



GARRY NOLAN

"The Material Science
of UAP"



1
00:00:02,190 --> 00:00:34,709

[Music]

2
00:00:39,830 --> 00:00:36,310

so again I want to thank everybody for

3
00:00:42,270 --> 00:00:39,840

coming uh really appreciate it and um I

4
00:00:45,310 --> 00:00:42,280

I forgot this morning to mention Dave

5
00:00:48,549 --> 00:00:45,320

grush uh Dave can't be here because of

6
00:00:50,549 --> 00:00:48,559

travel that he's doing right now but um

7
00:00:52,069 --> 00:00:50,559

I want to remind everybody that he's uh

8
00:00:54,910 --> 00:00:52,079

you know he was a partner in setting

9
00:00:56,950 --> 00:00:54,920

this up um and we're proud to be

10
00:01:04,479 --> 00:00:56,960

associated with him just so everybody

11
00:01:09,030 --> 00:01:06,710

[Applause]

12
00:01:10,910 --> 00:01:09,040

so what's

13
00:01:13,990 --> 00:01:10,920

inevitable inevitably we're going to

14

00:01:16,469 --> 00:01:14,000

come across something out there that is

15

00:01:20,069 --> 00:01:16,479

uh Alien I mean this's just be serious

16

00:01:23,069 --> 00:01:20,079

about it um or at least life let's say

17

00:01:26,910 --> 00:01:23,079

um but how do we engage it and how do we

18

00:01:32,510 --> 00:01:26,920

begin and so you know I

19

00:01:35,069 --> 00:01:32,520

think we start with the problem is

20

00:01:38,270 --> 00:01:35,079

everything is made of Stardust right so

21

00:01:39,870 --> 00:01:38,280

how do we approach this um we don't

22

00:01:41,789 --> 00:01:39,880

understand the rules frankly of how it

23

00:01:45,350 --> 00:01:41,799

all goes together you know as a

24

00:01:46,870 --> 00:01:45,360

biologist I study the basic gears and

25

00:01:50,749 --> 00:01:46,880

principles of what goes on inside of a

26

00:01:56,029 --> 00:01:50,759

cell and then we basically figure out

27

00:01:59,389 --> 00:01:56,039

how it works um try to um and so I think

28

00:02:00,910 --> 00:01:59,399

of potential UAP materials as something

29

00:02:04,270 --> 00:02:00,920

that I can can approach with the same

30

00:02:07,350 --> 00:02:04,280

methodologies that I have with uh cancer

31

00:02:09,710 --> 00:02:07,360

research it's straightforward we just if

32

00:02:11,990 --> 00:02:09,720

to analyze it but at what level do you

33

00:02:13,229 --> 00:02:12,000

analyze it so because we don't

34

00:02:15,190 --> 00:02:13,239

understand the rules of how it all goes

35

00:02:19,470 --> 00:02:15,200

together and you know if you if you

36

00:02:21,110 --> 00:02:19,480

think about uh avi's work with the

37

00:02:23,670 --> 00:02:21,120

meteor from

38

00:02:26,070 --> 00:02:23,680

2014 um which seems to have a structural

39

00:02:29,070 --> 00:02:26,080

Integrity that

40

00:02:31,509 --> 00:02:29,080

defies at least a good portion of the

41

00:02:34,589 --> 00:02:31,519

astrophysics community's

42

00:02:37,309 --> 00:02:34,599

desires um and then you think about what

43

00:02:38,990 --> 00:02:37,319

Kevin spoke about obviously somebody has

44

00:02:40,470 --> 00:02:39,000

an understanding of physics that we

45

00:02:42,270 --> 00:02:40,480

don't but that means that they're

46

00:02:45,070 --> 00:02:42,280

putting things together in ways that we

47

00:02:47,470 --> 00:02:45,080

don't understand how they're doing it so

48

00:02:51,430 --> 00:02:47,480

let's back up here so technology

49

00:02:54,630 --> 00:02:51,440

invention Stanford and questions from

50

00:02:57,350 --> 00:02:54,640

exobiology to Silicon Valley and biotech

51
00:02:59,350 --> 00:02:57,360
so in the department where I got my PhD

52
00:03:01,949 --> 00:02:59,360
uh there was a gentleman by the name of

53
00:03:04,550 --> 00:03:01,959
Joshua leberg and he' got the Nobel

54
00:03:06,309 --> 00:03:04,560
Prize for uh being the first to show how

55
00:03:10,550 --> 00:03:06,319
bacteria have

56
00:03:13,190 --> 00:03:10,560
sex um and so uh he was the chairman of

57
00:03:17,630 --> 00:03:13,200
the department um but he was interested

58
00:03:19,270 --> 00:03:17,640
in what's out there and so he pioneered

59
00:03:22,789 --> 00:03:19,280
the field of exobiology with one of the

60
00:03:25,470 --> 00:03:22,799
first papers on the subject um and then

61
00:03:29,190 --> 00:03:25,480
he started proposing the Viking

62
00:03:31,470 --> 00:03:29,200
project uh and then uh he was appointed

63
00:03:35,390 --> 00:03:31,480

oversight of that and he helped design

64

00:03:37,309 --> 00:03:35,400

it at the same time he was uh he was

65

00:03:40,670 --> 00:03:37,319

recruiting other

66

00:03:42,789 --> 00:03:40,680

scientists uh to the

67

00:03:46,470 --> 00:03:42,799

department a couple of which I'll talk

68

00:03:49,070 --> 00:03:46,480

about in a moment so this is Lenard

69

00:03:50,309 --> 00:03:49,080

herzenberg Leonard was my PhD adviser

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00:03:52,589 --> 00:03:50,319

along with Lee herzenberg they were a

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00:03:55,350 --> 00:03:52,599

