



1
00:00:03,990 --> 00:00:02,550
feedback mechanism that is delayed but

2
00:00:06,309 --> 00:00:04,000
it's the opposite direction it has a

3
00:00:08,150 --> 00:00:06,319
cooling effect so here's what we know we

4
00:00:10,549 --> 00:00:08,160
know that there is a whole lot more to

5
00:00:13,430 --> 00:00:10,559
learn about each of the systems that

6
00:00:15,110 --> 00:00:13,440
comprise the entirety of the earth the

7
00:00:16,950 --> 00:00:15,120
lithosphere the atmosphere the

8
00:00:19,349 --> 00:00:16,960
hydrosphere

9
00:00:21,269 --> 00:00:19,359
and of course dr mike frylick has been

10
00:00:23,750 --> 00:00:21,279
at the very center of all of these

11
00:00:25,349 --> 00:00:23,760
activities one of my first interactions

12
00:00:27,429 --> 00:00:25,359
with him when i became the nasa

13
00:00:29,189 --> 00:00:27,439

administrator i got invited to

14

00:00:30,630 --> 00:00:29,199

participate

15

00:00:33,110 --> 00:00:30,640

in

16

00:00:35,430 --> 00:00:33,120

what was called it was the uh the

17

00:00:37,350 --> 00:00:35,440

the global ag summit it was out in

18

00:00:39,750 --> 00:00:37,360

tulare california

19

00:00:42,790 --> 00:00:39,760

um and i called dr mike frylick and i

20

00:00:45,430 --> 00:00:42,800

said hey i i need to give a speech on

21

00:00:47,990 --> 00:00:45,440

how earth science is affecting ag what

22

00:00:50,470 --> 00:00:48,000

is nasa doing to feed more of the world

23

00:00:52,790 --> 00:00:50,480

than ever before and of course he came

24

00:00:54,389 --> 00:00:52,800

up and he shared with me a whole host of

25

00:00:55,990 --> 00:00:54,399

different mission sets

26

00:00:58,950 --> 00:00:56,000

um that are

27

00:01:00,150 --> 00:00:58,960

critical to increasing the capability of

28

00:01:01,910 --> 00:01:00,160

feeding more of the world than ever

29

00:01:03,270 --> 00:01:01,920

before

30

00:01:05,350 --> 00:01:03,280

and of course

31

00:01:06,710 --> 00:01:05,360

he he ran the whole earth science

32

00:01:08,070 --> 00:01:06,720

division

33

00:01:10,149 --> 00:01:08,080

but there was a number of missions that

34

00:01:12,950 --> 00:01:10,159

were very near and dear to his heart the

35

00:01:14,630 --> 00:01:12,960

copernicus program is one of those

36

00:01:17,270 --> 00:01:14,640

i wasn't the head of the agency at the

37

00:01:19,270 --> 00:01:17,280

time but i have heard from many many

38

00:01:20,870 --> 00:01:19,280

people that he was a driving force

39

00:01:22,710 --> 00:01:20,880

behind

40

00:01:24,870 --> 00:01:22,720

a lot of these activities that became

41

00:01:28,149 --> 00:01:24,880

this global initiative to understand our

42

00:01:30,789 --> 00:01:28,159

changing earth and ultimately

43

00:01:33,030 --> 00:01:30,799

help decision makers make good decisions

44

00:01:35,030 --> 00:01:33,040

as it continues to change

45

00:01:36,469 --> 00:01:35,040

so with that what i'd like to do is show

46

00:01:40,310 --> 00:01:36,479

a quick video

47

00:01:42,310 --> 00:01:40,320

that demonstrates what sentinel 6 is who

48

00:01:46,270 --> 00:01:42,320

all is involved and what we can expect

49

00:01:53,749 --> 00:01:49,510

[Music]

