

Google+



1  
00:00:11,699 --> 00:00:08,070  
greetings to all and welcome to the first

2  
00:00:13,619 --> 00:00:11,709  
google+ hangout of nasa in spanish it's

3  
00:00:15,510 --> 00:00:13,629  
time for lado lopez and i'm from the

4  
00:00:18,509 --> 00:00:15,520  
institute for global environmental strategies

5  
00:00:20,580 --> 00:00:18,519  
and gs which works with

6  
00:00:23,130 --> 00:00:20,590  
nasa in the area of ■■education and

7  
00:00:24,990 --> 00:00:23,140  
scientific dissemination we are celebrating the

8  
00:00:27,510 --> 00:00:25,000  
national month of the story of the woman with

9  
00:00:29,820 --> 00:00:27,520  
the science for growth initiative science

10  
00:00:31,650 --> 00:00:29,830  
for girls and we will be talking with

11  
00:00:33,240 --> 00:00:31,660  
two latina researchers from nasa

12  
00:00:35,700 --> 00:00:33,250  
who will answer your questions

13  
00:00:37,229 --> 00:00:35,710

about their professional career their work

14

00:00:39,750 --> 00:00:37,239

in the agency and why it is so

15

00:00:42,000 --> 00:00:39,760

important so participate in the

16

00:00:46,079 --> 00:00:42,010

discussion sending us your questions

17

00:00:48,569 --> 00:00:46,089

via twitter @ nasa underscore e s

18

00:00:49,049 --> 00:00:48,579

or on the google plus page of nothing in

19

00:00:50,849 --> 00:00:49,059

spanish let

20

00:00:53,279 --> 00:00:50,859

's start by greeting our

21

00:00:55,829 --> 00:00:53,289

participants first we have erika

22

00:00:58,199 --> 00:00:55,839

podés and michelle a muñoz fernández who

23

00:01:01,500 --> 00:00:58,209

greet us before the center hey skin in

24

00:01:07,890 --> 00:01:05,249

we pass with Maria Jose Viñas, who is a

25

00:01:10,350 --> 00:01:07,900

scientific writer and coordinator of

26  
00:01:16,830 --> 00:01:10,360  
scientific dissemination at the NASA Goddard Center

27  
00:01:22,560 --> 00:01:19,319  
we also have a group of users

28  
00:01:26,290 --> 00:01:22,570  
of the Old Town New Home Library in

29  
00:01:31,180 --> 00:01:29,140  
and finally we have a group of

30  
00:01:35,720 --> 00:01:31,190  
users of the high ground

31  
00:01:43,610 --> 00:01:38,480  
now let's go back to erika and michel a for

32  
00:01:48,210 --> 00:01:46,260  
well good afternoon i am delighted to

33  
00:01:51,270 --> 00:01:48,220  
be here with you and share my

34  
00:01:55,080 --> 00:01:51,280  
experiences on my behalf erika power

35  
00:01:56,969 --> 00:01:55,090  
i am a scientist at nasa and i am panamanian

36  
00:01:59,219 --> 00:01:56,979  
so I explain a little about how I

37  
00:02:01,650 --> 00:01:59,229  
got here and what I do.

38  
00:02:05,450 --> 00:02:01,660

Panama is a country with

39

00:02:09,990 --> 00:02:05,460

exuberant nature and since I was little

40

00:02:13,800 --> 00:02:10,000

I developed a curiosity and a respect

41

00:02:30,860 --> 00:02:13,810

for nature. I knew that I

42

00:02:30,870 --> 00:02:38,000

and finally after this tour

43

00:02:46,410 --> 00:02:40,620

now I am a scientist who is

44

00:02:52,400 --> 00:02:49,430

for example,

45

00:02:54,800 --> 00:02:52,410

good afternoon everyone. My name is

46

00:02:57,380 --> 00:02:54,810

Michelle Ammonio Fernández and

47

00:03:01,190 --> 00:02:57,390

I am also delighted to participate in this

48

00:03:04,760 --> 00:03:01,200

very interesting initiative. I am from

49

00:03:15,620 --> 00:03:04,770

Madrid. I am Spanish and my career has

50

00:03:22,330 --> 00:03:15,630

been one of brands and I have always I wanted to

51  
00:03:27,790 --> 00:03:26,120  
my studies in the field of engineering

52  
00:03:30,910 --> 00:03:27,800  
my mother says and would say

53  
00:03:32,750 --> 00:03:30,920  
telecommunications and then later

54  
00:03:36,730 --> 00:03:32,760  
development and my final project

55  
00:03:44,590 --> 00:03:41,090  
and later work for the

56  
00:03:44,600 --> 00:03:55,050  
on this occasion

57  
00:03:55,060 --> 00:04:03,059  
and the practices

58  
00:04:10,009 --> 00:04:07,670  
as an engineer and scientist in NASA

59  
00:04:12,949 --> 00:04:10,019  
very well and before continuing with the

60  
00:04:15,860 --> 00:04:12,959  
questions just make sure all the

61  
00:04:18,140 --> 00:04:15,870  
participants who have their microphones

62  
00:04:20,689 --> 00:04:18,150  
on YouTube and who do not have the hang open

63  
00:04:22,219 --> 00:04:20,699

another page open so that all the

64

00:04:24,379 --> 00:04:22,229

world is listening well including

65

00:04:26,360 --> 00:04:24,389

people what they are watching us through

66

00:04:28,520 --> 00:04:26,370

youtube so now we start the

67

00:04:30,499 --> 00:04:28,530

round of questions first in maria jose do

68

00:04:31,879 --> 00:04:30,509

you have any questions for erika and

69

00:04:34,249 --> 00:04:31,889

michel a

70

00:04:35,659 --> 00:04:34,259

and i would like to know if your careers

71

00:04:37,070 --> 00:04:35,669

have always been in a straight line or has

72

00:04:44,210 --> 00:04:37,080

There have been certain detours that you did not

73

00:04:52,080 --> 00:04:48,060

Well, you always have. I think that there

74

00:04:55,170 --> 00:04:52,090

are always things in your path that can

75

00:04:59,070 --> 00:04:55,180

interfere with your plan,

76  
00:05:00,840 --> 00:04:59,080  
but I believe that one thing that has always

77  
00:05:09,680 --> 00:05:00,850  
been in our lives, both America

78  
00:05:16,920 --> 00:05:14,480  
matter, or some project that

79  
00:05:22,670 --> 00:05:16,930  
we have put more commitment to the interests

80  
00:05:22,680 --> 00:05:26,920  
completing the sun

81  
00:05:33,430 --> 00:05:28,930  
in accordance with what my

82  
00:05:35,350 --> 00:05:33,440  
chela has just said and I believe that in both

83  
00:05:37,960 --> 00:05:35,360  
our experiences we have had a

84  
00:05:40,480 --> 00:05:37,970  
vision of where we wanted to be and what we

85  
00:05:44,050 --> 00:05:40,490  
wanted to do I believe that our

86  
00:05:47,350 --> 00:05:44,060  
path It was not specifically drawn up

87  
00:05:49,360 --> 00:05:47,360  
but we had this great vision and there

88  
00:05:51,189 --> 00:05:49,370

were already different routes to reach

89

00:05:52,439 --> 00:05:51,199

that vision and here we were, we have

90

00:05:55,739 --> 00:05:52,449

achieved it

91

00:05:59,620 --> 00:05:55,749

very well now let's move on to the

92

00:06:03,210 --> 00:05:59,630

NATO library and a home do you have any questions

93

00:06:03,220 --> 00:06:12,629

inadvertently

94

00:06:12,639 --> 00:06:20,580

yes you

95

00:06:26,290 --> 00:06:23,320

can listen to me you

96

00:06:29,800 --> 00:06:26,300

listened and now I repeat the question

97

00:06:31,390 --> 00:06:29,810

please that 8-year-old Juan asked if he wants to

98

00:06:33,140 --> 00:06:31,400

know if you have been in

99

00:06:35,060 --> 00:06:33,150

space

100

00:06:36,850 --> 00:06:35,070

that is the first question and the second

101  
00:06:40,730 --> 00:06:36,860  
question he has if they have found

102  
00:06:42,510 --> 00:06:40,740  
diamonds in space

103  
00:06:44,520 --> 00:06:42,520  
although

104  
00:06:46,740 --> 00:06:44,530  
he answered the first part of the question

105  
00:06:50,010 --> 00:06:46,750  
and you can add it and answer the

106  
00:06:52,409 --> 00:06:50,020  
second if we have been in space

107  
00:06:54,809 --> 00:06:52,419  
NASA is a very large organization that

108  
00:06:56,850 --> 00:06:54,819  
we have 12 different centers in

109  
00:06:58,680 --> 00:06:56,860  
different parts of the United States and

110  
00:07:01,920 --> 00:06:58,690  
each center has a specific focus

111  
00:07:04,230 --> 00:07:01,930  
the center where michel a and I are is

112  
00:07:11,909 --> 00:07:04,240  
called the jet propulsion laboratory and the

