

# TO BLACK

LIVE with Jimmy Church

JANET AIRLINES

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1  
00:00:17,990 --> 00:00:15,030

[Music]

2  
00:00:20,870 --> 00:00:18,000

the smoke radio for the masses headline

3  
00:00:22,630 --> 00:00:20,880

edition july 8th 1947

4  
00:00:25,109 --> 00:00:22,640

the army air force's has announced that

5  
00:00:27,189 --> 00:00:25,119

a flying disc has been found and is now

6  
00:00:31,589 --> 00:00:27,199

in the possession of the army if the

7  
00:00:34,470 --> 00:00:31,599

game is rigged change the game changer

8  
00:00:36,790 --> 00:00:34,480

i occasionally think how quickly

9  
00:00:38,150 --> 00:00:36,800

our differences worldwide

10  
00:00:40,869 --> 00:00:38,160

would vanish

11  
00:00:44,220 --> 00:00:40,879

if we were facing an alien threat from

12  
00:00:47,029 --> 00:00:44,230

outside this world

13  
00:00:49,830 --> 00:00:47,039

[Applause]

14

00:00:52,470 --> 00:00:49,840

this is fade to black with your host

15

00:00:55,670 --> 00:00:52,480

jimmy church on the game changer radio

16

00:00:59,349 --> 00:00:55,680

network and kgra the global radio

17

00:01:04,640 --> 00:01:01,510

i need your help to get to the year

18

00:01:10,469 --> 00:01:08,390

[Music]

19

00:01:13,450 --> 00:01:10,479

you are listening to fate to black with

20

00:01:15,910 --> 00:01:13,460

jimmy judge on the game changer network

21

00:01:17,990 --> 00:01:15,920

[Music]