husband wife team they were

72

00:03:58,229 --> 00:03:55,360

inseparable um and he invented the

73

00:04:01,229 --> 00:03:58,239

fluorescence activated cell order which

74

00:04:02,670 --> 00:04:01,239

is a remarkable device device uh that

75

00:04:04,229 --> 00:04:02,680

allows you to separate cells based on

76

00:04:05,750 --> 00:04:04,239

fluorescence and when you get a blood

77

00:04:07,630 --> 00:04:05,760

draw and you something comes back and

78

00:04:11,509 --> 00:04:07,640

say you have this many cbcs or this many

79

00:04:13,869 --> 00:04:11,519

whatever it's using this instrument um

80

00:04:16,550 --> 00:04:13,879

and but interestingly he capitalized on

81

00:04:18,949 --> 00:04:16,560

the engineers who were still kind of

82

00:04:21,550 --> 00:04:18,959

they they sort of they Viking had been

83

00:04:24,670 --> 00:04:21,560

launched or was around and but they had

84

00:04:29,469 --> 00:04:24,680

this amazing expertise to design things

85

00:04:31,590 --> 00:04:29,479

at the micro scale so he he capitalized

86

00:04:33,270 --> 00:04:31,600

that that flowmetry today because of

87

00:04:35,710 --> 00:04:33,280

those patents is a multi-billion dollar

88

00:04:37,749 --> 00:04:35,720

industry it is the root of all

89

00:04:40,670 --> 00:04:37,759

immunology and all the things that I've

90

00:04:43,830 --> 00:04:40,680

done have frankly been replicating many

91

00:04:46,909 --> 00:04:43,840

of the things that that uh Lee and Len

92

00:04:49,629 --> 00:04:46,919

have done but at more expansive

93

00:04:52,629 --> 00:04:49,639

scales importantly to get that

94

00:04:55,870 --> 00:04:52,639

technology out right I mean there's like

95

00:04:57,790 --> 00:04:55,880

this big thing be in academics you know

96

00:04:59,909 --> 00:04:57,800

socialism capitalism you know it's free

97

00:05:01,990 --> 00:04:59,919

for everybody is whatever so but what

98

00:05:04,189 --> 00:05:02,000

Stanford realized along with Neils

99

00:05:06,350 --> 00:05:04,199

reamers who was the uh head of the

100

00:05:07,909 --> 00:05:06,360

Stanford office of Technology licensing

101
00:05:10,990 --> 00:05:07,919
who with Bertram Roland they come up

102
00:05:14,870 --> 00:05:11,000
with a very unique patenting scheme that

103
00:05:16,390 --> 00:05:14,880
enabled access while not giving away the

104
00:05:19,150 --> 00:05:16,400
the farm

105
00:05:20,950 --> 00:05:19,160
literally also in that department at the

106
00:05:24,870 --> 00:05:20,960
same time was Stanley

107
00:05:27,350 --> 00:05:24,880
Cohen uh Stanley Cohen uh was the uh

108
00:05:30,230 --> 00:05:27,360
basically the Cohen Boyer patents that

109
00:05:32,510 --> 00:05:30,240
started the Biotech Industry

110
00:05:34,070 --> 00:05:32,520
so I rotated with st in fact I came to

111
00:05:35,350 --> 00:05:34,080
Stanford to work with him and but I

112
00:05:36,550 --> 00:05:35,360
ended up being more interested in the

113
00:05:41,469 --> 00:05:36,560

stuff going on in

114

00:05:43,870 --> 00:05:41,479

lenslet so \$35 billion overall so

115

00:05:47,270 --> 00:05:43,880

far okay and that was that was a lot of

116

00:05:48,670 --> 00:05:47,280

extra money to the Department of uh of

117

00:05:50,830 --> 00:05:48,680

genetics was one of the richest

118

00:05:53,350 --> 00:05:50,840

departments on

119

00:05:57,550 --> 00:05:53,360

campus using the flow cytometer was this

120

00:05:59,510 --> 00:05:57,560

guy Vernon oi he was my uh lab Mentor in

121

00:06:02,670 --> 00:05:59,520

in lens lab he was a postto more than

122

00:06:06,430 --> 00:06:02,680

than that he again had been an amazing

123

00:06:08,710 --> 00:06:06,440

inventor so he along with Len and others

124

00:06:10,510 --> 00:06:08,720

uh invented what are called humanized

125

00:06:12,390 --> 00:06:10,520

antibodies and those humanized

126
00:06:15,270 --> 00:06:12,400
antibodies have gone on to

127
00:06:16,790 --> 00:06:15,280
revolutionize cancer uh and autoimmune

128
00:06:19,150 --> 00:06:16,800
disease

129
00:06:21,390 --> 00:06:19,160
work the impact there is in the

130
00:06:24,710 --> 00:06:21,400
trillions of dollars not just the sales

131
00:06:28,469 --> 00:06:24,720
of them but trillions and the lives

132
00:06:31,110 --> 00:06:28,479
saved okay so here you have a question a

133
00:06:33,950 --> 00:06:31,120
simple question that set up a chain

134
00:06:36,230 --> 00:06:33,960
reaction of opportunity a synchronistic

135
00:06:37,990 --> 00:06:36,240
chain reaction right people right time

136
00:06:40,670 --> 00:06:38,000
all in this one Department because of

137
00:06:43,350 --> 00:06:40,680
the closeness of those people right and

138
00:06:45,950 --> 00:06:43,360

that proximity and access to information

139

00:06:48,029 --> 00:06:45,960

is what drives it's the fuel of science

140

00:06:49,390 --> 00:06:48,039

it's very important so and it all

141

00:06:51,469 --> 00:06:49,400

started with the

142

00:06:54,629 --> 00:06:51,479

question are we

143

00:06:58,070 --> 00:06:54,639

alone right that that started it that is

144

00:07:00,309 --> 00:06:58,080

the reason all of this is here

145

00:07:02,150 --> 00:07:00,319

right so

146

00:07:06,510 --> 00:07:02,160

let's jump right into it as you all know

147

00:07:09,670 --> 00:07:06,520

I've been interested in alleged UAP

148

00:07:12,550 --> 00:07:09,680

materials so how would you analyze

149

00:07:14,230 --> 00:07:12,560

materials from a UAP well like I said

150

00:07:15,749 --> 00:07:14,240

before it's you take it apart piece by

151
00:07:17,430 --> 00:07:15,759
piece you try to understand the

152
00:07:19,230 --> 00:07:17,440
components and you try to ask the

153
00:07:21,110 --> 00:07:19,240
question why is this component here next

154
00:07:22,749 --> 00:07:21,120
to that component and what might they be

155
00:07:26,510 --> 00:07:22,759
doing with each

156
00:07:30,510 --> 00:07:26,520
other so but it's not just about that it

157
00:07:32,110 --> 00:07:30,520
was about that there's data out there

158
00:07:34,950 --> 00:07:32,120
that something unusual is observed and

159
00:07:36,670 --> 00:07:34,960
the speakers this morning went over this

160
00:07:38,189 --> 00:07:36,680
and the evidence is collected in a crime

161
00:07:42,430 --> 00:07:38,199
scene and I got interested in it because

162
00:07:46,550 --> 00:07:42,440
of this and so but as it turned out some

163
00:07:49,710 --> 00:07:46,560

of this evidence appeared to come from

164

00:07:52,510 --> 00:07:49,720

uaps is it the steering wheel is it

165

00:07:54,510 --> 00:07:52,520

their version of a of a you know

166

00:07:55,589 --> 00:07:54,520

television screen what is it what do

167

00:07:57,990 --> 00:07:55,599

they leave behind and why do they leave

168

00:08:00,350 --> 00:07:58,000

it behind is the question so how do we

169

00:08:03,510 --> 00:08:00,360

analyze it

170

00:08:06,149 --> 00:08:03,520

so I mean I won't go into all of the of

171

00:08:08,629 --> 00:08:06,159

the uh this whole slide but I mean it's

172

00:08:11,589 --> 00:08:08,639

really about using the tools we already

