1
00:00:04,370 --> 00:00:02,690
hi I'm Raquel Villanueva coming to you

2
00:00:07,070 --> 00:00:04,380
live from NASA's jet propulsion

3
00:00:09,890 --> 00:00:07,080
laboratory in Southern California today

4
00:00:13,610 --> 00:00:09,900
we have a very special guest the

5
00:00:16,790 --> 00:00:13,620
director of JPL Lori leschen not only is

6
00:00:18,650 --> 00:00:16,800
she the first woman to lead JPL she's

7
00:00:21,529 --> 00:00:18,660
also known for her barrier-breaking

8
00:00:24,290 --> 00:00:21,539
leadership in the space industry and

9
00:00:27,589 --> 00:00:24,300
Academia she's also an accomplished

10
00:00:29,870 --> 00:00:27,599
geochemist and space scientist we'll

11
00:00:32,990 --> 00:00:29,880
talk about her first 10 months here at

12
00:00:35,270 --> 00:00:33,000
JPL and also talk about some of the

13
00:00:38,270 --> 00:00:35,280

questions you've asked over the past

14
00:00:40,130 --> 00:00:38,280
couple days on Instagram so we're gonna

15
00:00:43,369 --> 00:00:40,140
get started here in a second and I'm

16
00:00:45,709 --> 00:00:43,379
going to connect with Lori and while we

17
00:00:48,229 --> 00:00:45,719
get connected where is everyone joining

18
00:00:51,350 --> 00:00:48,239
us from today

19
00:00:54,049 --> 00:00:51,360
Let's see we are connecting with her

20
00:00:56,990 --> 00:00:54,059
right now

21
00:00:57,000 --> 00:01:02,569
there we go

22
00:01:07,190 --> 00:01:04,189
someone's coming in from Chile hello

23
00:01:12,230 --> 00:01:10,130
yeah and we say Lori Hi how are you

24
00:01:14,390 --> 00:01:12,240
welcome

25
00:01:16,490 --> 00:01:14,400
good how are you doing and it looks like

26
00:01:23,270 --> 00:01:16,500
you're joining us today where are you

27
00:01:30,050 --> 00:01:27,890
fantastic so you started last May can

28
00:01:31,550 --> 00:01:30,060
you believe it's almost in a year 10

29
00:01:34,010 --> 00:01:31,560
months have gone like the fastest 10

30
00:01:37,510 --> 00:01:34,020
months of my life and and some of the

31
00:01:43,969 --> 00:01:41,990
like what stands out most people of JPL

32
00:01:46,130 --> 00:01:43,979
just the incredible team here first of

33
00:01:48,890 --> 00:01:46,140
all everybody's just been so

34
00:01:51,350 --> 00:01:48,900
extraordinarily welcoming to me and

35
00:01:53,149 --> 00:01:51,360
supportive as I've gotten to know the

36
00:01:54,889 --> 00:01:53,159
place better I knew JPL well before

37
00:01:57,830 --> 00:01:54,899
because I've worked with JPL for decades

38
00:02:02,149 --> 00:01:57,840

but being here every single day is just

39
00:02:07,069 --> 00:02:04,190
that's fantastic stick and we love

40
00:02:10,490 --> 00:02:07,079
having you here also you know it is

41
00:02:13,130 --> 00:02:10,500
women's history month and what does it

42
00:02:16,309 --> 00:02:13,140
mean to you to be the first woman to

43
00:02:18,190 --> 00:02:16,319
lead JPL and then what are you doing to

44
00:02:20,270 --> 00:02:18,200
help women at JPL

45
00:02:21,830 --> 00:02:20,280
it's a thrill first of all to be doing

46
00:02:24,290 --> 00:02:21,840
this during women's history month so

47
00:02:25,729 --> 00:02:24,300
thanks to everybody who's watching but

48
00:02:28,550 --> 00:02:25,739
um you know for me being the first woman

49
00:02:31,490 --> 00:02:28,560
in the now almost 87 year history of JPL

50
00:02:33,710 --> 00:02:31,500
it's a huge honor and I definitely feel

51
00:02:36,410 --> 00:02:33,720
that it's a responsibility as well I'm

52
00:02:38,570 --> 00:02:36,420
as a leader as a woman leader we hold

53
00:02:40,430 --> 00:02:38,580
space for other women you know we really

54
00:02:42,290 --> 00:02:40,440
work to help make our organizations

55
00:02:45,770 --> 00:02:42,300
places where everyone can Thrive not

56
00:02:49,369 --> 00:02:45,780
just women but but men too uh all folks

57
00:02:53,390 --> 00:02:49,379
everyone can Thrive and so I just have

58
00:02:55,970 --> 00:02:53,400
focused on again trying to continue a

59
00:02:58,130 --> 00:02:55,980
great legacy of JPL of having diverse

60
00:03:00,229 --> 00:02:58,140
teams we we recently crossed the

61
00:03:02,930 --> 00:03:00,239
threshold of having more than 2 000

62
00:03:05,509 --> 00:03:02,940
women on our team at JPL which is is a

63
00:03:08,449 --> 00:03:05,519

incredibly exciting so a lot more work

64
00:03:10,490 --> 00:03:08,459
to do always to make our organizations

65
00:03:12,050 --> 00:03:10,500
um as inclusive as they can be and

66
00:03:13,550 --> 00:03:12,060
that's certainly our goal here at JPL

67
00:03:15,530 --> 00:03:13,560
one of the things we're really working

68
00:03:17,270 --> 00:03:15,540
towards is having more women in

69
00:03:19,430 --> 00:03:17,280
technical leadership roles right we have

70
00:03:21,170 --> 00:03:19,440
these two thousand incredible women many

71
00:03:22,729 --> 00:03:21,180
of them are extraordinary I have

72
00:03:24,350 --> 00:03:22,739
extraordinary technical backgrounds and

73
00:03:26,270 --> 00:03:24,360
we want the to make sure they're

74
00:03:29,270 --> 00:03:26,280
