

1
00:00:04,168 --> 00:00:09,759
hello everybody and welcome to the final

2
00:00:06,849 --> 00:00:11,500
hubble hang out of 2014 my name is Tony

3
00:00:09,759 --> 00:00:13,449
Darnell I work at the Space Telescope

4
00:00:11,500 --> 00:00:16,120
Science Institute and as we do every

5
00:00:13,449 --> 00:00:18,309
week we have another great hangout plan

6
00:00:16,120 --> 00:00:21,370
for you we have people from the Intrepid

7
00:00:18,309 --> 00:00:23,229
Sea Air and Space Museum in New York to

8
00:00:21,370 --> 00:00:25,089
talk about their Hubble at 25 exhibit

9
00:00:23,230 --> 00:00:26,469
and one of them I don't know how this

10
00:00:25,089 --> 00:00:27,940
happened we're going to ask and find out

11
00:00:26,469 --> 00:00:29,049
one of them happened to be an astronaut

12
00:00:27,940 --> 00:00:31,179
so we're going to ask him a few

13
00:00:29,050 --> 00:00:33,100
astronaut questions too while he's here

14
00:00:31,179 --> 00:00:35,408
but before I get to this let me

15
00:00:33,100 --> 00:00:37,808
introduce my my Hubble buds my

16
00:00:35,408 --> 00:00:39,460
colleagues dr. carol christian who does

17
00:00:37,808 --> 00:00:42,099
this with me every week she's the hubble

18
00:00:39,460 --> 00:00:44,469
outreach astronomer extraordinaire

19
00:00:42,100 --> 00:00:47,139
welcome Carol it's good to see ya are

20
00:00:44,469 --> 00:00:48,850
you get promoted yes it's true yeah we

21
00:00:47,139 --> 00:00:51,789
had an extraordinary to the title yeah

22
00:00:48,850 --> 00:00:53,350
the and Scott Lewis our driver of the

23
00:00:51,789 --> 00:00:55,719
internet who is now going to tell you

24
00:00:53,350 --> 00:00:57,039
how you can interact with us and you

25
00:00:55,719 --> 00:00:58,600
better interact with us we want your

26
00:00:57,039 --> 00:01:00,158
comments and questions don't make me

27
00:00:58,600 --> 00:01:01,420
climb into the internet and come yell

28
00:01:00,158 --> 00:01:05,170
another thing oh there's already a bunch

29

00:01:01,420 --> 00:01:07,570
going on so first of all I wiki the QA

30
00:01:05,170 --> 00:01:09,670
up here which is on YouTube and Google+

31
00:01:07,569 --> 00:01:12,069
so if you have a question that you like

32
00:01:09,670 --> 00:01:14,349
to ask our panel click on that ask a

33
00:01:12,069 --> 00:01:16,059
question and also allows you guys to

34
00:01:14,349 --> 00:01:18,309
upvote different questions if there's

35
00:01:16,060 --> 00:01:20,049
something that's really popular we can

36
00:01:18,310 --> 00:01:21,399
select that there will time stamp it on

37
00:01:20,049 --> 00:01:25,479
YouTube for those that are watching us

38
00:01:21,399 --> 00:01:27,310
later also we are on Twitter so we are

39
00:01:25,478 --> 00:01:29,679
using the hashtag hubble hang out and

40
00:01:27,310 --> 00:01:32,590
I'm also looking at the hashtag Hubble

41
00:01:29,679 --> 00:01:35,379
25 since this is a merging of the two

42
00:01:32,590 --> 00:01:37,060
for our 25th anniversary celebration so

43
00:01:35,379 --> 00:01:38,608

we will be going back and forth i'll be

44

00:01:37,060 --> 00:01:41,200

live tweeting from the Hubble telescope

45

00:01:38,608 --> 00:01:43,538

account so we look forward to those

46

00:01:41,200 --> 00:01:45,490

questions awesome thank you Scott and

47

00:01:43,539 --> 00:01:47,108

yes i'll be reading the questions or

48

00:01:45,489 --> 00:01:49,059

comments mostly to the Q&A app and the

49

00:01:47,108 --> 00:01:50,408

common tracker on the youtube page but

50

00:01:49,060 --> 00:01:52,478

scott will also let us know about all

51

00:01:50,409 --> 00:01:53,829

those other and things so don't make me

52

00:01:52,478 --> 00:01:55,118

climb into the internet i think i'm

53

00:01:53,828 --> 00:01:58,928

gaining too much weight for that these

54

00:01:55,118 --> 00:02:02,498

days yeah so just let's get to today's

55

00:01:58,929 --> 00:02:05,890

get to today's guest the Hubble Space

56

00:02:02,498 --> 00:02:07,868

Telescope has been in orbit now for 25

57

00:02:05,890 --> 00:02:11,169

years and any of you who know anything

58
00:02:07,868 --> 00:02:13,659
about numbers knows that the number 25

59
00:02:11,169 --> 00:02:17,109
is way way better than the number

60
00:02:13,659 --> 00:02:19,030
for we have this tendency when when even

61
00:02:17,110 --> 00:02:22,210
numbers rolled around to commemorate

62
00:02:19,030 --> 00:02:25,270
them we celebrate them and we want to

63
00:02:22,210 --> 00:02:28,780
and we are no exception and among the

64
00:02:25,270 --> 00:02:30,550
first people to celebrate the 25th year

65
00:02:28,780 --> 00:02:33,030
of the hubble space telescope in orbit

66
00:02:30,550 --> 00:02:35,860
it was launched in april of nineteen

67
00:02:33,030 --> 00:02:38,229
ninety and we're coming up quickly on

68
00:02:35,860 --> 00:02:40,150
that on that anniversary the people at

69
00:02:38,229 --> 00:02:43,079
the Intrepid Sea Air and Space Museum

70
00:02:40,150 --> 00:02:46,120
have opened an exhibit called Hubble at

71
00:02:43,080 --> 00:02:47,530
25 and they're here to tell us about

72
00:02:46,120 --> 00:02:49,270
what they've got going and a little bit

73
00:02:47,530 --> 00:02:51,640
about the museum itself while to talk

74
00:02:49,270 --> 00:02:55,110
about it we have Eric beim he's the

75
00:02:51,639 --> 00:02:58,869
curator of aviation there at the at the

76
00:02:55,110 --> 00:03:00,520
Museum i also have Jerry bay hall she's

77
00:02:58,870 --> 00:03:02,680
the education manager there she is

78
00:03:00,520 --> 00:03:04,060
dealing with the stem she has stem

79
00:03:02,680 --> 00:03:06,189
projects and stuff she's going to tell

80
00:03:04,060 --> 00:03:08,560
us about as well as astronaut Mike

81
00:03:06,189 --> 00:03:10,599
Massimino even know him as astro mike on

82
00:03:08,560 --> 00:03:13,300
twitter he's actually been to Hubble

83
00:03:10,599 --> 00:03:14,739
touched it done things to it and then

84
00:03:13,300 --> 00:03:16,180
came back down again and he's going to

85
00:03:14,740 --> 00:03:18,640
tell us about some of his experiences

86

00:03:16,180 --> 00:03:20,800
there as well but let me go back so Eric

87
00:03:18,639 --> 00:03:23,079
let me start with you tell us a little

88
00:03:20,800 --> 00:03:25,000
bit give us a bird's-eye view of what

89
00:03:23,080 --> 00:03:26,950
the exhibit is as well as tell us a

90
00:03:25,000 --> 00:03:28,750
little bit about the intrepid museum so

91
00:03:26,949 --> 00:03:30,310
oh well the intrepid is just like the

92
00:03:28,750 --> 00:03:31,689
greatest place in the world of work I

93
00:03:30,310 --> 00:03:34,270
mean this is an aircraft carrier that

94
00:03:31,689 --> 00:03:36,189
served through World War two the space

95
00:03:34,270 --> 00:03:37,659
race we recovered us got carpenters

96
00:03:36,189 --> 00:03:39,729
mission and also recovered the first

97
00:03:37,659 --> 00:03:42,039
Gemini mission with the young and

98
00:03:39,729 --> 00:03:44,859
gruesome so a lot of space history here

99
00:03:42,039 --> 00:03:46,810
already and then we got enterprise so we

100
00:03:44,860 --> 00:03:49,570

were always looking for space things to

101

00:03:46,810 --> 00:03:51,129

do and every summer we do with space and

102

00:03:49,569 --> 00:03:53,650

science fest and we bring the astronauts

103

00:03:51,129 --> 00:03:55,180

out here as many as NASA let us have and

104

00:03:53,650 --> 00:03:56,709

I think it was hit up a mic here a

105

00:03:55,180 --> 00:03:58,930

couple of years ago and he put a little

106

00:03:56,709 --> 00:04:01,030

bug in our ear about that even number

107

00:03:58,930 --> 00:04:02,260

that 25 coming up for hobbles so we

108

00:04:01,030 --> 00:04:06,129

really started thinking hard about that

109

00:04:02,259 --> 00:04:07,599

and that just kind of kicked it off so

110

00:04:06,129 --> 00:04:10,689

Scott showing us a sort of an overview

111

00:04:07,599 --> 00:04:12,250

of what the exhibit looks like at the at

112

00:04:10,689 --> 00:04:13,959

the intrepid my keg why don't you tell

113

00:04:12,250 --> 00:04:16,839

us a little bit about how did you get

114

00:04:13,959 --> 00:04:20,649

involved what's your role here well Tony

115
00:04:16,839 --> 00:04:24,489
I've been really lucky to get a chance

116
00:04:20,649 --> 00:04:25,689
to contribute to this I am now i look at

117
00:04:24,490 --> 00:04:29,230
the astronaut program

118
00:04:25,689 --> 00:04:31,569
and NASA back in July and now teaching

119
00:04:29,230 --> 00:04:33,819
at Columbia my faculty member there and

120
00:04:31,569 --> 00:04:36,159
i'm also an advisor here at the intrepid

121
00:04:33,819 --> 00:04:37,389
museum so i'm in new york city because

122
00:04:36,160 --> 00:04:40,420
were the opportunity do a lot of cool

123
00:04:37,389 --> 00:04:44,860
things including participate in this in

124
00:04:40,420 --> 00:04:46,650
this exhibit so as my job as advisor I

125
00:04:44,860 --> 00:04:50,259
got to work with Eric and the team here

126
00:04:46,649 --> 00:04:52,209
in trying to determine what we would

127
00:04:50,259 --> 00:04:56,230
like to have to show people here at the

128
00:04:52,209 --> 00:05:00,339
Museum so what artifacts would be would

129
00:04:56,230 --> 00:05:03,460
be interesting some of the tools that we

130
00:05:00,339 --> 00:05:05,169
use in orbit or actually on display it's

131
00:05:03,459 --> 00:05:07,319
very personal a couple of our flown

132
00:05:05,170 --> 00:05:11,530
items I flew a home plate in space on

133
00:05:07,319 --> 00:05:13,360
sts-125 from shea stadium for from New

134
00:05:11,529 --> 00:05:15,159
York City for the Mets we have that home

135
00:05:13,360 --> 00:05:17,530
plate here we have a basketball that was

136
00:05:15,160 --> 00:05:20,920
used by Edwin Hubble the actual hubble

137
00:05:17,529 --> 00:05:22,179
hubble guy Hubble the dude was was from

138
00:05:20,920 --> 00:05:23,410
the University of Chicago and played

139
00:05:22,180 --> 00:05:24,970
basketball there wasn't just an

140
00:05:23,410 --> 00:05:27,640
astronomer we have a basketball that

141
00:05:24,970 --> 00:05:29,590
that that he played played with in a

142
00:05:27,639 --> 00:05:31,569
game and he actually beat I think you'd

143

00:05:29,589 --> 00:05:33,479
beta Indiana was a very low-scoring

144
00:05:31,569 --> 00:05:35,379
game it was back on the old days

145
00:05:33,480 --> 00:05:36,790
basketballs and a bouncing ball back

146
00:05:35,379 --> 00:05:39,759
then but we have that kind of fun stuff

147
00:05:36,790 --> 00:05:42,069
but we also have some history about the

148
00:05:39,759 --> 00:05:43,569
Hubble itself it didn't work as well as

149
00:05:42,069 --> 00:05:44,800
they would have liked there was problems

150
00:05:43,569 --> 00:05:46,629
with the optics and there's a story

151
00:05:44,800 --> 00:05:48,699
there how it was fixed and how the

152
00:05:46,629 --> 00:05:52,120
instruments work my favorite part of the

153
00:05:48,699 --> 00:05:54,969
exhibit is and inside in the back of the

154
00:05:52,120 --> 00:05:56,319
exhibit we have I say incitement whole

155
00:05:54,970 --> 00:05:57,610
things inside we got to go into the

156
00:05:56,319 --> 00:06:00,490
exhibit and go to the back there's a

157
00:05:57,610 --> 00:06:01,810

special video room with footage from our

158

00:06:00,490 --> 00:06:03,790
training in the neutral buoyancy

159

00:06:01,810 --> 00:06:06,129
laboratory which is our big pool that we

160

00:06:03,790 --> 00:06:08,620
practice our space walks in and it

161

00:06:06,129 --> 00:06:10,870
exactly it's not a big screen it's got

162

00:06:08,620 --> 00:06:13,269
the sounds behind it that we had in a

163

00:06:10,870 --> 00:06:14,800
pool and it reminds me so much of what

164

00:06:13,269 --> 00:06:17,889
