

1
00:00:00,770 --> 00:00:10,259
too hello everybody and welcome to the

2
00:00:06,450 --> 00:00:11,638
our final hubble hangout for the 225th

3
00:00:10,259 --> 00:00:13,888
meeting of the american astronomical

4
00:00:11,638 --> 00:00:15,178
society my name is Tony Darnell I work

5
00:00:13,888 --> 00:00:17,278
at the Space Telescope Science Institute

6
00:00:15,179 --> 00:00:20,250
in with me as dr. carol christian the

7
00:00:17,278 --> 00:00:27,810
hubble outreach scientists we are at the

8
00:00:20,250 --> 00:00:30,028
end all finally and then hi Albert it's

9
00:00:27,809 --> 00:00:31,829
only away or some late so that's all

10
00:00:30,028 --> 00:00:33,299
right he was taking a nap we are this

11
00:00:31,829 --> 00:00:35,699
has been some meeting hasn't it guys I

12
00:00:33,299 --> 00:00:38,819
mean this has been no Thursday's are

13
00:00:35,700 --> 00:00:40,260
always the most you just try to work to

14
00:00:38,820 --> 00:00:43,049
get through it because our the by then

15
00:00:40,259 --> 00:00:44,640
you're just exhausted saying goodbyes to

16
00:00:43,049 --> 00:00:47,459
the people you've seen and having less

17
00:00:44,640 --> 00:00:51,600
meetings and being bugged by Carol to

18
00:00:47,460 --> 00:00:54,149
get out of the meeting you know yeah so

19
00:00:51,600 --> 00:00:55,350
anyway this this will be our last this

20
00:00:54,149 --> 00:00:57,539
will be our last hang out like I said

21
00:00:55,350 --> 00:00:59,039
for the meeting and to sort of cap

22
00:00:57,539 --> 00:01:00,929
everything off what we thought we'd do

23
00:00:59,039 --> 00:01:03,600
is we have dr. and restaurant from NASA

24
00:01:00,929 --> 00:01:06,180
headquarters to join us and sort of help

25
00:01:03,600 --> 00:01:08,460
us talk a little bit about the we've

26
00:01:06,180 --> 00:01:11,159
kind of used this meeting as a launching

27
00:01:08,459 --> 00:01:12,658
point for this beginning of our

28
00:01:11,159 --> 00:01:14,280
celebration for Hubble's 25th

29

00:01:12,659 --> 00:01:16,650
anniversary and we have a lot of things

30
00:01:14,280 --> 00:01:19,379
planned in today's Hubble Town Hall

31
00:01:16,650 --> 00:01:21,810
amber gave a really good discussion or

32
00:01:19,379 --> 00:01:23,069
talk on some of our activities what's

33
00:01:21,810 --> 00:01:26,040
been planned and what we're doing and

34
00:01:23,069 --> 00:01:27,179
how you guys can get involved Carol and

35
00:01:26,040 --> 00:01:30,329
I are also going to be doing a lot of

36
00:01:27,180 --> 00:01:33,060
Hubble hangouts that our 25th specific

37
00:01:30,328 --> 00:01:34,529
you notice about certain topics that

38
00:01:33,060 --> 00:01:37,259
we'll be announcing also on our on our

39
00:01:34,530 --> 00:01:38,489
website so i guess amber let's let's

40
00:01:37,259 --> 00:01:39,780
talk a little bit about we know what are

41
00:01:38,489 --> 00:01:42,478
what are we trying to accomplish here

42
00:01:39,780 --> 00:01:45,810
and what are some of the activities we

43
00:01:42,478 --> 00:01:46,950

have planned well i guess you know

44

00:01:45,810 --> 00:01:49,560
generally what we're trying to

45

00:01:46,950 --> 00:01:52,109
accomplish is I mean Hubble is awesome

46

00:01:49,560 --> 00:01:54,180
everybody loves Hubble and 25th

47

00:01:52,109 --> 00:01:56,040
anniversary is a huge milestone and so

48

00:01:54,180 --> 00:01:59,070
we just want to use this unique

49

00:01:56,040 --> 00:02:04,020
opportunity in time to use this year

50

00:01:59,069 --> 00:02:05,699
2015 to celebrate hubble hubble has you

51

00:02:04,019 --> 00:02:08,310
know changed the way that we as

52

00:02:05,700 --> 00:02:09,868
scientists understand the universe

53

00:02:08,310 --> 00:02:12,140
but even more fundamentally than that

54

00:02:09,868 --> 00:02:16,348
Hubble has changed the way that people

55

00:02:12,139 --> 00:02:18,179
view space so it's had such a huge

56

00:02:16,348 --> 00:02:21,179
cultural impact that we want to

57

00:02:18,180 --> 00:02:23,550
celebrate that fact so so yeah we have a

58
00:02:21,180 --> 00:02:27,409
whole lot of things planned for this

59
00:02:23,550 --> 00:02:31,010
year a lot of it involves social media

60
00:02:27,409 --> 00:02:33,659
and in traditional media as well but

61
00:02:31,009 --> 00:02:36,389
we'll use social media as a platform to

62
00:02:33,659 --> 00:02:39,180
get all of you involved and then we also

63
00:02:36,389 --> 00:02:43,169
have lots of sort of specific you know

64
00:02:39,180 --> 00:02:46,530
events at specific places as well and we

65
00:02:43,169 --> 00:02:49,139
have tons of information on we have a

66
00:02:46,530 --> 00:02:52,169
brand new website Hubble 25th or Kabul

67
00:02:49,139 --> 00:02:54,259
25 th org and then on social media of

68
00:02:52,169 --> 00:02:59,068
course you can follow the hashtag

69
00:02:54,259 --> 00:03:01,250
hashtag Kabul 25 yeah um but then some

70
00:02:59,068 --> 00:03:03,268
so specific I'll just mention just a few

71
00:03:01,250 --> 00:03:05,639
