



DEN OF LORE



1
00:00:07,010 --> 00:00:04,190
all right we are live ladies and

2
00:00:08,150 --> 00:00:07,020
gentlemen welcome back to the den of

3
00:00:12,430 --> 00:00:08,160
lore

4
00:00:16,550 --> 00:00:12,440
it's been a uh Whirlwind couple of weeks

5
00:00:19,070 --> 00:00:16,560
anything from being sick because the

6
00:00:21,650 --> 00:00:19,080
kids bring something home or just

7
00:00:25,689 --> 00:00:21,660
general

8
00:00:28,029 --> 00:00:25,699
renovation pre-sale post sale birthday

9
00:00:31,310 --> 00:00:28,039
hilarity so

10
00:00:33,590 --> 00:00:31,320
uh Chuck thank you very much for joining

11
00:00:35,030 --> 00:00:33,600
us and joining me this afternoon it has

12
00:00:37,389 --> 00:00:35,040
been a while since I've had a chance to

13
00:00:42,110 --> 00:00:37,399

talk to you for anybody who isn't aware

14

00:00:44,690 --> 00:00:42,120

uh Chuck wad I know Miss Chuck but uh

15

00:00:47,510 --> 00:00:44,700

everyone else can call him Charles P

16

00:00:50,450 --> 00:00:47,520

Odell who is a

17

00:00:53,930 --> 00:00:50,460

he's a retired Canadian Aviator uh as

18

00:00:56,270 --> 00:00:53,940

well as Navy service servicemen an avid

19

00:00:58,970 --> 00:00:56,280

impact crater researcher who is based in

20

00:01:00,709 --> 00:00:58,980

my hometown uh Ottawa Canada as you can

21

00:01:02,330 --> 00:01:00,719

also probably see from our past videos

22

00:01:04,729 --> 00:01:02,340

he's one of the few guests I have

23

00:01:07,429 --> 00:01:04,739

actually had in studio

24

00:01:10,270 --> 00:01:07,439

um where we've enjoyed enjoy the good

25

00:01:14,990 --> 00:01:12,950

very good

26

00:01:17,870 --> 00:01:15,000

uh he's also a member of the Royal

27

00:01:20,690 --> 00:01:17,880

Astronomical Society of Canada and the

28

00:01:23,710 --> 00:01:20,700

Ottawa center for rasc through his

29

00:01:25,910 --> 00:01:23,720

website creatorexplorer.ca Mr O'Dell

30

00:01:27,830 --> 00:01:25,920

shares his passion for Earth's

31

00:01:29,990 --> 00:01:27,840

geological history providing in-depth

32

00:01:34,310 --> 00:01:30,000

documentation and stunning photography

33

00:01:37,370 --> 00:01:34,320

of impact craters in Canada and Beyond

34

00:01:41,450 --> 00:01:37,380

well let me be the first person to raise

35

00:01:43,210 --> 00:01:41,460

a toast to you and welcome you back in

36

00:01:45,289 --> 00:01:43,220

for

37

00:01:48,050 --> 00:01:45,299

some of

38

00:01:50,350 --> 00:01:48,060

the people that we've had at home

39

00:01:52,850 --> 00:01:50,360

and

40

00:01:54,950 --> 00:01:52,860

you were the first person besides

41

00:01:57,649 --> 00:01:54,960

Randall Carlson who really knew about

42

00:02:00,469 --> 00:01:57,659

the younger dryas impact hypothesis and

43

00:02:02,510 --> 00:02:00,479

and your own researches uh either

44

00:02:04,670 --> 00:02:02,520

on-site or

45

00:02:06,789 --> 00:02:04,680

you know via any of the researchers that

46

00:02:09,589 --> 00:02:06,799

that were out there

47

00:02:11,750 --> 00:02:09,599

but a lot of people that are you know

48

00:02:13,550 --> 00:02:11,760

finding our Channel Down may not know a

49

00:02:15,190 --> 00:02:13,560

lot of your backgrounds so you know

50

00:02:16,490 --> 00:02:15,200

Chuck how did you get into

51
00:02:18,830 --> 00:02:16,500
[Music]