those training days were like all those

165

00:06:14,800 --> 00:06:19,449
days that we spent over training over in

166

00:06:17,889 --> 00:06:21,490
the in the big pool at the neutral

167

00:06:19,449 --> 00:06:23,649
buoyancy laboratory so it's me it's very

168

00:06:21,490 --> 00:06:25,060
very personal to chose the stuff we use

169

00:06:23,649 --> 00:06:27,399
and it tells the story of the telescope

170

00:06:25,060 --> 00:06:30,519
but also of the crews and the science

171

00:06:27,399 --> 00:06:33,039
and it's I well you know I contributed

172
00:06:30,519 --> 00:06:34,870
through its own bias but I do I feel

173
00:06:33,040 --> 00:06:36,280
great yeah I want to go I want to get

174
00:06:34,870 --> 00:06:37,449
back to a lot of your experiences on the

175
00:06:36,279 --> 00:06:38,509
shuttle and working there specifically

176
00:06:37,449 --> 00:06:39,860
working on the Hubble

177
00:06:38,509 --> 00:06:41,930
I'm gonna get my do the exhibit itself a

178
00:06:39,860 --> 00:06:44,060
little bit with Eric when did it open

179
00:06:41,930 --> 00:06:45,590
when did it start and for how long will

180
00:06:44,060 --> 00:06:47,629
it be available for the public to come

181
00:06:45,589 --> 00:06:49,759
look at well we just opened it this

182
00:06:47,629 --> 00:06:51,199
october october twenty third and we're

183
00:06:49,759 --> 00:06:53,990
going to keep it over for almost 11

184
00:06:51,199 --> 00:06:56,599
months until mid-september of 2015 so

185
00:06:53,990 --> 00:06:58,819
we'll be open and right through the

186
00:06:56,600 --> 00:07:02,810
anniversary of the launch anniversary in

187
00:06:58,819 --> 00:07:04,490
april so goes along with the exhibit are

188
00:07:02,810 --> 00:07:06,050
a lot of programming we've already had a

189
00:07:04,490 --> 00:07:08,840
couple programs and these are evening

190
00:07:06,050 --> 00:07:11,629
programs but some other programs coming

191
00:07:08,839 --> 00:07:14,089
up just kind of a concept we like to do

192
00:07:11,629 --> 00:07:15,980
kari and her team have all these

193
00:07:14,089 --> 00:07:18,439
educational programs for the kids or in

194
00:07:15,980 --> 00:07:20,090
a day but the adult programming at night

195
00:07:18,439 --> 00:07:22,670
or the family programming at night is

196
00:07:20,089 --> 00:07:24,859
about big part of it so as i mentioned

197
00:07:22,670 --> 00:07:27,530
at the top of the of the Hangout the

198
00:07:24,860 --> 00:07:29,840
Hubble has been up for 25 years and it's

199
00:07:27,529 --> 00:07:32,059
been circling over our heads not looking

200

00:07:29,839 --> 00:07:34,039
down at us but looking up at the outer

201
00:07:32,060 --> 00:07:36,560
reaches of the solar system and our

202
00:07:34,040 --> 00:07:39,170
galaxy and the universe and I think it

203
00:07:36,560 --> 00:07:42,230
is more than any other scientific

204
00:07:39,170 --> 00:07:44,090
instrument has given us with its

205
00:07:42,230 --> 00:07:47,810
glimpses of the heavens it's given us

206
00:07:44,089 --> 00:07:49,269
more a perspective on our place in the

207
00:07:47,810 --> 00:07:51,290
universe than I think any other

208
00:07:49,269 --> 00:07:52,669
telescope has ever done and I've often

209
00:07:51,290 --> 00:07:54,830
said and I don't think I'm overstating

210
00:07:52,670 --> 00:07:56,569
and when I say this is that the Hubble

211
00:07:54,829 --> 00:07:58,579
Space Telescope in my opinion is the

212
00:07:56,569 --> 00:08:00,889
most single most important instrument

213
00:07:58,579 --> 00:08:03,050
ever built and because of that because

214
00:08:00,889 --> 00:08:05,479

of its what it has shown us and taught

215

00:08:03,050 --> 00:08:08,720

us about the universe so Jerry when you

216

00:08:05,480 --> 00:08:11,030

are designing some of the education

217

00:08:08,720 --> 00:08:14,150

programs that go along with the exhibit

218

00:08:11,029 --> 00:08:15,739

and are you seeing any of that sense of

219

00:08:14,149 --> 00:08:18,319

wonder among the students you're

220

00:08:15,740 --> 00:08:21,319

teaching with this is it is the is the

221

00:08:18,319 --> 00:08:22,790

exhibit conveying that sort of sense of

222

00:08:21,319 --> 00:08:25,339

wonder that Hubble has always been

223

00:08:22,790 --> 00:08:27,410

famous for I think absolutely especially

224

00:08:25,339 --> 00:08:30,679

for the younger kids who have grown up

225

00:08:27,410 --> 00:08:32,300

with a lot of these images and and they

226

00:08:30,680 --> 00:08:34,370

recognize them and they might see them

227

00:08:32,299 --> 00:08:37,909

in you know popular culture and then to

228

00:08:34,370 --> 00:08:40,460

see these huge images underneath the

229
00:08:37,909 --> 00:08:43,039
Space Shuttle that we have it really

230
00:08:40,460 --> 00:08:45,950
does bring them to the science and

231
00:08:43,039 --> 00:08:48,110
technology that has made it possible

232
00:08:45,950 --> 00:08:51,080
they finally understand why it's

233
00:08:48,110 --> 00:08:52,500
important to have the telescope there up

234
00:08:51,080 --> 00:08:54,509
above the Earth's atmosphere

235
00:08:52,500 --> 00:08:57,090
here and what it can do it really is

236
00:08:54,509 --> 00:08:58,409
amazing for them so tell us a little

237
00:08:57,090 --> 00:09:00,420
about some of the programs you've

238
00:08:58,409 --> 00:09:02,789
designed what are what specifically are

239
00:09:00,419 --> 00:09:04,919
you teaching kids and at jet what

240
00:09:02,789 --> 00:09:07,559
general age range are you targeting um

241
00:09:04,919 --> 00:09:10,829
we're actually we've been trying to

242
00:09:07,559 --> 00:09:13,799
target k through 12 hosts the whole

243
00:09:10,830 --> 00:09:15,330
Schmeer I mean the K through the K

244
00:09:13,799 --> 00:09:18,899
through tues I admit are a little

245
00:09:15,330 --> 00:09:21,270
difficult but the exhibit is designed so

246
00:09:18,899 --> 00:09:23,879
well around stem science technology

247
00:09:21,269 --> 00:09:26,490
engineering math that you can really

248
00:09:23,879 --> 00:09:29,220
target and focus the different age

249
00:09:26,490 --> 00:09:30,600
groups so for the little ones we

250
00:09:29,220 --> 00:09:33,720
actually lost you're invested in a

251
00:09:30,600 --> 00:09:35,399
portable planetarium um so was it a star

252
00:09:33,720 --> 00:09:38,160
lab I used to have one of them ah it is

253
00:09:35,399 --> 00:09:39,480
it did you tell us oh okay they've got

254
00:09:38,159 --> 00:09:41,039
the UH they've grown a lot i love those

255
00:09:39,480 --> 00:09:45,300
things those those those inflatable

256
00:09:41,039 --> 00:09:47,370
things you walk away yeah yes oh you

257

00:09:45,299 --> 00:09:51,029
know for K through 2 kids who've never

258
00:09:47,370 --> 00:09:53,250
been in one of those we show them images

259
00:09:51,029 --> 00:09:56,909
that are taken with Hubble inside the

260
00:09:53,250 --> 00:09:59,100
planetarium specifically at and we look

261
00:09:56,909 --> 00:10:02,730
at constellations and specifically stars

262
00:09:59,100 --> 00:10:03,990
in Orion and Ursa Major and then we take

263
00:10:02,730 --> 00:10:06,330
them out of the planetarium and they get

264
00:10:03,990 --> 00:10:09,600
to create their own star story so you

265
00:10:06,330 --> 00:10:10,980
know we bring it down to a level for the

266
00:10:09,600 --> 00:10:12,960
caves or trees that are it's really

267
00:10:10,980 --> 00:10:16,860
accessible and then we show them where

268
00:10:12,960 --> 00:10:18,210
those pictures came from and for the the

269
00:10:16,860 --> 00:10:20,850
upper grades we talk about the

270
00:10:18,210 --> 00:10:23,280
spectrometers we look at um discreet

271
00:10:20,850 --> 00:10:25,170

gases through fractal lenses it's

272

00:10:23,279 --> 00:10:26,819

actually really fun and then we talk

273

00:10:25,169 --> 00:10:28,469

about galaxy shapes the shapes of

274

00:10:26,820 --> 00:10:31,980

different galaxies and we actually do an

275

00:10:28,470 --> 00:10:33,899

art project so we bring together the

276

00:10:31,980 --> 00:10:36,149

science and then the art because these

277

00:10:33,899 --> 00:10:38,370

really are beautiful photographs when

278

00:10:36,149 --> 00:10:41,429

you get right down to it so it's been a

279

00:10:38,370 --> 00:10:44,009

lot of fun and it certainly has been a

280

00:10:41,429 --> 00:10:46,139

way to get our education kind of

281

00:10:44,009 --> 00:10:50,879

creative juices flowing it's been really

282

00:10:46,139 --> 00:10:51,960

wonderful so imma do you have to are all

283

00:10:50,879 --> 00:10:54,600

of your activities centered around

284

00:10:51,960 --> 00:10:56,430

things at the museum itself or let's say

285

00:10:54,600 --> 00:10:57,779

I'm a teacher can I contact you and

286
00:10:56,429 --> 00:10:59,489
would you have some activities maybe I

287
00:10:57,779 --> 00:11:01,199
can't go to the museum but maybe do you

288
00:10:59,490 --> 00:11:04,320
have some things maybe I could do in my

289
00:11:01,200 --> 00:11:06,150
classroom absolutely I mean we can

290
00:11:04,320 --> 00:11:09,060
design certain programs 40

291
00:11:06,149 --> 00:11:12,689
we have the capabilities obviously to

292
00:11:09,059 --> 00:11:13,739
beam into classrooms for certain and

293
00:11:12,690 --> 00:11:16,790
then there are a lot of other resources

294
00:11:13,740 --> 00:11:22,320
that were happy to connect people with

295
00:11:16,789 --> 00:11:23,819
so the so the one because it's

296
00:11:22,320 --> 00:11:25,470
underneath the enterprise and the

297
00:11:23,820 --> 00:11:27,990
enterprise for those who don't know the

298
00:11:25,470 --> 00:11:30,389
Space Shuttle enterprise is was not an

299
00:11:27,990 --> 00:11:32,460
actual working fully working space

300
00:11:30,389 --> 00:11:34,860
station or space straddle it was one of

301
00:11:32,460 --> 00:11:36,570
those that they used to test fly to make

302
00:11:34,860 --> 00:11:39,289
sure they could land it I remember we

303
00:11:36,570 --> 00:11:42,810
was was a John Young to float the fluid

304
00:11:39,289 --> 00:11:44,189
Eric that that they glided the the

305
00:11:42,809 --> 00:11:46,529
enterprise down in its first flight

306
00:11:44,190 --> 00:11:48,120
actually Fred Hayes on the first fret Oh

307
00:11:46,529 --> 00:11:50,309
was Fred hey sorry thank you for reading

308
00:11:48,120 --> 00:11:52,350
right Chad when young was the first

309
00:11:50,309 --> 00:11:53,879
commander of the space shuttle oh that's

310
00:11:52,350 --> 00:11:57,269
right that's what you think so the real

311
00:11:53,879 --> 00:11:58,919
first if sts-1 yes yes when John Young

312
00:11:57,269 --> 00:12:00,480
was the commander that's right and

313
00:11:58,919 --> 00:12:02,969
Robert Robert Crippen went with him so

314

00:12:00,480 --> 00:12:04,769
yeah yeah okay I right I got confused so

315
00:12:02,970 --> 00:12:06,060
but this this didn't have rocket engines

316
00:12:04,769 --> 00:12:08,490
on it was just a sort of a

317
00:12:06,059 --> 00:12:10,949
proof-of-concept can we glide and land

318
00:12:08,490 --> 00:12:13,409
this thing right Eric it was but it was

319
00:12:10,950 --> 00:12:16,770
built as a spaceship structurally it was

320
00:12:13,409 --> 00:12:19,889
all there it was okay of course yeah

321
00:12:16,769 --> 00:12:21,240
we've had the designation ov 101 the 100

322
00:12:19,889 --> 00:12:24,330
series was supposed to be the orbital

323
00:12:21,240 --> 00:12:27,120
vehicles though it was built to be

324
00:12:24,330 --> 00:12:29,070
eventually converted into an orbital

325
00:12:27,120 --> 00:12:30,960
vehicle you know that has to change

326
00:12:29,070 --> 00:12:32,310
their mind later on because i think the

327
00:12:30,960 --> 00:12:35,250
structure was a little heavy was going

