



MARC D'ANTONIO

1
00:00:05,570 --> 00:00:02,119
and it hits me oh my gosh this is that

2
00:00:06,440 --> 00:00:05,580
triangle Western the Rendlesham forest

3
00:00:08,900 --> 00:00:06,450
incident

4
00:00:11,780 --> 00:00:08,910
it involved aliens at all it was

5
00:00:17,820 --> 00:00:11,790
completely silent it comes right over

6
00:00:17,830 --> 00:00:32,170
[Music]

7
00:00:37,730 --> 00:00:34,730
don't forget to Like us on our very

8
00:00:39,530 --> 00:00:37,740
active Facebook page hello and welcome

9
00:00:42,770 --> 00:00:39,540
to the show I'm Martin Willis your host

10
00:00:45,170 --> 00:00:42,780
and welcome to the show and we have a

11
00:00:48,590 --> 00:00:45,180
good one for you this evening we have

12
00:00:50,030 --> 00:00:48,600
our guest mark D Antonio he's a repeat

13
00:00:53,540 --> 00:00:50,040

guest and we're going to be talking

14

00:00:56,450 --> 00:00:53,550

anywhere from possible alien and alien

15

00:01:00,619 --> 00:00:56,460

detection he doesn't know that yet to

16

00:01:03,080 --> 00:01:00,629

space junk which I really want to talk

17

00:01:07,219 --> 00:01:03,090

about it's very interesting to me to the

18

00:01:10,460 --> 00:01:07,229

new Mars insight Lander also China has

19

00:01:12,920 --> 00:01:10,470

landed a high-definition lander on the

20

00:01:16,399 --> 00:01:12,930

moon and taken some interesting images

21

00:01:20,450 --> 00:01:16,409

also I want to announce that after this

22

00:01:22,580 --> 00:01:20,460

show tonight 8:30 p.m. ET mark will be

23

00:01:24,230 --> 00:01:22,590

doing some type of show he's going to

24

00:01:25,640 --> 00:01:24,240

talk to us about where anyone can join

25

00:01:27,200 --> 00:01:25,650

in it's actually through his telescope

26

00:01:29,539 --> 00:01:27,210

and all that so we're going to talk

27

00:01:31,340 --> 00:01:29,549

about that as well he he has a little

28

00:01:34,810 --> 00:01:31,350

observatory right on his property in

29

00:01:39,140 --> 00:01:34,820

Connecticut and so that will be fun and

30

00:01:41,180 --> 00:01:39,150

so just a couple of things we are alive

31

00:01:43,880 --> 00:01:41,190

anyone can watch the full shows on

32

00:01:46,370 --> 00:01:43,890

youtubes on youtubes is there more than

33

00:01:49,250 --> 00:01:46,380

one YouTube no just YouTube every

34

00:01:51,100 --> 00:01:49,260

Tuesday night at 8:00 I'm sorry six

35

00:01:53,960 --> 00:01:51,110

eight and that's Eastern Standard Time

36

00:01:55,880 --> 00:01:53,970

you can also check out our website and

37

00:01:59,330 --> 00:01:55,890

on our website you can watch it there as

38

00:02:01,070 --> 00:01:59,340

well and it's also on kgr a radio at the

39

00:02:03,620 --> 00:02:01,080

same time we have a chat room over there

40

00:02:05,570 --> 00:02:03,630

in a chat room on YouTube you're welcome

41

00:02:07,850 --> 00:02:05,580

to join in we have a man to helping us

42

00:02:10,160 --> 00:02:07,860

out with a chat tonight gonna be sending

43

00:02:14,630 --> 00:02:10,170

questions for forwarding questions to

44

00:02:17,869 --> 00:02:14,640

myself to ask mark from both chat rooms

45

00:02:21,140 --> 00:02:17,879

actually so that should be interesting

46

00:02:24,520 --> 00:02:21,150

we will take calls in the second the

47

00:02:26,750 --> 00:02:24,530

second hour of the show too as well and

48

00:02:28,640 --> 00:02:26,760

let's see I want to thank everyone that

49

00:02:29,330 --> 00:02:28,650

helps out with the show I really do

50

00:02:31,369 --> 00:02:29,340

appreciate it

51
00:02:35,030 --> 00:02:31,379
without your help I couldn't do that we

52
00:02:37,190 --> 00:02:35,040
also have a blog that Chris wrote in

53
00:02:40,429 --> 00:02:37,200
Tasmania send it in and it's about

54
00:02:42,670 --> 00:02:40,439
Jeremy Korbelt in his recent Lazarus

55
00:02:45,130 --> 00:02:42,680
movie that's coming out and

56
00:02:47,410 --> 00:02:45,140
today I believe it so today is today the

57
00:02:50,170 --> 00:02:47,420
4th yes it is I do believe it's today

58
00:02:53,440 --> 00:02:50,180
that it has come out so anyway all that

59
00:02:56,470 --> 00:02:53,450
is on podcast UFO calm we also have an

60
00:03:00,610 --> 00:02:56,480
active Facebook page with over 25,000

61
00:03:02,410 --> 00:03:00,620
people and news stories posted every day

62
00:03:05,890 --> 00:03:02,420
Peggy helps out with that I want to

63
00:03:08,910 --> 00:03:05,900

thank her for doing that and all right I

64

00:03:11,979 --> 00:03:08,920

guess we're ready to roll alejandro

65

00:03:15,309 --> 00:03:11,989

thank you for general hello my friend

66

00:03:18,220 --> 00:03:15,319

yeah thank you for joining us as usual

67

00:03:21,580 --> 00:03:18,230

and my pleasure we missed you last week

68

00:03:23,680 --> 00:03:21,590

so good to have you back Oh was I not on

69

00:03:29,500 --> 00:03:23,690

yeah you were doing the you're going to

70

00:03:31,449 --> 00:03:29,510

the airport to the airport is that was

71

00:03:33,550 --> 00:03:31,459

that last week or the week before last

72

00:03:37,210 --> 00:03:33,560

week I think was when I was trying to do

73

00:03:39,610 --> 00:03:37,220

something and it it was the internet was

74

00:03:41,349 --> 00:03:39,620

crappy in my room oh that's really yeah

75

00:03:43,569 --> 00:03:41,359

yeah we tried to do a Precourt and that

76

00:03:46,289 --> 00:03:43,579

that's it yeah that's right sorry

77

00:03:51,699 --> 00:03:46,299

hey real bad about that I'm sure you did

78

00:03:53,830 --> 00:03:51,709

but at the I did but at the risk of

79

00:03:55,900 --> 00:03:53,840

upsetting I I mean I got my whole

80

00:03:58,030 --> 00:03:55,910

background and I made sure I've even got

81

00:03:59,559 --> 00:03:58,040

like back here I know I probably

82

00:04:02,979 --> 00:03:59,569

shouldn't move my camera but I got a

83

00:04:06,399 --> 00:04:02,989

whole little UFO high-tech setting back

84

00:04:08,170 --> 00:04:06,409

there I could see mark here on my end

85

00:04:11,559 --> 00:04:08,180

already and he gave me the thumbs up

86

00:04:14,500 --> 00:04:11,569

there so he enjoys it yeah yeah you have

87

00:04:18,039 --> 00:04:14,510

quite a bit of paraphernalia UFO I do

88

00:04:21,009 --> 00:04:18,049

yeah Wow this cuz we complete more stuff

89

00:04:23,680 --> 00:04:21,019

for this store the UFO Congress store

90

00:04:25,719 --> 00:04:23,690

we've got all kinds of UFO junkies and

91

00:04:27,879 --> 00:04:25,729

alien junkies and stuff like that and

92

00:04:30,010 --> 00:04:27,889

Mark spent some time here your guest

93

00:04:32,830 --> 00:04:30,020

actually just a few weeks ago right he

94

00:04:34,930 --> 00:04:32,840

spent a few days hanging out here and

95

00:04:36,850 --> 00:04:34,940

checking out our collection and we've

96

00:04:40,089 --> 00:04:36,860

gotten even more since he's been here so

97

00:04:43,180 --> 00:04:40,099

he inspired us his strange alien like

98

00:04:46,990 --> 00:04:43,190

behavior really helped us think out of

99

00:04:48,370 --> 00:04:47,000

the box now those little UFO that thing

100

00:04:50,560 --> 00:04:48,380

that's actually when a tip tip the

101
00:04:54,180 --> 00:04:50,570
camera lives for okay this is for

102
00:04:56,469 --> 00:04:54,190
YouTube only of course but is that

103
00:04:58,899 --> 00:04:56,479
actually it actually

104
00:05:00,670 --> 00:04:58,909
it's not touching the ground right it's

105
00:05:03,369 --> 00:05:00,680
actually hovering see that it's

106
00:05:06,159 --> 00:05:03,379
electromagnetics really hovering and I

107
00:05:07,989 --> 00:05:06,169
like it alien anti-gravity take all the

108
00:05:10,089 --> 00:05:07,999
course which mark will tell you yes

109
00:05:11,409 --> 00:05:10,099
Steven Greer has harnessed that somehow

110
00:05:13,809 --> 00:05:11,419
right

111
00:05:16,809 --> 00:05:13,819
anyway I Hari I slipped that in there

112
00:05:19,839 --> 00:05:16,819
now do you do sell those actually on

113
00:05:21,519 --> 00:05:19,849

your website we do so this is a black

114

00:05:24,279 --> 00:05:21,529

one I think we're out of them I think

115

00:05:27,909 --> 00:05:24,289

you you know Dale remember Dale he's an

116

00:05:31,209 --> 00:05:27,919

artist - yeah he bought I think the last

117

00:05:33,399 --> 00:05:31,219

one of this color but we have some more

118

00:05:35,860 --> 00:05:33,409

that are all gray and all silver they're

119

00:05:37,329 --> 00:05:35,870

actually super super cool actually I

120

00:05:40,390 --> 00:05:37,339

don't even know which is my favorite

121

00:05:42,429 --> 00:05:40,400

because they're all equally cool let's

122

00:05:45,129 --> 00:05:42,439

just quickly tell who deal is he's up

123

00:05:47,800 --> 00:05:45,139

was it the Simpsons was that yeah he's a

124

00:05:52,329 --> 00:05:47,810

art character designer for the Simpsons

125

00:05:54,129 --> 00:05:52,339

so in fact he's done me and we've got a

126
00:05:56,350 --> 00:05:54,139
whole set because of course that open

127
00:05:58,719 --> 00:05:56,360
mind Jason McClellan used to work there

128
00:06:01,929 --> 00:05:58,729
and I'm Maureen Elsberry so he did us

129
00:06:04,809 --> 00:06:01,939
kind of doing a podcast radio show which

130
00:06:07,029 --> 00:06:04,819
was kind of cool and he's got one of Lee

131
00:06:10,749 --> 00:06:07,039
Spiegel and a few other angle that he's

132
00:06:13,719 --> 00:06:10,759
done Lisa's wrangle at UFO well that's

133
00:06:15,219 --> 00:06:13,729
not a yeah he simpson eyes doll of us so

134
00:06:17,649 --> 00:06:15,229
well that's what I was talking about but

135
00:06:18,420 --> 00:06:17,659
yes he did do that artwork of Lee

136
00:06:21,070 --> 00:06:18,430
Spiegel's

137
00:06:24,189 --> 00:06:21,080
amazing sighting right and what's great

138
00:06:26,559 --> 00:06:24,199

about Lee Spiegel sighting is that it he

139

00:06:29,320 --> 00:06:26,569

went to this location at the behest of J

140

00:06:31,269 --> 00:06:29,330

Allen Hynek who of course is the a

141

00:06:33,969 --> 00:06:31,279

real-life person who is going to be

142

00:06:36,489 --> 00:06:33,979

portrayed in this new History Channel

143

00:06:40,329 --> 00:06:36,499

television show called Project Blue Book

144

00:06:42,100 --> 00:06:40,339

here that starts in January right right

145

00:06:44,350 --> 00:06:42,110

that will be fun I can't wait for that

146

00:06:45,909 --> 00:06:44,360

to get going I got to see the last

147

00:06:50,409 --> 00:06:45,919

couple episodes we already talked about

148

00:06:52,059 --> 00:06:50,419

that I think your show so possibly it's

149

00:06:54,369 --> 00:06:52,069

really good though it was it's really

150

00:06:56,800 --> 00:06:54,379

cool and have you ever had Bryce's able

151
00:06:58,869 --> 00:06:56,810
on your show yeah yep Hollywood guy yeah

152
00:07:00,850 --> 00:06:58,879
so Bryce table did the show dark skies

153
00:07:03,189 --> 00:07:00,860
and what was interesting is I was going

154
00:07:05,350 --> 00:07:03,199
to expecting that they were going to try

155
00:07:08,050 --> 00:07:05,360
to do an x-files type of show with this

156
00:07:10,210 --> 00:07:08,060
project Bluebook but it's actually much

157
00:07:12,040 --> 00:07:10,220
more dark skies

158
00:07:14,380 --> 00:07:12,050
it really felt like dark skies I even

159
00:07:16,420 --> 00:07:14,390
emailed Bryce I was like hey I just saw

160
00:07:17,770 --> 00:07:16,430
the first couple episodes of Project

161
00:07:20,230 --> 00:07:17,780
Blue Book I'm not sure if you got to a

162
00:07:22,420 --> 00:07:20,240
premiere he said no why is it like dark

163
00:07:25,450 --> 00:07:22,430

skies and I was like yeah exactly it

164

00:07:27,730 --> 00:07:25,460

reminded me very much of your show just

165

00:07:29,620 --> 00:07:27,740

because it's historic and if anybody

166

00:07:32,830 --> 00:07:29,630

remembers dark skies you know it was

167

00:07:34,960 --> 00:07:32,840

more you know accurate towards

168

00:07:37,000 --> 00:07:34,970

speculation about you know government

169

00:07:39,730 --> 00:07:37,010

conspiracies and stuff and of course

170

00:07:42,910 --> 00:07:39,740

this is based on real project cases but

171

00:07:44,860 --> 00:07:42,920

they add this conspiracy stuff so they

172

00:07:47,290 --> 00:07:44,870

even add men in black and stuff like

173

00:07:49,810 --> 00:07:47,300

this stuff that Hynek really didn't get

174

00:07:51,370 --> 00:07:49,820

involved with necessarily but of course

175

00:07:54,400 --> 00:07:51,380

they've got to add some drama to the

176

00:07:56,080 --> 00:07:54,410

show and many speculate that I even had

177

00:07:58,440 --> 00:07:56,090

the guy on you've had him - I think the

178

00:08:02,080 --> 00:07:58,450

guy who wrote the recent autobiography

179

00:08:04,270 --> 00:08:02,090

or a recent biography of jln Heineken

180

00:08:06,580 --> 00:08:04,280

and he says you know nobody knows there

181

00:08:08,320 --> 00:08:06,590

are hints that Hynek felt that they were

182

00:08:10,960 --> 00:08:08,330

hiding information from him but he

183

00:08:14,590 --> 00:08:10,970

nobody knows for sure how Hynek felt

184

00:08:18,490 --> 00:08:14,600

about that or if he knew more than he

185

00:08:21,010 --> 00:08:18,500

let on but we all know from this this

186

00:08:24,100 --> 00:08:21,020

memo when they did close Project Blue

187

00:08:26,260 --> 00:08:24,110

Book the bollinger memo where this

188

00:08:27,969 --> 00:08:26,270

general essentially said I go ahead and

189

00:08:31,030 --> 00:08:27,979

close blue blue book because we send the

190

00:08:35,050 --> 00:08:31,040

most interesting cases elsewhere anyway

191

00:08:36,130 --> 00:08:35,060

I I got to know Tom Schneider talk-show

192

00:08:38,409 --> 00:08:36,140

host

193

00:08:40,870 --> 00:08:38,419

are you familiar with who really yes

194

00:08:43,029 --> 00:08:40,880

very much so the white hair yeah yeah

195

00:08:45,070 --> 00:08:43,039

tall guy dan Aykroyd used to imitate him

196

00:08:46,660 --> 00:08:45,080

actually he said he was actually friends

197

00:08:50,350 --> 00:08:46,670

with Dan Aykroyd he thought that with

198

00:08:52,270 --> 00:08:50,360

the imitation was a riot but anyway I'm

199

00:08:56,590 --> 00:08:52,280

still in touch with Pam Burke that's her

200

00:08:59,010 --> 00:08:56,600

that's his wife a widow and I saw

201
00:09:02,110 --> 00:08:59,020
something about Tom Schneider

202
00:09:04,120 --> 00:09:02,120
interviewing J Allen Hynek so I said hey

203
00:09:06,520 --> 00:09:04,130
Pam what did you think of J Allen Hynek

204
00:09:09,100 --> 00:09:06,530
and and and she said oh my god that was

205
00:09:12,490 --> 00:09:09,110
one of my very very favorite and Tom's

206
00:09:14,530 --> 00:09:12,500
favorite guests she had such a sense of

207
00:09:16,390 --> 00:09:14,540
humor it was really it was really great

208
00:09:19,630 --> 00:09:16,400
to talk to her about it and that's

209
00:09:21,370 --> 00:09:19,640
fascinating you know I got to I don't

210
00:09:22,540 --> 00:09:21,380
know if I told you this because I guess

211
00:09:24,080 --> 00:09:22,550
I haven't been on because I was that

212
00:09:27,860 --> 00:09:24,090
alien Khan also

213
00:09:29,540 --> 00:09:27,870

a few weeks ago and in Baltimore and I

214

00:09:31,340 --> 00:09:29,550

was doing several different talks and

215

00:09:33,020 --> 00:09:31,350

one of them was about Spielberg in the

216

00:09:35,480 --> 00:09:33,030

beginning of the show I talked about

217

00:09:38,030 --> 00:09:35,490

Close Encounters which was inspired by

218

00:09:39,860 --> 00:09:38,040

Hynek so I go over Hynek a bunch and I

219

00:09:41,810 --> 00:09:39,870

talk about how great Hynek is I even

220

00:09:44,120 --> 00:09:41,820

mentioned how excited I am about this

221

00:09:47,030 --> 00:09:44,130

new History Channel show well at the end

222

00:09:49,940 --> 00:09:47,040

of my talk this guy walks up to me and I

223

00:09:52,100 --> 00:09:49,950

says I'm Paul Hynek this is hynek's son

224

00:09:56,000 --> 00:09:52,110

and I said thank you for all the nice

225

00:09:58,340 --> 00:09:56,010

things you said about my father so that

226

00:10:00,350 --> 00:09:58,350

was really cool but I did include a

227

00:10:04,010 --> 00:10:00,360

video of Hynek where he makes a joke

228

00:10:05,930 --> 00:10:04,020

about flying saucers and remember if you

229

00:10:09,050 --> 00:10:05,940

are offended by this joke at all it's

230

00:10:10,820 --> 00:10:09,060

Hynek who said it not me first but he

231

00:10:13,850 --> 00:10:10,830

said if you want to see a flying saucer

232

00:10:15,770 --> 00:10:13,860

one of the jokes is if and he was

233

00:10:17,780 --> 00:10:15,780

complaining about the term flying saucer

234

00:10:19,340 --> 00:10:17,790

but he said one of the jokes out there

235

00:10:23,890 --> 00:10:19,350

is if you want to see a flying saucer

236

00:10:27,110 --> 00:10:23,900

just goose the waitress the whole cheese

237

00:10:29,090 --> 00:10:27,120

I'm glad you didn't say that yeah yeah

238

00:10:30,860 --> 00:10:29,100

yeah I'd never say he never knew of the

239

00:10:31,550 --> 00:10:30,870

me to movement you know what I mean

240

00:10:33,620 --> 00:10:31,560

right

241

00:10:36,740 --> 00:10:33,630

yeah that was prior to that that was the

242

00:10:41,720 --> 00:10:36,750

the Men Behaving Badly or whatever kind

243

00:10:43,010 --> 00:10:41,730

of era yeah for like millennia yeah all

244

00:10:45,680 --> 00:10:43,020

right well you got you got anything

245

00:10:49,220 --> 00:10:45,690

going on in the UFO world this this week

246

00:10:52,700 --> 00:10:49,230

yeah I mean you mentioned it the Lazar

247

00:10:55,460 --> 00:10:52,710

movie launched today I'm looking at my

248

00:10:58,490 --> 00:10:55,470

email and let's see because I I did

249

00:11:00,620 --> 00:10:58,500

already see it I got a preview copy to

250

00:11:04,010 --> 00:11:00,630

look at and I can answer any questions

251

00:11:05,660 --> 00:11:04,020

about it if you want but it did launch

252

00:11:06,950 --> 00:11:05,670

today too because I did pay for it

253

00:11:07,730 --> 00:11:06,960

because there's extras and I want to

254

00:11:10,430 --> 00:11:07,740

help support

255

00:11:13,160 --> 00:11:10,440

I'm Jeremy because he's a buddy and I

256

00:11:17,180 --> 00:11:13,170

got my email at 1:00 a.m. i pre-ordered

257

00:11:19,160 --> 00:11:17,190

it to download it so yeah it is out

258

00:11:22,190 --> 00:11:19,170

there today if you want to check it out

259

00:11:24,620 --> 00:11:22,200

lots of people excited it was if you go

260

00:11:26,600 --> 00:11:24,630

to Jeremy's Instagram which is great

261

00:11:28,520 --> 00:11:26,610

because you can see all of the

262

00:11:32,090 --> 00:11:28,530

excitement you know the big line of

263

00:11:33,800 --> 00:11:32,100

people outside of the theater so very

264

00:11:35,420 --> 00:11:33,810

exciting I'm bummed I couldn't be there

265

00:11:37,310 --> 00:11:35,430

but Dale the friend we just talked about

266

00:11:40,610 --> 00:11:37,320

was it was there

267

00:11:45,200 --> 00:11:40,620

I know that Jason McClellan was there

268

00:11:47,750 --> 00:11:45,210

and Ryan Sprague and David Navarro the

269

00:11:50,030 --> 00:11:47,760

rock guy you know the rocker he was

270

00:11:52,250 --> 00:11:50,040

there he was instagramming about it last

271

00:11:53,900 --> 00:11:52,260

night it looked like he got to actually

272

00:11:56,420 --> 00:11:53,910

talk with Bob Lazar who was there I

273

00:11:59,060 --> 00:11:56,430

didn't even realize Bob Lazar was going

274

00:12:02,390 --> 00:11:59,070

to be there so yeah pretty interesting

275

00:12:03,590 --> 00:12:02,400

stuff now I am curious if it's okay to

276

00:12:10,160 --> 00:12:03,600

talk about that right now

277

00:12:12,020 --> 00:12:10,170

and about what this blog post is kind of

278

00:12:14,300 --> 00:12:12,030

the gist of the blog post and also if

279

00:12:16,430 --> 00:12:14,310

you don't mind I kind of would like to

280

00:12:19,280 --> 00:12:16,440

bring mark on in mark he's listening I

281

00:12:21,380 --> 00:12:19,290

can see him his camera there waiting on

282

00:12:22,550 --> 00:12:21,390

the ISS that or it looks like he's in a

283

00:12:25,790 --> 00:12:22,560

submarine or something

284

00:12:27,260 --> 00:12:25,800

but I sent a link in the chat if you

285

00:12:29,030 --> 00:12:27,270

could look at that because there is a

286

00:12:33,080 --> 00:12:29,040

UFO video that's kind of making the

287

00:12:36,230 --> 00:12:33,090

rounds right now and oh and the chat

288

00:12:37,640 --> 00:12:36,240

next yeah our Skype chat oh I don't know

289

00:12:39,560 --> 00:12:37,650

if I can get to that right now what the

290

00:12:41,570 --> 00:12:39,570

way things are hopefully mark can

291

00:12:44,420 --> 00:12:41,580

because I think mark could with it yeah

292

00:12:46,850 --> 00:12:44,430

no I'll talk about it mark so let me

293

00:12:47,930 --> 00:12:46,860

introduce mark repeat guests Mark

294

00:12:49,400 --> 00:12:47,940

Dantonio

295

00:12:50,660 --> 00:12:49,410

we're going to pull them up in the

296

00:12:53,270 --> 00:12:50,670

screen a little blurry but that's all

297

00:12:57,080 --> 00:12:53,280

right I want to hear about this blog

298

00:12:58,280 --> 00:12:57,090

post on lazar or did you read it yet did

299

00:13:00,680 --> 00:12:58,290

I read my own blog post

300

00:13:03,440 --> 00:13:00,690

oh you posted it yeah it's on my website

301
00:13:05,270 --> 00:13:03,450
on podcast UFO it's from a gentleman

302
00:13:07,940 --> 00:13:05,280
Chris who's been writing guest blogs

303
00:13:11,840 --> 00:13:07,950
from tazmania and basically do you hate

304
00:13:14,420 --> 00:13:11,850
it I write I read through it late last

305
00:13:16,610 --> 00:13:14,430
night I can't remember the gist of it

306
00:13:18,820 --> 00:13:16,620
though is that he thinks is you know

307
00:13:23,000 --> 00:13:18,830
definitely a lot to the bob lazar story

308
00:13:25,580 --> 00:13:23,010
and I actually have gotten a few emails

309
00:13:27,050 --> 00:13:25,590
today of people saying you know what do

310
00:13:28,910 --> 00:13:27,060
you have against Bob Lazar I don't have

311
00:13:32,510 --> 00:13:28,920
anything against Bob Lazar I just

312
00:13:34,460 --> 00:13:32,520
questioned certain things like his

313
00:13:37,640 --> 00:13:34,470

education his claimed education and when

314

00:13:39,950 --> 00:13:37,650

someone claims one thing and it turns

315

00:13:41,510 --> 00:13:39,960

out to be wrong then I kind of question

316

00:13:43,430 --> 00:13:41,520

it's kind of like the appraiser and me

317

00:13:44,870 --> 00:13:43,440

the antiques appraiser I question

318

00:13:47,570 --> 00:13:44,880

everything in one part of something's

319

00:13:49,460 --> 00:13:47,580

wrong so that's that's basically it you

320

00:13:51,170 --> 00:13:49,470

know I mean mm-hmm

321

00:13:53,420 --> 00:13:51,180

no that makes sense and

322

00:13:55,430 --> 00:13:53,430

people will ask and there's has been

323

00:13:57,380 --> 00:13:55,440

these comments what does Stanton have

324

00:14:00,290 --> 00:13:57,390

against Bob Lazar or some you know

325

00:14:03,230 --> 00:14:00,300

people are looking at it wrong you don't

326

00:14:06,260 --> 00:14:03,240

have to this is about you know getting

327

00:14:08,420 --> 00:14:06,270

to the truth into the facts and just

328

00:14:09,830 --> 00:14:08,430

because someone seems nice like there

329

00:14:11,360 --> 00:14:09,840

are some researchers well I met this

330

00:14:12,740 --> 00:14:11,370

person that's why I can say they're

331

00:14:14,570 --> 00:14:12,750

telling the truth well just because

332

00:14:16,610 --> 00:14:14,580

you've met them and even just because

333

00:14:18,800 --> 00:14:16,620

you like them doesn't mean that what

334

00:14:21,710 --> 00:14:18,810

they're saying is completely accurate so

335

00:14:22,700 --> 00:14:21,720

it's incumbent upon people like us who

336

00:14:26,450 --> 00:14:22,710

are out there trying to share

337

00:14:27,890 --> 00:14:26,460

information too heavily scrutinized you

338

00:14:29,930 --> 00:14:27,900

know what people are saying and

339

00:14:33,020 --> 00:14:29,940

especially someone like Stanton when

340

00:14:35,450 --> 00:14:33,030