50

00:01:56,709 --> 00:01:53,759

ottoboon germany at this iagb clean room

51
00:01:58,310 --> 00:01:56,719
sentinel 6 is ready for final testing

52
00:02:01,990 --> 00:01:58,320
after which the satellite will be

53
00:02:04,149 --> 00:02:02,000
shipped to the us for launch in 2020

54
00:02:06,550 --> 00:02:04,159
like all the sentinel satellites

55
00:02:08,869 --> 00:02:06,560
sentinel 6 is part of the european

56
00:02:11,750 --> 00:02:08,879
union's copernicus program

57
00:02:13,589 --> 00:02:11,760
but for this satellite issa and the eu

58
00:02:17,030 --> 00:02:13,599
have joined forces with a number of

59
00:02:19,190 --> 00:02:17,040
other partners such as umetsat nasa and

60
00:02:20,869 --> 00:02:19,200
noaa benefiting from each other's

61
00:02:23,190 --> 00:02:20,879
expertise

62
00:02:25,510 --> 00:02:23,200
the sentinel 6 mission will consist of

63
00:02:27,430 --> 00:02:25,520

two identical satellites that are

64

00:02:30,150 --> 00:02:27,440

launched sequentially

65

00:02:32,150 --> 00:02:30,160

they each carry a radar altimeter to

66

00:02:35,589 --> 00:02:32,160

provide high precision measurements of

67

00:02:37,990 --> 00:02:35,599

ocean topography on a global scale

68

00:02:39,270 --> 00:02:38,000

at an orbit altitude of around 1300

69

00:02:42,070 --> 00:02:39,280

kilometers

70

00:02:43,509 --> 00:02:42,080

sentinel 6's lifespan is limited to 5

71

00:02:45,270 --> 00:02:43,519

years

72

00:02:47,750 --> 00:02:45,280

but by flying both satellites

73

00:02:50,949 --> 00:02:47,760

consecutively the mission will provide

74

00:02:53,350 --> 00:02:50,959

data for over a decade it will continue

75

00:02:55,430 --> 00:02:53,360

the long-term data sets on sea surface

76
00:02:58,949 --> 00:02:55,440
height that have been gathered since the

77
00:03:00,869 --> 00:02:58,959
1990s by the french top ex poseidon and

78
00:03:02,630 --> 00:03:00,879
the jason missions

79
00:03:04,790 --> 00:03:02,640
it is crucial to continue these

80
00:03:07,030 --> 00:03:04,800
measurements for climate research as

81
00:03:09,350 --> 00:03:07,040
they offer insight into the causes and

82
00:03:11,509 --> 00:03:09,360
effects of sea level rise

83
00:03:12,550 --> 00:03:11,519
with water covering two thirds of our

84
00:03:14,790 --> 00:03:12,560
planet

85
00:03:20,229 --> 00:03:14,800
monitoring our oceans with sentinel-6

86
00:03:24,149 --> 00:03:22,070
take a moment and look at those agencies

87
00:03:25,350 --> 00:03:24,159
that are involved in sentinel six

88
00:03:26,869 --> 00:03:25,360

there's a lot

89

00:03:28,309 --> 00:03:26,879

and i can tell you as the head of nasa

90

00:03:30,149 --> 00:03:28,319

it's really hard to get anything through

91

00:03:31,670 --> 00:03:30,159

the bureaucracy i don't know if any of

92

00:03:33,190 --> 00:03:31,680

you have noticed that mike certainly has

93

00:03:34,630 --> 00:03:33,200

not noticed that because he gets things

94

00:03:35,350 --> 00:03:34,640

through the bureaucracy

95

00:03:38,710 --> 00:03:35,360

but

96

00:03:39,990 --> 00:03:38,720

bureaucracy of any big government agency

97

00:03:42,789 --> 00:03:40,000

like nasa

98

00:03:46,149 --> 00:03:42,799

like noah is difficult

99

00:03:48,550 --> 00:03:46,159

but here we have this amazing program

100

00:03:49,830 --> 00:03:48,560

with support from the entire world

101
00:03:51,589 --> 00:03:49,840
and it not just got through our

102
00:03:53,830 --> 00:03:51,599
bureaucracy it got through the noaa

103
00:03:55,830 --> 00:03:53,840
bureaucracy it got through

104
00:03:58,949 --> 00:03:55,840
the european commission the european

105
00:04:01,350 --> 00:03:58,959
space agency umetsat of course dealing

106
00:04:03,190 --> 00:04:01,360
with congress dealing with um

107
00:04:04,710 --> 00:04:03,200
politicians in general i can say that

108
00:04:05,990 --> 00:04:04,720
because i used to be one it's sometimes

109
00:04:08,229 --> 00:04:06,000
difficult

110
00:04:09,990 --> 00:04:08,239
but these programs are important

111
00:04:12,550 --> 00:04:10,000
and if you believe in them

112
00:04:15,190 --> 00:04:12,560
you push for them and all the roadblocks

113
00:04:16,949 --> 00:04:15,200

that come in your way you you make you

114

00:04:18,789 --> 00:04:16,959

you get those roadblocks gone and you

115

00:04:20,870 --> 00:04:18,799

keep moving forward

116

00:04:23,189 --> 00:04:20,880

that's what mike freilick did

117

00:04:25,430 --> 00:04:23,199

in helping move these programs forward

118

00:04:28,150 --> 00:04:25,440

in a meaningful way and i just want to

119

00:04:29,749 --> 00:04:28,160

say we're grateful for your service

120

00:04:31,909 --> 00:04:29,759

and and i want to say to the folks that

121

00:04:34,469 --> 00:04:31,919

are here on the front row

122

00:04:35,670 --> 00:04:34,479

you guys have all been champions of this

123

00:04:37,030 --> 00:04:35,680

and he couldn't have done it without

124

00:04:38,070 --> 00:04:37,040

your help

125

00:04:40,150 --> 00:04:38,080

but you couldn't have done it without

126

00:04:42,230 --> 00:04:40,160

his help and that's why

127

00:04:44,150 --> 00:04:42,240

this is such a meaningful long-term

128

00:04:46,150 --> 00:04:44,160

program

129

00:04:47,110 --> 00:04:46,160

so getting through one bureaucracy is

130

00:04:49,030 --> 00:04:47,120

tough

131

00:04:50,629 --> 00:04:49,040

dealing with all of the bureaucracies

132

00:04:51,990 --> 00:04:50,639

not just in our own country but

133

00:04:53,430 --> 00:04:52,000

countries around the world is even

134

00:04:55,189 --> 00:04:53,440

tougher

135

00:04:56,629 --> 00:04:55,199

and it's a it's an amazing tribute to

136

00:04:58,469 --> 00:04:56,639

what you've been able to accomplish as

137

00:05:00,790 --> 00:04:58,479

the head of the earth science division

138

00:05:03,670 --> 00:05:00,800

dr mike freilich so with that i'd like

139

00:05:07,670 --> 00:05:05,110

our next speaker

140

00:05:09,510 --> 00:05:07,680

dr joseph oshbacher he's the director of

141

00:05:11,270 --> 00:05:09,520

earth observation programs at the

142

00:05:12,190 --> 00:05:11,280

european space agency thank you for

143

00:05:21,189 --> 00:05:12,200

being here

144

00:05:25,029 --> 00:05:23,990

thank you jim ladies and gentlemen dear

145

00:05:26,870 --> 00:05:25,039

friends

146

00:05:28,710 --> 00:05:26,880

it is a very special moment to be here

147

00:05:30,550 --> 00:05:28,720

and i really appreciate the

148

00:05:32,790 --> 00:05:30,560

very kind words said by nasa

149

00:05:34,550 --> 00:05:32,800

administrator jim feinsein on the good

150

00:05:36,950 --> 00:05:34,560

cooperation we have we have between

151
00:05:39,110 --> 00:05:36,960
europe and united states

152
00:05:41,110 --> 00:05:39,120
because this is a very special moment

153
00:05:43,749 --> 00:05:41,120
it's a very emotional moment

154
00:05:45,189 --> 00:05:43,759
and i'm very pleased and very honored

155
00:05:47,110 --> 00:05:45,199
at this moment

156
00:05:50,310 --> 00:05:47,120
to announce the renaming

157
00:05:53,670 --> 00:05:50,320
of sentinel 6 which is a joint european

158
00:05:55,350 --> 00:05:53,680
us mission within the kubernetes program

159
00:05:57,510 --> 00:05:55,360
but with a very strong american

160
00:06:00,230 --> 00:05:57,520
contribution which is equal to that of

161
00:06:01,830 --> 00:06:00,240
europe i'm very pleased to rename

162
00:06:04,230 --> 00:06:01,840
central 6a

163
00:06:06,460 --> 00:06:04,240

in the future to be called sentinel 6

164

00:06:25,350 --> 00:06:06,470

michael freile

165

00:06:27,749 --> 00:06:25,360

[Applause]