events and things that we have plan

72
00:03:03,269 --> 00:03:08,370
because we have literally entire year of

73
00:03:05,639 --> 00:03:10,798
things planned so wow there's a lot

74
00:03:08,370 --> 00:03:12,180
going on but we're going to have a big

75
00:03:10,799 --> 00:03:14,370
event at the National Air and Space

76
00:03:12,180 --> 00:03:17,489
Museum on the launch anniversary april

77
00:03:14,370 --> 00:03:20,219
twenty fourth and this is going to be

78
00:03:17,489 --> 00:03:22,200
just a celebratory of it but of course

79
00:03:20,219 --> 00:03:24,349
not everybody lives in Washington DC so

80
00:03:22,199 --> 00:03:27,599
what we're going to do is we're going to

81
00:03:24,349 --> 00:03:29,489
webcast it on NASA TV and we're hoping

82
00:03:27,599 --> 00:03:32,669
that different science centers planetary

83
00:03:29,489 --> 00:03:35,670
I universities can can take the webcast

84
00:03:32,669 --> 00:03:38,068
and do their own sort of events and how

85
00:03:35,669 --> 00:03:40,828
bold birthday parties around around that

86

00:03:38,068 --> 00:03:42,599
webcast from the event in DC so that's

87
00:03:40,829 --> 00:03:46,069
one example one big thing we have

88
00:03:42,599 --> 00:03:49,650
planned and then we have things planned

89
00:03:46,068 --> 00:03:51,119
also at at at science centers and planet

90
00:03:49,650 --> 00:03:53,459
area across the country we have a

91
00:03:51,120 --> 00:03:58,109
traveling exhibit based on Hubble 25

92
00:03:53,459 --> 00:04:02,099
there's yes yes that's a big one and so

93
00:03:58,109 --> 00:04:04,319
if you haven't seen hubble 3d we're

94
00:04:02,099 --> 00:04:09,840
going to their imax is releasing it in

95
00:04:04,318 --> 00:04:13,409
in april of this year so right right

96
00:04:09,840 --> 00:04:15,930
exactly right almost everyone has seen

97
00:04:13,409 --> 00:04:17,170
it but if you haven't go see it again in

98
00:04:15,930 --> 00:04:18,730
april at your imax

99
00:04:17,170 --> 00:04:21,970
and they're they're going to release it

100
00:04:18,730 --> 00:04:23,770

so that's going to be awesome and um Wow

101

00:04:21,970 --> 00:04:25,780

yeah it's just it's almost overwhelming

102

00:04:23,769 --> 00:04:28,479

there's so much going on and there's

103

00:04:25,779 --> 00:04:29,679

yeah and we've got like it so we'll be

104

00:04:28,480 --> 00:04:31,900

announcing all of these things on

105

00:04:29,680 --> 00:04:34,840

Twitter using the Hubble 25 hashtag

106

00:04:31,899 --> 00:04:36,669

we'll also be posting on the Hubble 25th

107

00:04:34,839 --> 00:04:41,489

org side that's have to remember that

108

00:04:36,670 --> 00:04:44,530

part no yeah I guess Hubble 25 org

109

00:04:41,490 --> 00:04:46,269

anyway so that's where the the epicenter

110

00:04:44,529 --> 00:04:48,549

of all this information will be kept and

111

00:04:46,269 --> 00:04:50,019

we hope you'll join in I mean we were

112

00:04:48,550 --> 00:04:51,280

just talking before we started I guess

113

00:04:50,019 --> 00:04:53,049

you're going to be we're going to be

114

00:04:51,279 --> 00:04:56,019

asking for people who are like getting

115
00:04:53,050 --> 00:04:57,550
get you know celebrating their 25th

116
00:04:56,019 --> 00:04:59,740
wedding anniversary to get involved

117
00:04:57,550 --> 00:05:02,829
people who were born on the day of

118
00:04:59,740 --> 00:05:07,540
Hubble by now would be 25 years old

119
00:05:02,829 --> 00:05:10,930
right the the Hubble thank you I'm so

120
00:05:07,540 --> 00:05:14,020
glad I could do the math they would be

121
00:05:10,930 --> 00:05:15,550
25 and so I think what was that what was

122
00:05:14,019 --> 00:05:19,329
the thing about the graduate student

123
00:05:15,550 --> 00:05:23,139
somebody there was a suggestion that we

124
00:05:19,329 --> 00:05:26,139
hunt for an astronomy graduate student

125
00:05:23,139 --> 00:05:27,279
or post doc who was born on the day and

126
00:05:26,139 --> 00:05:30,189
so we're talking to NASA headquarters

127
00:05:27,279 --> 00:05:32,019
about how to celebrate that I also

128
00:05:30,189 --> 00:05:34,719
wanted to mention that we did a hangout

129
00:05:32,019 --> 00:05:36,549
from the intrepid museum and that's one

130
00:05:34,720 --> 00:05:38,770
of the places that has a great exhibit

131
00:05:36,550 --> 00:05:41,470
and if you'd like a sneak preview and

132
00:05:38,769 --> 00:05:44,379
see what Mike Massimino the astronaut

133
00:05:41,470 --> 00:05:46,210
says about it check our Hubble hangout

134
00:05:44,379 --> 00:05:47,800
archive because you'll get a little

135
00:05:46,209 --> 00:05:49,629
snippet and boy I'll tell you that

136
00:05:47,800 --> 00:05:52,000
convinced me I've got to go up there and

137
00:05:49,629 --> 00:05:55,569
see it so it's a really beautiful

138
00:05:52,000 --> 00:05:57,699
exhibit very well done so the the

139
00:05:55,569 --> 00:05:59,139
easiest way to see all of our Hubble

140
00:05:57,699 --> 00:06:01,300
hangouts is to go to our YouTube channel

141