52
00:02:21,770 --> 00:02:18,840
researching creators and and stumbling

53
00:02:24,710 --> 00:02:21,780
into the younger dryas hypothesis

54
00:02:25,930 --> 00:02:24,720
yeah that okay a long story uh you got

55
00:02:31,490 --> 00:02:25,940
three or four hours

56
00:02:33,650 --> 00:02:31,500
okay if um some of the guys my age uh

57
00:02:35,690 --> 00:02:33,660
before your time there was in the black

58
00:02:37,309 --> 00:02:35,700
and white TV there was a program called

59
00:02:39,949 --> 00:02:37,319
front page challenge

60
00:02:42,170 --> 00:02:39,959
long long time ago and on there uh Dr

61
00:02:46,309 --> 00:02:42,180
Amin from the Royal Ontario Museum was

62
00:02:50,930 --> 00:02:46,319
on and he had just finished a um a

63
00:02:53,210 --> 00:02:50,940

project exploration uh exploration trip

64

00:02:55,369 --> 00:02:53,220

up to the Chubb crater it was called

65

00:02:58,070 --> 00:02:55,379

Chubb at the time up in Northern Quebec

66

00:03:01,550 --> 00:02:58,080

there was absolutely no access to it

67

00:03:03,470 --> 00:03:01,560

before so they had to rent a pby and all

68

00:03:05,270 --> 00:03:03,480

kinds of stuff now the but the reason it

69

00:03:07,190 --> 00:03:05,280

was named Chubb is because a geologist

70

00:03:09,290 --> 00:03:07,200

named Chubb thought it was a kimberlite

71

00:03:11,809 --> 00:03:09,300

and it was looking for diamonds and mean

72

00:03:13,990 --> 00:03:11,819

went up to just look at the geology and

73

00:03:17,630 --> 00:03:14,000

said this damn thing is an impact crater

74

00:03:19,790 --> 00:03:17,640

and uh so so here I am I'm 10 or 11

75

00:03:22,190 --> 00:03:19,800

years old I say Dad can we go drive and

76

00:03:24,770 --> 00:03:22,200

see what that crater is all about you

77

00:03:26,509 --> 00:03:24,780

know that that sort of started and from

78

00:03:28,430 --> 00:03:26,519

there I got a telescope looked at the

79

00:03:30,710 --> 00:03:28,440

moon and looked at all those craters and

80

00:03:31,970 --> 00:03:30,720

said man will I ever be able to explore

81

00:03:35,869 --> 00:03:31,980

those things

82

00:03:37,550 --> 00:03:35,879

well if fast forward now 25 years a

83

00:03:41,030 --> 00:03:37,560

career in the Navy career in high tech

84

00:03:42,649 --> 00:03:41,040

blah blah blah and finally I was in a

85

00:03:45,170 --> 00:03:42,659

position I owned an airplane at the time

86

00:03:46,910 --> 00:03:45,180

I thought what the heck let's go explore

87

00:03:49,009 --> 00:03:46,920

some craters where could I look for a

88

00:03:51,289 --> 00:03:49,019

creators well being in the RAC of course

89

00:03:52,369 --> 00:03:51,299

he documented every impact crater in

90

00:03:56,210 --> 00:03:52,379

Canada

91

00:03:58,789 --> 00:03:56,220

so that's what I did I started uh flying

92

00:04:00,530 --> 00:03:58,799

over them and during the time I was

93

00:04:02,570 --> 00:04:00,540

researching it and putting it on my

94

00:04:06,530 --> 00:04:02,580

website through the rasc Royal

95

00:04:09,830 --> 00:04:06,540

Astronomical uh Society of Canada

96

00:04:11,750 --> 00:04:09,840

um a close friend of mine actually was a

97

00:04:14,449 --> 00:04:11,760

stranger at the time contacted me and

98

00:04:17,030 --> 00:04:14,459

said I'm interested in in exploring as

99

00:04:18,469 --> 00:04:17,040

well these craters and I said oh well

100

00:04:20,629 --> 00:04:18,479

that's cool where do you live well he

101
00:04:22,490 --> 00:04:20,639
lived you know just in whole just across

102
00:04:24,950 --> 00:04:22,500
the river called Gatineau now

103
00:04:26,990 --> 00:04:24,960
and so Eric had a canoe I had an

104
00:04:29,870 --> 00:04:27,000
airplane so I could possibly go wrong

105
00:04:31,850 --> 00:04:29,880
with that let's go exploring through the

106
00:04:34,610 --> 00:04:31,860
two of us we went all over the place we

107
00:04:38,450 --> 00:04:34,620
were up in Northern Quebec uh all the

108
00:04:40,670 --> 00:04:38,460
way through Ontario with his canoe we

109
00:04:43,370 --> 00:04:40,680
our best adventure was the manaquagan

110
00:04:45,350 --> 00:04:43,380
crater if you all if you look at a map