reaching leadership potential here as

75
00:03:34,130 --> 00:03:31,790
well I can tell through the comments so

76
00:03:36,830 --> 00:03:34,140
many people are inspired by you right

77
00:03:38,690 --> 00:03:36,840
now and I'd also like to know is there a

78
00:03:40,430 --> 00:03:38,700
specific woman that has inspired you

79
00:03:42,530 --> 00:03:40,440
throughout your life well I would say

80
00:03:45,470 --> 00:03:42,540
there are two that I would name so first

81
00:03:47,449 --> 00:03:45,480
is my own mom my mom Jerry Lerner lesson

82
00:03:49,190 --> 00:03:47,459
was her name she passed away about 18

83
00:03:52,190 --> 00:03:49,200
months ago

84
00:03:53,990 --> 00:03:52,200
um and uh she was really the light of my

85
00:03:55,910 --> 00:03:54,000
life in so many ways but mostly she was

86
00:03:58,009 --> 00:03:55,920
the person who always told me I could do

87
00:04:01,369 --> 00:03:58,019
anything and I learned by watching her

88
00:04:03,830 --> 00:04:01,379

uh she you know raised a family she had

89
00:04:06,530 --> 00:04:03,840
a great career she was

90
00:04:07,670 --> 00:04:06,540
um just a special human being and so she

91
00:04:09,830 --> 00:04:07,680
certainly won

92
00:04:12,190 --> 00:04:09,840
um in terms of professional women uh

93
00:04:15,050 --> 00:04:12,200
Sally Ride was a huge inspiration to me

94
00:04:16,729 --> 00:04:15,060
I was fortunate enough to become friends

95
00:04:19,250 --> 00:04:16,739
with her and colleagues with her and

96
00:04:22,129 --> 00:04:19,260
I've learned so much on how to

97
00:04:24,350 --> 00:04:22,139
take the opportunities that we are given

98
00:04:28,670 --> 00:04:24,360
but also the responsibility that comes

99
00:04:34,070 --> 00:04:31,969
now those are two great tributes and it

100
00:04:36,110 --> 00:04:34,080
was great to hear from you on those we

101
00:04:37,310 --> 00:04:36,120
also have some Instagram questions that

102
00:04:38,890 --> 00:04:37,320
came in from people who've been

103
00:04:42,350 --> 00:04:38,900
submitting them for the past couple days

104
00:04:45,170 --> 00:04:42,360
uh Ethan wants to know what is a typical

105
00:04:46,550 --> 00:04:45,180
day is there's no typical day uh so

106
00:04:49,249 --> 00:04:46,560
that's except that's one of the most

107
00:04:51,050 --> 00:04:49,259
exciting things is every week There's

108
00:04:53,510 --> 00:04:51,060
incredible things happening so it might

109
00:04:55,249 --> 00:04:53,520
be that oh hey we just got a new sensor

110
00:04:57,409 --> 00:04:55,259
delivered to be integrated onto our

111
00:05:00,050 --> 00:04:57,419
Europa Clipper spacecraft over here and

112
00:05:02,150 --> 00:05:00,060
oh on on Friday we got first light from

113
00:05:04,969 --> 00:05:02,160

our new Earth Science Mission studying

114
00:05:07,310 --> 00:05:04,979
Earth's water so every single week there

115
00:05:09,590 --> 00:05:07,320
are a number of incredible things

116
00:05:11,990 --> 00:05:09,600
happening because we're working on we're

117
00:05:13,850 --> 00:05:12,000
flying about 40 missions we're working

118
00:05:16,249 --> 00:05:13,860
on another couple of dozen missions in

119
00:05:18,350 --> 00:05:16,259
different stages of going from like the

120
00:05:20,510 --> 00:05:18,360
kernel of an idea all the way to getting

121
00:05:22,010 --> 00:05:20,520
ready to be launched so there's always

122
00:05:25,189 --> 00:05:22,020
something different each and every day

123
00:05:26,810 --> 00:05:25,199
and for me my day is about trying to

124
00:05:28,909 --> 00:05:26,820
support our teens so that they can

125
00:05:31,990 --> 00:05:28,919
succeed in exploring the frontiers of

126
00:05:37,969 --> 00:05:35,090
fantastic and Katie would actually like

127
00:05:40,370 --> 00:05:37,979
to know what steps did you take to get

128
00:05:42,230 --> 00:05:40,380
where yeah is

129
00:05:45,830 --> 00:05:42,240
um I was actually on a fairly

130
00:05:47,510 --> 00:05:45,840
traditional academic path I realized in

131
00:05:49,370 --> 00:05:47,520
college it's a longer story but I won't

132
00:05:51,469 --> 00:05:49,380
tell you the long story I realized in

133
00:05:53,570 --> 00:05:51,479
college that I I by fascination with

134
00:05:55,310 --> 00:05:53,580
space could also potentially be a career

135
00:05:58,010 --> 00:05:55,320
and so

136
00:06:00,110 --> 00:05:58,020
um I studied hard and got a PhD at

137
00:06:02,029 --> 00:06:00,120
Caltech actually which is which operates

138
00:06:04,490 --> 00:06:02,039

JPL for NASA so now it's great to be

139
00:06:07,790 --> 00:06:04,500
back part of the Caltech family

140
00:06:09,650 --> 00:06:07,800
um and then I was a professor and got

141
00:06:11,689 --> 00:06:09,660
tenure and we had students and was

142
00:06:13,969 --> 00:06:11,699
teaching and doing research and I was on

143
00:06:15,650 --> 00:06:13,979
a pretty traditional path and then for

144
00:06:18,290 --> 00:06:15,660
lots of reasons that again I don't have

145
00:06:20,090 --> 00:06:18,300
time to to go into I actually ditched my