00:05:59,139 --> 00:06:02,800
Hubble site channel and I there's a

142
00:06:01,300 --> 00:06:04,360
playlist I maintained with all of our

143

00:06:02,800 --> 00:06:06,370
hangouts on it and that was the one we

144
00:06:04,360 --> 00:06:08,770
did it was december it was middle to

145
00:06:06,370 --> 00:06:10,840
December right yeah it was just one of

146
00:06:08,769 --> 00:06:12,069
the one of them yeah it was the in fact

147
00:06:10,839 --> 00:06:14,439
it was the last one we did before we

148
00:06:12,069 --> 00:06:15,939
took our Christmas break so I definitely

149
00:06:14,439 --> 00:06:18,189
check that out and if you're in New York

150
00:06:15,939 --> 00:06:20,319
definitely go what about you Alberta how

151
00:06:18,189 --> 00:06:21,759
are you going to celebrate Hubble's 25th

152
00:06:20,319 --> 00:06:23,800
anniversary going to be in Baltimore

153
00:06:21,759 --> 00:06:25,750
right hopefully i will be in baltimore

154
00:06:23,800 --> 00:06:28,389
literally come on i'm gonna i'm going to

155
00:06:25,750 --> 00:06:29,408
be hunting down astronomers i get 100

156
00:06:28,389 --> 00:06:33,238
games how's that

157
00:06:29,408 --> 00:06:36,639

we do that no I'm just kidding no no no

158

00:06:33,238 --> 00:06:38,618

no no no I think we can all celebrate

159

00:06:36,639 --> 00:06:40,389

this it's a milestone for astronomy in

160

00:06:38,619 --> 00:06:42,639

general I think it's not just for you

161

00:06:40,389 --> 00:06:44,319

know for for Hubble I mean as amber said

162

00:06:42,639 --> 00:06:46,088

you know 25 years of revolutionary

163

00:06:44,319 --> 00:06:47,259

science we saw something today for

164

00:06:46,088 --> 00:06:49,418

example you know the first lens

165

00:06:47,259 --> 00:06:50,528

supernova for example we saw incredible

166

00:06:49,418 --> 00:06:53,288

things today so I think it's a

167

00:06:50,528 --> 00:06:54,819

celebration of in general of what our

168

00:06:53,288 --> 00:06:56,949

place in the cosmos if you will I think

169

00:06:54,819 --> 00:06:58,300

so it's going to be in tremendous set of

170

00:06:56,949 --> 00:07:01,360

events with amber I'm going to be in

171

00:06:58,300 --> 00:07:05,559

South by Southwest on a panel oh and

172
00:07:01,360 --> 00:07:07,149
Carol will be I will be there too as

173
00:07:05,559 --> 00:07:08,979
well have a big presence there so we're

174
00:07:07,149 --> 00:07:11,468
going to celebrate you know again in

175
00:07:08,978 --> 00:07:13,449
this almost consider this you know I

176
00:07:11,468 --> 00:07:14,829
know it was a few years ago perhaps the

177
00:07:13,449 --> 00:07:16,718
year of astronomy or something but this

178
00:07:14,829 --> 00:07:19,449
is a it's a grand year celebration I

179
00:07:16,718 --> 00:07:21,519
think a while we have you know become

180
00:07:19,449 --> 00:07:22,989
such a far you know so far and we have a

181
00:07:21,519 --> 00:07:25,538
demonstration on how far we come behind

182
00:07:22,988 --> 00:07:27,038
us right yeah we're sitting in fact a

183
00:07:25,538 --> 00:07:28,360
lot of people are saying their goodbyes

184
00:07:27,038 --> 00:07:29,558
in front of it you see people taking

185
00:07:28,360 --> 00:07:31,179
pictures and they're interviewing

186
00:07:29,559 --> 00:07:33,819
there's other interviews going on over

187
00:07:31,178 --> 00:07:35,228
there too but this is the fat image of

188
00:07:33,819 --> 00:07:37,569
the Andromeda galaxy that we showed you

189
00:07:35,228 --> 00:07:40,899
earlier in the week various yeah cuz it

190
00:07:37,569 --> 00:07:42,639
goes way way down the wall there but we

191
00:07:40,899 --> 00:07:43,838
took and that by the way that hangout

192
00:07:42,639 --> 00:07:48,098
got a lot of use a lot of people were

193
00:07:43,838 --> 00:07:49,689
watching so it's a really they would go

194
00:07:48,098 --> 00:07:51,038
into really good detail we had a

195
00:07:49,689 --> 00:07:52,838
microsoft touch screen where we could

196
00:07:51,038 --> 00:07:55,389
zoom in on it and everything else so it

197
00:07:52,838 --> 00:07:57,129
was really kind of nice so amber let's

198
00:07:55,389 --> 00:07:58,929
see you said all throughout the year is

199
00:07:57,129 --> 00:08:00,819
gonna come and culminate though on the

200

00:07:58,928 --> 00:08:02,768
twenty-fourth right right so that's

201
00:08:00,819 --> 00:08:04,718
that's sort of the apex of everything we

202
00:08:02,769 --> 00:08:06,788
have going on is April 24th because

203
00:08:04,718 --> 00:08:08,168
that's the launch anniversary but all

204
00:08:06,788 --> 00:08:11,110
through the year we're sort of going to

205
00:08:08,168 --> 00:08:12,758
be ramping up things up until up until

206
00:08:11,110 --> 00:08:13,689
that date and then throughout the rest

207
00:08:12,759 --> 00:08:17,199
of the year they're going to be things

208
00:08:13,689 --> 00:08:18,849
going on as well so yeah that April is

209
00:08:17,199 --> 00:08:21,249
definitely going to be the the busy fun

210