22

00:01:19,670 --> 00:01:18,000

i'm jimmy church of fade to black and in

23

00:01:22,390 --> 00:01:19,680

this presentation

24

00:01:25,830 --> 00:01:22,400

we're going to discuss our milky way the

25

00:01:28,230 --> 00:01:25,840

universe exoplanets and extraterrestrial

26

00:01:29,590 --> 00:01:28,240

intelligence that may be visiting planet

27

00:01:32,069 --> 00:01:29,600

earth we're going to present a bunch of

28

00:01:34,550 --> 00:01:32,079

numbers from the very small to

29

00:01:35,670 --> 00:01:34,560

absolutely ginormous and take you

30

00:01:37,749 --> 00:01:35,680

through

31

00:01:39,990 --> 00:01:37,759

where we are today

32

00:01:43,350 --> 00:01:40,000

with the amount of knowledge that we

33

00:01:46,550 --> 00:01:43,360

have been able to acquire in just one

34

00:01:48,469 --> 00:01:46,560

lifetime because one lifetime ago at the

35

00:01:50,389 --> 00:01:48,479

turn of the century

36

00:01:52,630 --> 00:01:50,399

in 1900

37

00:01:54,069 --> 00:01:52,640

astronomers and cosmologists around the

38

00:01:56,469 --> 00:01:54,079

world with their telescopes we're

39

00:01:59,030 --> 00:01:56,479

looking up into the night sky at planets

40

00:02:00,870 --> 00:01:59,040

and stars and discovering things and

41

00:02:04,389 --> 00:02:00,880

they were also looking

42

00:02:05,670 --> 00:02:04,399

at these gas clouds that they called

43

00:02:08,550 --> 00:02:05,680

nebulae

44

00:02:11,910 --> 00:02:08,560

and one of the earliest examples of this

45

00:02:13,510 --> 00:02:11,920

uh is here this was photographed by

46

00:02:15,350 --> 00:02:13,520

henry draper

47

00:02:18,150 --> 00:02:15,360

in 1880

48

00:02:20,229 --> 00:02:18,160

and this is of orion and it took 50

49

00:02:22,309 --> 00:02:20,239

minutes for this exposure

50

00:02:24,309 --> 00:02:22,319

and they were seeing these but they

51  
00:02:26,309 --> 00:02:24,319  
thought that they were all inside of our

52  
00:02:27,510 --> 00:02:26,319  
milky way that these were just gas

53  
00:02:28,229 --> 00:02:27,520  
clouds

54  
00:02:30,309 --> 00:02:28,239  
and

55  
00:02:32,150 --> 00:02:30,319  
today if you go down into the southern

56  
00:02:34,550 --> 00:02:32,160  
hemisphere like australia on a clear

57  
00:02:36,470 --> 00:02:34,560  
night look up into the sky you can see

58  
00:02:37,509 --> 00:02:36,480  
these pink clouds

59  
00:02:39,910 --> 00:02:37,519  
up there

60  
00:02:41,990 --> 00:02:39,920  
uh just floating well

61  
00:02:44,630 --> 00:02:42,000  
all of that changed

62  
00:02:47,750 --> 00:02:44,640  
it changed with edwin hubble because in

63  
00:02:51,509 --> 00:02:47,760

1919 he arrived at the mount wilson

64  
00:02:55,030 --> 00:02:51,519  
observatory where they had the brand new

65  
00:02:59,750 --> 00:02:55,040  
100 inch hooker telescope

66  
00:03:00,869 --> 00:02:59,760  
and he starts checking out these nebulae

67  
00:03:07,270 --> 00:03:00,879  
and

68  
00:03:08,470 --> 00:03:07,280  
of them is that they were far too

69  
00:03:12,710 --> 00:03:08,480  
distant

70  
00:03:14,309 --> 00:03:12,720  
to be inside of our milky way and up to

71  
00:03:16,790 --> 00:03:14,319  
that point

72  
00:03:20,229 --> 00:03:16,800  
uh the prevailing thought around the

73  
00:03:22,390 --> 00:03:20,239  
world was that our milky way was the

74  
00:03:24,790 --> 00:03:22,400  
universe and that's it there was nothing

75  
00:03:26,630 --> 00:03:24,800  
else outside of it

76

00:03:27,910 --> 00:03:26,640

well this was pretty exciting stuff

77

00:03:29,509 --> 00:03:27,920

except

78

00:03:30,830 --> 00:03:29,519

he was fought

79

00:03:34,309 --> 00:03:30,840

and in

80

00:03:35,990 --> 00:03:34,319

1924 he actually proved that these

81

00:03:37,990 --> 00:03:36,000

nebulae were

82

00:03:40,390 --> 00:03:38,000

much too distant

83

00:03:41,509 --> 00:03:40,400

to be part of the milky way and were in

84

00:03:44,390 --> 00:03:41,519

fact

85

00:03:47,430 --> 00:03:44,400

distant galaxies outside of our own

86

00:03:49,830 --> 00:03:47,440

in this image here this is the first

87

00:03:53,030 --> 00:03:49,840

what is thought to be the first image

88

00:03:55,670 --> 00:03:53,040

of andromeda and you can even see

89

00:03:58,070 --> 00:03:55,680

hubble's handwriting on the negative as

90

00:04:01,509 --> 00:03:58,080

he is calculating movement

91

00:04:04,789 --> 00:04:01,519

and distance this was incredible the new

92

00:04:07,429 --> 00:04:04,799

york times covered this in 1924 but

93

00:04:10,390 --> 00:04:07,439

hubble's results for andromeda were not

94

00:04:13,990 --> 00:04:10,400

formally published in a peer-reviewed uh

95

00:04:15,509 --> 00:04:14,000

