



1
00:05:23,830 --> 00:02:51,830

[Music]

2
00:05:27,270 --> 00:05:26,390

i used to clean houses and today i'm

3
00:05:29,430 --> 00:05:27,280

trying to find out

4
00:05:31,189 --> 00:05:29,440

there's life in another planet my name

5
00:05:33,189 --> 00:05:31,199

is diana trujillo and i work robotic

6
00:05:34,629 --> 00:05:33,199

arms to collect samples on mars

7
00:05:36,469 --> 00:05:34,639

what we're trying to do is to draw

8
00:05:37,029 --> 00:05:36,479

around the surface of this unknown

9
00:05:39,189 --> 00:05:37,039

planet

10
00:05:41,029 --> 00:05:39,199

to try to find out if at some point

11
00:05:43,029 --> 00:05:41,039

there was life on the surface of ours

12
00:05:44,950 --> 00:05:43,039

on the robotic arm we have two very

13
00:05:45,270 --> 00:05:44,960

interesting instruments with a robotic

14

00:05:46,950 --> 00:05:45,280

arm

15

00:05:48,950 --> 00:05:46,960

actually right behind me we will use

16

00:05:49,350 --> 00:05:48,960

their arm to place those instruments or

17

00:05:54,550 --> 00:05:49,360

the

18

00:05:56,390 --> 00:05:54,560

analyzing that terrain and helping us

19

00:05:57,990 --> 00:05:56,400

understand what he's composed of

20

00:06:00,550 --> 00:05:58,000

and understanding their one trace

21

00:06:03,029 --> 00:06:00,560

ability of life and i feel like a

22

00:06:04,150 --> 00:06:03,039

lucky person to be working this we're

23

00:06:05,670 --> 00:06:04,160

standing on the margin

24

00:06:07,990 --> 00:06:05,680

the intent here is to demonstrate that

25

00:06:08,710 --> 00:06:08,000

we have enough grip to continue to move

26

00:06:11,670 --> 00:06:08,720

the rover

27

00:06:13,350 --> 00:06:11,680

up and down on the surface of mars i was

28

00:06:13,830 --> 00:06:13,360

born and raised in colombia there was a

29

00:06:15,830 --> 00:06:13,840

lot

30

00:06:17,590 --> 00:06:15,840

of violence going on in my country so

31

00:06:19,189 --> 00:06:17,600

for me looking up at the sky

32

00:06:21,590 --> 00:06:19,199

and looking at the stars was my safe

33

00:06:23,350 --> 00:06:21,600

place i came to the us when i was 17.