173

00:08:14,230 --> 00:08:11,599

have and I happen to have M laboratory

174

00:08:17,270 --> 00:08:14,240

tools that allow me to look at Metals um

175

00:08:21,869 --> 00:08:17,280

I'm not a metallist but I play one on

176

00:08:24,510 --> 00:08:21,879

TV um but it's uh I had the tools and I

177

00:08:27,070 --> 00:08:24,520

had the interest and I had a good friend

178

00:08:29,550 --> 00:08:27,080

by the name of jacqu valet who brought

179

00:08:32,670 --> 00:08:29,560

me some of these materials cuz he said

180

00:08:34,829 --> 00:08:32,680

hey let's uh let's look at this and I

181

00:08:38,589 --> 00:08:34,839

should say right up front jacqu and Hal

182

00:08:42,110 --> 00:08:38,599

POF Eric Davis col kellerer uh all those

183

00:08:43,910 --> 00:08:42,120

people frankly rescued me from the uh

184

00:08:47,670 --> 00:08:43,920

the rabbit hole of

185

00:08:49,070 --> 00:08:47,680

ufology uh because I was wandering and

186

00:08:50,910 --> 00:08:49,080

they said here's here's a guy who might

187

00:08:53,430 --> 00:08:50,920

be he might we might be able to work

188

00:08:55,030 --> 00:08:53,440

with him so it's all about and also

189

00:08:56,829 --> 00:08:55,040

functional analysis just knowing what a

190

00:08:58,190 --> 00:08:56,839

thing How It's Made is not the same

191

00:09:00,470 --> 00:08:58,200

thing as knowing how it

192

00:09:03,389 --> 00:09:00,480

functions so but it needs that

193

00:09:05,630 --> 00:09:03,399

interdisciplinary team that what

194

00:09:08,829 --> 00:09:05,640

happened in the department of

195

00:09:12,630 --> 00:09:08,839

genetics okay so how do do science

196

00:09:18,150 --> 00:09:12,640

right um so where do we start this is

197

00:09:23,710 --> 00:09:20,990

mirror so where do we start let's get

198

00:09:24,670 --> 00:09:23,720

this show on the road that's chat GPT I

199

00:09:27,670 --> 00:09:24,680

love

200

00:09:31,190 --> 00:09:27,680

it um so the first case and this is the

201

00:09:32,630 --> 00:09:31,200

case that we published uh in uh

202

00:09:38,910 --> 00:09:32,640

basically last year and it was with

203

00:09:43,350 --> 00:09:38,920

Larry lmy uh a a post do of mine and um

204

00:09:45,870 --> 00:09:43,360

uh and uh well jacqu sorry and so again

205

00:09:48,550 --> 00:09:45,880

it's about the evidence you can't just

206

00:09:51,630 --> 00:09:48,560

take anybody's claim that something is

207

00:09:56,829 --> 00:09:51,640

the truth so this is one of the best and

208

00:09:59,710 --> 00:09:56,839

most widely observed at the time uh of

209

00:10:01,630 --> 00:09:59,720

cases um multiple Observers Etc I won't

210

00:10:04,430 --> 00:10:01,640

go through them all it's not necessary

211

00:10:06,190 --> 00:10:04,440

but uh you know a hovering object and

212

00:10:08,110 --> 00:10:06,200

then something seems to sloth off and

213

00:10:09,949 --> 00:10:08,120

drop to the ground and some people were

214

00:10:13,870 --> 00:10:09,959

like they were literally only with about

215

00:10:18,389 --> 00:10:13,880

500 or so feet from it so the police

216

00:10:19,710 --> 00:10:18,399

luckily were called um and uh and here's

217

00:10:21,790 --> 00:10:19,720

you know here's one of The Observers

218

00:10:24,630 --> 00:10:21,800

down here in red another Observer

219

00:10:27,710 --> 00:10:24,640

another Observer and this is where they

220

00:10:30,069 --> 00:10:27,720

ran to and what did they find this is

221

00:10:33,550 --> 00:10:30,079

one of the actual original photo graphs

222

00:10:36,110 --> 00:10:33,560

um we have them um and uh it's a big

223

00:10:38,269 --> 00:10:36,120

pool of metal that was in the process of

224

00:10:41,110 --> 00:10:38,279

cooling okay so how did that how did

225

00:10:44,269 --> 00:10:41,120

that get there so you know they went

226

00:10:46,550 --> 00:10:44,279

through uh all of the possible reasons

227

00:10:48,670 --> 00:10:46,560

that could get there from hoaxes through

228

00:10:49,870 --> 00:10:48,680

thermite through a meteoric crash I mean

229

00:10:51,190 --> 00:10:49,880

who would have think this is a meteor it

230

00:10:53,990 --> 00:10:51,200

would have left a

231

00:10:56,509 --> 00:10:54,000

hole um space debris re-entry all of

232

00:10:59,430 --> 00:10:56,519

these things were

233

00:11:00,910 --> 00:10:59,440

dismissed so uh but of course of course

234

00:11:05,030 --> 00:11:00,920

it's just something sitting in the in

235

00:11:07,710 --> 00:11:05,040

the literature um and this is where we

236

00:11:08,910 --> 00:11:07,720

published that paper um and just you

237

00:11:11,750 --> 00:11:08,920

know so there's always this question I

238

00:11:14,710 --> 00:11:11,760

get about reputational damage so Suzun

239

00:11:16,069 --> 00:11:14,720

Jang is on this paper he's now Professor

240

00:11:19,269 --> 00:11:16,079

assistant professor at Harvard over in

241

00:11:22,190 --> 00:11:19,279

the medical school didn't hurt

242

00:11:25,030 --> 00:11:22,200

him they fought for him there's Suzun

243

00:11:26,949 --> 00:11:25,040

right there so the first technology that

244

00:11:28,509 --> 00:11:26,959

we brought to this is the one of the

245

00:11:32,590 --> 00:11:28,519

ones that was developed in my lab

246

00:11:34,790 --> 00:11:32,600

actually by Mikeangelo who's here um

247

00:11:36,990 --> 00:11:34,800

Michelangelo

248

00:11:39,269 --> 00:11:37,000

reincarnation and I nobody is I mean

249

00:11:41,509 --> 00:11:39,279

when he showed up in my lab uh he was I

250

00:11:42,910 --> 00:11:41,519

thought he was crazy cuz he was all

251
00:11:45,269 --> 00:11:42,920
excited about something that he thought

252
00:11:49,430 --> 00:11:45,279
we could do and I thought you know what

253
00:11:51,750 --> 00:11:49,440
it sounds possible so let's do it so we

254
00:11:54,750 --> 00:11:51,760
took these materials this was we had a

255
00:11:57,269 --> 00:11:54,760
big chunk of this material we took five

256
00:11:58,910 --> 00:11:57,279
different pieces of it very small pieces

257
00:12:01,310 --> 00:11:58,920
because these things require tiny amount

258
00:12:02,629 --> 00:12:01,320
amounts of material to study because you

259
00:12:04,590 --> 00:12:02,639
don't want to look at just one thing if

260
00:12:06,110 --> 00:12:04,600
you can as long as if it's if it's

261
00:12:08,350 --> 00:12:06,120
relatively inexpensive you want to look

262
00:12:10,069 --> 00:12:08,360
at multiple places you want to as we say

263
00:12:12,629 --> 00:12:10,079

when we're looking at the at the tumor

264

00:12:15,829 --> 00:12:12,639

immune interface we want to sample the

265

00:12:18,870 --> 00:12:15,839

we want to sample the ecosystem so took

266

00:12:20,269 --> 00:12:18,880

multiple things just to make sure so you

267

00:12:21,829 --> 00:12:20,279

know the first thing as you all know we

268

00:12:22,870 --> 00:12:21,839

went and looked at isotope ratios we

269

00:12:26,189 --> 00:12:22,880

didn't find anything they looked

270

00:12:27,870 --> 00:12:26,199

absolutely normal um but I I noticed

271