166

00:06:30,230 --> 00:06:27,759

i'm very honored to do this renaming on

167

00:06:33,110 --> 00:06:30,240

behalf of not only myself

168

00:06:35,590 --> 00:06:33,120

but many of us in europe of these member

169

00:06:38,070 --> 00:06:35,600

states i've consulted 22 of our member

170

00:06:40,390 --> 00:06:38,080

states which we have and they agree and

171

00:06:42,950 --> 00:06:40,400

they send their regards and best wishes

172

00:06:45,270 --> 00:06:42,960

i've also closely coordinated obviously

173

00:06:47,909 --> 00:06:45,280

with the european commission in brussels

174

00:06:50,469 --> 00:06:47,919

we have a representative here today and

175

00:06:52,950 --> 00:06:50,479

with elevate your med satu is also

176

00:06:55,110 --> 00:06:52,960

speaking later on and this is really

177

00:06:57,029 --> 00:06:55,120

coming from all our heart it is to your

178

00:07:00,309 --> 00:06:57,039

mic for what you have done in order to

179

00:07:04,230 --> 00:07:01,749

i really would like to underline that

180

00:07:06,790 --> 00:07:04,240

central six would not exist without mike

181

00:07:09,589 --> 00:07:06,800

fili's contribution mike has been

182

00:07:11,830 --> 00:07:09,599

instrumental in ring fencing and making

183

00:07:14,390 --> 00:07:11,840

sure that the u.s contribution is

184

00:07:17,029 --> 00:07:14,400

materializing and is coming over the

185

00:07:20,230 --> 00:07:17,039

many years such a program preparation

186

00:07:22,710 --> 00:07:20,240

takes on our side and as jim was saying

187

00:07:24,150 --> 00:07:22,720

it takes a long time and a lot of effort

188

00:07:26,390 --> 00:07:24,160

to get programs to the various

189

00:07:29,430 --> 00:07:26,400

administrations and believe me in europe

190

00:07:31,189 --> 00:07:29,440

with 22 countries on easter side and 28

191

00:07:33,749 --> 00:07:31,199

and the european union side it's by far

192

00:07:35,749 --> 00:07:33,759

not easier than here in the us we have

193

00:07:38,710 --> 00:07:35,759

our hurdles to take

194

00:07:40,870 --> 00:07:38,720

but one pillar one constant element of

195

00:07:43,029 --> 00:07:40,880

this collaboration was always that we

196

00:07:45,430 --> 00:07:43,039

can trust america that we can trust the

197

00:07:46,950 --> 00:07:45,440

u.s contribution to come and this

198

00:07:49,350 --> 00:07:46,960

through the person of mike friley who

199

00:07:51,670 --> 00:07:49,360

was making sure that u.s contribution is

200

00:07:52,950 --> 00:07:51,680

coming and is being delivered and this

201
00:07:54,230 --> 00:07:52,960
is being shown

202
00:07:56,230 --> 00:07:54,240
right now

203
00:07:57,749 --> 00:07:56,240
with the finalization of the satellite

204
00:08:00,150 --> 00:07:57,759
we have seen before in the video that

205
00:08:02,790 --> 00:08:00,160
we're at the final stage with a very

206
00:08:04,629 --> 00:08:02,800
important event in uh close to munich

207
00:08:07,430 --> 00:08:04,639
where the satellite was shown to the

208
00:08:10,950 --> 00:08:07,440
press and we will launch it later this

209
00:08:12,790 --> 00:08:10,960
year from u.s seoul with a u.s launcher

210
00:08:15,110 --> 00:08:12,800
thanks to the contribution of the united

211
00:08:17,589 --> 00:08:15,120
states of america

212
00:08:20,230 --> 00:08:17,599
we have been working with mike and with

213
00:08:23,110 --> 00:08:20,240

nasa earth science for many many years

214

00:08:24,629 --> 00:08:23,120

decades it goes back actually

215

00:08:26,869 --> 00:08:24,639

that we have been working together with

216

00:08:29,589 --> 00:08:26,879

nasa to the 80s

217

00:08:31,270 --> 00:08:29,599

but in 2010 we established what is

218

00:08:33,909 --> 00:08:31,280

called the joint program

219

00:08:36,230 --> 00:08:33,919

planning group which is a formal

220

00:08:39,670 --> 00:08:36,240

mechanism where we meet formally once a

221

00:08:41,750 --> 00:08:39,680

year to exchange our experience to

222

00:08:44,310 --> 00:08:41,760

establish cooperation topics and

223

00:08:46,389 --> 00:08:44,320

cooperation activities and mike and my

224

00:08:48,230 --> 00:08:46,399

predecessor and now myself have been

225

00:08:49,910 --> 00:08:48,240

instrumental in making sure this is

226
00:08:51,829 --> 00:08:49,920
happening

227
00:08:54,150 --> 00:08:51,839
we have been addressing different topics

228
00:08:56,870 --> 00:08:54,160
missions and technology calibration

229
00:08:59,350 --> 00:08:56,880
validation field campaigns but also

230
00:09:00,870 --> 00:08:59,360
access to data exchange of data in many

231
00:09:02,550 --> 00:09:00,880
domains

232
00:09:04,550 --> 00:09:02,560
let me just mention a few of them

233
00:09:07,430 --> 00:09:04,560
because they are all important gravity

234
00:09:08,389 --> 00:09:07,440
soil moisture sea ice volume sea surface

235
00:09:09,910 --> 00:09:08,399
salinity

236
00:09:12,870 --> 00:09:09,920
ice sheet volume and mass change

237
00:09:14,310 --> 00:09:12,880
greenland ice loss land cover and many

238
00:09:16,790 --> 00:09:14,320

many other topics where we have been

