,200
you know you can't have this expensive

633
00:25:11,669 --> 00:25:08,960
of equipment and this level of

634
00:25:13,430 --> 00:25:11,679
monitoring going on on a brain

635
00:25:15,669 --> 00:25:13,440
anytime you think somebody might be

636
00:25:18,549 --> 00:25:15,679
close to dying they just happen to be

637
00:25:19,669 --> 00:25:18,559
studying for another reason

638
00:25:20,710 --> 00:25:19,679

and what they found was really

639

00:25:21,909 --> 00:25:20,720

incredible

640

00:25:24,710 --> 00:25:21,919

so

641

00:25:26,710 --> 00:25:24,720

there's all kinds of brain waves and

642

00:25:28,789 --> 00:25:26,720

brain wave activity that comes out of

643

00:25:31,430 --> 00:25:28,799

your brain and by brain waves that's

644

00:25:34,789 --> 00:25:31,440

just the electromagnetic description of

645

00:25:37,110 --> 00:25:34,799

the shape the the uh electricity is

646

00:25:39,830 --> 00:25:37,120

taking in your brain it's a it's a

647

00:25:41,990 --> 00:25:39,840

complex term for a simple process but

648

00:25:44,630 --> 00:25:42,000

the different brain waves we often see

649

00:25:45,669 --> 00:25:44,640

in there like beta waves alpha waves

650

00:25:48,630 --> 00:25:45,679

gamma

651
00:25:51,430 --> 00:25:48,640
delta theta waves all of these sort of

652
00:25:53,909 --> 00:25:51,440
things and what they found was

653
00:25:56,549 --> 00:25:53,919
when this guy passed at the moment of

654
00:25:59,029 --> 00:25:56,559
death and and for some period this

655
00:26:02,549 --> 00:25:59,039
period of minutes afterwards

656
00:26:04,870 --> 00:26:02,559
they were seeing activity in his brain

657
00:26:07,110 --> 00:26:04,880
in the areas of the brain associated

658
00:26:08,789 --> 00:26:07,120
with memory and in all of these

659
00:26:10,390 --> 00:26:08,799
different brain wave patterns

660
00:26:11,350 --> 00:26:10,400
representing like

661
00:26:12,549 --> 00:26:11,360
thought

662
00:26:20,390 --> 00:26:12,559
and uh

663
00:26:23,190 --> 00:26:20,400

all these other things were all mixed up

664

00:26:24,950 --> 00:26:23,200

but happening in a very normal way

665

00:26:28,470 --> 00:26:24,960

that one would associate with almost

666

00:26:30,870 --> 00:26:28,480

like a dream recall state where you're

667

00:26:32,630 --> 00:26:30,880

having a pleasant dream

668

00:26:35,029 --> 00:26:32,640

where you're remembering a great memory

669

00:26:36,950 --> 00:26:35,039

as a childhood or something like that

670

00:26:40,070 --> 00:26:36,960

and that was the most

671

00:26:41,909 --> 00:26:40,080

uh most apt description of the wave

672

00:26:43,350 --> 00:26:41,919

pattern and the brain regions they were

673

00:26:45,990 --> 00:26:43,360

seeing in this guy

674

00:26:49,110 --> 00:26:46,000

is it sure as heck looked like

675

00:26:51,190 --> 00:26:49,120

he was reliving his best life that as he

676
00:26:53,669 --> 00:26:51,200
was on the way out the door and even

677
00:26:55,669 --> 00:26:53,679
after his body had stopped functioning

678
00:26:57,510 --> 00:26:55,679
his brain was still playing out the end

679
00:27:00,310 --> 00:26:57,520
of that show

680
00:27:02,149 --> 00:27:00,320
wow i think somebody contacted me via

681
00:27:03,990 --> 00:27:02,159
twitter and was like well isn't this a

682
00:27:06,630 --> 00:27:04,000
bit reductive and doesn't make

683
00:27:09,590 --> 00:27:06,640
consciousness a local phenomenon

684
00:27:10,630 --> 00:27:09,600
i thought actually if anything it lended

685
00:27:13,190 --> 00:27:10,640
great

686
00:27:16,870 --> 00:27:13,200
credence to a non-local conscious

687
00:27:18,870 --> 00:27:16,880
phenomena because after the body is not

688
00:27:20,630 --> 00:27:18,880

really perfectly working anymore and you

689

00:27:23,029 --> 00:27:20,640

are essentially dead

690

00:27:25,350 --> 00:27:23,039

this antenna that in a non-local

691

00:27:27,190 --> 00:27:25,360

consciousness theory that your brain is

692

00:27:30,389 --> 00:27:27,200

more like an antenna picking up on

693

00:27:32,310 --> 00:27:30,399

consciousness and and conveying it uh

694

00:27:34,149 --> 00:27:32,320

that yeah that would be what you might

695

00:27:35,750 --> 00:27:34,159

see as the body stop working but the

696

00:27:37,750 --> 00:27:35,760

brain's still picking up a little bit of

697

00:27:39,669 --> 00:27:37,760

signal while it's viable

698

00:27:40,950 --> 00:27:39,679

and what it's it's almost like a

699

00:27:43,029 --> 00:27:40,960

transition

700

00:27:44,789 --> 00:27:43,039

so it's not

701
00:27:46,710 --> 00:27:44,799
yes it could be the fact that in a

702
00:27:48,149 --> 00:27:46,720
material world

703
00:27:50,230 --> 00:27:48,159
what they caught was an image of

704
00:27:52,230 --> 00:27:50,240
somebody dying and having pleasant

705
00:27:53,510 --> 00:27:52,240
memories on the way out the door

706
00:27:55,909 --> 00:27:53,520
but in a

707
00:27:57,669 --> 00:27:55,919
life after death or a continuation of

708
00:27:59,669 --> 00:27:57,679
consciousness or more particularly like

709
00:28:01,110 --> 00:27:59,679
a quantum non-local

710
00:28:02,710 --> 00:28:01,120
consciousness

711
00:28:05,269 --> 00:28:02,720
argument which is relatively new in

712
00:28:08,710 --> 00:28:05,279
science but a pretty popular area of

713
00:28:11,029 --> 00:28:08,720

study um this lends just as much

714

00:28:13,029 --> 00:28:11,039

credence to that area if not more so it

715

00:28:14,230 --> 00:28:13,039

was a really like you said bigelow and

716

00:28:16,710 --> 00:28:14,240

these other ones that are kind of

717

00:28:18,870 --> 00:28:16,720

looking into it at this time

718

00:28:20,549 --> 00:28:18,880

for them to have this chunk information

719

00:28:23,430 --> 00:28:20,559

like this where you could look at and go

720

00:28:25,590 --> 00:28:23,440

here was a guy while he was passing away

721

00:28:28,710 --> 00:28:25,600

and we have this information and this

722

00:28:31,990 --> 00:28:28,720

information looks like yeah he was uh

723

00:28:34,389 --> 00:28:32,000

he was channeling his best life

724

00:28:36,630 --> 00:28:34,399

i love it i absolutely love that like

725

00:28:39,190 --> 00:28:36,640

you couldn't plan this these things any

726

00:28:41,190 --> 00:28:39,200

better you know and that's kind of the

727

00:28:43,669 --> 00:28:41,200

the beauty of science like a lot of it

728

00:28:46,230 --> 00:28:43,679

is happenstance and we just happened to

729

00:28:49,350 --> 00:28:46,240

trip upon something you know um

730

00:28:52,470 --> 00:28:49,360

unbeknownst to us at the time and and

731

00:28:54,630 --> 00:28:52,480

there you go scientific um you know

732

00:28:57,110 --> 00:28:54,640

discovery made you know look it happens

733

00:29:00,230 --> 00:28:57,120

like all the time right you know

734

00:29:01,909 --> 00:29:00,240

we will joke about like like uh propecia

735

00:29:03,510 --> 00:29:01,919

to keep you from losing your hair was

736

00:29:05,990 --> 00:29:03,520

like a blood pressure medicine right

737

00:29:06,950 --> 00:29:06,000

like this happens all the time that you

738

00:29:08,870 --> 00:29:06,960

find

739

00:29:11,110 --> 00:29:08,880

something you're looking for one thing

740

00:29:13,269 --> 00:29:11,120

and you find something else i have one

741

00:29:15,430 --> 00:29:13,279

of the stories on the list you gave me

742

00:29:17,350 --> 00:29:15,440

is where uh they were looking to confirm

743

00:29:19,590 --> 00:29:17,360

one planet they found a whole other one

744

00:29:21,510 --> 00:29:19,600

right so like there are definitely

745

00:29:23,990 --> 00:29:21,520

circumstances like that and yeah in this

746

00:29:25,669 --> 00:29:24,000

case they're studying epilepsy they're

747

00:29:27,510 --> 00:29:25,679

studying seizures

748

00:29:29,990 --> 00:29:27,520

and all of a sudden they're able to

749

00:29:32,950 --> 00:29:30,000

publish an entire paper

750

00:29:34,950 --> 00:29:32,960

about what happens in the brain at the

751
00:29:37,269 --> 00:29:34,960
moment of death something they were not

752
00:29:39,029 --> 00:29:37,279
working on at all but all of a sudden

753
00:29:41,990 --> 00:29:39,039
here they are publishing a paper on it

754
00:29:43,510 --> 00:29:42,000
because it's it's that significant of a

755
00:29:45,190 --> 00:29:43,520
recording you know the right place at

756
00:29:48,389 --> 00:29:45,200
the right time

757
00:29:50,310 --> 00:29:48,399
crazy crazy well let's let's move to

758
00:29:52,870 --> 00:29:50,320
that that story you were talking about

759
00:29:55,590 --> 00:29:52,880
about finding another planet this is the

760
00:29:58,950 --> 00:29:55,600
new planet found orbiting proxima

761
00:30:02,230 --> 00:29:58,960
centauri now um you know we hear about

762
00:30:05,110 --> 00:30:02,240
these ideas of exoplanets and and things

763
00:30:07,350 --> 00:30:05,120

like that but um this is a little bit uh

764

00:30:09,590 --> 00:30:07,360

closer to us you know our stellar

765

00:30:11,350 --> 00:30:09,600

neighbor as it were so yeah would you

766

00:30:13,590 --> 00:30:11,360

mind telling us a little bit about this

767

00:30:16,310 --> 00:30:13,600

story

768

00:30:18,470 --> 00:30:16,320

do you like stories of the strange the

769

00:30:21,269 --> 00:30:18,480

weird and the unexplained then we want

770

00:30:23,990 --> 00:30:21,279

you to check out jim harold's campfire

771

00:30:26,789 --> 00:30:24,000

the concept is pretty simple jim talks

772

00:30:28,870 --> 00:30:26,799

to regular people about strange stuff

773

00:30:32,549 --> 00:30:28,880

that happens to them and yes that

774

00:30:35,110 --> 00:30:32,559

includes ufos along with cryptids ghosts

775

00:30:38,230 --> 00:30:35,120

and head scratchers he doesn't

776

00:30:40,389 --> 00:30:38,240

exaggerate or play a lot of spooky music

777

00:30:43,350 --> 00:30:40,399

kind of like i'm doing right now the

778

00:30:46,470 --> 00:30:43,360

stories speak for themselves ones like a

779

00:30:49,269 --> 00:30:46,480

ghost story involving serial killer ted

780

00:30:52,470 --> 00:30:49,279