328
00:12:32,309 --> 00:12:37,679

to be expensive to take the photons off

329

00:12:35,250 --> 00:12:41,009

put real tiles on it and the engines and

330

00:12:37,679 --> 00:12:43,079

all the other systems and just uh guess

331

00:12:41,009 --> 00:12:45,059

they were moving forward each kenichi

332

00:12:43,080 --> 00:12:47,160

vehicle was lighter in weight as they

333

00:12:45,059 --> 00:12:48,899

were building them to sew and which is

334

00:12:47,159 --> 00:12:50,850

really important for hauling pay load up

335

00:12:48,899 --> 00:12:52,559

was that because materials just got

336

00:12:50,850 --> 00:12:54,330

better or they got smarter at building

337

00:12:52,559 --> 00:12:55,709

space shuttles in offer both things I've

338

00:12:54,330 --> 00:12:58,800

talked to engineer and I heard it's been

339

00:12:55,710 --> 00:13:01,019

materials and just structurally it's

340

00:12:58,799 --> 00:13:03,839

heavy when did you get it reminded

341

00:13:01,019 --> 00:13:07,559

remind me when you got enterprise two

342

00:13:03,840 --> 00:13:12,570

thousand eleven no twelve she tells I'm

343
00:13:07,559 --> 00:13:14,879
sorry oh yeah we were don't get so mad

344
00:13:12,570 --> 00:13:16,770
when I do that to her I promise by yeah

345
00:13:14,879 --> 00:13:17,299
I know I'm gonna work yeah I'm putting

346
00:13:16,769 --> 00:13:22,159
her on

347
00:13:17,299 --> 00:13:24,349
rewarded and in my spring 2011 okay fine

348
00:13:22,159 --> 00:13:26,719
that's good enough we were still flying

349
00:13:24,350 --> 00:13:28,490
real space shuttles game at me Thank You

350
00:13:26,720 --> 00:13:30,259
those are 112 but we were still flying

351
00:13:28,490 --> 00:13:32,360
to space shells in space in two thousand

352
00:13:30,259 --> 00:13:35,569
right so a year later they went through

353
00:13:32,360 --> 00:13:37,519
the museum's yeah 2012 so did so Jerry

354
00:13:35,570 --> 00:13:40,010
you you got you give these students sort

355
00:13:37,519 --> 00:13:42,110
of a sense of just you know having the

356
00:13:40,009 --> 00:13:43,909
enterprise there helps you give them a

357
00:13:42,110 --> 00:13:46,789
sense of just how big Hubble was right

358
00:13:43,909 --> 00:13:48,649
yeah it is I mean and it's such right

359
00:13:46,789 --> 00:13:50,480
now it's such a fantastic connection to

360
00:13:48,649 --> 00:13:52,429
make because if you I don't know if

361
00:13:50,480 --> 00:13:54,350
we've got the shot of the exhibit again

362
00:13:52,429 --> 00:13:56,659
the exhibit it's set up like we said

363
00:13:54,350 --> 00:13:59,149
right underneath the shuttle so you can

364
00:13:56,659 --> 00:14:01,519
stand there with your group look up at

365
00:13:59,149 --> 00:14:03,740
the payload area of the shuttle and say

366
00:14:01,519 --> 00:14:06,139
it was designed to fit in that pelo

367
00:14:03,740 --> 00:14:07,639
because we have a decent sized model of

368
00:14:06,139 --> 00:14:09,679
it right now but for a lot of kids who

369
00:14:07,639 --> 00:14:12,679
don't understand scale and how large

370
00:14:09,679 --> 00:14:14,569
actually you know things are to show

371

00:14:12,679 --> 00:14:17,000
them yeah I fit inside that payload it's

372
00:14:14,570 --> 00:14:19,220
about the same size as a large school

373
00:14:17,000 --> 00:14:20,990
bus it's really easy to make those real

374
00:14:19,220 --> 00:14:23,720
life connections which is what we try to

375
00:14:20,990 --> 00:14:26,570
do with all our programming here on the

376
00:14:23,720 --> 00:14:28,100
ship yeah I vogue everybody always says

377
00:14:26,570 --> 00:14:30,050
that the Hubble Space Telescope is the

378
00:14:28,100 --> 00:14:31,490
size of a school bus and while that you

379
00:14:30,049 --> 00:14:33,349
know you say that and you can imagine a

380
00:14:31,490 --> 00:14:37,009
school bus when you really actually see

381
00:14:33,350 --> 00:14:38,750
it it's pretty darn big so Mike you went

382
00:14:37,009 --> 00:14:41,299
up and you you went up and actually

383
00:14:38,750 --> 00:14:43,039
touch this thing how were you impressed

384
00:14:41,299 --> 00:14:44,689
by how large it was what were some of

385
00:14:43,039 --> 00:14:47,599

your first thoughts for going up there

386

00:14:44,690 --> 00:14:49,459

yeah we yeah so that when you when you

387

00:14:47,600 --> 00:14:51,620

Ronnie I never saw the telescope before

388

00:14:49,458 --> 00:14:55,039

was launched I was launched in 1990 I

389

00:14:51,620 --> 00:14:58,060

became an astronaut 96 and started

390

00:14:55,039 --> 00:15:00,620

training for the flight more or less and

391

00:14:58,059 --> 00:15:04,399

in two thousand to fly my first flight

392

00:15:00,620 --> 00:15:07,339

to flood in 2002 and so when you running

393

00:15:04,399 --> 00:15:09,049

with Hubble it starts out and you wake

394

00:15:07,339 --> 00:15:11,089

up more or less on the third day your

395

00:15:09,049 --> 00:15:13,159

third space space flight a flight day

396

00:15:11,089 --> 00:15:15,649

three is when we did our rendezvous

397

00:15:13,159 --> 00:15:17,659

vision so you see it on the hall right

398

00:15:15,649 --> 00:15:19,970

away at now and say the rise but out

399

00:15:17,659 --> 00:15:22,129

there in space somewhere as it looks

400
00:15:19,970 --> 00:15:23,750
like a star that keeps getting brighter

401
00:15:22,129 --> 00:15:26,720
and brighter as you get close to it as

402
00:15:23,750 --> 00:15:28,220
hours go by and then it starts to take

403
00:15:26,720 --> 00:15:32,110
the shape of a telescope as you get

404
00:15:28,220 --> 00:15:32,110
closer and you only

405
00:15:33,730 --> 00:15:39,950
oops uh-oh you got accidentally muted

406
00:15:37,339 --> 00:15:45,529
Mike can you a mute yourself my weekend

407
00:15:39,950 --> 00:15:47,269
are you okay right so um so I don't know

408
00:15:45,528 --> 00:15:49,399
where you were but as a I was saying how

409
00:15:47,269 --> 00:15:52,490
the trouble starts out as a star yeah

410
00:15:49,399 --> 00:15:54,320
yeah it's bigger and bigger and in as

411
00:15:52,490 --> 00:15:56,000
you get close to it its arse you start

412
00:15:54,320 --> 00:15:57,320
seeing like a little telescope and it

413
00:15:56,000 --> 00:15:59,299
gets bigger and bigger and bigger and

414
00:15:57,320 --> 00:16:01,040
then it's like you recognize this Hubble

415
00:15:59,299 --> 00:16:02,990
and you can't close to an crap would

416
00:16:01,039 --> 00:16:04,730
pull in a pail of day but it's it's

417
00:16:02,990 --> 00:16:07,639
really big I mean it's nowhere near as

418
00:16:04,730 --> 00:16:09,379
big as a space station but it's pretty

419
00:16:07,639 --> 00:16:12,230
impressive when you when you come up and

420
00:16:09,379 --> 00:16:14,269
see this thing after your gift in space

421
00:16:12,230 --> 00:16:16,070
for a few days and then you hit the mark

422
00:16:14,269 --> 00:16:18,440
and you're right there next to it well

423
00:16:16,070 --> 00:16:19,850
so because of its size and the way you

424
00:16:18,440 --> 00:16:21,860
have to approach it with the space

425
00:16:19,850 --> 00:16:23,509
shuttle is there any worry that if

426
00:16:21,860 --> 00:16:25,220
you're not getting it just something I

427
00:16:23,509 --> 00:16:26,870
mean I don't know exactly how you grab

428

00:16:25,220 --> 00:16:29,209
on to it but was there is any worry

429
00:16:26,870 --> 00:16:31,429
about you know going at it too quickly

430
00:16:29,208 --> 00:16:33,169
or maybe spinning it by accident maybe

431
00:16:31,429 --> 00:16:35,750
is there any danger is is it massive

432
00:16:33,169 --> 00:16:37,789
enough to sort of get there tells the

433
00:16:35,750 --> 00:16:39,799
telescope and the space station in kind

434
00:16:37,789 --> 00:16:41,539
of a role or some kind of the space show

435
00:16:39,799 --> 00:16:43,039
are you space shuttle space shuttle

436
00:16:41,539 --> 00:16:46,039
forgive me yeah you could all about you

437
00:16:43,039 --> 00:16:50,059
can do all kinds of bad things I'm

438
00:16:46,039 --> 00:16:53,028
really concerned about hitting it you go

439
00:16:50,059 --> 00:16:55,549
ahead I'm fast you're going 17,500 miles

440
00:16:53,028 --> 00:16:57,740
an hour and so is the telescope so

441
00:16:55,549 --> 00:16:59,870
you're flying in formation at 17,500

442
00:16:57,740 --> 00:17:02,778

miles an hour which is really fast and

443

00:16:59,870 --> 00:17:05,359

in the commander we all work together

444

00:17:02,778 --> 00:17:07,369

but it's primarily to commander in my

445

00:17:05,359 --> 00:17:09,588

flight Scott Altman who flies the

446

00:17:07,369 --> 00:17:12,019

shuttle manually up to within a couple

447

00:17:09,588 --> 00:17:14,029

inches of the telescope and the way we

448

00:17:12,019 --> 00:17:15,889

grabbed it is with the robot on there's

449

00:17:14,029 --> 00:17:17,299

to grapple fixtures on Hubble the

450

00:17:15,890 --> 00:17:21,110

primary one is when we've always used

451

00:17:17,299 --> 00:17:22,639

and he gets it such that the target of

452

00:17:21,109 --> 00:17:24,918

that grapple fixture that we're going to

453

00:17:22,640 --> 00:17:27,860

grab with the robot arm is centered in

454

00:17:24,919 --> 00:17:31,730

the camera of the of the of the arm of

455

00:17:27,859 --> 00:17:33,500

the manipulator arm so that the robot

456

00:17:31,730 --> 00:17:35,839

operate their own operator just has to

457
00:17:33,500 --> 00:17:37,220
kind of push in and go get the telescope

458
00:17:35,839 --> 00:17:39,709
but its orbital mechanics and rates

459
00:17:37,220 --> 00:17:41,350
going on so if you wait long enough with

460
00:17:39,710 --> 00:17:43,819
more than just a few seconds really

461
00:17:41,349 --> 00:17:44,449
you'll start seeing mismatch he's trying

462
00:17:43,819 --> 00:17:46,970
to match

463
00:17:44,450 --> 00:17:50,028
perfectly the attitude of the grapple

464
00:17:46,970 --> 00:17:52,339
fixture with the position of the robot

465
00:17:50,028 --> 00:17:54,409
arm and then turn it over to the the arm

466
00:17:52,339 --> 00:17:56,089
operator to go in and grapple the

467
00:17:54,409 --> 00:17:57,830
telescope but it you've got to act

468
00:17:56,089 --> 00:17:59,629
pretty quickly you also don't want to

469
00:17:57,829 --> 00:18:03,288
bang it if you knock it it's a free

470
00:17:59,630 --> 00:18:04,760
flyer that's bad get off spinning yeah I

471
00:18:03,288 --> 00:18:07,278
mean all kinds of bad things can happen

472
00:18:04,759 --> 00:18:11,359
so no pressure nice put a lot of

473
00:18:07,278 --> 00:18:14,538
pressure in practice a lot in order to

474
00:18:11,359 --> 00:18:16,428
do that I am effort but but uh yeah

475
00:18:14,538 --> 00:18:18,859
megan macarthur on my second flight you

476
00:18:16,429 --> 00:18:20,960
is the first rookie to ever be entrusted

477
00:18:18,859 --> 00:18:23,418
with with the job of the way the

478
00:18:20,960 --> 00:18:25,759
telescope does you good night that's why

479
00:18:23,419 --> 00:18:27,350
that's probably bad day I will say on

480
00:18:25,759 --> 00:18:29,690
behalf of the mission and all the people

481
00:18:27,349 --> 00:18:32,209
at Space Telescope we sit in the

482
00:18:29,690 --> 00:18:34,970
auditorium and in front of our TVs and

483
00:18:32,210 --> 00:18:38,538
computers and we hold our breaths that

484
00:18:34,970 --> 00:18:40,460
whole procedure is like oh my gosh

485

00:18:38,538 --> 00:18:43,879
anyway we're with you we're with you

486
00:18:40,460 --> 00:18:45,319
thank you that was a big mission to you

487
00:18:43,880 --> 00:18:47,510
did a lot of stuff to this to the

488
00:18:45,319 --> 00:18:50,298
telescope I mean one of the reasons that

489
00:18:47,509 --> 00:18:53,269
Hubble has been up there for 25 years

490
00:18:50,298 --> 00:18:55,730