scientific journal until 1929

96

00:04:16,390 --> 00:04:15,519

now

97

00:04:17,189 --> 00:04:16,400

over

98

00:04:19,830 --> 00:04:17,199

the

99

00:04:21,349 --> 00:04:19,840

next couple of decades

100

00:04:24,310 --> 00:04:21,359

they were counting the stars in the

101  
00:04:27,909 --> 00:04:24,320  
milky way they were mapping out our

102  
00:04:30,950 --> 00:04:27,919  
milky way they were cataloging galaxies

103  
00:04:32,710 --> 00:04:30,960  
now and counting galaxies and things

104  
00:04:36,550 --> 00:04:32,720  
were pretty exciting

105  
00:04:40,469 --> 00:04:36,560  
the milky way as it is presented here

106  
00:04:42,790 --> 00:04:40,479  
is the latest star count and shape of

107  
00:04:45,350 --> 00:04:42,800  
what we think our milky way actually is

108  
00:04:47,670 --> 00:04:45,360  
of course we haven't uh

109  
00:04:49,510 --> 00:04:47,680  
got gotten a satellite

110  
00:04:51,430 --> 00:04:49,520  
out outside of our milky way to

111  
00:04:53,749 --> 00:04:51,440  
photograph it but this is the latest

112  
00:04:55,430 --> 00:04:53,759  
computer generated model

113  
00:04:59,430 --> 00:04:55,440

and here

114

00:05:01,749 --> 00:04:59,440

is where things get crazy because

115

00:05:02,710 --> 00:05:01,759

one lifetime ago it was just planet

116

00:05:05,270 --> 00:05:02,720

earth

117

00:05:07,510 --> 00:05:05,280

one lifetime ago it was just the milky

118

00:05:08,469 --> 00:05:07,520

way that there wasn't anything outside

119

00:05:09,830 --> 00:05:08,479

of it

120

00:05:12,150 --> 00:05:09,840

today

121

00:05:14,310 --> 00:05:12,160

it's much different and the numbers have

122

00:05:18,230 --> 00:05:14,320

gotten ginormous

123

00:05:19,230 --> 00:05:18,240

our milky way with the latest count

124

00:05:22,310 --> 00:05:19,240

is

125

00:05:24,870 --> 00:05:22,320

400 billion stars

126

00:05:29,189 --> 00:05:24,880

400 billion

127

00:05:31,830 --> 00:05:29,199

and with the discovery of exoplanets

128

00:05:34,150 --> 00:05:31,840

things have also changed

129

00:05:37,189 --> 00:05:34,160

we had always thought that earth was

130

00:05:39,990 --> 00:05:37,199

unique and that life here was unique and

131

00:05:41,670 --> 00:05:40,000

life here was singular and that it was a

132

00:05:45,510 --> 00:05:41,680

rare occurrence

133

00:05:46,310 --> 00:05:45,520

anywhere in space in in our solar system

134

00:05:48,390 --> 00:05:46,320

or

135

00:05:50,230 --> 00:05:48,400

in the milky way and beyond that out

136

00:05:52,870 --> 00:05:50,240

into the universe

137

00:05:54,629 --> 00:05:52,880

well the first exoplanet

138

00:05:58,950 --> 00:05:54,639

was discovered

139

00:06:02,469 --> 00:06:00,790

as of may 1st

140

00:06:04,870 --> 00:06:02,479

2019

141

00:06:10,390 --> 00:06:04,880

and we are shooting this video

142

00:06:15,150 --> 00:06:10,400

on may 11 2019 as of may 1st 2019 there

143

00:06:18,189 --> 00:06:15,160

are now 4 058 confirmed exoplanets in

144

00:06:21,110 --> 00:06:18,199

3033 systems with

145

00:06:23,990 --> 00:06:21,120

658 of those systems having more than

146

00:06:25,350 --> 00:06:24,000

one planet there's another 4 000

147

00:06:27,110 --> 00:06:25,360

exoplanets

148

00:06:29,430 --> 00:06:27,120

that have been confirmed that are

149

00:06:31,350 --> 00:06:29,440

waiting to be cataloged and we are

150

00:06:33,830 --> 00:06:31,360

virtually

151

00:06:36,309 --> 00:06:33,840

like per

152

00:06:38,390 --> 00:06:36,319

discovering another exoplanet every

153

00:06:40,070 --> 00:06:38,400

single day if you're an astronomer today

154

00:06:42,070 --> 00:06:40,080

if you're a cosmologist today and you

155

00:06:43,430 --> 00:06:42,080

wake up in the morning and and you want

156

00:06:45,510 --> 00:06:43,440

something to do

157

00:06:47,830 --> 00:06:45,520

you can literally say

158

00:06:50,390 --> 00:06:47,840

to yourself and to your friends hey

159

00:06:52,150 --> 00:06:50,400

let's go find a planet today and you

160

00:06:53,990 --> 00:06:52,160

probably will

161

00:06:56,550 --> 00:06:54,000

that's where it's at

162

00:06:57,830 --> 00:06:56,560

the numbers are now extraordinary and we

163

00:06:59,430 --> 00:06:57,840

find that

164

00:07:01,270 --> 00:06:59,440

every star

165

00:07:03,430 --> 00:07:01,280

that we see

166

00:07:06,629 --> 00:07:03,440

every star that when you go out at night

167

00:07:07,990 --> 00:07:06,639

and look up into the sky every star

168

00:07:12,469 --> 00:07:08,000

has a planet

169

00:07:14,390 --> 00:07:12,479

our milky way has 400 billion stars

170

00:07:17,909 --> 00:07:14,400

latest count

171

00:07:20,710 --> 00:07:17,919

400 billion planets

172