146
00:06:22,309 --> 00:06:20,100
tenure and went and joined NASA for a

147
00:06:24,110 --> 00:06:22,319
while moved to the east coast

148
00:06:26,390 --> 00:06:24,120
um kind of uprooted my whole life and

149
00:06:28,010 --> 00:06:26,400
went and worked at Nasa for six years in

150
00:06:30,170 --> 00:06:28,020
three different jobs and then I went

151
00:06:32,689 --> 00:06:30,180
back to Academia for a while and so my

152
00:06:34,610 --> 00:06:32,699
last job right before coming to APL was

153
00:06:36,350 --> 00:06:34,620
I was president of a university in

154
00:06:38,390 --> 00:06:36,360
Massachusetts called WPI Worcester

155
00:06:40,969 --> 00:06:38,400
Polytechnic Institute

156
00:06:44,090 --> 00:06:40,979
go Nation go goats

157
00:06:46,309 --> 00:06:44,100
um and uh and so being able to kind of

158
00:06:48,230 --> 00:06:46,319
broaden my experience do more than one

159
00:06:51,770 --> 00:06:48,240
type of job in my career was a really

160
00:06:54,890 --> 00:06:51,780
important part of what has enabled me

161
00:06:58,550 --> 00:06:54,900
now to be ready to come and and lead a

162
00:07:03,110 --> 00:07:00,890
fantastic and it's great to hear that

163
00:07:05,510 --> 00:07:03,120

there wasn't one linear path for you

164
00:07:07,730 --> 00:07:05,520
that you did exactly definitely not a

165
00:07:10,490 --> 00:07:07,740
linear path and and in fact so much of

166
00:07:12,350 --> 00:07:10,500
it I really feel is about learning to

167
00:07:13,969 --> 00:07:12,360
recognize good opportunities not every

168
00:07:16,249 --> 00:07:13,979
opportunity is a good opportunity but

169
00:07:17,809 --> 00:07:16,259
learning to recognize those and then

170
00:07:19,430 --> 00:07:17,819
um and then grabbing some of them and

171
00:07:20,749 --> 00:07:19,440
and perhaps taking a little bit of a

172
00:07:23,089 --> 00:07:20,759
right turn from where you might have

173
00:07:24,650 --> 00:07:23,099
expected your career to go it's often

174
00:07:27,290 --> 00:07:24,660
those experiences that can be really

175
00:07:31,909 --> 00:07:27,300
broadening that can help us then make an

176
00:07:36,770 --> 00:07:34,189
Ed this next question Lori is going to

177
00:07:39,290 --> 00:07:36,780
test your movie knowledge here so Singh

178
00:07:40,969 --> 00:07:39,300
is wanting to know Interstellar or the

179
00:07:44,510 --> 00:07:40,979
Marshall both Mac movies right

180
00:07:46,850 --> 00:07:44,520
McConaughey and Damon how to choose how

181
00:07:48,950 --> 00:07:46,860
to choose okay no actually it's easy the

182
00:07:50,350 --> 00:07:48,960
Martian sorry like I'm married to an

183
00:07:53,150 --> 00:07:50,360
astronomer who you might say

184
00:07:55,850 --> 00:07:53,160
Interstellar for me I'm a planet girl

185
00:07:57,350 --> 00:07:55,860
and I say the Martian I the the book is

186
00:07:59,270 --> 00:07:57,360
even better than the movie if you can

187
00:08:01,189 --> 00:07:59,280
believe it and a lot more stuff happens

188
00:08:03,409 --> 00:08:01,199

to them in the in the book that happens

189
00:08:05,029 --> 00:08:03,419
in the movie but the thing I love about

190
00:08:08,290 --> 00:08:05,039
it is it's

191
00:08:11,270 --> 00:08:08,300
you know it's close enough to reality

192
00:08:13,430 --> 00:08:11,280
that uh technically that even people

193
00:08:16,969 --> 00:08:13,440
here in a place like JPL we're pretty

194
00:08:20,270 --> 00:08:16,979
into it so and and just the idea of

195
00:08:21,950 --> 00:08:20,280
being able to sit on a on a edge of a

196
00:08:23,629 --> 00:08:21,960
cliff on Mars and look out over that

197
00:08:26,930 --> 00:08:23,639
landscape that's a dream I've had since

198
00:08:32,029 --> 00:08:29,809
and making that kind of dream visualized

199
00:08:33,350 --> 00:08:32,039
into reality through a movie

200
00:08:36,529 --> 00:08:33,360
and

201
00:08:38,810 --> 00:08:36,539
heading back to JPL what do you think

202
00:08:40,850 --> 00:08:38,820
the future holds I think our future is

203
00:08:43,190 --> 00:08:40,860
really really exciting so we have a lot

204
00:08:46,250 --> 00:08:43,200
of really really cool missions coming up

205
00:08:47,630 --> 00:08:46,260
so in uh solar system exploration which

206
00:08:49,370 --> 00:08:47,640
is kind of our bread and butter here

207
00:08:51,410 --> 00:08:49,380
people kind of know us as the Mars rover

208
00:08:53,090 --> 00:08:51,420
people but we also send missions to

209
00:08:55,190 --> 00:08:53,100
other parts of the solar system so just

210
00:08:57,290 --> 00:08:55,200
this year later this year we're going to

211
00:08:59,509 --> 00:08:57,300
launch a mission called psyche which is

212
00:09:02,150 --> 00:08:59,519
going to explore for the first time ever

213
00:09:04,310 --> 00:09:02,160

a metal world it's a metal asteroid

214
00:09:05,750 --> 00:09:04,320
called psyche we've never been to a

215
00:09:09,050 --> 00:09:05,760
metal world before it's going to go into

216
00:09:10,910 --> 00:09:09,060
orbit around uh this asteroid and and

217
00:09:13,670 --> 00:09:10,920