111
00:04:48,170 --> 00:04:45,360
of Quebec and you see this big circular

112
00:04:52,010 --> 00:04:48,180
Lake that's a 214 million year old

113
00:04:54,469 --> 00:04:52,020

impact site and uh the circular Lake

114

00:04:56,590 --> 00:04:54,479

itself is only maybe less than

115

00:04:59,030 --> 00:04:56,600

two-thirds of full size of the crater

116

00:05:02,150 --> 00:04:59,040

there's a lot of physics that goes on to

117

00:05:04,430 --> 00:05:02,160

it But Eric and I actually canoed there

118

00:05:07,550 --> 00:05:04,440

and we almost didn't make it back

119

00:05:10,610 --> 00:05:07,560

okay you know you got a canoe a 30 knot

120

00:05:12,530 --> 00:05:10,620

wind with a 10 kilometer fetch kind of

121

00:05:15,950 --> 00:05:12,540

high waves and a canoe full of rocks

122

00:05:17,570 --> 00:05:15,960

what could possibly go wrong well I

123

00:05:19,670 --> 00:05:17,580

ended up we were marooned on an island

124

00:05:23,629 --> 00:05:19,680

for for over a day for almost a whole

125

00:05:25,969 --> 00:05:23,639

day uh we we as Eric was an expert canoe

126

00:05:28,310 --> 00:05:25,979

canoeist and we got on the beach I

127

00:05:29,930 --> 00:05:28,320

didn't even get my feet wet uh the way

128

00:05:31,909 --> 00:05:29,940

we got in when the surf was on the beach

129

00:05:33,830 --> 00:05:31,919

as well so but he was a white water

130

00:05:36,950 --> 00:05:33,840

canoeist he just surfed right up onto

131

00:05:39,110 --> 00:05:36,960

the beach I pulled you know stepped out

132

00:05:41,029 --> 00:05:39,120

and pulled the canoe up and we set the

133

00:05:43,310 --> 00:05:41,039

tent up and I went exploring and we

134

00:05:45,710 --> 00:05:43,320

spent uh almost the day there until the

135

00:05:47,210 --> 00:05:45,720

wind came down anyway that's that's one

136

00:05:48,770 --> 00:05:47,220

of the stories you can see it on my

137

00:05:51,710 --> 00:05:48,780

website but

138

00:05:54,230 --> 00:05:51,720

um throughout my life I've always wanted

139

00:05:57,350 --> 00:05:54,240

to explore impact craters

140

00:06:00,170 --> 00:05:57,360

and finally in retirement I was had the

141

00:06:02,390 --> 00:06:00,180

opportunity and uh my website has

142

00:06:04,610 --> 00:06:02,400

documented all the creators I've uh

143

00:06:07,850 --> 00:06:04,620

explored now I'm going to give you a

144

00:06:09,409 --> 00:06:07,860

piece of trivia here uh we're uh we're

145

00:06:11,510 --> 00:06:09,419

in Ottawa here

146

00:06:13,850 --> 00:06:11,520

and if you

147

00:06:15,950 --> 00:06:13,860

just uh pretend you have a car and

148

00:06:17,029 --> 00:06:15,960

you're going to go drive for one day at

149

00:06:19,670 --> 00:06:17,039

a straight line

150

00:06:22,370 --> 00:06:19,680

and stop that straight line is now a

151
00:06:24,590 --> 00:06:22,380
radius of a circle draw a circle of that

152
00:06:27,110 --> 00:06:24,600
radius with the center in Ottawa and

153
00:06:29,450 --> 00:06:27,120
within that Circle there are 10 impact

154
00:06:32,450 --> 00:06:29,460
craters you can explore

155
00:06:35,029 --> 00:06:32,460
so that in itself shows you how many

156
00:06:36,890 --> 00:06:35,039
impacts there are in our own country

157
00:06:39,170 --> 00:06:36,900
and here in Ottawa within a couple hours

158
00:06:41,930 --> 00:06:39,180
drive you can see two of them so

159
00:06:44,450 --> 00:06:41,940
yeah it's fascinating and and to look at

160
00:06:45,950 --> 00:06:44,460
these things and and see this hole in

161
00:06:47,689 --> 00:06:45,960
the ground that's you know five six

162
00:06:49,070 --> 00:06:47,699
kilometers in some cases hundreds of

163
00:06:51,710 --> 00:06:49,080

kilometers across

164

00:06:54,830 --> 00:06:51,720

you realize how much energy it took to

165

00:07:03,469 --> 00:06:54,840

within a microsecond dig this hole it's

166

00:07:03,479 --> 00:07:06,290

oh no

167

00:07:08,930 --> 00:07:08,029

you mean I was talking to myself all

168

00:07:10,969 --> 00:07:08,940

this time

169

00:07:12,590 --> 00:07:10,979

you know

170

00:07:14,150 --> 00:07:12,600

ah okay cool

171

00:07:16,189 --> 00:07:14,160

[Laughter]