bundy or the young man who encountered

781

00:30:54,870 --> 00:30:52,480

an eight-legged demon then there's the

782

00:30:57,669 --> 00:30:54,880

story of an alien abduction by what

783

00:31:00,630 --> 00:30:57,679

could be considered a reptilian now not

784

00:31:02,870 --> 00:31:00,640

all the stories are horrifying some are

785

00:31:05,430 --> 00:31:02,880

actually pretty heartwarming like a

786

00:31:07,750 --> 00:31:05,440

visit from a past loved one or a

787

00:31:10,630 --> 00:31:07,760

peaceful near-death experience

788

00:31:13,669 --> 00:31:10,640

regardless these are true and

789

00:31:15,590 --> 00:31:13,679

fascinating stories told by ordinary

790

00:31:17,269 --> 00:31:15,600

people who've had extraordinary

791

00:31:19,909 --> 00:31:17,279

experiences

792

00:31:23,430 --> 00:31:19,919

tune in to jim herald's campfire on

793

00:31:25,909 --> 00:31:23,440

apple podcasts spotify or wherever you

794

00:31:27,029 --> 00:31:25,919

listen to somewhere in the skies and

795

00:31:29,990 --> 00:31:27,039

remember

796

00:31:33,029 --> 00:31:30,000

stay spooky

797

00:31:34,630 --> 00:31:33,039

this is uh this is really exciting to me

798

00:31:39,430 --> 00:31:34,640

so

799

00:31:41,509 --> 00:31:39,440

is advanced enough

800

00:31:44,070 --> 00:31:41,519

that we're gonna go to other star

801
00:31:46,149 --> 00:31:44,080
systems and we're gonna go to other

802
00:31:48,950 --> 00:31:46,159
planets that aren't in our star our you

803
00:31:51,430 --> 00:31:48,960
know uh solar system and we're going to

804
00:31:53,669 --> 00:31:51,440
study planets hopefully

805
00:31:55,909 --> 00:31:53,679
rocky planets that are in the habitable

806
00:31:56,950 --> 00:31:55,919
zone that have a chance at

807
00:31:57,909 --> 00:31:56,960
life

808
00:32:00,789 --> 00:31:57,919
uh

809
00:32:03,830 --> 00:32:00,799
what better place to start than you know

810
00:32:06,549 --> 00:32:03,840
the closest one which is proxima chart

811
00:32:13,590 --> 00:32:10,549
at one point i believe it's 2016

812
00:32:15,750 --> 00:32:13,600
they found the telltale wobble

813
00:32:17,110 --> 00:32:15,760

again using the wobble method but that

814

00:32:19,110 --> 00:32:17,120

telltale

815

00:32:21,909 --> 00:32:19,120

shimmy of the star

816

00:32:23,909 --> 00:32:21,919

that indicated there was a planet there

817

00:32:26,230 --> 00:32:23,919

and not only is there a planet there

818

00:32:30,230 --> 00:32:26,240

that they found they dubbed that one

819

00:32:32,710 --> 00:32:30,240

proxima b but that proxima b

820

00:32:35,909 --> 00:32:32,720

is indeed the right orbit the right

821

00:32:38,630 --> 00:32:35,919

orbital distance from its star

822

00:32:40,789 --> 00:32:38,640

to have water the habitable zone to have

823

00:32:43,110 --> 00:32:40,799

liquid water on the surface

824

00:32:46,710 --> 00:32:43,120

so it's an earth-like planet

825

00:32:50,070 --> 00:32:46,720

it's size-wise uh mass

826

00:32:51,509 --> 00:32:50,080

uh and and habitable zone so we already

827

00:32:53,750 --> 00:32:51,519

knew like hey

828

00:32:55,430 --> 00:32:53,760

if we're gonna ever go to the stars

829

00:32:57,430 --> 00:32:55,440

let's see if there's a planet around the

830

00:33:00,549 --> 00:32:57,440

closest one they found it

831

00:33:02,310 --> 00:33:00,559

so this latest study is exactly what you

832

00:33:03,590 --> 00:33:02,320

and i just talked about

833

00:33:06,549 --> 00:33:03,600

so

834

00:33:08,710 --> 00:33:06,559

here we are 2021 last year and

835

00:33:10,710 --> 00:33:08,720

researchers at the i believe it was the

836

00:33:12,870 --> 00:33:10,720

let me double check here

837

00:33:16,149 --> 00:33:12,880

yes so there's the thing called the

838

00:33:18,070 --> 00:33:16,159

european southern observatory in chile

839

00:33:21,029 --> 00:33:18,080

and they have a telescope there it's my

840

00:33:24,470 --> 00:33:21,039

favorite telescope name it's the vlt

841

00:33:27,430 --> 00:33:24,480

which stands for very large telescope

842

00:33:29,190 --> 00:33:27,440

so it's by far the best i mean hubble

843

00:33:30,549 --> 00:33:29,200

all these other are great but that's a

844

00:33:33,190 --> 00:33:30,559

great name

845

00:33:35,669 --> 00:33:33,200

yeah how literal can you get yeah the

846

00:33:38,230 --> 00:33:35,679

eso vlt is about as cool as it gets

847

00:33:40,230 --> 00:33:38,240

right the very large coast so

848

00:33:44,870 --> 00:33:40,240

researchers use this very large

849

00:33:47,110 --> 00:33:44,880

telescope to again look at proxima

850

00:33:48,310 --> 00:33:47,120

and to measure the light coming from the

851
00:33:50,389 --> 00:33:48,320
host star

852
00:33:54,310 --> 00:33:50,399
and see if they could confirm that that

853
00:33:57,590 --> 00:33:54,320
proxima b that that planet exists

854
00:33:59,269 --> 00:33:57,600
and they found two things one yes

855
00:34:01,509 --> 00:33:59,279
proxima b is there

856
00:34:04,710 --> 00:34:01,519
and two by the way there's a whole other

857
00:34:05,750 --> 00:34:04,720
planet there too proxima d

858
00:34:08,470 --> 00:34:05,760
and

859
00:34:10,470 --> 00:34:08,480
yes now proxima d

860
00:34:13,349 --> 00:34:10,480
is not in the habitable zone it's

861
00:34:15,990 --> 00:34:13,359
smaller than earth it's also rocky

862
00:34:17,669 --> 00:34:16,000
but it's much closer to the horse star

863
00:34:20,869 --> 00:34:17,679

so think of like a

864

00:34:22,950 --> 00:34:20,879

mercury and how close it is to our sun

865

00:34:25,909 --> 00:34:22,960

and therefore on the surface it's like a

866

00:34:29,430 --> 00:34:25,919

molten lava hell you know right like

867

00:34:32,230 --> 00:34:29,440

nothing would probably live there and so

868

00:34:34,710 --> 00:34:32,240

that's what they found so they did

869

00:34:37,669 --> 00:34:34,720

confirm this the planet they were hoping

870

00:34:39,750 --> 00:34:37,679

to confirm and so while we're here

871

00:34:42,389 --> 00:34:39,760

there's another planet here now the

872

00:34:45,430 --> 00:34:42,399

reason that's encouraging is because

873

00:34:47,750 --> 00:34:45,440

we're hoping proxima b is habitable but

874

00:34:49,750 --> 00:34:47,760

multi-planet systems have various

875

00:34:52,470 --> 00:34:49,760

astronomical advantages in the search

876
00:34:54,950 --> 00:34:52,480
for extra terrestrial intelligence so

877
00:34:57,109 --> 00:34:54,960
ideally you would have like a big gas

878
00:34:58,950 --> 00:34:57,119
giant like a jupiter that does and

879
00:35:01,030 --> 00:34:58,960
saturn in our solar system that kind of

880
00:35:03,270 --> 00:35:01,040
like keep a lot of the big rocks from

881
00:35:05,990 --> 00:35:03,280
coming in and slamming into us

882
00:35:09,109 --> 00:35:06,000
and uh and killing life over and over so

883
00:35:11,510 --> 00:35:09,119
signs of more planets in as in a star

884
00:35:14,710 --> 00:35:11,520
system that has a habitable zone is

885
00:35:17,430 --> 00:35:14,720
already really encouraging so

886
00:35:18,630 --> 00:35:17,440
i wrote about another story uh not that

887
00:35:21,190 --> 00:35:18,640
long ago

888
00:35:24,470 --> 00:35:21,200

about a mission being developed

889

00:35:26,550 --> 00:35:24,480

using uh directed energy propulsion so

890

00:35:28,390 --> 00:35:26,560

basically you put like a satellite space

891

00:35:30,790 --> 00:35:28,400

that has a laser

892

00:35:33,510 --> 00:35:30,800

and you put like a solar sail that uses

893

00:35:36,150 --> 00:35:33,520

that that you propel with that laser you

894

00:35:37,910 --> 00:35:36,160

know imagine like you have a uh

895

00:35:39,990 --> 00:35:37,920

like a little parachute you're shooting

896

00:35:43,190 --> 00:35:40,000

it with your hose right it's pushing it

897

00:35:45,510 --> 00:35:43,200

forward so this laser would hit that

898

00:35:47,349 --> 00:35:45,520

solar sail and this is using current

899

00:35:49,109 --> 00:35:47,359

technology so this is something that's

900

00:35:51,270 --> 00:35:49,119

within our

901
00:35:53,030 --> 00:35:51,280
viable range

902
00:35:54,550 --> 00:35:53,040
and if you could shoot and then the

903
00:35:56,470 --> 00:35:54,560
mission they're designing is to go to

904
00:35:58,230 --> 00:35:56,480
proxima centauri

905
00:36:00,390 --> 00:35:58,240
so if you shoot that thing with the

906
00:36:02,630 --> 00:36:00,400
laser and you keep the laser pointed on

907
00:36:03,990 --> 00:36:02,640
it you keep pushing that probe faster

908
00:36:06,630 --> 00:36:04,000
and faster

909
00:36:08,870 --> 00:36:06,640
there is a point around 20 to 30 percent

910
00:36:11,190 --> 00:36:08,880
the speed of light where

911
00:36:13,190 --> 00:36:11,200
other aspects of physics get involved

912
00:36:15,030 --> 00:36:13,200
that prevent it from really probably

913
00:36:17,349 --> 00:36:15,040

traveling much faster

914

00:36:19,349 --> 00:36:17,359

but imagine you could get to 20 the

915

00:36:21,750 --> 00:36:19,359

speed of light which seems something we

916

00:36:24,150 --> 00:36:21,760

will be able to do may may not be in my

917

00:36:26,550 --> 00:36:24,160

lifetime maybe in yours but you know

918

00:36:29,430 --> 00:36:26,560

we're not that far from doing this sort

919

00:36:32,790 --> 00:36:29,440

of uh directed energy propulsion

920

00:36:35,030 --> 00:36:32,800

if you could go 20 the speed of light

921

00:36:36,470 --> 00:36:35,040

and proxima is a little over four light

922

00:36:39,190 --> 00:36:36,480

years away

923

00:36:41,030 --> 00:36:39,200

my simple math tells me that's about 20

924

00:36:43,829 --> 00:36:41,040

years yeah

925

00:36:46,630 --> 00:36:43,839

no that's nothing right like the the two

926
00:36:50,470 --> 00:36:46,640
mars rover spirit opportunity launched

927
00:36:53,349 --> 00:36:50,480
to the uh uh mars in the mid 90s like

928
00:36:56,390 --> 00:36:53,359
that's almost 30 years ago so the late

929
00:36:58,870 --> 00:36:56,400
90s the fact that like we can send a

930
00:37:01,109 --> 00:36:58,880
probe now granted it's not going to land

931
00:37:02,950 --> 00:37:01,119
