

HUBBLE
25



HUBBLE

hangouts

Learn about the Hubble@25 Exhibit at the Intrepid Museum
with Astronaut Mike Massimino

Thursday December 18 2014 3pm EST, 8pm UT, 9pm CET

1
00:00:09,750 --> 00:00:06,840
hello everybody and welcome to the final

2
00:00:11,490 --> 00:00:09,760
hubble hang out of 2014 my name is Tony

3
00:00:13,440 --> 00:00:11,500
Darnell I work at the Space Telescope

4
00:00:16,110 --> 00:00:13,450
Science Institute and as we do every

5
00:00:18,300 --> 00:00:16,120
week we have another great hangout plan

6
00:00:21,360 --> 00:00:18,310
for you we have people from the Intrepid

7
00:00:23,220 --> 00:00:21,370
Sea Air and Space Museum in New York to

8
00:00:25,080 --> 00:00:23,230
talk about their Hubble at 25 exhibit

9
00:00:26,460 --> 00:00:25,090
and one of them I don't know how this

10
00:00:27,930 --> 00:00:26,470
happened we're going to ask and find out

11
00:00:29,040 --> 00:00:27,940
one of them happened to be an astronaut

12
00:00:31,170 --> 00:00:29,050
so we're going to ask him a few

13
00:00:33,090 --> 00:00:31,180

astronaut questions too while he's here

14

00:00:35,399 --> 00:00:33,100

but before I get to this let me

15

00:00:37,799 --> 00:00:35,409

introduce my my Hubble buds my

16

00:00:39,450 --> 00:00:37,809

colleagues dr. carol christian who does

17

00:00:42,090 --> 00:00:39,460

this with me every week she's the hubble

18

00:00:44,459 --> 00:00:42,100

outreach astronomer extraordinaire

19

00:00:47,129 --> 00:00:44,469

welcome Carol it's good to see ya are

20

00:00:48,840 --> 00:00:47,139

you get promoted yes it's true yeah we

21

00:00:51,779 --> 00:00:48,850

had an extraordinary to the title yeah

22

00:00:53,340 --> 00:00:51,789

the and Scott Lewis our driver of the

23

00:00:55,709 --> 00:00:53,350

internet who is now going to tell you

24

00:00:57,029 --> 00:00:55,719

how you can interact with us and you

25

00:00:58,590 --> 00:00:57,039

better interact with us we want your

26
00:01:00,149 --> 00:00:58,600
comments and questions don't make me

27
00:01:01,410 --> 00:01:00,159
climb into the internet and come yell

28
00:01:05,160 --> 00:01:01,420
another thing oh there's already a bunch

29
00:01:07,560 --> 00:01:05,170
going on so first of all I wiki the QA

30
00:01:09,660 --> 00:01:07,570
up here which is on YouTube and Google+

31
00:01:12,060 --> 00:01:09,670
so if you have a question that you like

32
00:01:14,340 --> 00:01:12,070
to ask our panel click on that ask a

33
00:01:16,050 --> 00:01:14,350
question and also allows you guys to

34
00:01:18,300 --> 00:01:16,060
upvote different questions if there's

35
00:01:20,039 --> 00:01:18,310
something that's really popular we can

36
00:01:21,389 --> 00:01:20,049
select that there will time stamp it on

37
00:01:25,469 --> 00:01:21,399
YouTube for those that are watching us

38
00:01:27,300 --> 00:01:25,479

later also we are on Twitter so we are

39

00:01:29,669 --> 00:01:27,310

using the hashtag hubble hang out and

40

00:01:32,580 --> 00:01:29,679

I'm also looking at the hashtag Hubble

41

00:01:35,370 --> 00:01:32,590

25 since this is a merging of the two

42

00:01:37,050 --> 00:01:35,380

for our 25th anniversary celebration so

43

00:01:38,599 --> 00:01:37,060

we will be going back and forth i'll be

44

00:01:41,190 --> 00:01:38,609

live tweeting from the Hubble telescope

45

00:01:43,529 --> 00:01:41,200

account so we look forward to those

46

00:01:45,480 --> 00:01:43,539

questions awesome thank you Scott and

47

00:01:47,099 --> 00:01:45,490

yes i'll be reading the questions or

48

00:01:49,050 --> 00:01:47,109

comments mostly to the Q&A app and the

49

00:01:50,399 --> 00:01:49,060

common tracker on the youtube page but

50

00:01:52,469 --> 00:01:50,409

scott will also let us know about all

51
00:01:53,819 --> 00:01:52,479
those other and things so don't make me

52
00:01:55,109 --> 00:01:53,829
climb into the internet i think i'm

53
00:01:58,919 --> 00:01:55,119
gaining too much weight for that these

54
00:02:02,489 --> 00:01:58,929
days yeah so just let's get to today's

55
00:02:05,880 --> 00:02:02,499
get to today's guest the Hubble Space

56
00:02:07,859 --> 00:02:05,890
Telescope has been in orbit now for 25

57
00:02:11,160 --> 00:02:07,869
years and any of you who know anything

58
00:02:13,650 --> 00:02:11,170
about numbers knows that the number 25

59
00:02:17,100 --> 00:02:13,660
is way way better than the number

60
00:02:19,020 --> 00:02:17,110
for we have this tendency when when even

61
00:02:22,200 --> 00:02:19,030
numbers rolled around to commemorate

62
00:02:25,260 --> 00:02:22,210
them we celebrate them and we want to

63
00:02:28,770 --> 00:02:25,270

and we are no exception and among the

64

00:02:30,540 --> 00:02:28,780

first people to celebrate the 25th year

65

00:02:33,020 --> 00:02:30,550

of the hubble space telescope in orbit

66

00:02:35,850 --> 00:02:33,030

it was launched in april of nineteen

67

00:02:38,220 --> 00:02:35,860

ninety and we're coming up quickly on

68

00:02:40,140 --> 00:02:38,230

that on that anniversary the people at

69

00:02:43,070 --> 00:02:40,150

the Intrepid Sea Air and Space Museum

70

00:02:46,110 --> 00:02:43,080

have opened an exhibit called Hubble at

71

00:02:47,520 --> 00:02:46,120

25 and they're here to tell us about

72

00:02:49,260 --> 00:02:47,530

what they've got going and a little bit

73

00:02:51,630 --> 00:02:49,270

about the museum itself while to talk

74

00:02:55,100 --> 00:02:51,640

about it we have Eric beim he's the

75

00:02:58,860 --> 00:02:55,110

curator of aviation there at the at the

76

00:03:00,510 --> 00:02:58,870

Museum i also have Jerry bay hall she's

77

00:03:02,670 --> 00:03:00,520

the education manager there she is

78

00:03:04,050 --> 00:03:02,680

dealing with the stem she has stem

79

00:03:06,180 --> 00:03:04,060

projects and stuff she's going to tell

80

00:03:08,550 --> 00:03:06,190

us about as well as astronaut Mike

81

00:03:10,590 --> 00:03:08,560

Massimino even know him as astro mike on

82

00:03:13,290 --> 00:03:10,600

twitter he's actually been to Hubble

83

00:03:14,730 --> 00:03:13,300

touched it done things to it and then

84

00:03:16,170 --> 00:03:14,740

came back down again and he's going to

85

00:03:18,630 --> 00:03:16,180

tell us about some of his experiences

86

00:03:20,790 --> 00:03:18,640

there as well but let me go back so Eric

87

00:03:23,070 --> 00:03:20,800

let me start with you tell us a little

88

00:03:24,990 --> 00:03:23,080

bit give us a bird's-eye view of what

89

00:03:26,940 --> 00:03:25,000

the exhibit is as well as tell us a

90

00:03:28,740 --> 00:03:26,950

little bit about the intrepid museum so

91

00:03:30,300 --> 00:03:28,750

oh well the intrepid is just like the

92

00:03:31,680 --> 00:03:30,310

greatest place in the world of work I

93

00:03:34,260 --> 00:03:31,690

mean this is an aircraft carrier that

94

00:03:36,180 --> 00:03:34,270

served through World War two the space

95

00:03:37,650 --> 00:03:36,190

race we recovered us got carpenters

96

00:03:39,720 --> 00:03:37,660

mission and also recovered the first

97

00:03:42,030 --> 00:03:39,730

Gemini mission with the young and

98

00:03:44,850 --> 00:03:42,040

gruesome so a lot of space history here

99

00:03:46,800 --> 00:03:44,860

already and then we got enterprise so we

100

00:03:49,560 --> 00:03:46,810

were always looking for space things to

101
00:03:51,120 --> 00:03:49,570
do and every summer we do with space and

102
00:03:53,640 --> 00:03:51,130
science fest and we bring the astronauts

103
00:03:55,170 --> 00:03:53,650
out here as many as NASA let us have and

104
00:03:56,699 --> 00:03:55,180
I think it was hit up a mic here a

105
00:03:58,920 --> 00:03:56,709
couple of years ago and he put a little

106
00:04:01,020 --> 00:03:58,930
bug in our ear about that even number

107
00:04:02,250 --> 00:04:01,030
that 25 coming up for hobbles so we

108
00:04:06,120 --> 00:04:02,260
really started thinking hard about that

109
00:04:07,590 --> 00:04:06,130
and that just kind of kicked it off so

110
00:04:10,680 --> 00:04:07,600
Scott showing us a sort of an overview

111
00:04:12,240 --> 00:04:10,690
of what the exhibit looks like at the at

112
00:04:13,949 --> 00:04:12,250
the intrepid my keg why don't you tell

113
00:04:16,830 --> 00:04:13,959

us a little bit about how did you get

114

00:04:20,640 --> 00:04:16,840

involved what's your role here well Tony

115

00:04:24,480 --> 00:04:20,650

I've been really lucky to get a chance

116

00:04:25,680 --> 00:04:24,490

to contribute to this I am now i look at

117

00:04:29,220 --> 00:04:25,690

the astronaut program

118

00:04:31,560 --> 00:04:29,230

and NASA back in July and now teaching

119

00:04:33,810 --> 00:04:31,570

at Columbia my faculty member there and

120

00:04:36,150 --> 00:04:33,820

i'm also an advisor here at the intrepid

121

00:04:37,380 --> 00:04:36,160

museum so i'm in new york city because

122

00:04:40,410 --> 00:04:37,390

were the opportunity do a lot of cool

123

00:04:44,850 --> 00:04:40,420

things including participate in this in

124

00:04:46,640 --> 00:04:44,860

this exhibit so as my job as advisor I

125

00:04:50,250 --> 00:04:46,650

got to work with Eric and the team here

126
00:04:52,200 --> 00:04:50,260
in trying to determine what we would

127
00:04:56,220 --> 00:04:52,210
like to have to show people here at the

128
00:05:00,330 --> 00:04:56,230
Museum so what artifacts would be would

129
00:05:03,450 --> 00:05:00,340
be interesting some of the tools that we

130
00:05:05,160 --> 00:05:03,460
use in orbit or actually on display it's

131
00:05:07,310 --> 00:05:05,170
very personal a couple of our flown

132
00:05:11,520 --> 00:05:07,320
items I flew a home plate in space on

133
00:05:13,350 --> 00:05:11,530
sts-125 from shea stadium for from New

134
00:05:15,150 --> 00:05:13,360
York City for the Mets we have that home

135
00:05:17,520 --> 00:05:15,160
plate here we have a basketball that was

136
00:05:20,910 --> 00:05:17,530
used by Edwin Hubble the actual hubble

137
00:05:22,170 --> 00:05:20,920
hubble guy Hubble the dude was was from

138
00:05:23,400 --> 00:05:22,180

the University of Chicago and played

139

00:05:24,960 --> 00:05:23,410

basketball there wasn't just an

140

00:05:27,630 --> 00:05:24,970

astronomer we have a basketball that

141

00:05:29,580 --> 00:05:27,640

that that he played played with in a

142

00:05:31,560 --> 00:05:29,590

game and he actually beat I think you'd

143

00:05:33,470 --> 00:05:31,570

betta Indiana was a very low-scoring

144

00:05:35,370 --> 00:05:33,480

game it was back on the old days

145

00:05:36,780 --> 00:05:35,380

basketballs and a bouncing ball back

146

00:05:39,750 --> 00:05:36,790

then but we have that kind of fun stuff

147

00:05:42,060 --> 00:05:39,760

but we also have some history about the

148

00:05:43,560 --> 00:05:42,070

Hubble itself it didn't work as well as

149

00:05:44,790 --> 00:05:43,570

they would have liked there was problems

150

00:05:46,620 --> 00:05:44,800

with the optics and there's a story

151

00:05:48,690 --> 00:05:46,630

there how it was fixed and how the

152

00:05:52,110 --> 00:05:48,700

instruments work my favorite part of the

153

00:05:54,960 --> 00:05:52,120

exhibit is and inside in the back of the

154

00:05:56,310 --> 00:05:54,970

exhibit we have I say incitement whole

155

00:05:57,600 --> 00:05:56,320

things inside we got to go into the

156

00:06:00,480 --> 00:05:57,610

exhibit and go to the back there's a

157

00:06:01,800 --> 00:06:00,490

special video room with footage from our

158

00:06:03,780 --> 00:06:01,810

training in the neutral buoyancy

159

00:06:06,120 --> 00:06:03,790

laboratory which is our big pool that we

160

00:06:08,610 --> 00:06:06,130

practice our space walks in and it

161

00:06:10,860 --> 00:06:08,620

exactly it's not a big screen it's got

162

00:06:13,260 --> 00:06:10,870

the sounds behind it that we had in a

