

1
00:00:00,000 --> 00:00:03,149
it just looks like great I remember

2
00:00:01,620 --> 00:00:05,278
there's nothing in there and remember

3
00:00:03,149 --> 00:00:06,870
it's also got subtraction but if you if

4
00:00:05,278 --> 00:00:09,000
you were looking closely at the screen

5
00:00:06,870 --> 00:00:11,940
you would see that there were a range of

6
00:00:09,000 --> 00:00:13,830
black spots and white spots the black

7
00:00:11,939 --> 00:00:15,660
spots were subtracting out the cosmic

8
00:00:13,830 --> 00:00:18,660
rays would that happen to have occurred

9
00:00:15,660 --> 00:00:20,789
in the control condition versus the

10
00:00:18,660 --> 00:00:24,000
white spots which other the cosmic rays

11
00:00:20,789 --> 00:00:25,890
that were then detected in the in

12
00:00:24,000 --> 00:00:28,948
whatever they quote intention trial or

13
00:00:25,890 --> 00:00:30,778
its control trial was and this is just

14
00:00:28,949 --> 00:00:32,309
simply an amplification of that the tiny

15
00:00:30,778 --> 00:00:34,640
little spots in the corner are slight

16
00:00:32,308 --> 00:00:39,479
imperfections in the chip which I'm

17
00:00:34,640 --> 00:00:42,420
which were essentially constant the what

18
00:00:39,479 --> 00:00:44,459
we limited is by the way we we use image

19
00:00:42,420 --> 00:00:46,260
J software how many of you up by the way

20
00:00:44,460 --> 00:00:49,049
of familiar with the software anyone in

21
00:00:46,259 --> 00:00:52,049
this room it is available free from NIH

22
00:00:49,049 --> 00:00:54,179
if you've got an image image J and just

23
00:00:52,049 --> 00:00:56,308
Google that space NIH you can actually

24
00:00:54,179 --> 00:00:58,738
download the software it is very

25
00:00:56,308 --> 00:00:59,909
sophisticated imaging processing system

26
00:00:58,738 --> 00:01:01,349
and it made it possible to do these

27
00:00:59,909 --> 00:01:04,140
analyses which we couldn't have done

28
00:01:01,350 --> 00:01:05,400
otherwise but we then do is we take

29

00:01:04,140 --> 00:01:07,320
those because we're interested in the

30
00:01:05,400 --> 00:01:10,530
cosmic rays which are presumably quote

31
00:01:07,319 --> 00:01:13,789
random coming in through the from the

32
00:01:10,530 --> 00:01:17,700
obviously from from quote space the M

33
00:01:13,790 --> 00:01:20,189
what we do is we then do a min routine

34
00:01:17,700 --> 00:01:23,250
where we only accept those data points

35
00:01:20,188 --> 00:01:29,519
that are above 500 units using this the

36
00:01:23,250 --> 00:01:31,228
cameras on amplitude system most of the

37
00:01:29,519 --> 00:01:33,328
low light is within the range of ten to

38
00:01:31,228 --> 00:01:35,459
20 so what it does is it R essentially

39
00:01:33,328 --> 00:01:36,868
creates a black image but if you look

40
00:01:35,459 --> 00:01:39,118
very closely you'll see the little white

41
00:01:36,868 --> 00:01:41,700
specks of the cosmic rays and what I've

42
00:01:39,118 --> 00:01:43,950
done in the lower images is just amplify

43
00:01:41,700 --> 00:01:46,590

those with a sharpening technique so you

44

00:01:43,950 --> 00:01:49,560

actually see what the pattern is it

45

00:01:46,590 --> 00:01:53,310

looks like patterns of stars it looks

46

00:01:49,560 --> 00:01:56,759

like a little pencil stars and the they

47

00:01:53,310 --> 00:01:59,490

vary both in position and amplitude okay

48

00:01:56,759 --> 00:02:01,728

and now the question we're looking at is

49

00:01:59,489 --> 00:02:05,459

is there something in the in the

50

00:02:01,728 --> 00:02:07,140

structure of those patterns and the way

51

00:02:05,459 --> 00:02:08,699

that you can get at the structure of the

52

00:02:07,140 --> 00:02:10,699

patterns is to do fast Fourier

53

00:02:08,699 --> 00:02:12,929

transforms of the images

54

00:02:10,699 --> 00:02:15,359

which this software does very

55

00:02:12,930 --> 00:02:17,250

conveniently and so you just take this

56

00:02:15,360 --> 00:02:18,840

at you you hit the FFT button it's

57

00:02:17,250 --> 00:02:20,639

really nice how the software networks

58
00:02:18,840 --> 00:02:23,610
and all of a sudden it creates a