239

00:09:19,590 --> 00:09:16,800

working together for really many many

240

00:09:24,389 --> 00:09:22,070

and i think it is a very historic moment

241

00:09:27,350 --> 00:09:24,399

also because on our side the european

242

00:09:29,829 --> 00:09:27,360

side the copernicus program is maturing

243

00:09:31,430 --> 00:09:29,839

and we are launching we have launched a

244

00:09:33,110 --> 00:09:31,440

few satellites we are launching a very

245

00:09:34,949 --> 00:09:33,120

important one towards the end of the

246

00:09:37,829 --> 00:09:34,959

year but we are also entering into the

247

00:09:38,630 --> 00:09:37,839

next phase of copernicus we have had a

248

00:09:40,230 --> 00:09:38,640

very

249

00:09:43,110 --> 00:09:40,240

important and successful ministerial

250

00:09:45,110 --> 00:09:43,120

conference in november last year and we

251
00:09:47,030 --> 00:09:45,120
got new money new commitments from our

252
00:09:49,110 --> 00:09:47,040
member states from our politicians to

253
00:09:51,430 --> 00:09:49,120
start the next phase and the expansion

254
00:09:54,230 --> 00:09:51,440
of the kubernetes program and i would

255
00:09:56,070 --> 00:09:54,240
like to do that again with america we

256
00:09:58,470 --> 00:09:56,080
have some ideas in the making we are in

257
00:10:00,550 --> 00:09:58,480
discussion on some concrete missions and

258
00:10:02,630 --> 00:10:00,560
some concrete activities and i hope that

259
00:10:04,630 --> 00:10:02,640
we continue the strong cooperation which

260
00:10:07,590 --> 00:10:04,640
we have been initiating through sentinel

261
00:10:09,670 --> 00:10:07,600
6 as one example

262
00:10:12,150 --> 00:10:09,680
and this is really something that makes

263
00:10:14,389 --> 00:10:12,160

me very proud that we have been able to

264

00:10:16,829 --> 00:10:14,399

work together mike has been a driving

265

00:10:20,310 --> 00:10:16,839

force in doing that mike has been

266

00:10:23,110 --> 00:10:20,320

extremely gentle nice and strong in this

267

00:10:25,190 --> 00:10:23,120

cooperation with america with uh sorry

268

00:10:27,269 --> 00:10:25,200

with europe as an american strong

269

00:10:29,910 --> 00:10:27,279

partner but also with other partners

270

00:10:32,550 --> 00:10:29,920

outside these two nations or these two

271

00:10:35,910 --> 00:10:32,560

blocks actually at the global level and

272

00:10:38,230 --> 00:10:35,920

mike has also reinforced nasa's standing

273

00:10:39,990 --> 00:10:38,240

in the international sphere through ceos

274

00:10:41,990 --> 00:10:40,000

when mike came on board cs was

275

00:10:44,150 --> 00:10:42,000

reinforced and really got a much

276

00:10:46,470 --> 00:10:44,160

stronger visibility and much more force

277

00:10:48,949 --> 00:10:46,480

than it was ever before so mike we

278

00:10:51,430 --> 00:10:48,959

really owe you a lot also in issa you

279

00:10:53,670 --> 00:10:51,440

have taught us a lot nasa is always a

280

00:10:55,829 --> 00:10:53,680

big example for us to follow we always

281

00:10:56,790 --> 00:10:55,839

very carefully watch and see what is

282

00:10:58,310 --> 00:10:56,800

happening

283

00:11:00,230 --> 00:10:58,320

and how you're doing it and we have

284

00:11:03,030 --> 00:11:00,240

learned a lot from you and i thank you

285

00:11:05,190 --> 00:11:03,040

for all the lessons and all the elements

286

00:11:06,870 --> 00:11:05,200

you have been teaching us directly and

287

00:11:08,630 --> 00:11:06,880

indirectly and this is very much

288

00:11:11,269 --> 00:11:08,640

appreciated

289

00:11:14,310 --> 00:11:11,279

so i'm here really to convey these

290

00:11:17,190 --> 00:11:14,320

things on behalf of a large community

291

00:11:20,069 --> 00:11:17,200

and i'd like to also personally thank

292

00:11:21,990 --> 00:11:20,079

you as a friend as a colleague but not

293

00:11:23,829 --> 00:11:22,000

only myself i have

294

00:11:25,990 --> 00:11:23,839

announced of course that i'm coming here

295

00:11:28,710 --> 00:11:26,000

to this occasion and many of my

296

00:11:32,550 --> 00:11:28,720

colleagues in essa but also in our

297

00:11:34,630 --> 00:11:32,560

member states have asked me to convey my

298

00:11:36,470 --> 00:11:34,640

your greeting their greetings to you

299

00:11:37,990 --> 00:11:36,480

through me and making sure that they are

300

00:11:40,550 --> 00:11:38,000

reaching you and i really would like to

301
00:11:42,150 --> 00:11:40,560
say on behalf of all our colleagues in

302
00:11:43,990 --> 00:11:42,160
this earth observation and many other

303
00:11:45,269 --> 00:11:44,000
colleagues in nissa thank you very much

304
00:11:47,509 --> 00:11:45,279
what you have done over the last few

305
00:11:49,670 --> 00:11:47,519
years this is really a small gesture

306
00:11:51,509 --> 00:11:49,680
which we can do in order to honor you on

307
00:11:53,670 --> 00:11:51,519
only your contribution to us thank you

308
00:11:57,400 --> 00:11:53,680
very much mike

309
00:12:00,389 --> 00:11:57,410
[Applause]

310
00:12:02,310 --> 00:12:00,399
[Music]