34

00:06:25,110 --> 00:06:23,360

i learned english paid myself through

35

00:06:26,230 --> 00:06:25,120

college and eventually applied to

36

00:06:27,990 --> 00:06:26,240

working here

37

00:06:29,909 --> 00:06:28,000

we spend lots and lots of hours here

38

00:06:30,629 --> 00:06:29,919

testing everything from how it should be

39

00:06:32,309 --> 00:06:30,639

moved

40

00:06:34,230 --> 00:06:32,319

from how we're going to configure it

41

00:06:36,469 --> 00:06:34,240

this is us trying to understand

42

00:06:38,309 --> 00:06:36,479

how we will use the hardware and the

43

00:06:39,510 --> 00:06:38,319

software to get it to do what we want to

44

00:06:42,309 --> 00:06:39,520

do on the surface of

45

00:06:43,189 --> 00:06:42,319

ours it is more about your enthusiasm

46

00:06:45,029 --> 00:06:43,199

your passion

47

00:06:47,029 --> 00:06:45,039

and if you are determined to do what you

48

00:06:53,189 --> 00:06:47,039

want to do in your life you will find a

49

00:06:57,909 --> 00:06:55,990

hi i'm requier villanueva with nasa's

50

00:06:59,189 --> 00:06:57,919

jet propulsion laboratory in southern

51

00:07:01,430 --> 00:06:59,199

california

52

00:07:02,870 --> 00:07:01,440

in honor of hispanic heritage month

53

00:07:05,110 --> 00:07:02,880

which starts today

54

00:07:06,230 --> 00:07:05,120

we will be asking and answering your

55

00:07:09,029 --> 00:07:06,240

questions in both

56

00:07:11,350 --> 00:07:09,039

english and espanol and you'll be able

57

00:07:14,309 --> 00:07:11,360

to see diana trujillo's story again

58

00:07:14,950 --> 00:07:14,319

in spanish at the end of this broadcast

59

00:07:16,950 --> 00:07:14,960

now

60

00:07:18,469 --> 00:07:16,960

getting to mars is a test of

61

00:07:20,390 --> 00:07:18,479

perseverance in itself

62

00:07:23,189 --> 00:07:20,400

and we are joined today by one of the

63

00:07:25,189 --> 00:07:23,199

many faces behind the spacecraft

64

00:07:27,270 --> 00:07:25,199

diana is an engineer working on the

65

00:07:33,670 --> 00:07:27,280

robotic arm of the rover

66

00:07:37,110 --> 00:07:35,830

her love of space in colombia led her to

67

00:07:39,830 --> 00:07:37,120

nasa jpl

68

00:07:41,029 --> 00:07:39,840

where she's working on her second mars

69

00:07:43,430 --> 00:07:41,039

spacecraft

70

00:07:45,270 --> 00:07:43,440

and she joins us live from her home and

71

00:07:48,309 --> 00:07:45,280

if you have any questions you'd like to

72

00:07:56,869 --> 00:07:51,270

in espanol you can leave them right here

73

00:08:01,430 --> 00:07:59,670

thank you very much for having me thank

74

00:08:03,029 --> 00:08:01,440

you so to start i'll ask a question in

75

00:08:04,070 --> 00:08:03,039

english and we'll ask him again in

76

00:08:07,189 --> 00:08:04,080

spanish

77

00:08:10,830 --> 00:08:07,199

so why is the robotic arm such

78

00:08:12,230 --> 00:08:10,840

an important part of the mars 2020

79

00:08:13,909 --> 00:08:12,240

mission but

80

00:08:15,270 --> 00:08:13,919

besides the fact that i've worked on

81

00:08:16,629 --> 00:08:15,280

robotic arm uh

82

00:08:18,550 --> 00:08:16,639

i think that it is very important

83

00:08:21,029 --> 00:08:18,560

because it is a

84

00:08:22,629 --> 00:08:21,039

seven foot arm long that has two

85

00:08:25,029 --> 00:08:22,639

instruments that are key for our

86

00:08:25,990 --> 00:08:25,039

understanding of uh what's going on on

87

00:08:28,309 --> 00:08:26,000

the surface of mars that

88

00:08:30,469 --> 00:08:28,319

is pixel and sherlock so the robotic arm

89

00:08:31,830 --> 00:08:30,479

will be the mechanism that will place

90

00:08:33,350 --> 00:08:31,840

those two instruments

91

00:08:34,870 --> 00:08:33,360

close to the surface and we call

92

00:08:37,350 --> 00:08:34,880

proximity operations

93

00:08:38,230 --> 00:08:37,360

uh use those two instruments to do a

94

00:08:40,230 --> 00:08:38,240

mapping

95

00:08:42,469 --> 00:08:40,240

uh that could help us understand if

96