they hear you know information that they

341

00:14:37,940 --> 00:14:35,460

follow up on like the education or the

342

00:14:40,370 --> 00:14:37,950

science then they have to say hey this

343

00:14:42,740 --> 00:14:40,380

science is wrong I know this to be wrong

344

00:14:45,380 --> 00:14:42,750

even if they're like I'm sorry but you

345

00:14:47,150 --> 00:14:45,390

know you still got to convince me that

346

00:14:49,550 --> 00:14:47,160

this science is correct

347

00:14:52,910 --> 00:14:49,560

so you know I think those are it's all

348

00:14:55,970 --> 00:14:52,920

way it's fair that we be critical of

349

00:14:57,590 --> 00:14:55,980

people I always go back to Sagan you

350

00:15:00,200 --> 00:14:57,600

know extraordinary claims require

351
00:15:02,600 --> 00:15:00,210
extraordinary evidence and so we need to

352
00:15:04,580 --> 00:15:02,610
seek that actually it wasn't Sagan that

353
00:15:07,730 --> 00:15:04,590
coined that phrase but but I get what

354
00:15:09,290 --> 00:15:07,740
isn't it no no someone before Haley yeah

355
00:15:10,040 --> 00:15:09,300
he stole it from someone else and took

356
00:15:13,910 --> 00:15:10,050
all the credit

357
00:15:15,830 --> 00:15:13,920
oh my god he'll joy go ahead and google

358
00:15:18,290 --> 00:15:15,840
that if you don't believe me listen I

359
00:15:19,910 --> 00:15:18,300
believe or I get that email hey I want

360
00:15:22,310 --> 00:15:19,920
to introduce mark the Antonio POTUS I

361
00:15:24,650 --> 00:15:22,320
started to and I forgot why I changed

362
00:15:26,960 --> 00:15:24,660
here's my fault I distracted you and

363
00:15:29,030 --> 00:15:26,970

it's okay right you to listen he needs

364

00:15:31,700 --> 00:15:29,040

almost no introduction at all he's an

365

00:15:35,420 --> 00:15:31,710

astronomer and he does a great show he's

366

00:15:38,060 --> 00:15:35,430

also on kgr a radio and does a thing a

367

00:15:39,800 --> 00:15:38,070

sky watch thing I joined the other night

368

00:15:41,120 --> 00:15:39,810

actually not a sky watch it was actually

369

00:15:44,240 --> 00:15:41,130

talking about the moon we can talk about

370

00:15:45,950 --> 00:15:44,250

that Mark Dantonio welcome back hey

371

00:15:49,130 --> 00:15:45,960

thank you so much for having me hi

372

00:15:51,980 --> 00:15:49,140

alejandro how you doing buddy hey but if

373

00:15:54,800 --> 00:15:51,990

we had a good time when I was out there

374

00:15:56,900 --> 00:15:54,810

I was doing a talk for the Phoenix MUFON

375

00:15:58,940 --> 00:15:56,910

and then I had to teach a week later in

376

00:16:01,760 --> 00:15:58,950

the desert for the boot camp for the

377

00:16:03,860 --> 00:16:01,770

mutual UFO network and Alejandro said

378

00:16:04,759 --> 00:16:03,870

hey come spend a few days with us so I

379

00:16:06,169 --> 00:16:04,769

did and it was

380

00:16:08,509 --> 00:16:06,179

wonderful time and I got to play with

381

00:16:12,079 --> 00:16:08,519

those little UFOs that were hovering and

382

00:16:14,569 --> 00:16:12,089

I got to tell you I I had a lot of fun

383

00:16:17,449 --> 00:16:14,579

with that you know a lot of fun yeah

384

00:16:19,720 --> 00:16:17,459

thing mark and I were like kids playing

385

00:16:22,639 --> 00:16:19,730

with all of our toys we did a bunch of

386

00:16:27,609 --> 00:16:22,649

astrophotography which was a lot of fun

387

00:16:28,850 --> 00:16:27,619

and we made a video about you know

388

00:16:31,129 --> 00:16:28,860

misidentifying

389

00:16:34,819 --> 00:16:31,139

you know certain things like bugs as

390

00:16:36,769 --> 00:16:34,829

UFOs or or birds and then mark played a

391

00:16:39,499 --> 00:16:36,779

little bit of didgeridoo so if you want

392

00:16:41,869 --> 00:16:39,509

to see him doing some did you redo you

393

00:16:43,699 --> 00:16:41,879

can go to the open minds YouTube and see

394

00:16:46,249 --> 00:16:43,709

that but it was really fun I felt like a

395

00:16:48,559 --> 00:16:46,259

little kid like you know when you're you

396

00:16:49,910 --> 00:16:48,569

were little and you got to go home your

397

00:16:53,600 --> 00:16:49,920

mom comes and picked you up and you're

398

00:16:55,280 --> 00:16:53,610

the good ago it was kind of sad seeing

399

00:16:57,319 --> 00:16:55,290

mark leave we had a lot of fun I felt

400

00:17:00,829 --> 00:16:57,329

actually because you know Alejandro's

401
00:17:04,549 --> 00:17:00,839
basically lives in a giant toy box no

402
00:17:07,010 --> 00:17:04,559
and if you look at your place okay my

403
00:17:08,299 --> 00:17:07,020
place notwithstanding okay yeah Marcus

404
00:17:09,110 --> 00:17:08,309
you're forgetting I've been there so I

405
00:17:13,069 --> 00:17:09,120
can vouch for that

406
00:17:15,649 --> 00:17:13,079
you know yeah now and would you do the

407
00:17:17,449 --> 00:17:15,659
FX models for also do you want to talk

408
00:17:19,100 --> 00:17:17,459
why don't you just say quickly to the

409
00:17:20,929 --> 00:17:19,110
listener who's not urgent before with

410
00:17:24,110 --> 00:17:20,939
those what that's all about

411
00:17:26,449 --> 00:17:24,120
yeah I mean it if FX models you know

412
00:17:27,980 --> 00:17:26,459
letter F letter X models is a visual

413
00:17:31,940 --> 00:17:27,990

effects company that I started back in

414

00:17:34,970 --> 00:17:31,950

1995 believe it or not and I started it

415

00:17:37,340 --> 00:17:34,980

as a way to start making these very

416

00:17:39,320 --> 00:17:37,350

elaborate very detailed models for

417

00:17:40,850 --> 00:17:39,330

movies and commercials and so forth well

418

00:17:42,799 --> 00:17:40,860

it turned out that I worked on awful lot

419

00:17:44,710 --> 00:17:42,809

for the Navy and I spent a lot of time

420

00:17:50,210 --> 00:17:44,720

working for the Navy many years actually

421

00:17:52,029 --> 00:17:50,220

doing these projects and the the benefit

422

00:17:55,070 --> 00:17:52,039

of FX models was that I learned a whole

423

00:17:56,870 --> 00:17:55,080

host of new techniques especially when I

424

00:17:59,090 --> 00:17:56,880

was working alone a lot of the time I

425

00:18:03,110 --> 00:17:59,100

had to be smart about it had to learn

426

00:18:05,899 --> 00:18:03,120

how to work alone and that was much

427

00:18:07,519 --> 00:18:05,909

better for me because I ended up you

428

00:18:10,370 --> 00:18:07,529

know creating and getting machinery to

429

00:18:12,139 --> 00:18:10,380

help me do all this that led to getting

430

00:18:14,090 --> 00:18:12,149

into astronomy more because I got my

431

00:18:17,149 --> 00:18:14,100

degree in astronomy as you know and I've

432

00:18:18,260 --> 00:18:17,159

been an astronomer for science centers

433

00:18:20,630 --> 00:18:18,270

and so forth and

434

00:18:22,520 --> 00:18:20,640

so what I did was I ended up putting an

435

00:18:24,140 --> 00:18:22,530

observatory on the front lawn so it

436

00:18:26,870 --> 00:18:24,150

looks like a big white minion out there

437

00:18:31,160 --> 00:18:26,880

okay but a round heads like it's like

438

00:18:33,710 --> 00:18:31,170

Stewart you know but we're tonight is a

439

00:18:34,940 --> 00:18:33,720

special streaming night you know for Sky

440

00:18:37,700 --> 00:18:34,950

to livestream it's called that's on

441

00:18:39,770 --> 00:18:37,710

YouTube and it's a companion stream to

442

00:18:42,440 --> 00:18:39,780

sky to a radio which as you mentioned is

443

00:18:45,520 --> 00:18:42,450

the kgr a radio radio show that we do

444

00:18:48,799 --> 00:18:45,530

Sunday nights at 9:00 p.m. Eastern and

445

00:18:51,380 --> 00:18:48,809

so skites were live stream tonight is

446

00:18:52,460 --> 00:18:51,390

special because we're actually doing

447

00:18:54,919 --> 00:18:52,470

something a little different we're

448

00:18:57,650 --> 00:18:54,929

actually using the observatory

449

00:18:59,780 --> 00:18:57,660

completely remotely because this

450

00:19:03,740 --> 00:18:59,790

Observatory is being prepared to get

451
00:19:07,040 --> 00:19:03,750
shipped to Arizona and talk about that

452
00:19:09,740 --> 00:19:07,050
yeah and it's still something that we're

453
00:19:12,650 --> 00:19:09,750
planning on doing and so to that end I

454
00:19:15,860 --> 00:19:12,660
have to really make this thing robust

455
00:19:17,870 --> 00:19:15,870
and standalone so that no matter what I

456
00:19:19,910 --> 00:19:17,880
can operate it and run anything that

457
00:19:22,370 --> 00:19:19,920
goes wrong through the internet so

458
00:19:23,990 --> 00:19:22,380
that's what I'm doing today

459
00:19:27,320 --> 00:19:24,000
and tonight's stream is going to be the

460
00:19:31,100 --> 00:19:27,330
first time we debut this new process and

461
00:19:32,570 --> 00:19:31,110
procedure so tune in if you want to see

462
00:19:34,850 --> 00:19:32,580
things either go horribly wrong and

463
00:19:36,980 --> 00:19:34,860

laugh your butts off or watch things go

464

00:19:37,790 --> 00:19:36,990

wonderfully right yeah now how can they

465

00:19:41,000 --> 00:19:37,800

find it mark

466

00:19:43,040 --> 00:19:41,010

it's a sky tour livestream that sky -

467

00:19:44,720 --> 00:19:43,050

all one word livestream all one word and

468

00:19:46,760 --> 00:19:44,730

it's on YouTube and it's probably

469

00:19:50,240 --> 00:19:46,770

showing there now like if someone wanted

470

00:19:52,430 --> 00:19:50,250

to save it so and is that kind of is

471

00:19:55,640 --> 00:19:52,440

that a regular that's a regular show

472

00:19:59,150 --> 00:19:55,650

that you do right well it's it's a clear

473

00:20:02,330 --> 00:19:59,160

it's a clear night stream I see that I

474

00:20:04,310 --> 00:20:02,340

do and you know Amanda Curran who is my

475

00:20:06,260 --> 00:20:04,320

co-host on Sky to her radio was also my

476

00:20:08,090 --> 00:20:06,270

co-host on scratch her livestream so

477

00:20:10,730 --> 00:20:08,100

it's all things sky to her everything's

478

00:20:13,580 --> 00:20:10,740

sky to her for us so we actually do just

479

00:20:15,260 --> 00:20:13,590

she creates Skype to her news she has

480

00:20:16,310 --> 00:20:15,270

sky to her stories and a whole bunch of

481

00:20:19,540 --> 00:20:16,320

other things that she does that are

482

00:20:22,490 --> 00:20:19,550

really cool in the sky tour arena and

483

00:20:24,860 --> 00:20:22,500

then I do the live stream and I'm part

484

00:20:27,230 --> 00:20:24,870

of a bigger picture which is called

485

00:20:29,390 --> 00:20:27,240

Astro imaging live.com that's the

486

00:20:30,890 --> 00:20:29,400

website and there we have Bill New York

487

00:20:32,310 --> 00:20:30,900

Sky Watcher who's actually one of K

488

00:20:34,860 --> 00:20:32,320

Jerry's producer

489

00:20:37,260 --> 00:20:34,870

and we have P and K Paul and Keith P in

490

00:20:39,480 --> 00:20:37,270

k-space imaging those guys look at the

491

00:20:41,790 --> 00:20:39,490

moon and the planets bill new york sky

492

00:20:44,430 --> 00:20:41,800

watch it set all meteors and big meteor

493

00:20:45,960 --> 00:20:44,440

showers and then i'm the one that looks

494

00:20:47,670 --> 00:20:45,970

at the deep sky object so we go to

495

00:20:50,010 --> 00:20:47,680

particular objects in the sky we look at

496

00:20:52,140 --> 00:20:50,020

comets we look at asteroids we look at

497

00:20:53,730 --> 00:20:52,150

deep space nebula all these things and

498

00:20:55,470 --> 00:20:53,740

we take people on a tour and i don't

499

00:20:57,360 --> 00:20:55,480

just show them I mean I I'm an

500

00:20:59,280 --> 00:20:57,370

astronomer so I tell people about them

501
00:21:00,930 --> 00:20:59,290
and I give them a little idea of what

502
00:21:03,540 --> 00:21:00,940
they're looking at now when Alejandro

503
00:21:05,100 --> 00:21:03,550
and I went out basically that's evolved

504
00:21:06,360 --> 00:21:05,110
into playing with lasers on the mountain

505
00:21:07,830 --> 00:21:06,370
in the distance and we were just drawing

506
00:21:09,990 --> 00:21:07,840
our names in the mountain with lasers

507
00:21:13,680 --> 00:21:10,000
and stuff that was really cool Karen did

508
00:21:15,180 --> 00:21:13,690
a perfect star it was me Wow leave it I

509
00:21:16,650 --> 00:21:15,190
laughed because I didn't think she'd

510
00:21:18,390 --> 00:21:16,660
possibly do it and she turns around and

511
00:21:20,490 --> 00:21:18,400
she does a perfect star the first time I

512
00:21:22,280 --> 00:21:20,500
was like wow okay you're gonna have to

513
00:21:24,870 --> 00:21:22,290

share that picture it's a good one hey

514

00:21:26,700 --> 00:21:24,880

we have about four minutes to the break

515

00:21:29,340 --> 00:21:26,710

coming up so Alejandra what is it

516

00:21:31,530 --> 00:21:29,350

exactly did you want to ask mark yeah

517

00:21:33,180 --> 00:21:31,540

sorry I'll leave it to break and I just

518

00:21:37,160 --> 00:21:33,190

wanted to take one of the new stories

519

00:21:41,670 --> 00:21:37,170

out there is a a UFO at the Outer Banks

520

00:21:43,890 --> 00:21:41,680

so yeah I figured you did and you can

521

00:21:45,840 --> 00:21:43,900

correct me if I'm wrong it is a

522

00:21:47,760 --> 00:21:45,850

spectacular looking video because you

523

00:21:53,220 --> 00:21:47,770

see two or three lights out over the

524

00:21:56,550 --> 00:21:53,230

ocean so that are very bright and but to

525

00:21:59,040 --> 00:21:56,560

me I believe them to be flares some

526
00:22:01,080 --> 00:21:59,050
people disagree and and Mark can speak

527
00:22:03,030 --> 00:22:01,090
more to this people say well flares you

528
00:22:05,940 --> 00:22:03,040
can see smoke you can see them

529
00:22:08,010 --> 00:22:05,950
descending they flicker and none of

530
00:22:10,350 --> 00:22:08,020
those things are necessarily true I see

531
00:22:12,300 --> 00:22:10,360
flares often they can be very bright

532
00:22:14,640 --> 00:22:12,310
these new military flares they're

533
00:22:16,440 --> 00:22:14,650
falling at such a slow speed that they

534
00:22:18,690 --> 00:22:16,450
don't look like they're falling at all

535
00:22:22,110 --> 00:22:18,700
and I've got video on there I'm showing

536
00:22:24,630 --> 00:22:22,120
this yeah you're right yeah so they they

537
00:22:28,350 --> 00:22:24,640
are flares can and you don't see the

538
00:22:30,660 --> 00:22:28,360

smoke on these flares either so uh

539

00:22:31,380 --> 00:22:30,670

that's what do you think mark what do

540

00:22:34,860 --> 00:22:31,390

you think they are

541

00:22:36,480 --> 00:22:34,870

I actually photograph exactly this type

542

00:22:39,150 --> 00:22:36,490

of thing when I was in Arizona because

543

00:22:41,720 --> 00:22:39,160

when I was out in the desert I had my

544

00:22:43,980 --> 00:22:41,730

own private Phoenix lights basically

545

00:22:45,540 --> 00:22:43,990

Luke Air Force Base was doing maneuvers

546

00:22:46,019 --> 00:22:45,550

and they were dropping parachute flares

547

00:22:49,139 --> 00:22:46,029

and when they

548

00:22:51,389 --> 00:22:49,149

did and those flares had to be 70 miles

549

00:22:52,680 --> 00:22:51,399

away from me at least and when you look

550

00:22:54,180 --> 00:22:52,690

at these two bright lights you know

551
00:22:54,810 --> 00:22:54,190
these these two bright lights are on the

552
00:22:56,700 --> 00:22:54,820
horizon

553
00:22:59,129 --> 00:22:56,710
they looked eerie they look unearthly

554
00:23:00,749 --> 00:22:59,139
but the thing is they're not unearthly

555
00:23:02,879 --> 00:23:00,759
and when you zoom in on the camp with a

556
00:23:04,979 --> 00:23:02,889
camera and get up close you can see the

557
00:23:06,749 --> 00:23:04,989
smoke the smoke is not visible to your

558
00:23:09,119 --> 00:23:06,759
eye because it's such a low surface

559
00:23:11,159 --> 00:23:09,129
brightness to the smoke but it's there

560
00:23:14,430 --> 00:23:11,169
and then of course these flares are

561
00:23:16,169 --> 00:23:14,440
descending actually at a rather at a

562
00:23:17,310 --> 00:23:16,179
parachute type rate they're really

563
00:23:19,469 --> 00:23:17,320

nothing and I think you're absolutely

564

00:23:21,649 --> 00:23:19,479

correct I'm with you on this I think

565

00:23:23,969 --> 00:23:21,659

these are actually parachute flares

566

00:23:26,070 --> 00:23:23,979

sorry guys I know some people are gonna

567

00:23:28,440 --> 00:23:26,080

get upset but well they can be upset

568

00:23:30,180 --> 00:23:28,450

with me then because you know yeah I

569

00:23:32,969 --> 00:23:30,190

agree you know that these are probably

570

00:23:34,049 --> 00:23:32,979

well I'd have to say 99.9% that I

571

00:23:36,479 --> 00:23:34,059

believe these are parachute flares

572

00:23:37,829 --> 00:23:36,489

because they never change orientation

573

00:23:40,049 --> 00:23:37,839

relative to each other they're

574

00:23:42,799 --> 00:23:40,059

descending at a rate that's concurrent

575

00:23:45,329 --> 00:23:42,809

and well that's actually you know

576

00:23:47,279 --> 00:23:45,339

coincidentally the thought like the same

577

00:23:48,450 --> 00:23:47,289

for parachute flare drop so I I don't

578

00:23:50,909 --> 00:23:48,460

see any reason why these aren't

579

00:23:51,629 --> 00:23:50,919

parachute flares and the guy is the

580

00:23:53,700 --> 00:23:51,639

important thing

581

00:23:55,320 --> 00:23:53,710

well the camp not picking it up as well

582

00:23:57,329 --> 00:23:55,330

but it's an unearthly shade of orange

583

00:23:59,700 --> 00:23:57,339

that these things look and I'm sure it

584

00:24:02,549 --> 00:23:59,710

was startling we have just like a minute

585

00:24:04,379 --> 00:24:02,559

or so to break so I just want to say the

586

00:24:06,749 --> 00:24:04,389

Phoenix lights you know a lot of the or

587

00:24:07,950 --> 00:24:06,759

I think maybe perhaps all the videos

588

00:24:10,950 --> 00:24:07,960

that you see we have one minute left

589

00:24:14,729 --> 00:24:10,960

hold break that you see is is flares

590

00:24:16,950 --> 00:24:14,739

there may be one that is not possibly

591

00:24:19,049 --> 00:24:16,960

there's only one I'm aware of that might

592

00:24:20,549 --> 00:24:19,059

not be flares but a rest yes you're

593

00:24:22,409 --> 00:24:20,559

right are are the flares because they

594

00:24:25,739 --> 00:24:22,419

ten o'clock there was there were flares

595

00:24:26,430 --> 00:24:25,749

now I'm not sure those because a from

596

00:24:28,769 --> 00:24:26,440

eight o'clock

597

00:24:31,109 --> 00:24:28,779

earlier in the day there were sightings

598

00:24:34,219 --> 00:24:31,119

out around the Phoenix area and all the

599

00:24:36,659 --> 00:24:34,229

way up to like Kingman and and needles

600

00:24:38,339 --> 00:24:36,669

just over the border in California I

601
00:24:40,680 --> 00:24:38,349
don't think those were flares but

602
00:24:43,019 --> 00:24:40,690
certainly the 10:00 p.m. were flares

603
00:24:45,029 --> 00:24:43,029
over Goldwater and I think Marc will

604
00:24:47,549 --> 00:24:45,039
concur without a page and that really

605
00:24:49,139 --> 00:24:47,559
that really kind of that was if they

606
00:24:52,079 --> 00:24:49,149
were going to cover up they did a really

607
00:24:54,119 --> 00:24:52,089
good job because yeah it's not apparent

608
00:24:55,469 --> 00:24:54,129
whether they were trying to do that we

609
00:24:56,969 --> 00:24:55,479
don't have any evidence they were

610
00:24:58,889 --> 00:24:56,979
definitely trended but you're exactly

611
00:24:59,850 --> 00:24:58,899
right if they were doing that it was a

612
00:25:02,610 --> 00:24:59,860
genius way

613
00:25:03,480 --> 00:25:02,620

to distract people absolutely okay it's

614

00:25:06,030 --> 00:25:03,490

time to go to break

615

00:25:09,030 --> 00:25:06,040

so all right thank you so much Alejandro

616

00:25:11,160 --> 00:25:09,040

I appreciate it have a great job thank

617

00:25:12,630 --> 00:25:11,170

you and all right everyone we'll be back

618

00:25:16,080 --> 00:25:12,640

with the mark the Antonio in just a

619

00:25:18,960 --> 00:25:16,090

second and I'm live on kgr a radio

620

00:25:21,870 --> 00:25:18,970

YouTube and podcast UFO this is Martin

621

00:25:26,760 --> 00:25:21,880

Willis stay tuned we'll be right back

622

00:25:27,740 --> 00:25:26,770

after these messages after these

623

00:25:31,380 --> 00:25:27,750

messages

624

00:25:35,010 --> 00:25:31,390

well that's be right back mm-hmm

625

00:25:36,480 --> 00:25:35,020

oh yeah you're clear all right what do

626

00:25:38,520 --> 00:25:36,490

you have like four minutes four and a

627

00:25:43,169 --> 00:25:38,530

half minutes okay sounds good

628

00:25:45,870 --> 00:25:43,179

all right so are you still on yeah I can

629

00:25:46,650 --> 00:25:45,880

stay okay yeah okay for the break here

630

00:25:48,539 --> 00:25:46,660

yeah why not

631

00:25:51,000 --> 00:25:48,549

okay we're doing Mike this is on YouTube

632

00:25:53,520 --> 00:25:51,010

still write the break that's right yeah

633

00:25:55,830 --> 00:25:53,530

this and usually in the break we take

634

00:25:57,390 --> 00:25:55,840

either questions well we talk about

635

00:26:00,090 --> 00:25:57,400

something that we weren't talking about

636

00:26:02,250 --> 00:26:00,100

so so it doesn't you know mess up when

637

00:26:03,990 --> 00:26:02,260

we get back on kgr a radio well I don't

638

00:26:06,000 --> 00:26:04,000

know if you were gonna ask mark this but

639

00:26:08,549 --> 00:26:06,010

I want to hear what mark thinks of lazar

640

00:26:10,560 --> 00:26:08,559

and for both of you I would like to have

641

00:26:12,210 --> 00:26:10,570

this discussion again after you see

642

00:26:14,220 --> 00:26:12,220

Jeremy's film because there is some new

643

00:26:16,470 --> 00:26:14,230

stuff here and Lazar speaks for himself

644

00:26:18,390 --> 00:26:16,480

and some of the things that I think all

645

00:26:22,230 --> 00:26:18,400

three of us are critical of but what do

646

00:26:25,260 --> 00:26:22,240

you think mark uh actually I listen to

647

00:26:27,000 --> 00:26:25,270

George Noory interview Bob Lazar the

648

00:26:29,700 --> 00:26:27,010

other night it was an older and older

649

00:26:31,289 --> 00:26:29,710

show probably but it was Jeremy Korbelt

650

00:26:34,169 --> 00:26:31,299

was there with Bob Lazar and they were

651
00:26:36,120 --> 00:26:34,179
always new actually yeah I say older

652
00:26:38,100 --> 00:26:36,130
show I mean it was like last week or two

653
00:26:41,070 --> 00:26:38,110
weeks ago you know or whatever was so

654
00:26:42,930 --> 00:26:41,080
but yeah and listening to that I I

655
00:26:44,669 --> 00:26:42,940
started listening to the show kind of

656
00:26:47,100 --> 00:26:44,679
with that skeptical approach thinking

657
00:26:49,580 --> 00:26:47,110
you know I've heard all the things about

658
00:26:52,950 --> 00:26:49,590
him and all these things but then

659
00:26:55,620 --> 00:26:52,960
listening to him respond I actually got

660
00:26:57,240 --> 00:26:55,630
the impression that you know he might

661
00:26:59,880 --> 00:26:57,250
actually there might be something to him

662
00:27:02,220 --> 00:26:59,890
in more than I think he believes what

663
00:27:04,919 --> 00:27:02,230

he's saying I well that's my voice but I

664

00:27:05,430 --> 00:27:04,929

could say that he believes what he's

665

00:27:09,930 --> 00:27:05,440

telling you

666

00:27:12,690 --> 00:27:09,940

you know and so but then again I always

667

00:27:13,680 --> 00:27:12,700

believe what I'm telling you to so it

668

00:27:15,899 --> 00:27:13,690

does I could

669

00:27:17,399 --> 00:27:15,909

a blatant liar I guess as well or

670

00:27:17,730 --> 00:27:17,409

something I don't know if that's what he

671

00:27:20,669 --> 00:27:17,740

is

672

00:27:21,899 --> 00:27:20,679

or you can telling the truth or yes or

673

00:27:24,690 --> 00:27:21,909

you keep telling the truth and the fact

674

00:27:28,740 --> 00:27:24,700

is we don't have the information to to

675

00:27:31,590 --> 00:27:28,750

judge him negatively or positively we

676

00:27:33,509 --> 00:27:31,600

have to take it for what it is and let

677

00:27:35,190 --> 00:27:33,519

that ride because unless somebody comes

678

00:27:37,320 --> 00:27:35,200

forward and says here's a government

679

00:27:39,149 --> 00:27:37,330

stamp document that claims you know that

680