311
00:12:04,550 --> 00:12:02,320
i was so excited

312
00:12:06,230 --> 00:12:04,560
to receive a letter

313
00:12:08,550 --> 00:12:06,240

by the european space agency in the

314

00:12:10,389 --> 00:12:08,560

european commission proposing

315

00:12:11,430 --> 00:12:10,399

that senal 6a

316

00:12:13,430 --> 00:12:11,440

should be

317

00:12:15,350 --> 00:12:13,440

sentinel 6 mike freilich having a

318

00:12:17,509 --> 00:12:15,360

satellite named after you is pretty

319

00:12:19,430 --> 00:12:17,519

remarkable it's not something we do in

320

00:12:23,110 --> 00:12:19,440

earth science very often it's not only

321

00:12:25,990 --> 00:12:23,120

isa it's europe who wishes to honor mike

322

00:12:29,190 --> 00:12:26,000

freidich mike freili here

323

00:12:32,230 --> 00:12:29,200

has been instrumental in making sentinel

324

00:12:34,230 --> 00:12:32,240

6 a satellite that measures with very

325

00:12:35,829 --> 00:12:34,240

high precision sea level of ice the

326

00:12:37,829 --> 00:12:35,839

sentinel missions are something that

327

00:12:39,509 --> 00:12:37,839

mike was very involved in it really

328

00:12:41,509 --> 00:12:39,519

epitomizes the the role that mike has

329

00:12:43,509 --> 00:12:41,519

played over the years as championing

330

00:12:44,949 --> 00:12:43,519

partnerships championing collaborative

331

00:12:46,790 --> 00:12:44,959

investigation of the earth names are

332

00:12:50,710 --> 00:12:46,800

reserved for the greats you don't name

333

00:12:52,870 --> 00:12:50,720

after a satellite after somebody who

334

00:12:55,190 --> 00:12:52,880

just does the job it's the second

335

00:12:57,350 --> 00:12:55,200

mission ever named after a person who's

336

00:12:59,990 --> 00:12:57,360

alive it's a huge honor and i couldn't

337

00:13:02,710 --> 00:13:00,000

be more excited through this we want to

338

00:13:05,590 --> 00:13:02,720

pay tribute to a unique cooperation

339

00:13:08,230 --> 00:13:05,600

between the u.s and europe

340

00:13:10,470 --> 00:13:08,240

and a unique personality mike freilich

341

00:13:12,870 --> 00:13:10,480

dr mike freilich is a world-renowned

342

00:13:15,990 --> 00:13:12,880

ocean scientist who after a successful

343

00:13:17,350 --> 00:13:16,000

career in academia came to nasa and for

344

00:13:19,430 --> 00:13:17,360

a dozen years

345

00:13:22,389 --> 00:13:19,440

led all of her signs it is really

346

00:13:24,949 --> 00:13:22,399

brought nasa back on the international

347

00:13:27,269 --> 00:13:24,959

stage the partnerships that we forged

348

00:13:29,590 --> 00:13:27,279

are beyond a business transaction

349

00:13:31,509 --> 00:13:29,600

they are the about friendship and it

350

00:13:33,110 --> 00:13:31,519

might do just that working with our

351
00:13:35,110 --> 00:13:33,120
international partners working with our

352
00:13:37,110 --> 00:13:35,120
interagency partners and mike brought

353
00:13:39,509 --> 00:13:37,120
that community together in a way that

354
00:13:40,629 --> 00:13:39,519
was really unprecedented mike freilich's

355
00:13:43,030 --> 00:13:40,639
legacy

356
00:13:46,150 --> 00:13:43,040
is being able to build the coalitions

357
00:13:48,629 --> 00:13:46,160
that are necessary for us to get as much

358
00:13:50,310 --> 00:13:48,639
understanding of our planet as possible

359
00:13:51,829 --> 00:13:50,320
there is not another person more

360
00:13:55,829 --> 00:13:51,839
deserving of this honor than mike

361
00:14:01,430 --> 00:13:58,629
you know when i first found out that

362
00:14:05,990 --> 00:14:03,030
when i first found out that mike had

363
00:14:07,670 --> 00:14:06,000

cancer i got a call from thomas zurbukin

364

00:14:09,430 --> 00:14:07,680

so i called up

365

00:14:11,590 --> 00:14:09,440

the administrator and told him about it

366

00:14:14,230 --> 00:14:11,600

immediately and he shared with me kind

367

00:14:16,550 --> 00:14:14,240

of what was going on and and i asked him

368

00:14:18,949 --> 00:14:16,560

i said we've got to do something

369

00:14:20,629 --> 00:14:18,959

quickly i want him to know that

370

00:14:21,750 --> 00:14:20,639

all the work he's done is extremely

371

00:14:24,870 --> 00:14:21,760

meaningful

372

00:14:25,990 --> 00:14:24,880

mike is a leader to all of us and a

373

00:14:28,150 --> 00:14:26,000

mentor

374

00:14:30,470 --> 00:14:28,160

and a person who has really advanced

375

00:14:32,949 --> 00:14:30,480

earth science for the entire world what

376

00:14:35,509 --> 00:14:32,959

is unique with mike is his commitment to

377

00:14:36,710 --> 00:14:35,519

science and cooperation but also his

378

00:14:39,030 --> 00:14:36,720

resilience

379

00:14:41,790 --> 00:14:39,040

and sense of humor and i believe

380

00:14:44,230 --> 00:14:41,800

these are two facets of the same coin is