try and understand it from lots of

218
00:09:17,090 --> 00:09:13,680
different aspects so that's our next big

219
00:09:19,190 --> 00:09:17,100
launch is psyche in October then a year

220
00:09:21,410 --> 00:09:19,200
after that our next launch to the outer

221
00:09:24,230 --> 00:09:21,420
solar system Europa Clipper a mission

222
00:09:27,050 --> 00:09:24,240
that's going to explore the icy Moon

223
00:09:29,810 --> 00:09:27,060
that's orbiting Jupiter that we think

224
00:09:32,690 --> 00:09:29,820
has a liquid water ocean beneath the icy

225
00:09:35,990 --> 00:09:32,700
moon it's so exciting this is a

226
00:09:37,790 --> 00:09:36,000
potential whole new type of habitable

227
00:09:39,650 --> 00:09:37,800
environment in our solar system ocean

228
00:09:41,210 --> 00:09:39,660
worlds in the outer solar system and

229
00:09:43,550 --> 00:09:41,220
this is the first mission truly

230
00:09:45,829 --> 00:09:43,560
dedicated to fully exploring one of

231
00:09:47,570 --> 00:09:45,839
those ocean worlds so it's being built

232
00:09:50,150 --> 00:09:47,580
right now in our clean room and actually

233
00:09:52,850 --> 00:09:50,160
for everyone watching you should go out

234
00:09:55,970 --> 00:09:52,860
and look up on YouTube you can find live

235
00:09:58,070 --> 00:09:55,980
camera feed of the engineers and

236
00:10:00,170 --> 00:09:58,080
technicians actually building the Europa

237
00:10:02,630 --> 00:10:00,180
Clipper spacecraft right now if you go

238
00:10:05,210 --> 00:10:02,640

search for Europa Clipper Live on

239
00:10:06,949 --> 00:10:05,220
YouTube you will find

240
00:10:08,630 --> 00:10:06,959
um our our folks at JPL actually

241
00:10:11,030 --> 00:10:08,640
building that mission so that launches

242
00:10:14,329 --> 00:10:11,040
next October and then I'm giving a long

243
00:10:15,829 --> 00:10:14,339
answer but and then we've got

244
00:10:17,870 --> 00:10:15,839
um the next big missions in our solar

245
00:10:19,430 --> 00:10:17,880
system actually the the biggest one the

246
00:10:21,350 --> 00:10:19,440
biggest solar system Mission we will

247
00:10:23,690 --> 00:10:21,360
have ever attempted is something called

248
00:10:25,790 --> 00:10:23,700
Mars sample return where we want to go

249
00:10:28,670 --> 00:10:25,800
to Mars and pick up

250
00:10:30,410 --> 00:10:28,680
30 bits of rock that perseverance the

251
00:10:32,030 --> 00:10:30,420
Rover that's there right now is driving

252
00:10:33,470 --> 00:10:32,040
around and collecting drilling little

253
00:10:37,250 --> 00:10:33,480
pieces of rock that are about the size

254
00:10:38,930 --> 00:10:37,260
of your pinky and collecting them really

255
00:10:40,250 --> 00:10:38,940
fascinating rocks that could answer the

256
00:10:42,290 --> 00:10:40,260
question about whether we're alone in

257
00:10:44,389 --> 00:10:42,300
the universe we're going to send a

258
00:10:46,610 --> 00:10:44,399
mission to go get those rocks and bring

259
00:10:50,150 --> 00:10:46,620
them back to Earth about a decade from

260
00:10:52,069 --> 00:10:50,160
now that is the hardest thing we've ever

261
00:10:53,690 --> 00:10:52,079
tried to do it is that one of the most

262
00:10:55,250 --> 00:10:53,700
exciting scientific things we've ever

263
00:10:57,530 --> 00:10:55,260

tried to do so we're doing all of those

264
00:10:59,630 --> 00:10:57,540
things and we're doing a bunch of cool

265
00:11:01,310 --> 00:10:59,640
things in astrophysics and in earth

266
00:11:03,170 --> 00:11:01,320
science as well which I would also love

267
00:11:04,850 --> 00:11:03,180
to talk about but I feel like I should

268
00:11:07,190 --> 00:11:04,860
stop and let you ask me another question

269
00:11:09,769 --> 00:11:07,200
if you want keep going

270
00:11:11,269 --> 00:11:09,779
oh well I think that's gonna be my next

271
00:11:14,210 --> 00:11:11,279
question for you but as you were

272
00:11:15,610 --> 00:11:14,220
mentioning with Europa the website is

273
00:11:18,290 --> 00:11:15,620
youtube.com

274
00:11:20,389 --> 00:11:18,300
NASA JPL and it's going to be that first

275
00:11:21,829 --> 00:11:20,399
box that you see that says live for

276
00:11:23,870 --> 00:11:21,839
anyone that wants to watch Lord do you

277
00:11:26,389 --> 00:11:23,880
catch yourself sometimes just watching

278
00:11:28,069 --> 00:11:26,399
that it's so fun it's cool to see like

279
00:11:29,870 --> 00:11:28,079
how people are just working it's great

280
00:11:31,850 --> 00:11:29,880
because it gives you a simple scale of

281
00:11:33,650 --> 00:11:31,860
the spacecraft because you can see

282
00:11:35,210 --> 00:11:33,660
people on it and the people are like

283
00:11:36,650 --> 00:11:35,220
this and the spacecraft's like this and

284
00:11:38,810 --> 00:11:36,660
it's really big

285
00:11:40,730 --> 00:11:38,820
um it's it's quite impressive um Mission

286
00:11:42,470 --> 00:11:40,740
that's gonna fly all the way out to

287
00:11:44,449 --> 00:11:42,480
Jupiter which is five times further from

288
00:11:46,670 --> 00:11:44,459

the Sun than the Earth and as big as the