163

00:06:14,790 --> 00:06:13,270

pool and it reminds me so much of what

164

00:06:17,880 --> 00:06:14,800

those training days were like all those

165

00:06:19,440 --> 00:06:17,890

days that we spent over training over in

166

00:06:21,480 --> 00:06:19,450

the in the big pool at the neutral

167

00:06:23,640 --> 00:06:21,490

buoyancy laboratory so it's me it's very

168

00:06:25,050 --> 00:06:23,650

very personal to chose the stuff we use

169

00:06:27,390 --> 00:06:25,060

and it tells the story of the telescope

170

00:06:30,510 --> 00:06:27,400

but also of the crews and the science

171

00:06:33,030 --> 00:06:30,520

and it's I well you know I contributed

172

00:06:34,860 --> 00:06:33,040

through its own bias but I do I feel

173

00:06:36,270 --> 00:06:34,870

great yeah I want to go I want to get

174

00:06:37,440 --> 00:06:36,280

back to a lot of your experiences on the

175

00:06:38,500 --> 00:06:37,450

shuttle and working there specifically

176

00:06:39,850 --> 00:06:38,510

working on the Hubble

177

00:06:41,920 --> 00:06:39,860

I'm gonna get my do the exhibit itself a

178

00:06:44,050 --> 00:06:41,930

little bit with Eric when did it open

179

00:06:45,580 --> 00:06:44,060

when did it start and for how long will

180

00:06:47,620 --> 00:06:45,590

it be available for the public to come

181

00:06:49,750 --> 00:06:47,630

look at well we just opened it this

182

00:06:51,190 --> 00:06:49,760

october october twenty third and we're

183

00:06:53,980 --> 00:06:51,200

going to keep it over for almost 11

184

00:06:56,590 --> 00:06:53,990

months until mid-september of 2015 so

185

00:06:58,810 --> 00:06:56,600

we'll be open and right through the

186

00:07:02,800 --> 00:06:58,820

anniversary of the launch anniversary in

187

00:07:04,480 --> 00:07:02,810

april so goes along with the exhibit are

188

00:07:06,040 --> 00:07:04,490

a lot of programming we've already had a

189

00:07:08,830 --> 00:07:06,050

couple programs and these are evening

190

00:07:11,620 --> 00:07:08,840

programs but some other programs coming

191

00:07:14,080 --> 00:07:11,630

up just kind of a concept we like to do

192

00:07:15,970 --> 00:07:14,090

kari and her team have all these

193

00:07:18,430 --> 00:07:15,980

educational programs for the kids or in

194

00:07:20,080 --> 00:07:18,440

a day but the adult programming at night

195

00:07:22,660 --> 00:07:20,090

or the family programming at night is

196

00:07:24,850 --> 00:07:22,670

about big part of it so as i mentioned

197

00:07:27,520 --> 00:07:24,860

at the top of the of the Hangout the

198

00:07:29,830 --> 00:07:27,530

Hubble has been up for 25 years and it's

199

00:07:32,050 --> 00:07:29,840

been circling over our heads not looking

200

00:07:34,030 --> 00:07:32,060

down at us but looking up at the outer

201
00:07:36,550 --> 00:07:34,040
reaches of the solar system and our

202
00:07:39,160 --> 00:07:36,560
galaxy and the universe and I think it

203
00:07:42,220 --> 00:07:39,170
is more than any other scientific

204
00:07:44,080 --> 00:07:42,230
instrument has given us with its

205
00:07:47,800 --> 00:07:44,090
glimpses of the heavens it's given us

206
00:07:49,260 --> 00:07:47,810
more a perspective on our place in the

207
00:07:51,280 --> 00:07:49,270
universe than I think any other

208
00:07:52,660 --> 00:07:51,290
telescope has ever done and I've often

209
00:07:54,820 --> 00:07:52,670
said and I don't think I'm overstating

210
00:07:56,560 --> 00:07:54,830
and when I say this is that the Hubble

211
00:07:58,570 --> 00:07:56,570
Space Telescope in my opinion is the

212
00:08:00,880 --> 00:07:58,580
most single most important instrument

213
00:08:03,040 --> 00:08:00,890

ever built and because of that because

214

00:08:05,470 --> 00:08:03,050

of its what it has shown us and taught

215

00:08:08,710 --> 00:08:05,480

us about the universe so Jerry when you

216

00:08:11,020 --> 00:08:08,720

are designing some of the education

217

00:08:14,140 --> 00:08:11,030

programs that go along with the exhibit

218

00:08:15,730 --> 00:08:14,150

and are you seeing any of that sense of

219

00:08:18,310 --> 00:08:15,740

wonder among the students you're

220

00:08:21,310 --> 00:08:18,320

teaching with this is it is the is the

221

00:08:22,780 --> 00:08:21,320

exhibit conveying that sort of sense of

222

00:08:25,330 --> 00:08:22,790

wonder that Hubble has always been

223

00:08:27,400 --> 00:08:25,340

famous for I think absolutely especially

224

00:08:30,670 --> 00:08:27,410

for the younger kids who have grown up

225

00:08:32,290 --> 00:08:30,680

with a lot of these images and and they

226

00:08:34,360 --> 00:08:32,300

recognize them and they might see them

227

00:08:37,900 --> 00:08:34,370

in you know popular culture and then to

228

00:08:40,450 --> 00:08:37,910

see these huge images underneath the

229

00:08:43,030 --> 00:08:40,460

Space Shuttle that we have it really

230

00:08:45,940 --> 00:08:43,040

does bring them to the science and

231

00:08:48,100 --> 00:08:45,950

technology that has made it possible

232

00:08:51,070 --> 00:08:48,110

they finally understand why it's

233

00:08:52,490 --> 00:08:51,080

important to have the telescope there up

234

00:08:54,500 --> 00:08:52,500

above the Earth's atmosphere

235

00:08:57,080 --> 00:08:54,510

here and what it can do it really is

236

00:08:58,400 --> 00:08:57,090

amazing for them so tell us a little

237

00:09:00,410 --> 00:08:58,410

about some of the programs you've

238

00:09:02,780 --> 00:09:00,420

designed what are what specifically are

239

00:09:04,910 --> 00:09:02,790

you teaching kids and at jet what

240

00:09:07,550 --> 00:09:04,920

general age range are you targeting um

241

00:09:10,820 --> 00:09:07,560

we're actually we've been trying to

242

00:09:13,790 --> 00:09:10,830

target k through 12 hosts the whole

243

00:09:15,320 --> 00:09:13,800

Schmeer I mean the K through the K

244

00:09:18,890 --> 00:09:15,330

through tues I admit are a little

245

00:09:21,260 --> 00:09:18,900

difficult but the exhibit is designed so

246

00:09:23,870 --> 00:09:21,270

well around stem science technology

247

00:09:26,480 --> 00:09:23,880

engineering math that you can really

248

00:09:29,210 --> 00:09:26,490

target and focus the different age

249

00:09:30,590 --> 00:09:29,220

groups so for the little ones we

250

00:09:33,710 --> 00:09:30,600

actually lost you're invested in a

251
00:09:35,390 --> 00:09:33,720
portable planetarium um so was it a star

252
00:09:38,150 --> 00:09:35,400
lab I used to have one of them ah it is

253
00:09:39,470 --> 00:09:38,160
it did you tell us oh okay they've got

254
00:09:41,030 --> 00:09:39,480
the UH they've grown a lot i love those

255
00:09:45,290 --> 00:09:41,040
things those those those inflatable

256
00:09:47,360 --> 00:09:45,300
things you walk away yeah yes oh you

257
00:09:51,020 --> 00:09:47,370
know for K through 2 kids who've never

258
00:09:53,240 --> 00:09:51,030
been in one of those we show them images

259
00:09:56,900 --> 00:09:53,250
that are taken with Hubble inside the

260
00:09:59,090 --> 00:09:56,910
planetarium specifically at and we look

261
00:10:02,720 --> 00:09:59,100
at constellations and specifically stars

262
00:10:03,980 --> 00:10:02,730
in Orion and Ursa Major and then we take

263
00:10:06,320 --> 00:10:03,990

them out of the planetarium and they get

264

00:10:09,590 --> 00:10:06,330

to create their own star story so you

265

00:10:10,970 --> 00:10:09,600

know we bring it down to a level for the

266

00:10:12,950 --> 00:10:10,980

caves or tues that are it's really

267

00:10:16,850 --> 00:10:12,960

accessible and then we show them where

268

00:10:18,200 --> 00:10:16,860

those pictures came from and for the the

269

00:10:20,840 --> 00:10:18,210

upper grades we talk about the

270

00:10:23,270 --> 00:10:20,850

spectrometers we look at um discreet

271

00:10:25,160 --> 00:10:23,280

gases through fractal lenses it's

272

00:10:26,810 --> 00:10:25,170

actually really fun and then we talk

273

00:10:28,460 --> 00:10:26,820

about galaxy shapes the shapes of

274

00:10:31,970 --> 00:10:28,470

different galaxies and we actually do an

275

00:10:33,890 --> 00:10:31,980

art project so we bring together the

276

00:10:36,140 --> 00:10:33,900

science and then the art because these

277

00:10:38,360 --> 00:10:36,150

really are beautiful photographs when

278

00:10:41,420 --> 00:10:38,370

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

279

00:10:44,000 --> 00:10:41,430

lot of fun and it certainly has been a

280

00:10:46,130 --> 00:10:44,010

way to get our education kind of

281

00:10:50,870 --> 00:10:46,140

creative juices flowing it's been really

282

00:10:51,950 --> 00:10:50,880

wonderful so imma do you have to are all

283

00:10:54,590 --> 00:10:51,960

of your activities centered around

284

00:10:56,420 --> 00:10:54,600

things at the museum itself or let's say

285

00:10:57,770 --> 00:10:56,430

I'm a teacher can I contact you and

286

00:10:59,480 --> 00:10:57,780

would you have some activities maybe I

287

00:11:01,190 --> 00:10:59,490

can't go to the museum but maybe do you

288

00:11:04,310 --> 00:11:01,200

have some things maybe I could do in my

289

00:11:06,140 --> 00:11:04,320

classroom absolutely I mean we can

290

00:11:09,050 --> 00:11:06,150

design certain programs 40

291

00:11:12,680 --> 00:11:09,060

we have the capabilities obviously to

292

00:11:13,730 --> 00:11:12,690

beam into classrooms for certain and

293

00:11:16,780 --> 00:11:13,740

then there are a lot of other resources

294

00:11:22,310 --> 00:11:16,790

that were happy to connect people with

295

00:11:23,810 --> 00:11:22,320

so the so the one because it's

296

00:11:25,460 --> 00:11:23,820

underneath the enterprise and the

297

00:11:27,980 --> 00:11:25,470

enterprise for those who don't know the

298

00:11:30,380 --> 00:11:27,990

Space Shuttle enterprise is was not an

299

00:11:32,450 --> 00:11:30,390

actual working fully working space

300

00:11:34,850 --> 00:11:32,460

station or space straddle it was one of

301
00:11:36,560 --> 00:11:34,860
those that they used to test fly to make

302
00:11:39,280 --> 00:11:36,570
sure they could land it I remember we

303
00:11:42,800 --> 00:11:39,290
was was a John Young to float the fluid

304
00:11:44,180 --> 00:11:42,810
Eric that that they glided the the

305
00:11:46,520 --> 00:11:44,190
enterprise down in its first flight

306
00:11:48,110 --> 00:11:46,530
actually Fred Hayes on the first fret Oh

307
00:11:50,300 --> 00:11:48,120
was Fred hey sorry thank you for reading

308
00:11:52,340 --> 00:11:50,310
right Chad when young was the first

309
00:11:53,870 --> 00:11:52,350
commander of the space shuttle oh that's

310
00:11:57,260 --> 00:11:53,880
right that's what you think so the real

311
00:11:58,910 --> 00:11:57,270
first if sts-1 yes yes when John Young

312
00:12:00,470 --> 00:11:58,920
was the commander that's right and

313
00:12:02,960 --> 00:12:00,480

Robert Robert Crippen went with him so

314

00:12:04,760 --> 00:12:02,970

yeah yeah okay I right I got confused so

315

00:12:06,050 --> 00:12:04,770

but this this didn't have rocket engines

316

00:12:08,480 --> 00:12:06,060

on it was just a sort of a

317

00:12:10,940 --> 00:12:08,490

proof-of-concept can we glide and land

318

00:12:13,400 --> 00:12:10,950

this thing right Eric it was but it was

319

00:12:16,760 --> 00:12:13,410

built as a spaceship structurally it was

320

00:12:19,880 --> 00:12:16,770

all there it was okay of course yeah

321

00:12:21,230 --> 00:12:19,890

we've had the designation ov 101 the 100

322

00:12:24,320 --> 00:12:21,240

series was supposed to be the orbital

323

00:12:27,110 --> 00:12:24,330

vehicles though it was built to be

324

00:12:29,060 --> 00:12:27,120

eventually converted into an orbital

325

00:12:30,950 --> 00:12:29,070

vehicle you know that has to change