381

00:14:46,870 --> 00:14:44,240

unapologetically excellent i am much

382

00:14:48,710 --> 00:14:46,880

better because of what i learned from

383

00:14:51,030 --> 00:14:48,720

him and because i had the opportunity to

384

00:14:52,870 --> 00:14:51,040

work with him it's just been

385

00:14:55,189 --> 00:14:52,880

very rewarding

386

00:14:57,509 --> 00:14:55,199

not just for me but for the

387

00:15:00,310 --> 00:14:57,519

people in my organization to have had

388

00:15:02,949 --> 00:15:00,320

the privilege really of being his

389

00:15:05,829 --> 00:15:02,959

colleague in front he was absolutely

390

00:15:08,470 --> 00:15:05,839

committed to dispassionately following

391

00:15:09,829 --> 00:15:08,480

the science he had high standards for

392

00:15:12,389 --> 00:15:09,839

himself

393

00:15:13,350 --> 00:15:12,399

and everyone around him mike had a very

394

00:15:14,790 --> 00:15:13,360

big

395

00:15:17,269 --> 00:15:14,800

very full

396

00:15:19,189 --> 00:15:17,279

red pen everybody was always afraid of

397

00:15:20,949 --> 00:15:19,199

that then his

398

00:15:22,470 --> 00:15:20,959

pretty intense energy

399

00:15:24,389 --> 00:15:22,480

one of the characteristics was the

400

00:15:26,230 --> 00:15:24,399

bouncy knee which you never missed and

401
00:15:27,990 --> 00:15:26,240
it was always there and you could kind

402
00:15:31,590 --> 00:15:28,000
of gauge the way the medium is going by

403
00:15:34,069 --> 00:15:31,600
the pace of the bounce i have a lot of

404
00:15:35,990 --> 00:15:34,079
hilarious emails on my smartphone

405
00:15:38,069 --> 00:15:36,000
exchange with mike which i keep as a

406
00:15:39,990 --> 00:15:38,079
treasurer and thank you mike for being

407
00:15:41,509 --> 00:15:40,000
such a wonderful partner a trusted

408
00:15:43,670 --> 00:15:41,519
partner who has built up this

409
00:15:45,749 --> 00:15:43,680
relationship over many years without you

410
00:15:47,590 --> 00:15:45,759
mike or without mike filey this would

411
00:15:49,670 --> 00:15:47,600
not have happened it is a no-brainer

412
00:15:52,069 --> 00:15:49,680
that uh

413
00:15:54,470 --> 00:15:52,079

that we all came together and and that

414

00:15:56,790 --> 00:15:54,480

they were able to to really rally around

415

00:15:59,189 --> 00:15:56,800

and and allow

416

00:16:00,790 --> 00:15:59,199

the name renaming of sentinel 6a after

417

00:16:03,110 --> 00:16:00,800

mike when i got that letter the first

418

00:16:05,509 --> 00:16:03,120

thing i did is frankly i called mike

419

00:16:07,110 --> 00:16:05,519

and said i received this letter

420

00:16:09,110 --> 00:16:07,120

it would be an honor for all of us if

421

00:16:10,949 --> 00:16:09,120

you could name that spacecraft after you

422

00:16:12,550 --> 00:16:10,959

would you accept that

423

00:16:17,990 --> 00:16:12,560

and it said

424

00:16:21,590 --> 00:16:19,670

i knew in

425

00:16:23,670 --> 00:16:21,600

10th grade

426

00:16:26,710 --> 00:16:23,680

that i wanted to be a near-shore

427

00:16:27,509 --> 00:16:26,720

oceanographer what has driven me

428

00:16:29,829 --> 00:16:27,519

is

429

00:16:33,910 --> 00:16:29,839

understanding how

430

00:16:35,030 --> 00:16:33,920

nature works i got a call from dr jack

431

00:16:37,749 --> 00:16:35,040

kay

432

00:16:41,110 --> 00:16:37,759

here at nasa headquarters

433

00:16:46,230 --> 00:16:43,590

i might be interested in

434

00:16:48,069 --> 00:16:46,240

running the earth science division

435

00:16:52,550 --> 00:16:48,079

here at nasa

436

00:16:54,069 --> 00:16:52,560

we made dramatic progress in the last 13

437

00:16:55,910 --> 00:16:54,079

years

438

00:16:58,310 --> 00:16:55,920

with our

439

00:17:01,749 --> 00:16:58,320

really substantive

440

00:17:05,029 --> 00:17:01,759

mission and analysis international

441

00:17:07,189 --> 00:17:05,039

collaborations to bring together

442

00:17:10,230 --> 00:17:07,199

people who have expertise in many

443

00:17:13,270 --> 00:17:10,240

different disciplines to work for long

444

00:17:16,309 --> 00:17:13,280

periods of time on problems

445

00:17:18,949 --> 00:17:16,319

that none of them individually

446

00:17:20,069 --> 00:17:18,959

could solve but together

447

00:17:22,789 --> 00:17:20,079

could

448

00:17:26,630 --> 00:17:22,799

earth system science is bigger than any

449

00:17:28,710 --> 00:17:26,640

particular agency it's bigger than any

450

00:17:30,789 --> 00:17:28,720

single nation it's bigger than any

451
00:17:33,350 --> 00:17:30,799
single continent

452
00:17:34,870 --> 00:17:33,360
and i surely hope because humanity

453
00:17:37,510 --> 00:17:34,880
requires it

454
00:17:47,290 --> 00:17:37,520
that we make some significant progress

455
00:18:05,350 --> 00:18:03,430
[Applause]