289
00:11:48,590 --> 00:11:46,680
spacecraft itself is the solar panels

290
00:11:50,870 --> 00:11:48,600
that are needed to power it out at

291
00:11:52,850 --> 00:11:50,880
Jupiter are the size of a basketball

292
00:11:54,290 --> 00:11:52,860
court and they're gigantic they're

293
00:11:57,290 --> 00:11:54,300
they're the length of a basketball court

294
00:11:58,490 --> 00:11:57,300
so it's it's really a huge thing it's I

295
00:12:01,310 --> 00:11:58,500
think it's probably the biggest thing

296
00:12:02,630 --> 00:12:01,320
we've built our sample return will be a

297
00:12:05,750 --> 00:12:02,640
little bit bigger even which is if you

298
00:12:08,750 --> 00:12:07,490
believe it it's great to talk about that

299
00:12:10,430 --> 00:12:08,760
sense of scale because you can't really

300
00:12:11,569 --> 00:12:10,440
see it inanimate so go check out the

301
00:12:13,550 --> 00:12:11,579
live camera and then you can see it

302
00:12:16,610 --> 00:12:13,560
compared to people right so you can see

303
00:12:19,910 --> 00:12:17,810
perfect and you know what I'm going to

304
00:12:22,610 --> 00:12:19,920
ask you a continuation of what you were

305
00:12:24,170 --> 00:12:22,620
talking about what yeah so you know

306
00:12:26,449 --> 00:12:24,180
again people know us for solar system

307
00:12:29,389 --> 00:12:26,459
exploration planets

308
00:12:31,430 --> 00:12:29,399
in some ways what animates us really is

309
00:12:33,829 --> 00:12:31,440
is these questions about life on Earth

310
00:12:35,449 --> 00:12:33,839
and life in the universe and so we are

311
00:12:37,370 --> 00:12:35,459
exploring Mars we are exploring moons of

312
00:12:39,110 --> 00:12:37,380
Jupiter but but the other place to think

313
00:12:42,110 --> 00:12:39,120

about life elsewhere is on planets

314
00:12:44,210 --> 00:12:42,120
around other stars and so we are

315
00:12:46,550 --> 00:12:44,220
building you know we just launched the

316
00:12:48,829 --> 00:12:46,560
amazing um we NASA just launched the

317
00:12:51,110 --> 00:12:48,839
amazing James Webb Space Telescope and

318
00:12:53,870 --> 00:12:51,120
we JPL had an instrument on board that

319
00:12:56,210 --> 00:12:53,880
Space Telescope the next Space Telescope

320
00:12:58,190 --> 00:12:56,220
that's going to launch in about 2027 is

321
00:13:00,110 --> 00:12:58,200
called the Nancy Grace Romans face

322
00:13:02,750 --> 00:13:00,120
telescope named after an awesome woman

323
00:13:04,730 --> 00:13:02,760
she was amazing and

324
00:13:06,110 --> 00:13:04,740
um and we're building a sensor and

325
00:13:09,530 --> 00:13:06,120
instrument for that called the

326
00:13:11,990 --> 00:13:09,540
chronograph instrument its job is to if

327
00:13:13,850 --> 00:13:12,000
you want to take a family portrait of

328
00:13:15,769 --> 00:13:13,860
another solar system like lots of

329
00:13:17,930 --> 00:13:15,779
pictures of of the planets around the

330
00:13:20,269 --> 00:13:17,940
other stars it's hard to do because the

331
00:13:22,250 --> 00:13:20,279
light of the star is so bright that you

332
00:13:24,710 --> 00:13:22,260
can't see the planets so this instrument

333
00:13:27,889 --> 00:13:24,720
actually really really effectively

334
00:13:30,829 --> 00:13:27,899
blocks the light of the star are so that

335
00:13:31,910 --> 00:13:30,839
we can see the planets themselves and

336
00:13:33,889 --> 00:13:31,920
that's what this instrument is going to

337
00:13:36,290 --> 00:13:33,899
do and so we're going to take dozens

338
00:13:39,530 --> 00:13:36,300

hundreds even maybe even more family

339
00:13:43,069 --> 00:13:39,540
portraits of other solar systems and

340
00:13:44,810 --> 00:13:43,079
that is the first step to sort of trying

341
00:13:47,509 --> 00:13:44,820
to sense whether life could have gotten

342
00:13:49,850 --> 00:13:47,519
started on some of those planets and so

343
00:13:51,110 --> 00:13:49,860
it's a huge technology Leap Forward and

344
00:13:53,389 --> 00:13:51,120
I think it's going to blow people's

345
00:13:55,730 --> 00:13:53,399
minds when it flies the other big thing

346
00:13:59,030 --> 00:13:55,740
that we do here at JPL is try and

347
00:14:00,829 --> 00:13:59,040
protect life here on Earth and so we

348
00:14:03,050 --> 00:14:00,839
haven't this is sort of a best kept

349
00:14:04,550 --> 00:14:03,060
secret I would say about JPL is we have

350
00:14:06,350 --> 00:14:04,560
a ton of our science missions here

351
00:14:08,389 --> 00:14:06,360
missions that we launched that look back

352
00:14:09,710 --> 00:14:08,399
down at Earth to try and understand our

353
00:14:12,470 --> 00:14:09,720
own Planet how it's changing and

354
00:14:14,449 --> 00:14:12,480
evolving and try and put you know

355
00:14:15,829 --> 00:14:14,459
actionable information in the hands of

356
00:14:17,389 --> 00:14:15,839
people who need it as they're making

357
00:14:19,370 --> 00:14:17,399
decisions about the future of our planet

358
00:14:20,990 --> 00:14:19,380
so not only understanding it better from

359
00:14:23,090 --> 00:14:21,000