00:12:30,430 --> 00:12:27,880

something in these

272

00:12:34,710 --> 00:12:30,440

signatures and those are the metals that

273

00:12:37,350 --> 00:12:34,720

came out is that the ratios of the

274

00:12:40,030 --> 00:12:37,360

elements were different from one to the

275

00:12:42,550 --> 00:12:40,040

other right so that means it was not

276

00:12:45,509 --> 00:12:42,560

homogeneous somebody didn't put it in a

277

00:12:48,110 --> 00:12:45,519

blender and make a you know make a a

278

00:12:51,189 --> 00:12:48,120

uniform distribution I mean if you're

279

00:12:53,389 --> 00:12:51,199

making a material for something and it

280

00:12:55,230 --> 00:12:53,399

is different in different

281

00:12:57,069 --> 00:12:55,240

places uh then you're going to have

282

00:13:00,750 --> 00:12:57,079

structural issues where one part might

283

00:13:03,790 --> 00:13:00,760

be uh less or more bendy than another or

284

00:13:06,990 --> 00:13:03,800

more likely to crack Etc so that was

285

00:13:09,269 --> 00:13:07,000

interesting that means when this stuff

286

00:13:11,389 --> 00:13:09,279

when it was dumped there however it was

287

00:13:15,470 --> 00:13:11,399

but we'll take the word of the cuz it's

288

00:13:17,629 --> 00:13:15,480

fun right I mean speculation ends up

289

00:13:20,509 --> 00:13:17,639

being a headline Stanford professor says

290

00:13:23,629 --> 00:13:20,519

Harvard professor says you know no it's

291

00:13:27,550 --> 00:13:23,639

speculation it's just a game to play in

292

00:13:29,990 --> 00:13:27,560

your mind so you have these different

293

00:13:33,590 --> 00:13:30,000

ratios which means that before it was

294

00:13:34,629 --> 00:13:33,600

dumped out it was incompletely mixed so

295

00:13:38,710 --> 00:13:34,639

what does that

296

00:13:40,470 --> 00:13:38,720

mean how and why would you do that um I

297

00:13:41,629 --> 00:13:40,480

mean were you offloading something that

298

00:13:43,910 --> 00:13:41,639

was

299

00:13:46,030 --> 00:13:43,920

problematic you know we've all heard the

300

00:13:47,949 --> 00:13:46,040

stories about how these things might

301
00:13:49,389 --> 00:13:47,959
wobble and then something happens

302
00:13:52,430 --> 00:13:49,399
somebody another one shows up and they

303
00:13:53,389 --> 00:13:52,440
fix it and then they they go off merrily

304
00:13:56,749 --> 00:13:53,399
ever

305
00:13:58,910 --> 00:13:56,759
after so uh and these were just the

306
00:14:01,230 --> 00:13:58,920
ratios uh and and there they are so so

307
00:14:03,949 --> 00:14:01,240
they're not slightly different they're

308
00:14:05,910 --> 00:14:03,959
completely different right so depend

309
00:14:07,710 --> 00:14:05,920
everywhere you look it's it's I I've

310
00:14:10,189 --> 00:14:07,720
explained it before like you have

311
00:14:12,550 --> 00:14:10,199
chocolate and uh vanilla ice cream along

312
00:14:15,030 --> 00:14:12,560
with strawberry you let it melt you give

313
00:14:16,110 --> 00:14:15,040

it a couple of Twirls and where you

314

00:14:17,189 --> 00:14:16,120

where wherever you look there's going to

315

00:14:19,870 --> 00:14:17,199

be a different

316

00:14:20,870 --> 00:14:19,880

ratio so but so what can we conclude

317

00:14:23,310 --> 00:14:20,880

from

318

00:14:26,389 --> 00:14:23,320

this it's clearly the result of an

319

00:14:28,470 --> 00:14:26,399

industrial process it's not the machine

320

00:14:29,189 --> 00:14:28,480

maybe it's exhaust maybe who who knows

321

00:14:31,710 --> 00:14:29,199

we

322

00:14:33,189 --> 00:14:31,720

know um it had incomplete mixing of

323

00:14:35,230 --> 00:14:33,199

components that's a

324

00:14:37,790 --> 00:14:35,240

conclusion right I always talk about

325

00:14:39,829 --> 00:14:37,800

data and conclusions that you know it's

326

00:14:42,030 --> 00:14:39,839

about the data not the conclusion get

327

00:14:43,990 --> 00:14:42,040

another scientist to agree with the data

328

00:14:47,030 --> 00:14:44,000

that the data is real and now you get to

329

00:14:49,790 --> 00:14:47,040

ask them why the onus is not entirely on

330

00:14:51,710 --> 00:14:49,800

you right there's there was no signs of

331

00:14:55,710 --> 00:14:51,720

any technology and no exotic isotope

332

00:14:57,590 --> 00:14:55,720

ratios okay so you know can we look

333

00:15:00,470 --> 00:14:57,600

deeper I mean that's a pretty high

334

00:15:02,230 --> 00:15:00,480

that's from from I mean from a you know

335

00:15:05,629 --> 00:15:02,240

a structural analysis point of view if

336

00:15:08,790 --> 00:15:05,639

I'm talking about Atomic you know

337

00:15:11,430 --> 00:15:08,800

machines this is like the 30,000 fot but

338

00:15:14,509 --> 00:15:11,440

it's what was available at the time and

339

00:15:16,949 --> 00:15:14,519

it it wasn't really something that I had

340

00:15:19,350 --> 00:15:16,959

uh thought about much but then you know

341

00:15:21,749 --> 00:15:19,360

can we do it this can we see can we see

342

00:15:23,110 --> 00:15:21,759

smaller and why would we want to do that

343

00:15:26,189 --> 00:15:23,120

well like with the immune system in

344

00:15:28,230 --> 00:15:26,199

cancer cells the the proximity of where

345

00:15:31,350 --> 00:15:28,240

one is relative to another actually

346

00:15:34,389 --> 00:15:31,360

predicts the outcome of the cancer and

347

00:15:36,829 --> 00:15:34,399

whether the therapy will work or not so

348

00:15:38,550 --> 00:15:36,839

we went to this instrument this is

349

00:15:44,670 --> 00:15:38,560

atomic probe

350

00:15:46,069 --> 00:15:44,680

is actually a very wellknown and used

351

00:15:49,590 --> 00:15:46,079

technology but it's expensive and

352

00:15:51,749 --> 00:15:49,600

there's only a few of them around um but

353

00:15:53,790 --> 00:15:51,759

what it does is it literally takes the

354

00:15:56,110 --> 00:15:53,800

sample apart atom by atom about a th000

355

00:15:58,590 --> 00:15:56,120

atoms a second and it figures out where

356

00:16:01,590 --> 00:15:58,600

the threedimensional uh it's three

357

00:16:04,949 --> 00:16:01,600

dimensional placement in

358

00:16:06,829 --> 00:16:04,959

that so so here's the here's the idea

359

00:16:09,110 --> 00:16:06,839

you create an electric field electric

360

00:16:12,269 --> 00:16:09,120

field differential you set it up so that

361

00:16:15,189 --> 00:16:12,279

you are evaporating the sample and where

362

00:16:17,590 --> 00:16:15,199

it lands on the detector can be

363

00:16:20,269 --> 00:16:17,600

triangulated back to where it originated

364

00:16:23,150 --> 00:16:20,279

on the sample and so and what do you get

365

00:16:25,430 --> 00:16:23,160

from that you get a

366

00:16:28,629 --> 00:16:25,440

map of where things

367

00:16:34,150 --> 00:16:28,639

are so there's this is the worlds at

368

00:16:38,269 --> 00:16:34,160

least public first uh UAP alleged

369

00:16:42,470 --> 00:16:38,279

material uh studied at the atomic level

370

00:16:44,509 --> 00:16:42,480

and collected at the atomic level so

371

00:16:46,670 --> 00:16:44,519