113  
00:07:17,370 --> 00:07:15,450

humans, nothing else, we send robots satellites,

114

00:07:22,580 --> 00:07:21,060

so our universe of many

115

00:07:26,460 --> 00:07:22,590

different

116

00:07:30,210 --> 00:07:26,470

space humans, the NASA center

117

00:07:32,910 --> 00:07:30,220

in charge of training astronauts,

118

00:07:38,490 --> 00:07:32,920

and of course, we have the space station

119

00:07:41,630 --> 00:07:38,500

where humans have also been all the time,

120

00:07:48,650 --> 00:07:44,420

this was the first place. where we arrived

121

00:08:03,590 --> 00:07:48,660

so we have a series of different

122

00:08:09,450 --> 00:08:06,330

we asked ourselves focused and we have

123

00:08:14,960 --> 00:08:09,460

already gone to space because

124

00:08:26,970 --> 00:08:25,140

and you have been I have not been either my

125

00:08:30,420 --> 00:08:26,980

mind is in space many times

126

00:08:32,400 --> 00:08:30,430

but I have not been We have been in space

127

00:08:35,800 --> 00:08:32,410

but our minds

128

00:08:40,670 --> 00:08:38,300

but the truth is that I

129

00:08:43,700 --> 00:08:40,680

applied for the

130

00:08:46,730 --> 00:08:43,710

astronaut program for the European space agency

131

00:08:48,350 --> 00:08:46,740

and they called me in 2008

132

00:08:52,760 --> 00:08:48,360

so I did the

133

00:08:54,440 --> 00:08:52,770

astronaut tests in Germany in Hamburg And if it was that

134

00:08:56,300 --> 00:08:54,450

I commented, it was very interesting, I

135

00:08:59,510 --> 00:08:56,310

was not selected because there were about

136

00:09:02,030 --> 00:08:59,520

10,000 people who are in the application and

137

00:09:04,730 --> 00:09:02,040

in the end I ended up among the last 200

138

00:09:06,410 --> 00:09:04,740

but they chose only 45 people in the end,

139

00:09:10,370 --> 00:09:06,420

so it was a very selective process,

140

00:09:14,290 --> 00:09:10,380

but sure that They would both

141

00:09:16,750 --> 00:09:14,300

love it and maybe one day we can go

142

00:09:18,730 --> 00:09:16,760

and for now they are going into space through

143

00:09:21,490 --> 00:09:18,740

the satellites and the other ships that

144

00:09:23,680 --> 00:09:21,500

we have that is very good let's move on to the

145

00:09:30,630 --> 00:09:23,690

next question with the

146

00:09:30,640 --> 00:09:38,290

do you have any questions about her

147

00:09:44,560 --> 00:09:40,540

ok good well for now we are going to start

148

00:09:47,710 --> 00:09:44,570

taking questions from the public and the

149

00:09:49,940 --> 00:09:47,720

first question I have for you

150

00:09:54,320 --> 00:09:49,950

is

151

00:09:57,440 --> 00:09:54,330

what concrete steps did you take in your

152

00:09:59,630 --> 00:09:57,450

career in terms of education what

153

00:10:01,010 --> 00:09:59,640

class did you emphasize in order to do

154

00:10:03,810 --> 00:10:01,020

what you are doing now at the

155

00:10:11,420 --> 00:10:05,120

and

156

00:10:13,820 --> 00:10:11,430

what I did was

157

00:10:16,750 --> 00:10:13,830

telecommunications engineering in Madrid, which here is

158

00:10:20,810 --> 00:10:16,760

called electrical

159

00:10:23,330 --> 00:10:20,820

electrical engineering in the US, and

160

00:10:26,030 --> 00:10:23,340

later when I was about to

161

00:10:28,460 --> 00:10:26,040

finish my degree, I did my final project

162

00:10:32,000 --> 00:10:28,470

at the National Institute of

163

00:10:32,000 --> 00:10:33,260

Stays in Madrid and I worked on

164

00:10:37,430 --> 00:10:34,980

optical communications research

165

00:10:41,340 --> 00:10:37,440

later on, as I have said before,

166

00:10:45,139 --> 00:10:41,350

when the project offered me a

167

00:10:49,260 --> 00:10:45,149

job and then I worked designing

168

00:10:55,920 --> 00:10:54,240

in hand with people

169

00:10:57,930 --> 00:10:55,930

and then, since I wanted to continue

170

00:10:59,540 --> 00:10:57,940

learning more about space and My

171

00:11:01,890 --> 00:10:59,550

dream was always to work at NASA

172

00:11:04,110 --> 00:11:01,900

because in the end I am looking at

173

00:11:06,420 --> 00:11:04,120

opportunities to leave Spain and

174

00:11:09,480 --> 00:11:06,430

be in other countries and learn other

175

00:11:11,280 --> 00:11:09,490

things and then I did a master's degree in

176

00:11:13,430 --> 00:11:11,290

space studies at the

177

00:11:16,440 --> 00:11:13,440

international space university in Strasbourg

178

00:11:18,870 --> 00:11:16,450

and thanks to that master's I can to do an

179

00:11:20,700 --> 00:11:18,880

internship in my skin here at the

180

00:11:24,420 --> 00:11:20,710

nasa center which is something very

181

00:11:26,520 --> 00:11:24,430

important to be able to have experience

182

00:11:29,490 --> 00:11:26,530

and later have the opportunity to

183

00:11:31,290 --> 00:11:29,500

do more research and even

184

00:11:33,960 --> 00:11:31,300

have a job a position to whom to

185

00:11:36,510 --> 00:11:33,970

launch but anyway in

186

00:11:38,430 --> 00:11:36,520

Regarding the subjects, it is true that I

187

00:11:41,760 --> 00:11:38,440

focused on the technical, not mathematics,

188

00:11:45,450 --> 00:11:41,770

physics, chemistry, engineering, all these

189

00:11:47,940 --> 00:11:45,460

types of subjects, but I think that to

190

00:11:48,980 --> 00:11:47,950

work at NASA, there

191

00:11:52,620 --> 00:11:48,990

are not only engineers and scientists, there

192

00:11:54,210 --> 00:11:52,630

are also lawyers, there are economists, there are

193

00:11:56,250 --> 00:11:54,220

a lot of people who work in what

194

00:11:58,950 --> 00:11:56,260

is called space load space business in English

195

00:12:01,080 --> 00:11:58,960

so

196

00:12:02,700 --> 00:12:01,090

you love science and technology

197

00:12:04,740 --> 00:12:02,710

great because it is what there are more

198

00:12:07,500 --> 00:12:04,750

engineers and scientists but it is also

199

00:12:08,910 --> 00:12:07,510

important to mention that other careers

200

00:12:10,500 --> 00:12:08,920

that are not scientific also have

201

00:12:12,450 --> 00:12:10,510

many possibilities to work at

202

00:12:16,110 --> 00:12:12,460

NASA that is my point of view what do you think

203

00:12:18,840 --> 00:12:16,120

about me my journey has been somewhat

204

00:12:21,330 --> 00:12:18,850

similar to michel's although we work

205

00:12:23,640 --> 00:12:21,340

in different areas as i mentioned

206

00:12:27,720 --> 00:12:23,650

initially i am passionate about science and

207

00:12:30,540 --> 00:12:27,730

always had that desire to venture and

208

00:12:32,430 --> 00:12:30,550

develop as a I was a professional in

209

00:12:35,280 --> 00:12:32,440

the area of ■■science and technology

210

00:12:37,290 --> 00:12:35,290

and I knew that NASA had this

211

00:12:39,810 --> 00:12:37,300

very large program focused on this planet

212

00:12:42,630 --> 00:12:39,820

earth using satellite images,

213

00:12:44,970 --> 00:12:42,640

so that

214

00:12:48,570 --> 00:12:44,980

was more or less my journey

215

00:12:51,210 --> 00:12:48,580

studying electrical media using

216

00:12:53,530 --> 00:12:51,220

technology and then applied physics

217

00:12:55,569 --> 00:12:53,540

towards the environment

218

00:12:58,300 --> 00:12:55,579

one opportunity led to another and I

219

00:13:00,790 --> 00:12:58,310

got here thanks to the opportunity to

220

00:13:03,970 --> 00:13:00,800

be able to do part of the research for

221

00:13:05,980 --> 00:13:03,980

my master's thesis here at NASA and

222

00:13:08,949 --> 00:13:05,990

that opportunity opened another

223

00:13:11,139 --> 00:13:08,959

opportunity for me to be able to do part of

224

00:13:14,850 --> 00:13:11,149

my research PhD here at

225

00:13:17,280 --> 00:13:14,860

NASA too and from there

226

00:13:20,250 --> 00:13:17,290

when I finished well the team of

227

00:13:22,680 --> 00:13:20,260

scientists invited me to be part

228

00:13:26,820 --> 00:13:22,690

of the team of scientists

229

00:13:28,890 --> 00:13:26,830

here at NASA so it's god there have been

230

00:13:30,930 --> 00:13:28,900

a series of opportunities but I think

231

00:13:33,780 --> 00:13:30,940

the most important in my life was being

232

00:13:38,160 --> 00:13:33,790

able to come here to NASA initially

233

00:13:40,470 --> 00:13:38,170

as a student not only for me to not

234

00:13:42,840 --> 00:13:40,480

gain experience but also to

235

00:13:44,510 --> 00:13:42,850

let people and other

236

00:13:47,550 --> 00:13:44,520

scientists within the organization

237

00:13:49,200 --> 00:13:47,560

know who I am and to make myself known and

238

00:13:51,990 --> 00:13:49,210

also explore the opportunities that

239

00:13:53,130 --> 00:13:52,000

They existed within the institution very

240

00:13:56,220 --> 00:13:53,140

well

241

00:13:58,050 --> 00:13:56,230

I also forgot to mention that I

242

00:14:00,450 --> 00:13:58,060

too, like Erika, did my

243

00:14:04,350 --> 00:14:00,460

PhD research in engine

244

00:14:06,360 --> 00:14:04,360

skin here so I took classes

245

00:14:08,130 --> 00:14:06,370

at Caltech but then all the

246

00:14:09,840 --> 00:14:08,140

scientific part of the PhD I also did

247

00:14:11,700 --> 00:14:09,850

here in my skin then This is very

248

00:14:13,170 --> 00:14:11,710

important because when I finish my

249

00:14:15,300 --> 00:14:13,180

doctoral program, they also offered a job,

250

00:14:16,760 --> 00:14:15,310

so it is very important to do

251  
00:14:18,840 --> 00:14:16,770  
an internship here that does not

252  
00:14:22,439 --> 00:14:18,850  
make itself known

253  
00:14:24,329 --> 00:14:22,449  
very well and is somewhat related to what they

254  
00:14:26,430 --> 00:14:24,339  
have been talking about. I have another

255  
00:14:29,370 --> 00:14:26,440  
question from the public, this one came to us from this

256  
00:14:31,680 --> 00:14:29,380  
Rolando Alfaro, who asks you about Erika,

257  
00:14:34,470 --> 00:14:31,690  
firstly, what is your main research goal

258  
00:14:36,420 --> 00:14:34,480  
and secondly, what do you think about

259  
00:14:39,540 --> 00:14:36,430  
basic research or what is called

260  
00:14:41,880 --> 00:14:39,550  
in English basic research and NASA?

261  
00:14:45,810 --> 00:14:41,890  
The goal of my main research

262  
00:14:48,269 --> 00:14:45,820  
was purely my focus. My area of

263  
00:14:50,730 --> 00:14:48,279

study is the earth then used

264

00:14:52,460 --> 00:14:50,740

satellite images to study

265

00:14:55,949 --> 00:14:52,470

our planet earth specifically

266

00:14:59,009 --> 00:14:55,959

the continents and how everything is

267

00:15:01,079 --> 00:14:59,019

interrelated global processes and

268

00:15:05,100 --> 00:15:01,089

what are the effects of

269

00:15:08,160 --> 00:15:05,110

climate change on different

270

00:15:10,440 --> 00:15:08,170

aspects of our environment in

271

00:15:12,870 --> 00:15:10,450

terms of basic research the

272

00:15:14,759 --> 00:15:12,880

basics beat and songs there is a great focus

273

00:15:16,980 --> 00:15:14,769

on the basic crisis date

274

00:15:19,470 --> 00:15:16,990

basic research in earth sciences by

275

00:15:23,190 --> 00:15:19,480

NASA because they are topics that

276

00:15:25,980 --> 00:15:23,200

are of the utmost importance and if NASA

277

00:15:28,139 --> 00:15:25,990

is increasing its

278

00:15:30,480 --> 00:15:28,149

emphasis on Earth observation every time,

279

00:15:34,500 --> 00:15:30,490

for example in the next six years

280

00:15:36,389 --> 00:15:34,510

are going to take place between now and 2015, sorry, there are going to

281

00:15:39,980 --> 00:15:36,399

be six new satellites for

282

00:15:39,980 --> 00:15:42,480

earth observation, so

283

00:15:49,590 --> 00:15:47,610

basic research was definitely becoming

284

00:15:52,439 --> 00:15:49,600

stronger and more important within the

285

00:15:53,610 --> 00:15:52,449

organization, very well, very well,

286

00:15:55,439 --> 00:15:53,620

now We go back to the

287

00:15:59,660 --> 00:15:55,449

participants that we have online. Maria

288

00:16:05,720 --> 00:16:03,200

and you are quite representative. I

289

00:16:08,020 --> 00:16:05,730

think NASA personnel

290

00:16:11,960 --> 00:16:08,030

are not very varied. They come from many

291

00:16:14,150 --> 00:16:11,970

different backgrounds of different

292

00:16:15,410 --> 00:16:14,160

nationalities.

293

00:16:17,480 --> 00:16:15,420

I would like you to explain it a bit.

294

00:16:19,340 --> 00:16:17,490

What is it like to work at NASA? The

295

00:16:23,860 --> 00:16:19,350

work environment and the type of people I

296

00:16:28,580 --> 00:16:26,390

can start

297

00:16:31,340 --> 00:16:28,590

with the work environment. It's very,

298

00:16:33,680 --> 00:16:31,350

really. It's very international.

299

00:16:36,200 --> 00:16:33,690

One thing I've learned, I've worked here for almost

300

00:16:38,740 --> 00:16:36,210

all these five years. years in the

301  
00:16:41,810 --> 00:16:38,750  
mission and one that is a mission to Jupiter

302  
00:16:44,810 --> 00:16:41,820  
as a satellite that has been managed

303  
00:16:47,090 --> 00:16:44,820  
here in the beginning and so in this

304  
00:16:48,890 --> 00:16:47,100  
project there are instruments from all over the

305  
00:16:51,860 --> 00:16:48,900  
world, not only American but also

306  
00:16:55,130 --> 00:16:51,870  
European and in fact part of my job

307  
00:16:58,900 --> 00:16:55,140  
was to make the interface between NASA and the

308  
00:17:02,630 --> 00:16:58,910  
Italian space agency, so in

309  
00:17:04,850 --> 00:17:02,640  
these years

310  
00:17:05,930 --> 00:17:04,860  
international collaboration is essential, especially