00:08:18,848 --> 00:08:22,959
month and then leading up to that and

211
00:08:21,249 --> 00:08:24,789
then following off from that as well

212
00:08:22,959 --> 00:08:27,999
well all year long there's going to be

213
00:08:24,788 --> 00:08:29,228
stuff going on help us celebrate it if

214
00:08:27,999 --> 00:08:31,569

you've got any ideas things you'd like

215

00:08:29,228 --> 00:08:33,729

to see tweet at us using Hubble 25 will

216

00:08:31,569 --> 00:08:35,288

be reading at amber and I monitor that

217

00:08:33,729 --> 00:08:37,120

hashtag all the time so definitely let

218

00:08:35,288 --> 00:08:38,828

us know and I was going to mention a

219

00:08:37,120 --> 00:08:40,839

couple of people at this meeting came to

220

00:08:38,828 --> 00:08:42,389

us and asked about the images we have

221

00:08:40,839 --> 00:08:44,790

besides this image we are

222

00:08:42,389 --> 00:08:46,679

number of images from Hubble displayed

223

00:08:44,789 --> 00:08:48,629

in the hallways in the conference center

224

00:08:46,679 --> 00:08:50,969

and they were asking if they could have

225

00:08:48,629 --> 00:08:52,710

those and we will have on the 25th

226

00:08:50,970 --> 00:08:54,120

anniversary website that Amber was

227

00:08:52,710 --> 00:08:56,370

talking about we're going to have

228

00:08:54,120 --> 00:08:58,919

instructions and the files how you can

229
00:08:56,370 --> 00:09:01,409
down you can make your own exhibit you

230
00:08:58,919 --> 00:09:03,870
can make one of these two but you can

231
00:09:01,409 --> 00:09:05,639
use some of the other Hubble in it it's

232
00:09:03,870 --> 00:09:07,889
not going to be that costly so it'll be

233
00:09:05,639 --> 00:09:09,689
it'll be nice if you want to go ahead

234
00:09:07,889 --> 00:09:11,519
and make your own exhibit in your in

235
00:09:09,690 --> 00:09:14,520
your own locale and that would be a

236
00:09:11,519 --> 00:09:16,289
great forum for doing some events with

237
00:09:14,519 --> 00:09:18,509
the web casting that will be going on

238
00:09:16,289 --> 00:09:20,639
and having a birthday party is amber

239
00:09:18,509 --> 00:09:22,769
said that's right so amber there's a

240
00:09:20,639 --> 00:09:27,059
question on YouTube for you hold on what

241
00:09:22,769 --> 00:09:33,439
what is it Elena from Christina Thomson

242
00:09:27,059 --> 00:09:40,649
hi Christina we know her we know her

243
00:09:33,440 --> 00:09:42,030
amber in your opinion what is the

244
00:09:40,649 --> 00:09:44,059
greatest contribution that Hubble is

245
00:09:42,029 --> 00:09:46,319
made to science in your opinion knob

246
00:09:44,059 --> 00:09:53,189
Christina that's all you really put her

247
00:09:46,320 --> 00:09:55,830
on yeah that's hard yeah that man that

248
00:09:53,190 --> 00:09:58,890
that is so that is difficult so I would

249
00:09:55,830 --> 00:10:01,259
say first of all from a cultural sense I

250
00:09:58,889 --> 00:10:04,470
think just the the impact that Hubble

251
00:10:01,259 --> 00:10:07,919
has had on culture on people that aren't

252
00:10:04,470 --> 00:10:10,470
scientists is for me probably the most

253
00:10:07,919 --> 00:10:12,479
impressive the most striking thing I

254
00:10:10,470 --> 00:10:16,560
mean the fact that you see hubble images

255
00:10:12,480 --> 00:10:18,659
and movies and you know in their books

256
00:10:16,559 --> 00:10:21,509
there's poetry and about Hubble and that

257

00:10:18,659 --> 00:10:23,730
you see hubble hubble images on on

258
00:10:21,509 --> 00:10:26,460
clothing on you know in fashion runways

259
00:10:23,730 --> 00:10:28,080
the Hubble is infiltrated sort of every

260
00:10:26,460 --> 00:10:30,300
corner of our culture and I think that's

261
00:10:28,080 --> 00:10:34,440
awesome and it just speaks to the

262
00:10:30,299 --> 00:10:36,419
significance of of the mission so I love

263
00:10:34,440 --> 00:10:39,030
that from a scientific standpoint that's

264
00:10:36,419 --> 00:10:40,199
tough if I had to pick my favourite

265
00:10:39,029 --> 00:10:42,480
Hubble image it will probably be the

266
00:10:40,200 --> 00:10:44,460
Hubble Ultra Deep Field and just I mean

267
00:10:42,480 --> 00:10:45,870
it's just well first of all that image

268
00:10:44,460 --> 00:10:48,870
came out the first version of it when I

269
00:10:45,870 --> 00:10:51,450
was in grad school so I did my I did my

270
00:10:48,870 --> 00:10:54,429
dissertation research on the Hubble

271
00:10:51,450 --> 00:10:58,600

Ultra Deep Field hahaha

272

00:10:54,429 --> 00:11:00,729

yeah but that that image is just it it

273

00:10:58,600 --> 00:11:02,170

it's a blow your mind kind of image

274

00:11:00,730 --> 00:11:05,230

because when you think about how tiny

275

00:11:02,169 --> 00:11:07,419

that piece of sky is on or the the piece

276

00:11:05,230 --> 00:11:09,278

the images on the sky it's just this

277

00:11:07,419 --> 00:11:11,829

teeny tiny little patch of sky and there

278

00:11:09,278 --> 00:11:14,110

you see 10,000 galaxies it's just it's