00:27:41,220 --> 00:27:39,159

or shows that Bob Lazar is exactly who

681

00:27:42,930 --> 00:27:41,230

he says he was you know then what can

682

00:27:45,119 --> 00:27:42,940

you say I believe that he had a

683

00:27:47,190 --> 00:27:45,129

clearance because he said certain things

684

00:27:48,990 --> 00:27:47,200

during that during his interview got one

685

00:27:51,119 --> 00:27:49,000

minute okay thank you

686

00:27:53,639 --> 00:27:51,129

he had he said certain things during his

687

00:27:55,259 --> 00:27:53,649

interview that led me to believe that he

688

00:27:58,379 --> 00:27:55,269

would definitely have had a clearance to

689

00:28:01,320 --> 00:27:58,389

say what he said hmm I know that I had

690

00:28:03,240 --> 00:28:01,330

one for it for since 1995 all right

691

00:28:06,360 --> 00:28:03,250

nowhere near as high as he supposedly

692

00:28:08,549 --> 00:28:06,370

had you know so there's there's more to

693

00:28:10,080 --> 00:28:08,559

him than meets the eye in my view mmm

694

00:28:11,999 --> 00:28:10,090

okay we have less than a minute left

695

00:28:13,950 --> 00:28:12,009

just to let you know yeah I was just

696

00:28:15,690 --> 00:28:13,960

gonna say him I kind of like Travis

697

00:28:18,450 --> 00:28:15,700

Walton that there are people that you

698

00:28:20,460 --> 00:28:18,460

know I take seriously in a way they seem

699

00:28:21,810 --> 00:28:20,470

to believe what they're saying it's just

700

00:28:25,409 --> 00:28:21,820

uncomfortable because what they're

701

00:28:28,200 --> 00:28:25,419

saying is so strange you know it's it's

702

00:28:31,619 --> 00:28:28,210

so uncomfortable but very compelling

703

00:28:33,930 --> 00:28:31,629

yeah I think Lazar is more compelling

704

00:28:36,119 --> 00:28:33,940

after hearing this then then before I

705

00:28:39,269 --> 00:28:36,129

heard it so I'm looking forward to the

706

00:28:42,029 --> 00:28:39,279

movie no and you know I watched the

707

00:28:45,240 --> 00:28:42,039

skinwalker ranch one and I wasn't that

708

00:28:47,310 --> 00:28:45,250

excited about it yeah I agree with you

709

00:28:50,789 --> 00:28:47,320

yeah those are movie sounds like it's

710

00:28:54,180 --> 00:28:50,799

probably a better one yeah all right I

711

00:28:58,230 --> 00:28:54,190

think as far as I know I think we're are

712

00:29:00,110 --> 00:28:58,240

we ready to go back Eric we got about 30

713

00:29:02,730 --> 00:29:00,120

seconds till okay so stroll all right

714

00:29:04,379 --> 00:29:02,740

all right so Alejandro I guess I'll out

715

00:29:07,080 --> 00:29:04,389

we'll say goodnight for real this time

716

00:29:09,690 --> 00:29:07,090

since I say all right everyone when

717

00:29:10,470 --> 00:29:09,700

you're on but yeah so thanks and we'll

718

00:29:12,840 --> 00:29:10,480

talk to you next week

719

00:29:14,820 --> 00:29:12,850

all right take you guys later have a fun

720

00:29:21,269 --> 00:29:14,830

show thank you see you later alejandro

721

00:29:24,240 --> 00:29:21,279

adios adios great talking to you just a

722

00:29:26,130 --> 00:29:24,250

second let me get this here we go is

723

00:29:29,370 --> 00:29:26,140

ready yeah

724

00:29:42,330 --> 00:29:29,380

alright we got a little bit about ten

725

00:29:48,020 --> 00:29:42,340

seconds all right are you guys ready

726

00:29:50,520 --> 00:29:48,030

yeah ready yeah five four three two one

727

00:29:54,330 --> 00:29:50,530

all right welcome back to the show I'm

728

00:29:56,250 --> 00:29:54,340

here with Mark Dantonio and we are gonna

729

00:30:00,900 --> 00:29:56,260

be talking all about all kinds of great

730

00:30:03,000 --> 00:30:00,910

stuff space stuff and Mark so where do

731

00:30:04,200 --> 00:30:03,010

you want to start I have a bunch of

732

00:30:05,640 --> 00:30:04,210

different topics I want to talk to you

733

00:30:06,900 --> 00:30:05,650

about you want to start out with space

734

00:30:12,480 --> 00:30:06,910

junk or you want to start off with the

735

00:30:14,820 --> 00:30:12,490

landers I'll think that why don't we talk

736

00:30:17,270 --> 00:30:14,830

about the most recent thing which is the

737

00:30:22,260 --> 00:30:17,280

Mars insight Lander all right excellent

738

00:30:24,240 --> 00:30:22,270

yeah so if you're I mean if you want I

739

00:30:26,789 --> 00:30:24,250

can just go through some of the basics

740

00:30:28,500 --> 00:30:26,799

and we can you can I don't know where

741

00:30:30,630 --> 00:30:28,510

you want to go with that so yeah first

742

00:30:33,150 --> 00:30:30,640

of all I know that I always still love

743

00:30:35,460 --> 00:30:33,160

to watch when live when they land in the

744

00:30:38,610 --> 00:30:35,470

control room where everybody is just so

745

00:30:41,850 --> 00:30:38,620

excited and rightly so I mean it's their

746

00:30:44,820 --> 00:30:41,860

baby from you know from the moment it

747

00:30:47,100 --> 00:30:44,830

takes off to Lance and and it's there's

748

00:30:48,750 --> 00:30:47,110

so many things that can go wrong and and

749

00:30:51,600 --> 00:30:48,760

a lot of times they're unsuccessful so

750

00:30:54,120 --> 00:30:51,610

it's it's a big deal yeah I mean I know

751
00:30:55,830 --> 00:30:54,130
that you know the United States has been

752
00:30:59,130 --> 00:30:55,840
more successful than other countries and

753
00:31:01,640 --> 00:30:59,140
getting to Mars and that's a good thing

754
00:31:04,590 --> 00:31:01,650
but we've had our share of failures too

755
00:31:06,030 --> 00:31:04,600
but I can say this the DeMars insight

756
00:31:09,510 --> 00:31:06,040
landed I mean that was in space for six

757
00:31:11,730 --> 00:31:09,520
months and it all came down to the final

758
00:31:13,440 --> 00:31:11,740
seven minutes that final seven minutes

759
00:31:14,870 --> 00:31:13,450
as you've heard them say I'm sure in

760
00:31:18,740 --> 00:31:14,880
those watching and listening I've heard

761
00:31:22,350 --> 00:31:18,750
this was a the seven minutes of Terror

762
00:31:24,960 --> 00:31:22,360
brightkite and everything hundreds and

763
00:31:28,380 --> 00:31:24,970

hundreds of machine operations and

764

00:31:32,310 --> 00:31:28,390

different mechanisms and bolts and

765

00:31:35,040 --> 00:31:32,320

explosive bolts and another hardware had

766

00:31:37,440 --> 00:31:35,050

to do exactly what it was supposed to do

767

00:31:39,390 --> 00:31:37,450

not one thing could fail that's right

768

00:31:42,090 --> 00:31:39,400

and it did

769

00:31:44,580 --> 00:31:42,100

and as I listen to live I had

770

00:31:46,620 --> 00:31:44,590

butterflies in my stomach because you

771

00:31:48,660 --> 00:31:46,630

know I'm a obviously a big fan but I

772

00:31:51,570 --> 00:31:48,670

think of these these probes as if

773

00:31:53,970 --> 00:31:51,580

they're actually almost like people in a

774

00:31:56,910 --> 00:31:53,980

way because they are an extension of

775

00:31:59,490 --> 00:31:56,920

what we are and what the insight Lander

776

00:32:01,500 --> 00:31:59,500

is going to do on Mars is a spectacular

777

00:32:05,250 --> 00:32:01,510

mission and I really really want to see

778

00:32:08,549 --> 00:32:05,260

it happen and I was just so I was

779

00:32:11,040 --> 00:32:08,559

worried but I was actually confident JPL

780

00:32:12,510 --> 00:32:11,050

has been running on a high ever since

781

00:32:14,520 --> 00:32:12,520

Spirit and Opportunity actually since

782

00:32:18,120 --> 00:32:14,530

curiosity okay spirit and opportunity

783

00:32:21,690 --> 00:32:18,130

those Landers had a 90 day life

784

00:32:24,180 --> 00:32:21,700

expectancy and they went on for years

785

00:32:26,280 --> 00:32:24,190

and years and years plowing through

786

00:32:29,190 --> 00:32:26,290

Martian soil winter spring summer fall

787

00:32:32,210 --> 00:32:29,200

on Mars and they continued to do their

788

00:32:34,320 --> 00:32:32,220

jobs and opportunity still continues if

789

00:32:36,060 --> 00:32:34,330

we ever I don't know if actually we

790

00:32:40,140 --> 00:32:36,070

heard back yet from opportunity don't

791

00:32:42,240 --> 00:32:40,150

think we did but spirit was stuck in

792

00:32:44,970 --> 00:32:42,250

mired and it has a wheel that stopped

793

00:32:48,570 --> 00:32:44,980

working and an opportunity during the

794

00:32:50,970 --> 00:32:48,580

dust storm was lost so I'm not sure if

795

00:32:53,360 --> 00:32:50,980

it'll ever come back but you know

796

00:32:56,070 --> 00:32:53,370

there's always hope right that's right

797

00:32:58,020 --> 00:32:56,080

there's to it so and let's talk a little

798

00:33:01,080 --> 00:32:58,030

bit about what its mission actually is

799

00:33:03,870 --> 00:33:01,090

it's gonna be doing sonar or something

800

00:33:05,880 --> 00:33:03,880

to do with the crust of Mars is that

801
00:33:07,650 --> 00:33:05,890
right yeah actually there's several

802
00:33:11,730 --> 00:33:07,660
instruments on board the insight Lander

803
00:33:13,500 --> 00:33:11,740
which are really cool first of all let's

804
00:33:15,450 --> 00:33:13,510
talk about where it went right it when

805
00:33:17,580 --> 00:33:15,460
it landed and all those many things we

806
00:33:20,190 --> 00:33:17,590
talked about went right it landed in a

807
00:33:22,590 --> 00:33:20,200
place called Elysium Planitia and that

808
00:33:24,930 --> 00:33:22,600
is interesting because it's just south

809
00:33:26,549 --> 00:33:24,940
of the Viking 2 Lander and it's just

810
00:33:28,080 --> 00:33:26,559
north of where the Curiosity rover

811
00:33:30,590 --> 00:33:28,090
landed it's actually closer to where the

812
00:33:33,870 --> 00:33:30,600
Curiosity rover landed than Viking and

813
00:33:36,090 --> 00:33:33,880

it has these instruments on board that

814

00:33:38,970 --> 00:33:36,100

are designed for very specific purposes

815

00:33:39,900 --> 00:33:38,980

or there's a remote manipulator arm

816

00:33:41,840 --> 00:33:39,910

that's gonna be able to carry

817

00:33:44,790 --> 00:33:41,850

instruments off the main body of the

818

00:33:47,520 --> 00:33:44,800

lander and drop them onto Mars and set

819

00:33:48,690 --> 00:33:47,530

them at a distance all right and those

820

00:33:50,910 --> 00:33:48,700

instruments I'll tell you what they are

821

00:33:53,629 --> 00:33:50,920

one is called the Zeiss instrument s-cis

822

00:33:57,480 --> 00:33:53,639

and that stands for seismic

823

00:34:00,509 --> 00:33:57,490

or internal structure and that's gonna

824

00:34:02,879 --> 00:34:00,519

be deployed by that remote arm and it

825

00:34:04,529 --> 00:34:02,889

has a little dust and thermal shield on

826

00:34:08,220 --> 00:34:04,539

top of it so it looks like a little bug

827

00:34:11,309 --> 00:34:08,230

a little round-topped bug and it can

828

00:34:13,319 --> 00:34:11,319

detect really small vibrations and I

829

00:34:15,569 --> 00:34:13,329

mean vibrations down to the atomic level

830

00:34:17,730 --> 00:34:15,579

this is probably one of the most

831

00:34:21,450 --> 00:34:17,740

advanced seismometers if you want to

832

00:34:23,520 --> 00:34:21,460

call it that ever made and there might

833

00:34:25,500 --> 00:34:23,530

be liquid moving around inside Mars and

834

00:34:28,770 --> 00:34:25,510

this will be able to feel it all right

835

00:34:32,220 --> 00:34:28,780

there might be frictional vibration

836

00:34:33,780 --> 00:34:32,230

imparted on boulders you know many many

837

00:34:37,710 --> 00:34:33,790

miles away or hundreds of miles away

838

00:34:40,020 --> 00:34:37,720

that this else this thing can feel it'll

839

00:34:42,000 --> 00:34:40,030

give us an idea of how the atmosphere of

840

00:34:43,500 --> 00:34:42,010

Mars is working what the internal

841

00:34:44,909 --> 00:34:43,510

structure within Mars is because if

842

00:34:46,950 --> 00:34:44,919

there's liquid water down there it'll

843

00:34:49,559 --> 00:34:46,960

feel it it'll hear it and it'll be able

844

00:34:51,180 --> 00:34:49,569

to look at the rhythmic patterns and

845

00:34:53,159 --> 00:34:51,190

figure something out based on any

846

00:34:55,829 --> 00:34:53,169

rhythmic pattern so if water sloshing

847

00:34:57,990 --> 00:34:55,839

we'll find it basically so the weather

848

00:34:59,579 --> 00:34:58,000

systems also cause vibrations in the in

849

00:35:00,990 --> 00:34:59,589

the atmosphere of Mars and these

850

00:35:03,390 --> 00:35:01,000

vibrations are something that are also

851
00:35:07,280 --> 00:35:03,400
highly important that'll tell us you

852
00:35:11,579 --> 00:35:09,809
Bach tell us more about how Mars works

853
00:35:13,500 --> 00:35:11,589
because we've been there we've drilled a

854
00:35:15,750 --> 00:35:13,510
little into the soil but we haven't done

855
00:35:17,280 --> 00:35:15,760
anything like this is gonna do okay

856
00:35:19,290 --> 00:35:17,290
because this experience has an

857
00:35:20,940 --> 00:35:19,300
experiment on it called the H P cubed

858
00:35:23,550 --> 00:35:20,950
experiment that's that stands for heat

859
00:35:26,700 --> 00:35:23,560
flow and physical properties probe so P

860
00:35:28,230 --> 00:35:26,710
P P P cubed so the heat flow and

861
00:35:30,059 --> 00:35:28,240
physical properties probe is going to be

862
00:35:32,520 --> 00:35:30,069
deployed by the remote manipulator I'm a

863
00:35:36,870 --> 00:35:32,530

separate little unit these are both both

864

00:35:40,290 --> 00:35:36,880

the the seismic deployed deployables

865

00:35:41,280 --> 00:35:40,300

system and the this H P cubed experiment

866

00:35:43,859 --> 00:35:41,290

are going to be connected by little

867

00:35:46,200 --> 00:35:43,869

ribbon cables back to the mainlander but

868

00:35:49,500 --> 00:35:46,210

this one this this one is the the heat

869

00:35:53,309 --> 00:35:49,510

probe is gonna actually drill down 16

870

00:35:55,950 --> 00:35:53,319

feet into the Martian surface 16 feet

871

00:35:58,220 --> 00:35:55,960

maybe but keep in mind the insight

872

00:36:00,329 --> 00:35:58,230

Lander is the size of an old you know

873

00:36:02,819 --> 00:36:00,339

convertible station wagon okay I mean

874

00:36:04,680 --> 00:36:02,829

our convertible rather like like a 60s

875

00:36:05,970 --> 00:36:04,690

convertible it's a it's not small in

876

00:36:07,259 --> 00:36:05,980

each of the solar panels are or like

877

00:36:09,359 --> 00:36:07,269

seven feet in diameter

878

00:36:10,819 --> 00:36:09,369

and has two one on each side I can't

879

00:36:15,049 --> 00:36:10,829

even imagine how they could coordinate

880

00:36:17,189 --> 00:36:15,059

like the assemblage of of a drill bit

881

00:36:20,130 --> 00:36:17,199

because though obviously it's not a

882

00:36:23,039 --> 00:36:20,140

16-foot long drill bit it has to be put

883

00:36:25,739 --> 00:36:23,049

together somehow yeah there's actually a

884

00:36:28,079 --> 00:36:25,749

the system is really complex of course

885

00:36:30,209 --> 00:36:28,089

and it's gonna be going down and

886

00:36:33,329 --> 00:36:30,219

basically hammering itself down into the

887

00:36:35,159 --> 00:36:33,339

surface okay and the idea is to get it

888

00:36:35,429 --> 00:36:35,169

sixteen feet down and why would they do

889

00:36:38,099 --> 00:36:35,439

that

890

00:36:39,449 --> 00:36:38,109

well it's gonna go down and what its

891

00:36:41,039 --> 00:36:39,459

gonna do is detect something very

892

00:36:43,409 --> 00:36:41,049

important and that important thing is

893

00:36:46,799 --> 00:36:43,419

checking the heat that is actually

894

00:36:49,649 --> 00:36:46,809

escaping Mars all planets that have some

895

00:36:51,419 --> 00:36:49,659

type of solar you know impingement that

896

00:36:53,880 --> 00:36:51,429

is to say any solar energy striking a

897

00:36:55,259 --> 00:36:53,890

surface are gonna give off some heat

898

00:36:57,059 --> 00:36:55,269

it's going to get absorbed into the

899

00:36:58,289 --> 00:36:57,069

interior of the planet and then the

900

00:37:00,269 --> 00:36:58,299

planets gonna give off some of the heat

901
00:37:03,329 --> 00:37:00,279
so that's one the second thing is if the

902
00:37:06,539 --> 00:37:03,339
core of the planet is still semi molten

903
00:37:08,370 --> 00:37:06,549
on Mars alright then you're gonna get

904
00:37:09,959 --> 00:37:08,380
some heat that's given off by that and

905
00:37:11,969 --> 00:37:09,969
that's gonna end up getting out of the

906
00:37:14,669 --> 00:37:11,979
crust eventually and that's what this

907
00:37:17,339 --> 00:37:14,679
experiments designed to look for is to

908
00:37:19,649 --> 00:37:17,349
check the heat being released by Mars

909
00:37:21,359 --> 00:37:19,659
now very important stuff now we've

910
00:37:23,279 --> 00:37:21,369
talked on sky to a radio and Amanda

911
00:37:24,929 --> 00:37:23,289
Curran my co-host knows all about this

912
00:37:29,370 --> 00:37:24,939
is one of our favorite topics we've

913
00:37:31,859 --> 00:37:29,380

talked about a special way to get Mars

914

00:37:34,409 --> 00:37:31,869

to terraform itself now we know that

915

00:37:35,789 --> 00:37:34,419

that our planet has a magnetic field the

916

00:37:38,129 --> 00:37:35,799

magnetic fields what keeps our

917

00:37:40,739 --> 00:37:38,139

atmosphere basically intact otherwise

918

00:37:43,679 --> 00:37:40,749

the radiation would destroy it well on

919

00:37:45,479 --> 00:37:43,689

Mars that did happen right and there was

920

00:37:48,029 --> 00:37:45,489

no magnetic field on Mars to speak of

921

00:37:50,939 --> 00:37:48,039

and the atmosphere was a lot thicker but

922

00:37:52,979 --> 00:37:50,949

it was destroyed over time so what we

923

00:37:54,569 --> 00:37:52,989

have to do is restart the magnetic field

924

00:37:57,509 --> 00:37:54,579

of Mars well how would we do that

925

00:37:59,099 --> 00:37:57,519

well we could re start the core

926

00:38:01,289 --> 00:37:59,109

basically if we get the core to be

927

00:38:02,669 --> 00:38:01,299

molten again in the outer core and the

928

00:38:04,169 --> 00:38:02,679

inner core of Mars rub against each

929

00:38:06,059 --> 00:38:04,179

other they'll create electric currents

930

00:38:06,719 --> 00:38:06,069

which will create a magnetic field but

931

00:38:08,579 --> 00:38:06,729

guess what

932

00:38:12,149 --> 00:38:08,589

that's probably far beyond even in

933

00:38:15,779 --> 00:38:12,159

advanced species so what else is there

934

00:38:18,149 --> 00:38:15,789

well we could use the fact that there

935

00:38:21,030 --> 00:38:18,159

are points in space around Mars where

936

00:38:22,980 --> 00:38:21,040

all the gravitational forces basically

937

00:38:25,170 --> 00:38:22,990

some to zero so there's like parking

938

00:38:28,740 --> 00:38:25,180

spots in space these are called Lagrange

939

00:38:32,490 --> 00:38:28,750

points oh yeah we right if we can put a

940

00:38:34,380 --> 00:38:32,500

unit out there from Mars at the Mars

941

00:38:37,580 --> 00:38:34,390

Lagrange point number one which is

942

00:38:40,920 --> 00:38:37,590

between Mars and our Sun you know a few

943

00:38:44,640 --> 00:38:40,930

tens of millions of miles from Mars then

944

00:38:48,480 --> 00:38:44,650

if that was a magnetic field generator

945

00:38:50,460 --> 00:38:48,490

of some kind all right then the solar

946

00:38:52,290 --> 00:38:50,470

energy striking the magnetic field would

947

00:38:55,620 --> 00:38:52,300

actually drape that magnetic field

948

00:38:58,710 --> 00:38:55,630

behind this so this magnetic field

949

00:39:01,020 --> 00:38:58,720

generator and also if Mars was close

950

00:39:02,850 --> 00:39:01,030

enough then it would drape it behind

951
00:39:05,370 --> 00:39:02,860
Mars as well and it would actually

952
00:39:08,390 --> 00:39:05,380
basically coat Mars with a protective

953
00:39:10,530 --> 00:39:08,400
sheath of a magnetic field and that

954
00:39:12,870 --> 00:39:10,540
downwind side basically we're talking

955
00:39:14,580 --> 00:39:12,880
about solar wind high-energy electrons

956
00:39:17,520 --> 00:39:14,590
and protons that are making their way to

957
00:39:19,980 --> 00:39:17,530
Mars and those bombard the atmosphere

958
00:39:21,960 --> 00:39:19,990
every single day and destroy water vapor

959
00:39:23,720 --> 00:39:21,970
that's in the atmosphere well if we can

960
00:39:26,220 --> 00:39:23,730
shield Mars from that process

961
00:39:27,840 --> 00:39:26,230
artificially with this magnetic shield

962
00:39:29,790 --> 00:39:27,850
and it's actually a real project on the

963
00:39:32,220 --> 00:39:29,800

NASA docket by the way there's a halo

964

00:39:34,980 --> 00:39:32,230

magnetic shield from ours if we could do

965

00:39:38,160 --> 00:39:34,990

that then we would find that we'd have a

966

00:39:40,020 --> 00:39:38,170

Mars that is a lot more conducive to

967

00:39:42,810 --> 00:39:40,030

letting the water vapor stay in the

968

00:39:45,120 --> 00:39:42,820

atmosphere and if that happens it'll get

969

00:39:47,430 --> 00:39:45,130

warmer and the polar caps will begin to

970

00:39:50,190 --> 00:39:47,440

melt co2 the carbon dioxide parts of the

971

00:39:52,110 --> 00:39:50,200

polar caps will will sublimate and go

972

00:39:53,760 --> 00:39:52,120

away become carbon dioxide making the

973

00:39:56,370 --> 00:39:53,770

atmosphere heavier with this greenhouse

974

00:39:58,140 --> 00:39:56,380

gas and that will make it warmer again

975

00:40:00,420 --> 00:39:58,150

and the water will begin to melt the

976

00:40:03,150 --> 00:40:00,430

water ice which there's a lot of on Mars

977

00:40:05,280 --> 00:40:03,160

and if it melts then we can have a

978

00:40:07,200 --> 00:40:05,290

thicker atmosphere and if we have a

979

00:40:10,290 --> 00:40:07,210

thicker atmosphere well then you see

980

00:40:11,970 --> 00:40:10,300

Mars is terraforming itself because Mars

981

00:40:13,710 --> 00:40:11,980

generates water vapor all the time it's

982

00:40:16,170 --> 00:40:13,720

just destroyed you know by the

983

00:40:18,330 --> 00:40:16,180

ultraviolet radiation that's impacting

984

00:40:20,970 --> 00:40:18,340

it from the Sun a magnetic shield would

985

00:40:23,070 --> 00:40:20,980

prevent that you see so we actually see

986

00:40:25,320 --> 00:40:23,080

a way to actually do real terraforming

987

00:40:28,440 --> 00:40:25,330

at Mars and we don't even have to touch

988

00:40:30,450 --> 00:40:28,450

the planet amazing I'm gonna ask you the

989

00:40:34,720 --> 00:40:30,460

hypothetical I know no scientist likes

990

00:40:36,760 --> 00:40:34,730

to answer hypothetical but now we

991

00:40:38,770 --> 00:40:36,770

dunno that there was there's signs of

992

00:40:40,660 --> 00:40:38,780

water and possibly a lot of water on

993

00:40:42,880 --> 00:40:40,670

Mars at one time and flowing streams of

994

00:40:45,730 --> 00:40:42,890

flowing rivers or you know there's

995

00:40:47,950 --> 00:40:45,740

there's a you know stone stony Brook's I

996

00:40:49,900 --> 00:40:47,960

mean Brooks what am I trying to say

997

00:40:53,160 --> 00:40:49,910

Brook stones you know smooth over snow

998

00:40:56,380 --> 00:40:53,170

stones and everything from running water

999

00:40:59,170 --> 00:40:56,390

the hypothetical is do you think would

1000

00:41:02,280 --> 00:40:59,180

you think that it's possible that there

1001
00:41:05,440 --> 00:41:02,290
was life on Mars or not at one time

1002
00:41:09,790 --> 00:41:05,450
actually I don't think that's too

1003
00:41:13,090 --> 00:41:09,800
far-fetched yeah you talk about

1004
00:41:15,400 --> 00:41:13,100
microbial life advanced life I would

1005
00:41:17,650 --> 00:41:15,410
probably say not enough to you know look

1006
00:41:19,720 --> 00:41:17,660
at what happened here we were kind of in

1007
00:41:21,880 --> 00:41:19,730
the quote-unquote perfect location and

1008
00:41:24,310 --> 00:41:21,890
yet our planet is still far from perfect

1009
00:41:25,810 --> 00:41:24,320
we've had five major extinction events

1010
00:41:27,580 --> 00:41:25,820
that it killed a lot of life on this

1011
00:41:31,450 --> 00:41:27,590
planet up to 96 percent of it at one

1012
00:41:34,540 --> 00:41:31,460
time okay and yet we survived we

1013
00:41:36,460 --> 00:41:34,550

persisted you know a couple hundred

1014

00:41:39,550 --> 00:41:36,470

million years ago the Permian period was

1015