able to do what it does is because of

491
00:18:53,269 --> 00:18:58,519
this design capability of going up there

492
00:18:55,730 --> 00:19:00,259
grabbing on to it and opening up hatches

493
00:18:58,519 --> 00:19:02,089
and pulling things out and pulling and

494
00:19:00,259 --> 00:19:04,099
putting other things in and you guys

495
00:19:02,089 --> 00:19:06,048
basically made an almost an entirely too

496
00:19:04,099 --> 00:19:07,730
new telescope out there didn't you yeah

497
00:19:06,048 --> 00:19:09,408
every one of the science instruments so

498
00:19:07,730 --> 00:19:11,659
there was five servicing missions and

499
00:19:09,409 --> 00:19:13,340

over the course of the of the servicing

500

00:19:11,659 --> 00:19:16,190

missions each scientific instrument was

501

00:19:13,339 --> 00:19:17,329

replaced new batteries we put on my left

502

00:19:16,190 --> 00:19:19,580

my second floor you put in new batteries

503

00:19:17,329 --> 00:19:21,019

the solar rays will replace twice the

504

00:19:19,579 --> 00:19:23,298

wide field camera itself one of the

505

00:19:21,019 --> 00:19:26,089

sites of engagements is on a virgin

506

00:19:23,298 --> 00:19:28,099

three of that the right gyroscopes have

507

00:19:26,089 --> 00:19:29,449

been replaced three times we just put

508

00:19:28,099 --> 00:19:32,058

those in the last time the most of the

509

00:19:29,450 --> 00:19:35,298

newest instead of a new power control

510

00:19:32,058 --> 00:19:37,278

unit new computer yeah so you can

511

00:19:35,298 --> 00:19:39,589

replace stuff the parts that were out so

512

00:19:37,278 --> 00:19:41,599

you replace those and every time you

513

00:19:39,589 --> 00:19:43,569

replace an instrument or even though the

514
00:19:41,599 --> 00:19:46,548
component parts liking the gyroscopes

515
00:19:43,569 --> 00:19:49,069
the use the latest technology so as

516
00:19:46,548 --> 00:19:51,558
technology advanced you were able to put

517
00:19:49,069 --> 00:19:53,599
the new stuff in inside the telescope so

518
00:19:51,558 --> 00:19:56,119
and on my second mission it wasn't just

519
00:19:53,599 --> 00:19:58,139
replacing stuff it was fixing things we

520
00:19:56,119 --> 00:20:00,719
took two instruments that were that were

521
00:19:58,140 --> 00:20:02,880
broken and we show semesta the exhibit

522
00:20:00,720 --> 00:20:04,920
they had a power supply failure of the

523
00:20:02,880 --> 00:20:07,380
advanced camera for surveys and on a

524
00:20:04,920 --> 00:20:08,910
space telescope imaging spectrograph but

525
00:20:07,380 --> 00:20:11,100
we had to open those instruments up kind

526
00:20:08,910 --> 00:20:13,769
of performed surgery on orbit that put

527
00:20:11,099 --> 00:20:15,240
new power supplies in yourself that was

528
00:20:13,769 --> 00:20:18,299
a little bit different because it wasn't

529
00:20:15,240 --> 00:20:20,250
just removing in replace it was going

530
00:20:18,299 --> 00:20:22,710
and get inside of the instrument it was

531
00:20:20,250 --> 00:20:25,640
never intended to be worked on and take

532
00:20:22,710 --> 00:20:28,980
stuff out and put new Stephanie so um

533
00:20:25,640 --> 00:20:32,160
but but the the telescope did not leave

534
00:20:28,980 --> 00:20:34,710
unscathed did it Mike hey you kind of

535
00:20:32,160 --> 00:20:36,570
broke it I'm here yeah we did yeah so

536
00:20:34,710 --> 00:20:38,100
gotta pee I really bringing the

537
00:20:36,569 --> 00:20:40,289
telescope's all right I have pulled the

538
00:20:38,099 --> 00:20:42,559
handle you brought Hubble Space

539
00:20:40,289 --> 00:20:45,299
Telescope you're the man who broke it

540
00:20:42,559 --> 00:20:47,159
all right sure so I we gonna fool the

541
00:20:45,299 --> 00:20:49,289
internal I pulled a handrail off of an

542

00:20:47,160 --> 00:20:51,600
instrument yep so what's the story there

543
00:20:49,289 --> 00:20:53,460
you had to it just you will turn well

544
00:20:51,599 --> 00:20:55,919
during one of the during one of the

545
00:20:53,460 --> 00:20:58,590
repairs for the space telescope imaging

546
00:20:55,920 --> 00:21:00,300
spectrograph we had to remove a handrail

547
00:20:58,589 --> 00:21:03,449
and where they get to the access panel

548
00:21:00,299 --> 00:21:07,019
to remove that panel had that panel

549
00:21:03,450 --> 00:21:09,569
itself had a hundred and i had a hundred

550
00:21:07,019 --> 00:21:11,639
and thirteen screws there were four

551
00:21:09,569 --> 00:21:13,200
screws on the handrail three of the

552
00:21:11,640 --> 00:21:15,000
screws came off the handrail but one was

553
00:21:13,200 --> 00:21:17,309
when it come off I kinda get the handle

554
00:21:15,000 --> 00:21:19,170
out of a way to get to the access panel

555
00:21:17,309 --> 00:21:21,269
to get access to the access panel and

556
00:21:19,170 --> 00:21:22,680

after about an hour and a half the

557

00:21:21,269 --> 00:21:24,839

clever idea came to see better just

558

00:21:22,680 --> 00:21:27,779

ripped the handrail off we were supposed

559

00:21:24,839 --> 00:21:29,279

to remove it with by taking out all four

560

00:21:27,779 --> 00:21:31,379

screws were only three came out so I had

561

00:21:29,279 --> 00:21:33,089

to rip the thing off so in truth yeah I

562

00:21:31,380 --> 00:21:36,540

did rip it off but it was had come off

563

00:21:33,089 --> 00:21:38,359

anyone okay Hague so I wish there's

564

00:21:36,539 --> 00:21:40,829

actually lane if you can make that

565

00:21:38,359 --> 00:21:43,439

thumbnail big there's the actual handle

566

00:21:40,829 --> 00:21:46,829

that at the exhibit exhibit has an angle

567

00:21:43,440 --> 00:21:48,029

so every piece is that's right glass of

568

00:21:46,829 --> 00:21:51,419

the exhibit and that's still on the

569

00:21:48,029 --> 00:21:53,759

telescope great thing was that after

570

00:21:51,420 --> 00:21:56,190

that the project actually published the

571
00:21:53,759 --> 00:21:59,339
shuttle gyros when Mike did that and it

572
00:21:56,190 --> 00:22:05,750
shows that the gyros won't like this the

573
00:21:59,339 --> 00:22:08,750
trace of it wow they're like oh wow

574
00:22:05,750 --> 00:22:10,400
come off so this is one of the things

575
00:22:08,750 --> 00:22:12,650
you can see exhibit if you guys go to

576
00:22:10,400 --> 00:22:13,850
the exhibit itself Eric maybe you could

577
00:22:12,650 --> 00:22:15,710
describe a little bit of some of the

578
00:22:13,849 --> 00:22:17,509
things and if Kimberly you can pan

579
00:22:15,710 --> 00:22:18,980
around a little bit maybe you could just

580
00:22:17,509 --> 00:22:20,930
kind of just show us a little bit of

581
00:22:18,980 --> 00:22:23,539
overview of what's what's going on there

582
00:22:20,930 --> 00:22:27,950
what are we looking at Kimberly don't

583
00:22:23,539 --> 00:22:29,930
make a sick slowly so the exhibit if you

584
00:22:27,950 --> 00:22:32,059
look at my title aviation curator i'm

585
00:22:29,930 --> 00:22:33,740
not really a space guy though I'm an

586
00:22:32,059 --> 00:22:35,149
enthusiast but it was fun to sit down

587
00:22:33,740 --> 00:22:37,099
with Mike and then start picking his

588
00:22:35,150 --> 00:22:40,720
brain to see what a clean piece of paper

589
00:22:37,099 --> 00:22:43,009
where this can go and I'm very much into

590
00:22:40,720 --> 00:22:45,230
here at the intrepid really were here

591
00:22:43,009 --> 00:22:47,390
for the human aspect of it you know

592
00:22:45,230 --> 00:22:49,670
there's people that flew these airplanes

593
00:22:47,390 --> 00:22:51,830
and sailed in the ship and and fix this

594
00:22:49,670 --> 00:22:53,690
wonderful machine so we really wanted to

595
00:22:51,829 --> 00:22:56,539
make sure that we we touched the human

596
00:22:53,690 --> 00:22:58,670
component so am I completely understood

597
00:22:56,539 --> 00:23:00,619
that he was like i'll use these tools

598
00:22:58,670 --> 00:23:02,779
and here are people that helped us

599

00:23:00,619 --> 00:23:05,179
design these tool so he put me in

600
00:23:02,779 --> 00:23:07,670
contact with great people like Joe

601
00:23:05,180 --> 00:23:11,480
Maguire Justin Cassidy and then sepi

602
00:23:07,670 --> 00:23:13,720
down near Goddard uh and then uh from

603
00:23:11,480 --> 00:23:16,670
there he was like you need to talk to

604
00:23:13,720 --> 00:23:18,470
this person at Goddard and I gotta send

605
00:23:16,670 --> 00:23:22,039
a little shout-out to jinja letak who

606
00:23:18,470 --> 00:23:24,980
really he he made it all happen and we

607
00:23:22,039 --> 00:23:27,559
have you know like eight tools and the

608
00:23:24,980 --> 00:23:30,650
handle the actual flown tools on display

609
00:23:27,559 --> 00:23:32,569
uh Mike also suggested a few people at

610
00:23:30,650 --> 00:23:35,210
the Space Telescope Science Institute so

611
00:23:32,569 --> 00:23:36,679
shoutouts the plan Frank and Zolt out

612
00:23:35,210 --> 00:23:40,430
there for all their help with this

613
00:23:36,680 --> 00:23:43,430

exhibit oh yeah oh yeah uh oh these are

614

00:23:40,430 --> 00:23:45,620

all my new friends and you act like

615

00:23:43,430 --> 00:23:47,779

wonderful people and it just was just

616

00:23:45,619 --> 00:23:50,359

this was a joy this exhibit was a joy to

617

00:23:47,779 --> 00:23:52,279

put together I can be showing some of

618

00:23:50,359 --> 00:23:53,949

the tools and if you look at waiver we

619

00:23:52,279 --> 00:23:57,200

put them in cases they're insecure

620

00:23:53,950 --> 00:23:59,509

acrylic cases you can see him from all

621

00:23:57,200 --> 00:24:02,059

sides they're beautiful those are big

622

00:23:59,509 --> 00:24:03,859

cases right and another shout out here

623

00:24:02,059 --> 00:24:06,379

tomorrow exhibit designer in-house here

624

00:24:03,859 --> 00:24:07,939

a crystal ants and for dis- wonderful

625

00:24:06,380 --> 00:24:09,890

exhibit that's like it sits underneath

626

00:24:07,940 --> 00:24:11,330

the shuttle if you when you're in these

627

00:24:09,890 --> 00:24:15,679

it and you look up you're going to see

628
00:24:11,329 --> 00:24:17,960
the belly of a enterprise so um and then

629
00:24:15,679 --> 00:24:19,430
there's all the images and so kimberly's

630
00:24:17,960 --> 00:24:21,259
give us a nice little walk around

631
00:24:19,430 --> 00:24:23,180
here just over there to the right is a

632
00:24:21,259 --> 00:24:26,450
Mission Control we're trying to think of

633
00:24:23,180 --> 00:24:29,509
artistic ways to to show a lot of

634
00:24:26,450 --> 00:24:32,779
content we find that a lot of visitors

635
00:24:29,509 --> 00:24:34,670
don't have time to read you know big

636
00:24:32,779 --> 00:24:38,149
text panels kind of scare them away with

637
00:24:34,670 --> 00:24:43,759
iron yeah all right some of us just have

638
00:24:38,150 --> 00:24:46,610
a DD I never read so I don't think you

639
00:24:43,759 --> 00:24:47,809
mentioned the exhibit is real no it's

640
00:24:46,609 --> 00:24:49,009
wrapped around stems kind of a

641
00:24:47,809 --> 00:24:50,990
no-brainer when you're dealing with an

642
00:24:49,009 --> 00:24:53,359
instrument like the Hubble it the

643
00:24:50,990 --> 00:24:55,519
science technology engineering and math

644
00:24:53,359 --> 00:24:57,229
it's all there but also the artistic

645
00:24:55,519 --> 00:25:01,700
elements and Kimberly's gone perfectly

646
00:24:57,230 --> 00:25:03,860
into our NBL lab so this is what we call

647
00:25:01,700 --> 00:25:05,779
an immersive experience you'll get

648
00:25:03,859 --> 00:25:08,899
inside and see the water effects and

649
00:25:05,779 --> 00:25:11,569
this was a whole lot of fun getting some

650
00:25:08,900 --> 00:25:12,950
film clips from Johnston and folks at

651
00:25:11,569 --> 00:25:16,939