279

00:11:11,830 --> 00:11:16,990

wonderful it's beautiful it it makes you

280

00:11:14,110 --> 00:11:21,129

expand your mind so earlier this week

281

00:11:16,990 --> 00:11:22,839

when we did the m16 hang out one of the

282

00:11:21,129 --> 00:11:25,299

things that got tweeted while we were

283

00:11:22,839 --> 00:11:28,270

doing that hangout was a guy had a

284

00:11:25,299 --> 00:11:32,229

tattoo of the of the nebula on his arm

285

00:11:28,269 --> 00:11:33,338

and he that was the tweet that was that

286
00:11:32,230 --> 00:11:35,019
was what the tweet said he goes well I

287
00:11:33,339 --> 00:11:36,790
guess I have to change this now and he

288
00:11:35,019 --> 00:11:38,769
sent a picture of the tattoo I thought

289
00:11:36,789 --> 00:11:42,730
it was awesome so yeah it has really

290
00:11:38,769 --> 00:11:46,689
reached yeah so it has it yeah you

291
00:11:42,730 --> 00:11:48,670
definitely go so go ahead but so that's

292
00:11:46,690 --> 00:11:50,410
I guess that's you know pretty much it

293
00:11:48,669 --> 00:11:51,939
with the Hubble 25 stuff if you want

294
00:11:50,409 --> 00:11:54,490
like I said let us know your ideas and

295
00:11:51,940 --> 00:11:56,050
thoughts interact with us in with

296
00:11:54,490 --> 00:11:57,310
twitter or on facebook if you haven't

297
00:11:56,049 --> 00:11:58,329
subscribe to our youtube channel you

298
00:11:57,309 --> 00:11:59,979
better get that over there and do it

299
00:11:58,330 --> 00:12:00,940
because that's where all this stuff is

300
00:11:59,980 --> 00:12:02,830
going to get posted a lot of our

301
00:12:00,940 --> 00:12:04,150
activities are going to be seen so we

302
00:12:02,830 --> 00:12:06,430
hope that you'll subscribe to our

303
00:12:04,149 --> 00:12:09,220
YouTube Hubble site channel is what it

304
00:12:06,429 --> 00:12:10,479
is one thing which is actually it's kind

305
00:12:09,220 --> 00:12:13,240
of important I think to all of us which

306
00:12:10,480 --> 00:12:15,310
is that Hubble 25 the university would

307
00:12:13,240 --> 00:12:17,769
be an opportunity if you had never been

308
00:12:15,309 --> 00:12:20,079
exposed to something like this to Hubble

309
00:12:17,769 --> 00:12:22,449
to to do the recap obviously right but

310
00:12:20,080 --> 00:12:24,820
also to think about the future you know

311
00:12:22,450 --> 00:12:26,440
kind of other the unanswered questions

312
00:12:24,820 --> 00:12:27,700
the Hubble is but up at the last 25

313
00:12:26,440 --> 00:12:29,410
years you know so we're going to talk

314

00:12:27,700 --> 00:12:31,750
for sure the subway Southwest but across

315
00:12:29,409 --> 00:12:32,799
the year about his scientific successor

316
00:12:31,750 --> 00:12:34,720
the hell was the james webb space

317
00:12:32,799 --> 00:12:36,879
telescope but also talk about you know

318
00:12:34,720 --> 00:12:39,220
the really fundamental questions are

319
00:12:36,879 --> 00:12:40,629
still opening astronomy that you know we

320
00:12:39,220 --> 00:12:43,350
were ahead and we had a hanger with

321
00:12:40,629 --> 00:12:47,019
magarri earlier and we were thinking it

322
00:12:43,350 --> 00:12:49,240
was good yes where we thought what we

323
00:12:47,019 --> 00:12:51,639
thought you know that you know maybe in

324
00:12:49,240 --> 00:12:52,570
the 1990s we knew everything we wanted

325
00:12:51,639 --> 00:12:53,860
to know we were looking for the

326
00:12:52,570 --> 00:12:55,990
deceleration of universe there's a

327
00:12:53,860 --> 00:12:58,028
fossil day and so so there are lots of

328
00:12:55,990 --> 00:13:00,250

questions to Hubble as left an answer

329

00:12:58,028 --> 00:13:03,100

and I think the excitement to me is also

330

00:13:00,250 --> 00:13:05,470

to celebrate 25 years or incredible

331

00:13:03,100 --> 00:13:07,180

resources open new doors I think to what

332

00:13:05,470 --> 00:13:07,610

we will do over the over the next 25

333

00:13:07,179 --> 00:13:10,129

years

334

00:13:07,610 --> 00:13:12,019

right right and Ken Sandbach in the NASA

335

00:13:10,129 --> 00:13:14,600

tower in that Hubble Town Hall that we

336

00:13:12,019 --> 00:13:15,950

that he did earlier today and I'll that

337

00:13:14,600 --> 00:13:17,839

will be posted by the way next week on

338

00:13:15,950 --> 00:13:20,209

our youtube channel made a good made a

339

00:13:17,839 --> 00:13:22,700

point about reaching out to the

340

00:13:20,208 --> 00:13:25,549

scientific community to ask them what is

341

00:13:22,700 --> 00:13:26,990

the best way to use Hubble going forward

342

00:13:25,549 --> 00:13:28,250

what are the what are the kinds of

343
00:13:26,990 --> 00:13:30,289
things that we should be doing with

344
00:13:28,250 --> 00:13:32,690
Hubble because it does have a finite

345
00:13:30,289 --> 00:13:34,759
life and so that's something that I

346
00:13:32,690 --> 00:13:36,110
think looking forward and is it going to

347
00:13:34,759 --> 00:13:37,909
be doing obviously they want to keep

348