this is uh the Council Bluffs it's a

372

00:16:50,350 --> 00:16:46,680

tiny tiny thing I mean it's like it's

373

00:16:53,150 --> 00:16:50,360

like uh literally two or three

374

00:16:56,230 --> 00:16:53,160

microns cubed but there's millions of

375

00:16:58,550 --> 00:16:56,240

atoms in there so I mean I knew that I

376

00:17:01,230 --> 00:16:58,560

wasn't going to find any structures but

377

00:17:03,790 --> 00:17:01,240

this was an easy thing to start

378

00:17:05,429 --> 00:17:03,800

with uh and then you look at the you

379

00:17:06,949 --> 00:17:05,439

look at the complexity of what's in

380

00:17:07,990 --> 00:17:06,959

there so the first thing that for

381

00:17:09,470 --> 00:17:08,000

instance they were trying to explain

382

00:17:10,789 --> 00:17:09,480

this single way as as it's just

383

00:17:12,909 --> 00:17:10,799

Industrial Steel well it's not

384

00:17:15,110 --> 00:17:12,919

Industrial Steel now we now we literally

385

00:17:17,150 --> 00:17:15,120

have things that industrial Steels don't

386

00:17:21,270 --> 00:17:17,160

normally

387

00:17:24,309 --> 00:17:21,280

contain but now we can go in and look

388

00:17:26,870 --> 00:17:24,319

closer so here for instance this is 3D

389

00:17:29,470 --> 00:17:26,880

now we're inside the structure I've

390

00:17:31,070 --> 00:17:29,480

taken away the iron which is so

391

00:17:32,750 --> 00:17:31,080

prevalent as to be would obscure

392

00:17:35,350 --> 00:17:32,760

everything now we can see the position

393

00:17:38,070 --> 00:17:35,360

of where everything is right again this

394

00:17:41,190 --> 00:17:38,080

is just a trial but now we get to see

395

00:17:42,669 --> 00:17:41,200

potential structure so I would say that

396

00:17:45,549 --> 00:17:42,679

if we're going to study any of these

397

00:17:47,470 --> 00:17:45,559

other materials that seem to have novel

398

00:17:50,110 --> 00:17:47,480

properties uh this would be the way to

399

00:17:53,789 --> 00:17:50,120

do it I had hoped to do the Bismuth

400

00:17:55,909 --> 00:17:53,799

magnesium case uh before we we tried it

401
00:17:57,950 --> 00:17:55,919
but it it fell apart in the instrument

402
00:18:00,070 --> 00:17:57,960
under the stress of the local forces it

403
00:18:01,549 --> 00:18:00,080
was just too to crumbly unfortunately

404
00:18:03,310 --> 00:18:01,559
there's a way to fix that but we

405
00:18:05,909 --> 00:18:03,320
couldn't do it in time for

406
00:18:08,029 --> 00:18:05,919
this um because that would have been

407
00:18:09,549 --> 00:18:08,039
cool that I think that would have got a

408
00:18:12,750 --> 00:18:09,559
bunch of us jumping up and down but I'm

409
00:18:14,510 --> 00:18:12,760
going to do it anyway it's coming um so

410
00:18:16,470 --> 00:18:14,520
you can look at all the individual atoms

411
00:18:18,549 --> 00:18:16,480
you can't really see it so much so those

412
00:18:19,990 --> 00:18:18,559
are uh the things that I showed you on

413
00:18:21,029 --> 00:18:20,000

the on the other page those are the

414

00:18:29,870 --> 00:18:21,039

individual

415

00:18:33,510 --> 00:18:29,880

uh there's some hints of uh

416

00:18:34,669 --> 00:18:33,520

potential differences here um but it's

417

00:18:38,750 --> 00:18:34,679

such

418

00:18:40,669 --> 00:18:38,760

early stages that um I don't dare repeat

419

00:18:43,310 --> 00:18:40,679

I I don't dare say it until I repeat it

420

00:18:47,470 --> 00:18:43,320

there's a lot more I'm not an expert yet

421

00:18:49,390 --> 00:18:47,480

in AP but I will be um you know in this

422

00:18:52,350 --> 00:18:49,400

and by the way this was uh so the

423

00:18:55,669 --> 00:18:52,360

individual who's been helping me is uh

424

00:18:57,909 --> 00:18:55,679

Alex Bolton you've seen him around so uh

425

00:18:59,310 --> 00:18:57,919

he actually helped create uh all this

426

00:19:02,270 --> 00:18:59,320

analysis and because we just got the

427

00:19:04,630 --> 00:19:02,280

data Friday and while I was busy

428

00:19:09,230 --> 00:19:04,640

frantically dealing with Stanford

429

00:19:14,669 --> 00:19:09,240

administrative messes um he he basically

430

00:19:18,549 --> 00:19:14,679

saved my bacon on that but there's data

431

00:19:19,830 --> 00:19:18,559

right now this is data um material shows

432

00:19:22,270 --> 00:19:19,840

no sign of

433

00:19:24,950 --> 00:19:22,280

Technology the material is clearly the

434

00:19:27,789 --> 00:19:24,960

result of an industrial process and it

435

00:19:29,669 --> 00:19:27,799

was incompletely mixed okay so why again

436

00:19:31,909 --> 00:19:29,679

that's the the question you ask all the

437

00:19:32,870 --> 00:19:31,919

time when you see data it's like why why

438

00:19:36,070 --> 00:19:32,880

why would you do

439

00:19:37,350 --> 00:19:36,080

it what could have generated it and why

440

00:19:41,830 --> 00:19:37,360

would you dump it in the middle of a

441

00:19:43,870 --> 00:19:41,840

field in a small farming town in Iowa I

442

00:19:45,390 --> 00:19:43,880

don't know I don't know the answers okay

443

00:19:48,430 --> 00:19:45,400

so that's one

444

00:19:50,270 --> 00:19:48,440

case there's another famous case

445

00:19:53,270 --> 00:19:50,280

ubatuba

446

00:19:54,710 --> 00:19:53,280

1950s there's a primary witness but we

447

00:19:56,549 --> 00:19:54,720

don't have it never nobody ever had

448

00:19:59,789 --> 00:19:56,559

access to the primary witness but a

449

00:20:03,070 --> 00:19:59,799

Brazilian journalist who received the

450

00:20:06,390 --> 00:20:03,080

evidence uh and again through uh the

451

00:20:07,870 --> 00:20:06,400

offices of of jacqu I was able to get

452

00:20:11,149 --> 00:20:07,880

access to some of this

453

00:20:13,149 --> 00:20:11,159

stuff um and this is actually what I

454

00:20:14,630 --> 00:20:13,159

don't quite understand is because as

455

00:20:16,710 --> 00:20:14,640

you'll see from the result it was

456

00:20:20,110 --> 00:20:16,720

claimed to be pure

457

00:20:22,510 --> 00:20:20,120

magnesium what I was given was not

458

00:20:25,310 --> 00:20:22,520

magnesium so but we have two things

459

00:20:28,950 --> 00:20:25,320

called moisture a and moisture B that's

460

00:20:31,390 --> 00:20:28,960

Spanish for sample I think somebody said

461

00:20:35,870 --> 00:20:31,400

um told me and then this is the

462

00:20:37,110 --> 00:20:35,880

instrument that we used highly accurate

463

00:20:40,950 --> 00:20:37,120

Mass

464

00:20:42,470 --> 00:20:40,960

spectrometer um and just you know this

465

00:20:45,789 --> 00:20:42,480

is how this is the beginning of sort of

466

00:20:47,310 --> 00:20:45,799

how science is done you you don't want

467

00:20:50,630 --> 00:20:47,320

to measure different things on different

468

00:20:52,669 --> 00:20:50,640

days because you want the experiment to

469

00:20:57,029 --> 00:20:52,679

be done under the most similar

470

00:20:59,110 --> 00:20:57,039

conditions that you can so those samples

471

00:21:01,430 --> 00:20:59,120

two examples of each of those samples

472

00:21:04,270 --> 00:21:01,440