a science point of view but really

360
00:14:24,350 --> 00:14:23,100
making a difference in people's lives I

361
00:14:26,329 --> 00:14:24,360
just saw a presentation this morning

362
00:14:28,190 --> 00:14:26,339
about a sensor that we have flying on

363
00:14:31,610 --> 00:14:28,200

the International Space Station right

364
00:14:34,550 --> 00:14:31,620
now which is learning about heat the

365
00:14:36,170 --> 00:14:34,560
heat effects in cities and and cities

366
00:14:39,110 --> 00:14:36,180
are actually doing things to try and

367
00:14:41,569 --> 00:14:39,120
reduce the say the heat that's released

368
00:14:43,730 --> 00:14:41,579
from roadways by painting them different

369
00:14:45,769 --> 00:14:43,740
colors and we're actually sensing what

370
00:14:48,590 --> 00:14:45,779
kind of difference that's making heat

371
00:14:51,769 --> 00:14:48,600
waves are the biggest natural killers of

372
00:14:53,930 --> 00:14:51,779
people in in our country and to be able

373
00:14:56,509 --> 00:14:53,940
to help cities manage heat more

374
00:14:57,590 --> 00:14:56,519
effectively it's amazing so those are

375
00:14:59,389 --> 00:14:57,600
the kind of things we do with our earth

376
00:15:01,850 --> 00:14:59,399
science missions we just launched SWAT

377
00:15:03,530 --> 00:15:01,860
which is looking at Earth's water and

378
00:15:04,730 --> 00:15:03,540
next we have a mission called nysar

379
00:15:06,290 --> 00:15:04,740
which is going to under help us

380
00:15:08,050 --> 00:15:06,300
understand all these kind of things

381
00:15:11,750 --> 00:15:08,060
happening on land whether it's

382
00:15:13,850 --> 00:15:11,760
ecosystems and biomass earthquakes and

383
00:15:16,009 --> 00:15:13,860
volcanoes and also just how the ice

384
00:15:18,769 --> 00:15:16,019
sheets are changing so that was a lot

385
00:15:20,329 --> 00:15:18,779
there's a lot happening here it's so

386
00:15:22,970 --> 00:15:20,339
exciting any given day it could be Earth

387
00:15:27,949 --> 00:15:22,980
it could be Mars it could be Jupiter uh

388
00:15:32,150 --> 00:15:30,230

it was a really nice comprehensive list

389
00:15:33,790 --> 00:15:32,160
and great to bring up all the Earth

390
00:15:35,569 --> 00:15:33,800
missions

391
00:15:37,310 --> 00:15:35,579
this is something that people don't

392
00:15:40,310 --> 00:15:37,320
realize how much you can learn about our

393
00:15:42,050 --> 00:15:40,320
own planet from space it's uh it's a

394
00:15:44,329 --> 00:15:42,060
really critical part of of understanding

395
00:15:47,449 --> 00:15:44,339
how Earth is changing and and what we

396
00:15:49,550 --> 00:15:47,459
can do to um to mitigate that change to

397
00:15:51,590 --> 00:15:49,560
to manage it better like

398
00:15:54,350 --> 00:15:51,600
um managing greenhouse gas emissions but

399
00:15:56,509 --> 00:15:54,360
also to adapt to our changing plan to

400
00:15:58,370 --> 00:15:56,519
really understand how coastlines are

401
00:15:59,509 --> 00:15:58,380
changing and flood risk and things like

402
00:16:00,949 --> 00:15:59,519
this

403
00:16:05,689 --> 00:16:00,959
um so we're working on all of those

404
00:16:09,710 --> 00:16:07,910
and I'm again reading some of these

405
00:16:11,629 --> 00:16:09,720
comments that are coming in Lori and

406
00:16:14,689 --> 00:16:11,639
this is kind of the question to wrap it

407
00:16:16,250 --> 00:16:14,699
up people want some advice for young

408
00:16:18,710 --> 00:16:16,260
professionals

409
00:16:21,470 --> 00:16:18,720
um young women specifically who want to

410
00:16:22,970 --> 00:16:21,480
enter a career and pursue stem what what

411
00:16:24,889 --> 00:16:22,980
kind of advice do you have just go for

412
00:16:26,689 --> 00:16:24,899
it because there is a place for you

413
00:16:29,329 --> 00:16:26,699

there's a place for you at JPL there's a

414
00:16:30,949 --> 00:16:29,339
place for you in stem Fields they are we

415
00:16:33,290 --> 00:16:30,959
are getting better and better all the

416
00:16:35,569 --> 00:16:33,300
time at making stem a place for everyone

417
00:16:38,569 --> 00:16:35,579
is it perfect is any

418
00:16:41,509 --> 00:16:38,579
um institution perfect it is not but but

419
00:16:44,090 --> 00:16:41,519
the only way that we continue to make

420
00:16:46,670 --> 00:16:44,100
space the place for everyone is to have

421
00:16:49,490 --> 00:16:46,680
people continue to to come in and and

422
00:16:50,930 --> 00:16:49,500
work on space with us so for women who

423
00:16:53,090 --> 00:16:50,940
are interested for anyone who's

424
00:16:55,850 --> 00:16:53,100
interested in exploring a career in

425
00:16:58,249 --> 00:16:55,860
space you know studying science as or

426
00:17:01,310 --> 00:16:58,259
engineering is a great way to uh to

427
00:17:03,230 --> 00:17:01,320
pursue that there are so many

428
00:17:05,390 --> 00:17:03,240
um exciting ways that you can get

429
00:17:07,549 --> 00:17:05,400
involved whether you're basically any

430
00:17:09,949 --> 00:17:07,559
kind of of scientists or almost any kind

431