326

00:12:32,300 --> 00:12:30,960

their mind later on because i think the

327

00:12:35,240 --> 00:12:32,310

structure was a little heavy was going

328

00:12:37,670 --> 00:12:35,250

to be expensive to take the photons off

329

00:12:41,000 --> 00:12:37,680

put real tiles on it and the engines and

330

00:12:43,070 --> 00:12:41,010

all the other systems and just uh guess

331

00:12:45,050 --> 00:12:43,080

they were moving forward each kenichi

332

00:12:47,150 --> 00:12:45,060

vehicle was lighter in weight as they

333

00:12:48,890 --> 00:12:47,160

were building them to sew and which is

334

00:12:50,840 --> 00:12:48,900

really important for hauling pay load up

335

00:12:52,550 --> 00:12:50,850

was that because materials just got

336

00:12:54,320 --> 00:12:52,560

better or they got smarter at building

337

00:12:55,700 --> 00:12:54,330

space shuttles in offer both things I've

338

00:12:58,790 --> 00:12:55,710

talked to engineer and I heard it's been

339

00:13:01,010 --> 00:12:58,800

materials and just structurally it's

340

00:13:03,830 --> 00:13:01,020

heavy when did you get it reminded

341

00:13:07,550 --> 00:13:03,840

remind me when you got enterprise two

342

00:13:12,560 --> 00:13:07,560

thousand eleven no twelve she tells I'm

343

00:13:14,870 --> 00:13:12,570

sorry oh yeah we were don't get so mad

344

00:13:16,760 --> 00:13:14,880

when I do that to her I promise by yeah

345

00:13:17,290 --> 00:13:16,770

I know I'm gonna work yeah I'm putting

346

00:13:22,150 --> 00:13:17,300

her on

347

00:13:24,340 --> 00:13:22,160

rewarded and in my spring 2011 okay fine

348

00:13:26,710 --> 00:13:24,350

that's good enough we were still flying

349

00:13:28,480 --> 00:13:26,720

real space shuttles game at me Thank You

350

00:13:30,250 --> 00:13:28,490

those are l12 but we were still flying

351
00:13:32,350 --> 00:13:30,260
to space shells in space in two thousand

352
00:13:35,560 --> 00:13:32,360
right so a year later they went through

353
00:13:37,509 --> 00:13:35,570
the museum's yeah 2012 so did so Jerry

354
00:13:40,000 --> 00:13:37,519
you you got you give these students sort

355
00:13:42,100 --> 00:13:40,010
of a sense of just you know having the

356
00:13:43,900 --> 00:13:42,110
enterprise there helps you give them a

357
00:13:46,780 --> 00:13:43,910
sense of just how big Hubble was right

358
00:13:48,639 --> 00:13:46,790
yeah it is I mean and it's such right

359
00:13:50,470 --> 00:13:48,649
now it's such a fantastic connection to

360
00:13:52,420 --> 00:13:50,480
make because if you I don't know if

361
00:13:54,340 --> 00:13:52,430
we've got the shot of the exhibit again

362
00:13:56,650 --> 00:13:54,350
the exhibit it's set up like we said

363
00:13:59,139 --> 00:13:56,660

right underneath the shuttle so you can

364

00:14:01,509 --> 00:13:59,149

stand there with your group look up at

365

00:14:03,730 --> 00:14:01,519

the payload area of the shuttle and say

366

00:14:06,130 --> 00:14:03,740

it was designed to fit in that pelo

367

00:14:07,630 --> 00:14:06,140

because we have a decent sized model of

368

00:14:09,670 --> 00:14:07,640

it right now but for a lot of kids who

369

00:14:12,670 --> 00:14:09,680

don't understand scale and how large

370

00:14:14,560 --> 00:14:12,680

actually you know things are to show

371

00:14:16,990 --> 00:14:14,570

them yeah I fit inside that payload it's

372

00:14:19,210 --> 00:14:17,000

about the same size as a large school

373

00:14:20,980 --> 00:14:19,220

bus it's really easy to make those real

374

00:14:23,710 --> 00:14:20,990

life connections which is what we try to

375

00:14:26,560 --> 00:14:23,720

do with all our programming here on the

376

00:14:28,090 --> 00:14:26,570

ship yeah I vogue everybody always says

377

00:14:30,040 --> 00:14:28,100

that the Hubble Space Telescope is the

378

00:14:31,480 --> 00:14:30,050

size of a school bus and while that you

379

00:14:33,340 --> 00:14:31,490

know you say that and you can imagine a

380

00:14:37,000 --> 00:14:33,350

school bus when you really actually see

381

00:14:38,740 --> 00:14:37,010

it it's pretty darn big so Mike you went

382

00:14:41,290 --> 00:14:38,750

up and you you went up and actually

383

00:14:43,030 --> 00:14:41,300

touch this thing how were you impressed

384

00:14:44,680 --> 00:14:43,040

by how large it was what were some of

385

00:14:47,590 --> 00:14:44,690

your first thoughts for going up there

386

00:14:49,449 --> 00:14:47,600

yeah we yeah so that when you when you

387

00:14:51,610 --> 00:14:49,459

Ronnie I never saw the telescope before

388

00:14:55,030 --> 00:14:51,620

was launched I was launched in 1990 I

389

00:14:58,050 --> 00:14:55,040

became an astronaut 96 and started

390

00:15:00,610 --> 00:14:58,060

training for the flight more or less and

391

00:15:04,389 --> 00:15:00,620

in two thousand to fly my first flight

392

00:15:07,329 --> 00:15:04,399

to flood in 2002 and so when you running

393

00:15:09,040 --> 00:15:07,339

with Hubble it starts out and you wake

394

00:15:11,079 --> 00:15:09,050

up more or less on the third day your

395

00:15:13,150 --> 00:15:11,089

third space space flight a flight day

396

00:15:15,639 --> 00:15:13,160

three is when we did our rendezvous

397

00:15:17,650 --> 00:15:15,649

vision so you see it on the hall right

398

00:15:19,960 --> 00:15:17,660

away at now and say the rise but out

399

00:15:22,120 --> 00:15:19,970

there in space somewhere as it looks

400

00:15:23,740 --> 00:15:22,130

like a star that keeps getting brighter

401
00:15:26,710 --> 00:15:23,750
and brighter as you get close to it as

402
00:15:28,210 --> 00:15:26,720
hours go by and then it starts to take

403
00:15:33,720 --> 00:15:28,220
the shape of a telescope as you get

404
00:15:39,940 --> 00:15:37,329
oops uh-oh you got accidentally muted

405
00:15:45,519 --> 00:15:39,950
Mike can you a mute yourself my weekend

406
00:15:47,259 --> 00:15:45,529
are you okay right so um so I don't know

407
00:15:49,389 --> 00:15:47,269
where you were but as a I was saying how

408
00:15:52,480 --> 00:15:49,399
the trouble starts out as a star yeah

409
00:15:54,310 --> 00:15:52,490
yeah it's bigger and bigger and in as

410
00:15:55,990 --> 00:15:54,320
you get close to it its arse you start

411
00:15:57,310 --> 00:15:56,000
seeing like a little telescope and it

412
00:15:59,290 --> 00:15:57,320
gets bigger and bigger and bigger and

413
00:16:01,030 --> 00:15:59,300

then it's like you recognize this Hubble

414

00:16:02,980 --> 00:16:01,040

and you can't close to an crap would

415

00:16:04,720 --> 00:16:02,990

pull in a pail of day but it's it's

416

00:16:07,630 --> 00:16:04,730

really big I mean it's nowhere near as

417

00:16:09,370 --> 00:16:07,640

big as a space station but it's pretty

418

00:16:12,220 --> 00:16:09,380

impressive when you when you come up and

419

00:16:14,259 --> 00:16:12,230

see this thing after your gift in space

420

00:16:16,060 --> 00:16:14,269

for a few days and then you hit the mark

421

00:16:18,430 --> 00:16:16,070

and you're right there next to it well

422

00:16:19,840 --> 00:16:18,440

so because of its size and the way you

423

00:16:21,850 --> 00:16:19,850

have to approach it with the space

424

00:16:23,500 --> 00:16:21,860

shuttle is there any worry that if

425

00:16:25,210 --> 00:16:23,510

you're not getting it just something I

426
00:16:26,860 --> 00:16:25,220
mean I don't know exactly how you grab

427
00:16:29,199 --> 00:16:26,870
on to it but was there is any worry

428
00:16:31,420 --> 00:16:29,209
about you know going at it too quickly

429
00:16:33,160 --> 00:16:31,430
or maybe spinning it by accident maybe

430
00:16:35,740 --> 00:16:33,170
is there any danger is is it massive

431
00:16:37,780 --> 00:16:35,750
enough to sort of get there tells the

432
00:16:39,790 --> 00:16:37,790
telescope and the space station in kind

433
00:16:41,530 --> 00:16:39,800
of a role or some kind of the space show

434
00:16:43,030 --> 00:16:41,540
are you space shuttle space shuttle

435
00:16:46,030 --> 00:16:43,040
forgive me yeah you could all about you

436
00:16:50,050 --> 00:16:46,040
can do all kinds of bad things I'm

437
00:16:53,019 --> 00:16:50,060
really concerned about hitting it you go

438
00:16:55,540 --> 00:16:53,029

ahead I'm fast you're going 17,500 miles

439

00:16:57,730 --> 00:16:55,550

an hour and so is the telescope so

440

00:16:59,860 --> 00:16:57,740

you're flying in formation at 17,500

441

00:17:02,769 --> 00:16:59,870

miles an hour which is really fast and

442

00:17:05,350 --> 00:17:02,779

in the commander we all work together

443

00:17:07,360 --> 00:17:05,360

but it's primarily to commander in my

444

00:17:09,579 --> 00:17:07,370

flight Scott Altman who flies the

445

00:17:12,010 --> 00:17:09,589

shuttle manually up to within a couple

446

00:17:14,020 --> 00:17:12,020

inches of the telescope and the way we

447

00:17:15,880 --> 00:17:14,030

grabbed it is with the robot on there's

448

00:17:17,290 --> 00:17:15,890

to grapple fixtures on Hubble the

449

00:17:21,100 --> 00:17:17,300

primary one is when we've always used

450

00:17:22,630 --> 00:17:21,110

and he gets it such that the target of

451
00:17:24,909 --> 00:17:22,640
that grapple fixture that we're going to

452
00:17:27,850 --> 00:17:24,919
grab with the robot arm is centered in

453
00:17:31,720 --> 00:17:27,860
the camera of the of the of the arm of

454
00:17:33,490 --> 00:17:31,730
the manipulator arm so that the robot

455
00:17:35,830 --> 00:17:33,500
operate their own operator just has to

456
00:17:37,210 --> 00:17:35,840
kind of push in and go get the telescope

457
00:17:39,700 --> 00:17:37,220
but its orbital mechanics and rates

458
00:17:41,340 --> 00:17:39,710
going on so if you wait long enough with

459
00:17:43,810 --> 00:17:41,350
more than just a few seconds really

460
00:17:44,440 --> 00:17:43,820
you'll start seeing mismatch he's trying

461
00:17:46,960 --> 00:17:44,450
to match

462
00:17:50,019 --> 00:17:46,970
perfectly the attitude of the grapple

463
00:17:52,330 --> 00:17:50,029

fixture with the position of the robot

464

00:17:54,399 --> 00:17:52,340

arm and then turn it over to the the arm

465

00:17:56,080 --> 00:17:54,409

operator to go in and grapple the

466

00:17:57,820 --> 00:17:56,090

telescope but it you've got to act

467

00:17:59,620 --> 00:17:57,830

pretty quickly you also don't want to

468

00:18:03,279 --> 00:17:59,630

bang it if you knock it it's a free

469

00:18:04,750 --> 00:18:03,289

flyer that's bad get off spinning yeah I

470

00:18:07,269 --> 00:18:04,760

mean all kinds of bad things can happen

471

00:18:11,350 --> 00:18:07,279

so no pressure nice put a lot of

472

00:18:14,529 --> 00:18:11,360

pressure in practice a lot in order to

473

00:18:16,419 --> 00:18:14,539

do that I am effort but but uh yeah

474

00:18:18,850 --> 00:18:16,429

megan macarthur on my second flight you

475

00:18:20,950 --> 00:18:18,860

is the first rookie to ever be entrusted

476

00:18:23,409 --> 00:18:20,960

with with the job of the way the

477

00:18:25,750 --> 00:18:23,419

telescope does you good night that's why

478

00:18:27,340 --> 00:18:25,760

that's probably bad day I will say on

479

00:18:29,680 --> 00:18:27,350

behalf of the mission and all the people

480

00:18:32,200 --> 00:18:29,690

at Space Telescope we sit in the

481

00:18:34,960 --> 00:18:32,210

auditorium and in front of our TVs and

482

00:18:38,529 --> 00:18:34,970

computers and we hold our breaths that

483

00:18:40,450 --> 00:18:38,539

whole procedure is like oh my gosh

484

00:18:43,870 --> 00:18:40,460

anyway we're with you we're with you

485

00:18:45,310 --> 00:18:43,880

thank you that was a big mission to you

486

00:18:47,500 --> 00:18:45,320

did a lot of stuff to this to the

487

00:18:50,289 --> 00:18:47,510

telescope I mean one of the reasons that

488

00:18:53,259 --> 00:18:50,299