on those planets it's not going to do

932
00:37:05,270 --> 00:37:02,960
anything other than

933
00:37:08,630 --> 00:37:05,280
whip by them and take pictures and

934
00:37:09,990 --> 00:37:08,640
readings and stuff but it will do that

935
00:37:13,190 --> 00:37:10,000
so

936
00:37:13,990 --> 00:37:13,200
the idea that we have a first place to

937
00:37:15,670 --> 00:37:14,000
look

938
00:37:18,069 --> 00:37:15,680

that's within

939

00:37:21,030 --> 00:37:18,079

technological spinning distance at least

940

00:37:22,710 --> 00:37:21,040

within the next 20 30 years

941

00:37:25,030 --> 00:37:22,720

and the fact that there's a habitable

942

00:37:27,589 --> 00:37:25,040

planet there and the fact that we found

943

00:37:29,270 --> 00:37:27,599

this other planet i mean that is

944

00:37:31,270 --> 00:37:29,280

because imagine that we went oh the

945

00:37:33,190 --> 00:37:31,280

closest star has no planets the second

946

00:37:35,589 --> 00:37:33,200

closest you know the only place we found

947

00:37:37,990 --> 00:37:35,599

planets are 40 50 60 a thousand light

948

00:37:40,710 --> 00:37:38,000

years away 10 000 light years away no

949

00:37:42,630 --> 00:37:40,720

the very closest one has a habitable

950

00:37:44,069 --> 00:37:42,640

planet now we found another planet there

951
00:37:47,109 --> 00:37:44,079
too

952
00:37:49,670 --> 00:37:47,119
crazy man to think that like maybe

953
00:37:51,589 --> 00:37:49,680
it's a lot closer than we ever

954
00:37:53,510 --> 00:37:51,599
thought it could be and just think of

955
00:37:54,310 --> 00:37:53,520
like how that would shatter

956
00:38:00,150 --> 00:37:54,320
the

957
00:38:02,630 --> 00:38:00,160
say that nothing could travel here in

958
00:38:05,510 --> 00:38:02,640
terms of light speed and it's it's it's

959
00:38:06,550 --> 00:38:05,520
impossible mathematically and now

960
00:38:09,270 --> 00:38:06,560
like

961
00:38:11,990 --> 00:38:09,280
there a lot of scientists are

962
00:38:12,870 --> 00:38:12,000
turning you know turning face and saying

963
00:38:14,390 --> 00:38:12,880

huh

964

00:38:18,390 --> 00:38:14,400

we could have been wrong on this the

965

00:38:19,829 --> 00:38:18,400

whole time so it's uh it's exciting if

966

00:38:22,390 --> 00:38:19,839

you were building a case in the

967

00:38:24,069 --> 00:38:22,400

courtroom in 1969

968

00:38:24,870 --> 00:38:24,079

at the end of blue book

969

00:38:28,470 --> 00:38:24,880

for

970

00:38:30,630 --> 00:38:28,480

uh aliens already being here visiting us

971

00:38:33,270 --> 00:38:30,640

you would have to build the case

972

00:38:35,109 --> 00:38:33,280

that uh humans could survive long-term

973

00:38:36,230 --> 00:38:35,119

or anything could survive long-term in

974

00:38:37,670 --> 00:38:36,240

space

975

00:38:39,190 --> 00:38:37,680

you would have to build the case that

976

00:38:41,270 --> 00:38:39,200

there are planets

977

00:38:43,190 --> 00:38:41,280

around other stars

978

00:38:44,870 --> 00:38:43,200

you would then have to build the case

979

00:38:46,710 --> 00:38:44,880

that some of those planets would be

980

00:38:48,069 --> 00:38:46,720

rocky like earth

981

00:38:50,150 --> 00:38:48,079

then you would have to build the case

982

00:38:51,670 --> 00:38:50,160

that some of them would have water

983

00:38:53,510 --> 00:38:51,680

they'd have to build the case that some

984

00:38:55,270 --> 00:38:53,520

of those rocky water ones would be in

985

00:38:56,550 --> 00:38:55,280

the habitable zone

986

00:38:59,270 --> 00:38:56,560

and then you would have to build the

987

00:39:02,230 --> 00:38:59,280

case that yes traversing the

988

00:39:03,190 --> 00:39:02,240

interstellar distances for that life to

989

00:39:06,470 --> 00:39:03,200

get here

990

00:39:08,470 --> 00:39:06,480

in my lifetime i was born in 1969 the

991

00:39:10,390 --> 00:39:08,480

year that men first humans first walked

992

00:39:12,470 --> 00:39:10,400

on the moon and the year the blue book

993

00:39:14,790 --> 00:39:12,480

finished up and i can tell you that in

994

00:39:17,190 --> 00:39:14,800

my lifetime everything but the last one

995

00:39:19,990 --> 00:39:17,200

on that list has been covered right like

996

00:39:21,990 --> 00:39:20,000

there are planets everywhere humans we

997

00:39:25,270 --> 00:39:22,000

can send things up into space for a year

998

00:39:31,190 --> 00:39:27,190

they're in the habitable zone they're

999

00:39:34,069 --> 00:39:31,200

rocky planets and not only are they

1000

00:39:36,310 --> 00:39:34,079

common they're extremely common avi low

1001
00:39:38,069 --> 00:39:36,320
but harvard said in an interview the

1002
00:39:40,829 --> 00:39:38,079
other day that

1003
00:39:43,829 --> 00:39:40,839
data seems to indicate that as much as

1004
00:39:46,069 --> 00:39:43,839
half of the planets that are sun-like

1005
00:39:46,870 --> 00:39:46,079
that have a star like our sun

1006
00:39:49,030 --> 00:39:46,880
uh

1007
00:39:50,790 --> 00:39:49,040
have rocky exoplanets in the habitable

1008
00:39:52,230 --> 00:39:50,800
zone i mean think about that like

1009
00:39:55,030 --> 00:39:52,240
everyone talks about the billions of

1010
00:39:56,790 --> 00:39:55,040
galaxies and billions of star systems

1011
00:39:57,910 --> 00:39:56,800
think about the idea

1012
00:39:59,750 --> 00:39:57,920
that like

1013
00:40:01,910 --> 00:39:59,760

half of them would have a planet around

1014

00:40:03,670 --> 00:40:01,920

it and then all these binary ones that

1015

00:40:06,630 --> 00:40:03,680

we talked about

1016

00:40:09,030 --> 00:40:06,640

half of those or more would have these

1017

00:40:12,069 --> 00:40:09,040

habitable zone exoplanets

1018

00:40:13,190 --> 00:40:12,079

so what happens to the discussion

1019

00:40:15,829 --> 00:40:13,200

about

1020

00:40:17,670 --> 00:40:15,839

life already visiting earth whether it's

1021

00:40:19,990 --> 00:40:17,680

happening or not but what happens about

1022

00:40:22,150 --> 00:40:20,000

that theoretical discussion

1023

00:40:24,630 --> 00:40:22,160

if we start finding signs of life in the

1024

00:40:26,550 --> 00:40:24,640

atmosphere in these planets we're

1025

00:40:27,990 --> 00:40:26,560

finding is common

1026

00:40:31,910 --> 00:40:28,000

what happens if you say all right we've

1027

00:40:33,910 --> 00:40:31,920

spotted 25 000 planets and 10 000 of

1028

00:40:36,309 --> 00:40:33,920

them are rocky and 5 000 of those are in

1029

00:40:38,470 --> 00:40:36,319

the habitable zone and of those 5 000

1030

00:40:40,390 --> 00:40:38,480

habitable ones a couple of thousand of

1031

00:40:41,910 --> 00:40:40,400

them have gases in their atmosphere that

1032

00:40:42,870 --> 00:40:41,920

seem to indicate they have living things

1033

00:40:46,069 --> 00:40:42,880

there

1034

00:40:49,109 --> 00:40:46,079

now you have a ton of origin points

1035

00:40:51,589 --> 00:40:49,119

of life that could be coming here

1036

00:40:53,990 --> 00:40:51,599

and again you just get down to like you

1037

00:40:57,030 --> 00:40:54,000

said that that interstellar distance

1038

00:41:00,950 --> 00:40:57,040

which is legit it's a legitimate issue

1039

00:41:02,550 --> 00:41:00,960

but again in the last 120 years ago we'd

1040

00:41:07,589 --> 00:41:02,560

have an airplane

1041

00:41:09,190 --> 00:41:07,599

and here we are in in virtually one the

1042

00:41:12,069 --> 00:41:09,200

oldest person on the planet i think is

1043

00:41:14,390 --> 00:41:12,079

118. and i think that it's a japanese

1044

00:41:15,750 --> 00:41:14,400

woman so she was alive

1045

00:41:19,750 --> 00:41:15,760

before

1046

00:41:23,190 --> 00:41:19,760

airplanes flew and in her lifetime we're

1047

00:41:25,910 --> 00:41:23,200

sending missions across the solar system

1048

00:41:27,829 --> 00:41:25,920

we have spacecraft that left in the 70s

1049

00:41:30,150 --> 00:41:27,839

that have already left our solar system

1050

00:41:31,510 --> 00:41:30,160

voyager 1 and 2 have already left the

1051

00:41:33,510 --> 00:41:31,520

solar system

1052

00:41:36,390 --> 00:41:33,520

think of that in that short period of

1053

00:41:38,710 --> 00:41:36,400

time the technological advancement and

1054

00:41:41,829 --> 00:41:38,720

then tell me that in

1055

00:41:44,069 --> 00:41:41,839

50 years or 500 years or 5 000 years

1056

00:41:45,190 --> 00:41:44,079

that the human species won't be able to

1057

00:41:47,510 --> 00:41:45,200

go

1058

00:41:49,990 --> 00:41:47,520

across those interstellar distances even

1059

00:41:51,349 --> 00:41:50,000

with the probe i find it a ridiculous

1060

00:41:53,829 --> 00:41:51,359

proposition

1061

00:41:56,550 --> 00:41:53,839

absolutely i couldn't agree more man i

1062

00:41:59,829 --> 00:41:56,560

think we're we're building that case and

1063

00:42:02,150 --> 00:41:59,839

it's like you said we're so close within

1064

00:42:04,470 --> 00:42:02,160

within the span of a few decades we've

1065

00:42:07,430 --> 00:42:04,480

been able to accomplish that so i can't

1066

00:42:09,510 --> 00:42:07,440

even imagine if that last one that last

1067

00:42:12,309 --> 00:42:09,520

challenge is the only thing keeping us

1068

00:42:13,349 --> 00:42:12,319

back like just think of when we will be

1069

00:42:14,950 --> 00:42:13,359

able to

1070

00:42:17,109 --> 00:42:14,960

to do that and

1071

00:42:19,030 --> 00:42:17,119

who knows man could still be within the

1072

00:42:20,870 --> 00:42:19,040

lifetime of that japanese woman who

1073

00:42:23,510 --> 00:42:20,880

knows who knows i mean really right

1074

00:42:25,910 --> 00:42:23,520

we're really things are moving so fast

1075

00:42:28,390 --> 00:42:25,920

ryan that's you know me i i report on

1076

00:42:30,950 --> 00:42:28,400

exotic propulsion so i talk to these

1077

00:42:33,349 --> 00:42:30,960

people that are building working on warp

1078

00:42:36,550 --> 00:42:33,359

drives and solar sails and directed

1079

00:42:38,790 --> 00:42:36,560

energy and plasma rockets and

1080

00:42:42,069 --> 00:42:38,800

fusion energy propelled rockets that

1081

00:42:44,390 --> 00:42:42,079