311  
00:17:09,320 --> 00:17:05,940  
in the world we live in. Now we

312  
00:17:12,110 --> 00:17:09,330  
have to constantly collaborate on

313  
00:17:14,090 --> 00:17:12,120

projects with other countries, it is

314

00:17:16,520 --> 00:17:14,100

also very important from a scientific point of

315

00:17:18,980 --> 00:17:16,530

view because it they share

316

00:17:20,810 --> 00:17:18,990

ideas and so unity

317

00:17:22,390 --> 00:17:20,820

is strength so

318

00:17:26,170 --> 00:17:24,670

this aspect of our work is very important and I also

319

00:17:29,440 --> 00:17:26,180

love it because he is a person

320

00:17:32,230 --> 00:17:29,450

who really likes to talk to people from

321

00:17:33,880 --> 00:17:32,240

other countries and that makes it very

322

00:17:37,000 --> 00:17:33,890

exciting no so that's part of

323

00:17:39,670 --> 00:17:37,010

our work is also what I have

324

00:17:42,900 --> 00:17:39,680

noticed is that the scientists and

325

00:17:45,400 --> 00:17:42,910

engineers here in my skin are very, very

326

00:17:47,950 --> 00:17:45,410

little arrogant people, not in general,

327

00:17:50,140 --> 00:17:47,960

people are very simple, you can meet

328

00:17:52,030 --> 00:17:50,150

Nobel Prize winners and they are the most

329

00:17:54,460 --> 00:17:52,040

simple people, they talk to you that It is an

330

00:17:57,820 --> 00:17:54,470

environment that is truly

331

00:17:59,920 --> 00:17:57,830

appreciated very much. It is a

332

00:18:02,110 --> 00:17:59,930

very good environment to work in where you can

333

00:18:03,100 --> 00:18:02,120

develop very interesting ideas and the

334

00:18:05,080 --> 00:18:03,110

truth is that I think that is why we

335

00:18:09,880 --> 00:18:05,090

are here because we are very, very

336

00:18:15,170 --> 00:18:13,910

I just wanted to add it plays every time and

337

00:18:18,350 --> 00:18:15,180

Michel to that it is a place where there are

338

00:18:20,390 --> 00:18:18,360

talents from all over the world and a

339

00:18:23,060 --> 00:18:20,400

very important thing in the work that

340

00:18:27,050 --> 00:18:23,070

both michelle and I do is

341

00:18:29,720 --> 00:18:27,060

international collaboration and here every

342

00:18:32,270 --> 00:18:29,730

day I work with collaborators from

343

00:18:34,340 --> 00:18:32,280

all parts of the world of

344

00:18:36,710 --> 00:18:34,350

academic institutions of space agencies from

345

00:18:38,270 --> 00:18:36,720

different parts of the world and when one

346

00:18:40,820 --> 00:18:38,280

thinks about issues related to the

347

00:18:43,580 --> 00:18:40,830

environment, the problems are not

348

00:18:46,910 --> 00:18:43,590

just regional or from country to country, that is,

349

00:18:49,910 --> 00:18:46,920

they are problems that must be seen at a

350

00:18:51,020 --> 00:18:49,920

global level, they transcend borders and therefore that

351  
00:18:53,930 --> 00:18:51,030  
is so important the

352  
00:18:56,330 --> 00:18:53,940  
internal collaboration and look very well now let's move on

353  
00:19:01,700 --> 00:18:56,340  
to our library the

354  
00:19:01,710 --> 00:19:05,260  
and opportunely they

355  
00:19:10,910 --> 00:19:07,270  
approach the camera and ask the

356  
00:19:24,050 --> 00:19:13,230  
the question I had they

357  
00:19:30,020 --> 00:19:28,460  
listening that the question is

358  
00:19:33,090 --> 00:19:30,030  
discontinuous

359  
00:19:36,360 --> 00:19:33,100  
but that they are going to send another six here in the

360  
00:19:38,490 --> 00:19:36,370  
coming years if God gives us

361  
00:19:41,850 --> 00:19:38,500  
answers to questions that they had ok

362  
00:19:43,920 --> 00:19:41,860  
very well thank you thank you for everything because

363  
00:19:46,610 --> 00:19:43,930

we went to the library of another union

364

00:19:48,500 --> 00:19:46,620

any questions

365

00:19:51,050 --> 00:19:48,510

amen

366

00:19:53,090 --> 00:19:51,060

we want to know what the most

367

00:19:56,169 --> 00:19:53,100

exciting part of your work what do

368

00:20:00,820 --> 00:19:56,179

you like the most

369

00:20:03,460 --> 00:20:00,830

that is a difficult question because everything

370

00:20:05,619 --> 00:20:03,470

is fascinating about my work being a

371

00:20:08,080 --> 00:20:05,629

scientist first it is a lifestyle

372

00:20:10,600 --> 00:20:08,090

I say it is

373

00:20:12,760 --> 00:20:10,610

living what I am passionate about is how to

374

00:20:16,180 --> 00:20:12,770

practice my hobby everyday i

375

00:20:18,399 --> 00:20:16,190

don't see it as a job it's something i

376

00:20:20,950 --> 00:20:18,409

enjoy so much i would do it

377

00:20:22,990 --> 00:20:20,960

anyway if it wasn't my job and every

378

00:20:25,659 --> 00:20:23,000

day is different for me it's the life of

379

00:20:26,950 --> 00:20:25,669

a scientist it has many

380

00:20:29,529 --> 00:20:26,960

different aspects

381

00:20:32,380 --> 00:20:29,539

i have to be involved in my

382

00:20:34,510 --> 00:20:32,390

research I have to keep up

383

00:20:36,909 --> 00:20:34,520

with the latest research

384

00:20:38,830 --> 00:20:36,919

being done in my field I have to

385

00:20:41,850 --> 00:20:38,840

be publishing my latest

386

00:20:43,990 --> 00:20:41,860

results I go to conferences to

387

00:20:45,940 --> 00:20:44,000

collaborate and talk with other

388

00:20:48,130 --> 00:20:45,950

scientists and to present my work

389

00:20:50,950 --> 00:20:48,140

I also go to the field to collect

390

00:20:53,340 --> 00:20:50,960

field data like this which is very very varied and

391

00:20:57,750 --> 00:20:53,350

everything is fascinating

392

00:21:00,000 --> 00:20:57,760

very well if what is going to be said that

393

00:21:02,940 --> 00:21:00,010

in my case right now I am doing

394

00:21:04,590 --> 00:21:02,950

research but before in the

395

00:21:06,060 --> 00:21:04,600

last five years as I was

396

00:21:07,680 --> 00:21:06,070

working on what someone calls

397

00:21:09,330 --> 00:21:07,690

skin a mission of I fly a flight

398

00:21:11,430 --> 00:21:09,340

project

399

00:21:13,130 --> 00:21:11,440

so the lifestyle is very

400

00:21:16,430 --> 00:21:13,140

different from the

401  
00:21:19,690 --> 00:21:16,440  
research lifestyle simply yes so it

402  
00:21:22,710 --> 00:21:19,700  
requires a lot of travel we

403  
00:21:25,000 --> 00:21:22,720  
had to constantly travel

404  
00:21:27,490 --> 00:21:25,010  
as I mentioned before to Europe to

405  
00:21:29,259 --> 00:21:27,500  
Italy to have meetings with the

406  
00:21:31,810 --> 00:21:29,269  
engineers and scientists from the

407  
00:21:33,340 --> 00:21:31,820  
Italian space agency then we have to

408  
00:21:34,899 --> 00:21:33,350  
meet on other occasions with all

409  
00:21:37,000 --> 00:21:34,909  
the scientists and engineers of all the

410  
00:21:39,490 --> 00:21:37,010  
mission of all the instruments to

411  
00:21:42,070 --> 00:21:39,500  
decide the different non-

412  
00:21:43,860 --> 00:21:42,080  
scientific objectives of the mission and then I

413  
00:21:47,049 --> 00:21:43,870

have also worked a lot like doing many

414

00:21:48,610 --> 00:21:47,059

many tests of the instruments with

415

00:21:50,830 --> 00:21:48,620

which it has been we have collaborated a lot

416

00:21:53,289 --> 00:21:50,840

with lockheed martin so i

417

00:21:54,610 --> 00:21:53,299

had to go to colorado to test the

418

00:21:56,919 --> 00:21:54,620

integration of the instruments in the

419

00:21:58,690 --> 00:21:56,929

satellite before i had to do all

420

00:22:02,259 --> 00:21:58,700

these tests of the instruments

421

00:22:04,299 --> 00:22:02,269

in the different centers where we

422

00:22:08,110 --> 00:22:04,309

design them we go these have been a

423

00:22:09,759 --> 00:22:08,120

lifestyle totally quite intense but

424

00:22:12,330 --> 00:22:09,769

very interesting because it was my dream to

425

00:22:16,299 --> 00:22:12,340

really work on a mission that is going

426

00:22:19,180 --> 00:22:16,309

to jupiter not to go and see that everything went very

427

00:22:21,070 --> 00:22:19,190

well we launched it in august 2011

428

00:22:23,649 --> 00:22:21,080

and it is on its way to jupiter it will arrive in

429

00:22:26,259 --> 00:22:23,659

2016 so it has been that lifestyle

430

00:22:28,719 --> 00:22:26,269

super super frantic but

431

00:22:30,009 --> 00:22:28,729

very interesting and now I am going back

432

00:22:32,169 --> 00:22:30,019

to do a little more research

433

00:22:33,909 --> 00:22:32,179

and as the ica has said it is very similar to what it

434

00:22:36,839 --> 00:22:33,919

says since you have to

435

00:22:39,459 --> 00:22:36,849

always be studying and developing things

436

00:22:42,129 --> 00:22:39,469

but the truth is that both are

437

00:22:44,680 --> 00:22:42,139

very interesting and we think it's

438

00:22:46,029 --> 00:22:44,690

a game we're not enjoying it I

439

00:22:49,169 --> 00:22:46,039

really don't think it's working

440

00:22:52,599 --> 00:22:49,179

I think it's [ \_\_\_ ] good since it's very good

441

00:22:54,129 --> 00:22:52,609

very good well let's move on to another question

442

00:22:56,129 --> 00:22:54,139

from the public they are sent to Víctor

443

00:22:58,539 --> 00:22:56,139

candelas a very interesting question

444

00:23:01,599 --> 00:22:58,549

some of you consider that

445

00:23:04,539 --> 00:23:01,609

The relationship between

446

00:23:10,060 --> 00:23:04,549

astronomical science and philosophical and theological reflection is fruitful.

447

00:23:24,620 --> 00:23:18,080

This is a deep question and I do

448

00:23:32,210 --> 00:23:28,430

direct answer to that question as a scientist or

449

00:23:34,700 --> 00:23:32,220

we know the scientific part and the part

450

00:23:38,720 --> 00:23:34,710

that is not the data that the different

451

00:23:40,940 --> 00:23:38,730

satellites they provide us so that we

452

00:23:42,919 --> 00:23:40,950

only see that aspect, no, but I think

453

00:23:45,799 --> 00:23:42,929

that if one starts thinking about beyond,

454

00:23:47,450 --> 00:23:45,809

if there is a very philosophical and very theological part of

455

00:23:52,730 --> 00:23:49,610

the universe, how big is it that there is

456

00:23:55,100 --> 00:23:52,740

beyond how it was created, that is, nothing more?

457

00:24:00,470 --> 00:23:55,110

Thinking about the concept of distances

458

00:24:04,090 --> 00:24:00,480

and time is something that is far

459

00:24:07,570 --> 00:24:04,100

beyond what one relates

460

00:24:09,669 --> 00:24:07,580

very well to this question, the next one I

461

00:24:12,159 --> 00:24:09,679

received from the public, I am going to address it

462

00:24:15,010 --> 00:24:12,169

to my chela because it has something to do

463

00:24:17,919 --> 00:24:15,020

with what she mentioned before and they

464

00:24:20,799 --> 00:24:17,929

ask us is it possible to enter

465

00:24:24,130 --> 00:24:20,809

NASA to work in science as a

466

00:24:26,740 --> 00:24:24,140

person without a career in science or

467

00:24:28,630 --> 00:24:26,750

aeronautics what advice would you give to

468

00:24:31,450 --> 00:24:28,640

people who dream of working in

469

00:24:33,250 --> 00:24:31,460

dance so that they can enter and I

470

00:24:35,770 --> 00:24:33,260

would also like it to cover a bit of the

471

00:24:38,260 --> 00:24:35,780

angle of also to people who do

472

00:24:39,970 --> 00:24:38,270

not want or are not necessarily

473

00:24:41,890 --> 00:24:39,980

interested in science in that aspect

474

00:24:45,580 --> 00:24:41,900

but who would also like to contribute to the

475

00:24:47,869 --> 00:24:45,590

space program yes exactly it refers to

476

00:24:51,109 --> 00:24:47,879

what I have commented before

477

00:24:54,349 --> 00:24:51,119

if it is very true NASA is huge and there are

478

00:24:56,569 --> 00:24:54,359

a lot of people working and obviously

479

00:25:00,919 --> 00:24:56,579

not all of us are not all of us are

480

00:25:04,609 --> 00:25:00,929

scientists-engineers so the field

481

00:25:06,469 --> 00:25:04,619

of space involves many, let's say,

482

00:25:09,649 --> 00:25:06,479

different fields not many areas of

483

00:25:12,469 --> 00:25:09,659

knowledge so it's very important,

484

00:25:14,269 --> 00:25:12,479

for example, all the lawyers who

485

00:25:18,199 --> 00:25:14,279

work in all this law

486

00:25:21,680 --> 00:25:18,209

space is what twitter twitter

487

00:25:23,329 --> 00:25:21,690

space there are many regulations and many

488

00:25:25,999 --> 00:25:23,339

things that were kind of in progress

489

00:25:27,949 --> 00:25:26,009

because we still have to

490

00:25:30,019 --> 00:25:27,959

regulate all this kind of thing, no,

491

00:25:32,419 --> 00:25:30,029

so this is a field where people

492

00:25:34,159 --> 00:25:32,429

who, for example, are lawyers and

493

00:25:36,109 --> 00:25:34,169

want to get involved In the space field, there is

494

00:25:40,249 --> 00:25:36,119

a lot of work to be done in this

495

00:25:43,519 --> 00:25:40,259

sense. For example, economists

496

00:25:43,519 --> 00:25:45,349

and people who work in business matters,

497

00:25:48,700 --> 00:25:47,389

it is very important to have money to be

498

00:25:50,889 --> 00:25:48,710

able to

499

00:25:52,930 --> 00:25:50,899

do space missions, so

500

00:25:55,480 --> 00:25:52,940

I think that having good people who

501  
00:25:57,880 --> 00:25:55,490  
are good people in finance

502  
00:26:00,279 --> 00:25:57,890  
and In economics it is essential to be able to

503  
00:26:03,789 --> 00:26:00,289  
have sufficient resources to be

504  
00:26:07,840 --> 00:26:03,799  
able to send a mission because it requires

505  
00:26:10,289 --> 00:26:07,850  
money so that is very important, that is,

506  
00:26:12,760 --> 00:26:10,299  
there are many, there are many fields that

507  
00:26:12,760 --> 00:26:14,649  
are also necessary in the artistic field.