00:08:45,030 --> 00:08:42,479

there is any bio signature

97

00:08:46,310 --> 00:08:45,040

that could uh give us a clue that there

98

00:08:50,070 --> 00:08:46,320

was potential

99

00:08:52,150 --> 00:08:50,080

life in the past so uh my team and i

100

00:08:54,070 --> 00:08:52,160

the job is to how do we actually get

101
00:08:56,550 --> 00:08:54,080
closer to that target to that rock

102
00:08:57,430 --> 00:08:56,560
that scientists really want to see and

103
00:08:59,829 --> 00:08:57,440
how

104
00:09:01,030 --> 00:08:59,839
um creative can we get to put this

105
00:09:03,190 --> 00:09:01,040
ginormous arm

106
00:09:04,710 --> 00:09:03,200
close to a teeny tiny target that they

107
00:09:06,389 --> 00:09:04,720
want to inspect

108
00:09:08,710 --> 00:09:06,399
and then put the two instruments in it

109
00:09:10,389 --> 00:09:08,720
so i feel like we enable the science

110
00:09:12,389 --> 00:09:10,399
and enable the scientists to get what

111
00:09:15,670 --> 00:09:12,399
they want

112
00:09:18,790 --> 00:09:15,680
that's great now for the spanish porque

113
00:10:02,230 --> 00:09:18,800

están importante el brazo robótico para

114

00:10:06,069 --> 00:10:05,350

indiana you worked on the curiosity

115

00:10:09,509 --> 00:10:06,079

rover

116

00:10:13,829 --> 00:10:09,519

what's it like

117

00:10:17,990 --> 00:10:16,150

i think it's just crazy and fun to know

118

00:10:19,990 --> 00:10:18,000

that i did curiosity and now i'm doing

119

00:10:22,150 --> 00:10:20,000

perseverance um i can see

120

00:10:23,750 --> 00:10:22,160

that continuity of what we're trying to

121

00:10:25,430 --> 00:10:23,760

do with the whole mars program right

122

00:10:28,230 --> 00:10:25,440

trying to understand

123

00:10:28,630 --> 00:10:28,240

could we have sustained life in the past

124

00:10:30,870 --> 00:10:28,640

check

125

00:10:32,550 --> 00:10:30,880

the bios the chemical composition is

126

00:10:34,630 --> 00:10:32,560

their curiosity found that

127

00:10:36,230 --> 00:10:34,640

that's awesome and now we get to take

128

00:10:38,069 --> 00:10:36,240

the next step which is to try to find

129

00:10:39,190 --> 00:10:38,079

out if there was life on the surface of

130

00:10:42,230 --> 00:10:39,200

mars in the past

131

00:10:44,630 --> 00:10:42,240

and the fact that i have the

132

00:10:46,630 --> 00:10:44,640

just like the fact that i am so lucky to

133

00:10:48,230 --> 00:10:46,640

have been part of the first question and

134

00:10:50,470 --> 00:10:48,240

the second question

135

00:10:53,110 --> 00:10:50,480

both within my lifetime is just

136

00:10:55,030 --> 00:10:53,120

mind-blowing right you read books about

137

00:10:57,110 --> 00:10:55,040

uh the potential discoveries and you

138

00:10:58,470 --> 00:10:57,120

think that a hundred years passing

139

00:11:00,230 --> 00:10:58,480

between one and the other

140

00:11:02,230 --> 00:11:00,240

but that's not the case here we just did

141

00:11:05,350 --> 00:11:02,240

it back to back and it's just incredible

142

00:11:08,470 --> 00:11:05,360

to be part of history like this

143

00:11:10,069 --> 00:11:08,480

it's great to have you too so este munda

144

00:11:26,829 --> 00:11:10,079

missiona marte

145

00:11:26,839 --> 00:12:21,110

is

146

00:12:25,910 --> 00:12:23,190

let's talk about colombia your passion

147

00:12:27,430 --> 00:12:25,920

for space exploration began in colombia

148

00:12:31,190 --> 00:12:27,440

what advice do you have for people who

149

00:12:34,870 --> 00:12:33,190

well i think that it is a very

150

00:12:37,190 --> 00:12:34,880

interesting question because

151

00:12:39,190 --> 00:12:37,200

i know this is going to sound kind of

152

00:12:42,069 --> 00:12:39,200

funny and cheesy maybe but

153

00:12:43,750 --> 00:12:42,079

the fact that curiosity and perseverance

154

00:12:45,509 --> 00:12:43,760

are the two missions that i worked on

155

00:12:47,670 --> 00:12:45,519

i think that my advice to everybody else

156

00:12:49,590 --> 00:12:47,680

will be you know