Hubble has been up there for 25 years

489

00:18:55,720 --> 00:18:53,269

able to do what it does is because of

490

00:18:58,509 --> 00:18:55,730

this design capability of going up there

491

00:19:00,250 --> 00:18:58,519

grabbing on to it and opening up hatches

492

00:19:02,080 --> 00:19:00,260

and pulling things out and pulling and

493

00:19:04,090 --> 00:19:02,090

putting other things in and you guys

494

00:19:06,039 --> 00:19:04,100

basically made an almost an entirely too

495

00:19:07,720 --> 00:19:06,049

new telescope out there didn't you yeah

496

00:19:09,399 --> 00:19:07,730

every one of the science instruments so

497

00:19:11,649 --> 00:19:09,409

there was five servicing missions and

498

00:19:13,330 --> 00:19:11,659

over the course of the of the servicing

499

00:19:16,180 --> 00:19:13,340

missions each scientific instrument was

500

00:19:17,320 --> 00:19:16,190

replaced new batteries we put on my left

501
00:19:19,570 --> 00:19:17,330
my second floor you put in new batteries

502
00:19:21,009 --> 00:19:19,580
the solar rays will replace twice the

503
00:19:23,289 --> 00:19:21,019
wide field camera itself one of the

504
00:19:26,080 --> 00:19:23,299
sites of engagements is on a virgin

505
00:19:28,090 --> 00:19:26,090
three of that the right gyroscopes have

506
00:19:29,440 --> 00:19:28,100
been replaced three times we just put

507
00:19:32,049 --> 00:19:29,450
those in the last time the most of the

508
00:19:35,289 --> 00:19:32,059
newest instead of a new power control

509
00:19:37,269 --> 00:19:35,299
unit new computer yeah so you can

510
00:19:39,580 --> 00:19:37,279
replace stuff the parts that were out so

511
00:19:41,590 --> 00:19:39,590
you replace those and every time you

512
00:19:43,560 --> 00:19:41,600
replace an instrument or even though the

513
00:19:46,539 --> 00:19:43,570

component parts liking the gyroscopes

514

00:19:49,060 --> 00:19:46,549

the use the latest technology so as

515

00:19:51,549 --> 00:19:49,070

technology advanced you were able to put

516

00:19:53,590 --> 00:19:51,559

the new stuff in inside the telescope so

517

00:19:56,110 --> 00:19:53,600

and on my second mission it wasn't just

518

00:19:58,130 --> 00:19:56,120

replacing stuff it was fixing things we

519

00:20:00,710 --> 00:19:58,140

took two instruments that were that were

520

00:20:02,870 --> 00:20:00,720

broken and we show semesta the exhibit

521

00:20:04,910 --> 00:20:02,880

they had a power supply failure of the

522

00:20:07,370 --> 00:20:04,920

advanced camera for surveys and on a

523

00:20:08,900 --> 00:20:07,380

space telescope imaging spectrograph but

524

00:20:11,090 --> 00:20:08,910

we had to open those instruments up kind

525

00:20:13,760 --> 00:20:11,100

of performed surgery on orbit that put

526
00:20:15,230 --> 00:20:13,770
new power supplies in yourself that was

527
00:20:18,290 --> 00:20:15,240
a little bit different because it wasn't

528
00:20:20,240 --> 00:20:18,300
just removing in replace it was going

529
00:20:22,700 --> 00:20:20,250
and get inside of the instrument it was

530
00:20:25,630 --> 00:20:22,710
never intended to be worked on and take

531
00:20:28,970 --> 00:20:25,640
stuff out and put new Stephanie so um

532
00:20:32,150 --> 00:20:28,980
but but the the telescope did not leave

533
00:20:34,700 --> 00:20:32,160
unscathed did it Mike hey you kind of

534
00:20:36,560 --> 00:20:34,710
broke it I'm here yeah we did yeah so

535
00:20:38,090 --> 00:20:36,570
gotta pee I really bringing the

536
00:20:40,280 --> 00:20:38,100
telescope's all right I have pulled the

537
00:20:42,550 --> 00:20:40,290
handle you brought Hubble Space

538
00:20:45,290 --> 00:20:42,560

Telescope you're the man who broke it

539

00:20:47,150 --> 00:20:45,300

all right sure so I we gonna fool the

540

00:20:49,280 --> 00:20:47,160

internal I pulled a handrail off of an

541

00:20:51,590 --> 00:20:49,290

instrument yep so what's the story there

542

00:20:53,450 --> 00:20:51,600

you had to it just you will turn well

543

00:20:55,910 --> 00:20:53,460

during one of the during one of the

544

00:20:58,580 --> 00:20:55,920

repairs for the space telescope imaging

545

00:21:00,290 --> 00:20:58,590

spectrograph we had to remove a handrail

546

00:21:03,440 --> 00:21:00,300

and where they get to the access panel

547

00:21:07,010 --> 00:21:03,450

to remove that panel had that panel

548

00:21:09,560 --> 00:21:07,020

itself had a hundred and i had a hundred

549

00:21:11,630 --> 00:21:09,570

and thirteen screws there were four

550

00:21:13,190 --> 00:21:11,640

screws on the handrail three of the

551
00:21:14,990 --> 00:21:13,200
screws came off the handrail but one was

552
00:21:17,300 --> 00:21:15,000
when it come off I kinda get the handle

553
00:21:19,160 --> 00:21:17,310
out of a way to get to the access panel

554
00:21:21,260 --> 00:21:19,170
to get access to the access panel and

555
00:21:22,670 --> 00:21:21,270
after about an hour and a half the

556
00:21:24,830 --> 00:21:22,680
clever idea came to see better just

557
00:21:27,770 --> 00:21:24,840
ripped the handrail off we were supposed

558
00:21:29,270 --> 00:21:27,780
to remove it with by taking out all four

559
00:21:31,370 --> 00:21:29,280
screws were only three came out so I had

560
00:21:33,080 --> 00:21:31,380
to rip the thing off so in truth yeah I

561
00:21:36,530 --> 00:21:33,090
did rip it off but it was had come off

562
00:21:38,350 --> 00:21:36,540
anyone okay Hague so I wish there's

563
00:21:40,820 --> 00:21:38,360

actually lane if you can make that

564

00:21:43,430 --> 00:21:40,830

thumbnail big there's the actual handle

565

00:21:46,820 --> 00:21:43,440

that at the exhibit exhibit has an angle

566

00:21:48,020 --> 00:21:46,830

so every piece is that's right glass of

567

00:21:51,410 --> 00:21:48,030

the exhibit and that's still on the

568

00:21:53,750 --> 00:21:51,420

telescope great thing was that after

569

00:21:56,180 --> 00:21:53,760

that the project actually published the

570

00:21:59,330 --> 00:21:56,190

shuttle gyros when Mike did that and it

571

00:22:05,740 --> 00:21:59,340

shows that the gyros won't like this the

572

00:22:08,740 --> 00:22:05,750

trace of it wow they're like oh wow

573

00:22:10,390 --> 00:22:08,750

come off so this is one of the things

574

00:22:12,640 --> 00:22:10,400

you can see exhibit if you guys go to

575

00:22:13,840 --> 00:22:12,650

the exhibit itself Eric maybe you could

576

00:22:15,700 --> 00:22:13,850

describe a little bit of some of the

577

00:22:17,500 --> 00:22:15,710

things and if Kimberly you can pan

578

00:22:18,970 --> 00:22:17,510

around a little bit maybe you could just

579

00:22:20,920 --> 00:22:18,980

kind of just show us a little bit of

580

00:22:23,530 --> 00:22:20,930

overview of what's what's going on there

581

00:22:27,940 --> 00:22:23,540

what are we looking at Kimberly don't

582

00:22:29,920 --> 00:22:27,950

make a sick slowly so the exhibit if you

583

00:22:32,050 --> 00:22:29,930

look at my title aviation curator i'm

584

00:22:33,730 --> 00:22:32,060

not really a space guy though I'm an

585

00:22:35,140 --> 00:22:33,740

enthusiast but it was fun to sit down

586

00:22:37,090 --> 00:22:35,150

with Mike and then start picking his

587

00:22:40,710 --> 00:22:37,100

brain to see what a clean piece of paper

588

00:22:43,000 --> 00:22:40,720

where this can go and I'm very much into

589

00:22:45,220 --> 00:22:43,010

here at the intrepid really were here

590

00:22:47,380 --> 00:22:45,230

for the human aspect of it you know

591

00:22:49,660 --> 00:22:47,390

there's people that flew these airplanes

592

00:22:51,820 --> 00:22:49,670

and sailed in the ship and and fix this

593

00:22:53,680 --> 00:22:51,830

wonderful machine so we really wanted to

594

00:22:56,530 --> 00:22:53,690

make sure that we we touched the human

595

00:22:58,660 --> 00:22:56,540

component so am I completely understood

596

00:23:00,610 --> 00:22:58,670

that he was like i'll use these tools

597

00:23:02,770 --> 00:23:00,620

and here are people that helped us

598

00:23:05,170 --> 00:23:02,780

design these tool so he put me in

599

00:23:07,660 --> 00:23:05,180

contact with great people like Joe

600

00:23:11,470 --> 00:23:07,670

Maguire Justin Cassidy and then sepi

601
00:23:13,710 --> 00:23:11,480
down near Goddard uh and then uh from

602
00:23:16,660 --> 00:23:13,720
there he was like you need to talk to

603
00:23:18,460 --> 00:23:16,670
this person at Goddard and I gotta send

604
00:23:22,030 --> 00:23:18,470
a little shout-out to jinja letak who

605
00:23:24,970 --> 00:23:22,040
really he he made it all happen and we

606
00:23:27,550 --> 00:23:24,980
have you know like eight tools and the

607
00:23:30,640 --> 00:23:27,560
handle the actual flown tools on display

608
00:23:32,560 --> 00:23:30,650
uh Mike also suggested a few people at

609
00:23:35,200 --> 00:23:32,570
the Space Telescope Science Institute so

610
00:23:36,670 --> 00:23:35,210
shoutouts the plan Frank and Zolt out

611
00:23:40,420 --> 00:23:36,680
there for all their help with this

612
00:23:43,420 --> 00:23:40,430
exhibit oh yeah oh yeah uh oh these are

613
00:23:45,610 --> 00:23:43,430

all my new friends and you act like

614

00:23:47,770 --> 00:23:45,620

wonderful people and it just was just

615

00:23:50,350 --> 00:23:47,780

this was a joy this exhibit was a joy to

616

00:23:52,270 --> 00:23:50,360

put together I can be showing some of

617

00:23:53,940 --> 00:23:52,280

the tools and if you look at waiver we

618

00:23:57,190 --> 00:23:53,950

put them in cases they're insecure

619

00:23:59,500 --> 00:23:57,200

acrylic cases you can see him from all

620

00:24:02,050 --> 00:23:59,510

sides they're beautiful those are big

621

00:24:03,850 --> 00:24:02,060

cases right and another shout out here

622

00:24:06,370 --> 00:24:03,860

tomorrow exhibit designer in-house here

623

00:24:07,930 --> 00:24:06,380

a crystal ants and for dis- wonderful

624

00:24:09,880 --> 00:24:07,940

exhibit that's like it sits underneath

625

00:24:11,320 --> 00:24:09,890

the shuttle if you when you're in these

626

00:24:15,669 --> 00:24:11,330

it and you look up you're going to see

627

00:24:17,950 --> 00:24:15,679

the belly of a enterprise so um and then

628

00:24:19,420 --> 00:24:17,960

there's all the images and so kimberly's

629

00:24:21,250 --> 00:24:19,430

give us a nice little walk around

630

00:24:23,170 --> 00:24:21,260

here just over there to the right is a

631

00:24:26,440 --> 00:24:23,180

Mission Control we're trying to think of

632

00:24:29,500 --> 00:24:26,450

artistic ways to to show a lot of

633

00:24:32,770 --> 00:24:29,510

content we find that a lot of visitors

634

00:24:34,660 --> 00:24:32,780

don't have time to read you know big

635

00:24:38,140 --> 00:24:34,670

text panels kind of scare them away with

636

00:24:43,750 --> 00:24:38,150

iron yeah all right some of us just have

637

00:24:46,600 --> 00:24:43,760

a DD I never read so I don't think you

638

00:24:47,800 --> 00:24:46,610

mentioned the exhibit is real no it's

639

00:24:49,000 --> 00:24:47,810

wrapped around stems kind of a

640

00:24:50,980 --> 00:24:49,010

no-brainer when you're dealing with an

641

00:24:53,350 --> 00:24:50,990

instrument like the Hubble it the

642

00:24:55,510 --> 00:24:53,360

science technology engineering and math

643

00:24:57,220 --> 00:24:55,520

it's all there but also the artistic

644

00:25:01,690 --> 00:24:57,230

elements and Kimberly's gone perfectly

645

00:25:03,850 --> 00:25:01,700

into our NBL lab so this is what we call

646

00:25:05,770 --> 00:25:03,860

an immersive experience you'll get

647

00:25:08,890 --> 00:25:05,780

inside and see the water effects and

648

00:25:11,560 --> 00:25:08,900

this was a whole lot of fun getting some

649

00:25:12,940 --> 00:25:11,570

film clips from Johnston and folks at

650

00:25:16,930 --> 00:25:12,950