along with a a zoo of other things that

473

00:21:06,350 --> 00:21:04,280

that jock happened to have um were put

474

00:21:08,390 --> 00:21:06,360

on this and then we did the

475

00:21:11,390 --> 00:21:08,400

analysis and I remember sitting there

476
00:21:14,470 --> 00:21:11,400
when they we they printed out the data I

477
00:21:16,190 --> 00:21:14,480
was like I don't understand this I mean

478
00:21:18,430 --> 00:21:16,200
I hoped this something like this would

479
00:21:21,390 --> 00:21:18,440
happen but I never understood it um I

480
00:21:24,390 --> 00:21:21,400
still don't so one of the samples

481
00:21:26,909 --> 00:21:24,400
claimed samples has you know pretty much

482
00:21:29,669 --> 00:21:26,919
exactly the natural thing we had two you

483
00:21:32,070 --> 00:21:29,679
know two shards of each

484
00:21:37,070 --> 00:21:32,080
the other one was way

485
00:21:41,029 --> 00:21:37,080
off way off I mean just no doubt um okay

486
00:21:44,950 --> 00:21:41,039
so why 1950s Isotopes if you mentioned

487
00:21:48,430 --> 00:21:44,960
Isotopes to a 1950s crowd they'd Duck

488
00:21:50,909 --> 00:21:48,440

and Cover right because Isotopes and

489

00:21:52,310 --> 00:21:50,919

still humans use the like one of the

490

00:21:55,430 --> 00:21:52,320

most important things we do is we make

491

00:21:57,510 --> 00:21:55,440

nuclear bombs out of them um of course

492

00:22:00,149 --> 00:21:57,520

they're used uh in other for medical

493

00:22:04,190 --> 00:22:00,159

purposes and tracing um but we don't

494

00:22:08,070 --> 00:22:04,200

have any chemical or material reasons to

495

00:22:12,630 --> 00:22:08,080

use them so okay so what's what's going

496

00:22:16,350 --> 00:22:12,640

on so one had not why change the isotope

497

00:22:17,510 --> 00:22:16,360

ratios back then it was extraordinarily

498

00:22:19,789 --> 00:22:17,520

expensive to do these kinds of

499

00:22:22,430 --> 00:22:19,799

separations it's still expensive I mean

500

00:22:25,710 --> 00:22:22,440

my lab orders extremely small amounts of

501
00:22:28,310 --> 00:22:25,720
different isotopes uh from the periodic

502
00:22:30,269 --> 00:22:28,320
from the the lanthanide series we use

503
00:22:34,310 --> 00:22:30,279
them as tags in our biology experiments

504
00:22:37,310 --> 00:22:34,320
CU each of them is unique um so for the

505
00:22:39,750 --> 00:22:37,320
uninitiated what are isotopes again this

506
00:22:43,230 --> 00:22:39,760
is thank you chat GPT and it made some

507
00:22:49,750 --> 00:22:43,240
things up of course but you know um the

508
00:22:52,549 --> 00:22:49,760
idea here is you know humans work with

509
00:22:54,070 --> 00:22:52,559
elements but somebody is playing with

510
00:22:55,789 --> 00:22:54,080
Isotopes so why would you play with

511
00:22:56,950 --> 00:22:55,799
Isotopes because they're supposed to be

512
00:23:00,470 --> 00:22:56,960
the same that's what I was taught in

513
00:23:02,909 --> 00:23:00,480

chemistry well it turns out that's wrong

514

00:23:06,390 --> 00:23:02,919

now people are starting to look at

515

00:23:08,710 --> 00:23:06,400

Isotopes because you have an extra

516

00:23:11,430 --> 00:23:08,720

Neutron in the

517

00:23:13,669 --> 00:23:11,440

element and that changes the electronic

518

00:23:14,549 --> 00:23:13,679

configuration of the of the orbitals

519

00:23:16,950 --> 00:23:14,559

just

520

00:23:19,510 --> 00:23:16,960

slightly and so in the right

521

00:23:21,430 --> 00:23:19,520

circumstances having that difference

522

00:23:24,110 --> 00:23:21,440

would be sufficient to make a better

523

00:23:25,789 --> 00:23:24,120

Catalyst and so people pharmaceutical

524

00:23:27,710 --> 00:23:25,799

companies and others are starting to use

525

00:23:30,870 --> 00:23:27,720

this starting to understand that hey

526
00:23:33,830 --> 00:23:30,880
there something interesting here silicon

527
00:23:37,950 --> 00:23:33,840
some of the Isotopes of silicon make

528
00:23:40,750 --> 00:23:37,960
better Cubit holders that last longer

529
00:23:43,070 --> 00:23:40,760
than others than the other three okay

530
00:23:45,750 --> 00:23:43,080
so there it is I mean it's it's there

531
00:23:48,830 --> 00:23:45,760
plants use it actually it's it's really

532
00:23:50,310 --> 00:23:48,840
fascinating um so there's something yet

533
00:23:53,510 --> 00:23:50,320
to be

534
00:23:56,029 --> 00:23:53,520
understood okay so this was the first

535
00:23:58,190 --> 00:23:56,039
time that I had gone beyond just

536
00:24:00,230 --> 00:23:58,200
magnesium uh looking at the UB Tu

537
00:24:02,789 --> 00:24:00,240
material and even though we we looked at

538
00:24:04,029 --> 00:24:02,799

the Magnesium because is that instrument

539

00:24:06,870 --> 00:24:04,039

that I just showed you can see down to

540

00:24:09,110 --> 00:24:06,880

the parts per million um we were looking

541

00:24:11,190 --> 00:24:09,120

at that level when I looked at this it

542

00:24:13,590 --> 00:24:11,200

was almost entirely pure

543

00:24:17,950 --> 00:24:13,600

silicon okay well what's the natural

544

00:24:21,190 --> 00:24:17,960

state of silicon uh sand silicon oxide

545

00:24:23,990 --> 00:24:21,200

quartz things like that um it doesn't

546

00:24:28,830 --> 00:24:24,000

come prepackaged as

547

00:24:31,630 --> 00:24:28,840

99 yeah 99.999 395 you just don't get it

548

00:24:35,789 --> 00:24:31,640

so why is somebody

549

00:24:36,789 --> 00:24:35,799

tossing that level of Purity around uh

550

00:24:39,470 --> 00:24:36,799

because again it would be that would be

551
00:24:42,710 --> 00:24:39,480
expensive to make um so why would you

552
00:24:44,110 --> 00:24:42,720
why would you do it so again we go in

553
00:24:46,430 --> 00:24:44,120
and we're collecting this data and by

554
00:24:47,789 --> 00:24:46,440
the way I'm showing all of this because

555
00:24:49,789 --> 00:24:47,799
all of this will be going eventually on

556
00:24:55,669 --> 00:24:49,799
the web and I want to do this with every

557
00:25:01,070 --> 00:24:58,590
legally like I'll be like Lou and and

558
00:25:04,470 --> 00:25:01,080
Chris sneaking something out the

559
00:25:05,590 --> 00:25:04,480
back they weren't I'm I'm sorry Chris is

560
00:25:07,549 --> 00:25:05,600
going to kill

561
00:25:09,230 --> 00:25:07,559
me

562
00:25:17,750 --> 00:25:09,240
um

563
00:25:20,950 --> 00:25:17,760

percent there's lots of other things in

564

00:25:22,710 --> 00:25:20,960

there but the vast majority is silicon

565

00:25:25,190 --> 00:25:22,720

the reason why it shows as lower is

566

00:25:29,310 --> 00:25:25,200

because I broke it down into the Silicon

567

00:25:33,070 --> 00:25:29,320

um uh Isotopes and they're their natural

568

00:25:35,710 --> 00:25:33,080

levels so here again is the 3D where we

569

00:25:38,430 --> 00:25:35,720

can go inside and you know so one of the

570

00:25:40,710 --> 00:25:38,440

next things to do is to say well is

571

00:25:43,029 --> 00:25:40,720

there is there any sort of strange

572

00:25:46,190 --> 00:25:43,039

placement of the atom so those are the

573

00:25:48,470 --> 00:25:46,200