157

00:12:51,670 --> 00:12:49,600

find the thing that you love find the

158

00:12:54,310 --> 00:12:51,680

things that you have in your heart

159

00:12:55,269 --> 00:12:54,320

understand what the potential plan is uh

160

00:12:57,430 --> 00:12:55,279

that could be what

161

00:12:59,269 --> 00:12:57,440

what did anybody else or other people

162

00:13:01,350 --> 00:12:59,279

that have done that career path have

163

00:13:03,110 --> 00:13:01,360

have achieved in the past and see if you

164

00:13:03,670 --> 00:13:03,120

can pick some of those things from those

165

00:13:05,509 --> 00:13:03,680

people

166

00:13:07,030 --> 00:13:05,519

everybody does it differently i did a

167

00:13:08,870 --> 00:13:07,040

specific way it doesn't mean that that

168

00:13:10,310 --> 00:13:08,880

is the right way there's other ways

169

00:13:12,150 --> 00:13:10,320

but you can at least learn from those

170

00:13:13,110 --> 00:13:12,160

people and say i want that i want this i

171

00:13:16,389 --> 00:13:13,120

don't want this

172

00:13:17,990 --> 00:13:16,399

and then also discipline curiosity and

173

00:13:19,350 --> 00:13:18,000

perseverance to be honest

174

00:13:20,790 --> 00:13:19,360

and that's the cheeky part i was gonna

175

00:13:22,230 --> 00:13:20,800

say because it's the name of the

176

00:13:24,949 --> 00:13:22,240

missions but it's true

177

00:13:25,590 --> 00:13:24,959

it's really you not giving up and not

178

00:13:27,430 --> 00:13:25,600

quitting

179

00:13:29,590 --> 00:13:27,440

even when it gets hard because you have

180

00:13:31,670 --> 00:13:29,600

a target in your mind

181

00:13:32,870 --> 00:13:31,680

that wasn't cheesy at all it was great

182

00:14:41,910 --> 00:13:32,880

great advice

183

00:14:45,350 --> 00:14:43,750

once again now i'm going to ask you some

184

00:14:46,389 --> 00:14:45,360

questions that are coming in from social

185

00:14:49,670 --> 00:14:46,399

media

186

00:14:56,069 --> 00:14:49,680

and first up is kelly

187

00:14:56,079 --> 00:15:34,790

but okay

188

00:15:38,949 --> 00:15:37,189

it really is an interesting question so

189

00:15:40,710 --> 00:15:38,959

for the english audience kelly wanted to

190

00:15:42,550 --> 00:15:40,720

know um

191

00:15:45,990 --> 00:15:42,560

what does diane think will happen if we

192

00:15:47,509 --> 00:15:46,000

found ancient life on mars

193

00:15:49,030 --> 00:15:47,519

yeah so my answer to that is that i

194

00:15:51,269 --> 00:15:49,040

think it's a personal question

195

00:15:52,629 --> 00:15:51,279

um i don't know what it will happen from

196

00:15:53,430 --> 00:15:52,639

the science standpoint but from the

197

00:15:55,590 --> 00:15:53,440

personal

198

00:15:57,269 --> 00:15:55,600

perspective i hope that when we find

199

00:15:59,030 --> 00:15:57,279

that there was the possibility of life

200

00:16:01,110 --> 00:15:59,040

or that there was life in the past

201
00:16:02,949 --> 00:16:01,120
on the surface of mars we could

202
00:16:04,310 --> 00:16:02,959
understand or adjust our own

203
00:16:07,110 --> 00:16:04,320
understanding of where we

204
00:16:09,030 --> 00:16:07,120
fit in not only in society but in the

205
00:16:10,870 --> 00:16:09,040
world and now it's not just society and

206
00:16:13,110 --> 00:16:10,880
the world like where do we fit

207
00:16:14,550 --> 00:16:13,120
in the universe and how we can actually

208
00:16:16,310 --> 00:16:14,560
take care of ourselves more

209
00:16:18,389 --> 00:16:16,320
take care of our planet more take care

210
00:16:21,269 --> 00:16:18,399
of the fact that we're no longer

211
00:16:22,310 --> 00:16:21,279
the center of the universe but uh we

212
00:16:24,150 --> 00:16:22,320
need to share it

213
00:16:27,030 --> 00:16:24,160

and and we have to find a way of

214

00:16:31,670 --> 00:16:28,790

it's a great answer and i have a

215

00:16:48,829 --> 00:16:34,829

juanto tiempo toma para un rover

216

00:16:48,839 --> 00:17:18,150

um

217

00:17:24,549 --> 00:17:23,029

[Laughter]