jen's were very helpful there's some

651
00:25:21,210 --> 00:25:16,940
people just finish so do you have not

652
00:25:23,920 --> 00:25:21,220
signed disclaimers there is a very large

653
00:25:25,660 --> 00:25:23,930
curved screen in this room and the water

654
00:25:27,310 --> 00:25:25,670
effects which and make people feel like

655
00:25:28,900 --> 00:25:27,320
they're in water actually a woman tell

656
00:25:31,930 --> 00:25:28,910
me she was getting a little seasick

657
00:25:34,360 --> 00:25:31,940
under there but this is the sts-125 in

658
00:25:36,880 --> 00:25:34,370
training and it was great to bring Mike

659
00:25:38,740 --> 00:25:36,890
in there the first time and he sat on

660
00:25:41,380 --> 00:25:38,750
the floor we had a conference call with

661
00:25:43,360 --> 00:25:41,390
a news outlet uh gonna be interview over

662
00:25:45,250 --> 00:25:43,370
the phone we gotta get going and he sat

663
00:25:46,570 --> 00:25:45,260

on the floor like a little kid and it's

664

00:25:49,120 --> 00:25:46,580

like oh this is that and there's any

665

00:25:51,460 --> 00:25:49,130

just uh it's a loop thing it runs for

666

00:25:53,680 --> 00:25:51,470

several minutes but he really enjoyed it

667

00:25:56,110 --> 00:25:53,690

it brought him back home to training it

668

00:25:57,820 --> 00:25:56,120

so it was really good to see that and I

669

00:25:59,170 --> 00:25:57,830

go in there and i watch the visitors and

670

00:26:00,880 --> 00:25:59,180

the visitors they're just enthralled and

671

00:26:03,700 --> 00:26:00,890

they have that's really great balloon

672

00:26:07,380 --> 00:26:03,710

it's like this mercenary place it's my

673

00:26:09,460 --> 00:26:07,390

new happy place no as I might stop there

674

00:26:11,620 --> 00:26:09,470

so Mike let me ask you about the real

675

00:26:13,270 --> 00:26:11,630

tank is the real tank a good subs is it

676

00:26:15,880 --> 00:26:13,280

anything at all like being in space I

677

00:26:19,930 --> 00:26:15,890

mean it is it a good substitute or is it

678

00:26:22,570 --> 00:26:19,940

really not that the same how good is it

679

00:26:25,480 --> 00:26:22,580

prepare you working it is uh the best

680

00:26:28,390 --> 00:26:25,490

place to train to do a spacewalk it is

681

00:26:30,400 --> 00:26:28,400

it is great you know if we prepare she

682

00:26:32,890 --> 00:26:30,410

did very well to get ready to do your

683

00:26:34,360 --> 00:26:32,900

job though the mock-up

684

00:26:37,300 --> 00:26:34,370

working with the suit the teamwork part

685

00:26:39,370 --> 00:26:37,310

of it you practice there and there's

686

00:26:40,840 --> 00:26:39,380

other places we practice as well as

687

00:26:43,510 --> 00:26:40,850

other parts of the trainings not just

688

00:26:47,590 --> 00:26:43,520

the pool but the pool is is by far the

689

00:26:49,750 --> 00:26:47,600

most beneficial place to practice your

690

00:26:51,040 --> 00:26:49,760

space walks so it prepares you very well

691

00:26:54,580 --> 00:26:51,050

it doesn't prepare you for the view

692

00:26:56,440 --> 00:26:54,590

around you so I'll different by oh damn

693

00:26:58,180 --> 00:26:56,450

it lag it but the way that work your

694

00:26:59,850 --> 00:26:58,190

procedure the choreography working with

695

00:27:01,450 --> 00:26:59,860

your teammates working with the suit

696

00:27:03,640 --> 00:27:01,460

understanding how you're going to do

697

00:27:05,740 --> 00:27:03,650

things it is fantastic it is the best

698

00:27:07,870 --> 00:27:05,750

the best ability is a best place to get

699

00:27:09,190 --> 00:27:07,880

ready I have several hours of this film

700

00:27:12,100 --> 00:27:09,200

and we had a boil it down to several

701
00:27:13,750 --> 00:27:12,110
minutes on the watch but I didn't make

702
00:27:16,300 --> 00:27:13,760
sure that the little clip of Mike with

703
00:27:19,990 --> 00:27:16,310
the handle yeah comes on it is anyway

704
00:27:21,610 --> 00:27:20,000
yeah some diesel it so Jerry do you have

705
00:27:24,850 --> 00:27:21,620
a lot of do you get a lot of school

706
00:27:26,080 --> 00:27:24,860
groups coming through here uh yeah what

707
00:27:28,120 --> 00:27:26,090
would you give us an estimate how many

708
00:27:29,950 --> 00:27:28,130
do they come through the school day or

709
00:27:31,660 --> 00:27:29,960
how do they yeah they come through the

710
00:27:35,700 --> 00:27:31,670
school day um just to give you an idea

711
00:27:38,920 --> 00:27:35,710
over the year we see about 800 discrete

712
00:27:40,480 --> 00:27:38,930
classes in gallery programs and

713
00:27:42,100 --> 00:27:40,490

workshops so either they come for 60

714

00:27:45,550 --> 00:27:42,110

minutes or 90 minutes so that's over the

715

00:27:47,830 --> 00:27:45,560

school year we see 800 and we've noticed

716

00:27:50,230 --> 00:27:47,840

that since we you know have the

717

00:27:52,780 --> 00:27:50,240

Enterprise here now and we have the

718

00:27:54,250 --> 00:27:52,790

exhibit and we've really been pushing

719

00:27:56,500 --> 00:27:54,260

these programs because people don't

720

00:27:58,510 --> 00:27:56,510

often know that we have this great thing

721

00:28:00,160 --> 00:27:58,520

on the back of our aircraft carrier

722

00:28:01,840 --> 00:28:00,170

that's not what they immediately think

723

00:28:03,850 --> 00:28:01,850

of when they think of the intrepid and

724

00:28:08,500 --> 00:28:03,860

but we actually have been getting quite

725

00:28:10,600 --> 00:28:08,510

a few bookings for the space programs as

726

00:28:15,700 --> 00:28:10,610

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

727

00:28:18,190 --> 00:28:15,710

great way to tie in our intrepid history

728

00:28:19,750 --> 00:28:18,200

with the space race to you know real

729

00:28:22,150 --> 00:28:19,760

life science that's going on today it

730

00:28:24,430 --> 00:28:22,160

just makes it so much more enriching for

731

00:28:26,850 --> 00:28:24,440

the kids who come here um and one of the

732

00:28:29,170 --> 00:28:26,860

things we focus on particularly is

733

00:28:32,170 --> 00:28:29,180

problem solving and this is a great way

734

00:28:34,270 --> 00:28:32,180

to show all the different ways that you

735

00:28:36,460 --> 00:28:34,280

have to solve problems with things that

736

00:28:38,680 --> 00:28:36,470

you know go up in space and stay there

737

00:28:41,560 --> 00:28:38,690

for a long periods of time it's been

738

00:28:42,670 --> 00:28:41,570

really wonderful so yeah if you want to

739

00:28:45,100 --> 00:28:42,680

book a program and you're in the

740

00:28:47,710 --> 00:28:45,110

tri-state area give me a call

741

00:28:51,580 --> 00:28:47,720

you did it you got you got you got your

742

00:28:52,930 --> 00:28:51,590

plug so what do they call the word give

743

00:28:54,850 --> 00:28:52,940

it you know does their specific number

744

00:28:56,250 --> 00:28:54,860

is it on the web page it's on our web

745

00:28:58,150 --> 00:28:56,260

page so you can just look under

746

00:29:00,240 --> 00:28:58,160

education and there's a number of

747

00:29:03,250 --> 00:29:00,250

different ways that you can book

748

00:29:05,320 --> 00:29:03,260

different programs but specifically if

749

00:29:07,660 --> 00:29:05,330

you want to come for a Hubble program

750

00:29:09,820 --> 00:29:07,670

you would be calling my office here in

751

00:29:12,520 --> 00:29:09,830

the education department I'm on the I

752

00:29:15,280 --> 00:29:12,530

manage the school and teacher programs

753

00:29:17,890 --> 00:29:15,290

team and so we're we are really working

754

00:29:20,380 --> 00:29:17,900

with teachers to design very specific

755

00:29:22,090 --> 00:29:20,390

programs that work with the Hubble

756

00:29:24,760 --> 00:29:22,100

exhibit because it is a temporary

757

00:29:26,590 --> 00:29:24,770

exhibition it's not something that we're

758

00:29:28,150 --> 00:29:26,600

going to sadly be offering after next

759

00:29:30,580 --> 00:29:28,160

year so we really want to get people in

760

00:29:32,380 --> 00:29:30,590

here to see it as much as possible so so

761

00:29:34,630 --> 00:29:32,390

book your classes now that's an intrepid

762

00:29:36,580 --> 00:29:34,640

museum dot org and you have all of them

763

00:29:38,230 --> 00:29:36,590

there got a couple questions on the Q&A

764

00:29:40,750 --> 00:29:38,240

app I got one for you I think it's

765

00:29:43,539 --> 00:29:40,760

probably for mike patrick Calhoun is

766

00:29:47,770 --> 00:29:43,549

asking what did your boss say about you

767

00:29:56,020 --> 00:29:47,780

ripping the handle off um a fly off the

768

00:29:58,090 --> 00:29:56,030

handle i ah anybody else any other wise

769

00:30:01,900 --> 00:29:58,100

noise pranks there you go to let him

770

00:30:04,720 --> 00:30:01,910

here for um no it says you say what am I

771

00:30:06,789 --> 00:30:04,730

bossy because they were pretty they were

772

00:30:08,080 --> 00:30:06,799

our boss was pretty happy the chief

773

00:30:10,030 --> 00:30:08,090

astronaut it was mine you know they were

774

00:30:11,650 --> 00:30:10,040

just happy that we number one you get

775

00:30:15,340 --> 00:30:11,660

back alive and hang the mission was

776

00:30:16,720 --> 00:30:15,350

accomplished so I think it was I think

777

00:30:18,490 --> 00:30:16,730

everyone was pretty happy that we can't

778

00:30:19,630 --> 00:30:18,500

would a solution that worked so they

779

00:30:21,700 --> 00:30:19,640

didn't care at all that I ripped the

780

00:30:24,400 --> 00:30:21,710

thing off in fact that is uh it was

781

00:30:26,289 --> 00:30:24,410

actually showed how you can use some I

782

00:30:29,260 --> 00:30:26,299

guess some kind of primitive methods to

783

00:30:31,690 --> 00:30:29,270

do something really advanced in space it

784

00:30:32,890 --> 00:30:31,700

was very clever it was yeah wouldn't i

785

00:30:34,930 --> 00:30:32,900

think i'd still be thinking about how to

786

00:30:37,570 --> 00:30:34,940

solve that problem to say five years

787

00:30:39,130 --> 00:30:37,580

later oh not arrow kate anything charge

788

00:30:42,909 --> 00:30:39,140

me for the handrail or anything you let

789

00:30:44,710 --> 00:30:42,919

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

790

00:30:47,650 --> 00:30:44,720

virtue of being a simple solution also

791

00:30:49,480 --> 00:30:47,660

that's right okay Cecil Morgan is asking

792

00:30:53,230 --> 00:30:49,490

and I think I'll give this one to you

793

00:30:55,510 --> 00:30:53,240

Eric or if it's better for Jerry you let

794

00:30:57,840 --> 00:30:55,520

me know will the museum have an online

795

00:31:00,029 --> 00:30:57,850

version of the HST exhibit

796

00:31:03,690 --> 00:31:00,039

that is going to be for Eric because oh

797

00:31:04,980 --> 00:31:03,700

boy department at the moment we don't

798

00:31:07,650 --> 00:31:04,990

have that capability but it is

799

00:31:09,360 --> 00:31:07,660

definitely on our radar and something we

800

00:31:10,440 --> 00:31:09,370

want to do in the future when I said

801
00:31:13,049 --> 00:31:10,450
what would that be some kind of virtual

802
00:31:14,520 --> 00:31:13,059
sort of walk through thing is that what

803
00:31:16,650 --> 00:31:14,530
is that what he would have in mind or

804
00:31:18,960 --> 00:31:16,660
some kind of you know map out of the

805
00:31:21,390 --> 00:31:18,970
whole thing the old have the the high

806
00:31:24,000 --> 00:31:21,400
points and interactive point that people

807
00:31:25,919 --> 00:31:24,010
can actually play with that would be the

808
00:31:28,890 --> 00:31:25,929
goal in the future yes I'm sure it's

809
00:31:30,919 --> 00:31:28,900
can't wait for ya it would be nice okay

810
00:31:38,360 --> 00:31:30,929
Nathaniel a is this is also from Mike

811
00:31:43,350 --> 00:31:38,370
Nathaniel Sanchez Mike ! Lord angel !