00:13:36,110 --> 00:13:39,649
overlap with James Webb when it launches

349
00:13:37,909 --> 00:13:41,088
to I was just gonna ask Carol actually

350
00:13:39,649 --> 00:13:45,110
if I may because kerala is being

351
00:13:41,089 --> 00:13:47,269
involved with this yeah she knows almost

352
00:13:45,110 --> 00:13:48,800
i mean i will have all so actually you

353
00:13:47,269 --> 00:13:50,450
know falling I don't wanna so now

354
00:13:48,799 --> 00:13:52,578
following something that is uh that

355
00:13:50,450 --> 00:13:54,740
fault fell from the question that we had

356
00:13:52,578 --> 00:13:56,239
for from Christina guess so what are the

357
00:13:54,740 --> 00:13:58,100
biggest changes you have seen in your

358
00:13:56,240 --> 00:14:02,000
career guests that have been brought by

359
00:13:58,100 --> 00:14:04,339
by Hubble I guess well a couple of

360
00:14:02,000 --> 00:14:07,190
things the first thing is it's pretty

361
00:14:04,339 --> 00:14:10,670
amazing to actually look at images like

362
00:14:07,190 --> 00:14:13,940
the m16 and other objects that were we

363
00:14:10,669 --> 00:14:16,969
were looking yesterday at some images

364
00:14:13,940 --> 00:14:18,829
that were taken around 1995-1996 of

365
00:14:16,970 --> 00:14:22,070
Saturn we thought they were like

366
00:14:18,828 --> 00:14:24,739
shockingly amazing and then now we're

367
00:14:22,070 --> 00:14:26,839
looking at the newer advanced camera for

368
00:14:24,740 --> 00:14:28,490
surveys images so it's it's just things

369
00:14:26,839 --> 00:14:31,579
like that how the instrumentation has

370
00:14:28,490 --> 00:14:34,370
changed the other thing about the Hubble

371

00:14:31,578 --> 00:14:37,578
Deep Field which I agree was very

372
00:14:34,370 --> 00:14:39,709
dramatic besides the fact that the data

373
00:14:37,578 --> 00:14:42,588
is so amazing it actually changed the

374
00:14:39,708 --> 00:14:44,929
way astronomers started to think about

375
00:14:42,589 --> 00:14:47,390
doing astronomy because that data was

376
00:14:44,929 --> 00:14:49,549
made public right away and then all of a

377
00:14:47,389 --> 00:14:52,189
sudden people were applying to use other

378
00:14:49,549 --> 00:14:55,179
ground and space-based telescopes to

379
00:14:52,190 --> 00:14:57,890
observe that field so the next time we

380
00:14:55,179 --> 00:15:00,708
announced a field like that people had

381
00:14:57,889 --> 00:15:03,019
already put in requests to get data and

382
00:15:00,708 --> 00:15:05,509
were prepared with data from other

383
00:15:03,019 --> 00:15:08,750
telescopes when the Hubble data arrived

384
00:15:05,509 --> 00:15:11,659
and so a lot of collaborations arose

385
00:15:08,750 --> 00:15:13,100

that ordinarily wouldn't have if that

386

00:15:11,659 --> 00:15:16,850
observation had below

387

00:15:13,100 --> 00:15:19,100
long to just one team so that's another

388

00:15:16,850 --> 00:15:21,470
thing which I think was not only our

389

00:15:19,100 --> 00:15:23,269
understanding of the universe and the

390

00:15:21,470 --> 00:15:25,610
idea that now we're doing this frontier

391

00:15:23,269 --> 00:15:27,679
fields I mean it kind of is a path to go

392

00:15:25,610 --> 00:15:30,080
there is that it changed a little bit

393

00:15:27,679 --> 00:15:34,459
the way astronomers started to interact

394

00:15:30,080 --> 00:15:36,200
about these big fields so I think that

395

00:15:34,460 --> 00:15:38,810
the change in the telescope the fact

396

00:15:36,200 --> 00:15:40,640
that the telescope is really we think

397

00:15:38,809 --> 00:15:43,639
that the telescope's only five years old

398

00:15:40,639 --> 00:15:46,279
because it had all this equipment and

399

00:15:43,639 --> 00:15:49,909
instrumentation put on it in 2009 and

400
00:15:46,279 --> 00:15:52,519
also we can see how it has changed over

401
00:15:49,909 --> 00:15:55,039
time and also how astronomers have

402
00:15:52,519 --> 00:15:57,860
changed the way they are using the data

403
00:15:55,039 --> 00:16:00,409
to understand like the acceleration of

404
00:15:57,860 --> 00:16:03,560
the universe in much greater detail so

405
00:16:00,409 --> 00:16:07,370
the it really shows the value of having

406
00:16:03,559 --> 00:16:09,979
the telescope stable improving it and

407
00:16:07,370 --> 00:16:12,740
then having it around for 25 years so

408
00:16:09,980 --> 00:16:15,710
several generations of people can use it

409
00:16:12,740 --> 00:16:16,940
for amazing research yeah and I like the

410
00:16:15,710 --> 00:16:18,800
things that are going on right now with

411
00:16:16,940 --> 00:16:20,150
Hubble are very exciting or like you

412
00:16:18,799 --> 00:16:22,699
said the frontier fields which is taking

413
00:16:20,149 --> 00:16:24,379
that concept of a deep field the deep

414
00:16:22,700 --> 00:16:26,750
what the Hubble Deep fields were and

415
00:16:24,379 --> 00:16:28,279
seeing asking the question is it like

416
00:16:26,750 --> 00:16:30,740
this everywhere they're looking at six

417
00:16:28,279 --> 00:16:32,750