172

00:07:20,950 --> 00:07:16,199

you gotta love community

173

00:07:25,909 --> 00:07:24,110

all your Studios disassembled is it oh

174

00:07:27,469 --> 00:07:25,919

yeah well it's it's currently in pieces

175

00:07:31,730 --> 00:07:27,479

that uh partially at my mother's house

176

00:07:33,890 --> 00:07:31,740

and partially at my at my uh my in-laws

177

00:07:36,890 --> 00:07:33,900

which is okay well if you want we can

178

00:07:38,270 --> 00:07:36,900

carry do this some other time no it'll

179

00:07:39,589 --> 00:07:38,280

be a couple of weeks until I can get the

180

00:07:41,210 --> 00:07:39,599

new studio up and running I think we're

181

00:07:44,450 --> 00:07:41,220

actually back on

182

00:07:45,950 --> 00:07:44,460

so we're good I'm just gonna ignore that

183

00:07:49,370 --> 00:07:45,960

window completely

184

00:07:51,710 --> 00:07:49,380

so like I know that that crater Montreal

185

00:07:53,390 --> 00:07:51,720

or not Montreal but in Quebec

186

00:07:56,029 --> 00:07:53,400

um being around 200 million years old

187

00:07:58,370 --> 00:07:56,039

you can see it basically from space so

188

00:08:00,110 --> 00:07:58,380

like yeah it's it's a giant Circle it

189

00:08:01,909 --> 00:08:00,120

looks like a lake that's around a huge

190

00:08:04,930 --> 00:08:01,919

island or that there's a huge island

191

00:08:08,330 --> 00:08:04,940

that's currently in a lake that's right

192

00:08:09,770 --> 00:08:08,340

and there there are a couple in Quebec

193

00:08:12,730 --> 00:08:09,780

like that there's more than a couple

194

00:08:17,749 --> 00:08:15,650

Quebec is is just basically Bedrock you

195

00:08:21,230 --> 00:08:17,759

know ancient billion year old Bedrock so

196

00:08:23,450 --> 00:08:21,240

this the Creator scars have stayed like

197

00:08:24,950 --> 00:08:23,460

if you on the Prairies there's just as

198

00:08:26,629 --> 00:08:24,960

many craters but they're all buried

199

00:08:28,730 --> 00:08:26,639

under all this uh regolith with the

200

00:08:31,610 --> 00:08:28,740

glaciers and so on whereas in Northern

201
00:08:33,230 --> 00:08:31,620
Quebec that's been scraped dry from from

202
00:08:37,010 --> 00:08:33,240
the glaciers and these craters are all

203
00:08:38,690 --> 00:08:37,020
visible so I I on one hand I could say

204
00:08:41,329 --> 00:08:38,700
there's more than five anyway probably

205
00:08:42,949 --> 00:08:41,339
closer to ten maybe in 15. well in even

206
00:08:44,750 --> 00:08:42,959
around Ottawa

207
00:08:47,870 --> 00:08:44,760
um yeah but you said there's like five

208
00:08:49,190 --> 00:08:47,880
or ten uh where like at least compared

209
00:08:51,230 --> 00:08:49,200
to where we live because you and I both

210
00:08:53,690 --> 00:08:51,240
live in the West End of the city where's

211
00:08:55,790 --> 00:08:53,700
the closest okay the closest one is

212
00:08:57,410 --> 00:08:55,800
about a hour and a half two hour drive

213
00:08:59,990 --> 00:08:57,420

just to the south of us here just before

214

00:09:02,210 --> 00:09:00,000

you get to Kingston called hollerford

215

00:09:04,910 --> 00:09:02,220

and uh if you get on my website the

216

00:09:07,009 --> 00:09:04,920

directions how to get there uh are black

217

00:09:07,730 --> 00:09:07,019

and white you can get there and you sort

218

00:09:11,930 --> 00:09:07,740

of

219

00:09:13,970 --> 00:09:11,940

and look at it and realize okay this

220

00:09:15,530 --> 00:09:13,980

isn't just a hill down and a hill up

221

00:09:18,290 --> 00:09:15,540

this is actually a hole in the ground

222

00:09:19,790 --> 00:09:18,300

caused by an impact and and you realize

223

00:09:22,430 --> 00:09:19,800

how big it is

224

00:09:24,769 --> 00:09:22,440

and that is kind of it is very very cool

225

00:09:28,370 --> 00:09:24,779

note it's very very old

226

00:09:31,370 --> 00:09:28,380

um it has been uh overlane by oceans uh

227

00:09:33,350 --> 00:09:31,380

Limestone and so on so the crater itself

228

00:09:35,570 --> 00:09:33,360

is very deep underneath all this

229

00:09:37,910 --> 00:09:35,580

regolith but the shape is still there

230

00:09:40,130 --> 00:09:37,920

and people have been driving down into

231

00:09:42,050 --> 00:09:40,140

it driving down on the other side and up

232

00:09:44,210 --> 00:09:42,060

the other side not realizing they're

233

00:09:47,090 --> 00:09:44,220

going into and out of a crater for you

234

00:09:50,090 --> 00:09:47,100

know all these years that is I believe

235

00:09:50,990 --> 00:09:50,100

near one of the uh light pollution free

236

00:09:55,250 --> 00:09:51,000

zones

237

00:09:56,990 --> 00:09:55,260

uh yeah in Ontario yeah yeah it's pretty

238

00:09:58,850 --> 00:09:57,000

pretty desolate there there's the Odd

239

00:10:00,470 --> 00:09:58,860

Farm host that's about it

240

00:10:03,470 --> 00:10:00,480

no um

241

00:10:06,290 --> 00:10:03,480

with like

242

00:10:10,850 --> 00:10:06,300

with these types of of

243

00:10:12,170 --> 00:10:10,860

um like landscape markers uh do you find

244

00:10:15,530 --> 00:10:12,180