812
00:31:45,000 --> 00:31:43,360
any plans to return to star talk ah I

813
00:31:47,279 --> 00:31:45,010

don't know they haven't asked me lately

814

00:31:49,140 --> 00:31:47,289

so I'd be happy to go so I guess the

815

00:31:51,299 --> 00:31:49,150

answer to that is is that indeed all but

816

00:31:53,789 --> 00:31:51,309

sure I'll go back yeah that's at Cindy

817

00:31:56,250 --> 00:31:53,799

oh I'll ask him for you I'm friends with

818

00:31:58,820 --> 00:31:56,260

them so I'll do you a favor don't

819

00:32:02,340 --> 00:31:58,830

mention anything I run oh no oh no

820

00:32:04,620 --> 00:32:02,350

please don't I'm saying anything I'll

821

00:32:07,799 --> 00:32:04,630

tell me mail them to it's okay don't

822

00:32:10,260 --> 00:32:07,809

frighten yo it's okay I got it look

823

00:32:12,149 --> 00:32:10,270

don't worry about I got you go please

824

00:32:18,320 --> 00:32:12,159

don't say anything to my friend meal

825

00:32:22,320 --> 00:32:18,330

it's okay please who asked that question

826

00:32:24,480 --> 00:32:22,330

Nathaniel yeah girl here questions no

827

00:32:27,240 --> 00:32:24,490

yeah no I'm okay Scott you don't have to

828

00:32:28,500 --> 00:32:27,250

do a thing no sorry I haven't been on

829

00:32:30,029 --> 00:32:28,510

the show for a little bit but it's fun

830

00:32:32,279 --> 00:32:30,039

going out done so no wife shows with

831

00:32:33,480 --> 00:32:32,289

meal and been on here a couple times I

832

00:32:34,890 --> 00:32:33,490

don't know if he's still doing the show

833

00:32:37,620 --> 00:32:34,900

she's still doing her show is Nathaniel

834

00:32:40,560 --> 00:32:37,630

assure you they're doing live shows are

835

00:32:41,909 --> 00:32:40,570

gonna be out here in LA okay so I'm

836

00:32:43,409 --> 00:32:41,919

gonna be out there with all right cool

837

00:32:46,169 --> 00:32:43,419

ya know I have been on it for a little

838

00:32:50,100 --> 00:32:46,179

while but I'll get back there again it's

839

00:32:51,630 --> 00:32:50,110

always fun to you Neil yeah so a scott

840

00:32:52,950 --> 00:32:51,640

chapman and I'll and Carol i'll include

841

00:32:55,620 --> 00:32:52,960

you in this if you feel like answering

842

00:32:57,830 --> 00:32:55,630

it it's would there be any advantage to

843

00:33:00,659 --> 00:32:57,840

putting a telescope on the moon surface

844

00:33:02,430 --> 00:33:00,669

vs in Earth orbit sort of a general

845

00:33:04,140 --> 00:33:02,440

question not necessarily related to

846

00:33:06,000 --> 00:33:04,150

Hubble so we have Hubble in orbit are

847

00:33:09,649 --> 00:33:06,010

there any advantages to putting one on

848

00:33:11,670 --> 00:33:09,659

the on the moon said the dark side it ok

849

00:33:14,670 --> 00:33:11,680

number one it's

850

00:33:18,780 --> 00:33:14,680

not dark side really hi you would get on

851

00:33:20,820 --> 00:33:18,790

this side that is right it is the side

852

00:33:23,160 --> 00:33:20,830

that doesn't face the earth sometimes

853

00:33:26,870 --> 00:33:23,170

it's dark sometimes it's light and that

854

00:33:29,760 --> 00:33:26,880

is one of them yeah yeah okay

855

00:33:32,220 --> 00:33:29,770

considerations is that there are extreme

856

00:33:33,720 --> 00:33:32,230

temperature changes number two if you

857

00:33:35,760 --> 00:33:33,730

put it back there then you need

858

00:33:38,790 --> 00:33:35,770

something in orbit around the moon to

859

00:33:40,650 --> 00:33:38,800

transfer the data or you got to send

860

00:33:44,790 --> 00:33:40,660

people down there to get the data which

861

00:33:47,160 --> 00:33:44,800

is kind of a throwback they have we have

862

00:33:49,800 --> 00:33:47,170

talked with in our community about a

863

00:33:52,590 --> 00:33:49,810

radio telescope but again because the

864

00:33:54,180 --> 00:33:52,600

structure might be more tolerant of

865

00:33:56,370 --> 00:33:54,190

changes in temperature if you put

866

00:33:59,310 --> 00:33:56,380

something optical in there even even

867

00:34:01,080 --> 00:33:59,320

Hubble has a breathing mode because when

868

00:34:04,470 --> 00:34:01,090

it goes around the earth and it goes in

869

00:34:06,870 --> 00:34:04,480

and out of that thermal environment you

870

00:34:09,930 --> 00:34:06,880

know the telescope breathe so a radio

871

00:34:12,000 --> 00:34:09,940

telescope might be less sensitive to

872

00:34:13,770 --> 00:34:12,010

that because you wouldn't really see

873

00:34:15,480 --> 00:34:13,780

those perturbations but again you have

874

00:34:17,640 --> 00:34:15,490

the problem with you know building it

875

00:34:19,950 --> 00:34:17,650

back there what kind of facility you're

876

00:34:22,560 --> 00:34:19,960

going to have it be great I mean a bit

877

00:34:25,440 --> 00:34:22,570

wonderful autonomy but but logistically

878

00:34:28,770 --> 00:34:25,450

it might not be the smartest thing to do

879

00:34:31,530 --> 00:34:28,780

but we always chat about it i'm in the

880

00:34:33,780 --> 00:34:31,540

astronomical community okay so that got

881

00:34:36,630 --> 00:34:33,790

a good question thank you Scott um so

882

00:34:43,650 --> 00:34:36,640

the oh woot vanderheiden's is commenting

883

00:34:48,090 --> 00:34:43,660

he's tweeting Neil now so long ordeal

884

00:34:51,060 --> 00:34:48,100

hello yeah poor meal I'm sure um okay so

885

00:34:52,650 --> 00:34:51,070

uh Eric I just gotta ask and I don't

886

00:34:54,150 --> 00:34:52,660

know if you do that if I work there at

887

00:34:55,740 --> 00:34:54,160

the intrepid museum and I had an

888

00:35:02,360 --> 00:34:55,750

aircraft carrier do you guys ever go up

889

00:35:05,070 --> 00:35:02,370

on the deck and sing i'm on a boat I

890

00:35:07,800 --> 00:35:05,080

come to work early every morning and I

891

00:35:09,630 --> 00:35:07,810

could and I do sick because this is just

892

00:35:12,780 --> 00:35:09,640

a remarkable place to you or you're

893

00:35:14,400 --> 00:35:12,790

saying that song but I hasn't saying

894

00:35:17,310 --> 00:35:14,410

I've been here almost 10 years now and

895

00:35:19,620 --> 00:35:17,320

this is uh it's an accredited place that

896

00:35:21,420 --> 00:35:19,630

just did it's amazing well you gotta you

897

00:35:22,800 --> 00:35:21,430

gotta listen to the song just to do a

898

00:35:24,840 --> 00:35:22,810

google and i'm on a boat I think it's

899

00:35:27,480 --> 00:35:24,850

t-pain or somebody's

900

00:35:29,130 --> 00:35:27,490

afraid that's not safe for work so we're

901
00:35:33,120 --> 00:35:29,140
not gonna mention that on it yeah that's

902
00:35:35,940 --> 00:35:33,130
not safe so I just wondered if you do

903
00:35:37,650 --> 00:35:35,950
that okay so the in addition to the

904
00:35:39,810 --> 00:35:37,660
enterprise what other things you since

905
00:35:41,310 --> 00:35:39,820
you're the creator of aviation there's a

906
00:35:43,590 --> 00:35:41,320
lot of other interesting things that the

907
00:35:44,940 --> 00:35:43,600
at the museum as well right Eric oh boy

908
00:35:46,530 --> 00:35:44,950
we got some cool stuff here so our

909
00:35:51,380 --> 00:35:46,540
collection of aircraft range from a

910
00:35:53,610 --> 00:35:51,390
world war two torpedo bomber to an a 12

911
00:35:57,210 --> 00:35:53,620
project upskirt some people call the

912
00:35:58,950 --> 00:35:57,220
Blackbird the relative of the the sr-71

913
00:36:01,710 --> 00:35:58,960

and we even have a british airways

914

00:36:04,230 --> 00:36:01,720

concord here so there's 27 airplanes in

915

00:36:06,420 --> 00:36:04,240

total we also have a submarine here a

916

00:36:08,610 --> 00:36:06,430

guided missile submarine that has it's a

917

00:36:11,280 --> 00:36:08,620

cold war-era submarine with a Regulus

918

00:36:12,870 --> 00:36:11,290

missile on it one of the things that's

919

00:36:14,850 --> 00:36:12,880

really great I right underneath our

920

00:36:16,590 --> 00:36:14,860

enterprise towards the back end the way

921

00:36:19,410 --> 00:36:16,600

from where the Hubble exhibit is we have

922

00:36:22,280 --> 00:36:19,420

a store use games an actual phones

923

00:36:25,110 --> 00:36:22,290

capsule yes so that was donated to us by

924

00:36:27,870 --> 00:36:25,120

Greg Olsen who I think he was the third

925

00:36:29,610 --> 00:36:27,880

participant that went up to the ISS with

926
00:36:32,460 --> 00:36:29,620
the Russians and when he came back he

927
00:36:34,410 --> 00:36:32,470
brought his capsule home and we would

928
00:36:37,230 --> 00:36:34,420
really love having it here because it

929
00:36:39,180 --> 00:36:37,240
just shows a piece of tech not a lot

930
00:36:40,770 --> 00:36:39,190
Soyuz capsules on display here in the

931
00:36:43,980 --> 00:36:40,780
United States so it's great to have it

932
00:36:46,260 --> 00:36:43,990
here yeah that is awesome so is there

933
00:36:48,090 --> 00:36:46,270
any um so Mike one of the things I like

934
00:36:50,760 --> 00:36:48,100
to do when I have people who you know

935
00:36:51,870 --> 00:36:50,770
have done some amazing like been an

936
00:36:53,160 --> 00:36:51,880
astronaut I've been a scientist

937
00:36:54,330 --> 00:36:53,170
astronomer and things like that I've had

938
00:36:56,880 --> 00:36:54,340

Nobel Prize winners I've asked this

939

00:36:58,950 --> 00:36:56,890

question to what advice would you give

940

00:37:01,770 --> 00:36:58,960

to younger people who are just starting

941

00:37:03,720 --> 00:37:01,780

out let's say what is he I guess can you

942

00:37:05,790 --> 00:37:03,730

give us some sense of what the astronaut

943

00:37:07,440 --> 00:37:05,800

corps is like now is there is it still

944

00:37:10,350 --> 00:37:07,450

possible to become an astronaut I know

945

00:37:11,790 --> 00:37:10,360

when NASA's got future plans what would

946

00:37:14,840 --> 00:37:11,800

what advice would you give to somebody

947

00:37:17,550 --> 00:37:14,850

who wanted to become an astronaut oh

948

00:37:20,040 --> 00:37:17,560

yeah well NASA we just picked a group of

949

00:37:23,100 --> 00:37:20,050

a year ago we picked only eight new

950

00:37:25,320 --> 00:37:23,110

astronauts a year ago so it's pretty

951
00:37:27,570 --> 00:37:25,330
competitive there's I think kind of over

952
00:37:31,760 --> 00:37:27,580
6,000 applications you come to pick a

953
00:37:34,800 --> 00:37:31,770
people 6,000 yeah something like that so

954
00:37:37,500 --> 00:37:34,810
it's a tough job to get anyone who gets

955
00:37:38,590 --> 00:37:37,510
to become an astronaut is well qualified

956
00:37:40,970 --> 00:37:38,600
but also

957
00:37:42,980 --> 00:37:40,980
fortunate because there's not that many

958
00:37:46,370 --> 00:37:42,990
spots but there's still that possibility

959
00:37:47,780 --> 00:37:46,380
I think now that we have some commercial

960
00:37:50,210 --> 00:37:47,790
companies are working with to provide

961
00:37:52,010 --> 00:37:50,220
law services of people to the

962
00:37:54,470 --> 00:37:52,020
international space station is going to

963
00:37:55,880 --> 00:37:54,480

be more seats and we're going to need

964

00:37:57,260 --> 00:37:55,890

more astronauts so I think that those

965

00:38:00,320 --> 00:37:57,270

numbers will increase that the class

966

00:38:02,450 --> 00:38:00,330

size that I was in back in 1996 we have

967

00:38:04,640 --> 00:38:02,460

35 Americans so that was a pretty bit of

968

00:38:06,830 --> 00:38:04,650

class so depending on what the need is

969

00:38:08,210 --> 00:38:06,840

they look at that amount of new ass

970

00:38:09,920 --> 00:38:08,220

rocity so I think that numbers going to

971

00:38:12,050 --> 00:38:09,930

start to increase again it went down I

972

00:38:13,490 --> 00:38:12,060

think it's gotten lower now I thinking

973

00:38:14,690 --> 00:38:13,500

next coming next few selections are

974

00:38:16,040 --> 00:38:14,700

going to see it starting to rise up

975

00:38:17,420 --> 00:38:16,050

again they're going to need more and

976
00:38:19,520 --> 00:38:17,430
more people and though there is there is

977
00:38:21,020 --> 00:38:19,530
still a massively active astronaut corps

978
00:38:22,880 --> 00:38:21,030
yeah of course yeah sorry to me I just

979
00:38:24,530 --> 00:38:22,890
think a granted everybody knows that but

980
00:38:26,420 --> 00:38:24,540
we'd but many people don't okay the

981