218

00:17:26,309 --> 00:17:24,559

they want to know how long does it take

219

00:17:29,350 --> 00:17:26,319

to build a rover

220

00:17:31,270 --> 00:17:29,360

for mars and you have work

221

00:17:33,669 --> 00:17:31,280

in both so i think you would be the

222

00:17:35,029 --> 00:17:33,679

right person to ask

223

00:17:37,270 --> 00:17:35,039

well i'll tell you that based on my

224

00:17:38,549 --> 00:17:37,280

experience um a curiosity took

225

00:17:40,390 --> 00:17:38,559

approximately 10 years

226

00:17:41,830 --> 00:17:40,400

and perseverance too and that's from

227

00:17:44,710 --> 00:17:41,840

conception to a

228

00:17:46,470 --> 00:17:44,720

launching um i think that there were a

229

00:17:46,950 --> 00:17:46,480

lot of things that both of the missions

230

00:17:49,029 --> 00:17:46,960

actually

231

00:17:51,110 --> 00:17:49,039

share and had in common that enabled

232

00:17:52,470 --> 00:17:51,120

that to be such a short period of time

233

00:17:54,710 --> 00:17:52,480

uh although some people might think that

234

00:17:56,630 --> 00:17:54,720

10 years is a lot a lot

235

00:17:58,549 --> 00:17:56,640

a long time right but like the first

236

00:18:00,310 --> 00:17:58,559

question that you asked me is

237

00:18:01,750 --> 00:18:00,320

10 years for one and ten years for the

238

00:18:03,830 --> 00:18:01,760

other to find out

239

00:18:04,950 --> 00:18:03,840

if life was sustained on another planet

240

00:18:08,549 --> 00:18:04,960

and that there

241

00:18:12,230 --> 00:18:08,559

on the path in another planet

242

00:18:14,470 --> 00:18:12,240

is really not that uh long timeline

243

00:18:16,150 --> 00:18:14,480

uh i think that that demonstrates how

244

00:18:16,870 --> 00:18:16,160

well we're doing as humanity and how

245

00:18:19,510 --> 00:18:16,880

much

246

00:18:20,230 --> 00:18:19,520

um you know curiosity and ingenuity do

247

00:18:22,310 --> 00:18:20,240

we have

248

00:18:24,070 --> 00:18:22,320

uh to continue to work on these missions

249

00:18:26,950 --> 00:18:24,080

and continue to launch things to answer

250

00:18:29,590 --> 00:18:26,960

fundamental questions

251
00:18:30,070 --> 00:18:29,600
that's great and now i have a question

252
00:18:32,230 --> 00:18:30,080
from

253
00:18:33,110 --> 00:18:32,240
victor on facebook coming in live he

254
00:18:35,590 --> 00:18:33,120
asks

255
00:18:38,150 --> 00:18:35,600
can you remember the first thought that

256
00:18:42,150 --> 00:18:38,160
started this amazing journey for you

257
00:18:44,230 --> 00:18:42,160
i want to know this too victor

258
00:18:46,150 --> 00:18:44,240
a good question victor it's interesting

259
00:18:46,789 --> 00:18:46,160
um i think that's the first thought for

260
00:18:49,270 --> 00:18:46,799
me

261
00:18:49,830 --> 00:18:49,280
there were two thoughts uh the first one

262
00:18:52,230 --> 00:18:49,840
was

263
00:18:53,830 --> 00:18:52,240

um i need to take care of my own meaning

264

00:18:55,510 --> 00:18:53,840

i need to take care of my mom and my

265

00:18:56,710 --> 00:18:55,520

family when i started the journey to

266

00:18:57,909 --> 00:18:56,720

come to the us

267

00:19:00,230 --> 00:18:57,919

and i think that when i started the

268

00:19:01,830 --> 00:19:00,240

journey to go to nasa it's because i

269

00:19:03,830 --> 00:19:01,840

want it

270

00:19:05,990 --> 00:19:03,840

it's like kelly's question i wanted to

271

00:19:07,830 --> 00:19:06,000

understand how he said that all the

272

00:19:10,310 --> 00:19:07,840

planets and the solar system and

273

00:19:11,909 --> 00:19:10,320

everything on the sky just coexists

274

00:19:13,669 --> 00:19:11,919

in a way that you know you don't look at

275

00:19:15,669 --> 00:19:13,679

the sky and you know the stars are

276
00:19:17,029 --> 00:19:15,679
crashing and burning or anything like

277
00:19:19,110 --> 00:19:17,039
that you're just seeing them

278
00:19:20,070 --> 00:19:19,120
peaceful and working and they're so

279
00:19:23,350 --> 00:19:20,080
majestic

280
00:19:25,270 --> 00:19:23,360
so i wanted to understand that

281
00:19:28,870 --> 00:19:25,280
i think that was my my first thought

282
00:19:28,880 --> 00:19:36,830
contest

283
00:19:36,840 --> 00:20:32,360
victoria

284
00:20:32,370 --> 00:21:28,830
[Music]