that it's easier to be able to find

245

00:10:16,850 --> 00:10:15,540

these when you're going after an area

246

00:10:19,070 --> 00:10:16,860

that has been scraped cleaned by

247

00:10:20,990 --> 00:10:19,080

glaciers is like that most of Canada is

248

00:10:24,470 --> 00:10:21,000

that most of Canada or just like Ontario

249

00:10:26,150 --> 00:10:24,480

Canadians most of Canada I can say right

250

00:10:28,190 --> 00:10:26,160

now that most of the Canada the impact

251
00:10:30,949 --> 00:10:28,200
craters have all been discovered there's

252
00:10:34,009 --> 00:10:30,959
probably no new ones no

253
00:10:36,050 --> 00:10:34,019
that being said there are a lot of

254
00:10:38,329 --> 00:10:36,060
circular geological structures around

255
00:10:40,310 --> 00:10:38,339
I'm getting emails from a lot of people

256
00:10:44,569 --> 00:10:40,320
saying I think I found an impact site

257
00:10:47,329 --> 00:10:44,579
and it's a circular Lake and so on and

258
00:10:51,230 --> 00:10:47,339
I give them instructions in how to

259
00:10:53,569 --> 00:10:51,240
actually uh identify whether it's

260
00:10:56,150 --> 00:10:53,579
whether or not it's an impact site and

261
00:10:58,069 --> 00:10:56,160
the best thing is a shatter cone

262
00:11:00,250 --> 00:10:58,079
now a shadow cone is something that you

263
00:11:03,829 --> 00:11:00,260

can hold in your hand and it's visible

264

00:11:06,230 --> 00:11:03,839

it will uh it is caused by the uh the

265

00:11:09,889 --> 00:11:06,240

shattering effect of the impact itself

266

00:11:12,889 --> 00:11:09,899

and it it only occurs on a very large

267

00:11:15,769 --> 00:11:12,899

Blue Light hitting our planet or a

268

00:11:18,590 --> 00:11:15,779

nuclear explosion there's shatter cones

269

00:11:21,410 --> 00:11:18,600

and nuclear explosions and of course

270

00:11:24,230 --> 00:11:21,420

just about every impact crater of say

271

00:11:26,630 --> 00:11:24,240

more than five or eight kilometers

272

00:11:28,190 --> 00:11:26,640

across have them anything smaller than

273

00:11:31,550 --> 00:11:28,200

that didn't have enough energy to make a

274

00:11:35,210 --> 00:11:31,560

Shadow cone so I have on my website

275

00:11:38,269 --> 00:11:35,220

again uh ways to identify whether or not

276

00:11:40,910 --> 00:11:38,279

you have actually found an impact site

277

00:11:42,190 --> 00:11:40,920

there are plenty of circular lakes

278

00:11:45,170 --> 00:11:42,200

around here

279

00:11:47,030 --> 00:11:45,180

that that resemble impact sites and

280

00:11:49,910 --> 00:11:47,040

you'd think holy Mack and it has to be

281

00:11:51,550 --> 00:11:49,920

but no uh unless you have firm

282

00:11:54,470 --> 00:11:51,560

identification

283

00:11:57,230 --> 00:11:54,480

they are probable problem you know and I

284

00:12:00,470 --> 00:11:57,240

have a list of probable circular Lakes

285

00:12:03,829 --> 00:12:00,480

on my site as well so if anybody uh

286

00:12:05,329 --> 00:12:03,839

feels up up with the energy take a look

287

00:12:07,910 --> 00:12:05,339

at some of the lakes that I've

288

00:12:10,670 --> 00:12:07,920

documented and look around

289

00:12:12,650 --> 00:12:10,680

um hey even with a metal detector if you

290

00:12:16,009 --> 00:12:12,660

find a meteorite beside it you've

291

00:12:19,490 --> 00:12:16,019

probably found an impact site there's a

292

00:12:21,889 --> 00:12:19,500

an impact site out in Alberta that was

293

00:12:23,509 --> 00:12:21,899

Hunters have no I know there's a small

294

00:12:26,630 --> 00:12:23,519

circular Lake for years and years he

295

00:12:29,090 --> 00:12:26,640

used it as a as a rendezvous site until

296

00:12:30,710 --> 00:12:29,100

somebody found a meteorite beside it so

297

00:12:33,230 --> 00:12:30,720

they got the geologist in and say hey

298

00:12:36,050 --> 00:12:33,240

it's an impact site so it can be

299

00:12:37,670 --> 00:12:36,060

happening you know but what about Round

300

00:12:40,850 --> 00:12:37,680

Lake

301
00:12:43,910 --> 00:12:40,860
like but I know around up north of here

302
00:12:46,009 --> 00:12:43,920
yeah no uh again we've looked at that

303
00:12:49,069 --> 00:12:46,019
one uh the geologists have looked at it

304
00:12:51,430 --> 00:12:49,079
it's from scrape Drive many scraped uh

305
00:12:53,930 --> 00:12:51,440
scraped across many times by glaciers

306
00:12:56,930 --> 00:12:53,940
and uh

307
00:12:59,590 --> 00:12:56,940
there are there's there's other signs

308
00:13:01,670 --> 00:12:59,600
like there's brecha impact melt uh

309
00:13:04,069 --> 00:13:01,680
pseudo-tacolite and so on all kinds of

310
00:13:05,590 --> 00:13:04,079
geological features that are unique to

311
00:13:08,690 --> 00:13:05,600
impact craters

312
00:13:10,850 --> 00:13:08,700
I actually I'm wrong they are not unique

313
00:13:13,490 --> 00:13:10,860

to impact creators they can be caused by

314

00:13:15,829 --> 00:13:13,500

other geological functions

315

00:13:17,629 --> 00:13:15,839

so uh you have to be very very careful

316

00:13:20,569 --> 00:13:17,639

when you identify these things but if

317