00:38:28,490 --> 00:38:26,430
London I mean I you know if to America's

982
00:38:30,170 --> 00:38:28,500
in space right now we got to Americans

983
00:38:33,950 --> 00:38:30,180
in space right now orbiting in the space

984
00:38:35,300 --> 00:38:33,960
station so so there's six people in

985
00:38:37,280 --> 00:38:35,310
space right now to have more Americans

986
00:38:38,870 --> 00:38:37,290
so yeah if you're in if you're from

987
00:38:40,550 --> 00:38:38,880
other countries too or we have appealed

988
00:38:42,680 --> 00:38:40,560

from Europe that shots from Europe

989

00:38:44,810 --> 00:38:42,690

Canada all around the world Japan and so

990

00:38:46,460 --> 00:38:44,820

on so just how wherever you are it might

991

00:38:48,620 --> 00:38:46,470

be listen to this if yours country of

992

00:38:50,450 --> 00:38:48,630

space program there's the opportunity to

993

00:38:52,460 --> 00:38:50,460

do that it uses a goal that's what I did

994

00:38:53,960 --> 00:38:52,470

I mean it's unlike it was unlikely when

995

00:38:55,730 --> 00:38:53,970

I applied when I was dreaming about it

996

00:38:56,930 --> 00:38:55,740

but it's kind of the chances with zero

997

00:38:58,430 --> 00:38:56,940

if you don't know anything about it

998

00:39:00,950 --> 00:38:58,440

that's all the meth what you want to do

999

00:39:02,270 --> 00:39:00,960

that's just you know I was who dat who

1000

00:39:04,520 --> 00:39:02,280

dat knew I was would be able to do it

1001
00:39:06,170 --> 00:39:04,530
but in any of my colleagues with a lady

1002
00:39:07,700 --> 00:39:06,180
the same story yeah so unlikely but

1003
00:39:09,950 --> 00:39:07,710
you're not going to do it unless you try

1004
00:39:11,480 --> 00:39:09,960
so if so if people I want to do that

1005
00:39:13,490 --> 00:39:11,490
their students I want to do that kids I

1006
00:39:15,560 --> 00:39:13,500
want to do that it's great um they're

1007
00:39:17,750 --> 00:39:15,570
still picking people from technical

1008
00:39:19,010 --> 00:39:17,760
background so that can be just about

1009
00:39:21,500 --> 00:39:19,020
anything I mean you mentioned

1010
00:39:23,540 --> 00:39:21,510
astronomers but we only have engineers

1011
00:39:28,670 --> 00:39:23,550
pilots medical doctors veterinarian

1012
00:39:30,500 --> 00:39:28,680
rippling and a geology these guys people

1013
00:39:34,250 --> 00:39:30,510

I flew with for example drew Wisel

1014

00:39:36,920 --> 00:39:34,260

geologists magna carta an oceanographer

1015

00:39:39,080 --> 00:39:36,930

uh Rick lenihan I mentioned as a

1016

00:39:40,850 --> 00:39:39,090

veterinarian so there's there's lots of

1017

00:39:42,410 --> 00:39:40,860

different backgrounds and some of you

1018

00:39:43,940 --> 00:39:42,420

might not associate with space travel

1019

00:39:45,850 --> 00:39:43,950

you might think astronomer engineer a

1020

00:39:48,410 --> 00:39:45,860

pilot but just about anything

1021

00:39:50,720 --> 00:39:48,420

technically oriented medicine math

1022

00:39:52,210 --> 00:39:50,730

whatever it might be computers put it

1023

00:39:54,910 --> 00:39:52,220

makes you qualified you can see the list

1024

00:40:00,099 --> 00:39:54,920

these things on the website on the NHS

1025

00:40:01,540 --> 00:40:00,109

election website or that NASA so if you

1026
00:40:04,089 --> 00:40:01,550
want it if you want to do it yeah I mean

1027
00:40:06,370 --> 00:40:04,099
yeah it's unlikely maybe if that could

1028
00:40:09,310 --> 00:40:06,380
happen to me and if that's what your

1029
00:40:10,420 --> 00:40:09,320
dream is you gotta try again I think the

1030
00:40:12,070 --> 00:40:10,430
opportunity is always going to be there

1031
00:40:13,330 --> 00:40:12,080
for a long time I think it's very

1032
00:40:15,700 --> 00:40:13,340
exciting to is there may be other

1033
00:40:19,390 --> 00:40:15,710
opportunities with commercial companies

1034
00:40:21,670 --> 00:40:19,400
as companies like SpaceX and Virgin

1035
00:40:24,280 --> 00:40:21,680
Galactic and these other companies had

1036
00:40:26,410 --> 00:40:24,290
to put people into space I think there's

1037
00:40:28,750 --> 00:40:26,420
going to be not only NASA government

1038
00:40:30,370 --> 00:40:28,760

astronauts like I was but I think

1039

00:40:31,750 --> 00:40:30,380

they'll also be astronauts working for

1040

00:40:34,180 --> 00:40:31,760

these other companies so I think there's

1041

00:40:35,470 --> 00:40:34,190

there's lots of opportunities coming up

1042

00:40:37,900 --> 00:40:35,480

for the for young people who are

1043

00:40:40,480 --> 00:40:37,910

interested in flying into space and if

1044

00:40:43,930 --> 00:40:40,490

you have that dream you should do it you

1045

00:40:46,930 --> 00:40:43,940

should try you know do what you love but

1046

00:40:48,700 --> 00:40:46,940

keep an eye on on what your goal is you

1047

00:40:51,070 --> 00:40:48,710

know and again it could be whatever you

1048

00:40:53,530 --> 00:40:51,080

want I mean any technical field is a

1049

00:40:55,990 --> 00:40:53,540

qualifying feel so pick the field that

1050

00:40:57,400 --> 00:40:56,000

that you like if you couldn't be that's

1051
00:40:59,320 --> 00:40:57,410
not what would you want to do that's you

1052
00:41:01,120 --> 00:40:59,330
should do you need apply to be a

1053
00:41:02,050 --> 00:41:01,130
national at the same time well it sounds

1054
00:41:03,670 --> 00:41:02,060
to me like there would be kind of an

1055
00:41:05,650 --> 00:41:03,680
inherent bias though towards some

1056
00:41:08,589 --> 00:41:05,660
engineering fields if I might be more

1057
00:41:10,570 --> 00:41:08,599
likely to you know more of it more the

1058
00:41:12,220 --> 00:41:10,580
more spots open for an engineer type and

1059
00:41:13,930 --> 00:41:12,230
say maybe a science type or wood or is

1060
00:41:15,609 --> 00:41:13,940
that just not true well I mean you might

1061
00:41:17,160 --> 00:41:15,619
uh might be true but guess what get some

1062
00:41:20,079 --> 00:41:17,170
you know if you look at a number of

1063
00:41:23,680 --> 00:41:20,089

applications yeah there's probably more

1064

00:41:25,750 --> 00:41:23,690

you know there's it's you know what I

1065

00:41:28,570 --> 00:41:25,760

want to consider you do any love because

1066

00:41:30,760 --> 00:41:28,580

i think i figured i picked someone from

1067

00:41:32,650 --> 00:41:30,770

the life sciences area or it's going to

1068

00:41:34,720 --> 00:41:32,660

be a smaller pool because maybe that's

1069

00:41:36,430 --> 00:41:34,730

less there's lots of Engineers right so

1070

00:41:39,040 --> 00:41:36,440

it's going to that's a huge group i

1071

00:41:41,079 --> 00:41:39,050

reviewed applications this grew up

1072

00:41:43,180 --> 00:41:41,089

different for different selections that

1073

00:41:45,070 --> 00:41:43,190

we've had at nasa astronaut selection

1074

00:41:47,140 --> 00:41:45,080

and the you the biggest group is always

1075

00:41:48,579 --> 00:41:47,150

the engineers that doesn't mean you have

1076

00:41:50,650 --> 00:41:48,589

the greatest chance because if you're

1077

00:41:53,020 --> 00:41:50,660

they're going to pick five from that

1078

00:41:54,910 --> 00:41:53,030

group and there's a you know more so it

1079

00:41:56,050 --> 00:41:54,920

i don't think you can play numbers like

1080

00:41:57,849 --> 00:41:56,060

that i think that's not a good way to

1081

00:41:59,230 --> 00:41:57,859

look at it you should never pick your

1082

00:42:00,730 --> 00:41:59,240

career based on what you think is going

1083

00:42:02,620 --> 00:42:00,740

to make give you a chance to be an

1084

00:42:04,990 --> 00:42:02,630

astronaut do not do that that is a

1085

00:42:05,480 --> 00:42:05,000

stupid thing to do don't pick don't pick

1086

00:42:06,590 --> 00:42:05,490

your career

1087

00:42:08,120 --> 00:42:06,600

because I'm going to do this because I'm

1088

00:42:10,520 --> 00:42:08,130

going to become an instrument pick your

1089

00:42:12,410 --> 00:42:10,530

career of what you want to do and apply

1090

00:42:14,390 --> 00:42:12,420

to be an astronaut myth that career if

1091

00:42:15,620 --> 00:42:14,400

you have a love for medicine and you

1092

00:42:17,930 --> 00:42:15,630

think we'll have a better chance to be

1093

00:42:20,960 --> 00:42:17,940

an astronaut if I my engineer don't do

1094

00:42:23,690 --> 00:42:20,970

that become a medical doc that's great

1095

00:42:25,280 --> 00:42:23,700

it is going to you know I it's not only

1096

00:42:26,990 --> 00:42:25,290

going to give you a good career in case

1097

00:42:28,640 --> 00:42:27,000

you don't become an astronaut but I

1098

00:42:30,080 --> 00:42:28,650

think it gives you the best chance of

1099

00:42:31,550 --> 00:42:30,090

becoming an astronaut that's great

1100

00:42:33,260 --> 00:42:31,560

advice you're going to want to get into

1101
00:42:34,640 --> 00:42:33,270
a situation where you become a finalist

1102
00:42:36,770 --> 00:42:34,650
and you're in at an interview and

1103
00:42:38,090 --> 00:42:36,780
they're going to ask you why did you do

1104
00:42:40,310 --> 00:42:38,100
this if you said well the only reason I

1105
00:42:41,900 --> 00:42:40,320
became an engineer was because you know

1106
00:42:42,980 --> 00:42:41,910
you could lie i guess but if the truth

1107
00:42:44,510 --> 00:42:42,990
of it is the only reason you became an

1108
00:42:45,770 --> 00:42:44,520
edema to become an answer that's fine

1109
00:42:46,790 --> 00:42:45,780
that's such a good idea you should

1110
00:42:47,900 --> 00:42:46,800
become an engineer because that's what

1111
00:42:49,010 --> 00:42:47,910
you want to study to become a medical

1112
00:42:51,920 --> 00:42:49,020
doctor because that's what you want to

1113
00:42:54,470 --> 00:42:51,930

do or whatever it might be and and if

1114

00:42:56,120 --> 00:42:54,480

you're if you do the best you can at

1115

00:42:57,080 --> 00:42:56,130

that profession you love what you do

1116

00:42:58,609 --> 00:42:57,090

that gives you the best chance of

1117

00:43:00,290 --> 00:42:58,619

becoming a national but also in your

1118

00:43:03,260 --> 00:43:00,300

point on being the best of the best are

1119

00:43:04,520 --> 00:43:03,270

usually selected if you are really happy

1120

00:43:06,350 --> 00:43:04,530

and passionate about you're doing that's

1121

00:43:08,840 --> 00:43:06,360

much more likely to be the case perfect

1122

00:43:10,130 --> 00:43:08,850

Odessa I that's a new set in a few words

1123

00:43:12,740 --> 00:43:10,140

for what I've been trying to psyche as

1124

00:43:14,270 --> 00:43:12,750

10 minutes do what you're passionate

1125

00:43:15,950 --> 00:43:14,280

about and you're going to do good at it

1126
00:43:17,090 --> 00:43:15,960
and you're going to shine and you when

1127
00:43:19,190 --> 00:43:17,100
you get and talk to people without

1128
00:43:21,410 --> 00:43:19,200
you'll be happy and that's the kind of

1129
00:43:24,170 --> 00:43:21,420
people that they choose Kimberly has a

1130
00:43:25,730 --> 00:43:24,180
great shot of the Hubble at 25 exhibit

1131
00:43:27,890 --> 00:43:25,740
right now so that's that's really a

1132
00:43:30,109 --> 00:43:27,900
great shot Kimberly thank you woot

1133
00:43:32,030 --> 00:43:30,119
vanderheide is asking and I'm sorry if

1134
00:43:33,830 --> 00:43:32,040
I'm mispronouncing your name dude Mike

1135
00:43:35,480 --> 00:43:33,840
let's talk about the pinnacle of your

1136
00:43:38,030 --> 00:43:35,490
career forget being an astronaut and

1137
00:43:42,290 --> 00:43:38,040
going up into space how is it to be on

1138
00:43:44,359 --> 00:43:42,300

the big bang theory that was really a

1139

00:43:48,980 --> 00:43:44,369

lot of fun I love being on the Big Bang

1140

00:43:54,349 --> 00:43:48,990

Theory it's it's it's really just pure

1141

00:43:57,260 --> 00:43:54,359

fun the the cast is great the secular

1142

00:43:59,900 --> 00:43:57,270

producers director the people in

1143

00:44:01,340 --> 00:43:59,910

wardrobe everyone that works it's kind

1144

00:44:03,260 --> 00:44:01,350

of like a spaceflight almost you know

1145

00:44:04,520 --> 00:44:03,270

you have this all these support people

1146

00:44:07,400 --> 00:44:04,530

and the actors I guess or like the

1147

00:44:09,020 --> 00:44:07,410

astronauts you know but uh but it's just

1148

00:44:11,450 --> 00:44:09,030

fantastic it's a great group of people