00:17:11,569 --> 00:17:09,959
of engineer there's a an aspect of what

432
00:17:14,150 --> 00:17:11,579
we do in space exploration that you can

433
00:17:16,010 --> 00:17:14,160
participate in but I'll tell you what we

434
00:17:19,610 --> 00:17:16,020
have communications professionals like

435
00:17:22,069 --> 00:17:19,620
yourself at JPL we have attorneys we

436
00:17:23,870 --> 00:17:22,079
have all kind business people who help

437
00:17:25,909 --> 00:17:23,880
us with the finances and the scheduling

438
00:17:27,110 --> 00:17:25,919

and making sure that we understand what

439
00:17:29,810 --> 00:17:27,120
it's going to take to achieve our

440
00:17:32,630 --> 00:17:29,820
missions you know facilities folks we

441
00:17:34,730 --> 00:17:32,640
have all kinds of people involved in in

442
00:17:36,890 --> 00:17:34,740
sending our missions to space when when

443
00:17:38,450 --> 00:17:36,900
we launch something into space it's not

444
00:17:40,730 --> 00:17:38,460
only scientists and Engineers that make

445
00:17:43,310 --> 00:17:40,740
it happen it's it's a huge diverse team

446
00:17:44,930 --> 00:17:43,320
and so there are a lot of different ways

447
00:17:46,070 --> 00:17:44,940
to get involved in the space business so

448
00:17:48,409 --> 00:17:46,080
that's the other thing I would say and

449
00:17:49,970 --> 00:17:48,419
if you dream about it you know keep that

450
00:17:51,710 --> 00:17:49,980
dream alive and keep working towards it

451
00:17:53,810 --> 00:17:51,720
there are a lot of ways for young people

452
00:17:56,029 --> 00:17:53,820
to get involved with NASA you can NASA

453
00:17:57,890 --> 00:17:56,039
has education programs that start you

454
00:18:00,470 --> 00:17:57,900
know early in your in your educational

455
00:18:02,210 --> 00:18:00,480
time and then go through internships and

456
00:18:05,090 --> 00:18:02,220
things in college those are really

457
00:18:06,770 --> 00:18:05,100
important to to go for if you want to be

458
00:18:08,750 --> 00:18:06,780
a part of the space industry it's great

459
00:18:10,610 --> 00:18:08,760
to start young and get that experience

460
00:18:12,169 --> 00:18:10,620
that's where we meet a lot of our future

461
00:18:14,270 --> 00:18:12,179
employees is through our internship

462
00:18:16,909 --> 00:18:14,280
programs so definitely encourage people

463
00:18:19,789 --> 00:18:16,919

to go on our website and look at those

464
00:18:22,610 --> 00:18:19,799
um and and and apply and become a part

465
00:18:25,430 --> 00:18:22,620
of a part of our team and if you're an

466
00:18:27,110 --> 00:18:25,440
engineer out there now who's looking for

467
00:18:28,970 --> 00:18:27,120
work or thinking about making a career

468
00:18:31,250 --> 00:18:28,980
change hey check out our jobs website

469
00:18:33,770 --> 00:18:31,260
because we have positions open so we're

470
00:18:37,310 --> 00:18:33,780
always happy to uh to have folks join us

471
00:18:43,310 --> 00:18:41,510
and that website is jpl.jobs and a

472
00:18:45,830 --> 00:18:43,320
little tiny add-on to that question too

473
00:18:47,690 --> 00:18:45,840
is people wanted to know what you did

474
00:18:50,690 --> 00:18:47,700
and what you studied specifically yeah

475
00:18:52,789 --> 00:18:50,700
so I started in college I start out in

476
00:18:55,250 --> 00:18:52,799
chemistry I was I had a lot of interest

477
00:18:57,110 --> 00:18:55,260
as a young person I was you know I was

478
00:18:58,730 --> 00:18:57,120
editor of my high school yearbook so I

479
00:19:01,430 --> 00:18:58,740
was thinking about journalism actually

480
00:19:03,289 --> 00:19:01,440
and then I was also sort of a geek uh in

481
00:19:05,210 --> 00:19:03,299
a good way I think Geeks are awesome but

482
00:19:06,830 --> 00:19:05,220
uh so I was maybe going to study math

483
00:19:08,690 --> 00:19:06,840
but I actually had a really really good

484
00:19:10,730 --> 00:19:08,700
chemistry professor as a freshman and

485
00:19:12,890 --> 00:19:10,740
got excited about chemistry so I

486
00:19:14,690 --> 00:19:12,900
declared a chemistry major I'm not a

487
00:19:16,549 --> 00:19:14,700
person who like knew from the age of 10

488
00:19:18,710 --> 00:19:16,559

exactly what I wanted to do that's not

489
00:19:20,570 --> 00:19:18,720
the case for me I really sort of

490
00:19:23,090 --> 00:19:20,580
followed things as they came along and

491
00:19:24,770 --> 00:19:23,100
learned to take advantage of them so I I

492
00:19:26,450 --> 00:19:24,780
was a chemistry major but then I I

493
00:19:29,090 --> 00:19:26,460
managed to get the summer internship at

494
00:19:31,010 --> 00:19:29,100
Nasa when I was 19 and again it's a

495
00:19:32,150 --> 00:19:31,020
longer story but I realized that most of

496
00:19:33,950 --> 00:19:32,160
the people I was working with they were

497
00:19:35,870 --> 00:19:33,960
doing research on

498
00:19:39,169 --> 00:19:35,880
um on different planets in the solar

499
00:19:42,590 --> 00:19:39,179
system they were mostly geologists I had

500
00:19:44,750 --> 00:19:42,600