00:41:42,490 --> 00:41:39,560

in full force and mammals like we are

1016

00:41:44,440 --> 00:41:42,500

we're dominant at a time but then there

1017

00:41:47,170 --> 00:41:44,450

was this great dying and 96% of the

1018

00:41:49,150 --> 00:41:47,180

species died but dinosaurs the the

1019

00:41:52,240 --> 00:41:49,160

reptiles the larger reptiles they were

1020

00:41:53,800 --> 00:41:52,250

relatively unaffected and this started

1021

00:41:55,570 --> 00:41:53,810

the age of the reptiles that's why we

1022

00:42:00,070 --> 00:41:55,580

had dinosaurs on the planet and then

1023

00:42:01,630 --> 00:42:00,080

when when when the 65 million years ago

1024

00:42:03,490 --> 00:42:01,640

when the Chicxulub event or the

1025

00:42:04,780 --> 00:42:03,500

Cretaceous paleogene event that's called

1026

00:42:07,599 --> 00:42:04,790

you know the death of the dinosaurs

1027

00:42:11,140 --> 00:42:07,609

basically when that asteroid struck the

1028

00:42:12,880 --> 00:42:11,150

planet that caused the reptiles to go

1029

00:42:14,620 --> 00:42:12,890

into retreat and now those mammals that

1030

00:42:16,630 --> 00:42:14,630

were hiding in the shadows for millions

1031

00:42:18,730 --> 00:42:16,640

of years were able to come back out and

1032

00:42:22,750 --> 00:42:18,740

again we achieve dominance and became

1033

00:42:24,640 --> 00:42:22,760

what we are on Mars that process ok

1034

00:42:27,070 --> 00:42:24,650

would have taken a lot of a lot of time

1035

00:42:30,910 --> 00:42:27,080

just like here but how do you know there

1036

00:42:33,190 --> 00:42:30,920

was any extinction events on Mars to say

1037

00:42:35,560 --> 00:42:33,200

that there was you know animals on there

1038

00:42:37,810 --> 00:42:35,570

at one time you know I mean don't you

1039

00:42:40,570 --> 00:42:37,820

don't know her creatures yeah we don't

1040

00:42:42,760 --> 00:42:40,580

know but we do know that given the

1041

00:42:45,609 --> 00:42:42,770

timeframe Mars is about as old as the

1042

00:42:47,620 --> 00:42:45,619

earth basically and so we look at the

1043

00:42:48,490 --> 00:42:47,630

fact that over hundreds of millions of

1044

00:42:50,740 --> 00:42:48,500

years

1045

00:42:53,520 --> 00:42:50,750

I've developed on this planet I mean if

1046

00:42:56,350 --> 00:42:53,530

you look way before the the first

1047

00:42:59,890 --> 00:42:56,360

Cambrian creatures were in the Cambrian

1048

00:43:01,960 --> 00:42:59,900

oceans okay we had probably 2.7 billion

1049

00:43:03,570 --> 00:43:01,970

years ago we had blue green algae

1050

00:43:06,580 --> 00:43:03,580

basically on the planet cyanobacteria

1051
00:43:09,280 --> 00:43:06,590
these bacteria were gobblers of carbon

1052
00:43:10,690 --> 00:43:09,290
dioxide well they could have existed on

1053
00:43:13,690 --> 00:43:10,700
Mars I don't see any reason why they

1054
00:43:16,030 --> 00:43:13,700
couldn't why because the universe

1055
00:43:17,470 --> 00:43:16,040
creates a template for carbon-based life

1056
00:43:19,350 --> 00:43:17,480
okay

1057
00:43:21,690 --> 00:43:19,360
meteors deliver carbon-based compounds

1058
00:43:23,620 --> 00:43:21,700
comets deliver carbon-based compounds

1059
00:43:24,940 --> 00:43:23,630
asteroids deliver carbon-based compounds

1060
00:43:27,880 --> 00:43:24,950
and water

1061
00:43:30,280 --> 00:43:27,890
okay along with comets so the

1062
00:43:34,200 --> 00:43:30,290
carbon-based life form is actually sort

1063
00:43:37,570 --> 00:43:34,210

of a I would say a pretty destined type

1064

00:43:39,520 --> 00:43:37,580

life form that you might see I say might

1065

00:43:42,370 --> 00:43:39,530

because we can't be sure in certainty

1066

00:43:44,350 --> 00:43:42,380

right and on earth it happened so why

1067

00:43:46,270 --> 00:43:44,360

couldn't have happened on Mars Mars at

1068

00:43:49,720 --> 00:43:46,280

one time was a warmer climate it was

1069

00:43:51,880 --> 00:43:49,730

actually a more well developed planet it

1070

00:43:55,060 --> 00:43:51,890

had a magnetic field until the core of

1071

00:43:57,970 --> 00:43:55,070

Mars began to cool enough so the

1072

00:43:59,860 --> 00:43:57,980

magnetic field was no longer effective

1073

00:44:01,330 --> 00:43:59,870

and that's when that's when everything

1074

00:44:03,310 --> 00:44:01,340

happened that's when the atmosphere

1075

00:44:06,700 --> 00:44:03,320

began to thin because of ultraviolet

1076

00:44:09,040 --> 00:44:06,710

radiation killing the h2o molecules it

1077

00:44:11,590 --> 00:44:09,050

would split apart the hydrogen would get

1078

00:44:13,060 --> 00:44:11,600

lost to space and the oxygen you know

1079

00:44:15,460 --> 00:44:13,070

atoms would actually go down into the

1080

00:44:18,040 --> 00:44:15,470

soil and bond with things like iron to

1081

00:44:20,440 --> 00:44:18,050

create FeO which is iron oxide and

1082

00:44:25,660 --> 00:44:20,450

that's rust and that's why Mars is red

1083

00:44:27,730 --> 00:44:25,670

uh-huh so that you see a chronology here

1084

00:44:29,920 --> 00:44:27,740

now there was a lot of water on Mars no

1085

00:44:31,360 --> 00:44:29,930

doubt and people said well where is it

1086

00:44:33,880 --> 00:44:31,370

where is it well we're seeing this at

1087

00:44:36,490 --> 00:44:33,890

the end of the cycle we're seeing it at

1088

00:44:40,510 --> 00:44:36,500

the time when Mars water is now locked

1089

00:44:42,610 --> 00:44:40,520

up subsurface in ice hardest granite and

1090

00:44:44,980 --> 00:44:42,620

we're seeing it at a time when Mars is

1091

00:44:47,950 --> 00:44:44,990

at a point where it doesn't have an

1092

00:44:50,200 --> 00:44:47,960

atmosphere that is thick enough to allow

1093

00:44:53,080 --> 00:44:50,210

liquid water on the surface any longer

1094

00:44:56,430 --> 00:44:53,090

however we see evidence of liquid water

1095

00:44:59,980 --> 00:44:56,440

even in recent years occurring on Mars

1096

00:45:02,020 --> 00:44:59,990

mostly in the sides of deep craters

1097

00:45:02,410 --> 00:45:02,030

where suddenly right you know that's

1098

00:45:04,000 --> 00:45:02,420

there

1099

00:45:05,799 --> 00:45:04,010

a burst of water that comes gushing out

1100

00:45:09,910 --> 00:45:05,809

of the side it's probably very salty and

1101

00:45:11,890 --> 00:45:09,920

it goes racing down the the crater the

1102

00:45:13,839 --> 00:45:11,900

crater interior into the toward the

1103

00:45:15,870 --> 00:45:13,849

bottom of the crater but as it's falling

1104

00:45:19,750 --> 00:45:15,880

it's also sublimating it's going away

1105

00:45:22,630 --> 00:45:19,760

you know and when it when it goes to you

1106

00:45:24,460 --> 00:45:22,640

know from that that when it goes to

1107

00:45:26,260 --> 00:45:24,470

water vapor then the water vapor is

1108

00:45:29,589 --> 00:45:26,270

destroyed by the ultraviolet radiation

1109

00:45:32,230 --> 00:45:29,599

so this this and of course it leaves a

1110

00:45:36,010 --> 00:45:32,240

salts behind so this is what we see on

1111

00:45:40,510 --> 00:45:36,020

Mars now okay we don't see standing

1112

00:45:42,910 --> 00:45:40,520

water except at the South Pole and it's

1113

00:45:45,510 --> 00:45:42,920

down I think about a kilometer below the

1114

00:45:49,450 --> 00:45:45,520

surface there's a 12 kilometer long

1115

00:45:52,089 --> 00:45:49,460

actual subsurface Lake near the South

1116

00:45:53,200 --> 00:45:52,099

Pole of Mars Wow that's very important

1117

00:45:56,549 --> 00:45:53,210

because that's telling us that there's

1118

00:46:00,250 --> 00:45:56,559

actually actual real standing water and

1119

00:46:02,410 --> 00:46:00,260

that there's a place where the warmth

1120

00:46:04,450 --> 00:46:02,420

from the interior of the planet is it's

1121

00:46:06,609 --> 00:46:04,460

warm enough so that the pressure from

1122

00:46:11,049 --> 00:46:06,619

the overlying rock strata the warmth

1123

00:46:13,329 --> 00:46:11,059

coming from the core radiating out to

1124

00:46:15,430 --> 00:46:13,339

those those rock strata is enough to

1125

00:46:16,599 --> 00:46:15,440

allow liquid water to form and and that

1126

00:46:17,770 --> 00:46:16,609

that's the pressure of the overlying

1127

00:46:20,230 --> 00:46:17,780

rocks which are providing the pressure

1128

00:46:23,230 --> 00:46:20,240

then the mass basically and thus the

1129

00:46:26,410 --> 00:46:23,240

weight on Mars to allow for that water

1130

00:46:29,109 --> 00:46:26,420

to exist as water as we know it it's

1131

00:46:30,609 --> 00:46:29,119

just an interesting extra and is

1132

00:46:31,750 --> 00:46:30,619

perplexing and all the new things we're

1133

00:46:34,150 --> 00:46:31,760

learning about Mars you know this is

1134

00:46:36,549 --> 00:46:34,160

just absolutely incredible you know

1135

00:46:39,460 --> 00:46:36,559

there's a question related to that Daryl

1136

00:46:42,250 --> 00:46:39,470

from YouTube and thanks again to Amanda

1137

00:46:45,400 --> 00:46:42,260

for giving me these questions Daryl from

1138

00:46:49,569 --> 00:46:45,410

YouTube asked once to ask mark didn't

1139

00:46:51,640 --> 00:46:49,579

one of the that just moved didn't one of

1140

00:46:55,650 --> 00:46:51,650

the Viking landers have such strong

1141

00:46:57,760 --> 00:46:55,660

results from a test for life that they

1142

00:47:00,010 --> 00:46:57,770

disregarded the results have you heard

1143

00:47:02,370 --> 00:47:00,020

anything about that yeah you know I

1144

00:47:05,380 --> 00:47:02,380

actually had the the through this thick

1145

00:47:08,049 --> 00:47:05,390

I'm making a gesture for like two and a

1146

00:47:10,390 --> 00:47:08,059

half to three inches I had all the

1147

00:47:13,420 --> 00:47:10,400

results of the Viking landers and I

1148

00:47:15,430 --> 00:47:13,430

pored over them for many years and that

1149

00:47:16,790 --> 00:47:15,440

experiment they're talking about was one

1150

00:47:19,340 --> 00:47:16,800

I think we're there

1151
00:47:21,110 --> 00:47:19,350
some minerals in an oven and based on

1152
00:47:22,340 --> 00:47:21,120
what they were onboard the Viking

1153
00:47:24,230 --> 00:47:22,350
because they we had like a little easy

1154
00:47:27,200 --> 00:47:24,240
bake oven basically inside of the Viking

1155
00:47:29,090 --> 00:47:27,210
and it would cook these elements to try

1156
00:47:31,850 --> 00:47:29,100
and now these these minerals and try to

1157
00:47:33,800 --> 00:47:31,860
see what comes off now here's what

1158
00:47:36,230 --> 00:47:33,810
happens typically just like on earth

1159
00:47:39,080 --> 00:47:36,240
certain minerals can only form in the

1160
00:47:40,580 --> 00:47:39,090
presence of water so they look and they

1161
00:47:42,080 --> 00:47:40,590
gauge how much of a certain minerals

1162
00:47:44,300 --> 00:47:42,090
present and that tells them how much

1163
00:47:46,430 --> 00:47:44,310

water may have been present okay we do

1164

00:47:49,220 --> 00:47:46,440

that on earth we look back and we figure

1165

00:47:52,670 --> 00:47:49,230

out how much you know water we had how

1166

00:47:53,570 --> 00:47:52,680

much oxygen we had etc well on Mars when

1167

00:47:55,250 --> 00:47:53,580

there when they were doing this

1168

00:47:57,980 --> 00:47:55,260

experiment there were some results that

1169

00:48:00,560 --> 00:47:57,990

seemed like they might have been an

1170

00:48:03,080 --> 00:48:00,570

error because the results were so

1171

00:48:06,440 --> 00:48:03,090

promising now I don't think that it's

1172

00:48:08,360 --> 00:48:06,450

necessarily an error and guess what NASA

1173

00:48:10,940 --> 00:48:08,370

doesn't think so either and that's why

1174

00:48:15,890 --> 00:48:10,950

this Mars insight Lander landed just

1175

00:48:18,500 --> 00:48:15,900

south of the Viking 2 position Wow yeah

1176

00:48:21,620 --> 00:48:18,510

this is it's it's farther south than it

1177

00:48:23,750 --> 00:48:21,630

is from the Curiosity position curiosity

1178

00:48:28,190 --> 00:48:23,760

if you recall it found these wonderful

1179

00:48:29,390 --> 00:48:28,200

little round spheres now people have to

1180

00:48:32,270 --> 00:48:29,400

understand it when they look at pictures

1181

00:48:33,980 --> 00:48:32,280

from Mars they're in false color except

1182

00:48:37,880 --> 00:48:33,990

for the ones that are just all kind of a

1183

00:48:39,620 --> 00:48:37,890

salmon ruddy ready you know red color ok

1184

00:48:42,680 --> 00:48:39,630

Mars doesn't have a whole lot of color

1185

00:48:45,560 --> 00:48:42,690

other than the red and and that's

1186

00:48:47,390 --> 00:48:45,570

something that some when they look at

1187

00:48:49,520 --> 00:48:47,400

these little spheres that they found

1188

00:48:51,920 --> 00:48:49,530

they called them blueberries now they

1189

00:48:53,510 --> 00:48:51,930

were blue because of the fact that they

1190

00:48:55,760 --> 00:48:53,520

were formed in the presence of water but

1191

00:48:57,620 --> 00:48:55,770

they were false colored they were they

1192

00:48:59,870 --> 00:48:57,630

were false colored that wasn't their

1193

00:49:01,310 --> 00:48:59,880

real color they look like little pink

1194

00:49:04,280 --> 00:49:01,320

nodules but because of the mineral

1195

00:49:06,770 --> 00:49:04,290

content they were marked as blue okay so

1196

00:49:09,710 --> 00:49:06,780

it was algorithm that painted them that

1197

00:49:12,650 --> 00:49:09,720

way based on their mineralogy so we're

1198

00:49:14,360 --> 00:49:12,660

not looking at a real color here and

1199

00:49:18,140 --> 00:49:14,370

that's why sometimes the photos showed

1200

00:49:19,910 --> 00:49:18,150

blue sky and that brought all the the

1201
00:49:22,310 --> 00:49:19,920
the people that said oh look Mars really

1202
00:49:23,600 --> 00:49:22,320
has blue sky it's a that's really

1203
00:49:26,410 --> 00:49:23,610
they're hiding it from us it's like oh

1204
00:49:28,940 --> 00:49:26,420
my gosh you know to what end

1205
00:49:29,930 --> 00:49:28,950
sky but it said hey Mars has blue sky

1206
00:49:32,329 --> 00:49:29,940
yeah you know

1207
00:49:34,280 --> 00:49:32,339
you know there's a lot more than that

1208
00:49:38,710 --> 00:49:34,290
goes into this what's interesting is at

1209
00:49:42,230 --> 00:49:38,720
sunset on Mars the sky is blue

1210
00:49:44,120 --> 00:49:42,240
okay it's sunset all right which is kind

1211
00:49:46,730 --> 00:49:44,130
of cool usually sunset it's red here

1212
00:49:48,589 --> 00:49:46,740
right well on Mars it's more blue okay

1213
00:49:51,849 --> 00:49:48,599

nits for the opposite it's for the

1214

00:49:57,559 --> 00:49:51,859

similar but different reasons that the

1215

00:50:00,620 --> 00:49:57,569

sky is red at our sunset so yeah yeah so

1216

00:50:02,420 --> 00:50:00,630

anyway insight landed just well

1217

00:50:06,160 --> 00:50:02,430

relatively south it's sort of near the

1218

00:50:08,930 --> 00:50:06,170

Martian equator in Elysium Phoenicia and

1219

00:50:10,550 --> 00:50:08,940

viking was north obviously but it's on

1220

00:50:13,220 --> 00:50:10,560

that side of the planet it's in the same

1221

00:50:14,720 --> 00:50:13,230

relative region as Viking two so it'll

1222

00:50:17,329 --> 00:50:14,730

be interesting to see what this thing

1223

00:50:18,950 --> 00:50:17,339

turns up and that that heat flow probe

1224

00:50:20,839 --> 00:50:18,960

is gonna be very important too for when

1225

00:50:22,280 --> 00:50:20,849

it drills now you know then there's more

1226

00:50:23,870 --> 00:50:22,290

instruments on in sight than that but

1227

00:50:25,819 --> 00:50:23,880

still yeah it's really cool that'd be

1228

00:50:29,750 --> 00:50:25,829

really interesting to know whether there

1229

00:50:31,550 --> 00:50:29,760

is a heated core there should be I would

1230

00:50:33,980 --> 00:50:31,560

think there would be but whether it's

1231

00:50:34,550 --> 00:50:33,990

some heat yes but but is it molten

1232

00:50:36,770 --> 00:50:34,560

anymore

1233

00:50:39,430 --> 00:50:36,780

yes important is it moving at all you

1234

00:50:42,170 --> 00:50:39,440

know I know without without the

1235

00:50:44,990 --> 00:50:42,180

electromagnetic fear it's it's possibly

1236

00:50:47,000 --> 00:50:45,000

not moving at all now I do want to say

1237

00:50:49,819 --> 00:50:47,010

that well we're we're talking about Mars

1238

00:50:51,620 --> 00:50:49,829

we're gonna go into some other things

1239

00:50:52,880 --> 00:50:51,630

but we have a and the reason I'm saying

1240

00:50:54,440 --> 00:50:52,890

that is because we are getting some

1241

00:50:56,750 --> 00:50:54,450

questions from YouTube that Amanda is

1242

00:50:59,240 --> 00:50:56,760

passing along but I'm only going to ask

1243

00:51:01,210 --> 00:50:59,250

the ones related to Mars right now we

1244

00:51:04,220 --> 00:51:01,220

have about four minutes to a break

1245

00:51:06,170 --> 00:51:04,230

before I ask this question I I just keep

1246

00:51:09,410 --> 00:51:06,180

forgetting to let the listeners know

1247

00:51:13,130 --> 00:51:09,420

that upcoming shows I have I have David

1248

00:51:14,839 --> 00:51:13,140

O'Leary from Project Blue Book he is he

1249

00:51:17,450 --> 00:51:14,849

is the creator of that for the History

1250

00:51:19,040 --> 00:51:17,460

Channel he's going to be on on if you're

1251
00:51:22,640 --> 00:51:19,050
listening to YouTube he's going to be on

1252
00:51:26,089 --> 00:51:22,650
December 23rd along with Dave Marla

1253
00:51:27,829 --> 00:51:26,099
that's for a full show and but that will

1254
00:51:29,540 --> 00:51:27,839
be our Christmas show so that'll be

1255
00:51:31,520 --> 00:51:29,550
released during the day of Christmas

1256
00:51:33,859 --> 00:51:31,530
and we have a next week we have a

1257
00:51:36,620 --> 00:51:33,869
professor that of history talking about

1258
00:51:38,599 --> 00:51:36,630
UFOs that should be interesting so one

1259
00:51:41,480 --> 00:51:38,609
more question before four minutes we go

1260
00:51:43,730 --> 00:51:41,490
to break address two from YouTube asks

1261
00:51:46,550 --> 00:51:43,740
what if Mars hasn't always been

1262
00:51:50,390 --> 00:51:46,560
the same orbit as it is now that's

1263
00:51:52,700 --> 00:51:50,400

interesting yeah I mean there are signs

1264

00:51:56,810 --> 00:51:52,710

of massive impact on Mars just like on

1265

00:51:58,700 --> 00:51:56,820

the moon and on earth but if it changed

1266

00:52:02,930 --> 00:51:58,710

its orbit that would actually have been

1267

00:52:05,240 --> 00:52:02,940

very drastic usually when a planet is in

1268

00:52:07,490 --> 00:52:05,250

early formation it might form a little

1269

00:52:09,530 --> 00:52:07,500

farther away from the star and then

1270

00:52:11,630 --> 00:52:09,540

through impacts with other objects as

1271

00:52:13,790 --> 00:52:11,640

it's accumulated more mass it might

1272

00:52:15,950 --> 00:52:13,800

actually slow down a little or it might

1273

00:52:19,730 --> 00:52:15,960

change its momentum as it's called it's

1274

00:52:21,530 --> 00:52:19,740

its speed of motion and when that

1275

00:52:23,840 --> 00:52:21,540

happens it might start to spiral a

1276

00:52:26,090 --> 00:52:23,850

little bit toward the star and maybe

1277

00:52:27,710 --> 00:52:26,100

pick up another stable orbit I I think

1278

00:52:30,910 --> 00:52:27,720

that if anything Mars would have been a

1279

00:52:35,060 --> 00:52:30,920

little farther away before it was closer

1280

00:52:36,560 --> 00:52:35,070

and not the opposite way around but you

1281

00:52:38,690 --> 00:52:36,570

know there's a planets a really massive

1282

00:52:41,600 --> 00:52:38,700

thing and it would take an awful lot of

1283

00:52:46,100 --> 00:52:41,610

stuff to get in the way and cause it to

1284

00:52:48,560 --> 00:52:46,110

slow down in its orbit and generally

1285

00:52:50,570 --> 00:52:48,570

that usually happens from what we see in

1286

00:52:52,550 --> 00:52:50,580

the very formative stages when it's

1287

00:52:53,840 --> 00:52:52,560

first forming so it may have formed a

1288

00:52:56,540 --> 00:52:53,850

little farther out and then kind of

1289

00:52:59,720 --> 00:52:56,550

spiraled in this stuff was impacting and

1290

00:53:04,450 --> 00:52:59,730

accumulating on it that's very possible

1291

00:53:08,540 --> 00:53:04,460

but I just think that Mars probably

1292

00:53:09,650 --> 00:53:08,550

isn't relatively the same location as

1293

00:53:11,300 --> 00:53:09,660

when it was formed but that's a good

1294

00:53:13,849 --> 00:53:11,310

question because it makes people on it

1295

00:53:16,760 --> 00:53:13,859

helps people understand that planets

1296

00:53:17,870 --> 00:53:16,770

don't always end up looking or in the

1297

00:53:20,150 --> 00:53:17,880

same position that they were when they

1298

00:53:21,890 --> 00:53:20,160

started we see planets like that now

1299

00:53:23,780 --> 00:53:21,900

exoplanets people know I'm an exoplanet

1300

00:53:25,160 --> 00:53:23,790

guy when we look at exoplanets we know

1301

00:53:27,080 --> 00:53:25,170

that there are some that are actually

1302

00:53:29,000 --> 00:53:27,090

spiraling toward their star and they're

1303

00:53:31,010 --> 00:53:29,010

impossibly close to the star to a form

1304

00:53:32,930 --> 00:53:31,020

there and what they're actually doing is

1305

00:53:36,290 --> 00:53:32,940

evaporating because they're too close to

1306

00:53:39,500 --> 00:53:36,300

the star you know and ya know it's crazy

1307

00:53:42,050 --> 00:53:39,510

stuff now as far as I know that there

1308

00:53:45,140 --> 00:53:42,060

are several possibilities of reasons

1309

00:53:49,130 --> 00:53:45,150

that we go through ice ages and one of

1310

00:53:51,440 --> 00:53:49,140

them is if the Sun is quiet or dimming

1311

00:53:54,260 --> 00:53:51,450

or whatever I've heard that so would you

1312

00:53:56,450 --> 00:53:54,270

think that if Mars was terraformed in

1313

00:53:57,650 --> 00:53:56,460

that particular case do you think it

1314

00:54:01,609 --> 00:53:57,660

went through ice ages just

1315

00:54:03,440 --> 00:54:01,619

like earth and those situations well the

1316

00:54:04,940 --> 00:54:03,450

if if the Sun was responsible for

1317

00:54:06,349 --> 00:54:04,950

cooling the earth I mean we've had a

1318

00:54:09,170 --> 00:54:06,359

couple of times in our past history

1319

00:54:12,890 --> 00:54:09,180

where we think we had what's called a

1320

00:54:16,190 --> 00:54:12,900

snowball earth global glaciation the

1321

00:54:19,670 --> 00:54:16,200

entire planet like an ice ball and that

1322

00:54:22,460 --> 00:54:19,680

was way before we built up a enough

1323

00:54:25,220 --> 00:54:22,470

atmosphere to actually be a contender in

1324

00:54:27,250 --> 00:54:25,230

the planetary arena so but still

1325

00:54:29,539 --> 00:54:27,260

snowball earth is something that was

1326

00:54:32,240 --> 00:54:29,549

hypothesized for our planet

1327

00:54:34,789 --> 00:54:32,250

so could it have been that there was a

1328

00:54:37,520 --> 00:54:34,799

snowball Mars well if earth was that

1329

00:54:39,319 --> 00:54:37,530

cold caused by the Sun then Mars would

1330

00:54:42,920 --> 00:54:39,329

certainly have been cold as well even

1331

00:54:47,170 --> 00:54:42,930

colder so I would imagine that Mars

1332

00:54:49,910 --> 00:54:47,180

suffered the same types of effects a

1333

00:54:52,069 --> 00:54:49,920

long-term that the earth went through

1334

00:54:54,710 --> 00:54:52,079

when it came to that kind of course view

1335

00:54:57,650 --> 00:54:54,720

of things like we had a couple of global

1336

00:54:59,990 --> 00:54:57,660

cooling events on earth that were the

1337

00:55:01,490 --> 00:55:00,000

result of impacts too well we can't say

1338

00:55:04,880 --> 00:55:01,500

those happens on Mars the same time the

1339

00:55:08,000 --> 00:55:04,890

same way but the global ice age and the

1340

00:55:09,859 --> 00:55:08,010

global glaciation that occurred here if

1341

00:55:11,870 --> 00:55:09,869

it was due to the Sun well then the Sun

1342

00:55:14,809 --> 00:55:11,880

change for Mars too so it would have

1343

00:55:17,120 --> 00:55:14,819

changed there okay well we're ready to

1344

00:55:20,210 --> 00:55:17,130

go for break to break actually and when

1345

00:55:22,490 --> 00:55:20,220