other fields and trying to end doing the

418
00:16:30,740 --> 00:16:34,399
same thing really looking very very

419
00:16:32,750 --> 00:16:36,320
deeply back into the universe so I think

420
00:16:34,399 --> 00:16:38,120
with as far as what's going on right now

421
00:16:36,320 --> 00:16:39,800
Hubble is still added it sits at the top

422
00:16:38,120 --> 00:16:41,570
of its game and I Carol said it's only

423
00:16:39,799 --> 00:16:43,039
five years old as far as you know the

424
00:16:41,570 --> 00:16:44,810
stuff goes and it's don't it's a brand

425
00:16:43,039 --> 00:16:48,829
new telescope essentially so that's

426
00:16:44,809 --> 00:16:52,389
really cool so this meeting it's been

427
00:16:48,830 --> 00:16:55,250
amazing so what do you guys and

428

00:16:52,389 --> 00:16:56,990
exhausting very very tiring so we

429
00:16:55,250 --> 00:16:58,700
usually do a recap at the end of the day

430
00:16:56,990 --> 00:16:59,899
but we're because we have to pack up and

431
00:16:58,700 --> 00:17:01,610
leave and get it where it's going to go

432
00:16:59,899 --> 00:17:03,079
ahead and give it why don't you guys

433
00:17:01,610 --> 00:17:04,579
give a give your thoughts on what you

434
00:17:03,080 --> 00:17:05,690
thought the meeting was like and what

435
00:17:04,579 --> 00:17:07,449
you got out of it what are some of the

436
00:17:05,690 --> 00:17:10,250
highlights I'll start with you amber

437
00:17:07,450 --> 00:17:13,400
yeah it was it's this meeting is always

438
00:17:10,250 --> 00:17:16,069
so busy and their talks going on all day

439
00:17:13,400 --> 00:17:18,650
and too many talks going on at once you

440
00:17:16,069 --> 00:17:20,750
can't go to all of them so um it's it's

441
00:17:18,650 --> 00:17:22,130
great it's a it's a huge meeting it's

442
00:17:20,750 --> 00:17:25,309

the biggest meeting of astronomers that

443

00:17:22,130 --> 00:17:26,079

there is and so yeah it's been it's been

444

00:17:25,309 --> 00:17:28,119

a really good

445

00:17:26,078 --> 00:17:32,859

and there's been some really great

446

00:17:28,119 --> 00:17:34,808

science sessions and yeah just lots of

447

00:17:32,859 --> 00:17:37,869

seeing seeing old friends old colleagues

448

00:17:34,808 --> 00:17:39,700

and grad school buddies those sorts of

449

00:17:37,869 --> 00:17:41,768

things so yeah it's been a really great

450

00:17:39,700 --> 00:17:43,569

meeting and I think Hubble's had a

451

00:17:41,769 --> 00:17:45,819

pretty good representation here when you

452

00:17:43,569 --> 00:17:48,398

say Carl yeah absolutely very good

453

00:17:45,819 --> 00:17:49,658

representation lots of things that

454

00:17:48,398 --> 00:17:52,449

didn't show up of course and press

455

00:17:49,659 --> 00:17:54,159

releases posters talks all that kind of

456

00:17:52,450 --> 00:17:55,899

thing another thing I wanted to talk

457
00:17:54,159 --> 00:18:00,370
about a little bit is that thinking back

458
00:17:55,898 --> 00:18:02,408
to when I was a graduate student a

459
00:18:00,369 --> 00:18:06,428
million years ago and I know you were in

460
00:18:02,409 --> 00:18:08,409
kindergarten that went you know when you

461
00:18:06,429 --> 00:18:10,750
were looking for a job you came in Great

462
00:18:08,409 --> 00:18:12,610
Terror and your your advisor shoved you

463
00:18:10,750 --> 00:18:14,798
into a session and you gave a 10 minute

464
00:18:12,609 --> 00:18:16,388
talking you you you hoped that you

465
00:18:14,798 --> 00:18:18,579
didn't really totally screw it up so

466
00:18:16,388 --> 00:18:20,648
that someday you'd get a job I was

467
00:18:18,579 --> 00:18:22,509
really impressed with how much career

468
00:18:20,648 --> 00:18:25,178
advice there was at this meeting there

469
00:18:22,509 --> 00:18:26,829
were sessions all the time and there

470
00:18:25,179 --> 00:18:28,690
were people there's a job centre which

471
00:18:26,829 --> 00:18:30,788
we usually have but there were sessions

472
00:18:28,690 --> 00:18:32,679
every day talking about how you build

473
00:18:30,788 --> 00:18:34,929
your resume how do you do an interview

474
00:18:32,679 --> 00:18:36,580
just all kinds of things and I didn't

475
00:18:34,929 --> 00:18:38,080
get to go to any of those but every time

476
00:18:36,579 --> 00:18:40,569
I walked around the hall looked in the

477
00:18:38,079 --> 00:18:42,699
sessions you know there were people in

478
00:18:40,569 --> 00:18:45,548
industry helping we had a booth all

479
00:18:42,700 --> 00:18:47,649
kinds of career fair and job advice

480
00:18:45,548 --> 00:18:49,869
which i think is fabulous because it is

481
00:18:47,648 --> 00:18:52,898
a meeting like this is pretty terrifying

482
00:18:49,869 --> 00:18:54,939
if you're brand new and it's like oh my

483
00:18:52,898 --> 00:18:58,209
gosh what should i do so I was very very

484
00:18:54,940 --> 00:18:59,980
impressed with that that that effort was

485

00:18:58,210 --> 00:19:02,649
made yeah and I just want to say that

486