00:07:23,189 --> 00:07:20,720

now think about that for a second

173

00:07:24,550 --> 00:07:23,199

the question of intelligent life being

174

00:07:27,510 --> 00:07:24,560

out there when

175

00:07:31,029 --> 00:07:27,520

we thought that earth was rare and

176

00:07:33,029 --> 00:07:31,039

finding the first exoplanet in 1992

177

00:07:35,670 --> 00:07:33,039

was a huge event

178

00:07:39,189 --> 00:07:35,680

it wasn't until 1995 that the second

179

00:07:41,029 --> 00:07:39,199

exoplanet or the first official catalog

180

00:07:43,270 --> 00:07:41,039

exoplanet happened

181

00:07:46,309 --> 00:07:43,280

over the next couple of years five

182

00:07:49,990 --> 00:07:46,319

exoplanets five years ten exoplanets

183

00:07:54,390 --> 00:07:50,000

okay uh up until the year 2000 right to

184

00:07:57,189 --> 00:07:54,400

today 19 years later were were up uh

185

00:07:58,710 --> 00:07:57,199

just north of 8 000

186

00:08:00,309 --> 00:07:58,720

exoplanets

187

00:08:03,990 --> 00:08:00,319

so think about that

188

00:08:06,390 --> 00:08:04,000

in our own milky way out of those 400

189

00:08:08,469 --> 00:08:06,400

billion planets

190

00:08:11,029 --> 00:08:08,479

latest guesstimates are

191

00:08:12,710 --> 00:08:11,039

that there are between 10

192

00:08:16,390 --> 00:08:12,720

and 50

193

00:08:17,350 --> 00:08:16,400

billion rocky planets like earth with

194

00:08:19,990 --> 00:08:17,360

water

195

00:08:23,189 --> 00:08:20,000

sitting in the goldilocks zone next to a

196

00:08:26,150 --> 00:08:23,199

star where there is liquid water

197

00:08:27,990 --> 00:08:26,160

perfect for life

198

00:08:29,110 --> 00:08:28,000

one lifetime ago

199

00:08:31,430 --> 00:08:29,120

nothing

200

00:08:34,709 --> 00:08:31,440

today we're dealing with that now

201  
00:08:36,389 --> 00:08:34,719  
everything changed for the second time

202  
00:08:39,110 --> 00:08:36,399  
when the hubble space telescope was

203  
00:08:42,149 --> 00:08:39,120  
launched into low earth orbit in 1990

204  
00:08:45,350 --> 00:08:42,159  
just 60 years after his discovery of

205  
00:08:48,949 --> 00:08:45,360  
galaxies outside of our own milky way

206  
00:08:52,550 --> 00:08:48,959  
here is the first image that hubble took

207  
00:08:55,910 --> 00:08:52,560  
it astounded everybody it's not what we

208  
00:08:58,310 --> 00:08:55,920  
expected but as you look at this image

209  
00:09:00,070 --> 00:08:58,320  
everything you see here

210  
00:09:02,310 --> 00:09:00,080  
is a galaxy

211  
00:09:05,590 --> 00:09:02,320  
we didn't understand that

212  
00:09:09,430 --> 00:09:05,600  
every speck of light here is a galaxy

213  
00:09:12,630 --> 00:09:09,440

this next image is an enlargement of

214

00:09:15,750 --> 00:09:12,640

hubble's first image and as you can see

215

00:09:17,670 --> 00:09:15,760

everything there is a galaxy

216

00:09:20,070 --> 00:09:17,680

after that the hubble telescope started

217

00:09:22,790 --> 00:09:20,080

presenting us with deep field images the

218

00:09:25,910 --> 00:09:22,800

first deep field image here and then

219

00:09:27,630 --> 00:09:25,920

look at the enlargement from the same

220

00:09:31,910 --> 00:09:27,640

image

221

00:09:33,829 --> 00:09:31,920

everything is a galaxy now going back to

222

00:09:38,630 --> 00:09:33,839

the numbers

223

00:09:42,070 --> 00:09:38,640

of our milky way with 400 billion stars

224

00:09:44,150 --> 00:09:42,080

and 400 billion planets and then you

225

00:09:47,030 --> 00:09:44,160

take a look at this image which is a

226  
00:09:49,030 --> 00:09:47,040  
shot of our universe

227  
00:09:51,110 --> 00:09:49,040  
take a good look

228  
00:09:53,829 --> 00:09:51,120  
everything there

229  
00:09:55,910 --> 00:09:53,839  
is a galaxy

230  
00:09:58,550 --> 00:09:55,920  
everything that you are looking at every

231  
00:09:59,509 --> 00:09:58,560  
tiny speck of light

232  
00:10:03,190 --> 00:09:59,519  
is

233  
00:10:04,470 --> 00:10:03,200  
a galaxy with 250 billion stars with 500

234  
00:10:06,389 --> 00:10:04,480  
billion stars

235  
00:10:09,110 --> 00:10:06,399  
there are galaxies out there with a

236  
00:10:10,150 --> 00:10:09,120  
trillion stars and each one of those

237  
00:10:12,150 --> 00:10:10,160  
stars

238  
00:10:15,150 --> 00:10:12,160

has a planet

239

00:10:17,829 --> 00:10:15,160

the numbers now today are so

240

00:10:20,470 --> 00:10:17,839

extraordinarily huge that we almost

241

00:10:23,350 --> 00:10:20,480

can't wrap our mind around it

242

00:10:24,470 --> 00:10:23,360

and as uh the images started coming in

243

00:10:26,790 --> 00:10:24,480

from hubble

244

00:10:28,949 --> 00:10:26,800

and the deep field images were being