508  
00:26:20,049 --> 00:26:17,799  
a director of

509  
00:26:22,960 --> 00:26:20,059  
actel and then they create different

510  
00:26:25,330 --> 00:26:22,970  
exhibitions that are also shown here

511  
00:26:27,549 --> 00:26:25,340  
in leather and in other places and then they

512  
00:26:30,970 --> 00:26:27,559  
show the missions a little of how well

513  
00:26:32,919 --> 00:26:30,980

they do and it is very interesting to see that

514

00:26:36,250 --> 00:26:32,929

we mean that

515

00:26:39,480 --> 00:26:36,260

you can direct all kinds of fields to the space and

516

00:26:42,789 --> 00:26:39,490

you can work in the space sector

517

00:26:44,799 --> 00:26:42,799

so I think it is very important

518

00:26:46,750 --> 00:26:44,809

then for example if you think all this

519

00:26:48,820 --> 00:26:46,760

is scientific not for example the doctors

520

00:26:51,340 --> 00:26:48,830

who work to help

521

00:26:54,430 --> 00:26:51,350

astronauts then there are doctors who

522

00:26:56,560 --> 00:26:54,440

specialize in helping astronauts

523

00:27:00,249 --> 00:26:56,570

astronauts to do all the

524

00:27:02,110 --> 00:27:00,259

tests to be able to develop their career, that

525

00:27:03,789 --> 00:27:02,120

is, there are many careers that you don't

526

00:27:06,759 --> 00:27:03,799

have to be purely

527

00:27:08,440 --> 00:27:06,769

scientific engineering and biology, there is so much

528

00:27:11,080 --> 00:27:08,450

research in different fields that

529

00:27:12,369 --> 00:27:11,090

I think that really almost any

530

00:27:14,320 --> 00:27:12,379

career that you study

531

00:27:16,659 --> 00:27:14,330

if you want to give the direction later, no

532

00:27:20,139 --> 00:27:16,669

of space, that is, if you really

533

00:27:22,790 --> 00:27:20,149

like space, there are almost all the

534

00:27:26,300 --> 00:27:22,800

careers, well, orient in this direction,

535

00:27:29,030 --> 00:27:26,310

very well, very well, let's move on to Maria Jose,

536

00:27:32,660 --> 00:27:29,040

something, no other questions,

537

00:27:33,680 --> 00:27:32,670

if you ask me, especially for Erika, I

538

00:27:35,480 --> 00:27:33,690

think there is still a little bit of

539

00:27:39,080 --> 00:27:35,490  
perception. that working to earn

540

00:27:42,050 --> 00:27:39,090  
is working on space things and I

541

00:27:46,159 --> 00:27:42,060  
would like you to talk a little about everything

542

00:27:48,979 --> 00:27:46,169  
that NASA does with our planet

543

00:27:53,330 --> 00:27:48,989  
if NASA has a great focus on

544

00:27:55,190 --> 00:27:53,340  
our planet earth we have 15

545

00:27:57,349 --> 00:27:55,200  
satellites that are in orbit around

546

00:28:00,080 --> 00:27:57,359  
the earth observing the different

547

00:28:02,470 --> 00:28:00,090  
components of our environment and

548

00:28:05,119 --> 00:28:02,480  
these satellites help us understand

549

00:28:07,549 --> 00:28:05,129  
global processes and that is the

550

00:28:10,129 --> 00:28:07,559  
advantage of having satellites in space

551  
00:28:12,710 --> 00:28:10,139  
observing the earth that

552  
00:28:15,019 --> 00:28:12,720  
are continuously observing the same areas and

553  
00:28:16,849 --> 00:28:15,029  
we can see how

554  
00:28:21,169 --> 00:28:16,859  
different ecosystems are changing or if they are

555  
00:28:24,229 --> 00:28:21,179  
changing one so if there is a big

556  
00:28:27,349 --> 00:28:24,239  
emphasis we study the earth in three

557  
00:28:30,169 --> 00:28:27,359  
different main areas the oceans

558  
00:28:32,239 --> 00:28:30,179  
the atmosphere and the continents and how

559  
00:28:34,519 --> 00:28:32,249  
they are all interrelated so

560  
00:28:39,259 --> 00:28:34,529  
as I mentioned earlier by

561  
00:28:42,409 --> 00:28:39,269  
2015 we will be putting 6

562  
00:28:45,259 --> 00:28:42,419  
earth observing satellites in orbit

563  
00:28:47,800 --> 00:28:45,269

very good and María José you have another

564

00:28:50,920 --> 00:28:47,810

question related to that

565

00:28:53,020 --> 00:28:50,930

if you mention the importance of the

566

00:28:55,330 --> 00:28:53,030

satellites but for example in your case you

567

00:28:56,530 --> 00:28:55,340

also do the field work and I

568

00:28:57,930 --> 00:28:56,540

would like you to explain how

569

00:29:01,090 --> 00:28:57,940

the two works

570

00:29:02,590 --> 00:29:01,100

absolutely complement each other so I use the

571

00:29:05,950 --> 00:29:02,600

satellite images to do

572

00:29:08,260 --> 00:29:05,960

large-scale studies but

573

00:29:10,420 --> 00:29:08,270

I need what we call validation

574

00:29:13,590 --> 00:29:10,430

I need to know exactly what is

575

00:29:16,660 --> 00:29:13,600

happening in certain places so I

576

00:29:19,600 --> 00:29:16,670

can extrapolate so I can

577

00:29:23,049 --> 00:29:19,610

identify those same places

578

00:29:25,750 --> 00:29:23,059

within the images to larger areas

579

00:29:29,169 --> 00:29:25,760

so that's why it's important

580

00:29:31,690 --> 00:29:29,179

go to the field and be able to understand the

581

00:29:33,549 --> 00:29:31,700

different ecosystems and he studied wetlands a lot

582

00:29:37,610 --> 00:29:33,559

for example i

583

00:29:42,380 --> 00:29:40,640

humidity very specific and very important

584

00:29:45,110 --> 00:29:42,390

for him

585

00:29:47,150 --> 00:29:45,120

in terms of water resources and in

586

00:29:50,510 --> 00:29:47,160

terms of methane carbon emissions

587

00:29:52,610 --> 00:29:50,520

so if i can understand and know

588

00:29:55,520 --> 00:29:52,620

exactly what's going on with the

589

00:29:57,440 --> 00:29:55,530

wetlands in one location and I can

590

00:30:00,680 --> 00:29:57,450

identify them on the satellite images

591

00:30:04,250 --> 00:30:00,690

so I can identify other places

592

00:30:07,030 --> 00:30:04,260

that look the same in areas outside of my

593

00:30:09,560 --> 00:30:07,040

study area very good very good

594

00:30:16,130 --> 00:30:09,570

let's move on to today's library with my

595

00:30:22,550 --> 00:30:18,110

still haven't heard you

596

00:30:26,150 --> 00:30:22,560

try again now and agree that we've

597

00:30:30,110 --> 00:30:26,160

learned about the space pro that just

598

00:30:32,330 --> 00:30:30,120

left that the solar system and

599

00:30:37,629 --> 00:30:32,340

this was done by natalie who is 20

600

00:30:45,410 --> 00:30:41,350

what is it i'm going yesterday actually just just

601  
00:30:49,790 --> 00:30:45,420  
just to be in the news

602  
00:30:51,890 --> 00:30:49,800  
the debate if I go today now it has left

603  
00:30:54,080 --> 00:30:51,900  
our solar system or it has not left

604  
00:30:57,170 --> 00:30:54,090  
our solar system so there are

605  
00:30:58,910 --> 00:30:57,180  
two different currents nascar and I know

606  
00:31:02,150 --> 00:30:58,920  
that I am going yesterday it has not yet left

607  
00:31:04,400 --> 00:31:02,160  
our solar system and there are other

608  
00:31:08,720 --> 00:31:04,410  
entities academics that are saying

609  
00:31:10,930 --> 00:31:08,730  
that it's out now so we're going to wait a

610  
00:31:12,820 --> 00:31:10,940  
couple more years to

611  
00:31:14,170 --> 00:31:12,830  
see what the results are but what

612  
00:31:17,110 --> 00:31:14,180  
is happening now is that there are

613  
00:31:20,350 --> 00:31:17,120

solar winds or energy from the sun

614

00:31:23,710 --> 00:31:20,360

and we are still thinking about that energy

615

00:31:25,240 --> 00:31:23,720

from the sun but we are there are also

616

00:31:27,610 --> 00:31:25,250

indicators that there are winds from

617

00:31:29,590 --> 00:31:27,620

different directions, not only from behind

618

00:31:32,110 --> 00:31:29,600

that come from the sun but from different

619

00:31:35,800 --> 00:31:32,120

sides and that without here that we are in a

620

00:31:37,630 --> 00:31:35,810

stage or in a part of our

621

00:31:40,720 --> 00:31:37,640

solar system that is probably in transition

622

00:31:42,940 --> 00:31:40,730

and we do not know how wide It is that

623

00:31:44,740 --> 00:31:42,950

transition zone but if we have determined

624

00:31:46,450 --> 00:31:44,750

that we are still within the solar system it

625

00:31:46,460 --> 00:31:50,870

is the position of the cream

626  
00:31:58,430 --> 00:31:53,720  
very well let's go to the high road library

627  
00:32:02,269 --> 00:32:00,470  
any questions not yet not very well

628  
00:32:04,940 --> 00:32:02,279  
because we follow a question from the public

629  
00:32:08,149 --> 00:32:04,950  
this is not sent by Luis Eduardo

630  
00:32:11,299 --> 00:32:08,159  
sterling stop who asks us what

631  
00:32:13,249 --> 00:32:11,309  
additional academic requirements

632  
00:32:16,730 --> 00:32:13,259  
NASA applicants must have and mentions for

633  
00:32:18,470 --> 00:32:16,740  
example language behavior and

634  
00:32:20,539 --> 00:32:18,480  
personal characteristics think

635  
00:32:23,060 --> 00:32:20,549  
about those other attributes that

636  
00:32:25,999 --> 00:32:23,070  
help you to work and do

637  
00:32:29,119 --> 00:32:26,009  
your job well there at nasa yes exactly

638  
00:32:32,210 --> 00:32:29,129

I think that it is as important as having

639

00:32:34,190 --> 00:32:32,220

a technical training or any type

640

00:32:37,249 --> 00:32:34,200

of career that you study, not to work

641

00:32:38,960 --> 00:32:37,259

in NASA, it is also very important to be

642

00:32:43,629 --> 00:32:38,970

able to work as a team with other

643

00:32:46,519 --> 00:32:43,639

people, to have the ability to

644

00:32:49,460 --> 00:32:46,529

work with people not only from other

645

00:32:51,350 --> 00:32:49,470

countries like We have commented before on the

646

00:32:53,210 --> 00:32:51,360

radio about people from other countries of other

647

00:32:55,549 --> 00:32:53,220

cultures who have another way of

648

00:32:57,560 --> 00:32:55,559

communicating, so you have to have a

649

00:33:00,369 --> 00:32:57,570

certain level of emotional intelligence.