could go 10 20 the speed of light i mean

1082

00:42:47,109 --> 00:42:44,400

a bunch of technologies that

1083

00:42:48,550 --> 00:42:47,119

again if you look 50 or 100 years ago

1084

00:42:50,630 --> 00:42:48,560

the technologies that were in

1085

00:42:52,710 --> 00:42:50,640

development not only have they all been

1086

00:42:55,109 --> 00:42:52,720

developed the ones from 100 years ago

1087

00:42:56,790 --> 00:42:55,119

but we've gone way past that so these

1088

00:42:59,510 --> 00:42:56,800

are things we're planning now where are

1089

00:43:01,030 --> 00:42:59,520

we going to be in 50 years or 100 years

1090

00:43:04,470 --> 00:43:01,040

i think when you're doing the ryan

1091

00:43:07,430 --> 00:43:04,480

sprague somewhere in the spot sky's a 3d

1092

00:43:09,510 --> 00:43:07,440

hologram podcast in the meta universe

1093

00:43:11,430 --> 00:43:09,520

like 30 years from now you may be

1094

00:43:12,390 --> 00:43:11,440

talking about a probe zeroing in on

1095

00:43:14,230 --> 00:43:12,400

proxima

1096

00:43:16,390 --> 00:43:14,240

and that habitable planet getting ready

1097

00:43:18,470 --> 00:43:16,400

to take photos i just don't think it's

1098

00:43:22,390 --> 00:43:18,480

it's that far away

1099

00:43:24,630 --> 00:43:22,400

let's hope so man let's hope so well hey

1100

00:43:26,390 --> 00:43:24,640

it's so cool i know i know that's why i

1101
00:43:28,309 --> 00:43:26,400
love the stories you bring forward this

1102
00:43:31,270 --> 00:43:28,319
isn't like dry

1103
00:43:34,069 --> 00:43:31,280
you know data-driven um you know

1104
00:43:37,270 --> 00:43:34,079
mathematical stuff like you're showing

1105
00:43:39,190 --> 00:43:37,280
us the ambitions of the scientists out

1106
00:43:41,430 --> 00:43:39,200
there the ones who are willing to

1107
00:43:43,030 --> 00:43:41,440
ask those tougher questions and not

1108
00:43:45,430 --> 00:43:43,040
conform to the

1109
00:43:47,270 --> 00:43:45,440
you know the the status quo of science

1110
00:43:49,990 --> 00:43:47,280
and and that's what the debrief is all

1111
00:43:52,230 --> 00:43:50,000
about you know disruptive science and

1112
00:43:53,990 --> 00:43:52,240
what's that next step and who's willing

1113
00:43:55,990 --> 00:43:54,000

to take those risks to ask those

1114

00:43:58,230 --> 00:43:56,000

questions and i know those are kind of

1115

00:44:00,230 --> 00:43:58,240

the people that you have spoken to and

1116

00:44:02,230 --> 00:44:00,240

the stories you're bringing forward and

1117

00:44:03,829 --> 00:44:02,240

um this last one that i kind of wanted

1118

00:44:05,349 --> 00:44:03,839

to talk to you about at least the

1119

00:44:06,550 --> 00:44:05,359

stories how i wanted to share i know

1120

00:44:08,309 --> 00:44:06,560

there's a couple more that are going to

1121

00:44:09,990 --> 00:44:08,319

be coming out that you're going to tease

1122

00:44:12,710 --> 00:44:10,000

for us here but um

1123

00:44:15,589 --> 00:44:12,720

this idea this i love this theory i've

1124

00:44:17,670 --> 00:44:15,599

been all about it for years um the idea

1125

00:44:18,870 --> 00:44:17,680

that we are the aliens

1126

00:44:22,309 --> 00:44:18,880

to our own

1127

00:44:25,750 --> 00:44:22,319

planet earthling is but a subjective

1128

00:44:29,190 --> 00:44:25,760

term when it comes to uh who we are as a

1129

00:44:31,270 --> 00:44:29,200

um a species so yeah apparently

1130

00:44:33,030 --> 00:44:31,280

this theory is a lot more plausible than

1131

00:44:34,790 --> 00:44:33,040

we think and scientists are looking

1132

00:44:36,710 --> 00:44:34,800

further into it so would you mind

1133

00:44:39,750 --> 00:44:36,720

telling us a little about this story of

1134

00:44:40,870 --> 00:44:39,760

um the origins of our species possibly

1135

00:44:43,349 --> 00:44:40,880

possibly

1136

00:44:45,030 --> 00:44:43,359

this is as fundamental as science

1137

00:44:46,309 --> 00:44:45,040

question as there is ryan and i

1138

00:44:47,670 --> 00:44:46,319

mentioned that right at the beginning of

1139

00:44:49,670 --> 00:44:47,680

this article

1140

00:44:51,589 --> 00:44:49,680

i'm gonna fix this right here

1141

00:44:53,670 --> 00:44:51,599

this is as fundamental as questions

1142

00:44:55,910 --> 00:44:53,680

again

1143

00:44:57,430 --> 00:44:55,920

if you look at the history of life on

1144

00:44:59,670 --> 00:44:57,440

our planet

1145

00:45:01,589 --> 00:44:59,680

and you start with the earliest forms of

1146

00:45:02,630 --> 00:45:01,599

life maybe three four hundred million

1147

00:45:05,270 --> 00:45:02,640

years

1148

00:45:07,109 --> 00:45:05,280

after the after the planet first form so

1149

00:45:09,990 --> 00:45:07,119

we're going back maybe four billion

1150

00:45:12,950 --> 00:45:10,000

years in time

1151

00:45:14,870 --> 00:45:12,960

those first microscopic

1152

00:45:16,470 --> 00:45:14,880

organisms

1153

00:45:18,950 --> 00:45:16,480

over time

1154

00:45:21,430 --> 00:45:18,960

evolved into different things and those

1155

00:45:23,430 --> 00:45:21,440

evolved into things and if you skip

1156

00:45:25,670 --> 00:45:23,440

ahead to today

1157

00:45:28,390 --> 00:45:25,680

all of the forms of life you see on

1158

00:45:31,829 --> 00:45:28,400

earth from plants to microscopic

1159

00:45:34,150 --> 00:45:31,839

eukaryotes or whatever they call them to

1160

00:45:35,750 --> 00:45:34,160

animals to you and me

1161

00:45:39,030 --> 00:45:35,760

this is all

1162

00:45:41,829 --> 00:45:39,040

relatively traceable from a scientific

1163

00:45:44,150 --> 00:45:41,839

perspective if you give me that first

1164

00:45:46,630 --> 00:45:44,160

organisms you give me those first

1165

00:45:47,990 --> 00:45:46,640

microscopic organisms and you give me

1166

00:45:50,550 --> 00:45:48,000

enough time

1167

00:45:53,750 --> 00:45:50,560

and you give me just the darwinian you

1168

00:45:56,150 --> 00:45:53,760

know idea of the survival of the fittest

1169

00:45:58,870 --> 00:45:56,160

that over time you will get this vast

1170

00:46:01,109 --> 00:45:58,880

array of organisms and it's something we

1171

00:46:03,190 --> 00:46:01,119

can trace through the fossil record it's

1172

00:46:05,910 --> 00:46:03,200

something we see happen every day today

1173

00:46:08,230 --> 00:46:05,920

so you can look at the coronavirus and

1174

00:46:10,950 --> 00:46:08,240

see how it's evolving across generations

1175

00:46:13,349 --> 00:46:10,960

as it continually replicates so that

1176

00:46:15,190 --> 00:46:13,359

evolutionary process

1177

00:46:18,950 --> 00:46:15,200

seems to indicate

1178

00:46:21,349 --> 00:46:18,960

that the complex life we see today

1179

00:46:24,390 --> 00:46:21,359

came from that simple life

1180

00:46:27,030 --> 00:46:24,400

but the question has always been

1181

00:46:30,710 --> 00:46:27,040

where did that simple life come from how

1182

00:46:33,430 --> 00:46:30,720

do we go from zero to one we know how we

1183

00:46:35,910 --> 00:46:33,440

go from one to where we are here it's

1184

00:46:37,750 --> 00:46:35,920

evolution and there you could argue

1185

00:46:39,030 --> 00:46:37,760

the science and some of the aspects of

1186

00:46:41,349 --> 00:46:39,040

evolution that people get more

1187

00:46:42,870 --> 00:46:41,359

frustrated about but the bottom line is

1188

00:46:46,069 --> 00:46:42,880

there's a nice

1189

00:46:48,550 --> 00:46:46,079

fossil record showing billions of years

1190

00:46:50,309 --> 00:46:48,560

of evolution to get to where we are but

1191

00:46:51,349 --> 00:46:50,319

that beginning

1192

00:46:56,550 --> 00:46:51,359

that

1193

00:46:59,109 --> 00:46:56,560

got water it's got rock it's got all

1194

00:47:02,390 --> 00:46:59,119

these minerals and things but nothing is

1195

00:47:03,990 --> 00:47:02,400

alive on it there's nothing alive and

1196

00:47:06,069 --> 00:47:04,000

then

1197

00:47:09,109 --> 00:47:06,079

something is suddenly alive

1198

00:47:12,870 --> 00:47:09,119

suddenly we have one we have microscopic

1199

00:47:14,950 --> 00:47:12,880

organisms and once you light that fire

1200

00:47:17,910 --> 00:47:14,960

it's just a matter of time and pressures

1201
00:47:20,790 --> 00:47:17,920
to end up with complex life forms that's

1202
00:47:23,030 --> 00:47:20,800
just seems to be the pattern

1203
00:47:24,710 --> 00:47:23,040
how do we get to one how do we go from

1204
00:47:27,349 --> 00:47:24,720
zero to one

1205
00:47:28,950 --> 00:47:27,359
so when i was growing up taking science

1206
00:47:31,030 --> 00:47:28,960
classes there was this term that

1207
00:47:34,150 --> 00:47:31,040
scientists like to use it was a

1208
00:47:36,390 --> 00:47:34,160
pro prebiotic soup

1209
00:47:38,390 --> 00:47:36,400
and it was this the idea of that like on

1210
00:47:41,349 --> 00:47:38,400
earth you had these like

1211
00:47:44,309 --> 00:47:41,359
thermal vents and it was gurgling and

1212
00:47:45,030 --> 00:47:44,319
there's volcanic activity and lightning

1213
00:47:47,190 --> 00:47:45,040

and

1214

00:47:48,309 --> 00:47:47,200

all these things kind of magically

1215

00:47:49,990 --> 00:47:48,319

combine

1216

00:47:52,309 --> 00:47:50,000

and boom

1217

00:47:54,549 --> 00:47:52,319

you have the first like amino acids

1218

00:47:57,510 --> 00:47:54,559

turning into peptide chains and you have

1219

00:48:00,950 --> 00:47:57,520

those peptide chains turning into voila

1220

00:48:03,990 --> 00:48:00,960

those very first microscopic organisms

1221

00:48:06,790 --> 00:48:04,000

and you go from no life to life some

1222

00:48:10,150 --> 00:48:06,800

sort of frankenstein combination of

1223

00:48:12,069 --> 00:48:10,160

electricity and heat and chemistry and

1224

00:48:13,750 --> 00:48:12,079

boom we have life and then from there

1225

00:48:15,910 --> 00:48:13,760

it's just a runaway train to get to

1226

00:48:17,510 --> 00:48:15,920

where we are now

1227

00:48:20,950 --> 00:48:17,520

interestingly

1228

00:48:23,109 --> 00:48:20,960

that may very well be wrong and that's

1229

00:48:24,630 --> 00:48:23,119