245

00:10:32,310 --> 00:10:28,959

analyzed we were able to go look at

246

00:10:33,509 --> 00:10:32,320

these other gaseous nebulae out there

247

00:10:35,509 --> 00:10:33,519

like this

248

00:10:38,550 --> 00:10:35,519

this is just a shot

249

00:10:41,509 --> 00:10:38,560

of the hubble universe blown up here is

250

00:10:43,269 --> 00:10:41,519

another one here's another one and here

251  
00:10:45,110 --> 00:10:43,279  
is another

252  
00:10:47,750 --> 00:10:45,120  
when we look at the universe today

253  
00:10:49,990 --> 00:10:47,760  
especially these two images here

254  
00:10:51,990 --> 00:10:50,000  
this first image is a redshift image

255  
00:10:54,870 --> 00:10:52,000  
showing the expansion rate of the

256  
00:10:58,310 --> 00:10:54,880  
universe and the second image is the

257  
00:11:00,949 --> 00:10:58,320  
latest 3d model of our known universe

258  
00:11:03,190 --> 00:11:00,959  
but it's only going out a few hundred

259  
00:11:05,190 --> 00:11:03,200  
million light years it's not covering

260  
00:11:07,269 --> 00:11:05,200  
the edges of the universe because we

261  
00:11:09,829 --> 00:11:07,279  
can't see it the expansion is happening

262  
00:11:13,030 --> 00:11:09,839  
at such a great speed approaching the

263  
00:11:15,670 --> 00:11:13,040

speed of light and beyond that galaxies

264

00:11:17,910 --> 00:11:15,680

now are unseen

265

00:11:22,470 --> 00:11:17,920

and just imagine if you're on the other

266

00:11:25,269 --> 00:11:22,480

side of the the horizon of the universe

267

00:11:27,269 --> 00:11:25,279

you wouldn't see these galaxies coming

268

00:11:29,509 --> 00:11:27,279

at you because they're traveling now at

269

00:11:32,069 --> 00:11:29,519

the speed of light or faster faster than

270

00:11:35,750 --> 00:11:32,079

light travel it's pretty incredible but

271

00:11:39,030 --> 00:11:35,760

that takes us back to our milky way and

272

00:11:43,350 --> 00:11:39,040

where we are today if we are dealing

273

00:11:46,310 --> 00:11:43,360

with 10 to 50 billion rocky planets with

274

00:11:48,470 --> 00:11:46,320

water on them in the goldilocks zone

275

00:11:51,269 --> 00:11:48,480

what that only could suggest is the

276

00:11:52,630 --> 00:11:51,279

amount of life that is just inside of

277

00:11:54,470 --> 00:11:52,640

our milky way

278

00:11:57,030 --> 00:11:54,480

intelligent life

279

00:11:59,110 --> 00:11:57,040

that may be way beyond our own

280

00:12:01,030 --> 00:11:59,120

comprehension

281

00:12:04,069 --> 00:12:01,040

is everywhere

282

00:12:05,829 --> 00:12:04,079

and there isn't a scientist on this

283

00:12:07,990 --> 00:12:05,839

planet there isn't a physicist or a

284

00:12:11,110 --> 00:12:08,000

cosmologist or an astronomer

285

00:12:14,069 --> 00:12:11,120

on this planet today that doesn't think

286

00:12:17,590 --> 00:12:14,079

that intelligent life isn't out there

287

00:12:19,590 --> 00:12:17,600

they know now that it must be everywhere

288

00:12:21,670 --> 00:12:19,600

earth is only four and a half billion

289

00:12:23,350 --> 00:12:21,680

years old our son

290

00:12:24,470 --> 00:12:23,360

and we know

291

00:12:26,629 --> 00:12:24,480

that

292

00:12:29,670 --> 00:12:26,639

it took four and a half billion years

293

00:12:32,470 --> 00:12:29,680

from the creation of our planet for us

294

00:12:35,030 --> 00:12:32,480

to be here today where we are

295

00:12:37,030 --> 00:12:35,040

most of our progress has happened in the

296

00:12:39,190 --> 00:12:37,040

last hundred years

297

00:12:42,069 --> 00:12:39,200

in 1900

298

00:12:44,389 --> 00:12:42,079

we had gas lamps in the streets we were

299

00:12:46,629 --> 00:12:44,399

barely getting electricity

300

00:12:50,150 --> 00:12:46,639

into our cities

301  
00:12:52,310 --> 00:12:50,160  
telephones and and technology and cars

302  
00:12:55,269 --> 00:12:52,320  
hadn't happened yet all of that has

303  
00:12:57,590 --> 00:12:55,279  
happened within the last lifetime

304  
00:12:58,629 --> 00:12:57,600  
you need to think about that

305  
00:13:01,030 --> 00:12:58,639  
so

306  
00:13:03,030 --> 00:13:01,040  
with intelligent life out there if it

307  
00:13:04,710 --> 00:13:03,040  
got a jump on us

308  
00:13:08,550 --> 00:13:04,720  
by a hundred years

309  
00:13:11,670 --> 00:13:08,560  
by 10 000 years by a million years where

310  
00:13:13,350 --> 00:13:11,680  
are they now today well let's take a

311  
00:13:14,550 --> 00:13:13,360  
look at that

312  
00:13:21,829 --> 00:13:14,560  
here

313  
00:13:24,470 --> 00:13:21,839

up uh satellites and and probes uh to go

314

00:13:28,470 --> 00:13:24,480

to distant planets in the moon

315

00:13:31,990 --> 00:13:28,480