650

00:33:02,720 --> 00:33:00,379

I think it is very important to be able to

651

00:33:04,879 --> 00:33:02,730

understand other people, to have an

652

00:33:06,230 --> 00:33:04,889

open mind, to be tolerant with other

653

00:33:08,090 --> 00:33:06,240

people.

654

00:33:10,460 --> 00:33:08,100

Because of course, obviously we have grown up

655

00:33:12,169 --> 00:33:10,470

in different countries and so

656

00:33:13,490 --> 00:33:12,179

what for you means something

657

00:33:15,020 --> 00:33:13,500

totally different to other people,

658

00:33:16,880 --> 00:33:15,030

then you have to have the ability

659

00:33:19,130 --> 00:33:16,890

to see the world

660

00:33:21,470 --> 00:33:19,140

through the eyes of another person, not to

661

00:33:23,360 --> 00:33:21,480

be able to understand how they think, not today

662

00:33:28,460 --> 00:33:23,370

and So I think it's very important

663

00:33:31,940 --> 00:33:28,470

not to have that ability to

664

00:33:33,710 --> 00:33:31,950

understand and then also because

665

00:33:37,280 --> 00:33:33,720

I think it's very important to have a

666

00:33:39,169 --> 00:33:37,290

bit where people are, not the

667

00:33:43,779 --> 00:33:39,179

social process to be able to talk to other people

668

00:33:45,519 --> 00:33:43,789

while enjoying working with other people I

669

00:33:47,379 --> 00:33:45,529

think it's It is also something very

670

00:33:49,840 --> 00:33:47,389

important because if you only

671

00:33:51,909 --> 00:33:49,850

do science and you only work on a

672

00:33:53,889 --> 00:33:51,919

very specialized thing and maybe you don't,

673

00:33:56,919 --> 00:33:53,899

but always as we have mentioned

674

00:33:58,210 --> 00:33:56,929

before it is very important even if you work

675

00:34:00,159 --> 00:33:58,220

not as a specialist, here you always

676

00:34:01,690 --> 00:34:00,169

work on your own, well in the end you have

677

00:34:03,549 --> 00:34:01,700

that collaborating with other scientists and

678

00:34:05,680 --> 00:34:03,559

seven other people is very

679

00:34:07,239 --> 00:34:05,690

important then and then you are in a

680

00:34:09,220 --> 00:34:07,249

flight project like I have been, it is

681

00:34:10,809 --> 00:34:09,230

fundamental because if it is not

682

00:34:12,549 --> 00:34:10,819

impossible I have worked with hundreds of

683

00:34:14,859 --> 00:34:12,559

people you have to have the ability

684

00:34:16,569 --> 00:34:14,869

to speak in different Languages ■■is one

685

00:34:16,569 --> 00:34:18,629

thing, what I was saying about languages ■■is true.

686

00:34:22,680 --> 00:34:20,460

I speak 45 languages ■■and that has

687

00:34:23,579 --> 00:34:22,690

made it much easier for me to be

688

00:34:25,829 --> 00:34:23,589

involved in our

689

00:34:27,329 --> 00:34:25,839

international projects, because of course having

690

00:34:29,220 --> 00:34:27,339

this collaboration with people from Spain

691

00:34:30,690 --> 00:34:29,230

and Italy said, well, Michelle to

692

00:34:34,200 --> 00:34:30,700

college. Italian to perfect because

693

00:34:35,940 --> 00:34:34,210

apart from having the technical preparation,

694

00:34:38,190 --> 00:34:35,950

speaking is the language they speak

695

00:34:40,799 --> 00:34:38,200

so it was very, very

696

00:34:43,799 --> 00:34:40,809

important to the meeting and it made clear unions

697

00:34:45,180 --> 00:34:43,809

much easier so not

698

00:34:47,250 --> 00:34:45,190

only the language but also I understand

699

00:34:49,169 --> 00:34:47,260

European culture Italian culture

700

00:34:51,089 --> 00:34:49,179

Spanish culture so in our

701  
00:34:53,250 --> 00:34:51,099  
interaction with Italians it was very

702  
00:34:55,259 --> 00:34:53,260  
easy while other people who

703  
00:34:58,109 --> 00:34:55,269  
perhaps did not have that experience because they did

704  
00:35:00,240 --> 00:34:58,119  
not understand certain things well so

705  
00:35:02,599 --> 00:35:00,250  
I think it is very important if you have

706  
00:35:04,490 --> 00:35:02,609  
the possibility of studying languages

707  
00:35:07,410 --> 00:35:04,500  
the more the better

708  
00:35:09,779 --> 00:35:07,420  
speaking of Spanish for Right now, for example,

709  
00:35:11,430 --> 00:35:09,789  
Spanish, the latest

710  
00:35:12,870 --> 00:35:11,440  
statistics that I have read, is that it is the

711  
00:35:15,089 --> 00:35:12,880  
second most spoken language

712  
00:35:17,130 --> 00:35:15,099  
in the world after Chinese, so

713  
00:35:20,400 --> 00:35:17,140

having this power of such a rich and

714

00:35:22,140 --> 00:35:20,410

important language is essential, so

715

00:35:24,480 --> 00:35:22,150

the more languages ■■you speak and how many,

716

00:35:27,260 --> 00:35:24,490

the more capacity You will have

717

00:35:29,270 --> 00:35:27,270

better with other people,

718

00:35:31,730 --> 00:35:29,280

better and more successful, you will have all your

719

00:35:34,250 --> 00:35:31,740

projects, which I think is important and

720

00:35:36,920 --> 00:35:34,260

absolutely I think it is one

721

00:35:39,890 --> 00:35:36,930

more thing to add, it is of the utmost importance,

722

00:35:42,590 --> 00:35:39,900

communication is being able to communicate

723

00:35:45,620 --> 00:35:42,600

effectively both in writing and

724

00:35:48,950 --> 00:35:45,630

orally because it is essential. for

725

00:35:50,690 --> 00:35:48,960

us to be able to communicate in our

726

00:35:52,490 --> 00:35:50,700

results what we are doing not

727

00:35:55,580 --> 00:35:52,500

only with other scientists but with the

728

00:35:57,920 --> 00:35:55,590

general public, very well, another

729

00:36:01,040 --> 00:35:57,930

question and this room I am going to direct to

730

00:36:04,240 --> 00:36:01,050

erika who have been the role models

731

00:36:07,630 --> 00:36:04,250

that have motivated you in your career

732

00:36:11,830 --> 00:36:07,640

the models An excellent

733

00:36:16,900 --> 00:36:14,440

I believe that mainly in my mother

734

00:36:19,600 --> 00:36:16,910

my mother has been a motivating force

735

00:36:22,690 --> 00:36:19,610

in my life, she has always supported me and

736

00:36:26,820 --> 00:36:22,700

has always encouraged me to follow my

737

00:36:30,340 --> 00:36:26,830

dreams and in terms of

738

00:36:33,490 --> 00:36:30,350

Latin American models that we all know.

739

00:36:36,160 --> 00:36:33,500

I would say there are 21 is franklin chang

740

00:36:39,370 --> 00:36:36,170

diaz frank and chang diaz is a

741

00:36:42,880 --> 00:36:39,380

costa rican astronaut a person who has had

742

00:36:47,470 --> 00:36:42,890

an incredible journey he flew in the

743

00:36:49,810 --> 00:36:47,480

space station seven times seven

744

00:36:52,660 --> 00:36:49,820

different times so he is an

745

00:36:57,400 --> 00:36:52,670

amazing person with many accomplishments and the other

746

00:37:01,240 --> 00:36:57,410

person is is shakira shakira because

747

00:37:03,580 --> 00:37:01,250

-he said- shakira because despite all

748

00:37:06,880 --> 00:37:03,590

her successes she is a person who

749

00:37:09,640 --> 00:37:06,890

has never forgotten the needs

750

00:37:12,730 --> 00:37:09,650

of people with few resources

751

00:37:15,309 --> 00:37:12,740

and has a foundation to focus on

752

00:37:17,559 --> 00:37:15,319

that kind of thing not bare feet

753

00:37:21,370 --> 00:37:17,569

is called the foundation, so I admire

754

00:37:23,259 --> 00:37:21,380

that a lot and also that Shakira dances in

755

00:37:26,519 --> 00:37:23,269

a way that I would love to be able to

756

00:37:35,319 --> 00:37:31,720

very well. Maria Jose Another question if

757

00:37:38,109 --> 00:37:35,329

you had any advice to give to young

758

00:37:39,910 --> 00:37:38,119

Latin Americans or Spanish-speakers,

759

00:37:43,880 --> 00:37:39,920

especially girls who wanted to dedicate it to them

760

00:37:48,630 --> 00:37:45,950

I would say that as we have

761

00:37:51,099 --> 00:37:48,640

commented that I

762

00:37:54,130 --> 00:37:51,109

fundamentally if you have a dream and

763

00:37:57,069 --> 00:37:54,140

have a passion

764

00:37:58,750 --> 00:37:57,079

for something, in this case in space,

765

00:38:01,120 --> 00:37:58,760

we hope that after this talk you will

766

00:38:03,220 --> 00:38:01,130

be more excited that you really

767

00:38:05,859 --> 00:38:03,230

follow it or until the end than if you have a

768

00:38:08,260 --> 00:38:05,869

I dream and you really set your mind to it and you

769

00:38:10,540 --> 00:38:08,270

want to do it. Nothing is impossible because

770

00:38:13,240 --> 00:38:10,550

look, we're already here, neither of us

771

00:38:15,970 --> 00:38:13,250

are from the US and we've come a

772

00:38:17,950 --> 00:38:15,980

long way, and well, she - but

773

00:38:20,650 --> 00:38:17,960

we come and go from other countries and

774

00:38:23,230 --> 00:38:20,660

so I think that it really is. they

775

00:38:23,980 --> 00:38:23,240

set their mind to something and want it all, it is

776

00:38:28,030 --> 00:38:23,990

possible

777

00:38:30,339 --> 00:38:28,040

that they will never continue to insist or if

778

00:38:33,849 --> 00:38:30,349

they have some type of obstacle that they continue

779

00:38:35,530 --> 00:38:33,859

to insist and that they always have

780

00:38:37,839 --> 00:38:35,540

the support of your family is very important as

781

00:38:39,550 --> 00:38:37,849

erika has commented on our mothers

782

00:38:41,720 --> 00:38:39,560

I also have to mention my mother

783

00:38:44,060 --> 00:38:41,730

because it

784

00:38:46,580 --> 00:38:44,070

is not very important for my mother it has been

785

00:38:50,120 --> 00:38:46,590

fundamental and it is very important

786

00:38:54,080 --> 00:38:50,130

to have the support of your family who always

787

00:38:55,880 --> 00:38:54,090

support you in all your decisions and I

788

00:38:58,340 --> 00:38:55,890

think because having a good

789

00:39:01,130 --> 00:38:58,350

preparation preparing yourself well and having

790

00:39:05,860 --> 00:39:01,140

your goals clear I simply go

791

00:39:10,420 --> 00:39:08,590

very well now let's go to the

792

00:39:13,230 --> 00:39:10,430

old town library and a hall for the next

793

00:39:19,290 --> 00:39:16,109

although the next one is made by

794

00:39:21,900 --> 00:39:19,300

alex who is 10 years old it starts so if

795

00:39:27,800 --> 00:39:21,910

nasa flew for the first to go into

796

00:39:33,360 --> 00:39:30,570

the first to putting a satellite in

797

00:39:35,580 --> 00:39:33,370

space it was the russians with the satellite

798

00:39:39,030 --> 00:39:35,590

called sputnik a couple of months

799

00:39:40,710 --> 00:39:39,040

later the usa exposed the first set the

800

00:39:44,610 --> 00:39:40,720

first american satellite in

801  
00:39:46,450 --> 00:39:44,620  
space this was in 1958 called

802  
00:39:51,820 --> 00:39:46,460  
explore one

803  
00:39:53,950 --> 00:39:51,830  
and very well another question we received

804  
00:39:57,070 --> 00:39:53,960  
from the public is the following this came from

805  
00:39:59,589 --> 00:39:57,080  
juan camilo buitrago casas I think we are going to

806  
00:40:01,359 --> 00:39:59,599  
address it to michelle what do you

807  
00:40:04,420 --> 00:40:01,369  
think are the

808  
00:40:06,670 --> 00:40:04,430  
most relevant scientific objectives were in astronomy