jen's were very helpful there's some

652
00:25:12,950 --> 00:25:21,220
people just finish so do you have not

653
00:25:16,940 --> 00:25:23,930
signed disclaimers there is a very large

654
00:25:21,220 --> 00:25:25,670
curved screen in this room and the water

655
00:25:23,930 --> 00:25:27,320
effects which and make people feel like

656

00:25:25,670 --> 00:25:28,910
they're in water actually a woman tell

657
00:25:27,319 --> 00:25:31,939
me she was getting a little seasick

658
00:25:28,910 --> 00:25:34,370
under there but this is the sts-125 in

659
00:25:31,940 --> 00:25:36,890
training and it was great to bring Mike

660
00:25:34,369 --> 00:25:38,750
in there the first time and he sat on

661
00:25:36,890 --> 00:25:41,390
the floor we had a conference call with

662
00:25:38,750 --> 00:25:43,369
a news outlet uh gonna be interview over

663
00:25:41,390 --> 00:25:45,259
the phone we gotta get going and he sat

664
00:25:43,369 --> 00:25:46,579
on the floor like a little kid and it's

665
00:25:45,259 --> 00:25:49,129
like oh this is that and there's any

666
00:25:46,579 --> 00:25:51,470
just uh it's a loop thing it runs for

667
00:25:49,130 --> 00:25:53,690
several minutes but he really enjoyed it

668
00:25:51,470 --> 00:25:56,120
it brought him back home to training it

669
00:25:53,690 --> 00:25:57,830
so it was really good to see that and I

670
00:25:56,119 --> 00:25:59,179

go in there and i watch the visitors and

671

00:25:57,829 --> 00:26:00,889

the visitors they're just enthralled and

672

00:25:59,180 --> 00:26:03,710

they have that's really great balloon

673

00:26:00,890 --> 00:26:07,390

it's like this mercenary place it's my

674

00:26:03,710 --> 00:26:09,470

new happy place no as I might stop there

675

00:26:07,390 --> 00:26:11,630

so Mike let me ask you about the real

676

00:26:09,470 --> 00:26:13,279

tank is the real tank a good subs is it

677

00:26:11,630 --> 00:26:15,890

anything at all like being in space I

678

00:26:13,279 --> 00:26:19,940

mean it is it a good substitute or is it

679

00:26:15,890 --> 00:26:22,580

really not that the same how good is it

680

00:26:19,940 --> 00:26:25,490

prepare you working it is uh the best

681

00:26:22,579 --> 00:26:28,399

place to train to do a spacewalk it is

682

00:26:25,490 --> 00:26:30,410

it is great you know if we prepare she

683

00:26:28,400 --> 00:26:32,900

did very well to get ready to do your

684

00:26:30,410 --> 00:26:34,370

job though the mock-up

685
00:26:32,900 --> 00:26:37,310
working with the suit the teamwork part

686
00:26:34,369 --> 00:26:39,379
of it you practice there and there's

687
00:26:37,309 --> 00:26:40,849
other places we practice as well as

688
00:26:39,380 --> 00:26:43,520
other parts of the trainings not just

689
00:26:40,849 --> 00:26:47,599
the pool but the pool is is by far the

690
00:26:43,519 --> 00:26:49,759
most beneficial place to practice your

691
00:26:47,599 --> 00:26:51,049
space walks so it prepares you very well

692
00:26:49,759 --> 00:26:54,589
it doesn't prepare you for the view

693
00:26:51,049 --> 00:26:56,450
around you so I'll different by oh damn

694
00:26:54,589 --> 00:26:58,189
it lag it but the way that work your

695
00:26:56,450 --> 00:26:59,860
procedure the choreography working with

696
00:26:58,190 --> 00:27:01,460
your teammates working with the suit

697
00:26:59,859 --> 00:27:03,649
understanding how you're going to do

698
00:27:01,460 --> 00:27:05,750
things it is fantastic it is the best

699
00:27:03,650 --> 00:27:07,880
the best ability is a best place to get

700
00:27:05,750 --> 00:27:09,200
ready I have several hours of this film

701
00:27:07,880 --> 00:27:12,110
and we had a boil it down to several

702
00:27:09,200 --> 00:27:13,759
minutes on the watch but I didn't make

703
00:27:12,109 --> 00:27:16,309
sure that the little clip of Mike with

704
00:27:13,759 --> 00:27:20,000
the handle yeah comes on it is anyway

705
00:27:16,309 --> 00:27:21,619
yeah some diesel it so Jerry do you have

706
00:27:20,000 --> 00:27:24,859
a lot of do you get a lot of school

707
00:27:21,619 --> 00:27:26,089
groups coming through here uh yeah what

708
00:27:24,859 --> 00:27:28,129
would you give us an estimate how many

709
00:27:26,089 --> 00:27:29,959
do they come through the school day or

710
00:27:28,130 --> 00:27:31,670
how do they yeah they come through the

711
00:27:29,960 --> 00:27:35,710
school day um just to give you an idea

712
00:27:31,670 --> 00:27:38,930
over the year we see about 800 discrete

713

00:27:35,710 --> 00:27:40,490
classes in gallery programs and

714
00:27:38,930 --> 00:27:42,110
workshops so either they come for 60

715
00:27:40,490 --> 00:27:45,559
minutes or 90 minutes so that's over the

716
00:27:42,109 --> 00:27:47,839
school year we see 800 and we've noticed

717
00:27:45,559 --> 00:27:50,240
that since we you know have the

718
00:27:47,839 --> 00:27:52,789
Enterprise here now and we have the

719
00:27:50,240 --> 00:27:54,259
exhibit and we've really been pushing

720
00:27:52,789 --> 00:27:56,509
these programs because people don't

721
00:27:54,259 --> 00:27:58,519
often know that we have this great thing

722
00:27:56,509 --> 00:28:00,170
on the back of our aircraft carrier

723
00:27:58,519 --> 00:28:01,849
that's not what they immediately think

724
00:28:00,170 --> 00:28:03,860
of when they think of the intrepid and

725
00:28:01,849 --> 00:28:08,509
but we actually have been getting quite

726
00:28:03,859 --> 00:28:10,609
a few bookings for the space programs as

727
00:28:08,509 --> 00:28:15,710

we call it and it's just it's a really

728

00:28:10,609 --> 00:28:18,199

great way to tie in our intrepid history

729

00:28:15,710 --> 00:28:19,759

with the space race to you know real

730

00:28:18,200 --> 00:28:22,160

life science that's going on today it

731

00:28:19,759 --> 00:28:24,440

just makes it so much more enriching for

732

00:28:22,160 --> 00:28:26,860

the kids who come here um and one of the

733

00:28:24,440 --> 00:28:29,180

things we focus on particularly is

734

00:28:26,859 --> 00:28:32,179

problem solving and this is a great way

735

00:28:29,180 --> 00:28:34,279

to show all the different ways that you

736

00:28:32,180 --> 00:28:36,470

have to solve problems with things that

737

00:28:34,279 --> 00:28:38,690

you know go up in space and stay there

738

00:28:36,470 --> 00:28:41,569

for a long periods of time it's been

739

00:28:38,690 --> 00:28:42,680

really wonderful so yeah if you want to

740

00:28:41,569 --> 00:28:45,109

book a program and you're in the

741

00:28:42,680 --> 00:28:47,720

tri-state area give me a call

742
00:28:45,109 --> 00:28:51,589
you did it you got you got you got your

743
00:28:47,720 --> 00:28:52,940
plug so what do they call the word give

744
00:28:51,589 --> 00:28:54,859
it you know does their specific number

745
00:28:52,940 --> 00:28:56,259
is it on the web page it's on our web

746
00:28:54,859 --> 00:28:58,159
page so you can just look under

747
00:28:56,259 --> 00:29:00,250
education and there's a number of

748
00:28:58,160 --> 00:29:03,259
different ways that you can book

749
00:29:00,250 --> 00:29:05,329
different programs but specifically if

750
00:29:03,259 --> 00:29:07,670
you want to come for a Hubble program

751
00:29:05,329 --> 00:29:09,829
you would be calling my office here in

752
00:29:07,670 --> 00:29:12,529
the education department I'm on the I

753
00:29:09,829 --> 00:29:15,289
manage the school and teacher programs

754
00:29:12,529 --> 00:29:17,899
team and so we're we are really working

755
00:29:15,289 --> 00:29:20,389
with teachers to design very specific

756
00:29:17,900 --> 00:29:22,100
programs that work with the Hubble

757
00:29:20,390 --> 00:29:24,770
exhibit because it is a temporary

758
00:29:22,099 --> 00:29:26,599
exhibition it's not something that we're

759
00:29:24,769 --> 00:29:28,160
going to sadly be offering after next

760
00:29:26,599 --> 00:29:30,589
year so we really want to get people in

761
00:29:28,160 --> 00:29:32,390
here to see it as much as possible so so

762
00:29:30,589 --> 00:29:34,639
book your classes now that's an intrepid

763
00:29:32,390 --> 00:29:36,590
museum dot org and you have all of them

764
00:29:34,640 --> 00:29:38,240
there got a couple questions on the Q&A

765
00:29:36,589 --> 00:29:40,759
app I got one for you I think it's

766
00:29:38,240 --> 00:29:43,548
probably for mike patrick Calhoun is

767
00:29:40,759 --> 00:29:47,779
asking what did your boss say about you

768
00:29:43,548 --> 00:29:56,029
ripping the handle off um a fly off the

769
00:29:47,779 --> 00:29:58,099
handle i ah anybody else any other wise

770

00:29:56,029 --> 00:30:01,910
noise pranks there you go to let him

771
00:29:58,099 --> 00:30:04,730
here for um no it says you say what am I

772
00:30:01,910 --> 00:30:06,798
bossy because they were pretty they were

773
00:30:04,730 --> 00:30:08,089
our boss was pretty happy the chief

774
00:30:06,798 --> 00:30:10,039
astronaut it was mine you know they were

775
00:30:08,089 --> 00:30:11,659
just happy that we number one you get

776
00:30:10,039 --> 00:30:15,349
back alive and hang the mission was

777
00:30:11,660 --> 00:30:16,730
accomplished so I think it was I think

778
00:30:15,349 --> 00:30:18,500
everyone was pretty happy that we can't

779
00:30:16,730 --> 00:30:19,640
would a solution that worked so they

780
00:30:18,500 --> 00:30:21,710
didn't care at all that I ripped the

781
00:30:19,640 --> 00:30:24,410
thing off in fact that is uh it was

782
00:30:21,710 --> 00:30:26,298
actually showed how you can use some I

783
00:30:24,410 --> 00:30:29,269
guess some kind of primitive methods to

784
00:30:26,298 --> 00:30:31,700

do something really advanced in space it

785

00:30:29,269 --> 00:30:32,900

was very clever it was yeah wouldn't i

786

00:30:31,700 --> 00:30:34,940

think i'd still be thinking about how to

787

00:30:32,900 --> 00:30:37,580

solve that problem to say five years

788

00:30:34,940 --> 00:30:39,140

later oh not arrow kate anything charge

789

00:30:37,579 --> 00:30:42,918

me for the handrail or anything you let

790

00:30:39,140 --> 00:30:44,720

me go okay it's on a house it has the

791

00:30:42,919 --> 00:30:47,660

virtue of being a simple solution also

792

00:30:44,720 --> 00:30:49,490

that's right okay Cecil Morgan is asking

793

00:30:47,660 --> 00:30:53,240

and I think I'll give this one to you

794

00:30:49,490 --> 00:30:55,519

Eric or if it's better for Jerry you let

795

00:30:53,240 --> 00:30:57,849

me know will the museum have an online

796

00:30:55,519 --> 00:31:00,038

version of the HST exhibit

797

00:30:57,849 --> 00:31:03,699

that is going to be for Eric because oh

798

00:31:00,038 --> 00:31:04,990

boy department at the moment we don't

799

00:31:03,700 --> 00:31:07,660

have that capability but it is

800

00:31:04,990 --> 00:31:09,370

definitely on our radar and something we

801

00:31:07,660 --> 00:31:10,450

want to do in the future when I said

802

00:31:09,369 --> 00:31:13,058

what would that be some kind of virtual

803

00:31:10,450 --> 00:31:14,529

sort of walk through thing is that what

804

00:31:13,058 --> 00:31:16,660

is that what he would have in mind or

805

00:31:14,529 --> 00:31:18,970

some kind of you know map out of the

806

00:31:16,660 --> 00:31:21,400

whole thing the old have the the high

807

00:31:18,970 --> 00:31:24,009

points and interactive point that people

808

00:31:21,400 --> 00:31:25,929

can actually play with that would be the

809

00:31:24,009 --> 00:31:28,900

goal in the future yes I'm sure it's

810

00:31:25,929 --> 00:31:30,929

can't wait for ya it would be nice okay

811

00:31:28,900 --> 00:31:38,370

Nathaniel a is this is also from Mike

812

00:31:30,929 --> 00:31:43,360

Nathaniel Sanchez Mike ! Lord angel !