we come back we can take calls and also

1346

00:55:24,109 --> 00:55:22,500

we're gonna be talking I want to talk a

1347

00:55:26,029 --> 00:55:24,119

space junk because that's fascinating to

1348

00:55:28,549 --> 00:55:26,039

me so it's fun yeah

1349

00:55:30,319 --> 00:55:28,559

all right everyone so I'm on with Mark

1350

00:55:33,740 --> 00:55:30,329

Dantonio this is Martin Willis with

1351
00:55:38,470 --> 00:55:33,750
podcast UFO on kera radio and we'll be

1352
00:55:46,220 --> 00:55:41,240
clear all right how many minutes do we

1353
00:55:47,779 --> 00:55:46,230
have this time Eric four minutes you got

1354
00:55:49,549 --> 00:55:47,789
four and a half minutes okay excellent

1355
00:55:49,880 --> 00:55:49,559
or minutes I mean my bed all right no

1356
00:55:52,220 --> 00:55:49,890
problem

1357
00:55:54,829 --> 00:55:52,230
so during this break mark we had a ton

1358
00:55:57,920 --> 00:55:54,839
of YouTube questions come in so let me

1359
00:56:01,420 --> 00:55:57,930
fire away I'm going to start in order so

1360
00:56:03,740 --> 00:56:01,430
that's the fair way to go let's see Kim

1361
00:56:05,450 --> 00:56:03,750
these are all YouTube questions again

1362
00:56:06,950 --> 00:56:05,460
Kim and why don't we kind of fire

1363
00:56:08,450 --> 00:56:06,960

through them and not take too much time

1364

00:56:11,150 --> 00:56:08,460

because we have four or five of them Kim

1365

00:56:12,190 --> 00:56:11,160

wants to know what is your favorite tell

1366

00:56:15,079 --> 00:56:12,200

us

1367

00:56:17,150 --> 00:56:15,089

mm like maybe I ran a brand of telescope

1368

00:56:18,559 --> 00:56:17,160

I would I would yes yeah okay well my

1369

00:56:20,660 --> 00:56:18,569

home okay I can answer both of those

1370

00:56:22,760 --> 00:56:20,670

questions my favorite telescope forever

1371

00:56:24,460 --> 00:56:22,770

is going to be one that's not even up

1372

00:56:29,000 --> 00:56:24,470

there yet it's the James Webb telescope

1373

00:56:31,640 --> 00:56:29,010

that's authentic Carter yeah yeah that's

1374

00:56:34,160 --> 00:56:31,650

gonna be one that to show us the

1375

00:56:36,440 --> 00:56:34,170

atmospheres of exoplanets and it's gonna

1376

00:56:39,280 --> 00:56:36,450

be able to do things by looking at the

1377

00:56:42,770 --> 00:56:39,290

reflective well we'll call it the

1378

00:56:44,180 --> 00:56:42,780

reflective index of these planets and

1379

00:56:46,520 --> 00:56:44,190

Carl Sagan is the one that actually

1380

00:56:49,609 --> 00:56:46,530

suggested this way back when the Galileo

1381

00:56:52,220 --> 00:56:49,619

probe left the earth Wow we generated a

1382

00:56:56,630 --> 00:56:52,230

database of reflectance that's called

1383

00:56:58,880 --> 00:56:56,640

reflectance on planets like our own and

1384

00:57:00,859 --> 00:56:58,890

we looked at what a lush rainforest

1385

00:57:02,420 --> 00:57:00,869

looks like in this reflectance index

1386

00:57:04,220 --> 00:57:02,430

well like we looked at what it does it

1387

00:57:06,290 --> 00:57:04,230

looks like in this reflectance index and

1388

00:57:09,440 --> 00:57:06,300

we made a database and it seemed like

1389

00:57:11,540 --> 00:57:09,450

it's pretty darn consistent so if we're

1390

00:57:13,910 --> 00:57:11,550

looking for things like plants and lush

1391

00:57:15,829 --> 00:57:13,920

forests we should be able to get a

1392

00:57:19,549 --> 00:57:15,839

reflectance index using the James Webb

1393

00:57:21,109 --> 00:57:19,559

telescope of these exoplanets thousands

1394

00:57:24,710 --> 00:57:21,119

and hundreds of light-years away even

1395

00:57:27,410 --> 00:57:24,720

and if we can do that we'll be able to

1396

00:57:29,569 --> 00:57:27,420

actually tell or get an idea anyway of

1397

00:57:31,849 --> 00:57:29,579

whether they're actually full of plant

1398

00:57:33,710 --> 00:57:31,859

plant life and that's just the whole

1399

00:57:35,450 --> 00:57:33,720

thing right there so and what's your

1400

00:57:37,700 --> 00:57:35,460

favorite telescope that you can use like

1401
00:57:41,359 --> 00:57:37,710
to say an amateur out there wants to get

1402
00:57:43,430 --> 00:57:41,369
into star watching yeah I think that the

1403
00:57:47,660 --> 00:57:43,440
Meade family of telescopes is reasonably

1404
00:57:50,930 --> 00:57:47,670
priced I have a research quality Mead in

1405
00:57:53,329 --> 00:57:50,940
the observatory and we'll be using it

1406
00:57:56,329 --> 00:57:53,339
tonight actually after the after we you

1407
00:57:58,309 --> 00:57:56,339
and I talk and it's gonna be a fully

1408
00:57:59,720 --> 00:57:58,319
remote operation tonight for the first

1409
00:58:01,460 --> 00:57:59,730
time so we're gonna see how that goes

1410
00:58:03,170 --> 00:58:01,470
it could go nowhere it could go

1411
00:58:07,549 --> 00:58:03,180
everywhere but we'll see what happens on

1412
00:58:09,140 --> 00:58:07,559
top of that the mead telescopes that

1413
00:58:11,390 --> 00:58:09,150

don't have to be researched grade you

1414

00:58:12,710 --> 00:58:11,400

can actually use one there are simple

1415

00:58:14,900 --> 00:58:12,720

ones that are three and four hundred

1416

00:58:16,640 --> 00:58:14,910

dollars a piece they're absolutely just

1417

00:58:18,079 --> 00:58:16,650

beautiful and they actually have a

1418

00:58:19,640 --> 00:58:18,089

computer eyes for like four hundred

1419

00:58:22,430 --> 00:58:19,650

dollars four to five hundred dollars

1420

00:58:25,430 --> 00:58:22,440

that's it you can buy one that has a

1421

00:58:27,350 --> 00:58:25,440

computer control it so you can

1422

00:58:29,900 --> 00:58:27,360

it's called the go to mount you can

1423

00:58:31,430 --> 00:58:29,910

actually go to what you wanted to now

1424

00:58:33,170 --> 00:58:31,440

that requires that you learn a little

1425

00:58:34,880 --> 00:58:33,180

bit about alignments and stuff and how

1426

00:58:36,410 --> 00:58:34,890

they will line the telescope properly to

1427

00:58:38,900 --> 00:58:36,420

the North celestial Pole

1428

00:58:40,670 --> 00:58:38,910

but you know something you could do it

1429

00:58:43,130 --> 00:58:40,680

with one of your kids in an afternoon

1430

00:58:44,630 --> 00:58:43,140

and it's really cool you know learn

1431

00:58:46,310 --> 00:58:44,640

about the alignment and then at night

1432

00:58:48,650 --> 00:58:46,320

you go out there and say wow this was so

1433

00:58:50,330 --> 00:58:48,660

cool and then to maintain that alignment

1434

00:58:52,400 --> 00:58:50,340

you just put little marks on the ground

1435

00:58:54,650 --> 00:58:52,410

where you had your rehab this had a

1436

00:58:56,450 --> 00:58:54,660

sitting and and make the orientation the

1437

00:58:58,520 --> 00:58:56,460

same every time and you make you'll have

1438

00:59:00,230 --> 00:58:58,530

it we have no fixed questions now we

1439

00:59:02,630 --> 00:59:00,240

have to do in the minute and having

1440

00:59:04,100 --> 00:59:02,640

fluids okay Tom from YouTube wants to

1441

00:59:06,470 --> 00:59:04,110

know if you're still making models or

1442

00:59:08,150 --> 00:59:06,480

just doing radio these days now I'm

1443

00:59:10,580 --> 00:59:08,160

doing models actually I'm doing one for

1444

00:59:13,190 --> 00:59:10,590

the Navy it's right across the shop for

1445

00:59:15,970 --> 00:59:13,200

me right here so I'm doing plenty models

1446

00:59:19,820 --> 00:59:15,980

still okay we have 20 seconds actually

1447

00:59:23,720 --> 00:59:19,830

Darryl Darryl wants to know I'm sorry

1448

00:59:26,870 --> 00:59:23,730

where I did that one talk ton t o n talk

1449

00:59:29,150 --> 00:59:26,880

Tony I guess do you think Matt and NASA

1450

00:59:31,930 --> 00:59:29,160

will use my Mars thermal heating to

1451

00:59:34,130 --> 00:59:31,940

colonize Mars outside of a Mars base I

1452

00:59:37,280 --> 00:59:34,140

think that the whole point of putting

1453

00:59:39,890 --> 00:59:37,290

that that magnetic shield project on the

1454

00:59:41,630 --> 00:59:39,900

books is to suggest it down the line we

1455

00:59:43,790 --> 00:59:41,640

are going to colonize Mars we are gonna

1456

00:59:45,770 --> 00:59:43,800

wait for it to terraform itself will see

1457

00:59:48,280 --> 00:59:45,780

a difference in just a few years on Mars

1458

00:59:52,820 --> 00:59:48,290

no no Eric will be ready to go back

1459

00:59:56,480 --> 00:59:52,830

we got about 40 seconds okay 40 seconds

1460

00:59:59,570 --> 00:59:56,490

okay no one one more is Ronald wants to

1461

01:00:04,850 --> 00:59:59,580

know what effect will the Fobus impact

1462

01:00:07,160 --> 01:00:04,860

have on Mars Phobos impact Phobos is one

1463

01:00:11,230 --> 01:00:07,170

of the moons of Mars I'm not sure what

1464

01:00:12,410 --> 01:00:11,240

Ronald means by that I'm not sure oh

1465

01:00:15,530 --> 01:00:12,420

maybe

1466

01:00:17,120 --> 01:00:15,540

does it have an impact on as a moon does

1467

01:00:19,790 --> 01:00:17,130

it have an impact on Mars like we have a

1468

01:00:21,830 --> 01:00:19,800

tidal impact from our oh it's very

1469

01:00:24,290 --> 01:00:21,840

slight because Phobos is very small so

1470

01:00:26,990 --> 01:00:24,300

is damos the other moon there they may

1471

01:00:32,050 --> 01:00:27,000

be captured asteroids so they have

1472

01:00:33,730 --> 01:00:32,060

fairly no mass and they don't have a

1473

01:00:38,960 --> 01:00:33,740

okay here we go

1474

01:00:43,520 --> 01:00:38,970

intros rolling in five

1475

01:00:45,530 --> 01:00:43,530

or three two one all right welcome back

1476

01:00:49,190 --> 01:00:45,540

I'm Martin Willis my guest tonight is

1477

01:00:53,030 --> 01:00:49,200

Mark Dantonio and we are going to jump

1478

01:00:57,740 --> 01:00:53,040

into talking about space junk because I

1479

01:01:01,700 --> 01:00:57,750

think it's fascinating we have something

1480

01:01:05,480 --> 01:01:01,710

like a hundred million or so pieces of

1481

01:01:06,920 --> 01:01:05,490

space junk flying around and so I have a

1482

01:01:09,530 --> 01:01:06,930

bunch of questions I want to ask you

1483

01:01:11,150 --> 01:01:09,540

about counting all the nuts and bolts

1484

01:01:12,950 --> 01:01:11,160

that got loose from astronauts over

1485

01:01:14,960 --> 01:01:12,960

years yes yeah that's right there's a

1486

01:01:17,150 --> 01:01:14,970

spatula right there there's all kinds of

1487

01:01:17,960 --> 01:01:17,160

there's a spacesuit flying around space

1488

01:01:20,960 --> 01:01:17,970

blankets

1489

01:01:23,990 --> 01:01:20,970

there's objects the size of a bus all

1490

01:01:27,349 --> 01:01:24,000

the way down to flakes of paint but I

1491

01:01:31,430 --> 01:01:27,359

want to first of all ask you about the

1492

01:01:34,339 --> 01:01:31,440

danger it seems to me that putting

1493

01:01:36,109 --> 01:01:34,349

anything up in space is a great danger

1494

01:01:38,390 --> 01:01:36,119

when it comes to something that's

1495

01:01:42,140 --> 01:01:38,400

actually moving at I want to say 4-4

1496

01:01:45,589 --> 01:01:42,150

miles per second yeah I mean when when

1497

01:01:47,480 --> 01:01:45,599

you talk about you know penetrating the

1498

01:01:50,870 --> 01:01:47,490

atmosphere and heading up into space I

1499

01:01:54,500 --> 01:01:50,880

mean we we take off and we we head off

1500

01:01:57,620 --> 01:01:54,510

in the you know in the in a direction

1501

01:02:00,890 --> 01:01:57,630

that lets the rotation of the earth help

1502

01:02:02,540 --> 01:02:00,900

us with our with our motion so we start

1503

01:02:04,670 --> 01:02:02,550

off with a thousand miles an hour to

1504

01:02:06,740 --> 01:02:04,680

begin with and now we're up there and we

1505

01:02:09,050 --> 01:02:06,750

have to go to go to the Space Station

1506

01:02:11,809 --> 01:02:09,060

it's just over 250 miles up we got to be

1507

01:02:15,050 --> 01:02:11,819

moving at 17,500 miles per hour

1508

01:02:17,410 --> 01:02:15,060

amazing okay and and when you saw that

1509

01:02:20,720 --> 01:02:17,420

though the beautiful fragile-looking

1510

01:02:23,150 --> 01:02:20,730

gossamer solar panels on the

1511

01:02:25,809 --> 01:02:23,160

International Space Station and then you

1512

01:02:28,490 --> 01:02:25,819

saw that video of the space station

1513

01:02:31,329 --> 01:02:28,500

passing in front of the Sun that was

1514

01:02:34,220 --> 01:02:31,339

captured by a really intrepid astronomer

1515

01:02:37,040 --> 01:02:34,230

you saw that it went over the whole Sun

1516

01:02:39,620 --> 01:02:37,050

in just a split second boom and it was

1517

01:02:41,990 --> 01:02:39,630

gone that's how fast it was moving

1518

01:02:43,130 --> 01:02:42,000

across the disk of the Sun so when you

1519

01:02:44,870 --> 01:02:43,140

look at something like that you think

1520

01:02:46,250 --> 01:02:44,880

wow how could that move so fast and not

1521

01:02:49,750 --> 01:02:46,260

fall apart well it's because it's not

1522

01:02:51,980 --> 01:02:49,760

feeling any inertial forces now however

1523

01:02:52,790 --> 01:02:51,990

what's an inertial force and inertial

1524

01:02:55,490 --> 01:02:52,800

forces is

1525

01:02:58,280 --> 01:02:55,500

force that is basically based on the

1526
01:03:00,770 --> 01:02:58,290
mass of the object oh so a paint flake

1527
01:03:02,240 --> 01:03:00,780
is miniscule and if someone dropped

1528
01:03:03,740 --> 01:03:02,250
paint flakes on your head from 10 feet

1529
01:03:06,880 --> 01:03:03,750
up you'd say hey cut that out

1530
01:03:09,860 --> 01:03:06,890
but if those paint flakes hit you at

1531
01:03:12,380 --> 01:03:09,870
17,000 miles per hour they'd cut right

1532
01:03:14,210 --> 01:03:12,390
through you sure like razor blades yeah

1533
01:03:16,430 --> 01:03:14,220
you know and that's the thing that is

1534
01:03:18,560 --> 01:03:16,440
always a worry and so NASA tracks

1535
01:03:21,470 --> 01:03:18,570
objects in space it tracks objects in

1536
01:03:22,810 --> 01:03:21,480
orbit it tracks objects that have been

1537
01:03:25,580 --> 01:03:22,820
destroyed there have been actually

1538
01:03:27,470 --> 01:03:25,590

collisions between objects satellites

1539

01:03:29,690 --> 01:03:27,480

that have occurred and there it's

1540

01:03:31,040 --> 01:03:29,700

actually somewhat rare and there's

1541

01:03:33,320 --> 01:03:31,050

actually been satellites that have been

1542

01:03:36,140 --> 01:03:33,330

blown up intentionally right I

1543

01:03:38,990 --> 01:03:36,150

referenced the brilliant pebble you know

1544

01:03:41,630 --> 01:03:39,000

Star Wars project which you know that

1545

01:03:45,470 --> 01:03:41,640

particular project they said it never

1546

01:03:48,230 --> 01:03:45,480

got done but it did and that particular

1547

01:03:51,260 --> 01:03:48,240

project you know littered space with a

1548

01:03:53,660 --> 01:03:51,270

bunch of debris and there's no no

1549

01:03:54,920 --> 01:03:53,670

knowing which way that actually went you

1550

01:03:57,200 --> 01:03:54,930

know that cloud of debris when you eat

1551
01:04:00,290 --> 01:03:57,210
when something strikes another thing all

1552
01:04:01,430 --> 01:04:00,300
bets are off every every direction every

1553
01:04:03,380 --> 01:04:01,440
angle is gonna have a piece of debris

1554
01:04:05,240 --> 01:04:03,390
flying through it and then it's gonna

1555
01:04:06,620 --> 01:04:05,250
slow down some of its going to re-enter

1556
01:04:08,360 --> 01:04:06,630
the Earth's atmosphere but some of its

1557
01:04:09,980 --> 01:04:08,370
gonna go up higher or some of its gonna

1558
01:04:12,170 --> 01:04:09,990
go along further in the same orbit

1559
01:04:15,250 --> 01:04:12,180
higher orbit lower orbit a little bit

1560
01:04:20,180 --> 01:04:15,260
and you know over time those kinds of

1561
01:04:21,860 --> 01:04:20,190
impacts will tend to clean themselves up

1562
01:04:24,230 --> 01:04:21,870
they'll tend to clean themselves up the

1563
01:04:27,350 --> 01:04:24,240

debris will tend to re-enter the Earth's

1564

01:04:28,640 --> 01:04:27,360

Earth's atmosphere it'll tend to do that

1565

01:04:31,040 --> 01:04:28,650

it's not just gonna stay there forever

1566

01:04:33,950 --> 01:04:31,050

in the same place like a big cloud of

1567

01:04:35,570 --> 01:04:33,960

debris because it's very very difficult

1568

01:04:39,380 --> 01:04:35,580

to get something in a stable orbit

1569

01:04:42,800 --> 01:04:39,390

around the planet so only a very very

1570

01:04:45,230 --> 01:04:42,810

little bit of that that junk will

1571

01:04:48,340 --> 01:04:45,240

actually be in a stable orbit from say a

1572

01:04:50,540 --> 01:04:48,350

collision or an explosion all right so

1573

01:04:52,520 --> 01:04:50,550

but the things that have been up there

1574

01:04:54,890 --> 01:04:52,530

that were things were already on orbit

1575

01:04:56,900 --> 01:04:54,900

and then accidentally dropped you know

1576

01:04:58,160 --> 01:04:56,910

and they couldn't reach for them in time

1577

01:04:58,730 --> 01:04:58,170

couldn't grab them and they kind of

1578

01:05:00,860 --> 01:04:58,740

floated away

1579

01:05:03,290 --> 01:05:00,870

they're moving at the same relative

1580

01:05:05,930 --> 01:05:03,300

speed that the space shuttle or the

1581

01:05:09,880 --> 01:05:05,940

space station that you know dropped them

1582

01:05:16,130 --> 01:05:13,510

not that bolt now is a projectile and

1583

01:05:17,990 --> 01:05:16,140

could rip right through a satellite or

1584

01:05:19,460 --> 01:05:18,000

through a rocket or through the Orion

1585

01:05:21,760 --> 01:05:19,470

spacecraft when they're launching to

1586

01:05:24,680 --> 01:05:21,770

Mars they have to be absolutely careful

1587

01:05:27,260 --> 01:05:24,690

to the nth degree because they're taking

1588

01:05:29,420 --> 01:05:27,270

off through a cloud of debris basically

1589

01:05:31,310 --> 01:05:29,430

that's it's not yeah I make it sound

1590

01:05:33,860 --> 01:05:31,320

like it's everywhere it's not everywhere

1591

01:05:36,470 --> 01:05:33,870

it's in very it's in fairly well

1592

01:05:38,420 --> 01:05:36,480

regulated areas and and they know where

1593

01:05:39,770 --> 01:05:38,430

most of this stuff is but it's going in

1594

01:05:42,110 --> 01:05:39,780

it it's going in all different

1595

01:05:45,710 --> 01:05:42,120

directions that's what I just can't

1596

01:05:48,860 --> 01:05:45,720

understand how they can track it and and

1597

01:05:50,210 --> 01:05:48,870

another thing is there ever any I mean

1598

01:05:51,230 --> 01:05:50,220

it's going to get to the point where

1599

01:05:52,580 --> 01:05:51,240

they're going to have to do something

1600

01:05:54,530 --> 01:05:52,590

and do a little bit of cleaning I would

1601
01:05:57,800 --> 01:05:54,540
think you know that would be a great

1602
01:05:59,360 --> 01:05:57,810
contract to get wouldn't it yeah and and

1603
01:06:02,030 --> 01:05:59,370
first you have to build the technology

1604
01:06:04,570 --> 01:06:02,040
to do the cleaning yeah because you know

1605
01:06:08,180 --> 01:06:04,580
you have to consider that there are

1606
01:06:11,090 --> 01:06:08,190
satellites orbiting everywhere from you

1607
01:06:14,990 --> 01:06:11,100
know just under 200 miles all the way to

1608
01:06:16,280 --> 01:06:15,000
22,000 miles away from the earth and the

1609
01:06:17,450 --> 01:06:16,290
ones that are that far away you don't

1610
01:06:20,090 --> 01:06:17,460
really have to worry too much about

1611
01:06:21,410 --> 01:06:20,100
because they're fairly well known you

1612
01:06:23,030 --> 01:06:21,420
understand the booster they put

1613
01:06:24,530 --> 01:06:23,040

something in geosynchronous orbit that's

1614

01:06:26,540 --> 01:06:24,540

going to be you know maybe twelve

1615

01:06:29,720 --> 01:06:26,550

thousand miles out and you know you'll

1616

01:06:31,520 --> 01:06:29,730

see that thing and if you took a picture

1617

01:06:32,270 --> 01:06:31,530

of it at night like we've done in sky

1618

01:06:33,500 --> 01:06:32,280

through a live stream and the

1619

01:06:36,200 --> 01:06:33,510

observatory we've taken pictures of

1620

01:06:38,330 --> 01:06:36,210

these slow-moving satellites and of the

1621

01:06:39,830 --> 01:06:38,340

geostationary satellites if you did that

1622

01:06:42,860 --> 01:06:39,840

you'd find these things moving all

1623

01:06:46,400 --> 01:06:42,870

around the the sky as well again

1624

01:06:49,670 --> 01:06:46,410

straight lines but sometimes you know

1625

01:06:53,990 --> 01:06:49,680

these objects are very elusive sometimes

1626

01:06:56,870 --> 01:06:54,000

they are rolling and tumbling end

1627

01:06:58,700 --> 01:06:56,880

over end and they actually might show

1628

01:07:00,320 --> 01:06:58,710

you something bright and then something

1629

01:07:09,590 --> 01:07:00,330

that's almost invisible than something

1630

01:07:11,450 --> 01:07:09,600

bright again I say so when something is

1631

01:07:14,800 --> 01:07:11,460

when something's up there

1632

01:07:18,350 --> 01:07:14,810

like for instance 1957 there was a

1633

01:07:20,060 --> 01:07:18,360

weather satellite launch and you know of

1634

01:07:22,340 --> 01:07:20,070

course it's Deimos

1635

01:07:25,730 --> 01:07:22,350

yad long-defunct and it's gonna be like

1636

01:07:28,730 --> 01:07:25,740

240 years by the time that will actually

1637

01:07:30,050 --> 01:07:28,740

you know come back down through the

1638

01:07:33,790 --> 01:07:30,060

atmosphere and burn up

1639

01:07:37,010 --> 01:07:33,800

do they ever plan on setting something

1640

01:07:39,350 --> 01:07:37,020

at a location where it'll actually

1641

01:07:40,640 --> 01:07:39,360

re-enter after its expired you know

1642

01:07:43,490 --> 01:07:40,650

we're close to the time and it is

1643

01:07:46,460 --> 01:07:43,500

expired or they just put it up there no

1644

01:07:50,030 --> 01:07:46,470

actually most most actually I think all

1645

01:07:53,840 --> 01:07:50,040

space missions now have a terminal plan

1646

01:07:55,280 --> 01:07:53,850

and they they have a plan for saving

1647

01:07:57,650 --> 01:07:55,290

just enough fuel for instance to cause a

1648

01:08:01,280 --> 01:07:57,660

controlled reentry over the Indian Ocean

1649

01:08:03,800 --> 01:08:01,290

say usually and and they do this and and

1650

01:08:06,500 --> 01:08:03,810

so there is a lot of material up there

1651

01:08:08,000 --> 01:08:06,510

that is that has a lifetime and they

1652

01:08:10,250 --> 01:08:08,010

don't just leave it up and say oh well

1653

01:08:13,220 --> 01:08:10,260

that's stuck up there they actually put

1654

01:08:16,010 --> 01:08:13,230

in things up there with an eye on their

1655

01:08:18,590 --> 01:08:16,020

destruction you know that's great I

1656

01:08:21,050 --> 01:08:18,600

think they do now I can't say when they

1657

01:08:24,380 --> 01:08:21,060

were in the golden age of rocketry in

1658

01:08:25,670 --> 01:08:24,390

the in the 50s okay when the Tyros

1659

01:08:27,829 --> 01:08:25,680

weather satellite went up for instance

1660

01:08:31,059 --> 01:08:27,839

yeah as long defunct but it might still

1661

01:08:34,610 --> 01:08:31,069

be up there you know but it might also

1662

01:08:38,420 --> 01:08:34,620

over the years feel the impact of a few

1663

01:08:40,160 --> 01:08:38,430

molecules you know every orbit of the

1664

01:08:41,630 --> 01:08:40,170

atmosphere and that will tend to cause a

1665

01:08:44,570 --> 01:08:41,640

little bit of drag and that would make

1666

01:08:47,450 --> 01:08:44,580

it come lower and lower and lower until

1667

01:08:49,370 --> 01:08:47,460

finally it would burn up well they

1668

01:08:52,460 --> 01:08:49,380

actually can calculate how long it would

1669

01:08:54,920 --> 01:08:52,470

take for an object like that to degrade

1670

01:08:58,789 --> 01:08:54,930

and its orbit as it's called and then

1671

01:09:00,710 --> 01:08:58,799

that decayed orbit can then be shown and

1672

01:09:02,210 --> 01:09:00,720

then people can take a cruise ship to go

1673

01:09:03,980 --> 01:09:02,220

out and say okay well the satellites

1674

01:09:04,940 --> 01:09:03,990

gonna be entering right about now and

1675

01:09:06,770 --> 01:09:04,950

all of a sudden you start to see it I

1676

01:09:09,410 --> 01:09:06,780

mean it's literally that accurate Wow

1677