285
00:21:40,390 --> 00:21:34,070
a

286
00:21:43,190 --> 00:21:40,400
of the project

287
00:21:44,950 --> 00:21:43,200
is the fact that we have an

288
00:21:45,750 --> 00:21:44,960

international team of scientists and

289

00:21:48,549 --> 00:21:45,760

engineers

290

00:21:49,029 --> 00:21:48,559

and at some point we just come together

291

00:21:51,430 --> 00:21:49,039

right

292

00:21:53,430 --> 00:21:51,440

is this it's just all about the goal

293

00:21:55,909 --> 00:21:53,440

it's all about what we want to answer

294

00:21:57,750 --> 00:21:55,919

as a community that will hopefully shed

295

00:21:58,549 --> 00:21:57,760

some light into one of the fundamental

296

00:22:01,029 --> 00:21:58,559

questions of

297

00:22:02,710 --> 00:22:01,039

human history and at that point you

298

00:22:04,070 --> 00:22:02,720

realize that it is bigger than yourself

299

00:22:06,230 --> 00:22:04,080

that it is bigger than

300

00:22:07,430 --> 00:22:06,240

did i say at first did you say it first

301

00:22:10,149 --> 00:22:07,440

how did i come out

302

00:22:10,549 --> 00:22:10,159

is it my credit or not it doesn't matter

303

00:22:13,029 --> 00:22:10,559

it's

304

00:22:14,630 --> 00:22:13,039

all about what's the goal and when you

305

00:22:17,110 --> 00:22:14,640

get to that level

306

00:22:18,789 --> 00:22:17,120

you know it's just magic because

307

00:22:21,430 --> 00:22:18,799

everybody is on the same

308

00:22:22,470 --> 00:22:21,440

frequency and everybody just knows this

309

00:22:24,789 --> 00:22:22,480

is what we're going for

310

00:22:26,630 --> 00:22:24,799

and it's just everybody helps each other

311

00:22:29,750 --> 00:22:26,640

and builds on each other's strengths

312

00:22:31,990 --> 00:22:29,760

so it's just an amazing feeling it's

313

00:22:35,190 --> 00:22:32,000

really great teamwork going on

314

00:22:35,990 --> 00:22:35,200

and marcia on facebook is asking live

315

00:22:38,470 --> 00:22:36,000

right now

316

00:22:40,549 --> 00:22:38,480

what are your thoughts on improving

317

00:22:42,870 --> 00:22:40,559

equity and diversity of hispanic

318

00:22:43,750 --> 00:22:42,880

americans in the scientific community at

319

00:22:45,990 --> 00:22:43,760

large

320

00:22:48,630 --> 00:22:46,000

are there other hispanics working on the

321

00:22:50,070 --> 00:22:48,640

mars rover

322

00:22:52,310 --> 00:22:50,080

yes so marcia thank you so much for

323

00:22:55,029 --> 00:22:52,320

asking that question because that is

324

00:22:56,630 --> 00:22:55,039

absolutely necessary right i think that

325

00:23:00,230 --> 00:22:56,640

when you think about the fact that we're

326

00:23:01,590 --> 00:23:00,240

trying to answer like crazy questions

327

00:23:03,590 --> 00:23:01,600

right when we're trying to do things

328

00:23:07,190 --> 00:23:03,600

that nobody else has done

329

00:23:10,470 --> 00:23:07,200

and we just only do it with a specific

330

00:23:13,590 --> 00:23:10,480

type class a denomination

331

00:23:14,549 --> 00:23:13,600

of people we are certainly not doing the

332

00:23:16,789 --> 00:23:14,559

whole job

333

00:23:18,310 --> 00:23:16,799

it is it's not possible to answer the

334

00:23:19,190 --> 00:23:18,320

questions that nobody has answered

335

00:23:22,870 --> 00:23:19,200

before

336

00:23:25,909 --> 00:23:22,880

by keeping part of us out

337

00:23:28,230 --> 00:23:25,919

and so we need to make sure that diverse

338

00:23:29,190 --> 00:23:28,240

diversity and inclusion those two

339

00:23:31,110 --> 00:23:29,200

different things

340

00:23:32,549 --> 00:23:31,120

come into play when we are trying to

341

00:23:34,470 --> 00:23:32,559

solve problems

342

00:23:35,909 --> 00:23:34,480

and things that would never consider it

343

00:23:37,350 --> 00:23:35,919

shouldn't only be on that of course it

344

00:23:39,590 --> 00:23:37,360

should be on everything

345

00:23:40,870 --> 00:23:39,600

uh but in this specific case what i am

346

00:23:42,870 --> 00:23:40,880

trying to get at is that

347

00:23:44,310 --> 00:23:42,880

we need creative solutions and creative

348

00:23:45,750 --> 00:23:44,320

solutions come out of

349

00:23:48,310 --> 00:23:45,760

different backgrounds of different

350

00:23:51,430 --> 00:23:48,320

people of different expectations

351

00:23:53,190 --> 00:23:51,440

and and things that people live and

352

00:23:55,510 --> 00:23:53,200

none of that is taught in school all of

353

00:23:56,390 --> 00:23:55,520

that comes genuine to the uniqueness of

354

00:23:58,710 --> 00:23:56,400

each person

355

00:23:59,669 --> 00:23:58,720

so when we bring all of that together

356

00:24:01,909 --> 00:23:59,679

then we can answer

357

00:24:02,789 --> 00:24:01,919

questions that we didn't think we had

358

00:24:04,950 --> 00:24:02,799

answers

359

00:24:06,549 --> 00:24:04,960

right and so i think that it is

360

00:24:08,230 --> 00:24:06,559

important that we do all of that it is

361

00:24:09,909 --> 00:24:08,240

important that we also raise the bar

362