456
00:18:06,710 --> 00:18:05,360
we all see that mike is a very special

457
00:18:08,150 --> 00:18:06,720
person and

458
00:18:10,390 --> 00:18:08,160
allow me to

459
00:18:12,470 --> 00:18:10,400
hand over a small gift to you or two

460
00:18:14,390 --> 00:18:12,480
small gifts which

461
00:18:16,549 --> 00:18:14,400
my colleagues asked me to bring

462
00:18:22,310 --> 00:18:16,559
to the united states

463
00:18:28,210 --> 00:18:24,549

one of them is a model of sentinel six

464

00:18:35,830 --> 00:18:28,220

now called center six michael friely

465

00:18:40,950 --> 00:18:38,710

we have to change the engraving uh

466

00:18:46,630 --> 00:18:43,430

and one is a small box here which mike

467

00:18:49,590 --> 00:18:46,640

will unwrap back home i assume and this

468

00:18:51,909 --> 00:18:49,600

comes from our project team in aztec

469

00:18:54,789 --> 00:18:51,919

giro liverini and the center six project

470

00:18:56,630 --> 00:18:54,799

managers they heard that i'm going here

471

00:18:58,470 --> 00:18:56,640

and they stopped me on the way out when

472

00:19:00,950 --> 00:18:58,480

i was there uh last week and they said

473

00:19:02,630 --> 00:19:00,960

joseph we hear you're going to the u.s

474

00:19:04,470 --> 00:19:02,640

to meet mike freilich and there's this

475

00:19:06,630 --> 00:19:04,480

ceremony could you please hand over a

476
00:19:08,950 --> 00:19:06,640
small personal gift from us because we

477
00:19:11,270 --> 00:19:08,960
really miss him we appreciate his work

478
00:19:14,520 --> 00:19:11,280
and this comes from guido pierrick and

479
00:19:25,110 --> 00:19:14,530
all his team

480
00:19:30,230 --> 00:19:27,830
and now it is my pleasure and also honor

481
00:19:33,029 --> 00:19:30,240
to introduce and to ask

482
00:19:35,350 --> 00:19:33,039
thomas dr thomas super to come on stage

483
00:19:48,789 --> 00:19:35,360
associate administrator of the science

484
00:19:51,669 --> 00:19:50,470
thank you josef and thanks for your

485
00:19:53,990 --> 00:19:51,679
friendship

486
00:19:55,110 --> 00:19:54,000
as expressed through this general this

487
00:19:56,070 --> 00:19:55,120
generous

488
00:19:58,230 --> 00:19:56,080

action

489

00:19:59,830 --> 00:19:58,240

that came from you and your colleagues

490

00:20:01,830 --> 00:19:59,840

all over europe

491

00:20:04,149 --> 00:20:01,840

but of course here at nasa

492

00:20:06,630 --> 00:20:04,159

in an agency that seeks like no other

493

00:20:08,549 --> 00:20:06,640

agency to leave this planet

494

00:20:10,950 --> 00:20:08,559

we're going to places to the moon we

495

00:20:13,430 --> 00:20:10,960

want to go to mars with humans we want

496

00:20:15,350 --> 00:20:13,440

to send missions that look

497

00:20:17,270 --> 00:20:15,360

at the vastness of space and other

498

00:20:18,549 --> 00:20:17,280

planets explore places that we've never

499

00:20:20,470 --> 00:20:18,559

seen

500

00:20:22,149 --> 00:20:20,480

but what's really exciting and one of

501
00:20:25,510 --> 00:20:22,159
the benefits of working here i've talked

502
00:20:27,750 --> 00:20:25,520
to many individuals who've been in space

503
00:20:29,669 --> 00:20:27,760
when they're in space they tell me the

504
00:20:31,510 --> 00:20:29,679
most impressive part

505
00:20:35,750 --> 00:20:31,520
is to look back

506
00:20:37,830 --> 00:20:35,760
at our earth our earth that has been

507
00:20:39,029 --> 00:20:37,840
from the beginning part of what nasa

508
00:20:42,149 --> 00:20:39,039
does

509
00:20:44,870 --> 00:20:42,159
investigating it understanding

510
00:20:48,070 --> 00:20:44,880
the most complex planet

511
00:20:49,430 --> 00:20:48,080
we know and at this moment in time the

512
00:20:51,270 --> 00:20:49,440
only planet

513
00:20:54,390 --> 00:20:51,280

where there's life

514

00:20:55,990 --> 00:20:54,400

a planet that is so beautiful that my

515

00:20:57,909 --> 00:20:56,000

astronaut friends tell me takes their

516

00:21:00,630 --> 00:20:57,919

breath away because what they think

517

00:21:02,470 --> 00:21:00,640

about is that their entire history

518

00:21:04,149 --> 00:21:02,480

and all their hope

519

00:21:07,110 --> 00:21:04,159

about the future

520

00:21:09,990 --> 00:21:07,120