three uh nucleotides and is there a

574

00:25:49,990 --> 00:25:48,480

likelihood for one thing to be near

575

00:25:51,350 --> 00:25:50,000

another and that's what we do again in

576

00:25:53,389 --> 00:25:51,360

Immunology we look for certain cell

577

00:25:55,510 --> 00:25:53,399

types that are more or less likely to

578

00:25:57,269 --> 00:25:55,520

associate with each other and that tells

579

00:25:59,750 --> 00:25:57,279

you that huh if that happened above

580

00:26:01,590 --> 00:25:59,760

statistic iCal chance then there's

581

00:26:04,190 --> 00:26:01,600

probably a reason for it things don't

582

00:26:07,070 --> 00:26:04,200

happen usually in biology by

583

00:26:09,029 --> 00:26:07,080

coincidence um the two samples are

584

00:26:11,710 --> 00:26:09,039

pretty much within statistical certainty

585

00:26:14,990 --> 00:26:11,720

to be similar to each other so that's

586

00:26:18,110 --> 00:26:15,000

interesting um so even though they came

587

00:26:20,269 --> 00:26:18,120

from separate chains of custody uh

588

00:26:22,630 --> 00:26:20,279

there's enough data here at least to say

589

00:26:24,510 --> 00:26:22,640

that whoever prepared this stuff uh

590

00:26:26,990 --> 00:26:24,520

either had identical preparation

591

00:26:32,389 --> 00:26:27,000

techniques or it came and was broken and

592

00:26:38,310 --> 00:26:35,870

custody again it's data no sign of

593

00:26:41,750 --> 00:26:38,320

Technology but certainly signs of an

594

00:26:44,269 --> 00:26:41,760

industrial process and that's important

595

00:26:46,990 --> 00:26:44,279

so I mean and I'm I'm saying this thing

596

00:26:49,830 --> 00:26:47,000

about the Silicon if anybody can tell me

597

00:26:53,630 --> 00:26:49,840

why pure silicon should be thrown around

598

00:26:57,590 --> 00:26:53,640

a beach in you know Brazil I want to

599

00:26:59,590 --> 00:26:57,600

hear it you know um so the material is

600

00:27:02,190 --> 00:26:59,600

was clearly a result of an industrial

601
00:27:04,430 --> 00:27:02,200
process it wasn't found randomly nobody

602
00:27:06,310 --> 00:27:04,440
found it on the side of a road it was

603
00:27:10,149 --> 00:27:06,320
associated with an

604
00:27:13,190 --> 00:27:10,159
event and that's important here and uh

605
00:27:16,470 --> 00:27:13,200
because that coincidence it doesn't

606
00:27:19,710 --> 00:27:16,480
prove that it's anything but it but it

607
00:27:24,190 --> 00:27:21,909
interesting unusual levels of pure

608
00:27:26,350 --> 00:27:24,200
silicon with

609
00:27:28,669 --> 00:27:26,360
contaminants so again what what would

610
00:27:30,430 --> 00:27:28,679
you do so the the the event was somebody

611
00:27:32,310 --> 00:27:30,440
saw something with supposedly with

612
00:27:33,789 --> 00:27:32,320
lights and then it dropped something

613
00:27:36,029 --> 00:27:33,799

which

614

00:27:37,669 --> 00:27:36,039

exploded

615

00:27:41,509 --> 00:27:37,679

okay

616

00:27:45,070 --> 00:27:41,519

why right what why what what's going on

617

00:27:47,430 --> 00:27:45,080

I don't understand um because on the one

618

00:27:49,110 --> 00:27:47,440

hand we have these metals that drop I

619

00:27:51,950 --> 00:27:49,120

have I have another sample of something

620

00:27:54,950 --> 00:27:51,960

from Australia uh there's a couple of

621

00:27:58,669 --> 00:27:54,960

other a couple of other uh

622

00:28:02,549 --> 00:27:58,679

events um that actually are dropping

623

00:28:05,750 --> 00:28:02,559

molten objects so there's a reason to

624

00:28:07,950 --> 00:28:05,760

offload something again I'm speculating

625

00:28:10,110 --> 00:28:07,960

there's a reason to offload something

626

00:28:12,669 --> 00:28:10,120

but every time they do it it it ends up

627

00:28:14,110 --> 00:28:12,679

being slightly different so does that

628

00:28:16,870 --> 00:28:14,120

tell you that there's many ways to

629

00:28:18,389 --> 00:28:16,880

achieve a similar goal right so that's

630

00:28:20,470 --> 00:28:18,399

kind of sort of back engineering the

631

00:28:22,789 --> 00:28:20,480

thought process of why would you why

632

00:28:25,909 --> 00:28:22,799

would you do something like

633

00:28:28,830 --> 00:28:25,919

this so here's another case very famous

634

00:28:29,950 --> 00:28:28,840

case sakuro again this is something from

635

00:28:34,230 --> 00:28:29,960

from

636

00:28:36,789 --> 00:28:34,240

jacqu uh on an Indian Reservation the uh

637

00:28:41,190 --> 00:28:36,799

police officer was in was an Indian was

638

00:28:43,789 --> 00:28:41,200

Indian um he's driving along uh he hears

639

00:28:44,590 --> 00:28:43,799

a noise he sees something a shiny object

640

00:28:48,070 --> 00:28:44,600

in a

641

00:28:52,269 --> 00:28:48,080

field he observes little people outside

642

00:28:55,190 --> 00:28:52,279

of the object the object takes off kind

643

00:28:57,549 --> 00:28:55,200

of with a burst of flame um you know and

644

00:28:59,710 --> 00:28:57,559

of course when people tried to debunk it

645

00:29:01,990 --> 00:28:59,720

he's they said he he saw the star

646

00:29:04,350 --> 00:29:02,000

something or other you know he's a he's

647

00:29:07,590 --> 00:29:04,360

a trained Observer he's a policeman

648

00:29:11,149 --> 00:29:07,600

right so

649

00:29:13,750 --> 00:29:11,159

um he didn't want to talk about it so he

650

00:29:17,110 --> 00:29:13,760

wasn't seeking publicity he just did it

651
00:29:19,630 --> 00:29:17,120
so I so jacqu had a piece he gave it to

652
00:29:22,190 --> 00:29:19,640
me um

653
00:29:24,070 --> 00:29:22,200
and you know again we take an electron

654
00:29:27,350 --> 00:29:24,080
microscopy everything looks like it's

655
00:29:28,630 --> 00:29:27,360
you know from another planet uh under uh

656
00:29:33,230 --> 00:29:28,640
under electron

657
00:29:34,710 --> 00:29:33,240
microscope um very simple aluminum zinc

658
00:29:36,870 --> 00:29:34,720
mostly and some

659
00:29:38,630 --> 00:29:36,880
contaminants but the aluminum and the

660
00:29:43,710 --> 00:29:38,640
zinc are in different

661
00:29:45,950 --> 00:29:43,720
places so this is at a a a distance so

662
00:29:47,909 --> 00:29:45,960
there it is so there's the aluminum on

663
00:29:50,389 --> 00:29:47,919

the top there's the zinc on the bottom

664

00:29:53,110 --> 00:29:50,399

or vice versa no zinc is zinc's the

665

00:29:55,310 --> 00:29:53,120

green yes but it's it's differently

666

00:29:56,789 --> 00:29:55,320

distributed it's the contaminants that

667

00:29:57,950 --> 00:29:56,799

are interesting that's what I'm

668

00:30:00,430 --> 00:29:57,960

interested in

669

00:30:02,630 --> 00:30:00,440

cuz they're kind of a signature they is

670

00:30:05,870 --> 00:30:02,640

are they uniformly distributed

671

00:30:09,789 --> 00:30:05,880

throughout the thing meaning or are they

672

00:30:14,430 --> 00:30:09,799

somehow next to each other so we looked

673

00:30:17,990 --> 00:30:14,440

at that so now if I look in the aluminum

674

00:30:20,149 --> 00:30:18,000

on the top again it's incredibly pure it

675

00:30:20,950 --> 00:30:20,159