00:24:11,990 --> 00:24:09,919

and that and what i mean with raise the

363

00:24:13,510 --> 00:24:12,000

bar i mean all of those people from

364

00:24:14,070 --> 00:24:13,520

different backgrounds that are part of

365

00:24:16,710 --> 00:24:14,080

the team

366

00:24:17,350 --> 00:24:16,720

have also the opportunities to go up the

367

00:24:19,830 --> 00:24:17,360

chain

368

00:24:20,950 --> 00:24:19,840

and manage in different ways so that the

369

00:24:23,590 --> 00:24:20,960

teams can be

370

00:24:24,950 --> 00:24:23,600

more diverse and more inclusive and at

371

00:24:28,390 --> 00:24:24,960

some point we can just

372

00:24:29,669 --> 00:24:28,400

be more effective honestly that's great

373

00:24:31,190 --> 00:24:29,679

it's all about that magic you were

374

00:25:26,350 --> 00:24:31,200

saying about bringing people together

375

00:25:26,360 --> 00:25:46,710

is

376

00:25:50,870 --> 00:25:49,350

and kind of piggybacking off of that on

377

00:25:54,830 --> 00:25:50,880

facebook asks

378

00:25:56,630 --> 00:25:54,840

any advice for girls interested in

379

00:25:59,510 --> 00:25:56,640

sciences yeah

380

00:26:00,230 --> 00:25:59,520

um lots of advice to be honest i feel

381

00:26:02,470 --> 00:26:00,240

like

382

00:26:03,590 --> 00:26:02,480

uh maybe one of the most fundamental

383

00:26:05,110 --> 00:26:03,600

things for the

384

00:26:07,190 --> 00:26:05,120

girls that are interested in science is

385

00:26:08,549 --> 00:26:07,200

that if you care about science if that

386

00:26:11,029 --> 00:26:08,559

is the thing that you

387

00:26:12,230 --> 00:26:11,039

want don't let anybody tell you that

388

00:26:13,750 --> 00:26:12,240

that's not your thing

389

00:26:15,430 --> 00:26:13,760

don't let anybody tell you that you're

390

00:26:16,549 --> 00:26:15,440

not good enough for that thing yeah

391

00:26:18,149 --> 00:26:16,559

you're gonna hit it

392

00:26:20,070 --> 00:26:18,159

but when i say don't let anybody tell

393

00:26:20,710 --> 00:26:20,080

you that is don't let yourself believe

394

00:26:23,669 --> 00:26:20,720

that

395

00:26:24,950 --> 00:26:23,679

because uh you have it in you and you

396

00:26:26,870 --> 00:26:24,960

know when is your thing

397

00:26:27,990 --> 00:26:26,880

you know when you care about it you know

398

00:26:30,470 --> 00:26:28,000

when you're working it

399

00:26:32,230 --> 00:26:30,480

and making uh results and that you're

400

00:26:32,710 --> 00:26:32,240

excited like nobody really knows how

401
00:26:34,710 --> 00:26:32,720
excited

402
00:26:36,149 --> 00:26:34,720
you are about a topic except yourself so

403
00:26:39,190 --> 00:26:36,159
if you feel excited

404
00:26:40,950 --> 00:26:39,200
then you have to protect that and make

405
00:26:42,149 --> 00:26:40,960
sure that you have a plan to get to

406
00:26:43,830 --> 00:26:42,159
where you want to go

407
00:26:45,510 --> 00:26:43,840
by looking at other people maybe role

408
00:26:47,269 --> 00:26:45,520
models that have done things that you're

409
00:26:47,669 --> 00:26:47,279
excited about and make your own plan and

410
00:26:50,390 --> 00:26:47,679
just

411
00:26:51,029 --> 00:26:50,400
always you know put your compass in that

412
00:26:52,549 --> 00:26:51,039
direction

413
00:26:54,789 --> 00:26:52,559

regardless of what everybody else is

414

00:26:55,990 --> 00:26:54,799

saying

415

00:27:04,830 --> 00:26:56,000

i think it's great that i have a role

416

00:27:04,840 --> 00:27:53,190

is

417

00:27:56,950 --> 00:27:56,310

and speaking to kids we actually have a

418

00:27:59,190 --> 00:27:56,960

question

419

00:28:00,789 --> 00:27:59,200

from an eight-year-old eight-year-old

420

00:28:04,710 --> 00:28:00,799

ian wants to know

421

00:28:06,710 --> 00:28:04,720

what will the robotic arm be able to do

422

00:28:07,909 --> 00:28:06,720

hey ian this is an awesome question

423

00:28:09,590 --> 00:28:07,919

thanks for asking

424

00:28:11,190 --> 00:28:09,600

uh i'll tell you that what will that

425

00:28:14,389 --> 00:28:11,200

robotic arm will be able to do

426

00:28:17,269 --> 00:28:14,399

is that we will be able to drill

427

00:28:18,630 --> 00:28:17,279

holes we will be able to collect samples

428

00:28:21,190 --> 00:28:18,640

we will be able to make

429

00:28:22,470 --> 00:28:21,200

maps of the chemical composition of the

430

00:28:24,710 --> 00:28:22,480

rocks that we're seeing

431

00:28:26,230 --> 00:28:24,720

be able to take like super super close

432

00:28:28,789 --> 00:28:26,240

images like if you were

433

00:28:30,310 --> 00:28:28,799

having a magnifying glass and we will be

434

00:28:32,470 --> 00:28:30,320

able to help the scientists

435

00:28:33,750 --> 00:28:32,480

put the instruments as if it was their

436

00:28:36,310 --> 00:28:33,760

own hand right like

437

00:28:37,190 --> 00:28:36,320

the scientists pick up the location we

438

00:28:38,950 --> 00:28:37,200

deployed the armor

439

00:28:40,310 --> 00:28:38,960

we go where they want to go so i feel

440

00:28:42,230 --> 00:28:40,320