00:13:22,550 --> 00:13:20,579

you have a circular structure you find a

318

00:13:24,769 --> 00:13:22,560

meteorite beside it well chances are you

319

00:13:27,050 --> 00:13:24,779

found a crater if you found a shatter

320

00:13:28,910 --> 00:13:27,060

cone beside it then you've absolutely

321

00:13:32,030 --> 00:13:28,920

found an impact site

322

00:13:36,230 --> 00:13:32,040

so uh there are again I have a list of

323

00:13:37,850 --> 00:13:36,240

maybe 10 features that uh uh put in your

324

00:13:39,710 --> 00:13:37,860

pocket and when you go exploring in the

325

00:13:41,329 --> 00:13:39,720

bush and you run across something you

326

00:13:42,170 --> 00:13:41,339

look at this list and say hey this looks

327

00:13:44,150 --> 00:13:42,180

like that

328

00:13:48,710 --> 00:13:44,160

and give me a call and then we'll go

329

00:13:50,629 --> 00:13:48,720

look at it but your uh expertise is

330

00:13:52,730 --> 00:13:50,639

not necessarily within this field

331

00:13:54,769 --> 00:13:52,740

although

332

00:13:56,389 --> 00:13:54,779

you do have a background in electronics

333

00:13:58,550 --> 00:13:56,399

you do have a background in in

334

00:14:01,750 --> 00:13:58,560

Communications or at least from from a

335

00:14:03,949 --> 00:14:01,760

purely gonna say military standpoint

336

00:14:07,129 --> 00:14:03,959

yeah so sonar is something that's not

337

00:14:10,430 --> 00:14:07,139

foreign to you so you know how how have

338

00:14:13,490 --> 00:14:10,440

you been uh perceived even with your

339

00:14:15,290 --> 00:14:13,500

involvement of the the risc looking at

340

00:14:18,590 --> 00:14:15,300

these and when it comes to geologists or

341

00:14:20,629 --> 00:14:18,600

or other scientists yeah I am being a

342

00:14:23,030 --> 00:14:20,639

non-geologist but I am a retired

343

00:14:26,030 --> 00:14:23,040

scientist I don't know if you can see it

344

00:14:27,889 --> 00:14:26,040

here uh yeah this year right in the

345

00:14:31,790 --> 00:14:27,899

middle of the picture there it's a cover

346

00:14:35,389 --> 00:14:31,800

picture of uh technical uh uh magazine

347

00:14:38,930 --> 00:14:35,399

it's about a paper I wrote on uh failure

348

00:14:41,090 --> 00:14:38,940

analysis of integrated circuits so uh

349

00:14:44,150 --> 00:14:41,100

being that I am a Scientist I look at

350

00:14:47,509 --> 00:14:44,160

empirical evidence I uh I would look at

351

00:14:49,490 --> 00:14:47,519

any evidence and uh from that make a

352

00:14:53,569 --> 00:14:49,500

hypothesis and then from the hypothesis

353

00:14:57,170 --> 00:14:53,579

you can actually uh firm up a theory and

354

00:14:59,509 --> 00:14:57,180

then firm identification so being a

355

00:15:01,370 --> 00:14:59,519

science assistant in my background gives

356

00:15:02,389 --> 00:15:01,380

me kind of some authority to say yeah

357

00:15:03,769 --> 00:15:02,399

yeah

358

00:15:05,750 --> 00:15:03,779

um this kind of kind of knows what he's

359

00:15:08,990 --> 00:15:05,760

talking about even though I'm not a

360

00:15:11,810 --> 00:15:09,000

geologist I have to uh I have to

361

00:15:14,509 --> 00:15:11,820

um uh refer to them quite often actually

362

00:15:16,790 --> 00:15:14,519

now what about the younger driest impact

363

00:15:18,350 --> 00:15:16,800

hypothesis I know that yeah there are

364

00:15:21,530 --> 00:15:18,360

proponents on

365

00:15:23,389 --> 00:15:21,540

all sides of all sides of the uh

366

00:15:24,650 --> 00:15:23,399

conversation sometimes you know a little

367

00:15:27,530 --> 00:15:24,660

a little more aggressive than a

368

00:15:29,269 --> 00:15:27,540

conversation uh there are people who say

369

00:15:30,550 --> 00:15:29,279

that it's it's bunk and you know for any

370

00:15:33,829 --> 00:15:30,560

of the shatter cones and and

371

00:15:36,110 --> 00:15:33,839

microsphericals are you know bug poop or

372

00:15:39,050 --> 00:15:36,120

you have people that go like no it 100

373

00:15:41,389 --> 00:15:39,060

is you know there's this evidence we

374

00:15:45,110 --> 00:15:41,399

have the potential crater we have you

375

00:15:46,550 --> 00:15:45,120

know this uh Litany of sites that have

376

00:15:49,250 --> 00:15:46,560

um you know evidence to it there's the

377

00:15:51,769 --> 00:15:49,260

black mat etc etc how are you parsing

378

00:15:55,310 --> 00:15:51,779

through both of them uh and you know has

379

00:15:56,870 --> 00:15:55,320

your overall view changed over the last

380

00:15:59,090 --> 00:15:56,880

I'm going to say a couple of years since

381

00:16:01,430 --> 00:15:59,100

we were on the show last

382

00:16:03,530 --> 00:16:01,440

um okay well first of all I'll identify

383

00:16:07,310 --> 00:16:03,540

for for the audience what the younger

384

00:16:12,230 --> 00:16:07,320

drives is it's around 20 uh 12 000 years

385

00:16:14,329 --> 00:16:12,240

ago a major uh a uh if temperature event

386

00:16:16,629 --> 00:16:14,339

happened on our continent mostly on our

387

00:16:19,129 --> 00:16:16,639

continents parts of Europe and so on

388