01:09:10,820 --> 01:09:09,420

and by the way let's go to the southern

1678

01:09:13,039 --> 01:09:10,830

Indian Ocean where we're gonna see it

1679

01:09:15,020 --> 01:09:13,049

and usually send a plane up there and

1680

01:09:16,849 --> 01:09:15,030

you'll see it from a plane as it

1681

01:09:18,950 --> 01:09:16,859

re-enters I mean these you know that

1682

01:09:20,720 --> 01:09:18,960

it's fairly well planned out but there

1683

01:09:23,960 --> 01:09:20,730

is a lot of junk there's are over almost

1684

01:09:25,760 --> 01:09:23,970

5,000 active satellites and many of the

1685

01:09:28,579 --> 01:09:25,770

rests are either intermittent or are

1686

01:09:31,059 --> 01:09:28,589

fully defunct and some are boosters and

1687

01:09:33,380 --> 01:09:31,069

I was mentioning the the tumblers that

1688

01:09:33,829 --> 01:09:33,390

sometimes tumble when I was in Arizona a

1689

01:09:36,019 --> 01:09:33,839

couple weeks

1690

01:09:37,490 --> 01:09:36,029

I was here for ten days I had a as I

1691

01:09:40,249 --> 01:09:37,500

said I spoke for the Phoenix MUFON group

1692

01:09:43,609 --> 01:09:40,259

and then a week later right I helped to

1693

01:09:46,550 --> 01:09:43,619

teach the boot camp in the desert and

1694

01:09:48,559 --> 01:09:46,560

for MUFON the mutual UFO network and

1695

01:09:51,349 --> 01:09:48,569

while I was running a nighttime sky

1696

01:09:53,059 --> 01:09:51,359

watch I just happened to point a green

1697

01:09:55,459 --> 01:09:53,069

argon laser up at a constellation to

1698

01:09:58,160 --> 01:09:55,469

show people and right there at the end

1699

01:10:00,140 --> 01:09:58,170

of the laser you saw this flash and at

1700

01:10:02,419 --> 01:10:00,150

first I thought oh I illuminated a bat

1701

01:10:05,120 --> 01:10:02,429

or something and then it happened again

1702

01:10:07,100 --> 01:10:05,130

I was like wait a minute check it out

1703

01:10:09,470 --> 01:10:07,110

and I pointed it out we all looked at it

1704

01:10:11,330 --> 01:10:09,480

and it's like wow how about that

1705

01:10:13,339 --> 01:10:11,340

it was coincidental that I put the laser

1706

01:10:14,959 --> 01:10:13,349

at it but some people were wondering

1707

01:10:18,950 --> 01:10:14,969

whether I initiated some kind of

1708

01:10:21,620 --> 01:10:18,960

communication of course yeah that's what

1709

01:10:23,479 --> 01:10:21,630

people thought but the fact is it was

1710

01:10:25,070 --> 01:10:23,489

actually a tumbling satellite body and

1711

01:10:28,040 --> 01:10:25,080

we could look it up we found which one

1712

01:10:30,260 --> 01:10:28,050

it was I think was SB dash 8 you know

1713

01:10:31,729 --> 01:10:30,270

and bottom line is that was just

1714

01:10:34,310 --> 01:10:31,739

tumbling and it was catching the glint

1715

01:10:39,800 --> 01:10:34,320

of the Sun as it was tumbling slowly in

1716

01:10:42,200 --> 01:10:39,810

space and then as it passed over us or

1717

01:10:47,089 --> 01:10:42,210

past enough past us so the glint was no

1718

01:10:48,560 --> 01:10:47,099

longer visible then it went away and I

1719

01:10:52,339 --> 01:10:48,570

took a time exposure of the area and I

1720

01:10:55,070 --> 01:10:52,349

caught it on on I captured I should say

1721

01:10:57,050 --> 01:10:55,080

on the digital camera and we actually

1722

01:10:58,430 --> 01:10:57,060

have this little faint line of where it

1723

01:11:00,919 --> 01:10:58,440

was but it's very bright because it's

1724

01:11:03,410 --> 01:11:00,929

reflecting a very bright Sun you know

1725

01:11:06,260 --> 01:11:03,420

interesting yeah yeah

1726

01:11:08,479 --> 01:11:06,270

so yeah space another way to look at

1727

01:11:10,669 --> 01:11:08,489

space junk it's our the history of our

1728

01:11:12,620 --> 01:11:10,679

technology is floating around there

1729

01:11:14,510 --> 01:11:12,630

perfectly preserved or most a lot of it

1730

01:11:16,040 --> 01:11:14,520

is that you know like you said earlier

1731

01:11:18,890 --> 01:11:16,050

some of it might smash into each other

1732

01:11:21,320 --> 01:11:18,900

and kind of take vaporize itself and all

1733

01:11:23,959 --> 01:11:21,330

that okay question earlier we were

1734

01:11:28,189 --> 01:11:23,969

talking about the James Webb the James

1735

01:11:32,000 --> 01:11:28,199

Webb telescope would that be able to

1736

01:11:33,919 --> 01:11:32,010

detect a planet like ours that are with

1737

01:11:36,229 --> 01:11:33,929

silly people on our you know people like

1738

01:11:38,300 --> 01:11:36,239

animals sending things up into space and

1739

01:11:40,910 --> 01:11:38,310

causing their own space junk would we

1740

01:11:42,140 --> 01:11:40,920

actually be able to detect that well

1741

01:11:43,939 --> 01:11:42,150

I'll tell you what we'd be able to

1742

01:11:45,830 --> 01:11:43,949

detect to detect and this is the thing

1743

01:11:47,419 --> 01:11:45,840

that you know when when Stephen Hawking

1744

01:11:47,800 --> 01:11:47,429

said you know we don't want to announce

1745

01:11:49,090 --> 01:11:47,810

our

1746

01:11:50,950 --> 01:11:49,100

we should really just sort of be quiet

1747

01:11:55,810 --> 01:11:50,960

and not let them know we're here

1748

01:11:57,970 --> 01:11:55,820

well and he knew this unfortunately we

1749

01:11:59,050 --> 01:11:57,980

had no call we had no choice okay we

1750

01:12:01,810 --> 01:11:59,060

didn't cause it

1751

01:12:04,240 --> 01:12:01,820

it happened 2.7 billion years ago when

1752

01:12:06,100 --> 01:12:04,250

those cyanobacteria started eating the

1753

01:12:08,530 --> 01:12:06,110

carbon dioxide and basically pooping

1754

01:12:11,140 --> 01:12:08,540

oxygen all right and that's what we

1755

01:12:13,660 --> 01:12:11,150

breathe all right is that waste product

1756

01:12:16,660 --> 01:12:13,670

from this process and the buildup of

1757

01:12:18,130 --> 01:12:16,670

this oxygen atmosphere at our planet is

1758

01:12:21,340 --> 01:12:18,140

something that is very important because

1759

01:12:23,980 --> 01:12:21,350

at Mars we know that when materials were

1760

01:12:26,380 --> 01:12:23,990

broken down the oxygen went right back

1761

01:12:28,660 --> 01:12:26,390

into the soils and disappeared from the

1762

01:12:30,700 --> 01:12:28,670

atmosphere almost entirely and that's

1763

01:12:33,250 --> 01:12:30,710

what the planet wants to do it wants to

1764

01:12:36,160 --> 01:12:33,260

get rid of the oxygen that way so when

1765

01:12:37,330 --> 01:12:36,170

we look at a planet like the earth if we

1766

01:12:39,070 --> 01:12:37,340

look at the planet like the earth from

1767

01:12:41,110 --> 01:12:39,080

from a thousand ten thousand light years

1768

01:12:43,930 --> 01:12:41,120

away if we can see what the atmosphere

1769

01:12:45,820 --> 01:12:43,940

is made of we're gonna see oxygen and

1770

01:12:48,520 --> 01:12:45,830

we're gonna know from studying the

1771

01:12:51,220 --> 01:12:48,530

oxygen atmosphere of that planet that

1772

01:12:53,050 --> 01:12:51,230

this is no accident this is nothing

1773

01:12:56,320 --> 01:12:53,060

that's sitting in the it's a mature

1774

01:13:00,190 --> 01:12:56,330

planet it's circling the Sun in a stable

1775

01:13:03,520 --> 01:13:00,200

orbit it's in the habitable zone we know

1776

01:13:05,830 --> 01:13:03,530

that that oxygen is not due to some

1777

01:13:08,590 --> 01:13:05,840

sudden catastrophic release of oxygen

1778

01:13:10,870 --> 01:13:08,600

most likely but it's something being

1779

01:13:12,730 --> 01:13:10,880

replenished and that replenishment is

1780

01:13:15,130 --> 01:13:12,740

likely coming from a carbon-based

1781

01:13:16,570 --> 01:13:15,140

template provided by the universe and

1782

01:13:18,970 --> 01:13:16,580

all the things I mentioned earlier and

1783

01:13:21,510 --> 01:13:18,980

that carbon-based template has created

1784

01:13:25,330 --> 01:13:21,520

some type of life that utilizes this

1785

01:13:28,180 --> 01:13:25,340

catalyzer you know this this oxidizer I

1786

01:13:30,520 --> 01:13:28,190

should say and so that is something that

1787

01:13:32,710 --> 01:13:30,530

would be visible many many light-years

1788

01:13:34,300 --> 01:13:32,720

away so the James Webb telescope is

1789

01:13:34,900 --> 01:13:34,310

going to look for oxygen atmosphere is

1790

01:13:38,350 --> 01:13:34,910

undoubtedly

1791

01:13:40,830 --> 01:13:38,360

wouldn't you think though I'll pardon me

1792

01:13:43,840 --> 01:13:40,840

along the lines of what I just mentioned

1793

01:13:45,700 --> 01:13:43,850

would you think that it would be a way

1794

01:13:47,620 --> 01:13:45,710

to detect that there's intelligent life

1795

01:13:51,490 --> 01:13:47,630

out there is to actually see if there's

1796

01:13:52,990 --> 01:13:51,500

baked space junk flying around a planet

1797

01:13:55,240 --> 01:13:53,000

or you think that's a silly silly

1798

01:13:56,650 --> 01:13:55,250

thought no it's not a silly thought it's

1799

01:13:59,320 --> 01:13:56,660

just that it's a thought beyond a

1800

01:14:00,910 --> 01:13:59,330

technological capability I see um we

1801

01:14:01,640 --> 01:14:00,920

don't have a way to detect that space

1802

01:14:10,130 --> 01:14:01,650

junk

1803

01:14:13,100 --> 01:14:10,140

or active satellites around this other

1804

01:14:15,830 --> 01:14:13,110

planet somewhere was beaming some type

1805

01:14:18,260 --> 01:14:15,840

of radiation we might be able to detect

1806

01:14:21,080 --> 01:14:18,270

this periodic radiation pulse of some

1807

01:14:24,920 --> 01:14:21,090

type coming from a planet for instance

1808

01:14:27,440 --> 01:14:24,930

when tabatha Boyajian discovered the

1809

01:14:29,600 --> 01:14:27,450

star that was dimming the notion that

1810

01:14:34,070 --> 01:14:29,610

maybe that was dimming because a

1811

01:14:36,470 --> 01:14:34,080

advanced race was building a dyson type

1812

01:14:38,720 --> 01:14:36,480

sphere that is - this enclosure that

1813

01:14:40,850 --> 01:14:38,730

would completely encapsulate their star

1814

01:14:43,310 --> 01:14:40,860

and absorb all the energy from it it's

1815

01:14:45,740 --> 01:14:43,320

actually one of the postulated thought

1816

01:14:47,840 --> 01:14:45,750

processes that Freeman Dyson suggested

1817

01:14:49,430 --> 01:14:47,850

named for him of course but it would be

1818

01:14:52,580 --> 01:14:49,440

more likely something called a Dyson

1819

01:14:54,530 --> 01:14:52,590

swarm a lot of satellites that would be

1820

01:14:57,200 --> 01:14:54,540

microwave radiation back to the planet

1821

01:14:58,730 --> 01:14:57,210

so it captures it from the star put up

1822

01:15:02,150 --> 01:14:58,740

enough satellites they're gonna dim the

1823

01:15:03,560 --> 01:15:02,160

sunlight as seen from the from our

1824

01:15:07,820 --> 01:15:03,570

planet because they would be orbiting

1825

01:15:10,820 --> 01:15:07,830

the star not that planet okay so it's

1826

01:15:12,650 --> 01:15:10,830

possible that we could see something but

1827

01:15:15,890 --> 01:15:12,660

I don't think that we have the ability

1828

01:15:17,690 --> 01:15:15,900

yet to discern the difference yet I mean

1829

01:15:21,380 --> 01:15:17,700

it'll be enough to when we get the James

1830

01:15:24,440 --> 01:15:21,390

Webb up there to to look and see whether

1831

01:15:28,280 --> 01:15:24,450

a planet has an oxygenated atmosphere if

1832

01:15:30,710 --> 01:15:28,290

it does and it's fairly significant then

1833

01:15:33,080 --> 01:15:30,720

that will mean to us there's probably

1834

01:15:34,400 --> 01:15:33,090

life there of some kind you know maybe I

1835

01:15:36,770 --> 01:15:34,410

mean could it be a volcanic in origin

1836

01:15:39,380 --> 01:15:36,780

could it be other mineralogical

1837

01:15:41,000 --> 01:15:39,390

processes sure oxygen can be formed that

1838

01:15:43,160 --> 01:15:41,010

way but it has to be an awful lot of a

1839

01:15:44,840 --> 01:15:43,170

specific set of minerals to let it cause

1840

01:15:47,180 --> 01:15:44,850

that much oxygen if we see it that much

1841

01:15:49,790 --> 01:15:47,190

so we don't have that even on earth we

1842

01:15:51,830 --> 01:15:49,800

don't have that on Mars yet Mars makes

1843

01:15:53,720 --> 01:15:51,840

oxygen in a similar fashion and there's

1844

01:15:55,810 --> 01:15:53,730

there's ways in which it happens there's

1845

01:15:58,880 --> 01:15:55,820

ways that it happens here of course and

1846

01:16:02,570 --> 01:15:58,890

here it's the fact that our planet is

1847

01:16:05,840 --> 01:16:02,580

not repeat not in equilibrium if it was

1848

01:16:08,020 --> 01:16:05,850

in equilibrium then the oxygen in the

1849

01:16:10,970 --> 01:16:08,030

atmosphere would have found some level

1850

01:16:12,800 --> 01:16:10,980

that's fairly low and gets absorbed back

1851

01:16:15,390 --> 01:16:12,810

into the soils and binds with all these

1852

01:16:17,550 --> 01:16:15,400

other components in the soils the

1853

01:16:20,399 --> 01:16:17,560

not what happened here we have something

1854

01:16:24,959 --> 01:16:20,409

called disequilibrium we are not a

1855

01:16:26,700 --> 01:16:24,969

planet that's basically in a state that

1856

01:16:29,280 --> 01:16:26,710

is balanced

1857

01:16:31,830 --> 01:16:29,290

we're unbalanced and we're pro oxygen

1858

01:16:36,000 --> 01:16:31,840

Wow see hey mark we have a we have a

1859

01:16:38,880 --> 01:16:36,010

caller calling in now so let me take the

1860

01:16:42,500 --> 01:16:38,890

call there caller you're on the line

1861

01:16:50,280 --> 01:16:48,149

caller can you hear me well we do have a

1862

01:16:54,450 --> 01:16:50,290

caller on there he's he or she is being

1863

01:16:57,570 --> 01:16:54,460

very quiet and hey if they call through

1864

01:17:01,169 --> 01:16:57,580

Skype they're actually gone now so and

1865

01:17:03,060 --> 01:17:01,179

I'm sorry to have interrupted you know

1866

01:17:05,550 --> 01:17:03,070

on space junk

1867

01:17:11,310 --> 01:17:05,560

now someone made a good point how long

1868

01:17:15,660 --> 01:17:11,320

do we expect the ISS to be in orbit well

1869

01:17:18,620 --> 01:17:15,670

um if we leave it alone it'll come down

1870

01:17:22,770 --> 01:17:18,630

in the next few years we have to

1871

01:17:25,080 --> 01:17:22,780

constantly monitor the ISS because it's

1872

01:17:27,540 --> 01:17:25,090

a big broad object and it is getting hit

1873

01:17:30,060 --> 01:17:27,550

by stray molecules here and there and

1874

01:17:32,820 --> 01:17:30,070

stray atoms from our atmosphere all

1875

01:17:34,500 --> 01:17:32,830

right so we do have to monitor that so

1876

01:17:37,140 --> 01:17:34,510

it would come down in a few years I

1877

01:17:38,430 --> 01:17:37,150

think they have funding through and I

1878

01:17:41,040 --> 01:17:38,440

could be wrong on the date here but I

1879

01:17:43,470 --> 01:17:41,050

think it through through 2028 I think

1880

01:17:45,600 --> 01:17:43,480

they have funding now if you consider

1881

01:17:49,010 --> 01:17:45,610

what's happening we're putting up new

1882

01:17:51,990 --> 01:17:49,020

stuff like you know we got that new

1883

01:17:54,479 --> 01:17:52,000

inflated tat as I call it that Robert

1884

01:17:56,820 --> 01:17:54,489

Bigelow right put up there I think

1885

01:17:59,340 --> 01:17:56,830

that's the future I actually believe in

1886

01:18:02,040 --> 01:17:59,350

Bigelow's mission with that because I

1887

01:18:05,220 --> 01:18:02,050

think that putting an inflatable habitat

1888

01:18:08,130 --> 01:18:05,230

on Mars or the moon a moon first I think

1889

01:18:10,100 --> 01:18:08,140

is probably a better idea is something

1890

01:18:14,370 --> 01:18:10,110

that's going to really pave the way for

1891

01:18:17,640 --> 01:18:14,380

being able to have cheap housing in

1892

01:18:20,520 --> 01:18:17,650

habitable areas and if you put those on

1893

01:18:22,470 --> 01:18:20,530

the ground then you have the protection

1894

01:18:24,890 --> 01:18:22,480

from the ultraviolet say on the moon and

1895

01:18:27,959 --> 01:18:24,900

of course on Mars still at this point

1896

01:18:29,699 --> 01:18:27,969

just just a couple more questions about

1897

01:18:31,379 --> 01:18:29,709

space junk

1898

01:18:32,819 --> 01:18:31,389

and then we'll move on well I'd like to

1899

01:18:34,199 --> 01:18:32,829

talk low bit about you just mentioned

1900

01:18:37,229 --> 01:18:34,209

the moon like to talk about the Chinese

1901

01:18:38,729 --> 01:18:37,239

plant moon lander that just landed if

1902

01:18:42,660 --> 01:18:38,739

you know do you know anything about that

1903

01:18:44,660 --> 01:18:42,670

in particular oh it's at the Changi

1904

01:18:47,640 --> 01:18:44,670

youngji I think that's the way it's oh

1905

01:18:49,350 --> 01:18:47,650

yeah so you answered that and you know

1906

01:18:51,509 --> 01:18:49,360

something about it sure you're something

1907

01:18:53,430 --> 01:18:51,519

all right well so I thought it was a

1908

01:18:56,040 --> 01:18:53,440

really interesting Lander yeah alright

1909

01:18:58,259 --> 01:18:56,050

but before that I want to ask just a

1910

01:19:02,580 --> 01:18:58,269

couple more questions or one or one

1911

01:19:05,339 --> 01:19:02,590

possibly only how do you how dangerous

1912

01:19:07,319 --> 01:19:05,349

is space junk you know you think about

1913

01:19:09,959 --> 01:19:07,329

most of it gets burned up in the

1914

01:19:12,089 --> 01:19:09,969

atmosphere and by the way if it gets

1915

01:19:13,680 --> 01:19:12,099

burned up in the atmosphere and it could

1916

01:19:16,799 --> 01:19:13,690

is there any way it could still pose

1917

01:19:18,299 --> 01:19:16,809

some type of problem as far as poisons

1918

01:19:20,009 --> 01:19:18,309

or anything like that or once it's

1919

01:19:21,199 --> 01:19:20,019

burned up it's just nothing to worry

1920

01:19:24,569 --> 01:19:21,209

about

1921

01:19:25,949 --> 01:19:24,579

well I think that only for the local

1922

01:19:29,310 --> 01:19:25,959

environment where it hits like if

1923

01:19:32,489 --> 01:19:29,320

hydrazine tanks are corrosive hydrazine

1924

01:19:35,009 --> 01:19:32,499

corrosive material so the likelihood

1925

01:19:39,029 --> 01:19:35,019

that there's hydrazine still in a tank

1926

01:19:41,699 --> 01:19:39,039

when it hits the ground is fairly high

1927

01:19:43,799 --> 01:19:41,709

if the if the if it went through some

1928

01:19:45,870 --> 01:19:43,809

kind of circuitous reentry pattern where

1929

01:19:49,080 --> 01:19:45,880

it didn't really get the same kind of

1930

01:19:50,549 --> 01:19:49,090

heating if it wasn't breached okay if it

1931

01:19:52,229 --> 01:19:50,559

was still like a spherical tank and the

1932

01:19:53,790 --> 01:19:52,239

valve was closed at the bottom and then

1933

01:19:57,870 --> 01:19:53,800

maybe there could be something in there

1934

01:19:59,939 --> 01:19:57,880

but it's it's really toxic so I think

1935

01:20:01,649 --> 01:19:59,949

that's true now the bigger question

1936

01:20:05,549 --> 01:20:01,659

comes when you talk about launching

1937

01:20:11,069 --> 01:20:05,559

nuclear satellites okay we had Cassini

1938

01:20:14,279 --> 01:20:11,079

okay Cassini was nuclear-powered I think

1939

01:20:17,279 --> 01:20:14,289

and so was Jaleo I believe and you if

1940

01:20:20,040 --> 01:20:17,289

those failed on launch then they had to

1941

01:20:21,930 --> 01:20:20,050

have procedures in place such that the

1942

01:20:23,819 --> 01:20:21,940

rocket that comes crashing back to earth

1943

01:20:27,089 --> 01:20:23,829

with this satellite with a nuclear power

1944

01:20:28,770 --> 01:20:27,099

core in it would not cause any kind of

1945

01:20:30,750 --> 01:20:28,780

breach so they had these special

1946

01:20:35,879 --> 01:20:30,760

containment vessels inside these

1947

01:20:38,580 --> 01:20:35,889

satellites that were literally so they

1948

01:20:40,500 --> 01:20:38,590

were tested so so much to prevent breach

1949

01:20:42,089 --> 01:20:40,510

they tried everything nothing would

1950

01:20:43,020 --> 01:20:42,099

breach them so they figured okay they're

1951

01:20:45,810 --> 01:20:43,030

safe in an

1952

01:20:46,979 --> 01:20:45,820

they won't reach so it's really the

1953

01:20:48,990 --> 01:20:46,989

nuclear stuff we have to worry about

1954

01:20:51,149 --> 01:20:49,000

more I think because I mean just look at

1955

01:20:52,319 --> 01:20:51,159

Fukushima I look at you know oh that's

1956

01:20:55,140 --> 01:20:52,329

actually look at your novel

1957

01:20:57,359 --> 01:20:55,150

okay Chernobyl was a deadly accident and

1958

01:21:00,359 --> 01:20:57,369

that core what people don't know is that

1959

01:21:01,919 --> 01:21:00,369

core was that that melted core in that

1960

01:21:03,930 --> 01:21:01,929

graphite reactor was actually melting

1961

01:21:06,629 --> 01:21:03,940

through the containment building and it

1962

01:21:09,899 --> 01:21:06,639

was thanks to an American team right

1963

01:21:11,370 --> 01:21:09,909

that that meltdown was stopped and you

1964

01:21:14,430 --> 01:21:11,380

can you can thank the scientists at

1965

01:21:17,189 --> 01:21:14,440

Lawrence Livermore for that and when

1966

01:21:19,020 --> 01:21:17,199

that occurred had it gone through the

1967

01:21:21,899 --> 01:21:19,030

containment and gotten into the water

1968

01:21:24,450 --> 01:21:21,909

table just below the building then we

1969

01:21:26,669 --> 01:21:24,460

would have this erupting steam volcano

1970

01:21:28,500 --> 01:21:26,679

radioactive steam volcano it would have

1971

01:21:31,350 --> 01:21:28,510

gone on for tens of thousands of years

1972

01:21:33,750 --> 01:21:31,360

Wow yeah and that would have cost

1973

01:21:38,100 --> 01:21:33,760

hundreds of millions of lives over time

1974

01:21:41,160 --> 01:21:38,110

but because you know it was a project

1975

01:21:44,669 --> 01:21:41,170

that was classified and the Russians

1976

01:21:46,950 --> 01:21:44,679

asked for help the people that saved

1977

01:21:48,810 --> 01:21:46,960

hundreds of millions of lives couldn't

1978

01:21:50,490 --> 01:21:48,820

be acknowledged you know and that's

1979

01:21:53,040 --> 01:21:50,500

actually that's a true story

1980

01:21:55,859 --> 01:21:53,050

told to me by the actual scientist who

1981

01:21:58,319 --> 01:21:55,869

created the solution to the problem yeah

1982

01:22:00,870 --> 01:21:58,329

I know it's way off topic but it it is

1983

01:22:02,850 --> 01:22:00,880

but no no I'm saying Fukushima still

1984

01:22:05,100 --> 01:22:02,860

really worries me and I don't think

1985

01:22:06,689 --> 01:22:05,110

enough people uh I think that's so far

1986

01:22:08,879 --> 01:22:06,699

out of the news but it's still a real

1987

01:22:10,470 --> 01:22:08,889

big deal well yeah that's why I'm saying

1988

01:22:12,629 --> 01:22:10,480

you know I'm more worried not about

1989

01:22:14,490 --> 01:22:12,639

hydrazine and fuel that can always be

1990

01:22:17,060 --> 01:22:14,500

cleaned up you can't just go clean up a

1991

01:22:20,310 --> 01:22:17,070

nuclear accident so if there's a nuclear

1992

01:22:21,990 --> 01:22:20,320

spacecraft that's a big problem we do

1993

01:22:24,779 --> 01:22:22,000

have to worry about that right and

1994

01:22:27,689 --> 01:22:24,789

hasn't uh since you're talking about

1995

01:22:29,959 --> 01:22:27,699

satellites hasn't Kepler been basically

1996

01:22:34,529 --> 01:22:29,969

decommissioned in space at this point

1997

01:22:37,740 --> 01:22:34,539

well the k2 satellite let's call it that

1998

01:22:40,410 --> 01:22:37,750

because Kepler was the first mission and

1999

01:22:42,540 --> 01:22:40,420

Kepler was launched in 2009 March of

2000

01:22:45,149 --> 01:22:42,550

2009 actually I remember I mean I was so

2001

01:22:46,890 --> 01:22:45,159

intrigued I couldn't wait and it looks

2002

01:22:49,649 --> 01:22:46,900

up at an area the size of your fist

2003

01:22:52,500 --> 01:22:49,659

extended at arm's length at one spot in

2004

01:22:54,479 --> 01:22:52,510

space yeah and they have these reaction

2005

01:22:57,419 --> 01:22:54,489

wheels these these disks that that spin

2006

01:23:01,589 --> 01:22:57,429

and they actually cause moment'