59
00:02:20,639 --> 00:02:26,250
spectral image now if that if it was

60
00:02:23,610 --> 00:02:29,340
purely random you would essentially see

61
00:02:26,250 --> 00:02:30,840
just a cluster of gray scales and it

62
00:02:29,340 --> 00:02:33,030
would be no centering of that

63
00:02:30,840 --> 00:02:34,590
information but you'll notice if you

64
00:02:33,030 --> 00:02:36,150
look very closely which is hard to do

65
00:02:34,590 --> 00:02:37,500
again in the screen that you'll notice

66
00:02:36,150 --> 00:02:38,939
that there's a little blip born in the

67
00:02:37,500 --> 00:02:41,129
center it actually makes somewhat of a

68
00:02:38,939 --> 00:02:43,949
line and then if you do what's called

69
00:02:41,129 --> 00:02:46,289
the plot profile analysis which is just

70
00:02:43,949 --> 00:02:48,929
a simple procedure when you can have the

71
00:02:46,289 --> 00:02:52,889
software analyze each column of pixels

72
00:02:48,930 --> 00:02:57,719
it's a 512 by 512 pixel array it will

73
00:02:52,889 --> 00:02:59,879
then average each of those 512 columns

74
00:02:57,719 --> 00:03:02,340
and if there was nothing if it was just

75
00:02:59,879 --> 00:03:04,049
an average pattern you'd get a straight

76
00:03:02,340 --> 00:03:05,879
line or a slight squiggly line and

77
00:03:04,050 --> 00:03:08,550
you'll notice in this particular one it

78
00:03:05,879 --> 00:03:10,079
happened to show a curve which meant

79
00:03:08,550 --> 00:03:13,050
there was some structuring in the in the

80
00:03:10,080 --> 00:03:15,150
center of the FFT and it was that kind

81
00:03:13,050 --> 00:03:18,630
of analysis that we then did because

82
00:03:15,150 --> 00:03:22,409
this could be all automated now this is

83
00:03:18,629 --> 00:03:26,189
a complex pattern and I'll just briefly

84
00:03:22,409 --> 00:03:30,689
describe it up but that because this is

85
00:03:26,189 --> 00:03:37,229
now a summary of the averaging of each

86

00:03:30,689 --> 00:03:40,889
of the individual fft s4 that the upper

87
00:03:37,229 --> 00:03:43,280
right one is the when the spiritual

88
00:03:40,889 --> 00:03:46,768
healing intention trials were given

89
00:03:43,280 --> 00:03:48,469
minus its preceding control trial

90
00:03:46,769 --> 00:03:51,840
because remember there were four trials

91
00:03:48,469 --> 00:03:55,259
so you could either so it's either 3-2

92
00:03:51,840 --> 00:03:58,560
or 4-3 it's the difference in those

93
00:03:55,259 --> 00:04:01,139
spectral arrays averaged and then you

94
00:03:58,560 --> 00:04:02,759
can see the the plot profile to the

95
00:04:01,139 --> 00:04:07,069
right and you'll notice that there's an

96
00:04:02,759 --> 00:04:10,709
increase in that in that spectral peak

97
00:04:07,069 --> 00:04:13,620
the one on the bottom is the same

98
00:04:10,709 --> 00:04:17,699
identical sequence that time to have

99
00:04:13,620 --> 00:04:22,108
drawn out for the intention trial the

100
00:04:17,699 --> 00:04:24,159

meditation trial where the the subject

101

00:04:22,108 --> 00:04:26,439

put his attention imagine the stand

102

00:04:24,160 --> 00:04:28,180

and and focuses attention meditating on

103

00:04:26,439 --> 00:04:30,009

the thinking you'll notice that it's a

104

00:04:28,180 --> 00:04:32,889

different pattern and you'll notice it

105

00:04:30,009 --> 00:04:37,719

happens to have a lower part and the

106

00:04:32,889 --> 00:04:40,649

other two are the matched controls

107

00:04:37,720 --> 00:04:43,540

Royals the 16 runs of the controls

108

00:04:40,649 --> 00:04:45,669

separately placed for the same set of

109

00:04:43,540 --> 00:04:48,700

analyses and you'll notice there's a

110

00:04:45,670 --> 00:04:51,340

little bit of a pattern there that's

111

00:04:48,699 --> 00:04:53,500

sort of matching what the the other one

112

00:04:51,339 --> 00:04:57,789

does it's not so striking in that in the

113

00:04:53,500 --> 00:05:00,779

second one there when you then take all

114

00:04:57,790 --> 00:05:05,140

of this data average it together and

115
00:05:00,779 --> 00:05:08,079
then look at the the middle point with

116
00:05:05,139 --> 00:05:12,810