what this new study in this new research

1230

00:48:27,670 --> 00:48:24,640

and there's been some research kind of

1231

00:48:30,950 --> 00:48:27,680

building here so that old idea of the

1232

00:48:32,470 --> 00:48:30,960

the prebiotic soup the the magic formula

1233

00:48:34,870 --> 00:48:32,480

on earth that takes

1234

00:48:35,750 --> 00:48:34,880

uh just raw material and turns it into

1235

00:48:38,150 --> 00:48:35,760

life

1236

00:48:40,630 --> 00:48:38,160

that that belief has been under fire for

1237

00:48:42,230 --> 00:48:40,640

a long time now and this may be the nail

1238

00:48:44,630 --> 00:48:42,240

in that coffin because here's what they

1239

00:48:48,710 --> 00:48:46,230

we know

1240

00:48:51,589 --> 00:48:48,720

that the the building blocks of life

1241

00:48:53,349 --> 00:48:51,599

things that are called amino acids

1242

00:48:55,270 --> 00:48:53,359

are everywhere they're in space and

1243

00:48:57,589 --> 00:48:55,280

they're constantly raining down on us

1244

00:48:59,510 --> 00:48:57,599

they're constantly raining down on earth

1245

00:49:01,510 --> 00:48:59,520

we find them in meteorites all the time

1246

00:49:03,190 --> 00:49:01,520

we find them in martian meteorites we

1247

00:49:05,589 --> 00:49:03,200

find them in interstellar rock fragments

1248

00:49:06,950 --> 00:49:05,599

we find them in everything right so we

1249

00:49:09,990 --> 00:49:06,960

know like

1250

00:49:12,790 --> 00:49:10,000

the stuff you make life out of

1251

00:49:15,030 --> 00:49:12,800

comes here all the time

1252

00:49:16,710 --> 00:49:15,040

but it really did seem like you needed

1253

00:49:18,230 --> 00:49:16,720

that that

1254

00:49:20,390 --> 00:49:18,240

again that prebiotic super the

1255

00:49:23,349 --> 00:49:20,400

electricity and all the magic stuff to

1256

00:49:24,950 --> 00:49:23,359

turn it into life

1257

00:49:27,589 --> 00:49:24,960

however

1258

00:49:30,309 --> 00:49:27,599

what they did in a lab is they recreated

1259

00:49:32,950 --> 00:49:30,319

the environment of space

1260

00:49:37,270 --> 00:49:32,960

and they showed how they can take these

1261

00:49:39,829 --> 00:49:37,280

uh these glycine amino acids

1262

00:49:42,309 --> 00:49:39,839

that are common in what it i think they

1263

00:49:44,390 --> 00:49:42,319

say in the interstellar dust cloud in

1264

00:49:47,109 --> 00:49:44,400

the vacuum of space and an interstellar

1265

00:49:49,670 --> 00:49:47,119

dust cloud you'll find these

1266

00:49:51,109 --> 00:49:49,680

and in a simulated space like

1267

00:49:54,069 --> 00:49:51,119

environment

1268

00:49:57,829 --> 00:49:54,079

they were able to in one step

1269

00:50:01,750 --> 00:49:57,839

turn that single glycine into a peptide

1270

00:50:03,270 --> 00:50:01,760

chain a polyglycine chain and again

1271

00:50:06,150 --> 00:50:03,280

without getting too much into like

1272

00:50:10,069 --> 00:50:06,160

biology class and how this all works

1273

00:50:12,390 --> 00:50:10,079

the step from not life to life has this

1274

00:50:15,190 --> 00:50:12,400

transition you have to go from from

1275

00:50:17,510 --> 00:50:15,200

individual you know amino acids to these

1276

00:50:20,069 --> 00:50:17,520

chains that make like muscle tissue and

1277

00:50:22,710 --> 00:50:20,079

bone and all this other stuff

1278

00:50:25,349 --> 00:50:22,720

but there was always this energy problem

1279

00:50:27,270 --> 00:50:25,359

and how do you make that happen well

1280

00:50:29,910 --> 00:50:27,280

they did it in the lab and they

1281

00:50:32,230 --> 00:50:29,920

simulated space they were able to take

1282

00:50:34,390 --> 00:50:32,240

make peptide chains that were multiple

1283

00:50:36,390 --> 00:50:34,400

amino acids long like i think one of the

1284

00:50:39,750 --> 00:50:36,400

chains was over a dozen long and again

1285

00:50:41,030 --> 00:50:39,760

this is like a first try experiment and

1286

00:50:43,750 --> 00:50:41,040

they were able to do without the

1287

00:50:45,430 --> 00:50:43,760

electricity or without the water

1288

00:50:47,910 --> 00:50:45,440

and that's critical because we always

1289

00:50:50,470 --> 00:50:47,920

say you need water for life to form

1290

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

well what may be the case

1291

00:50:55,829 --> 00:50:53,760

is you need water for life to thrive so

1292

00:50:58,549 --> 00:50:55,839

that's what we have on earth we have to

1293

00:51:00,630 --> 00:50:58,559

basically like imagine the seeds that

1294

00:51:02,710 --> 00:51:00,640

are blown through the air of i live in a

1295

00:51:05,349 --> 00:51:02,720

suburban neighborhood and all of a

1296

00:51:07,510 --> 00:51:05,359

sudden like a a plant will crop up in

1297

00:51:10,630 --> 00:51:07,520

the middle of my lawn that is nothing i

1298

00:51:12,549 --> 00:51:10,640

planted but maybe a bird was nice enough

1299

00:51:13,589 --> 00:51:12,559

to plant it for me you know what i'm

1300

00:51:16,950 --> 00:51:13,599

saying

1301

00:51:18,230 --> 00:51:16,960

yeah this really lends an idea to an

1302

00:51:21,990 --> 00:51:18,240

argument

1303

00:51:24,470 --> 00:51:22,000

that life is common in the universe

1304

00:51:27,190 --> 00:51:24,480

the planet earth formed

1305

00:51:28,630 --> 00:51:27,200

and once it kind of cooled and settled

1306

00:51:31,030 --> 00:51:28,640

down i mean it's getting hit with these

1307

00:51:33,829 --> 00:51:31,040

amino acids from day one

1308

00:51:37,109 --> 00:51:33,839

and once it cooled down and settled down

1309

00:51:39,349 --> 00:51:37,119

meaning tectonic activity enough that

1310

00:51:40,230 --> 00:51:39,359

life could take hold

1311

00:51:42,710 --> 00:51:40,240

that

1312

00:51:44,710 --> 00:51:42,720

peptide chains and the the building

1313

00:51:45,990 --> 00:51:44,720

blocks and the actual early life

1314

00:51:48,630 --> 00:51:46,000

structures

1315

00:51:51,270 --> 00:51:48,640

were being made in space all on their

1316

00:51:53,270 --> 00:51:51,280

own and were raining down on us and we

1317

00:51:55,829 --> 00:51:53,280

just had to be a garden

1318

00:51:57,990 --> 00:51:55,839

capable of fertilizing that life of

1319

00:52:00,390 --> 00:51:58,000

supporting that life of giving that

1320

00:52:02,630 --> 00:52:00,400

would be the womb for that life and

1321

00:52:05,349 --> 00:52:02,640

maybe that's all worth is maybe we don't

1322

00:52:06,630 --> 00:52:05,359

create life here we're just a nice batch

1323

00:52:08,630 --> 00:52:06,640

of soil

1324

00:52:11,670 --> 00:52:08,640

and life essentially

1325

00:52:15,109 --> 00:52:11,680

is planted here

1326
00:52:18,069 --> 00:52:15,119
interesting we are the fertilizer to our

1327
00:52:19,829 --> 00:52:18,079
own planet i i love that i absolutely

1328
00:52:23,030 --> 00:52:19,839
love that man it makes you think you

1329
00:52:24,150 --> 00:52:23,040
know well then what's the next chapter

1330
00:52:26,230 --> 00:52:24,160
in the evidence well you know if you

1331
00:52:28,309 --> 00:52:26,240
watch the movie prometheus right i think

1332
00:52:31,910 --> 00:52:28,319
that was prometheus where this idea that

1333
00:52:35,109 --> 00:52:31,920
like the guy seated his dna into the

1334
00:52:37,670 --> 00:52:35,119
water to build life well you know

1335
00:52:40,230 --> 00:52:37,680
that that idea of panspermia that idea

1336
00:52:42,630 --> 00:52:40,240
of life across the cosmos being spread

1337
00:52:45,349 --> 00:52:42,640
maybe even intentionally if you were

1338
00:52:48,150 --> 00:52:45,359

going to intentionally spread life to

1339

00:52:50,470 --> 00:52:48,160

another planet as an advanced species of

1340

00:52:53,910 --> 00:52:50,480

some sort that was your goal

1341

00:52:56,230 --> 00:52:53,920

rather than spreading something specific

1342

00:52:58,630 --> 00:52:56,240

if you could spread the basics if you

1343

00:52:59,430 --> 00:52:58,640

could spread these peptides

1344

00:53:03,990 --> 00:52:59,440

and

1345

00:53:05,910 --> 00:53:04,000

the materials that are on that planet

1346

00:53:08,230 --> 00:53:05,920

the minerals that are on the planet the

1347

00:53:10,470 --> 00:53:08,240

temperatures all that things it creates

1348

00:53:13,670 --> 00:53:10,480

life that is more or less like unique to

1349

00:53:15,829 --> 00:53:13,680

that planet so rather than sending down

1350

00:53:17,430 --> 00:53:15,839

engineered organisms go we'll we'll give

1351
00:53:19,030 --> 00:53:17,440
him a cow and we'll give him a duck and

1352
00:53:20,710 --> 00:53:19,040
we'll give him a woolly mammoth and a

1353
00:53:22,870 --> 00:53:20,720
couple of people and whatever

1354
00:53:24,230 --> 00:53:22,880
like like at noah's ark

1355
00:53:26,950 --> 00:53:24,240
it's like no no no

1356
00:53:28,390 --> 00:53:26,960
let's just send down the seeds and what

1357
00:53:30,150 --> 00:53:28,400
grows grows

1358
00:53:33,670 --> 00:53:30,160
see what happens

1359
00:53:36,390 --> 00:53:33,680
so it lends an argument a that life

1360
00:53:39,190 --> 00:53:36,400
could just be everywhere which is what

1361
00:53:40,790 --> 00:53:39,200
those of us who are in this field

1362
00:53:43,109 --> 00:53:40,800
and i say it all the time people that

1363
00:53:46,549 --> 00:53:43,119

work at nasa the european space agency

1364

00:53:48,630 --> 00:53:46,559

place like that if you ask them in 2022

1365

00:53:50,710 --> 00:53:48,640

they will tell you their primary mission

1366

00:53:53,430 --> 00:53:50,720

is now the search for life that they

1367

00:53:56,390 --> 00:53:53,440

were astronomy organizations in the 20th

1368

00:53:58,630 --> 00:53:56,400

century in the 21st century

1369

00:54:00,470 --> 00:53:58,640

nasa employs astrobiologists

1370

00:54:02,870 --> 00:54:00,480

exobiologists

1371

00:54:06,069 --> 00:54:02,880

jobs that didn't exist 15 years ago 20

1372

00:54:08,549 --> 00:54:06,079

years ago even some of them 10 years ago

1373

00:54:10,630 --> 00:54:08,559

so in that search for life

1374

00:54:13,670 --> 00:54:10,640

the idea that

1375