to check out mars in venus the sun

316

00:13:34,389 --> 00:13:32,000

voyager uh voyager one and two which are

317

00:13:37,190 --> 00:13:34,399

our first interstellar

318

00:13:39,190 --> 00:13:37,200

craft to leave our solar system well

319

00:13:40,870 --> 00:13:39,200

this just happened

320

00:13:43,829 --> 00:13:40,880

this is new

321

00:13:47,190 --> 00:13:43,839

but it's our way of figuring out what's

322

00:13:50,230 --> 00:13:47,200

going on in our solar system right

323

00:13:52,230 --> 00:13:50,240

well intelligent life out there

324

00:13:53,590 --> 00:13:52,240

has already done that

325

00:13:56,230 --> 00:13:53,600

a lot

326

00:13:59,189 --> 00:13:56,240

and it's not just one intelligent

327

00:14:02,310 --> 00:13:59,199

species out there from one planet

328

00:14:03,990 --> 00:14:02,320

there are billions of planets out there

329

00:14:06,629 --> 00:14:04,000

there must be

330

00:14:09,189 --> 00:14:06,639

tens of thousands if not millions of

331

00:14:09,990 --> 00:14:09,199

civilizations right here in our milky

332

00:14:13,509 --> 00:14:10,000

way

333

00:14:14,829 --> 00:14:13,519

out there discovering planets just like

334

00:14:17,990 --> 00:14:14,839

we are

335

00:14:20,310 --> 00:14:18,000

today think about that

336

00:14:22,949 --> 00:14:20,320

our discovery of exoplanets is one of

337

00:14:25,189 --> 00:14:22,959

the most exciting things that anybody

338

00:14:26,949 --> 00:14:25,199

can do today in the field of astronomy

339

00:14:30,310 --> 00:14:26,959

and cosmology and if you're an

340

00:14:32,790 --> 00:14:30,320

astrophysicist it's this study today

341

00:14:35,110 --> 00:14:32,800

that is propelling and moving everything

342

00:14:38,389 --> 00:14:35,120

forward at such a fast rate

343

00:14:39,670 --> 00:14:38,399

now the other aspects to this

344

00:14:41,189 --> 00:14:39,680

is that

345

00:14:43,189 --> 00:14:41,199

if we

346

00:14:47,110 --> 00:14:43,199

are sending out probes and building

347

00:14:48,230 --> 00:14:47,120

satellites and spacex and and and blue

348

00:14:50,310 --> 00:14:48,240

origin

349

00:14:52,550 --> 00:14:50,320

today nasa

350

00:14:53,670 --> 00:14:52,560

if that's what we are doing et is doing

351  
00:14:54,710 --> 00:14:53,680  
it too

352  
00:14:56,310 --> 00:14:54,720  
and

353  
00:14:57,509 --> 00:14:56,320  
there are

354  
00:15:00,470 --> 00:14:57,519  
hundreds

355  
00:15:02,470 --> 00:15:00,480  
of sightings every single day on this

356  
00:15:03,829 --> 00:15:02,480  
planet of things that we can't explain

357  
00:15:06,069 --> 00:15:03,839  
out there in the sky you go out there

358  
00:15:08,230 --> 00:15:06,079  
with night vision goggles look up you're

359  
00:15:10,710 --> 00:15:08,240  
gonna see something strange it's nearly

360  
00:15:11,590 --> 00:15:10,720  
a guarantee it's a given

361  
00:15:15,110 --> 00:15:11,600  
so

362  
00:15:16,389 --> 00:15:15,120  
what could all of these crafts be

363  
00:15:19,110 --> 00:15:16,399

well

364

00:15:21,670 --> 00:15:19,120

this beautiful blue planet of ours is

365

00:15:24,389 --> 00:15:21,680

something worth checking out

366

00:15:27,430 --> 00:15:24,399

right of course it is

367

00:15:29,910 --> 00:15:27,440

but the other part now

368

00:15:31,350 --> 00:15:29,920

is that we always thought that earth was

369

00:15:32,790 --> 00:15:31,360

unique

370

00:15:33,990 --> 00:15:32,800

as it turns out

371

00:15:37,829 --> 00:15:34,000

it's not

372

00:15:41,189 --> 00:15:37,839

and if we have 10 to 50 billion

373

00:15:44,069 --> 00:15:41,199

earth-like rocky planets in our milky

374

00:15:46,790 --> 00:15:44,079

way how many of those

375

00:15:50,470 --> 00:15:46,800

are more fun more cool

376

00:15:51,990 --> 00:15:50,480

more spectacular than planet earth

377

00:15:54,470 --> 00:15:52,000

think about that

378

00:15:56,710 --> 00:15:54,480

maybe those are worth hanging out at

379

00:15:59,030 --> 00:15:56,720

before earth

380

00:16:01,990 --> 00:15:59,040

we don't really have a way to

381

00:16:04,069 --> 00:16:02,000

uh get into interstellar travel to go

382

00:16:06,150 --> 00:16:04,079

out there and visit the cosmos we don't

383

00:16:07,110 --> 00:16:06,160

have that ability today

384

00:16:08,470 --> 00:16:07,120

so

385

00:16:11,430 --> 00:16:08,480

with e.t

386

00:16:13,749 --> 00:16:11,440

there's probably more interest

387

00:16:17,110 --> 00:16:13,759

in those other planets out there that

388

00:16:18,870 --> 00:16:17,120

can trade that can communicate

389

00:16:21,590 --> 00:16:18,880

that can do all of those things that we

390

00:16:24,470 --> 00:16:21,600

can't do here yet

391