2007

01:23:04,500 --> 01:23:01,599

- to be balanced and that combination of

2008

01:23:06,479 --> 01:23:04,510

spinning disks on the on the satellite

2009

01:23:08,970 --> 01:23:06,489

cause the satellite to have a ability to

2010

01:23:13,560 --> 01:23:08,980

be moved in any particular location very

2011

01:23:15,540 --> 01:23:13,570

very precisely okay well to respond to

2012

01:23:17,520 --> 01:23:15,550

the solar wind that's hitting it and

2013

01:23:20,070 --> 01:23:17,530

then we'll have our third reaction wheel

2014

01:23:21,720 --> 01:23:20,080

back kinda sorta and they said yeah

2015

01:23:23,220 --> 01:23:21,730

let's try that kind of sorta and that

2016

01:23:27,419 --> 01:23:23,230

kind of sorta was a brilliant success

2017

01:23:32,280 --> 01:23:27,429

and then that found an additional 23 or

2018

01:23:34,850 --> 01:23:32,290

25 hundred planets you know on top so

2019

01:23:37,379 --> 01:23:34,860

we're talking a major success but then

2020

01:23:39,600 --> 01:23:37,389

they still need a little extra fuel they

2021

01:23:41,250 --> 01:23:39,610

needed to have some fuel that wasn't you

2022

01:23:43,560 --> 01:23:41,260

know electrical from solar and wasn't

2023

01:23:45,450 --> 01:23:43,570

from the reaction wheels to actually do

2024

01:23:49,560 --> 01:23:45,460

some of the tasks to orient Kepler and

2025

01:23:54,629 --> 01:23:49,570

unfortunately when that ran out Kepler

2026

01:23:57,000 --> 01:23:54,639

and Kepler to other reengineered Kepler

2027

01:23:59,790 --> 01:23:57,010

mission did you have to come to an end

2028

01:24:01,919 --> 01:23:59,800

right yeah all good things have to come

2029

01:24:04,800 --> 01:24:01,929

to an end so carry us ending this

2030

01:24:06,750 --> 01:24:04,810

question through email and he wanted to

2031

01:24:08,390 --> 01:24:06,760

know as an astronomer what are your

2032

01:24:11,339 --> 01:24:08,400

thoughts on Stephen Hawking's

2033

01:24:15,780 --> 01:24:11,349

hypothesis that black holes could be

2034

01:24:18,540 --> 01:24:15,790

gateways to another universe well that's

2035

01:24:21,390 --> 01:24:18,550

a loaded question Han and I'm really

2036

01:24:22,439 --> 01:24:21,400

grateful for that question it is sort of

2037

01:24:23,729 --> 01:24:22,449

different from what you want to talk

2038

01:24:26,790 --> 01:24:23,739

about I'm sure Martin but you know what

2039

01:24:28,649 --> 01:24:26,800

that's alright as far as being gateways

2040

01:24:31,109 --> 01:24:28,659

to a different universe we don't really

2041

01:24:33,419 --> 01:24:31,119

know what's inside a black hole we just

2042

01:24:36,540 --> 01:24:33,429

know what's not inside a black hole and

2043

01:24:37,830 --> 01:24:36,550

that's the rest of space around it um we

2044

01:24:39,390 --> 01:24:37,840

know that if the Sun were to become a

2045

01:24:40,890 --> 01:24:39,400

black hole tomorrow and it can it's not

2046

01:24:43,020 --> 01:24:40,900

massive enough but if it did let's just

2047

01:24:45,450 --> 01:24:43,030

say the the planets would just continue

2048

01:24:48,390 --> 01:24:45,460

orbiting like normal because you know

2049

01:24:50,580 --> 01:24:48,400

black hole is basically you know is

2050

01:24:52,470 --> 01:24:50,590

created by the amount of gravity that

2051

01:24:54,870 --> 01:24:52,480

the original star had it's just that

2052

01:24:56,990 --> 01:24:54,880

it's focused on to a small infinitely

2053

01:24:59,790 --> 01:24:57,000

small point basically which of course

2054

01:25:01,919 --> 01:24:59,800

people can't comprehend what infinity is

2055

01:25:06,330 --> 01:25:01,929

never mind a singularity that is an

2056

01:25:09,700 --> 01:25:06,340

infinitely small point but that said my

2057

01:25:12,820 --> 01:25:09,710

feeling is you know that it's possible

2058

01:25:14,220 --> 01:25:12,830

but probably not probable I mean I think

2059

01:25:18,190 --> 01:25:14,230

that we're probably talking about

2060

01:25:21,100 --> 01:25:18,200

parallel universes multiverses before we

2061

01:25:22,450 --> 01:25:21,110

would talk about you know and I'll tell

2062

01:25:23,740 --> 01:25:22,460

you more about that and I don't think

2063

01:25:27,070 --> 01:25:23,750

black holes are the ticket to get there

2064

01:25:29,350 --> 01:25:27,080

I think that there's a number of ways it

2065

01:25:31,600 --> 01:25:29,360

could be interdimensionally or it could

2066

01:25:34,540 --> 01:25:31,610

be kind of like the soap suds theory

2067

01:25:36,130 --> 01:25:34,550

where if you if you you you pour some

2068

01:25:38,140 --> 01:25:36,140

dawn dish detergent and you're sinking

2069

01:25:40,330 --> 01:25:38,150

run the sink really LA or it really hard

2070

01:25:42,280 --> 01:25:40,340

with hot water you get this big froth of

2071

01:25:44,530 --> 01:25:42,290

suds well what's it looking for each of

2072

01:25:46,870 --> 01:25:44,540

those suds individual suds was a

2073

01:25:49,229 --> 01:25:46,880

universe okay that's one of the theories

2074

01:25:52,240 --> 01:25:49,239

and each of the suds next to it is

2075

01:25:55,900 --> 01:25:52,250

connected to it by a flat wall in a flat

2076

01:25:57,790 --> 01:25:55,910

facet and that flat facet of the edge of

2077

01:25:59,200 --> 01:25:57,800

that bubble for all the interior bubbles

2078

01:26:01,660 --> 01:25:59,210

the the universe would have flat sides

2079

01:26:04,870 --> 01:26:01,670

for the outside one they might have

2080

01:26:06,459 --> 01:26:04,880

somewhat circular outsides and that has

2081

01:26:09,100 --> 01:26:06,469

to do with the law of minimal surfaces

2082

01:26:11,020 --> 01:26:09,110

and then which just means you know it

2083

01:26:13,450 --> 01:26:11,030

had to take up the least amount of space

2084

01:26:16,060 --> 01:26:13,460

possible it's gonna you know a creator a

2085

01:26:19,600 --> 01:26:16,070

little round object on near the outside

2086

01:26:22,390 --> 01:26:19,610

but inside it may not and so maybe our

2087

01:26:25,330 --> 01:26:22,400

universes are like this well they're all

2088

01:26:28,060 --> 01:26:25,340

linked together with these flat walls so

2089

01:26:29,830 --> 01:26:28,070

how do you get to another one well is it

2090

01:26:31,990 --> 01:26:29,840

necessary to go through a black hole I

2091

01:26:34,600 --> 01:26:32,000

don't think so because black holes are

2092

01:26:36,430 --> 01:26:34,610

actually the result of supermassive

2093

01:26:41,350 --> 01:26:36,440

stars that are undergoing collapse

2094

01:26:44,500 --> 01:26:41,360

either after supernova or during so the

2095

01:26:45,700 --> 01:26:44,510

fact is those happen a lot of places all

2096

01:26:48,820 --> 01:26:45,710

over the place and they usually happen

2097

01:26:50,950 --> 01:26:48,830

within galaxies so I don't think they

2098

01:26:55,120 --> 01:26:50,960

could be gateways per se I think they

2099

01:26:56,530 --> 01:26:55,130

are a physical I was gonna say ailment

2100

01:26:57,970 --> 01:26:56,540

but it's not really nail but I think

2101
01:27:00,640 --> 01:26:57,980
they're just a physical property of the

2102
01:27:02,260 --> 01:27:00,650
universe and massive stars but if we

2103
01:27:05,800 --> 01:27:02,270
could get to where the flat facets are

2104
01:27:08,770 --> 01:27:05,810
if it's the soapsuds universes then we

2105
01:27:10,810 --> 01:27:08,780
could probably just go through at that

2106
01:27:12,780 --> 01:27:10,820
point and there was a spot by the way

2107
01:27:16,090 --> 01:27:12,790
and this I'll just say this it's at the

2108
01:27:19,060 --> 01:27:16,100
end with this you know and to end that

2109
01:27:20,800 --> 01:27:19,070
that part of the question there's a spot

2110
01:27:22,840 --> 01:27:20,810
in the universe where there was some

2111
01:27:23,649 --> 01:27:22,850
matter that was streaming out of the

2112
01:27:25,720 --> 01:27:23,659
universe and I say

2113
01:27:28,689 --> 01:27:25,730

because we don't know what out means

2114

01:27:31,209 --> 01:27:28,699

here but the manor seemed to be

2115

01:27:33,879 --> 01:27:31,219

streaming someplace that wasn't our

2116

01:27:36,070 --> 01:27:33,889

universe and we don't really know where

2117

01:27:37,979 --> 01:27:36,080

it was going but it wasn't going through

2118

01:27:41,020 --> 01:27:37,989

a black hole it was just streaming and

2119

01:27:43,689 --> 01:27:41,030

so is it possible that if the soapsuds

2120

01:27:46,030 --> 01:27:43,699

theory is correct that maybe the facet

2121

01:27:48,700 --> 01:27:46,040

had a hole in it and stuff was streaming

2122

01:27:49,870 --> 01:27:48,710

from one universe to another why would

2123

01:27:53,020 --> 01:27:49,880

it do that you know what was happening

2124

01:27:55,360 --> 01:27:53,030

so that's that's sort of far-fetched

2125

01:27:56,680 --> 01:27:55,370

there so there's more signs back there

2126

01:27:57,939 --> 01:27:56,690

that indicates maybe that wasn't

2127

01:28:01,390 --> 01:27:57,949

happening but what if we're

2128

01:28:02,649 --> 01:28:01,400

interdimensional well now maybe what

2129

01:28:04,419 --> 01:28:02,659

we're seeing when people see for

2130

01:28:07,300 --> 01:28:04,429

instance ghosts maybe they're actually

2131

01:28:09,970 --> 01:28:07,310

seeing what I've coined to term a

2132

01:28:12,129 --> 01:28:09,980

parallel universe intersect maybe

2133

01:28:15,970 --> 01:28:12,139

they're seeing this this these parallel

2134

01:28:18,129 --> 01:28:15,980

universe creatures or beings in a way

2135

01:28:19,930 --> 01:28:18,139

that makes it look like it's nothing you

2136

01:28:22,899 --> 01:28:19,940

can touch here it's not a tangible item

2137

01:28:25,740 --> 01:28:22,909

here but maybe to that creature and the

2138

01:28:27,820 --> 01:28:25,750

other side of the dimensional universe

2139

01:28:30,160 --> 01:28:27,830

it's we're the ones that are not

2140

01:28:32,800 --> 01:28:30,170

tangible to them so you know I'm not

2141

01:28:34,689 --> 01:28:32,810

sure there's an awful lot of science

2142

01:28:36,580 --> 01:28:34,699

that we do not know and it would

2143

01:28:38,979 --> 01:28:36,590

actually be arrogant of me I think to

2144

01:28:42,220 --> 01:28:38,989

actually try and say that it's one way

2145

01:28:43,660 --> 01:28:42,230

or the other so I just tend to err on

2146

01:28:46,479 --> 01:28:43,670

the side of thinking that black holes

2147

01:28:48,459 --> 01:28:46,489

probably aren't a conduit because they

2148

01:28:51,430 --> 01:28:48,469

seem to be happening all over the place

2149

01:28:53,169 --> 01:28:51,440

and we recognize them as collapsed stars

2150

01:28:58,689 --> 01:28:53,179

and the physics tells us different

2151
01:29:02,649 --> 01:28:58,699
things then then what a conduit to

2152
01:29:05,979 --> 01:29:02,659
another universe might long answer so no

2153
01:29:09,459 --> 01:29:05,989
no no I love long answers and a two-hour

2154
01:29:12,399 --> 01:29:09,469
show so Persian from YouTube wants to

2155
01:29:14,379 --> 01:29:12,409
know what you think of the lunar wave

2156
01:29:17,140 --> 01:29:14,389
anomaly I'm not familiar with what that

2157
01:29:20,260 --> 01:29:17,150
is like I'll tell you what it is um all

2158
01:29:23,320 --> 01:29:20,270
right in my view I've I've seen a couple

2159
01:29:25,689 --> 01:29:23,330
of lunar waves and I saw them on peak a

2160
01:29:29,950 --> 01:29:25,699
space imaging as well as other sites and

2161
01:29:31,540 --> 01:29:29,960
here's what happens the lunar wave is

2162
01:29:33,189 --> 01:29:31,550
not an indication that the moon's a

2163
01:29:34,899 --> 01:29:33,199

hologram the lunar wave is not an

2164

01:29:36,970 --> 01:29:34,909

indication and I could say this with

2165

01:29:38,140 --> 01:29:36,980

certainty okay the lunar wave is not an

2166

01:29:41,320 --> 01:29:38,150

indication

2167

01:29:43,750 --> 01:29:41,330

that there is some kind of strange you

2168

01:29:49,180 --> 01:29:43,760

know NASA kept secret hovering over our

2169

01:29:51,370 --> 01:29:49,190

heads what it really is is a it's the

2170

01:29:54,220 --> 01:29:51,380

effect of a physical atmosphere over our

2171

01:29:56,740 --> 01:29:54,230

head now what do I mean by that well if

2172

01:29:58,330 --> 01:29:56,750

you look online and you say that you

2173

01:29:59,950 --> 01:29:58,340

want to see go to Google and say I want

2174

01:30:02,710 --> 01:29:59,960

to see all the jet traffic currently in

2175

01:30:05,200 --> 01:30:02,720

the air you will find that there are

2176

01:30:07,870 --> 01:30:05,210

tens of thousands of flights in the air

2177

01:30:10,510 --> 01:30:07,880

at any one time right it's amazed and

2178

01:30:13,000 --> 01:30:10,520

now what are those do well those will

2179

01:30:15,880 --> 01:30:13,010

actually heat the air all right jet

2180

01:30:18,070 --> 01:30:15,890

exhaust is hot ok and it heats the air

2181

01:30:20,290 --> 01:30:18,080

and by the way jet doesn't always leave

2182

01:30:22,120 --> 01:30:20,300

a contrail okay it leaves a contrail you

2183

01:30:23,650 --> 01:30:22,130

generally above thirty thousand feet but

2184

01:30:27,070 --> 01:30:23,660

below thirty thousand you're not gonna

2185

01:30:29,230 --> 01:30:27,080

really see a contrail okay so when a

2186

01:30:31,450 --> 01:30:29,240

jets taking off or when a jet is it's

2187

01:30:33,640 --> 01:30:31,460

climbing it's going through 25,000 it's

2188

01:30:35,560 --> 01:30:33,650

not gonna leave a contrail and as it

2189

01:30:38,950 --> 01:30:35,570

passes through the air it hates the air

2190

01:30:41,230 --> 01:30:38,960

behind it and that error doesn't just

2191

01:30:44,200 --> 01:30:41,240

sit there the air is part of a big

2192

01:30:45,940 --> 01:30:44,210

stratified band of air okay call an air

2193

01:30:48,100 --> 01:30:45,950

column it's actually moving across the

2194

01:30:50,290 --> 01:30:48,110

surface of the earth and so sometimes

2195

01:30:52,750 --> 01:30:50,300

those air columns drift across the face

2196

01:30:54,790 --> 01:30:52,760

of the moon alright and when I say

2197

01:30:57,910 --> 01:30:54,800

column I don't mean jet exhaust column I

2198

01:30:59,740 --> 01:30:57,920

mean giant slabs of air that have a

2199

01:31:02,160 --> 01:30:59,750

heated line of air through them caused

2200

01:31:07,450 --> 01:31:02,170

by the jet now these things will last

2201

01:31:08,950 --> 01:31:07,460

anywhere from a few seconds to many many

2202

01:31:12,310 --> 01:31:08,960

minutes and possibly even an hour

2203

01:31:14,590 --> 01:31:12,320

depending on the conditions so as the

2204

01:31:18,250 --> 01:31:14,600

jet goes through the area it could be

2205

01:31:20,230 --> 01:31:18,260

long gone but the remaining warm air and

2206

01:31:22,840 --> 01:31:20,240

it doesn't have to be much warmer okay

2207

01:31:25,600 --> 01:31:22,850

drifts across the moon it stays kind of

2208

01:31:27,370 --> 01:31:25,610

in at that location because it was in an

2209

01:31:30,160 --> 01:31:27,380

area of the sky that's sort of still

2210

01:31:32,950 --> 01:31:30,170

right and that is to say still relative

2211

01:31:35,080 --> 01:31:32,960

to each other relative to each molecule

2212

01:31:36,580 --> 01:31:35,090

around it the giant slab of air though

2213

01:31:39,010 --> 01:31:36,590

it could be moving it at tens of miles

2214

01:31:41,490 --> 01:31:39,020

an hour like the jet stream the jet

2215

01:31:43,750 --> 01:31:41,500

stream moves at giant you know at that

2216

01:31:45,970 --> 01:31:43,760

sometimes like 80 miles an hour or more

2217

01:31:48,670 --> 01:31:45,980

well guess what if you're in a balloon

2218

01:31:49,900 --> 01:31:48,680

in the jet stream and you leaned over

2219

01:31:51,040 --> 01:31:49,910

the side of the balloon you wouldn't

2220

01:31:54,010 --> 01:31:51,050

feel this blasting win

2221

01:31:55,990 --> 01:31:54,020

in your face okay in fact if you dropped

2222

01:31:59,290 --> 01:31:56,000

something like save drop the piece of

2223

01:32:01,000 --> 01:31:59,300

paper it would flutter down just like it

2224

01:32:03,370 --> 01:32:01,010

does on the ground it would flutter down

2225

01:32:05,080 --> 01:32:03,380

and it wouldn't go whipping away from

2226

01:32:07,600 --> 01:32:05,090

you at high speed it's because you're

2227

01:32:10,960 --> 01:32:07,610

all moving at that same 80 miles an hour

2228

01:32:14,350 --> 01:32:10,970

so tip the rest of the world that paper

2229

01:32:16,210 --> 01:32:14,360

is gonna fall just gently so if you can

2230

01:32:18,790 --> 01:32:16,220

think about it that way and think about

2231

01:32:21,430 --> 01:32:18,800

these contrails as or these these heated

2232

01:32:23,590 --> 01:32:21,440

jet exhaust pathways as an area in the

2233

01:32:25,600 --> 01:32:23,600

sky that's actually gonna stay fairly

2234

01:32:27,820 --> 01:32:25,610

cohesive for a little while until it

2235

01:32:29,290 --> 01:32:27,830

cools all right then you're gonna find

2236

01:32:31,330 --> 01:32:29,300

that you'll see this this line drift

2237

01:32:33,730 --> 01:32:31,340

right across the moon and I've seen that

2238

01:32:35,530 --> 01:32:33,740

like I said a couple times and one time

2239

01:32:38,770 --> 01:32:35,540

on peak a space imaging where Paul and

2240

01:32:40,420 --> 01:32:38,780

Keith were doing their magic you know

2241

01:32:42,580 --> 01:32:40,430

Paul in Miami Keith on it in

2242

01:32:43,840 --> 01:32:42,590

Pennsylvania so when they were doing

2243

01:32:46,300 --> 01:32:43,850

their magic it was actually really

2244

01:32:49,150 --> 01:32:46,310

really interesting to see this and again

2245

01:32:53,230 --> 01:32:49,160

this is just a physiological artifact

2246

01:32:56,500 --> 01:32:53,240

created by aircraft creating warm lines

2247

01:32:58,210 --> 01:32:56,510

of air that then drift across in a

2248

01:33:00,880 --> 01:32:58,220

cohesive manner and they're not uncommon

2249

01:33:03,040 --> 01:33:00,890

actually it's just uncommon to pass the

2250

01:33:05,290 --> 01:33:03,050

moon isn't that something I never even

2251
01:33:07,120 --> 01:33:05,300
knew of that or heard of that we do have

2252
01:33:10,720 --> 01:33:07,130
a caller on the line caller your first

2253
01:33:12,280 --> 01:33:10,730
name and where are you calling from now

2254
01:33:15,010 --> 01:33:12,290
this is Malcolm from the mighty

2255
01:33:16,540 --> 01:33:15,020
metropolis of other grid of Florida all

2256
01:33:18,610 --> 01:33:16,550
right thank you for your patience for

2257
01:33:22,720 --> 01:33:18,620
hanging in there you have a question for

2258
01:33:26,290 --> 01:33:22,730
mark well I noticed he's got quite a

2259
01:33:29,590 --> 01:33:26,300
career his work in special effects and

2260
01:33:34,090 --> 01:33:29,600
everything I wonder if we could change

2261
01:33:38,410 --> 01:33:34,100
the conversation a little bit I don't

2262
01:33:41,190 --> 01:33:38,420
know why people haven't pursued

2263
01:33:44,290 --> 01:33:41,200

communication with the marine mammals

2264

01:33:49,720 --> 01:33:44,300

too to understand other intelligences

2265

01:33:52,270 --> 01:33:49,730

better I can I can actually speak to

2266

01:33:53,530 --> 01:33:52,280

that because for a period of time I was

2267

01:33:56,230 --> 01:33:53,540

debating whether I was gonna get a

2268

01:33:58,270 --> 01:33:56,240

degree in oceanography or instructor

2269

01:34:01,660 --> 01:33:58,280

yeah I was either gonna go in a space or

2270

01:34:04,750 --> 01:34:01,670

outer space and I chose I chose outer

2271

01:34:05,890 --> 01:34:04,760

space I think primarily because

2272

01:34:07,600 --> 01:34:05,900

you know the thought of being on the

2273

01:34:08,920 --> 01:34:07,610

ocean I get seasick and I knew I'd have

2274

01:34:10,990 --> 01:34:08,930

to spend a lot of time on ocean-going

2275

01:34:12,550 --> 01:34:11,000

vessels and doing research and I was

2276

01:34:14,250 --> 01:34:12,560

afraid that I would get embarrassingly

2277

01:34:16,480 --> 01:34:14,260

seasick

2278

01:34:19,120 --> 01:34:16,490

frankly it's a real stupid reason but

2279

01:34:21,760 --> 01:34:19,130

that's actually the truth I was actually

2280

01:34:23,980 --> 01:34:21,770

very interested in dolphin communication

2281

01:34:26,530 --> 01:34:23,990

in particular because dolphins have a

2282

01:34:28,090 --> 01:34:26,540

way of communicating and you know when

2283

01:34:29,680 --> 01:34:28,100

you look at the size of a dolphin brain

2284

01:34:31,330 --> 01:34:29,690

you say oh well it's almost the size of

2285

01:34:35,230 --> 01:34:31,340

the human brain are they just as smart

2286

01:34:36,640 --> 01:34:35,240

as water going yeah yeah it's almost the

2287

01:34:38,920 --> 01:34:36,650

same size as ours right but you're right

2288

01:34:40,780 --> 01:34:38,930

it's a little bit larger but see it also

2289

01:34:43,240 --> 01:34:40,790

has specialized organs in it for sonar

2290

01:34:58,660 --> 01:34:43,250

and stuff as well that are operating now

2291

01:35:01,630 --> 01:34:58,670

so that's a little bit of a reason where

2292

01:35:07,600 --> 01:35:01,640

there are there emotions but sort of

2293

01:35:12,040 --> 01:35:07,610

integrated integrated with their their

2294

01:35:14,370 --> 01:35:12,050

body or something I ya know Ill know

2295

01:35:16,630 --> 01:35:14,380

what you're talking about and basically

2296

01:35:19,600 --> 01:35:16,640

the evolution of the dolphin is very

2297

01:35:21,580 --> 01:35:19,610

different from ours they may have brains

2298

01:35:24,190 --> 01:35:21,590

that are like me like I said nearly our

2299

01:35:26,620 --> 01:35:24,200

size a little bigger if you say but the

2300

01:35:29,200 --> 01:35:26,630

bottom line is that they didn't have the

2301
01:35:31,990 --> 01:35:29,210
environmental pressures to do what we

2302
01:35:34,180 --> 01:35:32,000
had to do we had to leave the water and

2303
01:35:36,160 --> 01:35:34,190
when we left the water we had to take

2304
01:35:38,200 --> 01:35:36,170
the ocean with us that's why you're

2305
01:35:48,780 --> 01:35:38,210
salty inside that's why your skin is

2306
01:35:53,200 --> 01:35:50,920
well they actually had their their

2307
01:35:56,740 --> 01:35:53,210
forward flippers do have what looked

2308
01:35:59,470 --> 01:35:56,750
very much like the the the metatarsals

2309
01:36:01,720 --> 01:35:59,480
of a of a land mammal that's great but I

2310
01:36:04,870 --> 01:36:01,730
was talking about humans at that point

2311
01:36:08,050 --> 01:36:04,880
oh I wonder done the the dolphin

2312
01:36:09,310 --> 01:36:08,060
evolution path at this point but but cuz

2313
01:36:11,110 --> 01:36:09,320

that's not the dolphin I think is the

2314

01:36:13,690 --> 01:36:11,120

one we need to look at there's another

2315

01:36:15,880 --> 01:36:13,700

animal in the ocean which is I think far

2316

01:36:18,730 --> 01:36:15,890

more intelligent and has a capability of

2317

01:36:21,280 --> 01:36:18,740

doing very very

2318

01:36:22,180 --> 01:36:21,290

powerful reasoning and that's the

2319

01:36:26,790 --> 01:36:22,190

octopus

2320

01:36:31,060 --> 01:36:26,800

intelligent animal in the entire ocean

2321

01:36:33,730 --> 01:36:31,070

and I've watched a number of tests done

2322

01:36:37,000 --> 01:36:33,740

with octopi and these things these

2323

01:36:39,160 --> 01:36:37,010

things reason out you know they're not

2324

01:36:41,110 --> 01:36:39,170

fooled by a glass wall they know what

2325

01:36:43,660 --> 01:36:41,120

the glass wall is and here's the other

2326
01:36:45,550 --> 01:36:43,670
thing that happens an octopus that goes

2327
01:36:48,550 --> 01:36:45,560
through this maze of tubes and finally

2328
01:36:51,340 --> 01:36:48,560
gets his way out into the main tank the

2329
01:36:53,980 --> 01:36:51,350
next octopus that follows him he goes

2330
01:36:56,230 --> 01:36:53,990
through the exact path without retracing

2331
01:36:57,610 --> 01:36:56,240
any steps without losing it if the first

2332
01:36:59,290 --> 01:36:57,620
one gets through then the second one

2333
01:37:01,840 --> 01:36:59,300
gets through the first one takes for say

2334
01:37:03,220 --> 01:37:01,850
30 minutes 40 minutes to actually figure

2335
01:37:04,590 --> 01:37:03,230
out goes through all the dead ends then

2336
01:37:07,810 --> 01:37:04,600
finally he goes through the right path

2337
01:37:10,450 --> 01:37:07,820
the second one is watching he goes right

2338
01:37:13,270 --> 01:37:10,460

out the correct path there's something

2339

01:37:15,010 --> 01:37:13,280

to that now here's the thing the octopus

2340

01:37:18,250 --> 01:37:15,020

doesn't know he's on the right path

2341

01:37:21,550 --> 01:37:18,260

until he gets out so he can't be leaving

2342

01:37:23,260 --> 01:37:21,560

any kind of biological tracers behind to

2343

01:37:24,820 --> 01:37:23,270

say oh this is the right path okay

2344

01:37:26,350 --> 01:37:24,830

because of the fact that he doesn't know

2345

01:37:28,870 --> 01:37:26,360

he's gonna get out until he actually

2346

01:37:30,220 --> 01:37:28,880

gets out the second one says oh I know

2347

01:37:30,580 --> 01:37:30,230

where you're going I'll be right behind

2348

01:37:34,120 --> 01:37:30,590

you

2349

01:37:35,740 --> 01:37:34,130

this is very much like like humans do we

2350

01:37:39,280 --> 01:37:35,750

watched someone do a task and we can

2351
01:37:41,320 --> 01:37:39,290
repeat that task pretty much now that so

2352
01:37:45,670 --> 01:37:41,330
the octopus is very very intelligent and

2353
01:37:47,170 --> 01:37:45,680
I if there was ever an alien animal I'm

2354
01:37:48,820 --> 01:37:47,180
not trying to say it was if there was

2355
01:37:51,520 --> 01:37:48,830
ever an animal delivered to this planet

2356
01:37:55,690 --> 01:37:51,530
of an alien nature it's probably the

2357
01:37:57,910 --> 01:37:55,700
octopus interesting hey yeah I've heard

2358
01:38:00,730 --> 01:37:57,920
I've heard about that and you can trace

2359
01:38:03,820 --> 01:38:00,740
a cephalopod evolution I guess back to

2360
01:38:05,800 --> 01:38:03,830
the Nautilus and that's the most

2361
01:38:07,900 --> 01:38:05,810
primitive and then it did taste asleep

2362
01:38:09,400 --> 01:38:07,910
somewhere and you come up with the

2363
01:38:11,260 --> 01:38:09,410

octopus which is a much more

2364

01:38:12,730 --> 01:38:11,270

sophisticated creature very

2365

01:38:14,320 --> 01:38:12,740

sophisticated you know the

2366

01:38:16,690 --> 01:38:14,330

chromatophores the way it changes color

2367

01:38:20,130 --> 01:38:16,700

can blend with its surroundings this

2368

01:38:22,960 --> 01:38:20,140

that that entire process says I

2369

01:38:24,280 --> 01:38:22,970

understand my environment I understand

2370

01:38:26,170 --> 01:38:24,290

my environment better than the other

2371

01:38:28,840 --> 01:38:26,180

creatures around me that might want to

2372

01:38:31,750 --> 01:38:28,850

eat me and I'm gonna change how I look

2373

01:38:32,660 --> 01:38:31,760

to blend in that's there's a conscious

2374

01:38:35,870 --> 01:38:32,670

reasoning going

2375

01:38:37,730 --> 01:38:35,880

there and and that's the thing that I'm

2376

01:38:38,930 --> 01:38:37,740

just so amazed with with those but

2377

01:38:40,870 --> 01:38:38,940

anyway I don't want to digress and go

2378

01:38:44,240 --> 01:38:40,880

down that path obviously we're talking

2379

01:38:49,790 --> 01:38:44,250

about space junk and the Chang lander

2380

01:38:53,570 --> 01:38:49,800

and so forth on money with the thought

2381

01:38:55,460 --> 01:38:53,580

that in in human beings and in dolphins

2382

01:39:00,980 --> 01:38:55,470

there has been a case of convergent

2383

01:39:03,860 --> 01:39:00,990

evolution regarding their emotions yes

2384

01:39:05,870 --> 01:39:03,870

yes I know that the animals can because

2385

01:39:07,850 --> 01:39:05,880

they show that even though dolphins are

2386

01:39:13,910 --> 01:39:07,860

physically very very different from us

2387

01:39:20,800 --> 01:39:13,920

yeah they've evolved the ability to make

2388

01:39:26,870 --> 01:39:24,260

well we don't know that we don't know

2389

01:39:29,840 --> 01:39:26,880

actually the octopus is a different a

2390

01:39:32,540 --> 01:39:29,850

different worker it's a different type

2391

01:39:36,290 --> 01:39:32,550

of being it's a it solves problems that

2392

01:39:38,000 --> 01:39:36,300

dolphins could never solve for instance

2393

01:39:39,680 --> 01:39:38,010

if a dolphin was so smart why would it

2394

01:39:41,930 --> 01:39:39,690