00:16:20,569 --> 00:16:19,139

essentially uh you look at the

389

00:16:24,050 --> 00:16:20,579

temperature temperature at a major

390

00:16:27,050 --> 00:16:24,060

change uh the carbon dioxide uh had a

391

00:16:29,389 --> 00:16:27,060

major change uh atmospheric uh continent

392

00:16:31,430 --> 00:16:29,399

contents had a major change

393

00:16:34,670 --> 00:16:31,440

something happened twelve thousand years

394

00:16:38,930 --> 00:16:34,680

ago the um there was a race of

395

00:16:41,269 --> 00:16:38,940

um of First Nations uh that before this

396

00:16:43,129 --> 00:16:41,279

the younger driest they were very highly

397

00:16:45,889 --> 00:16:43,139

technologically advanced in the Stone

398

00:16:48,530 --> 00:16:45,899

Age they had very very uh unique

399

00:16:50,990 --> 00:16:48,540

arrowheads and so on and this whole

400

00:16:53,150 --> 00:16:51,000

civilization completely disappeared at

401
00:16:55,249 --> 00:16:53,160
that 12 000 year point you mentioned the

402
00:16:58,490 --> 00:16:55,259
black mat there's a there's the odd

403
00:17:00,769 --> 00:16:58,500
black mat uh uh throughout our continent

404
00:17:03,170 --> 00:17:00,779
now I'll Define a black map basically if

405
00:17:04,970 --> 00:17:03,180
you dig down and then you look at the

406
00:17:07,730 --> 00:17:04,980
cross section of the land that you've

407
00:17:11,090 --> 00:17:07,740
dug down through you'll see uh younger

408
00:17:13,069 --> 00:17:11,100
soil older soil older soil and so on you

409
00:17:14,210 --> 00:17:13,079
hit the 12 000 year point and you have

410
00:17:17,689 --> 00:17:14,220
this black

411
00:17:19,730 --> 00:17:17,699
stripe well below that stripe this

412
00:17:21,890 --> 00:17:19,740
civilization existed and above that

413
00:17:24,370 --> 00:17:21,900

stripe they disappeared

414

00:17:29,690 --> 00:17:24,380

we do not know why

415

00:17:33,770 --> 00:17:29,700

So what had caused this this major event

416

00:17:36,230 --> 00:17:33,780

now there are uh two or three craters

417

00:17:38,330 --> 00:17:36,240

just around here one in in the middle of

418

00:17:41,390 --> 00:17:38,340

Lake Ontario we think is like an impact

419

00:17:42,830 --> 00:17:41,400

crater called charity Shoal that's dated

420

00:17:45,590 --> 00:17:42,840

around that time

421

00:17:48,350 --> 00:17:45,600

there's another uh impact crater in the

422

00:17:52,909 --> 00:17:48,360

St Lawrence River just by satiel seven

423

00:17:54,830 --> 00:17:52,919

islands and it is around the date and

424

00:17:57,890 --> 00:17:54,840

then there's bloody Creek in Nova Scotia

425

00:18:01,430 --> 00:17:57,900

three impact craters around the 12 000

426

00:18:04,130 --> 00:18:01,440

year period and there have been a

427

00:18:06,350 --> 00:18:04,140

hypothesis that this is kind of related

428

00:18:09,710 --> 00:18:06,360

to the younger dryas

429

00:18:12,470 --> 00:18:09,720

so you got three events that may be

430

00:18:14,810 --> 00:18:12,480

close to what happened at that time then

431

00:18:17,810 --> 00:18:14,820

what you have are the black masks that

432

00:18:19,610 --> 00:18:17,820

are at 12 000 years then you also have

433

00:18:24,230 --> 00:18:19,620

these micro diamonds these micro

434

00:18:26,570 --> 00:18:24,240

diamonds that are unique to a very high

435

00:18:30,770 --> 00:18:26,580

energy impact

436

00:18:33,470 --> 00:18:30,780

um and they are uh spreader out uh uh in

437

00:18:37,370 --> 00:18:33,480

in the Yukon Peninsula Peninsula and

438

00:18:40,070 --> 00:18:37,380

throughout North America and again this

439

00:18:43,430 --> 00:18:40,080

the hypothesis is this these diamonds

440

00:18:46,370 --> 00:18:43,440

had been caused by uh impacts

441

00:18:50,930 --> 00:18:46,380

so with all that evidence

442

00:18:53,090 --> 00:18:50,940

there has no defined absolute impact

443

00:18:56,510 --> 00:18:53,100

that was large enough that would cause a

444

00:19:00,470 --> 00:18:56,520

whole Extinction on our continent

445

00:19:04,549 --> 00:19:00,480

hasn't been identified yet we don't know

446

00:19:06,890 --> 00:19:04,559

where it could have been a large impact

447

00:19:08,870 --> 00:19:06,900

on a glacier and of course half to the

448

00:19:11,390 --> 00:19:08,880

glacier melts the impact gone

449

00:19:13,430 --> 00:19:11,400

that is the other hypothesis

450

00:19:15,470 --> 00:19:13,440

the Ice Age was happening at 12 000

451

00:19:18,350 --> 00:19:15,480
years ago all kinds of stuff has

452

00:19:26,690 --> 00:19:21,590
it's still unknown I

453

00:19:30,830 --> 00:19:26,700
um I I began looking at all greater kind

454

00:19:33,110 --> 00:19:30,840
of evidence and I'm not convinced

455

00:19:36,289 --> 00:19:33,120
I'm not convinced of

456

00:19:39,169 --> 00:19:36,299
there's a few other hypothesis of why it

457

00:19:42,049 --> 00:19:39,179
happened and there's virtually nothing

458

00:19:45,070 --> 00:19:42,059
black and white that says yes this is it

459

00:19:47,870 --> 00:19:45,080
so to answer your question I don't know

460

00:19:53,210 --> 00:19:47,880
[Laughter]