00:16:26,710 --> 00:16:24,480

but they're here checking us out just

392

00:16:28,790 --> 00:16:26,720

like we are out there discovering

393

00:16:31,829 --> 00:16:28,800

exoplanets

394

00:16:35,189 --> 00:16:31,839

the amount of uh stars

395

00:16:36,949 --> 00:16:35,199

just in our milky way putting planets

396

00:16:39,749 --> 00:16:36,959

aside

397

00:16:41,990 --> 00:16:39,759

the number is so huge that we don't have

398

00:16:43,350 --> 00:16:42,000

the space and the manpower to catalog

399

00:16:45,269 --> 00:16:43,360

everything

400

00:16:49,189 --> 00:16:45,279

and then we're going to start naming

401  
00:16:51,509 --> 00:16:49,199  
exoplanets we're only at 4 000 remaining

402  
00:16:52,710 --> 00:16:51,519  
to be catalogued today that's a small

403  
00:16:56,069 --> 00:16:52,720  
number

404  
00:16:57,990 --> 00:16:56,079  
imagine trying to catalog 50 billion

405  
00:17:00,310 --> 00:16:58,000  
in our milky way and then getting

406  
00:17:01,590 --> 00:17:00,320  
outside of our milky way and starting to

407  
00:17:04,390 --> 00:17:01,600  
catalog

408  
00:17:06,949 --> 00:17:04,400  
galaxies forget about the planets and

409  
00:17:10,870 --> 00:17:06,959  
the stars inside of those galaxies

410  
00:17:14,150 --> 00:17:10,880  
you've got 400 500 billion galaxies to

411  
00:17:15,990 --> 00:17:14,160  
catalog the number is so huge i'll give

412  
00:17:17,510 --> 00:17:16,000  
you this example

413  
00:17:19,110 --> 00:17:17,520

you could take

414

00:17:22,230 --> 00:17:19,120

this guitar pick

415

00:17:26,549 --> 00:17:22,240

and

416

00:17:28,230 --> 00:17:26,559

go out in your backyard tonight tonight

417

00:17:30,470 --> 00:17:28,240

take a guitar pick

418

00:17:32,390 --> 00:17:30,480

hold it out at arm's length just like

419

00:17:34,390 --> 00:17:32,400

this any black

420

00:17:36,870 --> 00:17:34,400

spot in the sky in between a couple of

421

00:17:37,909 --> 00:17:36,880

stars put the guitar pick up there just

422

00:17:40,510 --> 00:17:37,919

like that

423

00:17:42,230 --> 00:17:40,520

it is now covering

424

00:17:46,230 --> 00:17:42,240

150

425

00:17:48,230 --> 00:17:46,240

000 galaxies and you can do that

426  
00:17:50,950 --> 00:17:48,240  
anywhere

427  
00:17:53,430 --> 00:17:50,960  
that's how many galaxies are out there

428  
00:17:55,350 --> 00:17:53,440  
when you see

429  
00:17:58,950 --> 00:17:55,360  
something like star trek

430  
00:18:01,110 --> 00:17:58,960  
orville i love orville the new show

431  
00:18:03,350 --> 00:18:01,120  
and they're out

432  
00:18:04,470 --> 00:18:03,360  
and they pull up to a planet

433  
00:18:07,270 --> 00:18:04,480  
and they go

434  
00:18:09,909 --> 00:18:07,280  
what is that well it's an uncataloged

435  
00:18:12,390 --> 00:18:09,919  
planet it's undiscovered

436  
00:18:14,230 --> 00:18:12,400  
and i know a lot of you probably think

437  
00:18:17,029 --> 00:18:14,240  
wow that's strange how would they not

438  
00:18:19,990 --> 00:18:17,039

know of course they wouldn't know

439

00:18:21,990 --> 00:18:20,000

everything is undiscovered

440

00:18:23,029 --> 00:18:22,000

we're going to be discovering and naming

441

00:18:26,390 --> 00:18:23,039

everything

442

00:18:29,270 --> 00:18:26,400

for the rest of all time

443

00:18:31,990 --> 00:18:29,280

that's how big these numbers are

444

00:18:34,710 --> 00:18:32,000

so when we look at our planet and are we

445

00:18:37,029 --> 00:18:34,720

being visited well we've got to look at

446

00:18:39,669 --> 00:18:37,039

things two ways now

447

00:18:42,070 --> 00:18:39,679

i think that the question about us being

448

00:18:44,310 --> 00:18:42,080

alone in the universe has firmly been

449

00:18:46,789 --> 00:18:44,320

answered we now know about how many

450

00:18:49,190 --> 00:18:46,799

planets are in our milky way and

451  
00:18:51,270 --> 00:18:49,200  
discovering exoplanets every single day

452  
00:18:53,669 --> 00:18:51,280  
here's an image of the first

453  
00:18:56,470 --> 00:18:53,679  
photographed exoplanet here's another

454  
00:18:57,990 --> 00:18:56,480  
one called beta pictoris that was taken

455  
00:18:59,669 --> 00:18:58,000  
a few years later

456  
00:19:00,549 --> 00:18:59,679  
this is what we are doing every single

457  
00:19:02,230 --> 00:19:00,559  
day

458  
00:19:05,110 --> 00:19:02,240  
now

459  
00:19:06,310 --> 00:19:05,120  
we have two ways to look at our planet

460  
00:19:08,230 --> 00:19:06,320  
now

461  
00:19:11,750 --> 00:19:08,240  
two ways

462  
00:19:13,110 --> 00:19:11,760  
the first one

463  
00:19:15,029 --> 00:19:13,120

is if

464

00:19:17,669 --> 00:19:15,039

there is life out there

465

00:19:20,150 --> 00:19:17,679