never taken any geology so I went back

501
00:19:47,270 --> 00:19:44,760
to school as a junior in college and

502
00:19:49,190 --> 00:19:47,280
took a geology course and it turned out

503
00:19:51,289 --> 00:19:49,200
to be with a professor who was working

504
00:19:52,789 --> 00:19:51,299
on Mars and so I ended up starting to do

505
00:19:54,169 --> 00:19:52,799
research with him but then pretty

506
00:19:55,850 --> 00:19:54,179
quickly discovered that there was

507
00:19:57,409 --> 00:19:55,860
interesting science to be done at the

508
00:19:59,510 --> 00:19:57,419
intersection of chemistry and geology

509
00:20:01,430 --> 00:19:59,520
and so many of the questions we're

510
00:20:04,130 --> 00:20:01,440
asking whether it's about you know life

511
00:20:07,669 --> 00:20:04,140
on mars or oceans on Europa

512
00:20:09,590 --> 00:20:07,679
take an interdisciplinary approach it's

513
00:20:11,090 --> 00:20:09,600

not just about physics or chemistry or

514
00:20:13,549 --> 00:20:11,100
biology it's a little bit of everything

515
00:20:14,690 --> 00:20:13,559
the planets to understand a planet you

516
00:20:17,690 --> 00:20:14,700
have to understand lots of different

517
00:20:20,270 --> 00:20:17,700
kinds of science a bit and so I enjoyed

518
00:20:21,770 --> 00:20:20,280
that interdisciplinary approach so I I

519
00:20:23,450 --> 00:20:21,780
started thinking about working in

520
00:20:25,490 --> 00:20:23,460
geochemistry at the intersection of the

521
00:20:27,470 --> 00:20:25,500
two things I was interested in and it

522
00:20:30,049 --> 00:20:27,480
turned out that Caltech had a great PhD

523
00:20:33,350 --> 00:20:30,059
program in geochemistry and so I was

524
00:20:36,049 --> 00:20:33,360
able to to come here to it to Pasadena

525
00:20:39,230 --> 00:20:36,059
to Caltech for grad school and study

526
00:20:41,990 --> 00:20:39,240
meteorites so I I worked on meteorites

527
00:20:46,370 --> 00:20:42,000
for my doctorate and that's kind of yeah

528
00:20:51,289 --> 00:20:49,250
it's always really fascinating to hear

529
00:20:53,210 --> 00:20:51,299
just these Pathways too because

530
00:20:54,590 --> 00:20:53,220
sometimes when you you don't know it

531
00:20:56,450 --> 00:20:54,600
exists until you hear it and it was

532
00:20:58,490 --> 00:20:56,460
great and look I just people think like

533
00:21:00,770 --> 00:20:58,500
I have to figure out the perfect path to

534
00:21:02,990 --> 00:21:00,780
get to my goal my message to you is

535
00:21:04,850 --> 00:21:03,000
there is no one path that will either

536
00:21:06,770 --> 00:21:04,860
get you there or not get you there there

537
00:21:09,409 --> 00:21:06,780
are many many paths that can get you

538
00:21:11,450 --> 00:21:09,419

there so you know if you're interested

539
00:21:13,610 --> 00:21:11,460
in working in space probably the easiest

540
00:21:15,350 --> 00:21:13,620
way to get involved is to you know do

541
00:21:16,970 --> 00:21:15,360
that science and engineering or science

542
00:21:18,590 --> 00:21:16,980
or engineering actually science and

543
00:21:20,810 --> 00:21:18,600
engineering is really powerful when you

544
00:21:22,789 --> 00:21:20,820
bring those two together so you know

545
00:21:24,169 --> 00:21:22,799
continue to think about

546
00:21:26,210 --> 00:21:24,179
um you know don't opt out of those

547
00:21:29,210 --> 00:21:26,220
science and math courses lead into them

548
00:21:31,549 --> 00:21:29,220
and and uh and try and get that hands-on

549
00:21:33,710 --> 00:21:31,559
experience whether that's you know first

550
00:21:35,630 --> 00:21:33,720
robotics I love first robotics you know

551
00:21:38,149 --> 00:21:35,640
outside the classroom getting hands-on

552
00:21:39,710 --> 00:21:38,159
experience building robots or you know

553
00:21:42,049 --> 00:21:39,720
internship opportunities or whatever

554
00:21:43,669 --> 00:21:42,059
they might be because that's also what

555
00:21:45,890 --> 00:21:43,679
brings stem to life it's not about

556
00:21:50,390 --> 00:21:45,900
what's in the textbooks it's about how

557
00:21:54,830 --> 00:21:53,090
that is a fantastic message to wrap all

558
00:21:56,510 --> 00:21:54,840
of this up thank you so much thank you

559
00:21:58,070 --> 00:21:56,520
it was great to be with you and thanks

560
00:22:00,409 --> 00:21:58,080
again to everyone for watching this was

561
00:22:04,250 --> 00:22:02,810
of course and I'm just gonna let viewers

562
00:22:06,470 --> 00:22:04,260
know that if they want to know more

563
00:22:08,990 --> 00:22:06,480

about our missions and our projects they

564
00:22:10,970 --> 00:22:09,000
can follow at NASA JPL and to learn

565
00:22:13,370 --> 00:22:10,980
about life at JPL like you were talking

566
00:22:16,190 --> 00:22:13,380
about and career opportunities there's

567
00:22:18,049 --> 00:22:16,200
also at NASA JPL careers that's where

568
00:22:20,990 --> 00:22:18,059
you're coming live to us now right now

569
00:22:23,510 --> 00:22:21,000
and jpl.jobs for those career

570
00:22:25,490 --> 00:22:23,520
opportunities thank you again as we