has like a single oxygen molecule amidst

676

00:30:26,230 --> 00:30:20,960

a

677

00:30:30,269 --> 00:30:26,240

why would you do it it's

678

00:30:34,509 --> 00:30:30,279

attached to a zinc thing underneath

679

00:30:39,789 --> 00:30:34,519

which has some aluminum in it but look

680

00:30:43,870 --> 00:30:41,789

distributed right there's like a cluster

681

00:30:47,470 --> 00:30:43,880

R it over here is that because they have

682

00:30:51,430 --> 00:30:47,480

a junky recipe they didn't mix it right

683

00:30:55,789 --> 00:30:51,440

it just is but

684

00:30:59,750 --> 00:30:58,110

know again

685

00:31:01,750 --> 00:30:59,760

this case I mean this is clear clear

686

00:31:04,549 --> 00:31:01,760

sign of engineering I mean the interface

687

00:31:06,190 --> 00:31:04,559

between those things is is like exact

688

00:31:08,230 --> 00:31:06,200

down to the

689

00:31:11,669 --> 00:31:08,240

atom it's cuded the result of an

690

00:31:14,350 --> 00:31:11,679

industrial process so this of course is

691

00:31:16,509 --> 00:31:14,360

not the only way to look at atoms or

692

00:31:19,990 --> 00:31:16,519

looking at materials at an ultra high

693

00:31:22,549 --> 00:31:20,000

resolution there's many other of these

694

00:31:26,669 --> 00:31:22,559

kinds of devices uh that do different

695

00:31:31,470 --> 00:31:26,679

things but none of them have the uh

696

00:31:35,269 --> 00:31:31,480

exact ude that an AP has because they

697

00:31:38,389 --> 00:31:35,279

provide at the five or so angstrom scale

698

00:31:40,549 --> 00:31:38,399

and they're getting better um and so I

699

00:31:44,590 --> 00:31:40,559

won't go into all of the others but why

700

00:31:47,029 --> 00:31:44,600

why do I show a table like that um

701
00:31:49,509 --> 00:31:47,039
because we're actually starting a new

702
00:31:52,950 --> 00:31:49,519
initiative uh starbust Stardust

703
00:31:54,990 --> 00:31:52,960
repository taking a page from AI

704
00:31:58,149 --> 00:31:55,000
everything is made of

705
00:32:00,950 --> 00:31:58,159
Stardust setting up standardized IED

706
00:32:03,950 --> 00:32:00,960
testing so basically creating a

707
00:32:06,269 --> 00:32:03,960
Federation of other scientists to whom

708
00:32:07,509 --> 00:32:06,279
we can go and pass the material along

709
00:32:10,230 --> 00:32:07,519
because doing all the things you want to

710
00:32:12,110 --> 00:32:10,240
do would cost a bazillion dollars so you

711
00:32:15,430 --> 00:32:12,120
have to have other people doing it more

712
00:32:18,029 --> 00:32:15,440
or less for free um or at least at at

713
00:32:19,310 --> 00:32:18,039

Cost uh I mean by the way that thing

714

00:32:20,269 --> 00:32:19,320

that I all those things I showed you

715

00:32:24,190 --> 00:32:20,279

that was

716

00:32:25,789 --> 00:32:24,200

\$40,000 to do that at a service center

717

00:32:29,070 --> 00:32:25,799

down in San Jose that does it and uses

718

00:32:30,629 --> 00:32:29,080

it for microelectron

719

00:32:33,310 --> 00:32:30,639

deep vetting make sure we're no one's

720

00:32:35,389 --> 00:32:33,320

sending us junk uh and again it's it's

721

00:32:37,389 --> 00:32:35,399

about I can't look at everything and

722

00:32:40,629 --> 00:32:37,399

know the answers but I want to get the

723

00:32:44,590 --> 00:32:40,639

data out there so everybody can maybe

724

00:32:48,110 --> 00:32:44,600

somebody will will do it maybe my nephew

725

00:32:50,750 --> 00:32:48,120

here who's interested in science will do

726

00:32:54,590 --> 00:32:50,760

it um I'll help

727

00:32:56,029 --> 00:32:54,600

him so uh organized under a public

728

00:32:58,590 --> 00:32:56,039

umbrella

729

00:33:01,190 --> 00:32:58,600

operation maybe that might induce

730

00:33:03,710 --> 00:33:01,200

somebody who has something claimed on

731

00:33:06,190 --> 00:33:03,720

the inside to bring it out and say hey

732

00:33:08,149 --> 00:33:06,200

why don't you help us with this right

733

00:33:10,070 --> 00:33:08,159

and actually AI did exactly this with

734

00:33:13,070 --> 00:33:10,080

the materials that they brought back

735

00:33:14,710 --> 00:33:13,080

from um the South Pacific you know

736

00:33:17,830 --> 00:33:14,720

sending it around to other people but

737

00:33:19,509 --> 00:33:17,840

now I I I want to standardize it and

738

00:33:21,269 --> 00:33:19,519

give other people they don't H other

739

00:33:22,590 --> 00:33:21,279

people don't need to participate in what

740

00:33:24,629 --> 00:33:22,600

we're doing but I want to put out sets

741

00:33:25,950 --> 00:33:24,639

of protocols by which other people can

742

00:33:27,950 --> 00:33:25,960

do it so they don't have to reinvent the

743

00:33:31,549 --> 00:33:27,960

wheel

744

00:33:32,789 --> 00:33:31,559

so you know funded by gifts or grants

745

00:33:36,190 --> 00:33:32,799

help

746

00:33:38,070 --> 00:33:36,200

please um and uh you know the data

747

00:33:39,870 --> 00:33:38,080

freely available but I mean we do want

748

00:33:41,750 --> 00:33:39,880

to also respect and this is the biology

749

00:33:45,190 --> 00:33:41,760

Community has gone through this at Great

750

00:33:47,149 --> 00:33:45,200

depth uh where um you get these big

751
00:33:49,029 --> 00:33:47,159
consortia you collect the data

752
00:33:50,269 --> 00:33:49,039
everybody's freaking out because they

753
00:33:52,470 --> 00:33:50,279
want to write the

754
00:33:55,629 --> 00:33:52,480
paper um and so you got to give them

755
00:33:57,590 --> 00:33:55,639
time to write the paper uh but there's

756
00:33:59,389 --> 00:33:57,600
there's at the end of it

757
00:34:02,389 --> 00:33:59,399
uh the deadlines as you know we we

758
00:34:05,110 --> 00:34:02,399
public we put it out there publicly um

759
00:34:06,549 --> 00:34:05,120
after uh one or two years and that's

760
00:34:08,510 --> 00:34:06,559
fine because frankly collecting the data

761
00:34:10,669 --> 00:34:08,520
is the easy part understanding it's the

762
00:34:12,710 --> 00:34:10,679
hard part you know we spend months with

763
00:34:15,909 --> 00:34:12,720

bioinformatics and thinking about it

764

00:34:19,629 --> 00:34:15,919

trying to figure it out so you know I'm

765

00:34:21,310 --> 00:34:19,639

imagining now 30 years from now and this

766

00:34:23,589 --> 00:34:21,320

is my

767

00:34:25,710 --> 00:34:23,599

warehouse uh where I've collected all of

768

00:34:27,629 --> 00:34:25,720

these materials and actually we've used

769

00:34:30,149 --> 00:34:27,639

some of them to help analyze those

770

00:34:34,950 --> 00:34:30,159

materials right is there a discovery to

771

00:34:38,030 --> 00:34:34,960

be made so uh this I think is an

772

00:34:40,750 --> 00:34:38,040

important Endeavor I can't do it all I'm

773

00:34:42,909 --> 00:34:40,760

not a metallist but I think there's lots

774

00:34:45,349 --> 00:34:42,919

of I get now increasing numbers of

775

00:34:48,430 --> 00:34:45,359

emails from people saying how can I

776

00:34:50,300 --> 00:34:48,440

help I'm getting the sign I'm

777

00:34:51,340 --> 00:34:50,310

done thank