461

00:19:57,650 --> 00:19:55,310
yeah that's that's all I got on that

462

00:19:59,870 --> 00:19:57,660
just yeah you know that's basically I

463

00:20:02,150 --> 00:19:59,880

could say there's I I've wrote a lot on

464

00:20:03,770 --> 00:20:02,160

the on the website you can probably take

465

00:20:06,409 --> 00:20:03,780

a couple hours to go through it just

466

00:20:08,810 --> 00:20:06,419

what any any uh paper that was written

467

00:20:11,390 --> 00:20:08,820

I've quoted and so on so get in there

468

00:20:14,090 --> 00:20:11,400

make your suggestions make a hypothesis

469

00:20:17,169 --> 00:20:14,100

and maybe maybe you go look and find a

470

00:20:20,450 --> 00:20:17,179

crater who knows you'll be famous and

471

00:20:24,590 --> 00:20:20,460

and where where can people find you

472

00:20:27,070 --> 00:20:24,600

okay uh Google just craterexplorer.ca

473

00:20:30,049 --> 00:20:27,080

just two words together Creator

474

00:20:32,390 --> 00:20:30,059

explorer.ca or Google my name Chuck

475

00:20:35,029 --> 00:20:32,400

Odell either one will eventually get to

476

00:20:37,190 --> 00:20:35,039

my website and then in the website uh

477

00:20:40,549 --> 00:20:37,200

you can spend days in there it's awesome

478

00:20:41,870 --> 00:20:40,559

yeah well it I I I have been and I have

479

00:20:44,570 --> 00:20:41,880

before

480

00:20:46,789 --> 00:20:44,580

um you know what Chuck let's because it

481

00:20:48,350 --> 00:20:46,799

seems that my backup uh charger is not

482

00:20:52,610 --> 00:20:48,360

working as well as I could my laptop is

483

00:20:53,210 --> 00:20:52,620

gonna die uh so I would suggest this

484

00:20:54,950 --> 00:20:53,220

um

485

00:20:56,930 --> 00:20:54,960

I'm going to go through the site and I

486

00:20:58,669 --> 00:20:56,940

know that you do have your presentation

487

00:21:00,529 --> 00:20:58,679

that has been updated since the last

488

00:21:02,210 --> 00:21:00,539

time you're on the show let me get my

489

00:21:05,510 --> 00:21:02,220

new studio up and running and we'll have

490

00:21:07,430 --> 00:21:05,520

you back in for a nice barbecue uh and a

491

00:21:08,830 --> 00:21:07,440

good PowerPoint you know several hour

492

00:21:11,930 --> 00:21:08,840

presentation

493

00:21:14,870 --> 00:21:11,940

whatever I've got uh actually I just

494

00:21:16,789 --> 00:21:14,880

recently gave a an updated uh

495

00:21:21,289 --> 00:21:16,799

presentation at Carleton University nice

496

00:21:23,690 --> 00:21:21,299

uh it's a new astronomy group that's

497

00:21:26,150 --> 00:21:23,700

started up there and they invited me in

498

00:21:28,010 --> 00:21:26,160

so I came in got free pizza and uh talk

499

00:21:30,230 --> 00:21:28,020

creators and show shadowguns and

500

00:21:32,210 --> 00:21:30,240

everything so yeah I get that

501
00:21:33,890 --> 00:21:32,220
presentation set up actually I'll send

502
00:21:35,149 --> 00:21:33,900
you the presentation Carlton you and you

503
00:21:36,830 --> 00:21:35,159
can play with them both and then oh

504
00:21:38,870 --> 00:21:36,840
perfect rock and roll from there all

505
00:21:41,810 --> 00:21:38,880
right sounds good well at least this is

506
00:21:43,610 --> 00:21:41,820
a good teaser for everybody yeah uh so

507
00:21:45,409 --> 00:21:43,620
you know at least you guys got a treat

508
00:21:47,690 --> 00:21:45,419
and you know I got a 20 minute

509
00:21:50,750 --> 00:21:47,700
commercial for what's gonna be a very

510
00:21:52,549 --> 00:21:50,760
fun and uh hopefully informative

511
00:21:54,049 --> 00:21:52,559
and

512
00:21:55,430 --> 00:21:54,059
um I might have to do this on a Friday

513
00:21:57,909 --> 00:21:55,440

so I don't have to go anywhere the next

514

00:21:59,930 --> 00:21:57,919

day yeah so in the meantime just Google

515

00:22:01,250 --> 00:21:59,940

craterexplorer.ca all right ladies and

516

00:22:02,750 --> 00:22:01,260

gentlemen thank you very much and I'll

517

00:22:04,490 --> 00:22:02,760

I'll see you uh hopefully tomorrow