there is a reason to keep this place

466

00:19:21,190 --> 00:19:20,160

beautiful there's a reason

467

00:19:25,669 --> 00:19:21,200

to

468

00:19:28,870 --> 00:19:25,679

make sure that this planet is beautiful

469

00:19:30,710 --> 00:19:28,880

for our children and our grandchildren

470

00:19:33,510 --> 00:19:30,720

and the generations to come there's a

471

00:19:36,710 --> 00:19:33,520

reason to live for there's a moment

472

00:19:39,669 --> 00:19:36,720

where we are going to have real contact

473

00:19:42,390 --> 00:19:39,679

real communication and maybe even

474

00:19:44,549 --> 00:19:42,400

interstellar trade with our neighbors

475

00:19:46,950 --> 00:19:44,559

here i mean i don't know about you but i

476

00:19:48,630 --> 00:19:46,960

want a t-shirt from zeta reticuli you

477

00:19:50,870 --> 00:19:48,640

know i would really like to get some

478

00:19:55,350 --> 00:19:50,880

boots from orion that would be really

479

00:19:58,230 --> 00:19:55,360

cool a gemstones and and spices and and

480

00:20:00,950 --> 00:19:58,240

food and just things

481

00:20:02,710 --> 00:20:00,960

that's something to live for right

482

00:20:04,710 --> 00:20:02,720

the second

483

00:20:08,549 --> 00:20:04,720

view to have

484

00:20:11,990 --> 00:20:08,559

would be if we are truly alone

485

00:20:15,350 --> 00:20:12,000

if we are so unique in the universe if

486

00:20:17,350 --> 00:20:15,360

life is so rare that the only life is

487

00:20:18,789 --> 00:20:17,360

right here on earth

488

00:20:21,750 --> 00:20:18,799

then there's nothing to live for is

489

00:20:24,150 --> 00:20:21,760

there let's just party let's just burn

490

00:20:26,230 --> 00:20:24,160

this sucker down we're all alone

491

00:20:27,909 --> 00:20:26,240

there's nothing to do

492

00:20:29,510 --> 00:20:27,919

right let's just burn up all of our

493

00:20:31,669 --> 00:20:29,520

resources and

494

00:20:34,070 --> 00:20:31,679

and shut this thing down and maybe

495

00:20:36,470 --> 00:20:34,080

another life form will be created in

496

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

another million years and they can cycle

497

00:20:39,669 --> 00:20:38,400

through the same thing again

498

00:20:41,750 --> 00:20:39,679

or

499

00:20:44,310 --> 00:20:41,760

we can make this place beautiful

500

00:20:47,110 --> 00:20:44,320

beautiful for the generations to come

501  
00:20:49,990 --> 00:20:47,120  
for the moment when we have that real

502  
00:20:53,190 --> 00:20:50,000  
conversation with our friends here in

503  
00:20:56,149 --> 00:20:53,200  
the milky way those are the numbers

504  
00:20:58,149 --> 00:20:56,159  
exoplanets our universe

505  
00:21:00,630 --> 00:20:58,159  
our milky way

506  
00:21:03,990 --> 00:21:00,640  
our solar system i am the host of fade

507  
00:21:06,549 --> 00:21:04,000  
to black jimmy church and our show fade

508  
00:21:09,909 --> 00:21:06,559  
to black broadcast monday through

509  
00:21:11,909 --> 00:21:09,919  
thursday live from 7 to 10 p.m

510  
00:21:14,549 --> 00:21:11,919  
pacific time

511  
00:21:18,950 --> 00:21:14,559  
everything is easy to get to all of the

512  
00:21:23,590 --> 00:21:20,870  
or jimmychurchradio.com you could

513  
00:21:25,110 --> 00:21:23,600

subscribe to our podcast which is just

514

00:21:27,990 --> 00:21:25,120

two dollars a month the link is right

515

00:21:30,310 --> 00:21:28,000

below you can join our membership area

516

00:21:32,470 --> 00:21:30,320

become an official fate or not we have

517

00:21:34,149 --> 00:21:32,480

all kinds of cool stuff there and you

518

00:21:36,549 --> 00:21:34,159

can get autographed shirts and hats and

519

00:21:39,350 --> 00:21:36,559

things like that too there's all of that

520

00:21:41,350 --> 00:21:39,360

but we don't hide behind a paywall

521

00:21:43,110 --> 00:21:41,360

everything that you want from fate to

522

00:21:45,750 --> 00:21:43,120

black is right there you can listen to

523

00:21:48,950 --> 00:21:45,760

the show live each night for free on a

524

00:21:51,270 --> 00:21:48,960

multitude of our syndicated platforms uh

525

00:21:53,270 --> 00:21:51,280

all of our guests and the bios for those

526

00:21:54,870 --> 00:21:53,280

guests and the links to their websites

527

00:21:57,029 --> 00:21:54,880

and comments and anything that you would

528

00:21:59,990 --> 00:21:57,039

like to do on fade to black it's all

529

00:22:01,909 --> 00:22:00,000

right there at jimmychurchradio.com

530

00:22:04,230 --> 00:22:01,919

there you go i only have one thing left

531

00:22:06,370 --> 00:22:04,240

to say

532

00:22:17,029 --> 00:22:06,380

go backly tappy

533

00:22:18,970 --> 00:22:17,039

[Music]