where the peak was which is the mid

117
00:05:08,079 --> 00:05:15,399
century in the middle 56 columns in the

118
00:05:12,810 --> 00:05:18,040
512 which is what we then focused our

119
00:05:15,399 --> 00:05:21,699
analyses on this is the summary curve

120
00:05:18,040 --> 00:05:24,670
and what it shows is that in the

121
00:05:21,699 --> 00:05:28,379
spiritual energy healing trials you'll

122
00:05:24,670 --> 00:05:30,939
see that averaged peak increase and

123
00:05:28,379 --> 00:05:34,779
you'll notice that for the focused

124
00:05:30,939 --> 00:05:36,730
meditation which is that dashed line is

125
00:05:34,779 --> 00:05:39,789
there each it shows a slight decrease

126
00:05:36,730 --> 00:05:42,040
it's slightly more but not statistically

127
00:05:39,790 --> 00:05:46,480
so then the slight little decrease that

128
00:05:42,040 --> 00:05:49,210
you see for the blank controls and when

129
00:05:46,480 --> 00:05:51,900
you do the the appropriate repeated

130
00:05:49,209 --> 00:05:56,199
measures analysis of various is only did

131
00:05:51,899 --> 00:05:58,418
analysis variants on the data that turns

132
00:05:56,199 --> 00:06:01,479
out the results were are quite

133
00:05:58,418 --> 00:06:03,789
statistically significant so what are

134
00:06:01,480 --> 00:06:05,980
the summary of these findings the blind

135
00:06:03,790 --> 00:06:08,020
controls showed slight decreases in the

136
00:06:05,980 --> 00:06:10,810
FFT analysis of the contrary patterns

137
00:06:08,019 --> 00:06:14,139
controlling for time focus meditation

138
00:06:10,810 --> 00:06:15,668
was comparable to the blind controls the

139
00:06:14,139 --> 00:06:18,339
spiritual energy healing intention

140
00:06:15,668 --> 00:06:20,168
showed moderate increases in ft analysis

141
00:06:18,339 --> 00:06:22,899
of the cosmic-ray patterns and these

142
00:06:20,168 --> 00:06:25,029
effects were significantly different

143

00:06:22,899 --> 00:06:27,909
separate doing comparing each with their

144
00:06:25,029 --> 00:06:29,079
respective comparing the original into

145
00:06:27,910 --> 00:06:32,020
healing with the matched focus

146
00:06:29,079 --> 00:06:34,389
meditation of mind controls so what are

147
00:06:32,019 --> 00:06:35,680
the future research questions here of

148
00:06:34,389 --> 00:06:37,459
course the number one question here of

149
00:06:35,680 --> 00:06:40,019
course is belief

150
00:06:37,459 --> 00:06:42,779
you want to know if this is a a

151
00:06:40,019 --> 00:06:46,228
replicable phenomena of causing an

152
00:06:42,779 --> 00:06:50,128
alteration in the in the structural

153
00:06:46,228 --> 00:06:52,800
pattern of the the cosmic ray data is

154
00:06:50,129 --> 00:06:54,300
this purely a healer belief does a bill

155
00:06:52,800 --> 00:06:56,579
he'll they have to believe in a higher

156
00:06:54,300 --> 00:06:57,900
frequency higher power effect in order

157
00:06:56,579 --> 00:07:00,269

to get this effect or not of course the

158

00:06:57,899 --> 00:07:02,008

answer is we don't know nom this was a

159

00:07:00,269 --> 00:07:04,288

if you would have proof in principle

160

00:07:02,009 --> 00:07:06,270

kind of experiment of course the scale

161

00:07:04,288 --> 00:07:08,878

and motivation of the healer is

162

00:07:06,269 --> 00:07:11,008

important some of you may be aware that

163

00:07:08,879 --> 00:07:13,080

I'm Dean Radin recently published a

164

00:07:11,009 --> 00:07:15,449

paper in an explorer looking at the

165

00:07:13,079 --> 00:07:17,158

effects of skilled meditated versus

166

00:07:15,449 --> 00:07:18,870

controls attempting to influence the

167

00:07:17,158 --> 00:07:22,918

interference pattern in an

168

00:07:18,870 --> 00:07:24,629

interferometer we by the way now have

169

00:07:22,918 --> 00:07:26,430

borrowed his interferometer and are

170

00:07:24,629 --> 00:07:27,960

doing the same kind of research now also

171

00:07:26,430 --> 00:07:29,519

with spiritual of the healing and the

172
00:07:27,959 --> 00:07:30,779
whole question of the skill because in

173
00:07:29,519 --> 00:07:32,878
his day to buy the weight the skill