let us strap bombs to it to become a

2395

01:39:45,040 --> 01:39:41,940

bomb carrying dolphin I mean you know

2396

01:39:47,540 --> 01:39:45,050

I've never done that well there was a

2397

01:39:51,470 --> 01:39:47,550

never done though they've never blown

2398

01:39:53,210 --> 01:39:51,480

them but they did they did experiment

2399

01:39:56,240 --> 01:39:53,220

with training dolphins to deliver

2400

01:39:59,240 --> 01:39:56,250

ordnance the Dolphins proved too

2401

01:40:00,740 --> 01:39:59,250

unreliable yes that's correct

2402

01:40:07,430 --> 01:40:00,750

all right well a little way off topic

2403

01:40:08,690 --> 01:40:07,440

here so I know yeah but all right thank

2404

01:40:11,600 --> 01:40:08,700

you the call thank you the question was

2405

01:40:14,510 --> 01:40:11,610

great all right and so that line is open

2406

01:40:16,460 --> 01:40:14,520

if anyone else wants to give a call in

2407

01:40:24,470 --> 01:40:16,470

that's up in live only during the show

2408

01:40:27,050 --> 01:40:24,480

603 967 403 oh and so we do have a bunch

2409

01:40:31,010 --> 01:40:27,060

of questions that came in and I do want

2410

01:40:34,850 --> 01:40:31,020

to thank Amanda once again for her good

2411

01:40:37,160 --> 01:40:34,860

work here and lo a I mean she will I

2412

01:40:38,810 --> 01:40:37,170

mean you should hire that girl still

2413

01:40:41,600 --> 01:40:38,820

give you every question you so keep your

2414

01:40:43,430 --> 01:40:41,610

show going man yeah if you're a short

2415

01:40:44,690 --> 01:40:43,440

night man she'd figure it out she's good

2416

01:40:46,610 --> 01:40:44,700

good to know

2417

01:40:48,950 --> 01:40:46,620

Leslie on YouTube once

2418

01:40:51,140 --> 01:40:48,960

to know if you can comment on this

2419

01:40:55,670 --> 01:40:51,150

sensationalized coverage of the

2420

01:40:57,140 --> 01:40:55,680

near-earth asteroid passes oh you know

2421

01:40:59,810 --> 01:40:57,150

that's that's a really good question

2422

01:41:04,970 --> 01:40:59,820

because on our planet we have a number

2423

01:41:06,860 --> 01:41:04,980

of of near-earth asteroids and here's

2424

01:41:10,100 --> 01:41:06,870

the thing little by little we're

2425

01:41:12,410 --> 01:41:10,110

actually removing great many of these

2426

01:41:14,000 --> 01:41:12,420

from the list because there were some

2427

01:41:16,430 --> 01:41:14,010

that were considered dangerous there was

2428

01:41:20,600 --> 01:41:16,440

some that were you know considered very

2429

01:41:24,140 --> 01:41:20,610

very potential threats to us well the

2430

01:41:26,120 --> 01:41:24,150

fact of the matter is these objects once

2431

01:41:28,250 --> 01:41:26,130

their their orbits were recalculated

2432

01:41:30,770 --> 01:41:28,260

many of these objects were found to be

2433

01:41:33,710 --> 01:41:30,780

less of a threat to us and they were

2434

01:41:36,530 --> 01:41:33,720

thus removed from the shortlist you know

2435

01:41:38,600 --> 01:41:36,540

but it doesn't leave out rogues and

2436

01:41:43,130 --> 01:41:38,610

things that can show up unexpectedly

2437

01:41:45,560 --> 01:41:43,140

like Omaha MOA right Oh who was 700 feet

2438

01:41:47,300 --> 01:41:45,570

long 70 feet wide roughly and and it

2439

01:41:49,190 --> 01:41:47,310

came whipping through here at eighty six

2440

01:41:50,990 --> 01:41:49,200

thousand miles a while left at eighty

2441

01:41:52,130 --> 01:41:51,000

six thousand miles an hour and came

2442

01:41:53,930 --> 01:41:52,140

through here and over a hundred and

2443

01:41:56,660 --> 01:41:53,940

fifty thousand miles an hour but the

2444

01:42:01,130 --> 01:41:56,670

bottom line is this is something that we

2445

01:42:03,890 --> 01:42:01,140

had no knowledge of ahead of time so you

2446

01:42:05,300 --> 01:42:03,900

know and I gotta say you know the near

2447

01:42:07,430 --> 01:42:05,310

project actually is really near and dear

2448

01:42:09,650 --> 01:42:07,440

to me I don't mean that in the funny

2449

01:42:11,960 --> 01:42:09,660

term but there was a scientist on that

2450

01:42:16,190 --> 01:42:11,970

project by the name of Mary Ellen Murphy

2451

01:42:19,220 --> 01:42:16,200

and Mary Ellen Murphy was a chemist and

2452

01:42:23,270 --> 01:42:19,230

she was assigned to a study some of

2453

01:42:25,300 --> 01:42:23,280

these near Earth asteroids and when when

2454

01:42:28,480 --> 01:42:25,310

the project came to an end she of course

2455

01:42:33,620 --> 01:42:28,490

had a very fruitful role in that project

2456

01:42:36,080 --> 01:42:33,630

landing on of course eros and then along

2457

01:42:37,580 --> 01:42:36,090

comes the osiris-rex program this is

2458

01:42:39,950 --> 01:42:37,590

another program that she wasn't part of

2459

01:42:43,520 --> 01:42:39,960

that program but she had passed away a

2460

01:42:48,110 --> 01:42:43,530

couple years ago and when osiris-rex was

2461

01:42:50,870 --> 01:42:48,120

doing a call for you know remembrances

2462

01:42:53,390 --> 01:42:50,880

of past scientists and people of

2463

01:42:55,910 --> 01:42:53,400

importance I included Mary Ellen Murphy

2464

01:42:57,470 --> 01:42:55,920

in that list and I sent that to them

2465

01:42:59,000 --> 01:42:57,480

innate and so now there's actually a

2466

01:42:59,900 --> 01:42:59,010

little microchip with Mary Ellen Murphy

2467

01:43:02,450 --> 01:42:59,910

with an

2468

01:43:04,010 --> 01:43:02,460

image of her smiling circling the Sun

2469

01:43:06,200 --> 01:43:04,020

and will be there for billions of years

2470

01:43:09,440 --> 01:43:06,210

yeah it's sort of a little aside I mean

2471

01:43:12,800 --> 01:43:09,450

it that's pretty yeah again before we

2472

01:43:14,480 --> 01:43:12,810

get too far away from the mo mo that

2473

01:43:18,020 --> 01:43:14,490

what do you think about the Harvard's

2474

01:43:20,840 --> 01:43:18,030

paper on that the possibility of that

2475

01:43:24,200 --> 01:43:20,850

you know could have been an alien probe

2476

01:43:26,360 --> 01:43:24,210

yeah I think that that that that was

2477

01:43:29,900 --> 01:43:26,370

truly an open-minded statement to make

2478

01:43:32,750 --> 01:43:29,910

right because the fact is in all

2479

01:43:34,550 --> 01:43:32,760

likelihood it was just a rogue that got

2480

01:43:37,610 --> 01:43:34,560

loose from its original solar system a

2481

01:43:41,300 --> 01:43:37,620

ejected from its solar system but it was

2482

01:43:43,760 --> 01:43:41,310

actually a very spindly object something

2483

01:43:45,260 --> 01:43:43,770

we don't have anything like in our solar

2484

01:43:47,720 --> 01:43:45,270

system it doesn't make sense that

2485

01:43:49,310 --> 01:43:47,730

something could be created like that

2486

01:43:52,340 --> 01:43:49,320

you know I mean usually things are

2487

01:43:55,700 --> 01:43:52,350

globular or more globular than others I

2488

01:43:58,190 --> 01:43:55,710

mean then other shapes right you know

2489

01:43:59,570 --> 01:43:58,200

just by gravity a force of gravity it's

2490

01:44:01,720 --> 01:43:59,580

right it's right and beyond a certain

2491

01:44:04,430 --> 01:44:01,730

shape beyond a certain size rather mass

2492

01:44:07,430 --> 01:44:04,440

especially ten objects tend to be

2493

01:44:09,500 --> 01:44:07,440

spherical so in a muumuus case it wasn't

2494

01:44:11,990 --> 01:44:09,510

that way so there was a thought that

2495

01:44:13,820 --> 01:44:12,000

said well look because we don't get

2496

01:44:17,560 --> 01:44:13,830

spherical ah it's not a spherical object

2497

01:44:20,690 --> 01:44:17,570

could it have been an alien probe just

2498

01:44:24,620 --> 01:44:20,700

defunct after many millennia actually

2499

01:44:25,400 --> 01:44:24,630

millions of years of disuse and you know

2500

01:44:27,320 --> 01:44:25,410

the answer

2501

01:44:29,840 --> 01:44:27,330

we won't know because of course a mullah

2502

01:44:31,660 --> 01:44:29,850

is you know more and more gone you know

2503

01:44:34,600 --> 01:44:31,670

more gone you know it's it's actually

2504

01:44:37,550 --> 01:44:34,610

just disappeared but you know how

2505

01:44:41,540 --> 01:44:37,560

heading out toward the constellation

2506

01:44:43,820 --> 01:44:41,550

Pegasus right now but you know it could

2507

01:44:45,770 --> 01:44:43,830

have been maybe I mean I can't say no

2508

01:44:48,680 --> 01:44:45,780

I'd be arrogant to say you know yeah it

2509

01:44:50,690 --> 01:44:48,690

couldn't be a probe I mean science has

2510

01:44:53,600 --> 01:44:50,700

tended to have a closed mind at time but

2511

01:44:56,120 --> 01:44:53,610

you know I I'm tending to just stay open

2512

01:44:57,560 --> 01:44:56,130

to the possibilities but not be married

2513

01:45:00,560 --> 01:44:57,570

to any one of them I think that you know

2514

01:45:02,570 --> 01:45:00,570

it just it it merits investigation right

2515

01:45:04,250 --> 01:45:02,580

we do have a caller on the line caller

2516

01:45:08,510 --> 01:45:04,260

your first name and where are you

2517

01:45:11,170 --> 01:45:08,520

calling from hello Martin and Marcus

2518

01:45:13,939 --> 01:45:11,180

Ronald from Minnesota hey Ronald

2519

01:45:16,070 --> 01:45:13,949

welcome to the day and a question

2520

01:45:18,439 --> 01:45:16,080

thank you and thank you Mark V nagesh

2521

01:45:21,650 --> 01:45:18,449

really a great treat to have you on and

2522

01:45:25,550 --> 01:45:21,660

with with Martin and have young the

2523

01:45:30,110 --> 01:45:25,560

whole hour my question is something

2524

01:45:33,680 --> 01:45:30,120

about visually seeing something that you

2525

01:45:36,740 --> 01:45:33,690

never seen for instance I don't believe

2526

01:45:39,229 --> 01:45:36,750

that UFOs are not there I believe

2527

01:45:42,740 --> 01:45:39,239

musicals are real but I have not seen

2528

01:45:46,130 --> 01:45:42,750

one yet so how do I convince myself that

2529

01:45:48,439 --> 01:45:46,140

UFOs are real or aliens or anything that

2530

01:45:51,740 --> 01:45:48,449

we are talking about on on the

2531

01:45:54,669 --> 01:45:51,750

paranormal Channel - gary radio and

2532

01:45:57,950 --> 01:45:54,679

other other youtube stuff how do we

2533

01:46:01,910 --> 01:45:57,960

evaluate something that is real that we

2534

01:46:03,650 --> 01:46:01,920

have never seen in reality that might be

2535

01:46:06,439 --> 01:46:03,660

a good way to put it maybe rephrase that

2536

01:46:09,560 --> 01:46:06,449

I don't know Ronald that's an excellent

2537

01:46:12,260 --> 01:46:09,570

question and I do have an opinion it's

2538

01:46:15,110 --> 01:46:12,270

not necessarily a right opinion but it

2539

01:46:17,209 --> 01:46:15,120

is a thought my thought is that when we

2540

01:46:18,919 --> 01:46:17,219

look at how many planets have been found

2541

01:46:20,689 --> 01:46:18,929

and you know there's some people say oh

2542

01:46:22,310 --> 01:46:20,699

you can't talk about all the planets and

2543

01:46:25,490 --> 01:46:22,320

finally say statistically bla bla bla

2544

01:46:27,439 --> 01:46:25,500

bla you know but actually you can uh if

2545

01:46:29,270 --> 01:46:27,449

you look at the fact that there's a lot

2546

01:46:33,770 --> 01:46:29,280

of things going in the direction toward

2547

01:46:35,479 --> 01:46:33,780

life all right yes the universe is out

2548

01:46:38,570 --> 01:46:35,489

to kill us it is there's a lot of

2549

01:46:40,550 --> 01:46:38,580

reasons why we'll die very quickly the

2550

01:46:42,229 --> 01:46:40,560

earth but given what we have here on the

2551

01:46:44,570 --> 01:46:42,239

earth with the ultraviolet shield

2552

01:46:46,070 --> 01:46:44,580

prevent provided by our atmosphere with

2553

01:46:48,860 --> 01:46:46,080

a magnetic field which provides the

2554

01:46:51,350 --> 01:46:48,870

ability to maintain an atmosphere we're

2555

01:46:53,630 --> 01:46:51,360

not the only planet that has that and I

2556

01:46:56,180 --> 01:46:53,640

guarantee you that that means that based

2557

01:46:59,060 --> 01:46:56,190

on the fact that life started here by

2558

01:47:02,689 --> 01:46:59,070

itself we did not create it we didn't

2559

01:47:04,700 --> 01:47:02,699

have a role in that okay it happened and

2560

01:47:06,830 --> 01:47:04,710

and the miller-urey experiment in the

2561

01:47:09,439 --> 01:47:06,840

early 50s showed that the building

2562

01:47:12,650 --> 01:47:09,449

blocks of life amino acids were created

2563

01:47:15,110 --> 01:47:12,660

just by bombarding well we thought was a

2564

01:47:17,720 --> 01:47:15,120

primordial atmosphere in a flask with

2565

01:47:19,729 --> 01:47:17,730

lightning and having water you know

2566

01:47:21,500 --> 01:47:19,739

having a water cycle in there and and we

2567

01:47:24,560 --> 01:47:21,510

saw the building blocks of life form and

2568

01:47:26,450 --> 01:47:24,570

after a week they saw a whole number of

2569

01:47:27,240 --> 01:47:26,460

amino acids and then 50 years later they

2570

01:47:29,250 --> 01:47:27,250

reviewed those

2571

01:47:31,710 --> 01:47:29,260

files and those vials from that

2572

01:47:33,390 --> 01:47:31,720

experiment there were 22 more amino

2573

01:47:36,570 --> 01:47:33,400

acids that were undetected at the time

2574

01:47:38,160 --> 01:47:36,580

so what I'm getting at is the planet

2575

01:47:38,790 --> 01:47:38,170

makes the building blocks of life all by

2576

01:47:40,620 --> 01:47:38,800

itself

2577

01:47:42,630 --> 01:47:40,630

comets deliver the building blocks of

2578

01:47:45,120 --> 01:47:42,640

life you know without any influence from

2579

01:47:47,760 --> 01:47:45,130

us asteroids deliver a lot of water and

2580

01:47:49,320 --> 01:47:47,770

building blocks of life and meteors do

2581

01:47:52,260 --> 01:47:49,330

the same wait the Murchison meteorite

2582

01:47:55,320 --> 01:47:52,270

when that landed here that actually was

2583

01:47:57,530 --> 01:47:55,330

loaded with amino acids so you know if

2584

01:48:00,150 --> 01:47:57,540

you look at it from that perspective

2585

01:48:02,460 --> 01:48:00,160

this isn't unique to our solar system

2586

01:48:04,770 --> 01:48:02,470

this is probably and I can't say for

2587

01:48:07,920 --> 01:48:04,780

sure but this is probably something

2588

01:48:10,140 --> 01:48:07,930

that's been repeated elsewhere for a lot

2589

01:48:12,390 --> 01:48:10,150
of different systems therefore the

2590

01:48:14,370 --> 01:48:12,400
opportunity that life could arise

2591

01:48:15,600 --> 01:48:14,380
carbon-based life even life that's

2592

01:48:17,010 --> 01:48:15,610
carbon-based let's not even go to

2593

01:48:19,950 --> 01:48:17,020
silicon-based life and everything let's

2594

01:48:21,930 --> 01:48:19,960
just say carbon carbon-based life could

2595

01:48:24,840 --> 01:48:21,940
very well arisen

2596

01:48:26,490 --> 01:48:24,850
you know elsewhere I believe it I think

2597

01:48:28,410 --> 01:48:26,500
there might be life on the Europa's ice

2598

01:48:30,750 --> 01:48:28,420
man ice mantle that icy mantle of Europe

2599

01:48:32,820 --> 01:48:30,760
it has a 90 mile an hour 60 to 90 mile

2600

01:48:36,240 --> 01:48:32,830
deep ocean underneath that ice it's

2601

01:48:39,150 --> 01:48:36,250

possible that ice that is hiding life

2602

01:48:40,830 --> 01:48:39,160

underneath microbial no doubt same thing

2603

01:48:43,080 --> 01:48:40,840

with little Enceladus it's only 300

2604

01:48:45,680 --> 01:48:43,090

miles across that's Saturn's moon okay

2605

01:48:48,120 --> 01:48:45,690

and you know Europa's Jupiter's um

2606

01:48:49,920 --> 01:48:48,130

Enceladus is only three miles across and

2607

01:48:51,930 --> 01:48:49,930

it has these what we think are hot

2608

01:48:54,030 --> 01:48:51,940

smoking vents like we see in the floor

2609

01:48:56,040 --> 01:48:54,040

of the Pacific and Atlantic oceans these

2610

01:48:59,490 --> 01:48:56,050

black chimneys that are spewing mineral

2611

01:49:02,210 --> 01:48:59,500

lead in water that bacteria love okay so

2612

01:49:04,800 --> 01:49:02,220

that begets another form of life that

2613

01:49:07,590 --> 01:49:04,810

feeds on the bacteria and then those

2614

01:49:11,010 --> 01:49:07,600

feeders get fed upon themselves etc etc

2615

01:49:13,470 --> 01:49:11,020

is it possible yeah it happened here it

2616

01:49:15,900 --> 01:49:13,480

happened here and the life here at the

2617

01:49:18,060 --> 01:49:15,910

ocean vents is chemosynthetic not

2618

01:49:18,930 --> 01:49:18,070

photosynthetic you know photosynthetic

2619

01:49:21,300 --> 01:49:18,940

like plants

2620

01:49:24,090 --> 01:49:21,310

this is chemosynthetic chemosynthetic

2621

01:49:25,620 --> 01:49:24,100

based life it's an entire oasis on the

2622

01:49:26,880 --> 01:49:25,630

bottom of the oceans where this is

2623

01:49:29,610 --> 01:49:26,890

happening where there's never any light

2624

01:49:33,570 --> 01:49:29,620

so could that happen in Europa yes could

2625

01:49:36,090 --> 01:49:33,580

happen and Enceladus sure why not we

2626

01:49:39,270 --> 01:49:36,100

don't know yeah so that said I think

2627

01:49:40,950 --> 01:49:39,280

that there is a possibility that life

2628

01:49:43,200 --> 01:49:40,960

and and this is my

2629

01:49:46,470 --> 01:49:43,210

it's my favorite my favorite line from

2630

01:49:48,960 --> 01:49:46,480

Jurassic Park Jeff Goldblum okay he says

2631

01:49:51,720 --> 01:49:48,970

you know life life will find a way

2632

01:49:54,270 --> 01:49:51,730

you know life finds a way you know and I

2633

01:49:57,060 --> 01:49:54,280

think that that's very true I say that

2634

01:50:00,510 --> 01:49:57,070

often okay because I really do you know

2635

01:50:02,760 --> 01:50:00,520

yeah he played Ian Malcolm in that movie

2636

01:50:04,670 --> 01:50:02,770

yeah and great yeah it was really good I

2637

01:50:06,900 --> 01:50:04,680

kind of liked that he was the cautionary

2638

01:50:11,010 --> 01:50:06,910

scientist there and he would say and he

2639

01:50:13,230 --> 01:50:11,020

said um life life finds a way you know

2640

01:50:16,100 --> 01:50:13,240

and nobody else believes him when in

2641

01:50:19,260 --> 01:50:16,110

fact life does find a way so you know

2642

01:50:22,370 --> 01:50:19,270

yes that's fiction but the fact is what

2643

01:50:25,050 --> 01:50:22,380

he's saying is something that's it's not

2644

01:50:28,800 --> 01:50:25,060

based on fantasy it's actually based on

2645

01:50:33,810 --> 01:50:28,810

factual base okay like for instance when

2646

01:50:35,280 --> 01:50:33,820

96% of the species and and so forth on

2647

01:50:38,490 --> 01:50:35,290

this planet were destroyed in the

2648

01:50:41,190 --> 01:50:38,500

Permian era why should anything have

2649

01:50:43,860 --> 01:50:41,200

come back you know that that little 4%

2650

01:50:45,780 --> 01:50:43,870

was enough to actually put diversity out

2651
01:50:47,310 --> 01:50:45,790
there of that of such magnitude that we

2652
01:50:52,920 --> 01:50:47,320
have what we have now hundreds of

2653
01:50:55,080 --> 01:50:52,930
millions of species alive now see so and

2654
01:50:57,200 --> 01:50:55,090
here's another thing to Ronald when you

2655
01:50:59,400 --> 01:50:57,210
look at every life form on this planet

2656
01:51:01,400 --> 01:50:59,410
every single one of these that are

2657
01:51:03,720 --> 01:51:01,410
beyond multi just just single cells

2658
01:51:06,660 --> 01:51:03,730
every single one of these higher life

2659
01:51:08,100 --> 01:51:06,670
forms is bilaterally symmetric what's I

2660
01:51:10,170 --> 01:51:08,110
mean it means that they're the same on

2661
01:51:10,620 --> 01:51:10,180
the left side and the right side wait a

2662
01:51:12,060 --> 01:51:10,630
minute

2663
01:51:14,010 --> 01:51:12,070

that's symmetry where does that come

2664

01:51:16,170 --> 01:51:14,020

from and why don't we have like I've

2665

01:51:17,850 --> 01:51:16,180

said before pogo stick cows bouncing

2666

01:51:23,150 --> 01:51:17,860

around in the pastures why don't we have

2667

01:51:25,620 --> 01:51:23,160

one like creatures okay good right so

2668

01:51:27,900 --> 01:51:25,630

yes this is a template see this is a

2669

01:51:32,520 --> 01:51:27,910

template the universe provides for life

2670

01:51:34,860 --> 01:51:32,530

based on that ubiquitous element no well

2671

01:51:38,370 --> 01:51:34,870

I can tell you something we find it

2672

01:51:41,430 --> 01:51:38,380

everywhere Mars carbon I am I just want

2673

01:51:43,140 --> 01:51:41,440

to say thank you and I always learn when

2674

01:51:44,970 --> 01:51:43,150

you're talking I don't know if I

2675

01:51:47,250 --> 01:51:44,980

understand everything but I learned

2676
01:51:49,470 --> 01:51:47,260
that's the key part we only have about

2677
01:51:51,240 --> 01:51:49,480
three minutes left but I would like to

2678
01:51:52,470 --> 01:51:51,250
address thank you yeah wait a minute I'd

2679
01:51:54,000 --> 01:51:52,480
like to address part of your question

2680
01:51:54,840 --> 01:51:54,010
that really didn't get answered you say

2681
01:52:00,240 --> 01:51:54,850
why

2682
01:52:01,980 --> 01:52:00,250
seriously and I think that was also a

2683
01:52:04,500 --> 01:52:01,990
good question and it's kind of along the

2684
01:52:08,130 --> 01:52:04,510
same line there's so much of science so

2685
01:52:10,980 --> 01:52:08,140
much of astronomy that is observational

2686
01:52:17,130 --> 01:52:10,990
all of almost all of astronomy is

2687
01:52:18,660 --> 01:52:17,140
observational but but I don't know if

2688
01:52:20,640 --> 01:52:18,670

you want to address that mark but I mean

2689

01:52:24,120 --> 01:52:20,650

it's just that yes if there's so many

2690

01:52:25,620 --> 01:52:24,130

people that have seen something and

2691

01:52:28,650 --> 01:52:25,630

there's you know there's trace evidence

2692

01:52:30,300 --> 01:52:28,660

- I think I think I was actually go

2693

01:52:31,500 --> 01:52:30,310

ahead martinet I'm sorry I don't even

2694

01:52:34,080 --> 01:52:31,510

but I know you only have a couple

2695

01:52:35,310 --> 01:52:34,090

minutes left so one yeah say I I was

2696

01:52:37,410 --> 01:52:35,320

addressing it but I didn't actually

2697

01:52:39,510 --> 01:52:37,420

finish the point and I and thank you for

2698

01:52:42,750 --> 01:52:39,520

putting me on track up to you and Ronald

2699

01:52:44,220 --> 01:52:42,760

um the bottom line is that with all

2700

01:52:47,430 --> 01:52:44,230

these templates like I'm talking about

2701
01:52:49,230 --> 01:52:47,440
for life here on this planet you have to

2702
01:52:52,410 --> 01:52:49,240
look at it as this has happened

2703
01:52:53,700 --> 01:52:52,420
elsewhere therefore when you look at the

2704
01:52:54,150 --> 01:52:53,710
number of exoplanets that have been

2705
01:52:56,250 --> 01:52:54,160
found

2706
01:52:58,440 --> 01:52:56,260
alright just in that little tiny fist

2707
01:53:00,330 --> 01:52:58,450
sized area of space over your head on a

2708
01:53:02,520 --> 01:53:00,340
summer night okay in the constellation

2709
01:53:05,370 --> 01:53:02,530
Cygnus how many of those sized areas are

2710
01:53:08,250 --> 01:53:05,380
all around the universe that we see many

2711
01:53:10,830 --> 01:53:08,260
many millions of those overall and we

2712
01:53:12,210 --> 01:53:10,840
have a lot of planets in fact we think

2713
01:53:15,420 --> 01:53:12,220

there's more planets than there are

2714

01:53:18,420 --> 01:53:15,430

stars in the universe and now that means

2715

01:53:20,340 --> 01:53:18,430

that you have a possibility that were

2716

01:53:22,710 --> 01:53:20,350

the templates that we see that have been

2717

01:53:24,510 --> 01:53:22,720

exploited here on earth for life that

2718

01:53:26,670 --> 01:53:24,520

most likely those templates have also

2719

01:53:29,400 --> 01:53:26,680

been exploited elsewhere because the

2720

01:53:31,050 --> 01:53:29,410

universe is the same wherever we go

2721

01:53:33,270 --> 01:53:31,060

there's little differences here and

2722

01:53:35,400 --> 01:53:33,280

there but the chemistry the periodic

2723

01:53:37,980 --> 01:53:35,410

table the elements this is something

2724

01:53:40,710 --> 01:53:37,990

that was all generated by the Stars and

2725

01:53:42,450 --> 01:53:40,720

by other processes in the universe way

2726
01:53:47,010 --> 01:53:42,460
from very beginning and ongoing to this

2727
01:53:49,800 --> 01:53:47,020
day so life in my view is probably the

2728
01:53:53,490 --> 01:53:49,810
rule not the exception in this

2729
01:53:56,280 --> 01:53:53,500
particular universe thank you hey Ronald

2730
01:53:57,750 --> 01:53:56,290
thanks for uh thanks for the call yeah

2731
01:54:01,290 --> 01:53:57,760
thank you very much and have a great

2732
01:54:03,440 --> 01:54:01,300
night all right all right so we're

2733
01:54:08,850 --> 01:54:03,450
getting right near at the end mark so

2734
01:54:11,400 --> 01:54:08,860
and just just if you would remind the

2735
01:54:12,960 --> 01:54:11,410
live listener at this point or the

2736
01:54:14,910 --> 01:54:12,970
person watching on YouTube where they

2737
01:54:18,240 --> 01:54:14,920
can check out your show in about a

2738
01:54:20,130 --> 01:54:18,250

half-hour from now well on Sunday nights

2739

01:54:24,090 --> 01:54:20,140

have the kgr a radio show it's called

2740

01:54:26,400 --> 01:54:24,100

sky tour radio sky tour one word and on

2741

01:54:30,590 --> 01:54:26,410

clear nights like tonight it's a

2742

01:54:33,000 --> 01:54:30,600

beautifully clear night we have a little

2743

01:54:34,710 --> 01:54:33,010

well it's basically our live stream that

2744

01:54:36,870 --> 01:54:34,720

we do it's called the sky tour live

2745

01:54:40,410 --> 01:54:36,880

stream and we take a tour of the deep

2746

01:54:42,000 --> 01:54:40,420

sky objects in space and we show them we

2747

01:54:43,170 --> 01:54:42,010

talk about them and some of the

2748

01:54:45,150 --> 01:54:43,180

information like I'm talking about here

2749

01:54:47,340 --> 01:54:45,160

tonight we kind of go through it that

2750

01:54:49,130 --> 01:54:47,350

way in sky through livestream and we

2751

01:54:51,270 --> 01:54:49,140

take questions from the chat and

2752

01:54:54,510 --> 01:54:51,280

sometimes have guests come on with us as

2753

01:54:56,940 --> 01:54:54,520

well so we're gonna spend some time

2754

01:54:58,770 --> 01:54:56,950

tonight after this broadcast doing that

2755

01:55:00,690 --> 01:54:58,780

so join us sky tour live stream

2756

01:55:03,060 --> 01:55:00,700

subscribe hit the bell get notified when

2757

01:55:05,520 --> 01:55:03,070

we go live again and we are subject to

2758

01:55:07,890 --> 01:55:05,530

the weather you know but we're trying

2759

01:55:10,170 --> 01:55:07,900

out our new full remote operation

2760

01:55:11,850 --> 01:55:10,180

tonight and there's a few little quirks

2761

01:55:14,460 --> 01:55:11,860

that I've noticed already but you know

2762

01:55:15,900 --> 01:55:14,470

I'll get past them but you know come

2763

01:55:17,220 --> 01:55:15,910

along and either watch the dismal

2764

01:55:19,170 --> 01:55:17,230

failure or the tremendous success

2765

01:55:22,200 --> 01:55:19,180

excellent mark so we're totally out of

2766

01:55:23,670 --> 01:55:22,210

time thanks so much and we'll talk to

2767

01:55:25,530 --> 01:55:23,680

you soon mark you take care and have fun

2768

01:55:27,420 --> 01:55:25,540

tonight thank you bye bye

2769

01:55:29,460 --> 01:55:27,430

alright bye bye alright everyone so

2770

01:55:30,570 --> 01:55:29,470

that's it for our show thanks so much I

2771

01:55:32,340 --> 01:55:30,580

want to thank people that helped out

2772

01:55:35,550 --> 01:55:32,350

with the show we have Evan that helps

2773

01:55:38,070 --> 01:55:35,560

out during the show we have Keith and we

2774

01:55:40,620 --> 01:55:38,080

have over at the dark meadow digital

2775

01:55:44,450 --> 01:55:40,630

network we have Eric who is now helping

2776

01:55:46,710 --> 01:55:44,460

us out at kgr a radio thanks to you and

2777

01:55:49,590 --> 01:55:46,720

thanks mostly to you the listener

2778

01:55:51,600 --> 01:55:49,600

without you I beat anything at all

2779

01:55:53,790 --> 01:55:51,610

wouldn't even be here so thanks and

2780

01:55:56,670 --> 01:55:53,800

remember next week we have Professor

2781

01:55:59,040 --> 01:55:56,680

Greg elegant I don't know exactly how

2782

01:56:00,630 --> 01:55:59,050

he's got an unusual last name and I will

2783

01:56:02,790 --> 01:56:00,640

get that pronunciation down thanks so