00:18:59,980 --> 00:19:06,960
I'm Alberto wins the meeting because he

487
00:19:02,648 --> 00:19:10,709
has the most he has the most yeah

488
00:19:06,960 --> 00:19:12,329
he's all those merit badges no I was I

489
00:19:10,710 --> 00:19:14,429
was going to actually say exactly what

490
00:19:12,329 --> 00:19:16,918
Carol pointed out I was involved in

491
00:19:14,429 --> 00:19:18,899
doing the career meaning it this was in

492
00:19:16,919 --> 00:19:20,429
two ways was quite remarkable one the

493
00:19:18,898 --> 00:19:23,219
amount of advice that were given to this

494
00:19:20,429 --> 00:19:25,200
young kids that can be frankly if we are

495
00:19:23,220 --> 00:19:26,909
they they are certainly overwhelmed by

496
00:19:25,200 --> 00:19:28,710
the entire meeting but then the second

497
00:19:26,909 --> 00:19:30,960
thing i was i saw this lightning talks

498
00:19:28,710 --> 00:19:33,929
this five-minute talks and i have to say

499
00:19:30,960 --> 00:19:36,028

the quality of the talks is unbelievably

500

00:19:33,929 --> 00:19:38,250

has grown unbelievably over the last few

501

00:19:36,028 --> 00:19:39,990

years and they're not smart but they

502

00:19:38,250 --> 00:19:43,079

present well they were there they're

503

00:19:39,990 --> 00:19:44,190

very articulate thoughts very well and I

504

00:19:43,079 --> 00:19:46,288

remember when I was a graduate student

505

00:19:44,190 --> 00:19:48,450

he not going you know presented to these

506

00:19:46,288 --> 00:19:50,308

meetings the hardest part there there's

507

00:19:48,450 --> 00:19:51,720

the thing I was thinking of you know

508

00:19:50,308 --> 00:19:53,668

what scared me the most was answering

509

00:19:51,720 --> 00:19:55,259

these questions and these guys are

510

00:19:53,669 --> 00:19:56,940

experts I was unbelievable to answer

511

00:19:55,259 --> 00:19:58,558

these squares are questions you know in

512

00:19:56,940 --> 00:20:00,298

a very very professional way and I think

513

00:19:58,558 --> 00:20:03,690

it shows that we're maturing as a field

514
00:20:00,298 --> 00:20:06,269
and it's beautiful to watch so it that

515
00:20:03,690 --> 00:20:09,509
with that I guess we'll call it will all

516
00:20:06,269 --> 00:20:11,639
end up in the Hangout i would like to i

517
00:20:09,509 --> 00:20:12,990
would like to get you guys as input on

518
00:20:11,640 --> 00:20:14,960
what you thought about these hangouts so

519
00:20:12,990 --> 00:20:17,099
would you please if you have some

520
00:20:14,960 --> 00:20:18,360
comments or that you'd like to give us

521
00:20:17,099 --> 00:20:19,619
her feedback on these hangouts did you

522
00:20:18,359 --> 00:20:21,269
get anything out did you like it would

523
00:20:19,619 --> 00:20:25,439
we do something more that we're not

524
00:20:21,269 --> 00:20:26,819
doing did you like Carol's jacket I do I

525
00:20:25,440 --> 00:20:33,840
think it's beautiful this is a great

526
00:20:26,819 --> 00:20:35,579
jacket and it's a giant punk and if you

527
00:20:33,839 --> 00:20:37,199
would do that via the Hubble hang out

528
00:20:35,579 --> 00:20:39,329
hashtag will see that on Twitter we're

529
00:20:37,200 --> 00:20:41,340
monitoring that all the time so if you

530
00:20:39,329 --> 00:20:43,589
if you tweet idiot anything you'd like

531
00:20:41,339 --> 00:20:45,418
to see differently or things that we're

532
00:20:43,589 --> 00:20:48,000
not doing that you'd like to see in the

533
00:20:45,419 --> 00:20:49,740
future let us know Carol and I will be

534
00:20:48,000 --> 00:20:52,710
doing our regular be back to our regular

535
00:20:49,740 --> 00:20:56,548
schedule next week on Thursdays at three

536
00:20:52,710 --> 00:20:58,288
o'clock eastern time and I think we're

537
00:20:56,548 --> 00:21:01,648
the next hangout we have scheduled us

538
00:20:58,288 --> 00:21:03,898
with Massimo Massimo Steve le right yes

539
00:21:01,648 --> 00:21:06,209
okay and he will be he will be talking

540
00:21:03,898 --> 00:21:09,119
about some of the science of jwst now I

541
00:21:06,210 --> 00:21:10,500
know it's a hubble hang out but we want

542

00:21:09,119 --> 00:21:12,329
to all where you need to we need to

543
00:21:10,500 --> 00:21:15,329
it'll be talk about science in general

544
00:21:12,329 --> 00:21:16,470
and how Hubble can also contribute to

545
00:21:15,329 --> 00:21:18,298
that as well so there'll be a Hubble

546
00:21:16,470 --> 00:21:19,889
component so that'll be next week we'll

547
00:21:18,298 --> 00:21:20,639
see you guys there thank you guys for

548
00:21:19,888 --> 00:21:21,919
watching and

549
00:21:20,640 --> 00:21:24,509
thank you guys for being a mai-mai

550
00:21:21,920 --> 00:21:28,350
hangouts for all these times and yeah

551
00:21:24,509 --> 00:21:30,470
and keep looking up okay so you took my

552
00:21:28,349 --> 00:21:37,259
tagline thank you guys for watching

553
00:21:30,470 --> 00:21:41,870
Carol rd said keep a few you did it's

554
00:21:37,259 --> 00:21:41,869
okay it's not mine actually I just