813
00:31:38,369 --> 00:31:45,009
any plans to return to star talk ah I

814
00:31:43,359 --> 00:31:47,288
don't know they haven't asked me lately

815
00:31:45,009 --> 00:31:49,150
so I'd be happy to go so I guess the

816
00:31:47,288 --> 00:31:51,308
answer to that is is that indeed all but

817
00:31:49,150 --> 00:31:53,798
sure I'll go back yeah that's at Cindy

818
00:31:51,308 --> 00:31:56,259
oh I'll ask him for you I'm friends with

819
00:31:53,798 --> 00:31:58,829
them so I'll do you a favor don't

820
00:31:56,259 --> 00:32:02,349
mention anything I run oh no oh no

821
00:31:58,829 --> 00:32:04,629
please don't I'm saying anything I'll

822
00:32:02,349 --> 00:32:07,808
tell me mail them to it's okay don't

823
00:32:04,630 --> 00:32:10,270
frighten yo it's okay I got it look

824
00:32:07,808 --> 00:32:12,158
don't worry about I got you go please

825
00:32:10,269 --> 00:32:18,329
don't say anything to my friend meal

826
00:32:12,159 --> 00:32:22,330
it's okay please who asked that question

827

00:32:18,329 --> 00:32:24,490
Nathaniel yeah girl here questions no

828
00:32:22,329 --> 00:32:27,250
yeah no I'm okay Scott you don't have to

829
00:32:24,490 --> 00:32:28,509
do a thing no sorry I haven't been on

830
00:32:27,250 --> 00:32:30,038
the show for a little bit but it's fun

831
00:32:28,509 --> 00:32:32,288
going out done so no wife shows with

832
00:32:30,038 --> 00:32:33,490
meal and been on here a couple times I

833
00:32:32,288 --> 00:32:34,900
don't know if he's still doing the show

834
00:32:33,490 --> 00:32:37,630
she's still doing her show is Nathaniel

835
00:32:34,900 --> 00:32:40,570
assure you they're doing live shows are

836
00:32:37,630 --> 00:32:41,919
gonna be out here in LA okay so I'm

837
00:32:40,569 --> 00:32:43,418
gonna be out there with all right cool

838
00:32:41,919 --> 00:32:46,179
ya know I have been on it for a little

839
00:32:43,419 --> 00:32:50,110
while but I'll get back there again it's

840
00:32:46,179 --> 00:32:51,640
always fun to you Neil yeah so a scott

841
00:32:50,109 --> 00:32:52,959

chapman and I'll and Carol i'll include

842

00:32:51,640 --> 00:32:55,630

you in this if you feel like answering

843

00:32:52,960 --> 00:32:57,840

it it's would there be any advantage to

844

00:32:55,630 --> 00:33:00,669

putting a telescope on the moon surface

845

00:32:57,839 --> 00:33:02,439

vs in Earth orbit sort of a general

846

00:33:00,669 --> 00:33:04,150

question not necessarily related to

847

00:33:02,440 --> 00:33:06,009

Hubble so we have Hubble in orbit are

848

00:33:04,150 --> 00:33:09,659

there any advantages to putting one on

849

00:33:06,009 --> 00:33:11,680

the on the moon said the dark side it ok

850

00:33:09,659 --> 00:33:14,680

number one it's

851

00:33:11,680 --> 00:33:18,789

not dark side really hi you would get on

852

00:33:14,680 --> 00:33:20,830

this side that is right it is the side

853

00:33:18,789 --> 00:33:23,170

that doesn't face the earth sometimes

854

00:33:20,829 --> 00:33:26,879

it's dark sometimes it's light and that

855

00:33:23,170 --> 00:33:29,769

is one of them yeah yeah okay

856
00:33:26,880 --> 00:33:32,230
considerations is that there are extreme

857
00:33:29,769 --> 00:33:33,730
temperature changes number two if you

858
00:33:32,230 --> 00:33:35,769
put it back there then you need

859
00:33:33,730 --> 00:33:38,799
something in orbit around the moon to

860
00:33:35,769 --> 00:33:40,660
transfer the data or you got to send

861
00:33:38,799 --> 00:33:44,799
people down there to get the data which

862
00:33:40,660 --> 00:33:47,170
is kind of a throwback they have we have

863
00:33:44,799 --> 00:33:49,809
talked with in our community about a

864
00:33:47,170 --> 00:33:52,600
radio telescope but again because the

865
00:33:49,809 --> 00:33:54,190
structure might be more tolerant of

866
00:33:52,599 --> 00:33:56,379
changes in temperature if you put

867
00:33:54,190 --> 00:33:59,320
something optical in there even even

868
00:33:56,380 --> 00:34:01,090
Hubble has a breathing mode because when

869
00:33:59,319 --> 00:34:04,480
it goes around the earth and it goes in

870
00:34:01,089 --> 00:34:06,879
and out of that thermal environment you

871
00:34:04,480 --> 00:34:09,940
know the telescope breathe so a radio

872
00:34:06,880 --> 00:34:12,010
telescope might be less sensitive to

873
00:34:09,940 --> 00:34:13,780
that because you wouldn't really see

874
00:34:12,010 --> 00:34:15,490
those perturbations but again you have

875
00:34:13,780 --> 00:34:17,650
the problem with you know building it

876
00:34:15,489 --> 00:34:19,959
back there what kind of facility you're

877
00:34:17,650 --> 00:34:22,570
going to have it be great I mean a bit

878
00:34:19,960 --> 00:34:25,449
wonderful autonomy but but logistically

879
00:34:22,570 --> 00:34:28,780
it might not be the smartest thing to do

880
00:34:25,449 --> 00:34:31,539
but we always chat about it i'm in the

881
00:34:28,780 --> 00:34:33,790
astronomical community okay so that got

882
00:34:31,539 --> 00:34:36,639
a good question thank you Scott um so

883
00:34:33,789 --> 00:34:43,659
the oh woot vanderheiden's is commenting

884

00:34:36,639 --> 00:34:48,099
he's tweeting Neil now so long ordeal

885
00:34:43,659 --> 00:34:51,069
hello yeah poor meal I'm sure um okay so

886
00:34:48,099 --> 00:34:52,659
uh Eric I just gotta ask and I don't

887
00:34:51,070 --> 00:34:54,160
know if you do that if I work there at

888
00:34:52,659 --> 00:34:55,750
the intrepid museum and I had an

889
00:34:54,159 --> 00:35:02,369
aircraft carrier do you guys ever go up

890
00:34:55,750 --> 00:35:05,079
on the deck and sing i'm on a boat I

891
00:35:02,369 --> 00:35:07,809
come to work early every morning and I

892
00:35:05,079 --> 00:35:09,639
could and I do sick because this is just

893
00:35:07,809 --> 00:35:12,789
a remarkable place to you or you're

894
00:35:09,639 --> 00:35:14,409
saying that song but I hasn't saying

895
00:35:12,789 --> 00:35:17,320
I've been here almost 10 years now and

896
00:35:14,409 --> 00:35:19,629
this is uh it's an accredited place that

897
00:35:17,320 --> 00:35:21,430
just did it's amazing well you gotta you

898
00:35:19,630 --> 00:35:22,809

gotta listen to the song just to do a

899

00:35:21,429 --> 00:35:24,849

google and i'm on a boat I think it's

900

00:35:22,809 --> 00:35:27,489

t-pain or somebody's

901

00:35:24,849 --> 00:35:29,139

afraid that's not safe for work so we're

902

00:35:27,489 --> 00:35:33,129

not gonna mention that on it yeah that's

903

00:35:29,139 --> 00:35:35,949

not safe so I just wondered if you do

904

00:35:33,130 --> 00:35:37,660

that okay so the in addition to the

905

00:35:35,949 --> 00:35:39,819

enterprise what other things you since

906

00:35:37,659 --> 00:35:41,319

you're the creator of aviation there's a

907

00:35:39,820 --> 00:35:43,600

lot of other interesting things that the

908

00:35:41,320 --> 00:35:44,950

at the museum as well right Eric oh boy

909

00:35:43,599 --> 00:35:46,539

we got some cool stuff here so our

910

00:35:44,949 --> 00:35:51,389

collection of aircraft range from a

911

00:35:46,539 --> 00:35:53,619

world war two torpedo bomber to an a 12

912

00:35:51,389 --> 00:35:57,219

project upskirt some people call the

913
00:35:53,619 --> 00:35:58,960
Blackbird the relative of the the sr-71

914
00:35:57,219 --> 00:36:01,719
and we even have a british airways

915
00:35:58,960 --> 00:36:04,240
concord here so there's 27 airplanes in

916
00:36:01,719 --> 00:36:06,429
total we also have a submarine here a

917
00:36:04,239 --> 00:36:08,619
guided missile submarine that has it's a

918
00:36:06,429 --> 00:36:11,289
cold war-era submarine with a Regulus

919
00:36:08,619 --> 00:36:12,880
missile on it one of the things that's

920
00:36:11,289 --> 00:36:14,860
really great I right underneath our

921
00:36:12,880 --> 00:36:16,599
enterprise towards the back end the way

922
00:36:14,860 --> 00:36:19,420
from where the Hubble exhibit is we have

923
00:36:16,599 --> 00:36:22,289
a store use games an actual phones

924
00:36:19,420 --> 00:36:25,119
capsule yes so that was donated to us by

925
00:36:22,289 --> 00:36:27,880
Greg Olsen who I think he was the third

926
00:36:25,119 --> 00:36:29,619
participant that went up to the ISS with

927
00:36:27,880 --> 00:36:32,470
the Russians and when he came back he

928
00:36:29,619 --> 00:36:34,420
brought his capsule home and we would

929
00:36:32,469 --> 00:36:37,239
really love having it here because it

930
00:36:34,420 --> 00:36:39,190
just shows a piece of tech not a lot

931
00:36:37,239 --> 00:36:40,779
Soyuz capsules on display here in the

932
00:36:39,190 --> 00:36:43,990
United States so it's great to have it

933
00:36:40,780 --> 00:36:46,269
here yeah that is awesome so is there

934
00:36:43,989 --> 00:36:48,099
any um so Mike one of the things I like

935
00:36:46,269 --> 00:36:50,769
to do when I have people who you know

936
00:36:48,099 --> 00:36:51,880
have done some amazing like been an

937
00:36:50,769 --> 00:36:53,170
astronaut I've been a scientist

938
00:36:51,880 --> 00:36:54,340
astronomer and things like that I've had

939
00:36:53,170 --> 00:36:56,889
Nobel Prize winners I've asked this

940
00:36:54,340 --> 00:36:58,960
question to what advice would you give

941

00:36:56,889 --> 00:37:01,779
to younger people who are just starting

942
00:36:58,960 --> 00:37:03,730
out let's say what is he I guess can you

943
00:37:01,780 --> 00:37:05,800
give us some sense of what the astronaut

944
00:37:03,730 --> 00:37:07,449
corps is like now is there is it still

945
00:37:05,800 --> 00:37:10,360
possible to become an astronaut I know

946
00:37:07,449 --> 00:37:11,799
when NASA's got future plans what would

947
00:37:10,360 --> 00:37:14,849
what advice would you give to somebody

948
00:37:11,800 --> 00:37:17,560
who wanted to become an astronaut oh

949
00:37:14,849 --> 00:37:20,049
yeah well NASA we just picked a group of

950
00:37:17,559 --> 00:37:23,110
a year ago we picked only eight new

951
00:37:20,050 --> 00:37:25,330
astronauts a year ago so it's pretty

952
00:37:23,110 --> 00:37:27,579
competitive there's I think kind of over

953
00:37:25,329 --> 00:37:31,769
6,000 applications you come to pick a

954
00:37:27,579 --> 00:37:34,809
people 6,000 yeah something like that so

955
00:37:31,769 --> 00:37:37,509

it's a tough job to get anyone who gets

956

00:37:34,809 --> 00:37:38,599

to become an astronaut is well qualified

957

00:37:37,510 --> 00:37:40,980

but also

958

00:37:38,599 --> 00:37:42,989

fortunate because there's not that many

959

00:37:40,980 --> 00:37:46,380

spots but there's still that possibility

960

00:37:42,989 --> 00:37:47,789

I think now that we have some commercial

961

00:37:46,380 --> 00:37:50,220

companies are working with to provide

962

00:37:47,789 --> 00:37:52,019

law services of people to the

963

00:37:50,219 --> 00:37:54,480

international space station is going to

964

00:37:52,019 --> 00:37:55,889

be more seats and we're going to need

965

00:37:54,480 --> 00:37:57,269

more astronauts so I think that those

966

00:37:55,889 --> 00:38:00,329

numbers will increase that the class

967

00:37:57,269 --> 00:38:02,460

size that I was in back in 1996 we have

968

00:38:00,329 --> 00:38:04,650

35 Americans so that was a pretty bit of

969

00:38:02,460 --> 00:38:06,840

class so depending on what the need is

970
00:38:04,650 --> 00:38:08,220
they look at that amount of new ass

971
00:38:06,840 --> 00:38:09,930
rocity so I think that numbers going to

972
00:38:08,219 --> 00:38:12,059
start to increase again it went down I

973
00:38:09,929 --> 00:38:13,500
think it's gotten lower now I thinking

974
00:38:12,059 --> 00:38:14,699
next coming next few selections are

975
00:38:13,500 --> 00:38:16,050
going to see it starting to rise up

976
00:38:14,699 --> 00:38:17,429
again they're going to need more and

977
00:38:16,050 --> 00:38:19,530
more people and though there is there is

978
00:38:17,429 --> 00:38:21,029
still a massively active astronaut corps

979
00:38:19,530 --> 00:38:22,890
yeah of course yeah sorry to me I just

980
00:38:21,030 --> 00:38:24,540
think a granted everybody knows that but

981
00:38:22,889 --> 00:38:26,429
we'd but many people don't okay the

982
00:38:24,539 --> 00:38:28,500
London I mean I you know if to America's