174
00:07:30,779 --> 00:07:36,119
mattered and this person was clearly

175
00:07:32,879 --> 00:07:39,000
motivated he had an intense desire to at

176
00:07:36,120 --> 00:07:40,860
least discover something however he was

177
00:07:39,000 --> 00:07:43,228
blind to what the specific hypotheses

178
00:07:40,860 --> 00:07:45,778
were at least in terms of the cosmic-ray

179
00:07:43,228 --> 00:07:48,629
patterns there's a type of spiritual

180
00:07:45,778 --> 00:07:50,490
energy healing matter because some you

181
00:07:48,629 --> 00:07:54,718
know as I say most focus on universal

182
00:07:50,490 --> 00:07:56,610
energy is focused is is sort of allowing

183
00:07:54,718 --> 00:07:58,649
it to occur but some are just sell

184
00:07:56,610 --> 00:08:01,259
focused it's my energy having in effect

185
00:07:58,649 --> 00:08:03,689
I'm sending love to the to whatever the

186
00:08:01,259 --> 00:08:06,629
individual is and then there's the whole

187
00:08:03,689 --> 00:08:08,459
intriguing possibility which we bar by

188
00:08:06,629 --> 00:08:10,020
the way are looking at is the quote

189
00:08:08,459 --> 00:08:12,508
spirit assisted kind of healing

190
00:08:10,019 --> 00:08:14,310
traditions such as John of God we're

191
00:08:12,509 --> 00:08:18,028
literally and by the way more than fifty

192
00:08:14,310 --> 00:08:20,250
percent of healers report that when they

193
00:08:18,028 --> 00:08:23,098
are quote in the flow they are receiving

194
00:08:20,250 --> 00:08:24,959
some sort of assistance from what they

195
00:08:23,098 --> 00:08:27,839
call their hire guides all the way to

196
00:08:24,959 --> 00:08:29,698
the divine but we have never brought

197
00:08:27,839 --> 00:08:32,370
that into the laboratory we the

198
00:08:29,699 --> 00:08:33,870
collective we we were doing it now and

199
00:08:32,370 --> 00:08:37,620
of course then there's examination of

200

00:08:33,870 --> 00:08:40,889
other photon frequency bands now I end

201
00:08:37,620 --> 00:08:43,078
with this image here it's a sculpture

202
00:08:40,889 --> 00:08:46,289
from bill war L that happens to be

203
00:08:43,078 --> 00:08:50,000
called I reached two forces unseen bill

204
00:08:46,289 --> 00:08:52,159
writes poems for his major works and

205
00:08:50,000 --> 00:08:53,779
in lectures that I give on the energy

206
00:08:52,159 --> 00:08:56,360
healing experiments book I often end

207
00:08:53,779 --> 00:08:57,980
with this poem I'm not of course not

208
00:08:56,360 --> 00:08:59,930
going to take time to hear the poem here

209
00:08:57,980 --> 00:09:02,690
but I do want to raise the polym

210
00:08:59,929 --> 00:09:05,389
following thought imagine for the moment

211
00:09:02,690 --> 00:09:08,030
that with these super sensitive cameras

212
00:09:05,389 --> 00:09:09,710
with these new technologies originally

213
00:09:08,029 --> 00:09:12,649
designed for looking into deep space in

214
00:09:09,710 --> 00:09:14,120

master physics now being pointed inward

215

00:09:12,649 --> 00:09:16,429

looking at living systems and now

216

00:09:14,120 --> 00:09:18,529

looking at and by a photon emission and

217

00:09:16,429 --> 00:09:21,679

remember the cosmic rays here was simply

218

00:09:18,529 --> 00:09:25,579

a quote artifact of the technology but

219

00:09:21,679 --> 00:09:28,579

we can quantify it if it turns out to be

220

00:09:25,580 --> 00:09:34,040

the case that we can measure document

221

00:09:28,580 --> 00:09:36,850

changes in patterns of light including

222

00:09:34,039 --> 00:09:39,949

high frequency light that's associated

223

00:09:36,850 --> 00:09:44,480

with the human intention to involve

224

00:09:39,950 --> 00:09:47,120

spiritual matters we may be with this

225

00:09:44,480 --> 00:09:49,909

contemporary technology opening up new

226

00:09:47,120 --> 00:09:51,710

areas of science because for the first

227

00:09:49,909 --> 00:09:53,929

time we may be able to get a handle on

228

00:09:51,710 --> 00:09:58,970

quantifying something that's associated

229

00:09:53,929 --> 00:10:01,509

with these these kinds of effects and

230

00:09:58,970 --> 00:10:01,509

the technology