00:54:16,069 --> 00:54:13,680

not only may earth not be that unique

1376

00:54:18,390 --> 00:54:16,079

but life may have not even started here

1377

00:54:20,790 --> 00:54:18,400

life just may be in the cosmos just

1378

00:54:23,349 --> 00:54:20,800

maybe something and it just it rains

1379

00:54:25,030 --> 00:54:23,359

down everywhere and when it finds a nice

1380

00:54:27,589 --> 00:54:25,040

patch of soil i mean drive down the

1381

00:54:29,270 --> 00:54:27,599

street i see a little like little little

1382

00:54:31,750 --> 00:54:29,280

twig growing up in the crack in the

1383

00:54:34,150 --> 00:54:31,760

concrete earth just may be the crack in

1384

00:54:36,069 --> 00:54:34,160

the concrete man and that's where life

1385

00:54:39,670 --> 00:54:36,079

came up

1386

00:54:42,230 --> 00:54:39,680

i love it i love it hey purple rain

1387

00:54:44,710 --> 00:54:42,240

right right yep that's that's all i got

1388

00:54:47,750 --> 00:54:44,720

to say about chubby rain as my wife

1389

00:54:52,630 --> 00:54:50,470

hey man hey we're all unique in our own

1390

00:54:54,950 --> 00:54:52,640

ways that's right i think chubby right

1391

00:54:57,030 --> 00:54:54,960

from the eddie murphy movie

1392

00:55:00,150 --> 00:54:57,040

where at the end of the movie it's the

1393

00:55:03,510 --> 00:55:00,160

the chubby ray that's eddie murphy and

1394

00:55:03,520 --> 00:55:09,430

i remembered it look at this

1395

00:55:14,950 --> 00:55:12,630

of the early 2000s i think yeah yes yeah

1396

00:55:16,470 --> 00:55:14,960

it's about 20 years great film one of my

1397

00:55:17,990 --> 00:55:16,480

favorite eddie murphy performances

1398

00:55:20,950 --> 00:55:18,000

because he plays two characters in the

1399

00:55:23,510 --> 00:55:20,960

movie and the nerdy brother character is

1400

00:55:25,430 --> 00:55:23,520

one of his best performances

1401

00:55:28,069 --> 00:55:25,440

i love it i love it he's the master at

1402

00:55:30,230 --> 00:55:28,079

playing you know those sorts of things i

1403

00:55:32,630 --> 00:55:30,240

love it i love it well hey man that's

1404

00:55:34,309 --> 00:55:32,640

all the stories that i have from uh what

1405

00:55:35,829 --> 00:55:34,319

i saw over at the debrief but i know

1406

00:55:38,150 --> 00:55:35,839

you're gonna be coming out with some

1407

00:55:39,990 --> 00:55:38,160

other ones in the coming days this will

1408

00:55:42,309 --> 00:55:40,000

probably they'll probably be out by the

1409

00:55:44,309 --> 00:55:42,319

time this airs but are there any other

1410

00:55:46,870 --> 00:55:44,319

articles you're really excited about

1411

00:55:49,670 --> 00:55:46,880

teasing to us here sure that's not gonna

1412

00:55:51,190 --> 00:55:49,680

be coming out soon i just put a video up

1413

00:55:53,190 --> 00:55:51,200

that should go up in the next couple of

1414

00:55:54,630 --> 00:55:53,200

days here so about the time this podcast

1415

00:55:55,750 --> 00:55:54,640

comes out you can probably go ahead and

1416

00:55:56,950 --> 00:55:55,760

look at it

1417

00:55:58,870 --> 00:55:56,960

and

1418

00:56:01,030 --> 00:55:58,880

basically there's a company in san diego

1419

00:56:03,430 --> 00:56:01,040

in carlsbad california which is part of

1420

00:56:05,109 --> 00:56:03,440

san diego county just south of here in

1421

00:56:06,950 --> 00:56:05,119

southern california

1422

00:56:08,630 --> 00:56:06,960

and i wrote them about them last year

1423

00:56:11,109 --> 00:56:08,640

they've created

1424

00:56:13,430 --> 00:56:11,119

a three-wheeled electric vehicle it

1425

00:56:15,430 --> 00:56:13,440

looks like an electric car but it's got

1426

00:56:17,829 --> 00:56:15,440

two wheels in the front one in the back

1427

00:56:20,230 --> 00:56:17,839

helps it qualify as a motorcycle so it

1428

00:56:21,829 --> 00:56:20,240

made it easier to get road legal but

1429

00:56:24,150 --> 00:56:21,839

it's enclosed so you don't have to wear

1430

00:56:26,789 --> 00:56:24,160

a helmet like a motorcycle

1431

00:56:29,670 --> 00:56:26,799

they're called aptera motors

1432

00:56:31,990 --> 00:56:29,680

and the reason this car they created is

1433

00:56:34,309 --> 00:56:32,000

really cool is a couple of things and

1434

00:56:36,390 --> 00:56:34,319

then the reason the video that just came

1435

00:56:38,789 --> 00:56:36,400

out is really cool is a whole other

1436

00:56:41,109 --> 00:56:38,799

thing so what's great about this car is

1437

00:56:43,030 --> 00:56:41,119

it's solar powered it's a purely

1438

00:56:45,829 --> 00:56:43,040

electric vehicle

1439

00:56:48,069 --> 00:56:45,839

you can park it in your driveway and

1440

00:56:49,829 --> 00:56:48,079

it's covered in solar panels

1441

00:56:51,750 --> 00:56:49,839

and depending on where you live and how

1442

00:56:54,150 --> 00:56:51,760

much sun you get

1443

00:56:56,630 --> 00:56:54,160

they say in a typical about 80 percent

1444

00:56:58,950 --> 00:56:56,640

of the neighborhoods in north america

1445

00:57:03,670 --> 00:56:58,960

you would generate

1446

00:57:07,270 --> 00:57:03,680

excuse me around 46 to 50 miles a day of

1447

00:57:08,789 --> 00:57:07,280

driving energy in this car right so if

1448

00:57:11,270 --> 00:57:08,799

you don't drive for two or three days in

1449

00:57:14,470 --> 00:57:11,280

a row you got enough you got like 150

1450

00:57:16,230 --> 00:57:14,480

miles driving in really high sun areas

1451

00:57:18,150 --> 00:57:16,240

if you're like in arizona or some parts

1452

00:57:19,990 --> 00:57:18,160

of the southwestern u.s

1453

00:57:22,950 --> 00:57:20,000

uh some people calculate you'll get as

1454

00:57:24,549 --> 00:57:22,960

many as 70 miles a day driving but

1455

00:57:26,390 --> 00:57:24,559

either way so you've got this car right

1456

00:57:29,270 --> 00:57:26,400

it's solar powered

1457

00:57:32,950 --> 00:57:29,280

if you want to plug it in and charge it

1458

00:57:34,789 --> 00:57:32,960

you can plug it in on a 110 ac outlet

1459

00:57:37,349 --> 00:57:34,799

so it'll like

1460

00:57:41,030 --> 00:57:37,359

off your regular old plug it'll get

1461

00:57:43,030 --> 00:57:41,040

about 130 miles a day charged from that

1462

00:57:44,470 --> 00:57:43,040

and you can charge it when the thing is

1463

00:57:47,349 --> 00:57:44,480

fully charged

1464

00:57:49,270 --> 00:57:47,359

it can go a thousand miles on one charge

1465

00:57:51,270 --> 00:57:49,280

and that's always the big anxiety with

1466

00:57:53,270 --> 00:57:51,280

electric vehicles is what they call

1467

00:57:54,789 --> 00:57:53,280

range anxiety anything over about three

1468

00:57:56,549 --> 00:57:54,799

four hundred miles is pretty rare for

1469

00:57:59,270 --> 00:57:56,559

electric vehicles

1470

00:58:02,150 --> 00:57:59,280

so this new video that just came out is

1471

00:58:04,390 --> 00:58:02,160

a drag race that the company put on

1472

00:58:07,670 --> 00:58:04,400

and they took their newer model their

1473

00:58:10,390 --> 00:58:07,680

their aptera motors beta model and they

1474

00:58:12,230 --> 00:58:10,400

took their original their alpha model

1475

00:58:15,270 --> 00:58:12,240

and they put them in a drag race against

1476

00:58:17,670 --> 00:58:15,280

an audi r8 which is an electric car

1477

00:58:19,430 --> 00:58:17,680

and a tesla model 3 which of course we

1478

00:58:20,950 --> 00:58:19,440

know tesla is the gold standard of

1479

00:58:24,789 --> 00:58:20,960

electric cars

1480

00:58:27,190 --> 00:58:24,799

and uh since uh aptera motors is the one

1481

00:58:29,349 --> 00:58:27,200

to put the drag race up on their youtube

1482

00:58:31,109 --> 00:58:29,359

channel i think you can guess who won

1483

00:58:33,270 --> 00:58:31,119

the drag race

1484

00:58:34,710 --> 00:58:33,280

it was really neat to watch because here

1485

00:58:37,270 --> 00:58:34,720

you have a car

1486

00:58:39,430 --> 00:58:37,280

that if like if you plug a a toyota

1487

00:58:41,349 --> 00:58:39,440

prius into an electrical outlet at your

1488

00:58:43,990 --> 00:58:41,359

house and charge it up all day you get

1489

00:58:46,549 --> 00:58:44,000

about like eight miles of driving if you

1490

00:58:49,589 --> 00:58:46,559

plug this thing in you get 130 miles so

1491

00:58:52,630 --> 00:58:49,599

it's this amazing car for that reason

1492

00:58:54,309 --> 00:58:52,640

and the solar power and then it's faster

1493

00:58:56,470 --> 00:58:54,319

than the tesla and the driver so it'll

1494

00:58:58,630 --> 00:58:56,480

go zero to 16 about three and a half

1495

00:59:00,710 --> 00:58:58,640

seconds i mean when i was a kid in the

1496

00:59:02,950 --> 00:59:00,720

80s that was like corvette times like he

1497

00:59:05,270 --> 00:59:02,960

almost couldn't get cars that was like

1498

00:59:07,190 --> 00:59:05,280

ferrari type times like there weren't

1499

00:59:08,789 --> 00:59:07,200

cars that even did that so the things

1500

00:59:11,190 --> 00:59:08,799

fast as heck

1501

00:59:12,950 --> 00:59:11,200

it's completely road legal

1502

00:59:16,309 --> 00:59:12,960

when i wrote about them last year they

1503

00:59:18,309 --> 00:59:16,319

were shooting for the end of 2020 2021

1504

00:59:20,230 --> 00:59:18,319

to get their first models out they're

1505

00:59:22,710 --> 00:59:20,240

not quite out yet but they're still

1506

00:59:24,470 --> 00:59:22,720

expecting delivery sometime this year

1507

00:59:26,150 --> 00:59:24,480

they're taking deposits i don't get a

1508

00:59:28,710 --> 00:59:26,160

commission so i'm not selling them to

1509

00:59:31,270 --> 00:59:28,720

you but uh but if you want to go watch

1510

00:59:33,109 --> 00:59:31,280

the video and see this really killer

1511

00:59:34,710 --> 00:59:33,119

electric vehicle within that story i

1512

00:59:37,030 --> 00:59:34,720

have a couple other videos from the

1513

00:59:39,670 --> 00:59:37,040

company showing things just a really

1514

00:59:42,470 --> 00:59:39,680

neat vehicle and yeah

1515

00:59:45,190 --> 00:59:42,480

and uh if a guy in a tesla model three

1516

00:59:46,870 --> 00:59:45,200