809  
00:40:08,680 --> 00:40:06,680  
to be explored in the

810  
00:40:12,700 --> 00:40:08,690  
coming decades

811  
00:40:14,620 --> 00:40:12,710  
it is a long question but well a large

812  
00:40:18,280 --> 00:40:14,630  
part of it For example, this is a

813  
00:40:20,770 --> 00:40:18,290

sample of the Juno mission in the case of

814

00:40:23,760 --> 00:40:20,780

Junos, or what we want is to

815

00:40:25,870 --> 00:40:23,770

learn as much as possible about Jupiter,

816

00:40:29,490 --> 00:40:25,880

so what the

817

00:40:33,609 --> 00:40:29,500

instruments on the 'Juno' spacecraft are going to do is

818

00:40:35,200 --> 00:40:33,619

take images and data With

819

00:40:39,150 --> 00:40:35,210

tape instruments, different wavelengths,

820

00:40:41,380 --> 00:40:39,160

frequencies that are going to go to

821

00:40:44,109 --> 00:40:41,390

penetrate different depths in the

822

00:40:45,910 --> 00:40:44,119

atmosphere of Jupiter, and then we are going to

823

00:40:49,270 --> 00:40:45,920

know that we are going to obtain from

824

00:40:50,770 --> 00:40:49,280

Jupiter from the interior of Jupiter, it will

825

00:40:53,470 --> 00:40:50,780

help us to understand fundamental processes

826

00:40:57,550 --> 00:40:53,480

of the formation and initial evolution

827

00:40:59,559 --> 00:40:57,560

of Jupiter and the solar system and

828

00:41:02,349 --> 00:40:59,569

then understanding how

829

00:41:03,430 --> 00:41:02,359

other planets like Earth could be created, that is

830

00:41:05,290 --> 00:41:03,440

fundamental,

831

00:41:08,020 --> 00:41:05,300

so I think part of the

832

00:41:10,810 --> 00:41:08,030

objectives of the entire

833

00:41:12,940 --> 00:41:10,820

astronomy program is to understand

834

00:41:14,740 --> 00:41:12,950

where there are other planets that

835

00:41:18,490 --> 00:41:14,750

can be like the earth where they have been

836

00:41:20,410 --> 00:41:18,500

able to form what kind of processes

837

00:41:23,320 --> 00:41:20,420

gave rise to planets like the earth

838

00:41:25,360 --> 00:41:23,330

that then at the end of the place

839

00:41:27,640 --> 00:41:25,370

a planet that may have life in the

840

00:41:30,460 --> 00:41:27,650

case of one this mission that commented to

841

00:41:32,110 --> 00:41:30,470

jupiter in which he worked and we are going

842

00:41:35,530 --> 00:41:32,120

We want to know how much water there is on

843

00:41:37,900 --> 00:41:35,540

Jupiter, so discovering this is the

844

00:41:39,550 --> 00:41:37,910

most important piece of information will give us much

845

00:41:41,170 --> 00:41:39,560

more information about how the earth was formed

846

00:41:44,170 --> 00:41:41,180

and how water arose on

847

00:41:46,180 --> 00:41:44,180

earth and how this whole process will

848

00:41:48,060 --> 00:41:46,190

help us understand how it can the emergence

849

00:41:50,680 --> 00:41:48,070

of water or life on other planets

850

00:41:54,190 --> 00:41:50,690

so I think because that is a large part

851

00:41:56,770 --> 00:41:54,200

of the objectives that NASA has at

852

00:41:59,140 --> 00:41:56,780

that time in the

853

00:42:01,690 --> 00:41:59,150

good case if these manned and unmanned missions

854

00:42:04,930 --> 00:42:01,700

as you know there is the

855

00:42:08,170 --> 00:42:04,940

curiosity mission that is called the ms Marsans

856

00:42:10,210 --> 00:42:08,180

Life Lab of hers and the one

857

00:42:12,370 --> 00:42:10,220

that landed on Mars recently with great success,

858

00:42:15,280 --> 00:42:12,380

so

859

00:42:18,220 --> 00:42:15,290

there are missions like I installed, that first the

860

00:42:20,260 --> 00:42:18,230

idea is to send robots to obtain more

861

00:42:22,690 --> 00:42:20,270

data on the ground and then

862

00:42:25,230 --> 00:42:22,700

later to be able to send crews or

863

00:42:28,420 --> 00:42:25,240

manned missions, human missions to

864

00:42:30,760 --> 00:42:28,430

Mars In a few years we hope

865

00:42:34,299 --> 00:42:30,770

then the important thing is to have good

866

00:42:36,309 --> 00:42:34,309

planning and that during these years we

867

00:42:40,120 --> 00:42:36,319

can have these objectives

868

00:42:43,109 --> 00:42:40,130

so that in the end we can colonize

869

00:42:45,760 --> 00:42:43,119

other planets or at least we hope

870

00:42:48,910 --> 00:42:45,770

so

871

00:42:51,790 --> 00:42:48,920

another question from the public I will

872

00:42:55,320 --> 00:42:51,800

direct it to you Erika is how she balances her

873

00:42:57,840 --> 00:42:55,330

work with her personal life.

874

00:42:59,790 --> 00:42:57,850

That's a super good question because

875

00:43:02,010 --> 00:42:59,800

as I mentioned before, my work

876

00:43:04,590 --> 00:43:02,020

is like my hobby and it's something that I

877

00:43:06,300 --> 00:43:04,600

would be doing anyway if it

878

00:43:09,260 --> 00:43:06,310

wasn't my job, I mean, I'm passionate about

879

00:43:12,180 --> 00:43:09,270

what I'm doing. I am passionate about it because it is

880

00:43:13,800 --> 00:43:12,190

an area where I am involved with the

881

00:43:17,370 --> 00:43:13,810

environment with the latest

882

00:43:20,700 --> 00:43:17,380

technology with very real problems

883

00:43:24,030 --> 00:43:20,710

such as the interconnection with my

884

00:43:26,850 --> 00:43:24,040

personal life yes I have a personal life

885

00:43:29,670 --> 00:43:26,860

and I do things related to

886

00:43:32,640 --> 00:43:29,680

nature no so in my

887

00:43:35,580 --> 00:43:32,650

personal life I am very involved with

888

00:43:38,490 --> 00:43:35,590

activities outside of nature I

889

00:43:41,250 --> 00:43:38,500

really like to go

890

00:43:44,600 --> 00:43:41,260

camping I love the water and I

891

00:43:48,270 --> 00:43:44,610

love velez or windsurfing so

892

00:43:51,480 --> 00:43:48,280

yes and every time I am outside I always

893

00:43:52,980 --> 00:43:51,490

have that curiosity to know more and

894

00:43:55,210 --> 00:43:52,990

learn more about our

895

00:43:59,890 --> 00:43:55,220

environment and nature

896

00:44:04,480 --> 00:43:59,900

as a feeling that it is my mission in

897

00:44:06,520 --> 00:44:04,490

life and to be able to preserve how beautiful

898

00:44:08,380 --> 00:44:06,530

our environment is so that

899

00:44:10,050 --> 00:44:08,390

future generations can also

900

00:44:13,630 --> 00:44:10,060

enjoy it so

901  
00:44:16,930 --> 00:44:13,640  
my professional and personal life is very interrelated

902  
00:44:20,470 --> 00:44:16,940  
but like this It is, I mean, it is what I

903  
00:44:23,560 --> 00:44:20,480  
love and both are part of me, that is, I do

904  
00:44:25,570 --> 00:44:23,570  
n't see a difference between me going out to

905  
00:44:28,050 --> 00:44:25,580  
enjoy nature and me coming to

906  
00:44:30,160 --> 00:44:28,060  
work, I enjoy both of them enormously,

907  
00:44:33,090 --> 00:44:30,170  
very well,

908  
00:44:39,090 --> 00:44:36,810  
if this is for both of us, I They asked

909  
00:44:41,700 --> 00:44:39,100  
if you carry out scientific dissemination activities

910  
00:44:44,010 --> 00:44:41,710  
similar to this very often

911  
00:44:46,560 --> 00:44:44,020  
and if so, what kind of reflections

912  
00:44:47,940 --> 00:44:46,570  
do you have about things that work when

913  
00:44:49,890 --> 00:44:47,950

we try to connect with the public and

914

00:44:51,460 --> 00:44:49,900

things that scientists could

915

00:44:53,950 --> 00:44:51,470

improve?

916

00:44:57,530 --> 00:44:53,960

Yes, I think so, both Erika and

917

00:44:59,900 --> 00:44:57,540

I participate. In different activities we

918

00:45:03,290 --> 00:44:59,910

always go to volunteer

919

00:45:05,450 --> 00:45:03,300

if they ask us to always access whenever we can,

920

00:45:08,510 --> 00:45:05,460

not because of the projects

921

00:45:11,510 --> 00:45:08,520

but yes, in other activities that I have

922

00:45:14,210 --> 00:45:11,520

participated there was also

923

00:45:16,160 --> 00:45:14,220

another group of Spanish-speaking people who

924

00:45:17,930 --> 00:45:16,170

also gave skin here and

925

00:45:20,390 --> 00:45:17,940

asked me what it tells them a talk

926

00:45:22,760 --> 00:45:20,400

about you know about the mission I think it

927

00:45:26,480 --> 00:45:22,770

is always very important

928

00:45:28,610 --> 00:45:26,490

maybe to teach something of what we

929

00:45:31,070 --> 00:45:28,620

work on some sample maybe you have

930

00:45:33,830 --> 00:45:31,080

seen talking about that sometimes what he

931

00:45:36,260 --> 00:45:33,840

taught is this model of you know that

932

00:45:39,410 --> 00:45:36,270

I have here so the question It has come in

933

00:45:42,470 --> 00:45:39,420

very handy or if it looks like that,

934

00:45:44,599 --> 00:45:42,480

then it is one of the things that I

935

00:45:47,359 --> 00:45:44,609

sometimes wear when I give a talk.

936

00:45:48,890 --> 00:45:47,369

Your gallery here, don't worry, so it

937

00:45:50,270 --> 00:45:48,900

's a good shape because that

938

00:45:53,510 --> 00:45:50,280

's how it looks a little.

939

00:45:55,609 --> 00:45:53,520

solar panels on the

940

00:45:58,099 --> 00:45:55,619

antenna so people get a little

941

00:46:00,740 --> 00:45:58,109

idea of ■■how it is not and

942

00:46:03,079 --> 00:46:00,750

so I think that an image is always

943

00:46:05,030 --> 00:46:03,089

worth a thousand words so

944

00:46:08,240 --> 00:46:05,040

always have a model of something an

945

00:46:10,190 --> 00:46:08,250

image a photo of what you do

946

00:46:11,569 --> 00:46:10,200

people always see research

947

00:46:13,460 --> 00:46:11,579

as something more real, more tangible, no,

948

00:46:16,130 --> 00:46:13,470

so I think that it is very

949

00:46:17,599 --> 00:46:16,140

important to have something like this, visual, what

950

00:46:20,569 --> 00:46:17,609

people see says something, it

951  
00:46:23,660 --> 00:46:20,579  
makes sense or not, so I see

952  
00:46:27,650 --> 00:46:23,670  
that it helps me a lot in the You talk,

953  
00:46:29,720 --> 00:46:27,660  
what do you think about it? I think it is very

954  
00:46:33,109 --> 00:46:29,730  
important for us as

955  
00:46:35,510 --> 00:46:33,119  
scientists to communicate our

956  
00:46:38,630 --> 00:46:35,520  
results to the general public, and on

957  
00:46:40,579 --> 00:46:38,640  
environmental issues, for example, these are

958  
00:46:42,680 --> 00:46:40,589  
such important issues because they affect

959  
00:46:45,220 --> 00:46:42,690  
all the changes that are

960  
00:46:49,330 --> 00:46:45,230  
taking place in the environment. environment

961  
00:46:51,880 --> 00:46:49,340  
and more important is being able to communicate what