983
00:38:26,429 --> 00:38:30,179
in space right now we got to Americans

984
00:38:28,500 --> 00:38:33,960
in space right now orbiting in the space

985
00:38:30,179 --> 00:38:35,309
station so so there's six people in

986
00:38:33,960 --> 00:38:37,289
space right now to have more Americans

987
00:38:35,309 --> 00:38:38,880
so yeah if you're in if you're from

988
00:38:37,289 --> 00:38:40,559
other countries too or we have appealed

989
00:38:38,880 --> 00:38:42,690
from Europe that shots from Europe

990
00:38:40,559 --> 00:38:44,820
Canada all around the world Japan and so

991
00:38:42,690 --> 00:38:46,470
on so just how wherever you are it might

992
00:38:44,820 --> 00:38:48,630
be listen to this if yours country of

993
00:38:46,469 --> 00:38:50,459
space program there's the opportunity to

994
00:38:48,630 --> 00:38:52,470
do that it uses a goal that's what I did

995
00:38:50,460 --> 00:38:53,970
I mean it's unlike it was unlikely when

996
00:38:52,469 --> 00:38:55,739
I applied when I was dreaming about it

997
00:38:53,969 --> 00:38:56,939
but it's kind of the chances with zero

998

00:38:55,739 --> 00:38:58,439
if you don't know anything about it

999
00:38:56,940 --> 00:39:00,960
that's all the meth what you want to do

1000
00:38:58,440 --> 00:39:02,280
that's just you know I was who dat who

1001
00:39:00,960 --> 00:39:04,530
dat knew I was would be able to do it

1002
00:39:02,280 --> 00:39:06,180
but in any of my colleagues with a lady

1003
00:39:04,530 --> 00:39:07,710
the same story yeah so unlikely but

1004
00:39:06,179 --> 00:39:09,960
you're not going to do it unless you try

1005
00:39:07,710 --> 00:39:11,490
so if so if people I want to do that

1006
00:39:09,960 --> 00:39:13,500
their students I want to do that kids I

1007
00:39:11,489 --> 00:39:15,569
want to do that it's great um they're

1008
00:39:13,500 --> 00:39:17,760
still picking people from technical

1009
00:39:15,570 --> 00:39:19,019
background so that can be just about

1010
00:39:17,760 --> 00:39:21,510
anything I mean you mentioned

1011
00:39:19,019 --> 00:39:23,550
astronomers but we only have engineers

1012
00:39:21,510 --> 00:39:28,680

pilots medical doctors veterinarian

1013

00:39:23,550 --> 00:39:30,510

rippling and a geology these guys people

1014

00:39:28,679 --> 00:39:34,259

I flew with for example drew Wisel

1015

00:39:30,510 --> 00:39:36,930

geologists magna carta an oceanographer

1016

00:39:34,260 --> 00:39:39,090

uh Rick lenihan I mentioned as a

1017

00:39:36,929 --> 00:39:40,859

veterinarian so there's there's lots of

1018

00:39:39,090 --> 00:39:42,420

different backgrounds and some of you

1019

00:39:40,860 --> 00:39:43,950

might not associate with space travel

1020

00:39:42,420 --> 00:39:45,860

you might think astronomer engineer a

1021

00:39:43,949 --> 00:39:48,419

pilot but just about anything

1022

00:39:45,860 --> 00:39:50,730

technically oriented medicine math

1023

00:39:48,420 --> 00:39:52,220

whatever it might be computers put it

1024

00:39:50,730 --> 00:39:54,920

makes you qualified you can see the list

1025

00:39:52,219 --> 00:40:00,108

these things on the website on the NHS

1026

00:39:54,920 --> 00:40:01,550

election website or that NASA so if you

1027
00:40:00,108 --> 00:40:04,098
want it if you want to do it yeah I mean

1028
00:40:01,550 --> 00:40:06,380
yeah it's unlikely maybe if that could

1029
00:40:04,099 --> 00:40:09,320
happen to me and if that's what your

1030
00:40:06,380 --> 00:40:10,430
dream is you gotta try again I think the

1031
00:40:09,320 --> 00:40:12,080
opportunity is always going to be there

1032
00:40:10,429 --> 00:40:13,339
for a long time I think it's very

1033
00:40:12,079 --> 00:40:15,710
exciting to is there may be other

1034
00:40:13,340 --> 00:40:19,400
opportunities with commercial companies

1035
00:40:15,710 --> 00:40:21,679
as companies like SpaceX and Virgin

1036
00:40:19,400 --> 00:40:24,289
Galactic and these other companies had

1037
00:40:21,679 --> 00:40:26,419
to put people into space I think there's

1038
00:40:24,289 --> 00:40:28,759
going to be not only NASA government

1039
00:40:26,420 --> 00:40:30,380
astronauts like I was but I think

1040
00:40:28,760 --> 00:40:31,760
they'll also be astronauts working for

1041
00:40:30,380 --> 00:40:34,190
these other companies so I think there's

1042
00:40:31,760 --> 00:40:35,480
there's lots of opportunities coming up

1043
00:40:34,190 --> 00:40:37,909
for the for young people who are

1044
00:40:35,480 --> 00:40:40,490
interested in flying into space and if

1045
00:40:37,909 --> 00:40:43,940
you have that dream you should do it you

1046
00:40:40,489 --> 00:40:46,939
should try you know do what you love but

1047
00:40:43,940 --> 00:40:48,710
keep an eye on on what your goal is you

1048
00:40:46,940 --> 00:40:51,079
know and again it could be whatever you

1049
00:40:48,710 --> 00:40:53,539
want I mean any technical field is a

1050
00:40:51,079 --> 00:40:56,000
qualifying feel so pick the field that

1051
00:40:53,539 --> 00:40:57,409
that you like if you couldn't be that's

1052
00:40:56,000 --> 00:40:59,329
not what would you want to do that's you

1053
00:40:57,409 --> 00:41:01,129
should do you need apply to be a

1054
00:40:59,329 --> 00:41:02,059
national at the same time well it sounds

1055

00:41:01,130 --> 00:41:03,680
to me like there would be kind of an

1056
00:41:02,059 --> 00:41:05,659
inherent bias though towards some

1057
00:41:03,679 --> 00:41:08,598
engineering fields if I might be more

1058
00:41:05,659 --> 00:41:10,579
likely to you know more of it more the

1059
00:41:08,599 --> 00:41:12,230
more spots open for an engineer type and

1060
00:41:10,579 --> 00:41:13,940
say maybe a science type or wood or is

1061
00:41:12,230 --> 00:41:15,619
that just not true well I mean you might

1062
00:41:13,940 --> 00:41:17,170
uh might be true but guess what get some

1063
00:41:15,619 --> 00:41:20,088
you know if you look at a number of

1064
00:41:17,170 --> 00:41:23,690
applications yeah there's probably more

1065
00:41:20,088 --> 00:41:25,759
you know there's it's you know what I

1066
00:41:23,690 --> 00:41:28,579
want to consider you do any love because

1067
00:41:25,760 --> 00:41:30,770
i think i figured i picked someone from

1068
00:41:28,579 --> 00:41:32,659
the life sciences area or it's going to

1069
00:41:30,769 --> 00:41:34,730

be a smaller pool because maybe that's

1070

00:41:32,659 --> 00:41:36,440

less there's lots of Engineers right so

1071

00:41:34,730 --> 00:41:39,050

it's going to that's a huge group i

1072

00:41:36,440 --> 00:41:41,088

reviewed applications this grew up

1073

00:41:39,050 --> 00:41:43,190

different for different selections that

1074

00:41:41,088 --> 00:41:45,079

we've had at nasa astronaut selection

1075

00:41:43,190 --> 00:41:47,150

and the you the biggest group is always

1076

00:41:45,079 --> 00:41:48,588

the engineers that doesn't mean you have

1077

00:41:47,150 --> 00:41:50,660

the greatest chance because if you're

1078

00:41:48,588 --> 00:41:53,029

they're going to pick five from that

1079

00:41:50,659 --> 00:41:54,920

group and there's a you know more so it

1080

00:41:53,030 --> 00:41:56,060

i don't think you can play numbers like

1081

00:41:54,920 --> 00:41:57,858

that i think that's not a good way to

1082

00:41:56,059 --> 00:41:59,239

look at it you should never pick your

1083

00:41:57,858 --> 00:42:00,739

career based on what you think is going

1084
00:41:59,239 --> 00:42:02,629
to make give you a chance to be an

1085
00:42:00,739 --> 00:42:05,000
astronaut do not do that that is a

1086
00:42:02,630 --> 00:42:05,490
stupid thing to do don't pick don't pick

1087
00:42:05,000 --> 00:42:06,599
your career

1088
00:42:05,489 --> 00:42:08,129
because I'm going to do this because I'm

1089
00:42:06,599 --> 00:42:10,529
going to become an instrument pick your

1090
00:42:08,130 --> 00:42:12,420
career of what you want to do and apply

1091
00:42:10,530 --> 00:42:14,400
to be an astronaut myth that career if

1092
00:42:12,420 --> 00:42:15,630
you have a love for medicine and you

1093
00:42:14,400 --> 00:42:17,940
think we'll have a better chance to be

1094
00:42:15,630 --> 00:42:20,970
an astronaut if I my engineer don't do

1095
00:42:17,940 --> 00:42:23,700
that become a medical doc that's great

1096
00:42:20,969 --> 00:42:25,289
it is going to you know I it's not only

1097
00:42:23,699 --> 00:42:27,000
going to give you a good career in case

1098
00:42:25,289 --> 00:42:28,650
you don't become an astronaut but I

1099
00:42:27,000 --> 00:42:30,090
think it gives you the best chance of

1100
00:42:28,650 --> 00:42:31,559
becoming an astronaut that's great

1101
00:42:30,090 --> 00:42:33,269
advice you're going to want to get into

1102
00:42:31,559 --> 00:42:34,650
a situation where you become a finalist

1103
00:42:33,269 --> 00:42:36,780
and you're in at an interview and

1104
00:42:34,650 --> 00:42:38,099
they're going to ask you why did you do

1105
00:42:36,780 --> 00:42:40,320
this if you said well the only reason I

1106
00:42:38,099 --> 00:42:41,909
became an engineer was because you know

1107
00:42:40,320 --> 00:42:42,990
you could lie i guess but if the truth

1108
00:42:41,909 --> 00:42:44,519
of it is the only reason you became an

1109
00:42:42,989 --> 00:42:45,779
edema to become an answer that's fine

1110
00:42:44,519 --> 00:42:46,800
that's such a good idea you should

1111
00:42:45,780 --> 00:42:47,910
become an engineer because that's what

1112

00:42:46,800 --> 00:42:49,019
you want to study to become a medical

1113
00:42:47,909 --> 00:42:51,929
doctor because that's what you want to

1114
00:42:49,019 --> 00:42:54,480
do or whatever it might be and and if

1115
00:42:51,929 --> 00:42:56,129
you're if you do the best you can at

1116
00:42:54,480 --> 00:42:57,090
that profession you love what you do

1117
00:42:56,130 --> 00:42:58,619
that gives you the best chance of

1118
00:42:57,090 --> 00:43:00,300
becoming a national but also in your

1119
00:42:58,619 --> 00:43:03,269
point on being the best of the best are

1120
00:43:00,300 --> 00:43:04,530
usually selected if you are really happy

1121
00:43:03,269 --> 00:43:06,360
and passionate about you're doing that's

1122
00:43:04,530 --> 00:43:08,850
much more likely to be the case perfect

1123
00:43:06,360 --> 00:43:10,140
Odessa I that's a new set in a few words

1124
00:43:08,849 --> 00:43:12,750
for what I've been trying to psyche as

1125
00:43:10,139 --> 00:43:14,279
10 minutes do what you're passionate

1126
00:43:12,750 --> 00:43:15,960

about and you're going to do good at it

1127

00:43:14,280 --> 00:43:17,100

and you're going to shine and you when

1128

00:43:15,960 --> 00:43:19,199

you get and talk to people without

1129

00:43:17,099 --> 00:43:21,420

you'll be happy and that's the kind of

1130

00:43:19,199 --> 00:43:24,179

people that they choose Kimberly has a

1131

00:43:21,420 --> 00:43:25,740

great shot of the Hubble at 25 exhibit

1132

00:43:24,179 --> 00:43:27,899

right now so that's that's really a

1133

00:43:25,739 --> 00:43:30,118

great shot Kimberly thank you woot

1134

00:43:27,900 --> 00:43:32,039

vanderheide is asking and I'm sorry if

1135

00:43:30,119 --> 00:43:33,840

I'm mispronouncing your name dude Mike

1136

00:43:32,039 --> 00:43:35,489

let's talk about the pinnacle of your

1137

00:43:33,840 --> 00:43:38,039

career forget being an astronaut and

1138

00:43:35,489 --> 00:43:42,299

going up into space how is it to be on

1139

00:43:38,039 --> 00:43:44,369

the big bang theory that was really a

1140

00:43:42,300 --> 00:43:48,990

lot of fun I love being on the Big Bang

1141
00:43:44,369 --> 00:43:54,358
Theory it's it's it's really just pure

1142
00:43:48,989 --> 00:43:57,269
fun the the cast is great the secular

1143
00:43:54,358 --> 00:43:59,909
producers director the people in

1144
00:43:57,269 --> 00:44:01,349
wardrobe everyone that works it's kind

1145
00:43:59,909 --> 00:44:03,269
of like a spaceflight almost you know

1146
00:44:01,349 --> 00:44:04,529
you have this all these support people

1147
00:44:03,269 --> 00:44:07,409
and the actors I guess or like the

1148
00:44:04,530 --> 00:44:09,030
astronauts you know but uh but it's just

1149
00:44:07,409 --> 00:44:11,460
fantastic it's a great group of people

1150
00:44:09,030 --> 00:44:14,519