1149

00:44:14,510 --> 00:44:11,460

it's really fun it's a very successful

1150

00:44:16,609 --> 00:44:14,520

show and it's a bless I just I just have

1151

00:44:18,170 --> 00:44:16,619

such a great time going to do it I can

1152

00:44:18,769 --> 00:44:18,180

to be on the show school without but the

1153

00:44:19,849 --> 00:44:18,779

experience like

1154

00:44:21,919 --> 00:44:19,859

out there when you go out there to film

1155

00:44:24,529 --> 00:44:21,929

it usually out there for a few days out

1156

00:44:27,439 --> 00:44:24,539

in out in Burbank out in hollywood and

1157

00:44:29,719 --> 00:44:27,449

get to see my big bang through family i

1158

00:44:32,509 --> 00:44:29,729

really i really love those people it's a

1159

00:44:35,839 --> 00:44:32,519

great group of people and it's a fun

1160

00:44:38,569 --> 00:44:35,849

show to do great ok so thank you wuda

1161

00:44:40,519 --> 00:44:38,579

appreciate that out Scott anything from

1162

00:44:42,019 --> 00:44:40,529

Twitter or anybody else that I may be

1163

00:44:43,880 --> 00:44:42,029

missing I looked at YouTube but I didn't

1164

00:44:47,569 --> 00:44:43,890

see any comments actually I have a

1165

00:44:49,489 --> 00:44:47,579

request from dr. Emily rice up for Mike

1166

00:44:51,109 --> 00:44:49,499

I don't know if you're familiar with her

1167

00:44:54,380 --> 00:44:51,119

I'm friends with her but she has

1168

00:44:59,029 --> 00:44:54,390

requested for Mike to do a Simpsons

1169

00:45:02,809 --> 00:44:59,039

impression um deep space Homer fer fer

1170

00:45:07,579 --> 00:45:02,819

Bernie chance you might help yourself

1171

00:45:09,739 --> 00:45:07,589

I'm not homework I'm not really sure

1172

00:45:11,779 --> 00:45:09,749

what my cheeks why don't you do it for

1173

00:45:13,939 --> 00:45:11,789

me or maybe I could you don't know it I

1174

00:45:17,149 --> 00:45:13,949

don't know apparently Emily wants you to

1175

00:45:18,890 --> 00:45:17,159

do a Simpsons impression Simpsons in

1176

00:45:20,569 --> 00:45:18,900

fronting you know I'm not gonna do that

1177

00:45:25,159 --> 00:45:20,579

I'm not going to sign up and down a neck

1178

00:45:26,899 --> 00:45:25,169

like a chicken neither no doing it oh I

1179

00:45:34,849 --> 00:45:26,909

love about your ex I don't know any

1180

00:45:36,140 --> 00:45:34,859

magic either sorry that's fine okay so

1181

00:45:38,569 --> 00:45:36,150

anything else but am I missing anything

1182

00:45:40,609 --> 00:45:38,579

else are Scott I'm going to there's a

1183

00:45:41,989 --> 00:45:40,619

lot of chatter on her on her hashtag

1184

00:45:43,999 --> 00:45:41,999

which is great so I'm just so we thank

1185

00:45:45,949 --> 00:45:44,009

you guys yeah thanks for talking on the

1186

00:45:49,279 --> 00:45:45,959

Twitter the using that use it on Hubble

1187

00:45:52,099 --> 00:45:49,289

25 or Hubble hang out both okay so guys

1188

00:45:54,289 --> 00:45:52,109

I want to encourage you guys to if

1189

00:45:56,689 --> 00:45:54,299

you're in New York and if you are a

1190

00:45:58,519 --> 00:45:56,699

space fan a Hubble hugger and just all

1191

00:46:00,499 --> 00:45:58,529

around cool science person you need to

1192

00:46:04,519 --> 00:46:00,509

get to the intrepid museum I actually

1193

00:46:06,439 --> 00:46:04,529

have a question for them oh wait so I

1194

00:46:08,599 --> 00:46:06,449

know it's on your website but just

1195

00:46:12,620 --> 00:46:08,609

briefly how do you get to the intrepid

1196

00:46:16,489 --> 00:46:12,630

know right further live sex on a key

1197

00:46:18,949 --> 00:46:16,499

hall so first step is go to New York go

1198

00:46:22,370 --> 00:46:18,959

to New York I got that step got him okay

1199

00:46:24,229 --> 00:46:22,380

problem with you there okay ya know you

1200

00:46:27,140 --> 00:46:24,239

get on the subway and the closest subway

1201

00:46:29,749 --> 00:46:27,150

stop here we go is the AC e at

1202

00:46:31,990 --> 00:46:29,759

forty-second Street over square times

1203

00:46:34,030 --> 00:46:32,000

square and then I can either choose

1204

00:46:37,530 --> 00:46:34,040

walk down lovely 42nd avenue for about

1205

00:46:40,180 --> 00:46:37,540

15-20 minutes or you can take the m42

1206

00:46:43,690 --> 00:46:40,190

crosstown uh the right direction you

1207

00:46:44,680 --> 00:46:43,700

have to go west yes yes good you're in

1208

00:46:48,310 --> 00:46:44,690

Time Square its can be a little

1209

00:46:49,600 --> 00:46:48,320

discombobulating but yeah it's lovely

1210

00:46:52,900 --> 00:46:49,610

walk her right on the water we're a

1211

00:46:55,960 --> 00:46:52,910

giant ship it's great you get here and

1212

00:46:58,470 --> 00:46:55,970

by the way if you go around new years I

1213

00:47:02,290 --> 00:46:58,480

heard today that there might be a big

1214

00:47:04,570 --> 00:47:02,300

Hubble image in Times Square really so I

1215

00:47:05,950 --> 00:47:04,580

think so I think somebody's working on

1216

00:47:07,210 --> 00:47:05,960

that so that'd be nice you can go look

1217

00:47:10,120 --> 00:47:07,220

at the Hubble image and then you can

1218

00:47:12,970 --> 00:47:10,130

walk down to the museum no that's

1219

00:47:14,560 --> 00:47:12,980

against e1a a question earlier i'm

1220

00:47:16,600 --> 00:47:14,570

trying to find it but it was asking

1221

00:47:19,860 --> 00:47:16,610

about the intrepid for those that aren't

1222

00:47:22,270 --> 00:47:19,870

able to be in New York is there a way of

1223

00:47:25,000 --> 00:47:22,280

interacting or at least sing with still

1224

00:47:28,630 --> 00:47:25,010

fun online and so there is the website

1225

00:47:32,160 --> 00:47:28,640

that you can go to which is over here at

1226

00:47:34,510 --> 00:47:32,170

intrepid museum or clash hubble at 25

1227

00:47:40,300 --> 00:47:34,520

aspx they strengthen on the main page

1228

00:47:42,700 --> 00:47:40,310

that's nice so you can actually go and

1229

00:47:45,610 --> 00:47:42,710

get a preview of the exhibit and I'm

1230

00:47:48,760 --> 00:47:45,620

sure Jarius more to talk about or what's

1231

00:47:50,560 --> 00:47:48,770

on your website there Oh on are well on

1232

00:47:53,320 --> 00:47:50,570

our education site it just lists all of

1233

00:47:54,850 --> 00:47:53,330

our different programs but we have up on

1234

00:47:56,440 --> 00:47:54,860

our website just in general what you

1235

00:47:58,540 --> 00:47:56,450

want to see we've got past exhibits

1236

00:48:02,440 --> 00:47:58,550

we've got anything that's upcoming we

1237

00:48:03,730 --> 00:48:02,450

have if you go to plan your visit um you

1238

00:48:05,500 --> 00:48:03,740

can see all the upcoming there's our

1239

00:48:08,380 --> 00:48:05,510

astronomy night which are fabulous by

1240

00:48:11,470 --> 00:48:08,390

the way and we sometimes these are Papa

1241

00:48:14,650 --> 00:48:11,480

planetarium and you can go stargazing up

1242

00:48:16,690 --> 00:48:14,660

on the flight deck my department and

1243

00:48:18,760 --> 00:48:16,700

public programs put those together in

1244

00:48:21,400 --> 00:48:18,770

concert it's really wonderful so you

1245

00:48:23,410 --> 00:48:21,410

just go to events on plan your visit

1246

00:48:25,060 --> 00:48:23,420

somewhere along there you can kind of

1247

00:48:26,380 --> 00:48:25,070

see what we've got going on and if you

1248

00:48:29,050 --> 00:48:26,390

poke around a little bit more on the

1249

00:48:32,590 --> 00:48:29,060

website there's a lot of videos that

1250

00:48:34,090 --> 00:48:32,600

have been done by our tour guides that

1251

00:48:35,500 --> 00:48:34,100

have been done by our educators that

1252

00:48:36,580 --> 00:48:35,510

have been done by our curator so if you

1253

00:48:40,360 --> 00:48:36,590

just kind of want to get a general

1254

00:48:41,710 --> 00:48:40,370

overview of what here at the Museum it's

1255

00:48:45,160 --> 00:48:41,720

a really great way to kind of orient

1256

00:48:45,850 --> 00:48:45,170

yourself yes this is over at intrepid

1257

00:48:48,340 --> 00:48:45,860

museum

1258

00:48:50,530 --> 00:48:48,350

o RG were gobbled it all this

1259

00:48:57,280 --> 00:48:50,540

information I'm just happy you can see

1260

00:48:59,770 --> 00:48:57,290

stars in New York City that so that's

1261

00:49:01,600 --> 00:48:59,780

great info thanks guys and so yes and in

1262

00:49:04,810 --> 00:49:01,610

the exhibit is running for how long Eric

1263

00:49:06,370 --> 00:49:04,820

until september of 2015 Wow right so

1264

00:49:08,140 --> 00:49:06,380

you've got some time but if you doubt

1265

00:49:10,180 --> 00:49:08,150

there you definitely want to stop by go

1266

00:49:12,790 --> 00:49:10,190

before you go see any Broadway plays

1267

00:49:15,250 --> 00:49:12,800

definitely check this out because it'll

1268

00:49:17,680 --> 00:49:15,260

be it would be worth your time so I want

1269

00:49:19,060 --> 00:49:17,690

to thank you guys Eric Jerry and Mike

1270

00:49:22,470 --> 00:49:19,070

thank you all for showing up I

1271

00:49:25,420 --> 00:49:22,480

appreciate it this has been a lot of fun

1272

00:49:28,780 --> 00:49:25,430

that is it folks for this year we are

1273

00:49:31,570 --> 00:49:28,790

done with Hubble hangouts but we will be

1274

00:49:33,820 --> 00:49:31,580

coming back in with a bang literally in

1275

00:49:35,470 --> 00:49:33,830

the beginning of January where Carol and

1276

00:49:38,350 --> 00:49:35,480

I will be at the american astronomical

1277

00:49:40,570 --> 00:49:38,360

society in seattle meeting and we will

1278

00:49:43,120 --> 00:49:40,580

be broadcasting Hubble hangouts every

1279

00:49:44,680 --> 00:49:43,130

single day for the great day so for

1280

00:49:46,630 --> 00:49:44,690

those of you who know anything about if

1281

00:49:48,610 --> 00:49:46,640

you've ever followed me on space fan

1282

00:49:50,830 --> 00:49:48,620

news remember it started way back in the

1283

00:49:53,890 --> 00:49:50,840

day when I want it report on it on

1284

00:49:56,440 --> 00:49:53,900

double-a s stuff and now I get to go and

1285

00:49:58,390 --> 00:49:56,450

do it there so every day we'll be doing

1286

00:49:59,800 --> 00:49:58,400

something so look for us there and we

1287

00:50:02,140 --> 00:49:59,810

will be coming back with a bang that's

1288

00:50:04,900 --> 00:50:02,150

on january fifth i believe right Carolyn

1289

00:50:06,370 --> 00:50:04,910

will be starting Monday January fifth

1290

00:50:10,590 --> 00:50:06,380

and we'll be going to the sixth seventh

1291

00:50:14,380 --> 00:50:10,600

eighth and may be nice I'm not sure so

1292

00:50:15,640 --> 00:50:14,390

great to the eighth if you find if you

1293

00:50:17,050 --> 00:50:15,650

want to find out about these things and

1294

00:50:19,660 --> 00:50:17,060

if you have not subscribed to our

1295

00:50:21,580 --> 00:50:19,670

YouTube channel then you are not you are

1296

00:50:24,130 --> 00:50:21,590

so missing out and you're just not

1297

00:50:26,740 --> 00:50:24,140

you're just not being very cool Hubble

1298

00:50:28,840 --> 00:50:26,750

site channel on YouTube you be cool and

1299

00:50:32,830 --> 00:50:28,850

subscribe right because it's all about

1300

00:50:34,660 --> 00:50:32,840

us and it's about wall so you can follow

1301
00:50:36,970 --> 00:50:34,670
at intrepid museum to follow their stuff

1302
00:50:39,210 --> 00:50:36,980
going on on twitter also at Hubble

1303
00:50:42,130 --> 00:50:39,220
telescope follow us there you will find

1304
00:50:45,010 --> 00:50:42,140
about all of the Hubble hangouts and the

1305
00:50:48,310 --> 00:50:45,020
Hubble 25th anniversary events coming up

1306
00:50:51,460 --> 00:50:48,320
of which there are a plethora of them oh

1307
00:50:53,740 --> 00:50:51,470
so yeah I well I had to work a big words

1308
00:50:55,570 --> 00:50:53,750
Tony I know more than one more the two

1309
00:50:59,920 --> 00:50:55,580
syllables and I'm like I think you're

1310
00:51:04,360 --> 00:50:59,930
done Tony yeah okay mike is a

1311
00:51:05,440 --> 00:51:04,370
your phone everybody this is thanks for

1312
00:51:07,600 --> 00:51:05,450
all the interaction i want to thank

1313
00:51:09,700 --> 00:51:07,610

everybody for museum thank you all for

1314

00:51:11,320 --> 00:51:09,710

coming yeah that's it for this year