cuts you off you can dust into

1517

00:59:49,030 --> 00:59:46,880

with this thing yeah especially if you

1518

00:59:51,190 --> 00:59:49,040

live in arizona yeah

1519

00:59:53,670 --> 00:59:51,200

well yeah that's for the extra storage

1520

00:59:55,670 --> 00:59:53,680

but you the speed

1521

00:59:56,710 --> 00:59:55,680

is good anywhere you live but yeah you

1522

00:59:58,870 --> 00:59:56,720

can get

1523

01:00:01,589 --> 00:59:58,880

extra miles of driving if you have good

1524

01:00:03,510 --> 01:00:01,599

sun no the sun doesn't affect the

1525

01:00:04,870 --> 01:00:03,520

acceleration on it

1526

01:00:07,510 --> 01:00:04,880

okay

1527

01:00:08,870 --> 01:00:07,520

the one other story i was gonna jump

1528

01:00:11,109 --> 01:00:08,880

into here

1529

01:00:11,910 --> 01:00:11,119

at least and this is really cool by the

1530

01:00:13,030 --> 01:00:11,920

way

1531

01:00:15,030 --> 01:00:13,040

so

1532

01:00:17,589 --> 01:00:15,040

uh if you cruise around the internet

1533

01:00:20,309 --> 01:00:17,599

ever and you put in ionic wind or

1534

01:00:22,549 --> 01:00:20,319

lifters or ionic lifters and i think a

1535

01:00:24,870 --> 01:00:22,559

lot of people the kind of the ufo and

1536

01:00:27,030 --> 01:00:24,880

and science communities have done this

1537

01:00:29,030 --> 01:00:27,040

you go to youtube you'll see these

1538

01:00:29,990 --> 01:00:29,040

videos of these things they're usually

1539

01:00:32,549 --> 01:00:30,000

like

1540

01:00:34,950 --> 01:00:32,559

balsa wood triangle or a square with

1541

01:00:37,109 --> 01:00:34,960

some foil wrapped around it and it has

1542

01:00:38,390 --> 01:00:37,119

wires running to it and they flick the

1543

01:00:40,549 --> 01:00:38,400

switch on

1544

01:00:43,030 --> 01:00:40,559

and these things will hover and it'll

1545

01:00:45,190 --> 01:00:43,040

like go up in the air with like no

1546

01:00:46,950 --> 01:00:45,200

moving parts as a matter of fact the

1547

01:00:49,030 --> 01:00:46,960

scientists that first discovered it like

1548

01:00:51,990 --> 01:00:49,040

a hundred years ago thought he had an

1549

01:00:54,390 --> 01:00:52,000

anti-gravity effect and it was it was

1550

01:00:55,430 --> 01:00:54,400

known as the b field brown effect back

1551
01:00:58,630 --> 01:00:55,440
in the day

1552
01:01:01,510 --> 01:00:58,640
but it's basically an ionic wind so like

1553
01:01:03,670 --> 01:01:01,520
you know like uh the air filter in your

1554
01:01:05,349 --> 01:01:03,680
house those those ionic air filters

1555
01:01:07,270 --> 01:01:05,359
where you turn it on and there's a

1556
01:01:10,390 --> 01:01:07,280
little breeze going through there right

1557
01:01:13,190 --> 01:01:10,400
like it actually pushes air through but

1558
01:01:16,390 --> 01:01:13,200
there's no fan moving

1559
01:01:18,950 --> 01:01:16,400
it's just the the thick and thin uh

1560
01:01:21,270 --> 01:01:18,960
electronic substrates on either side

1561
01:01:25,430 --> 01:01:21,280
using an electric charge to create a

1562
01:01:27,630 --> 01:01:25,440
wind by by moving air through there

1563
01:01:29,829 --> 01:01:27,640

so in water it's like an electro

1564

01:01:32,390 --> 01:01:29,839

hydrodynamic effect

1565

01:01:33,589 --> 01:01:32,400

so in air the term they're using is an

1566

01:01:40,549 --> 01:01:33,599

electro

1567

01:01:42,549 --> 01:01:40,559

uh propulsion if you could theoretically

1568

01:01:44,470 --> 01:01:42,559

build this into a vehicle now here's

1569

01:01:46,549 --> 01:01:44,480

always been the problem when you build

1570

01:01:48,710 --> 01:01:46,559

one of these hobby lifters

1571

01:01:50,870 --> 01:01:48,720

the power plant that the battery or

1572

01:01:53,190 --> 01:01:50,880

whatever is powering it has to be down

1573

01:01:55,109 --> 01:01:53,200

on the ground you got a tether to it

1574

01:01:56,870 --> 01:01:55,119

because it's just the weight doesn't

1575

01:01:59,910 --> 01:01:56,880

work the thing doesn't create enough

1576

01:02:01,270 --> 01:01:59,920

lift for the batteries to be on board so

1577

01:02:03,910 --> 01:02:01,280

even though people have been building

1578

01:02:05,670 --> 01:02:03,920

these lifters for generations you can't

1579

01:02:08,470 --> 01:02:05,680

build one and go out and jump in it and

1580

01:02:10,470 --> 01:02:08,480

fly around because it just

1581

01:02:12,630 --> 01:02:10,480

just the the battery alone just there's

1582

01:02:14,630 --> 01:02:12,640

too much weight the power plant alone no

1583

01:02:16,069 --> 01:02:14,640

matter how you power it it can't create

1584

01:02:17,589 --> 01:02:16,079

enough lift

1585

01:02:21,349 --> 01:02:17,599

well

1586

01:02:23,750 --> 01:02:21,359

in 2018 some researchers at mit

1587

01:02:26,710 --> 01:02:23,760

built this model airplane

1588

01:02:29,029 --> 01:02:26,720

and i have that in the video as well as

1589

01:02:31,029 --> 01:02:29,039

the new update which is again they're

1590

01:02:33,190 --> 01:02:31,039

one of these groups from nasa they got

1591

01:02:36,470 --> 01:02:33,200

funding to take the plane to the next

1592

01:02:39,190 --> 01:02:36,480

level and this model plane

1593

01:02:42,470 --> 01:02:39,200

flies with no moving parts and on the

1594

01:02:44,230 --> 01:02:42,480

video you see it fly through the mit gym

1595

01:02:46,710 --> 01:02:44,240

and it kind of looks like a like a

1596

01:02:50,230 --> 01:02:46,720

wright brothers like by wing like kitty

1597

01:02:52,309 --> 01:02:50,240

hawk sort of like really simple design

1598

01:02:55,589 --> 01:02:52,319

but the main thing is it's not tethered

1599

01:02:57,510 --> 01:02:55,599

to anything it's carrying its own uh

1600

01:02:59,990 --> 01:02:57,520

uh i forget what type of their uh

1601
01:03:01,910 --> 01:03:00,000
lithium polymer batteries i believe not

1602
01:03:03,589 --> 01:03:01,920
lithium ion but they're a type of

1603
01:03:05,430 --> 01:03:03,599
battery

1604
01:03:07,589 --> 01:03:05,440
that they were able to conserve enough

1605
01:03:10,710 --> 01:03:07,599
of the weight and they were able to get

1606
01:03:13,270 --> 01:03:10,720
enough lift off of this airplane in 2018

1607
01:03:15,670 --> 01:03:13,280
that the thing does fly

1608
01:03:16,789 --> 01:03:15,680
on its own now the reason this is really

1609
01:03:18,470 --> 01:03:16,799
interesting

1610
01:03:23,029 --> 01:03:18,480
is if you think about the reports of

1611
01:03:25,029 --> 01:03:23,039
drones or or uaps harassing the us

1612
01:03:27,190 --> 01:03:25,039
military off the coast

1613
01:03:28,630 --> 01:03:27,200

and you think of the descriptions of

1614

01:03:30,789 --> 01:03:28,640

some of them and their performance

1615

01:03:31,990 --> 01:03:30,799

capabilities it sure sounds like

1616

01:03:33,510 --> 01:03:32,000

something you would think of as

1617

01:03:36,390 --> 01:03:33,520

anti-gravity

1618

01:03:39,270 --> 01:03:36,400

but what these guys are designing

1619

01:03:43,029 --> 01:03:39,280

is something that has no moving parts is

1620

01:03:45,829 --> 01:03:43,039

completely silent but flies just using

1621

01:03:47,990 --> 01:03:45,839

the power of electricity in my store i

1622

01:03:50,549 --> 01:03:48,000

even show a design of one that was built

1623

01:03:53,190 --> 01:03:50,559

in the early 2000s that looks like a

1624

01:03:54,630 --> 01:03:53,200

flying saucer and that one actually took

1625

01:03:56,549 --> 01:03:54,640

off the ground and hovered for about

1626
01:03:57,349 --> 01:03:56,559
three minutes before it late set back

1627
01:03:59,430 --> 01:03:57,359
down

1628
01:04:02,150 --> 01:03:59,440
and we have heard nothing about that

1629
01:04:03,670 --> 01:04:02,160
design and that's that's i don't know if

1630
01:04:05,430 --> 01:04:03,680
it's you know something's going on

1631
01:04:07,670 --> 01:04:05,440
behind the scenes or whatever but that

1632
01:04:09,589 --> 01:04:07,680
one kind of came and went in 2006 but

1633
01:04:11,589 --> 01:04:09,599
then it's on wikipedia i put a link to

1634
01:04:14,870 --> 01:04:11,599
it and you can look at the flying saucer

1635
01:04:16,069 --> 01:04:14,880
one the video of this airplane is real

1636
01:04:19,430 --> 01:04:16,079
and so

1637
01:04:22,150 --> 01:04:19,440
because of that success at mit of flying

1638
01:04:24,870 --> 01:04:22,160

of a vehicle powered just with the power

1639

01:04:26,470 --> 01:04:24,880

of electricity and no moving parts

1640

01:04:29,029 --> 01:04:26,480

nasa said all right here's a chunk of

1641

01:04:31,750 --> 01:04:29,039

money you guys go to phase two as

1642

01:04:33,270 --> 01:04:31,760

opposed to phase one we want to try and

1643

01:04:35,349 --> 01:04:33,280

build one of these

1644

01:04:38,309 --> 01:04:35,359

that would be like a drone

1645

01:04:39,349 --> 01:04:38,319

that can fly over an area where sound is

1646

01:04:40,950 --> 01:04:39,359

an issue

1647

01:04:43,190 --> 01:04:40,960

so imagine like

1648

01:04:45,910 --> 01:04:43,200

packaged drones right that we want

1649

01:04:48,549 --> 01:04:45,920

flying in in neighborhoods or airplanes

1650

01:04:51,430 --> 01:04:48,559

you want flying over or even delivering

1651
01:04:53,670 --> 01:04:51,440
medicine at 2 am to a critical patient

1652
01:04:56,390 --> 01:04:53,680
but it's where people don't want stuff

1653
01:04:58,870 --> 01:04:56,400
flying overhead because of noise imagine

1654
01:05:02,230 --> 01:04:58,880
these perfectly silent

1655
01:05:05,349 --> 01:05:02,240
vehicles that have no moving parts that

1656
01:05:07,910 --> 01:05:05,359
fly just using electricity so that's

1657
01:05:10,549 --> 01:05:07,920
that's what the grant is for is to try

1658
01:05:12,789 --> 01:05:10,559
and develop that technology further to

1659
01:05:15,430 --> 01:05:12,799
create these new ducted uh

1660
01:05:16,630 --> 01:05:15,440
uh type of uh

1661
01:05:18,630 --> 01:05:16,640
i'm trying to think of what they call

1662
01:05:20,470 --> 01:05:18,640
them like these electrodynamic ducts

1663
01:05:22,390 --> 01:05:20,480

that would funnel the air in a better