962  
00:46:55,420 --> 00:46:51,890  
we are learning so that the

963  
00:46:57,370 --> 00:46:55,430

general public can know what they

964

00:46:59,260 --> 00:46:57,380

can do to stop these

965

00:47:01,050 --> 00:46:59,270

changes or to adapt to the changes

966

00:47:02,670 --> 00:47:01,060

that are coming. It

967

00:47:04,800 --> 00:47:02,680

is also related to what

968

00:47:07,650 --> 00:47:04,810

we were talking about before because when

969

00:47:08,760 --> 00:47:07,660

they also asked us about personality and

970

00:47:10,920 --> 00:47:08,770

that is one thing that I forgot to

971

00:47:13,170 --> 00:47:10,930

say beforehand and that is that no matter what

972

00:47:14,910 --> 00:47:13,180

you know you can know a lot but if you do not

973

00:47:16,770 --> 00:47:14,920

communicate it to others no one will ever

974

00:47:18,150 --> 00:47:16,780

know what you do or know the good

975

00:47:21,930 --> 00:47:18,160

results you have been able to To have, then,

976  
00:47:23,820 --> 00:47:21,940  
is very important, very well, in the

977  
00:47:27,859 --> 00:47:23,830  
author's library, or a hall, another

978  
00:47:33,739 --> 00:47:31,249  
if this is our last question, how

979  
00:47:36,650 --> 00:47:33,749  
did you learn as girls about

980  
00:47:41,200 --> 00:47:36,660  
space by reading books or listening to the

981  
00:47:48,370 --> 00:47:45,670  
since I was a little girl, I don't know

982  
00:47:51,160 --> 00:47:48,380  
why Because my family hasn't

983  
00:47:52,840 --> 00:47:51,170  
worked in the aerospace sector but I don't

984  
00:47:54,940 --> 00:47:52,850  
know, it's something that has always been one thing, it

985  
00:47:57,100 --> 00:47:54,950  
's in me then, for example, on

986  
00:47:58,360 --> 00:47:57,110  
television I saw the launches and it was

987  
00:48:00,610 --> 00:47:58,370  
that they came out,

988  
00:48:02,980 --> 00:48:00,620

tears came to my eyes because the to see

989

00:48:04,990 --> 00:48:02,990

that you can find spaces outside

990

00:48:06,850 --> 00:48:05,000

our planet, I don't know about it, something

991

00:48:09,070 --> 00:48:06,860

exciting that I don't know where it

992

00:48:11,350 --> 00:48:09,080

came from, honestly, but I've always

993

00:48:13,480 --> 00:48:11,360

had this passion and so I've

994

00:48:16,420 --> 00:48:13,490

followed it, that is, always being crazy or power

995

00:48:18,640 --> 00:48:16,430

for space and these things and then

996

00:48:21,220 --> 00:48:18,650

Also in Spain I have been lucky in

997

00:48:23,140 --> 00:48:21,230

Madrid we have the complex one of the

998

00:48:25,090 --> 00:48:23,150

three antenna complexes of the deep space

999

00:48:27,220 --> 00:48:25,100

network which is the network of

1000

00:48:29,560 --> 00:48:27,230

space antennas great fund of NASA which is

1001

00:48:32,650 --> 00:48:29,570

called el robledo de chavela and so whether you

1002

00:48:34,750 --> 00:48:32,660

want it or not growing today In Madrid, in

1003

00:48:36,100 --> 00:48:34,760

Madrid, the space news talks a lot,

1004

00:48:38,290 --> 00:48:36,110

almost always there is some news

1005

00:48:40,030 --> 00:48:38,300

and then they talk from time to time, they

1006

00:48:42,460 --> 00:48:40,040

say, oh, well, the Robledo de

1007

00:48:44,140 --> 00:48:42,470

Chavela complex, the monitoring station for

1008

00:48:46,150 --> 00:48:44,150

that satellite, other satellites, so I have

1009

00:48:47,650 --> 00:48:46,160

always been aware of what

1010

00:48:48,069 --> 00:48:47,660

they said about that roble de chavela discovered

1011

00:48:53,289 --> 00:48:51,880

what data they had then if, for example, we

1012

00:48:55,180 --> 00:48:53,299

also have past theses from the

1013

00:48:57,729 --> 00:48:55,190

monitoring center I am always

1014

00:49:00,400 --> 00:48:57,739

very interested in this and I have followed all this

1015

00:49:02,079 --> 00:49:00,410

type of news but honestly it has

1016

00:49:04,029 --> 00:49:02,089

been the cream on me and I have

1017

00:49:05,079 --> 00:49:04,039

followed it and here I'm here but no one has

1018

00:49:07,209 --> 00:49:05,089

put it into my head or told me

1019

00:49:09,160 --> 00:49:07,219

you have to do this backwards my mother

1020

00:49:11,829 --> 00:49:09,170

told me well, calm down if you see that

1021

00:49:14,049 --> 00:49:11,839

the degree is very difficult you relax so

1022

00:49:16,150 --> 00:49:14,059

study something else because she saw me

1023

00:49:18,069 --> 00:49:16,160

that I was there for hours and hours studying

1024

00:49:21,190 --> 00:49:18,079

and the exams are very difficult in

1025

00:49:23,170 --> 00:49:21,200

engineering no but today well no no I'm going

1026

00:49:25,029 --> 00:49:23,180

to continue because I like it and I say like

1027

00:49:27,099 --> 00:49:25,039

erika it's not like we've been

1028

00:49:29,199 --> 00:49:27,109

passionate and I think you need to

1029

00:49:32,790 --> 00:49:29,209

have this passion and this

1030

00:49:35,530 --> 00:49:32,800

perseverance existence to be able

1031

00:49:37,090 --> 00:49:35,540

follow it and be able to do it because if not the

1032

00:49:39,970 --> 00:49:37,100

truth is that it is a lot of work and you have to

1033

00:49:44,069 --> 00:49:39,980

have a lot of effort to make

1034

00:49:47,219 --> 00:49:44,079

if in my case in Panama

1035

00:49:51,569 --> 00:49:47,229

as a child you used to go camping

1036

00:49:54,209 --> 00:49:51,579

frequently and I was always fascinated by

1037

00:49:57,180 --> 00:49:54,219

seeing the stars tropical nights

1038

00:49:59,940 --> 00:49:57,190

are extremely dark and I was fascinated by

1039

00:50:02,190 --> 00:49:59,950

seeing all the stars and thinking about

1040

00:50:04,499 --> 00:50:02,200

all the space programs that

1041

00:50:06,359 --> 00:50:04,509

were already in place at that time and apart from that I

1042

00:50:08,640 --> 00:50:06,369

also watched a lot of Star Trek television

1043

00:50:11,849 --> 00:50:08,650

and that kind of thing but I was more

1044

00:50:15,420 --> 00:50:11,859

passionate about the environment and

1045

00:50:18,569 --> 00:50:15,430

nature and I knew For me, my

1046

00:50:21,449 --> 00:50:18,579

focus was going to be the use of this

1047

00:50:23,960 --> 00:50:21,459

state-of-the-art technology

1048

00:50:26,810 --> 00:50:23,970

for observing the earth.