like the robotic arm is

441

00:28:44,710 --> 00:28:42,240

it's kind of like that interface in

442

00:28:46,549 --> 00:28:44,720

between what you will want it to be

443

00:28:50,789 --> 00:28:46,559

and when you actually in reality touch

444

00:28:50,799 --> 00:28:54,230

it's a great question ian

445

00:28:54,240 --> 00:29:24,830

for everyone in espanol

446

00:29:57,110 --> 00:29:50,230

is

447

00:29:59,750 --> 00:29:57,120

years

448

00:30:02,549 --> 00:29:59,760

and i'm a bit intimidated to pursue the

449

00:30:05,350 --> 00:30:02,559

long-term education it requires though

450

00:30:05,830 --> 00:30:05,360

she wants to know how did you do it and

451
00:30:08,950 --> 00:30:05,840
what

452
00:30:11,510 --> 00:30:08,960
is you to get there

453
00:30:14,149 --> 00:30:11,520
so listen christian i totally get it uh

454
00:30:16,310 --> 00:30:14,159
it feels like oh my god i need five psd

455
00:30:17,990 --> 00:30:16,320
and i need i need to be albert einstein

456
00:30:20,950 --> 00:30:18,000
and all that not really

457
00:30:21,990 --> 00:30:20,960
right i will tell you that um in my

458
00:30:23,669 --> 00:30:22,000
specific case i

459
00:30:25,830 --> 00:30:23,679
have a bachelor's degree i don't have a

460
00:30:27,830 --> 00:30:25,840
master i don't have a phd

461
00:30:29,269 --> 00:30:27,840
uh maybe if i were to just give you

462
00:30:31,590 --> 00:30:29,279
advice right now i'll say take a

463
00:30:33,830 --> 00:30:31,600

bachelor's degree and then do a master's

464

00:30:36,149 --> 00:30:33,840

uh so you can just come in with a with

465

00:30:38,950 --> 00:30:36,159

uh the right context of what you need

466

00:30:39,990 --> 00:30:38,960

i will also say that it is all about

467

00:30:43,590 --> 00:30:40,000

your attitude

468

00:30:44,789 --> 00:30:43,600

right um when you come in i realize that

469

00:30:46,950 --> 00:30:44,799

what has worked for me

470

00:30:49,110 --> 00:30:46,960

is that my attitude toward problems

471

00:30:50,710 --> 00:30:49,120

isn't like oh no this is the problem

472

00:30:52,710 --> 00:30:50,720

my attitude to our problems have been

473

00:30:53,269 --> 00:30:52,720

more of a this is a problem how do we

474

00:30:54,870 --> 00:30:53,279

fix it

475

00:30:56,710 --> 00:30:54,880

and let me clock it clock it clock it

476

00:30:57,430 --> 00:30:56,720

it in until i can actually figure

477

00:31:00,789 --> 00:30:57,440

out

478

00:31:03,269 --> 00:31:00,799

the right answer so i think that yes

479

00:31:05,190 --> 00:31:03,279

it feels like you know a bachelor's

480

00:31:08,070 --> 00:31:05,200

degree and then the master's

481

00:31:09,669 --> 00:31:08,080

like a lot like a lot but i also know a

482

00:31:11,350 --> 00:31:09,679

other colleagues and friends of mine

483

00:31:13,110 --> 00:31:11,360

that have done the bachelor's degree and

484

00:31:15,990 --> 00:31:13,120

then when they're already working

485

00:31:17,029 --> 00:31:16,000

they do their master so i wouldn't shy

486

00:31:20,470 --> 00:31:17,039

away from

487

00:31:21,830 --> 00:31:20,480

uh doing your dream job uh because you

488

00:31:23,830 --> 00:31:21,840

because you have to do your bachelor's

489

00:31:25,909 --> 00:31:23,840

degrees is totally rewarding

490

00:31:27,590 --> 00:31:25,919

and and by the way the moment you start

491

00:31:29,350 --> 00:31:27,600

doing it it just

492

00:31:31,029 --> 00:31:29,360

you're using your bachelor's degree but

493

00:31:32,230 --> 00:31:31,039

mainly what you're using is the way that

494

00:31:33,830 --> 00:31:32,240

you're thinking

495

00:31:35,750 --> 00:31:33,840

so get through the bachelor's degree

496

00:31:37,590 --> 00:31:35,760

because it's all i feel like

497

00:31:39,430 --> 00:31:37,600

based on how your brain thinks and how

498

00:31:58,830 --> 00:31:39,440

much you love it that it will be enough

499

00:31:58,840 --> 00:32:12,830

is

500

00:32:12,840 --> 00:33:08,830

university

501
00:33:13,830 --> 00:33:11,509
foreign

502
00:33:15,029 --> 00:33:13,840
as always thank you so much for

503
00:33:22,389 --> 00:33:15,039
answering the questions

504
00:33:26,070 --> 00:33:24,870
thank you very much for having me thanks

505
00:33:28,990 --> 00:33:26,080
now perseverance

506
00:33:30,310 --> 00:33:29,000
is set to land on mars on february 18th

507
00:33:32,149 --> 00:33:30,320
2021

508
00:33:33,669 --> 00:33:32,159
now for the latest on the mission follow

509
00:33:36,389 --> 00:33:33,679
at nasa persevere

510
00:33:38,149 --> 00:33:36,399
on twitter and facebook you can watch

511
00:33:38,870 --> 00:33:38,159
all the behind the spacecraft video

512
00:33:41,750 --> 00:33:38,880
profiles

513
00:33:43,029 --> 00:33:41,760

on the nasa 360 youtube channel and see

514

00:33:45,029 --> 00:33:43,039

deanna again

515

00:33:46,310 --> 00:33:45,039

in a nasa science live episode for

516

00:33:50,830 --> 00:33:46,320

hispanic heritage month

517

00:34:32,829 --> 00:33:50,840

airing september 30th thanks for

518

00:34:32,839 --> 00:35:28,829

is