it's really fun it's a very successful

1151
00:44:11,460 --> 00:44:16,619
show and it's a bless I just I just have

1152
00:44:14,519 --> 00:44:18,179
such a great time going to do it I can

1153
00:44:16,619 --> 00:44:18,778
to be on the show school without but the

1154
00:44:18,179 --> 00:44:19,858
experience like

1155
00:44:18,778 --> 00:44:21,929
out there when you go out there to film

1156
00:44:19,858 --> 00:44:24,538
it usually out there for a few days out

1157
00:44:21,929 --> 00:44:27,449
in out in Burbank out in hollywood and

1158
00:44:24,539 --> 00:44:29,729
get to see my big bang through family i

1159
00:44:27,449 --> 00:44:32,519
really i really love those people it's a

1160
00:44:29,728 --> 00:44:35,848
great group of people and it's a fun

1161
00:44:32,518 --> 00:44:38,578
show to do great ok so thank you wuda

1162
00:44:35,849 --> 00:44:40,528
appreciate that out Scott anything from

1163
00:44:38,579 --> 00:44:42,028
Twitter or anybody else that I may be

1164
00:44:40,528 --> 00:44:43,889
missing I looked at YouTube but I didn't

1165
00:44:42,028 --> 00:44:47,579
see any comments actually I have a

1166
00:44:43,889 --> 00:44:49,498
request from dr. Emily rice up for Mike

1167
00:44:47,579 --> 00:44:51,119
I don't know if you're familiar with her

1168
00:44:49,498 --> 00:44:54,389
I'm friends with her but she has

1169

00:44:51,119 --> 00:44:59,039
requested for Mike to do a Simpsons

1170
00:44:54,389 --> 00:45:02,818
impression um deep space Homer fer fer

1171
00:44:59,039 --> 00:45:07,589
Bernie chance you might help yourself

1172
00:45:02,818 --> 00:45:09,748
I'm not homework I'm not really sure

1173
00:45:07,588 --> 00:45:11,788
what my cheeks why don't you do it for

1174
00:45:09,748 --> 00:45:13,948
me or maybe I could you don't know it I

1175
00:45:11,789 --> 00:45:17,159
don't know apparently Emily wants you to

1176
00:45:13,949 --> 00:45:18,900
do a Simpsons impression Simpsons in

1177
00:45:17,159 --> 00:45:20,579
fronting you know I'm not gonna do that

1178
00:45:18,900 --> 00:45:25,168
I'm not going to sign up and down a neck

1179
00:45:20,579 --> 00:45:26,909
like a chicken neither no doing it oh I

1180
00:45:25,168 --> 00:45:34,858
love about your ex I don't know any

1181
00:45:26,909 --> 00:45:36,150
magic either sorry that's fine okay so

1182
00:45:34,858 --> 00:45:38,578
anything else but am I missing anything

1183
00:45:36,150 --> 00:45:40,619

else are Scott I'm going to there's a

1184

00:45:38,579 --> 00:45:41,999

lot of chatter on her on her hashtag

1185

00:45:40,619 --> 00:45:44,009

which is great so I'm just so we thank

1186

00:45:41,998 --> 00:45:45,958

you guys yeah thanks for talking on the

1187

00:45:44,009 --> 00:45:49,289

Twitter the using that use it on Hubble

1188

00:45:45,958 --> 00:45:52,108

25 or Hubble hang out both okay so guys

1189

00:45:49,289 --> 00:45:54,299

I want to encourage you guys to if

1190

00:45:52,108 --> 00:45:56,699

you're in New York and if you are a

1191

00:45:54,298 --> 00:45:58,528

space fan a Hubble hugger and just all

1192

00:45:56,699 --> 00:46:00,509

around cool science person you need to

1193

00:45:58,528 --> 00:46:04,528

get to the intrepid museum I actually

1194

00:46:00,509 --> 00:46:06,449

have a question for them oh wait so I

1195

00:46:04,528 --> 00:46:08,608

know it's on your website but just

1196

00:46:06,449 --> 00:46:12,630

briefly how do you get to the intrepid

1197

00:46:08,608 --> 00:46:16,498

know right further live sex on a key

1198
00:46:12,630 --> 00:46:18,959
hall so first step is go to New York go

1199
00:46:16,498 --> 00:46:22,379
to New York I got that step got him okay

1200
00:46:18,958 --> 00:46:24,239
problem with you there okay ya know you

1201
00:46:22,380 --> 00:46:27,150
get on the subway and the closest subway

1202
00:46:24,239 --> 00:46:29,759
stop here we go is the AC e at

1203
00:46:27,150 --> 00:46:32,000
forty-second Street over square times

1204
00:46:29,759 --> 00:46:34,039
square and then I can either choose

1205
00:46:32,000 --> 00:46:37,539
walk down lovely 42nd avenue for about

1206
00:46:34,039 --> 00:46:40,190
15-20 minutes or you can take the m42

1207
00:46:37,539 --> 00:46:43,699
crosstown uh the right direction you

1208
00:46:40,190 --> 00:46:44,690
have to go west yes yes good you're in

1209
00:46:43,699 --> 00:46:48,319
Time Square its can be a little

1210
00:46:44,690 --> 00:46:49,610
discombobulating but yeah it's lovely

1211
00:46:48,320 --> 00:46:52,910
walk her right on the water we're a

1212
00:46:49,610 --> 00:46:55,970
giant ship it's great you get here and

1213
00:46:52,909 --> 00:46:58,480
by the way if you go around new years I

1214
00:46:55,969 --> 00:47:02,299
heard today that there might be a big

1215
00:46:58,480 --> 00:47:04,579
Hubble image in Times Square really so I

1216
00:47:02,300 --> 00:47:05,960
think so I think somebody's working on

1217
00:47:04,579 --> 00:47:07,219
that so that'd be nice you can go look

1218
00:47:05,960 --> 00:47:10,130
at the Hubble image and then you can

1219
00:47:07,219 --> 00:47:12,980
walk down to the museum no that's

1220
00:47:10,130 --> 00:47:14,570
against e1a a question earlier i'm

1221
00:47:12,980 --> 00:47:16,610
trying to find it but it was asking

1222
00:47:14,570 --> 00:47:19,870
about the intrepid for those that aren't

1223
00:47:16,610 --> 00:47:22,280
able to be in New York is there a way of

1224
00:47:19,869 --> 00:47:25,009
interacting or at least sing with still

1225
00:47:22,280 --> 00:47:28,640
fun online and so there is the website

1226

00:47:25,010 --> 00:47:32,170
that you can go to which is over here at

1227
00:47:28,639 --> 00:47:34,519
intrepid museum or clash hubble at 25

1228
00:47:32,170 --> 00:47:40,309
aspx they strengthen on the main page

1229
00:47:34,519 --> 00:47:42,710
that's nice so you can actually go and

1230
00:47:40,309 --> 00:47:45,619
get a preview of the exhibit and I'm

1231
00:47:42,710 --> 00:47:48,769
sure Jarius more to talk about or what's

1232
00:47:45,619 --> 00:47:50,569
on your website there Oh on are well on

1233
00:47:48,769 --> 00:47:53,329
our education site it just lists all of

1234
00:47:50,570 --> 00:47:54,860
our different programs but we have up on

1235
00:47:53,329 --> 00:47:56,449
our website just in general what you

1236
00:47:54,860 --> 00:47:58,550
want to see we've got past exhibits

1237
00:47:56,449 --> 00:48:02,449
we've got anything that's upcoming we

1238
00:47:58,550 --> 00:48:03,740
have if you go to plan your visit um you

1239
00:48:02,449 --> 00:48:05,509
can see all the upcoming there's our

1240
00:48:03,739 --> 00:48:08,389

astronomy night which are fabulous by

1241

00:48:05,510 --> 00:48:11,480

the way and we sometimes these are Papa

1242

00:48:08,389 --> 00:48:14,659

planetarium and you can go stargazing up

1243

00:48:11,480 --> 00:48:16,699

on the flight deck my department and

1244

00:48:14,659 --> 00:48:18,769

public programs put those together in

1245

00:48:16,699 --> 00:48:21,409

concert it's really wonderful so you

1246

00:48:18,769 --> 00:48:23,420

just go to events on plan your visit

1247

00:48:21,409 --> 00:48:25,069

somewhere along there you can kind of

1248

00:48:23,420 --> 00:48:26,389

see what we've got going on and if you

1249

00:48:25,070 --> 00:48:29,059

poke around a little bit more on the

1250

00:48:26,389 --> 00:48:32,599

website there's a lot of videos that

1251

00:48:29,059 --> 00:48:34,099

have been done by our tour guides that

1252

00:48:32,599 --> 00:48:35,509

have been done by our educators that

1253

00:48:34,099 --> 00:48:36,589

have been done by our curator so if you

1254

00:48:35,510 --> 00:48:40,370

just kind of want to get a general

1255
00:48:36,590 --> 00:48:41,720
overview of what here at the Museum it's

1256
00:48:40,369 --> 00:48:45,170
a really great way to kind of orient

1257
00:48:41,719 --> 00:48:45,859
yourself yes this is over at intrepid

1258
00:48:45,170 --> 00:48:48,349
museum

1259
00:48:45,860 --> 00:48:50,539
o RG were gobbled it all this

1260
00:48:48,349 --> 00:48:57,289
information I'm just happy you can see

1261
00:48:50,539 --> 00:48:59,779
stars in New York City that so that's

1262
00:48:57,289 --> 00:49:01,610
great info thanks guys and so yes and in

1263
00:48:59,780 --> 00:49:04,820
the exhibit is running for how long Eric

1264
00:49:01,610 --> 00:49:06,380
until sep tember of 2015 Wow right so

1265
00:49:04,820 --> 00:49:08,150
you've got some time but if you doubt

1266
00:49:06,380 --> 00:49:10,190
there you definitely want to stop by go

1267
00:49:08,150 --> 00:49:12,800
before you go see any Broadway plays

1268
00:49:10,190 --> 00:49:15,260
definitely check this out because it'll

1269
00:49:12,800 --> 00:49:17,690
be it would be worth your time so I want

1270
00:49:15,260 --> 00:49:19,070
to thank you guys Eric Jerry and Mike

1271
00:49:17,690 --> 00:49:22,480
thank you all for showing up I

1272
00:49:19,070 --> 00:49:25,430
appreciate it this has been a lot of fun

1273
00:49:22,480 --> 00:49:28,789
that is it folks for this year we are

1274
00:49:25,429 --> 00:49:31,579
done with Hubble hangouts but we will be

1275
00:49:28,789 --> 00:49:33,829
coming back in with a bang literally in

1276
00:49:31,579 --> 00:49:35,480
the beginning of January where Carol and

1277
00:49:33,829 --> 00:49:38,360
I will be at the american astronomical

1278
00:49:35,480 --> 00:49:40,579
society in seattle meeting and we will

1279
00:49:38,360 --> 00:49:43,130
be broadcasting Hubble hangouts every

1280
00:49:40,579 --> 00:49:44,690
single day for the great day so for

1281
00:49:43,130 --> 00:49:46,640
those of you who know anything about if

1282
00:49:44,690 --> 00:49:48,619
you've ever followed me on space fan

1283

00:49:46,639 --> 00:49:50,839
news remember it started way back in the

1284
00:49:48,619 --> 00:49:53,900
day when I want it report on it on

1285
00:49:50,840 --> 00:49:56,450
double-a s stuff and now I get to go and

1286
00:49:53,900 --> 00:49:58,400
do it there so every day we'll be doing

1287
00:49:56,449 --> 00:49:59,809
something so look for us there and we

1288
00:49:58,400 --> 00:50:02,150
will be coming back with a bang that's

1289
00:49:59,809 --> 00:50:04,909
on January fifth I believe right Carolyn

1290
00:50:02,150 --> 00:50:06,380
will be starting Monday January fifth

1291
00:50:04,909 --> 00:50:10,599
and we'll be going to the sixth seventh

1292
00:50:06,380 --> 00:50:14,390
eighth and may be nice I'm not sure so

1293
00:50:10,599 --> 00:50:15,650
great to the eighth if you find if you

1294
00:50:14,389 --> 00:50:17,059
want to find out about these things and

1295
00:50:15,650 --> 00:50:19,670
if you have not subscribed to our

1296
00:50:17,059 --> 00:50:21,590
YouTube channel then you are not you are

1297
00:50:19,670 --> 00:50:24,139

so missing out and you're just not

1298

00:50:21,590 --> 00:50:26,750

you're just not being very cool Hubble

1299

00:50:24,139 --> 00:50:28,849

site channel on YouTube you be cool and

1300

00:50:26,750 --> 00:50:32,840

subscribe right because it's all about

1301

00:50:28,849 --> 00:50:34,670

us and it's about wall so you can follow

1302

00:50:32,840 --> 00:50:36,980

at Intrepid Museum to follow their stuff

1303

00:50:34,670 --> 00:50:39,220

going on on twitter also at Hubble

1304

00:50:36,980 --> 00:50:42,139

telescope follow us there you will find

1305

00:50:39,219 --> 00:50:45,019

about all of the Hubble hangouts and the

1306

00:50:42,139 --> 00:50:48,319

Hubble 25th anniversary events coming up

1307

00:50:45,019 --> 00:50:51,469

of which there are a plethora of them oh

1308

00:50:48,320 --> 00:50:53,750

so yeah I well I had to work a big words

1309

00:50:51,469 --> 00:50:55,579

Tony I know more than one more the two

1310

00:50:53,750 --> 00:50:59,929

syllables and I'm like I think you're

1311

00:50:55,579 --> 00:51:04,369

done Tony yeah okay mike is a

1312
00:50:59,929 --> 00:51:05,449
your phone everybody this is thanks for

1313
00:51:04,369 --> 00:51:07,609
all the interaction i want to thank

1314
00:51:05,449 --> 00:51:09,710
everybody for museum thank you all for

1315
00:51:07,610 --> 00:51:11,329
coming yeah that's it for this year

1316
00:51:09,710 --> 00:51:16,809
thank you for watching and as always

1317
00:51:11,329 --> 00:51:16,809
keep looking up yeah yeah nice