1049

00:50:28,400 --> 00:50:26,820

Very well, we are running out of

1050

00:50:30,410 --> 00:50:28,410

minutes, so I am going to ask you two

1051

00:50:33,830 --> 00:50:30,420

questions, one each and

1052

00:50:36,290 --> 00:50:33,840

think about what they are for Erika. the

1053

00:50:39,859 --> 00:50:36,300

disciplines of science or engineering

1054

00:50:42,380 --> 00:50:39,869

that are most in demand in your department and

1055

00:50:47,540 --> 00:50:42,390

for Michel, how difficult is it

1056

00:50:53,130 --> 00:50:50,339

because the disciplines in which there is the most

1057

00:50:55,170 --> 00:50:53,140

demand in my department, the

1058

00:50:58,109 --> 00:50:55,180

truth is that they are all in demand

1059

00:51:00,540 --> 00:50:58,119

because what happens is that

1060

00:51:02,490 --> 00:51:00,550

global processes is not just about one discipline it

1061

00:51:04,620 --> 00:51:02,500

's not just about chemistry or

1062

00:51:08,069 --> 00:51:04,630

biology or ecology or hydrology

1063

00:51:10,640 --> 00:51:08,079

everything is so interrelated that we

1064

00:51:12,480 --> 00:51:10,650

have to be what we call

1065

00:51:15,120 --> 00:51:12,490

multidisciplinary and that's why

1066

00:51:17,910 --> 00:51:15,130

we put together such diverse and

1067

00:51:20,730 --> 00:51:17,920

international teams because not everyone knows

1068

00:51:23,370 --> 00:51:20,740

and I'm not an expert in everything and that's why

1069

00:51:26,550 --> 00:51:23,380

I need experts in my team

1070

00:51:28,859 --> 00:51:26,560

in different areas so you

1071

00:51:30,839 --> 00:51:28,869

couldn't say that there is a

1072

00:51:33,180 --> 00:51:30,849

specific area that is more important than the

1073

00:51:34,920 --> 00:51:33,190

other right now in terms of changes

1074

00:51:36,539 --> 00:51:34,930

climatic and all these things that

1075

00:51:40,589 --> 00:51:36,549

we are seeing

1076

00:51:42,329 --> 00:51:40,599

one thing an area of ■■■study that is

1077

00:51:44,999 --> 00:51:42,339

taking more and more emphasis and

1078

00:51:47,370 --> 00:51:45,009

importance are water resources

1079

00:51:50,370 --> 00:51:47,380

water and coincidentally I am working

1080

00:51:53,640 --> 00:51:50,380

on the mission to put a satellite into

1081

00:51:57,239 --> 00:51:53,650

orbit next year in 2014 and the

1082

00:51:59,669 --> 00:51:57,249

purpose of this satellite will be to study

1083

00:52:03,829 --> 00:51:59,679

the water resources of our planet

1084

00:52:06,959 --> 00:52:03,839

and project what the condition will be and

1085

00:52:11,870 --> 00:52:06,969

how access to water will be in

1086

00:52:11,880 --> 00:52:14,550

mitchell,

1087

00:52:22,590 --> 00:52:18,000

well, the truth is that all the You

1088

00:52:26,370 --> 00:52:22,600

have to think about the process of having a mission

1089

00:52:29,220 --> 00:52:26,380

years in advance, not from the people, what

1090

00:52:31,080 --> 00:52:29,230

they do is throw it out, a kind of

1091

00:52:33,840 --> 00:52:31,090

request for application of the proposal,

1092

00:52:35,850 --> 00:52:33,850

not a research proposal, at the

1093

00:52:38,820 --> 00:52:35,860

beginning, what the piales call the

1094

00:52:40,610 --> 00:52:38,830

principal investigators, it

1095

00:52:44,010 --> 00:52:40,620

starts a little like that. not in the formulation

1096

00:52:47,250 --> 00:52:44,020

then normally the mission begins

1097

00:52:49,309 --> 00:52:47,260

like this a series of scientists meet and what

1098

00:52:51,589 --> 00:52:49,319

they do is that well

1099

00:52:54,019 --> 00:52:51,599

made in a proposal for NASA

1100

00:52:56,599 --> 00:52:54,029

or to see if this mission for example in

1101

00:52:59,059 --> 00:52:56,609

the case of one was thought good we want

1102

00:53:01,009 --> 00:52:59,069

a satellite that Go to Jupiter with a

1103

00:53:02,420 --> 00:53:01,019

certain elliptical polar orbit to

1104

00:53:04,999 --> 00:53:02,430

avoid Jupiter's most powerful radiation

1105

00:53:07,160 --> 00:53:05,009

and to be able to reach a

1106

00:53:09,949 --> 00:53:07,170

much higher resolution than

1107

00:53:11,390 --> 00:53:09,959

other missions and to be able to discover as

1108

00:53:13,519 --> 00:53:11,400

close as possible to Jupiter there is no

1109

00:53:16,279 --> 00:53:13,529

interior structure so for

1110

00:53:19,819 --> 00:53:16,289

example let's say that a mission is like

1111

00:53:21,519 --> 00:53:19,829

moi one is a very long-term mission

1112

00:53:24,019 --> 00:53:21,529

because that starts from the formulation

1113

00:53:25,729 --> 00:53:24,029

people who have been working these years and

1114

00:53:28,130 --> 00:53:25,739

years before the satellite

1115

00:53:29,900 --> 00:53:28,140

can even leave the earth so there are

1116

00:53:32,509 --> 00:53:29,910

years and years of preparation of

1117

00:53:34,069 --> 00:53:32,519

preparation of the proposal and then that

1118

00:53:36,620 --> 00:53:34,079

proposal has to be approved

1119

00:53:38,170 --> 00:53:36,630

once it is tested you start

1120

00:53:40,969 --> 00:53:38,180

the project a bit in different phases

1121

00:53:44,239 --> 00:53:40,979

then once you go to the

1122

00:53:46,339 --> 00:53:44,249

initial phase then you go to the

1123

00:53:48,289 --> 00:53:46,349

development phase and then in that phase

1124

00:53:51,140 --> 00:53:48,299

development is when, for example,

1125

00:53:53,329 --> 00:53:51,150

the design of all the

1126

00:53:54,559 --> 00:53:53,339

satellite instruments

1127

00:53:55,700 --> 00:53:54,569

begins, the design of

1128

00:53:57,620 --> 00:53:55,710

what the satellite is,

1129

00:53:59,810 --> 00:53:57,630

the subsystems of the satellites of the

1130

00:54:03,230 --> 00:53:59,820

telecommunication system, the

1131

00:54:05,120 --> 00:54:03,240

mechanical thermal system, everything that has to be there must be

1132

00:54:07,550 --> 00:54:05,130

a design and development of

1133

00:54:11,750 --> 00:54:07,560

all the systems and instruments and

1134

00:54:14,980 --> 00:54:11,760

so it really is a very

1135

00:54:17,960 --> 00:54:14,990

complex process that takes many years for

1136

00:54:20,359 --> 00:54:17,970

many people a huge team of

1137

00:54:22,339 --> 00:54:20,369

people in general and international as we

1138

00:54:24,859 --> 00:54:22,349

have said before and the truth is that it is

1139

00:54:26,270 --> 00:54:24,869

very complicated because you think that

1140

00:54:28,900 --> 00:54:26,280

you have to do all these instruments

1141

00:54:31,970 --> 00:54:28,910

design the all have to be able to

1142

00:54:35,120 --> 00:54:31,980

integrate later in the satellite and

1143

00:54:36,410 --> 00:54:35,130

be able to survive all kinds of tests

1144

00:54:39,109 --> 00:54:36,420

that we do the satellite because what

1145

00:54:41,630 --> 00:54:39,119

we do is that we simulate the conditions

1146

00:54:43,370 --> 00:54:41,640

of jupiter we know the radiation

1147

00:54:45,290 --> 00:54:43,380

that is going to see in jupiter we know more or

1148

00:54:46,970 --> 00:54:45,300

less socially the magnetic field is due to the

1149

00:54:49,010 --> 00:54:46,980

environmental conditions of jupiter

1150

00:54:50,720 --> 00:54:49,020

so we have had to design all

1151

00:54:53,150 --> 00:54:50,730

the instruments so that it can

1152

00:54:55,310 --> 00:54:53,160

survive a whole year orbiting

1153

00:54:57,230 --> 00:54:55,320

jupiter and that they cannot or are damaged by

1154

00:54:58,310 --> 00:54:57,240

radiation because otherwise they would die and

1155

00:54:59,960 --> 00:54:58,320

then not anymore you have no

1156

00:55:02,450 --> 00:54:59,970

scientific data so one of my

1157

00:55:04,849 --> 00:55:02,460

main objectives working on you has not been to

1158

00:55:07,099 --> 00:55:04,859

design these instruments so that they give

1159

00:55:10,490 --> 00:55:07,109

the maximum possible science so that

1160

00:55:12,980 --> 00:55:10,500

scientists and let's say the human race

1161

00:55:15,290 --> 00:55:12,990

in general do not get the most possible

1162

00:55:17,630 --> 00:55:15,300

from this mission to be able to learn more

1163

00:55:21,170 --> 00:55:17,640

of how the earth and life were formed,

1164

00:55:23,630 --> 00:55:21,180

so I have seen from my experience

1165

00:55:26,180 --> 00:55:23,640

with one that it is a very complex process that

1166

00:55:28,099 --> 00:55:26,190

requires very good organization,

1167

00:55:29,540 --> 00:55:28,109

excellent communication between all the

1168

00:55:32,359 --> 00:55:29,550

people who work because a

1169

00:55:36,020 --> 00:55:32,369

communication failure can mean the

1170

00:55:38,140 --> 00:55:36,030

destruction of the satellite, that is that it is

1171

00:55:41,720 --> 00:55:38,150

very important to have coordination

1172

00:55:44,210 --> 00:55:41,730

among all of them and then to be able to design these

1173

00:55:46,760 --> 00:55:44,220

instruments exactly with the

1174

00:55:49,450 --> 00:55:46,770

adequate requirements that all

1175

00:55:52,220 --> 00:55:49,460

three survive on earth, whether they are in the

1176

00:55:53,900 --> 00:55:52,230

center that designed the instrument, then it

1177

00:55:55,880 --> 00:55:53,910

is in the

1178

00:55:59,089 --> 00:55:55,890

integration center that has made the satellite that

1179

00:56:01,490 --> 00:55:59,099

was in colorado and then in a cruise to

1180

00:56:04,430 --> 00:56:01,500

jupiter that is, it really is a

1181

00:56:06,230 --> 00:56:04,440

very complex thing that until you work

1182

00:56:07,640 --> 00:56:06,240

on it you don't realize all the

1183

00:56:11,000 --> 00:56:07,650

complexity that is

1184

00:56:13,430 --> 00:56:11,010

is that it is needed so really that

1185

00:56:18,140 --> 00:56:13,440

anyone is The missions go well, it's

1186

00:56:20,690 --> 00:56:18,150

an incredible success, so I hope that

1187

00:56:22,280 --> 00:56:20,700

too, the fact that she is so so much so

1188

00:56:23,930 --> 00:56:22,290

complex is what I think makes

1189

00:56:25,490 --> 00:56:23,940

Erika and we excited because

1190

00:56:27,920 --> 00:56:25,500

otherwise it would be very boring, we always have

1191

00:56:29,420 --> 00:56:27,930

something different to do, some

1192

00:56:31,480 --> 00:56:29,430

new problem to solve. and so it

1193

00:56:34,970 --> 00:56:31,490

makes you a much more interesting job

1194

00:56:37,580 --> 00:56:34,980

very well and it's happening very fast now

1195

00:56:39,920 --> 00:56:37,590

so I would like to ask you if you have

1196

00:56:42,040 --> 00:56:39,930

a brief message with which to leave

1197

00:56:45,760 --> 00:56:42,050

the audience

1198

00:56:49,120 --> 00:56:45,770

without my message to the young women who

1199

00:56:51,490 --> 00:56:49,130

have connected is to continue and

1200

00:56:53,980 --> 00:56:51,500

study what you are passionate about that

1201

00:56:56,800 --> 00:56:53,990

is always the most important thing to do something you are

1202

00:56:58,570 --> 00:56:56,810

passionate about and look for opportunities

1203

00:57:00,460 --> 00:56:58,580

today with technology with the

1204

00:57:03,610 --> 00:57:00,470

internet you cannot go online and

1205

00:57:06,820 --> 00:57:03,620

look for opportunities study and

1206

00:57:10,020 --> 00:57:06,830

gain work experience both

1207

00:57:15,010 --> 00:57:10,030

as a volunteer or as a pay them and

1208

00:57:17,020 --> 00:57:15,020

finally do not give up knock on doors and

1209

00:57:19,090 --> 00:57:17,030

if they close one door they knock on another

1210

00:57:22,180 --> 00:57:19,100

and knock on another and look for

1211

00:57:24,430 --> 00:57:22,190

opportunities until they get them and

1212

00:57:27,550 --> 00:57:24,440

also a message for parents is

1213

00:57:30,720 --> 00:57:27,560

essential or extremely important

1214

00:57:34,560 --> 00:57:30,730

I think that the support of parents

1215

00:57:37,530 --> 00:57:34,570

so that their children move forward and that they

1216

00:57:40,980 --> 00:57:37,540

motivate them in the areas that they

1217

00:57:43,710 --> 00:57:40,990

like so that was my experience and

1218

00:57:46,470 --> 00:57:43,720

thanks to the support of my mother and my father

1219

00:57:48,570 --> 00:57:46,480

I am here today, the same advice was

1220

00:57:52,710 --> 00:57:48,580

passed on to all the parents

1221

00:57:54,900 --> 00:57:52,720

who you are listening today if I well yes

1222

00:57:58,020 --> 00:57:54,910

adding to what eric has said I

1223

00:58:00,090 --> 00:57:58,030

will tell you the same thing that all these

1224

00:58:02,520 --> 00:58:00,100

girls with whom we are talking are

1225

00:58:05,670 --> 00:58:02,530

at a very decisive age very important

1226

00:58:07,290 --> 00:58:05,680

to decide in their careers what they are going to

1227

00:58:08,580 --> 00:58:07,300

do in the university So I think it

1228

00:58:10,859 --> 00:58:08,590

's very important to address these

1229

00:58:12,840 --> 00:58:10,869

young girls who are thinking right now what I

1230

00:58:17,070 --> 00:58:12,850

study what I do

1231

00:58:20,970 --> 00:58:19,109

how fun it can be

1232

00:58:22,470 --> 00:58:20,980

to work in the space sector and how

1233

00:58:24,720 --> 00:58:22,480

important it is to improve the

1234

00:58:26,550 --> 00:58:24,730

quality of life. of the people because you

1235

00:58:28,260 --> 00:58:26,560

have to realize that the phone is the

1236

00:58:30,150 --> 00:58:28,270

phone it comes from

1237

00:58:32,520 --> 00:58:30,160

space research the microwave there are so many

1238

00:58:35,070 --> 00:58:32,530

technical advances that we have in

1239

00:58:36,960 --> 00:58:35,080

life in our current life thanks to

1240

00:58:37,950 --> 00:58:36,970

space research and I think it is

1241

00:58:40,050 --> 00:58:37,960

super important

1242

00:58:41,250 --> 00:58:40,060

is it surgical or Whether our life on

1243

00:58:43,320 --> 00:58:41,260

earth has improved

1244

00:58:44,400 --> 00:58:43,330

incredibly due to space research,

1245

00:58:48,150 --> 00:58:46,710

then the message I would say

1246

00:58:50,130 --> 00:58:48,160

to them is that now when they are

1247

00:58:52,260 --> 00:58:50,140

thinking about what careers to study, they should

1248

00:58:54,089 --> 00:58:52,270

really think because the drago position

1249

00:58:56,220 --> 00:58:54,099

in space

1250

00:58:59,280 --> 00:58:56,230

can be technical or non-technical. They can

1251

00:59:01,260 --> 00:58:59,290

be lawyers, they can be economists, they

1252

00:59:03,089 --> 00:59:01,270

can be doctors, there are so many careers

1253

00:59:06,180 --> 00:59:03,099

that they can do and the truth is that it is

1254

00:59:08,220 --> 00:59:06,190

an exciting field that

1255

00:59:10,470 --> 00:59:08,230

they will surely enjoy a lot in that career,

1256

00:59:12,870 --> 00:59:10,480

so I would encourage them to

1257

00:59:13,920 --> 00:59:12,880

at least think about it here and that As you

1258

00:59:16,349 --> 00:59:13,930

said, they were dedicated to looking for

1259

00:59:18,560 --> 00:59:16,359

opportunities because it is true if

1260

00:59:23,490 --> 00:59:18,570

the door is closed you have to keep

1261

00:59:24,839 --> 00:59:23,500

knocking on another door, never ever take

1262

00:59:27,210 --> 00:59:24,849

no for an answer, you don't always have to

1263

00:59:29,490 --> 00:59:27,220

be insistent and I think that if you have

1264

00:59:31,440 --> 00:59:29,500

that motivation, whatever dream you

1265

00:59:34,650 --> 00:59:31,450

set out to do you can achieve it and

1266

00:59:37,730 --> 00:59:34,660

finally to add everything you do

1267

00:59:40,700 --> 00:59:37,740

do it with the best possible effort

1268

00:59:43,550 --> 00:59:40,710

very well thanks to erika and michelle

1269

00:59:45,620 --> 00:59:43,560

there to our other participants with

1270

00:59:48,470 --> 00:59:45,630

that we close this our first

1271

00:59:50,330 --> 00:59:48,480

hangout in spanish from nasa

1272

00:59:52,520 --> 00:59:50,340

i want you to know that dance is

1273

00:59:55,010 --> 00:59:52,530

developing more and more resources in

1274

00:59:55,609 --> 00:59:55,020

Spanish such as the

1275

00:59:58,370 --> 00:59:55,619

women

1276

01:00:00,680 --> 00:59:58,380

@ nasa blog with bilingual reviews from other

1277

01:00:03,230 --> 01:00:00,690

prominent women in the agency such as

1278

01:00:05,990 --> 01:00:03,240

erika and michel so you have to

1279

01:00:08,210 --> 01:00:06,000

see that to keep abreast of

1280

01:00:09,890 --> 01:00:08,220

new resources and events like this

1281

01:00:13,430 --> 01:00:09,900

continue following us through

1282

01:00:15,320 --> 01:00:13,440

twitter @ nasa and under that one and on

1283

01:00:17,210 --> 01:00:15,330

nash's google plus page in Spanish

1284

01:00:17,770 --> 01:00:17,220

thank you very much again and until