1664

01:05:24,630 --> 01:05:22,400

way and you would put them stack them

1665

01:05:26,630 --> 01:05:24,640

it's a really interesting article it's

1666

01:05:29,589 --> 01:05:26,640

not that complex i make it more complex

1667

01:05:32,789 --> 01:05:29,599

than it is but basically

1668

01:05:37,270 --> 01:05:35,430

no propellant no moving part now no

1669

01:05:38,950 --> 01:05:37,280

propellant it is pushing ionic went

1670

01:05:40,549 --> 01:05:38,960

through but but you don't have to put

1671

01:05:42,390 --> 01:05:40,559

any on board propellant you don't have

1672

01:05:44,789 --> 01:05:42,400

to put like a rocket view or something

1673

01:05:47,589 --> 01:05:44,799

offer it to fire it can just fly around

1674

01:05:49,270 --> 01:05:47,599

using electricity so if they're already

1675

01:05:50,950 --> 01:05:49,280

building a little plane out of it that

1676

01:05:52,549 --> 01:05:50,960

they can fly around

1677

01:05:54,150 --> 01:05:52,559

the idea of one of these getting to the

1678

01:05:56,309 --> 01:05:54,160

point of a drone which is what they're

1679

01:05:58,789 --> 01:05:56,319

talking about that may be able to carry

1680

01:06:01,109 --> 01:05:58,799

sensors on it or carry a package on it

1681

01:06:03,670 --> 01:06:01,119

or whatever and then you scale up to the

1682

01:06:05,029 --> 01:06:03,680

idea of maybe you could solar power it

1683

01:06:08,069 --> 01:06:05,039

so it doesn't have to carry the

1684

01:06:09,910 --> 01:06:08,079

batteries on board so there's a lot of

1685

01:06:11,430 --> 01:06:09,920

interesting technological applications

1686

01:06:14,309 --> 01:06:11,440

that this group is going to be looking

1687

01:06:16,789 --> 01:06:14,319

for that but yeah it's called electro

1688

01:06:18,870 --> 01:06:16,799

aerodynamic propulsion and it is

1689

01:06:21,270 --> 01:06:18,880

something being funded by nasa and they

1690

01:06:23,990 --> 01:06:21,280

got a a real little airplane at mit that

1691

01:06:26,470 --> 01:06:24,000

flies so it's pretty i love it

1692

01:06:27,670 --> 01:06:26,480

phase two here we come i love it

1693

01:06:29,109 --> 01:06:27,680

so cool

1694

01:06:31,349 --> 01:06:29,119

so well hey

1695

01:06:34,069 --> 01:06:31,359

chris this has been incredible man i

1696

01:06:36,150 --> 01:06:34,079

knew that all i had to do was pick some

1697

01:06:39,029 --> 01:06:36,160

headlines and we would have enough to

1698

01:06:41,430 --> 01:06:39,039

talk about for over an hour man so i'm

1699

01:06:43,829 --> 01:06:41,440

going to wrap things up here with you

1700

01:06:46,390 --> 01:06:43,839

but i want to thank you every time you

1701

01:06:48,950 --> 01:06:46,400

come on here i can just hear the passion

1702

01:06:51,829 --> 01:06:48,960

and the excitement in your voice and it

1703

01:06:53,829 --> 01:06:51,839

shows by the voluminous amounts of

1704

01:06:55,910 --> 01:06:53,839

articles you put out over there at the

1705

01:06:58,789 --> 01:06:55,920

debrief and you know man it gives me

1706

01:07:00,710 --> 01:06:58,799

hope for the future and um i appreciate

1707

01:07:03,670 --> 01:07:00,720

it thank you ryan

1708

01:07:05,349 --> 01:07:03,680

my pleasure man so um i can tell you the

1709

01:07:07,190 --> 01:07:05,359

one thing i wanted to bring up before we

1710

01:07:09,190 --> 01:07:07,200

got on because it's really happening

1711

01:07:11,109 --> 01:07:09,200

right now is that because of what's

1712

01:07:12,710 --> 01:07:11,119

going on in ukraine i thought tim

1713

01:07:14,950 --> 01:07:12,720

mcmillan who i work with at the

1714

01:07:17,190 --> 01:07:14,960

debriefing and you work with uh put an

1715

01:07:18,470 --> 01:07:17,200

interesting tweet out this morning and

1716

01:07:21,190 --> 01:07:18,480

he said well

1717

01:07:24,630 --> 01:07:21,200

i guess we know now that the

1718

01:07:28,630 --> 01:07:24,640

the uh uaps that have hovering around

1719

01:07:31,430 --> 01:07:28,640

our military are not russian because uh

1720

01:07:34,470 --> 01:07:31,440

if they had that technology uh they'd be

1721

01:07:37,190 --> 01:07:34,480

using it right they're in a live combat

1722

01:07:38,870 --> 01:07:37,200

situation that's not going that well for

1723

01:07:40,870 --> 01:07:38,880

them you know tim's been writing these

1724

01:07:43,270 --> 01:07:40,880

updates on the debrief with some pretty

1725

01:07:44,950 --> 01:07:43,280

neat inside information about what's

1726

01:07:47,270 --> 01:07:44,960

going on behind the scenes and what the

1727

01:07:49,270 --> 01:07:47,280

situation on the ground really is

1728

01:07:50,309 --> 01:07:49,280

and uh

1729

01:07:52,309 --> 01:07:50,319

you know

1730

01:07:54,470 --> 01:07:52,319

the areas that maybe russia made a lot

1731

01:07:57,109 --> 01:07:54,480

of miscalculations but i thought it was

1732

01:07:58,870 --> 01:07:57,119

just an interesting point that we've had

1733

01:08:00,390 --> 01:07:58,880

this list of

1734

01:08:02,870 --> 01:08:00,400

our uaps

1735

01:08:06,150 --> 01:08:02,880

american secret project

1736

01:08:07,829 --> 01:08:06,160

russian chinese or other right the other

1737

01:08:09,430 --> 01:08:07,839

was always the interesting one because

1738

01:08:11,029 --> 01:08:09,440

we always seem to be able to eliminate

1739

01:08:13,750 --> 01:08:11,039

the first three

1740

01:08:15,829 --> 01:08:13,760

well now i feel like we can fully

1741

01:08:17,829 --> 01:08:15,839

eliminate russia tim put that out and i

1742

01:08:19,189 --> 01:08:17,839

have like a thousand likes but i read

1743

01:08:21,669 --> 01:08:19,199

that this morning and i said he's

1744

01:08:24,070 --> 01:08:21,679

exactly right we're in a live combat

1745

01:08:26,550 --> 01:08:24,080

situation over there if russia had these

1746

01:08:27,990 --> 01:08:26,560

things they'd be used so uh

1747

01:08:29,749 --> 01:08:28,000

i just thought it was an interesting

1748

01:08:31,749 --> 01:08:29,759

piece of information he noted this

1749

01:08:33,590 --> 01:08:31,759

morning and yeah i wanted to use it as

1750

01:08:35,910 --> 01:08:33,600

an opportunity to promote the fact that

1751

01:08:37,669 --> 01:08:35,920

he's just doing amazing coverage over at

1752

01:08:40,550 --> 01:08:37,679

the debris so you want to want to hear

1753

01:08:41,990 --> 01:08:40,560

about like the story inside the story of

1754

01:08:43,430 --> 01:08:42,000

ukraine and what he's hearing from

1755

01:08:45,669 --> 01:08:43,440

intelligence people what he's hearing

1756

01:08:47,829 --> 01:08:45,679

from military people and kind of like

1757

01:08:50,630 --> 01:08:47,839

the stuff he's sharing with us

1758

01:08:52,950 --> 01:08:50,640

it's really cool so uh yeah what one

1759

01:08:55,110 --> 01:08:52,960

thing for sure it seems those uh what

1760

01:08:58,070 --> 01:08:55,120

ryan graves and these other navy pilots

1761

01:09:00,390 --> 01:08:58,080

we're seeing uh harassing their carrier

1762

01:09:02,630 --> 01:09:00,400

groups are not russian

1763

01:09:08,950 --> 01:09:02,640

yeah let's hope so man and let's hope

1764

01:09:13,829 --> 01:09:11,269

kick them off the list of the whoever's

1765

01:09:15,829 --> 01:09:13,839

behind the uap so uh i thought that was

1766

01:09:19,030 --> 01:09:15,839

an interesting development as we would

1767

01:09:21,669 --> 01:09:19,040

say yep the mystery remains i love it

1768

01:09:23,269 --> 01:09:21,679

well hey man of course before we go i

1769

01:09:25,590 --> 01:09:23,279

have to ask you know besides your

1770

01:09:28,149 --> 01:09:25,600

twitter handle there on the screen where

1771

01:09:30,630 --> 01:09:28,159

can we find everything you're up to

1772

01:09:32,950 --> 01:09:30,640

uh so the the best place obviously just

1773

01:09:34,950 --> 01:09:32,960

keep going to thedebris.org

1774

01:09:36,789 --> 01:09:34,960

i do anywhere from eight to fifteen

1775

01:09:39,990 --> 01:09:36,799

stories a week just depending on what

1776

01:09:41,510 --> 01:09:40,000

i'm covering what we're covering um i i

1777

01:09:43,669 --> 01:09:41,520

know people have been

1778

01:09:45,749 --> 01:09:43,679

private messaging me about some stories

1779

01:09:48,149 --> 01:09:45,759

i've teased in the past and yes nothing

1780

01:09:50,630 --> 01:09:48,159

has disappeared things are still coming

1781

01:09:51,749 --> 01:09:50,640

we're working on some really neat stuff

1782

01:09:54,470 --> 01:09:51,759

uh

1783

01:09:56,790 --> 01:09:54,480

i can tell people that 2022 i just feel

1784

01:09:58,550 --> 01:09:56,800

like that the balance of this year has

1785

01:10:00,550 --> 01:09:58,560

some pretty interesting rebels uh

1786

01:10:02,630 --> 01:10:00,560

revelations on tap

1787

01:10:05,270 --> 01:10:02,640

and uh if you want to read my writing

1788

01:10:07,350 --> 01:10:05,280

about science technology any of these

1789

01:10:09,430 --> 01:10:07,360

cutting edge things every day at the

1790

01:10:12,229 --> 01:10:09,440

debrief you can follow me there on

1791

01:10:13,669 --> 01:10:12,239

twitter uh i do have my own website but

1792

01:10:15,590 --> 01:10:13,679

i don't do much on it if you're somebody

1793

01:10:17,270 --> 01:10:15,600

who reads fantasy novels or if you want

1794

01:10:19,590 --> 01:10:17,280

to read my science fiction novel when it

1795

01:10:20,430 --> 01:10:19,600

comes out later this year that website

1796

01:10:22,310 --> 01:10:20,440

is

1797

01:10:23,110 --> 01:10:22,320

plainfiction.com just like you're seeing

1798

01:10:32,470 --> 01:10:23,120

my

1799

01:10:34,390 --> 01:10:32,480

book is up there for 99 cents right now

1800

01:10:36,950 --> 01:10:34,400

so uh knock yourself

1801

01:10:38,950 --> 01:10:36,960

what a steal you are a renaissance man

1802

01:10:41,030 --> 01:10:38,960

through and through so chris of course

1803

01:10:43,030 --> 01:10:41,040

my man thank you so much again for

1804

01:10:50,940 --> 01:10:43,040

joining me on somewhere in the skies

1805

01:11:25,670 --> 01:11:23,980

[Music]