is on this celestial body that looks so

521

00:21:11,669 --> 00:21:10,000

incredibly beautiful a complex system of

522

00:21:12,789 --> 00:21:11,679

systems of the type the administrator

523

00:21:15,669 --> 00:21:12,799

talked about

524

00:21:17,750 --> 00:21:15,679

a system that we've learned a lot about

525

00:21:18,789 --> 00:21:17,760

in the last decades of science but a

526
00:21:25,430 --> 00:21:18,799
system

527
00:21:27,750 --> 00:21:25,440
that has all the future and hopes

528
00:21:29,590 --> 00:21:27,760
of our children and our children's

529
00:21:31,990 --> 00:21:29,600
children's right in it

530
00:21:33,029 --> 00:21:32,000
and a system that we investigate as

531
00:21:34,470 --> 00:21:33,039
partners

532
00:21:37,270 --> 00:21:34,480
mike

533
00:21:40,230 --> 00:21:37,280
has been a hero for all of us of

534
00:21:41,590 --> 00:21:40,240
investigating that very planet

535
00:21:43,990 --> 00:21:41,600
uh

536
00:21:46,470 --> 00:21:44,000
scientists are brought to work each and

537
00:21:47,909 --> 00:21:46,480
every day the discipline that it takes

538
00:21:49,909 --> 00:21:47,919

to analyze

539

00:21:52,470 --> 00:21:49,919

our planet with the tools of science

540

00:21:54,950 --> 00:21:52,480

science is very unforgiving it turns out

541

00:21:56,630 --> 00:21:54,960

very humbling most of the time we don't

542

00:21:58,710 --> 00:21:56,640

talk about that very often most of the

543

00:22:00,549 --> 00:21:58,720

time when we do science we're wrong for

544

00:22:01,750 --> 00:22:00,559

the first five times before we get it

545

00:22:03,590 --> 00:22:01,760

right

546

00:22:06,470 --> 00:22:03,600

being a scientist means you bounce back

547

00:22:08,230 --> 00:22:06,480

from that we learn we question every

548

00:22:10,470 --> 00:22:08,240

question is okay

549

00:22:12,310 --> 00:22:10,480

we answer those questions with the tools

550

00:22:15,029 --> 00:22:12,320

that we get from our satellites with

551
00:22:17,990 --> 00:22:15,039
data that's how we're advancing and

552
00:22:20,149 --> 00:22:18,000
sometimes get surprised by in fact what

553
00:22:21,190 --> 00:22:20,159
the planet is telling us about how it

554
00:22:22,549 --> 00:22:21,200
works

555
00:22:24,830 --> 00:22:22,559
and about

556
00:22:26,470 --> 00:22:24,840
the future

557
00:22:29,190 --> 00:22:26,480
now

558
00:22:31,430 --> 00:22:29,200
studying in partnership

559
00:22:33,110 --> 00:22:31,440
in true partnership not only

560
00:22:35,430 --> 00:22:33,120
domestically which is one of the

561
00:22:37,830 --> 00:22:35,440
paradigms that mike brought to work with

562
00:22:40,630 --> 00:22:37,840
noah with our cross-agency partners but

563
00:22:42,470 --> 00:22:40,640

also with our international partners has

564

00:22:44,630 --> 00:22:42,480

been something that mike stood from from

565

00:22:46,789 --> 00:22:44,640

the beginning i i too remember some of

566

00:22:49,190 --> 00:22:46,799

the first meetings with mike where he

567

00:22:51,830 --> 00:22:49,200

told me how important it is

568

00:22:54,630 --> 00:22:51,840

to take those partnerships seriously and

569

00:22:56,149 --> 00:22:54,640

i really believe just like he does that

570

00:22:58,470 --> 00:22:56,159

what we're seeing here a true

571

00:22:59,430 --> 00:22:58,480

partnership with built on genuine

572

00:23:03,350 --> 00:22:59,440

interest

573

00:23:05,830 --> 00:23:03,360

genuine alignment of values and genuine

574

00:23:07,430 --> 00:23:05,840

desire to actually help

575

00:23:10,070 --> 00:23:07,440

our population get a better

576

00:23:12,789 --> 00:23:10,080

understanding take that understanding

577

00:23:14,630 --> 00:23:12,799

and protect and improve life on earth

578

00:23:17,190 --> 00:23:14,640

that kind of partnership

579

00:23:19,270 --> 00:23:17,200

is what is being manifested here today

580

00:23:21,029 --> 00:23:19,280

what i'm going to say next has

581

00:23:22,390 --> 00:23:21,039

everything to do with the personal level

582

00:23:24,789 --> 00:23:22,400

of that

583

00:23:25,590 --> 00:23:24,799

there's very few times during my work

584

00:23:27,909 --> 00:23:25,600

here

585

00:23:30,390 --> 00:23:27,919

i'm tearing up

586

00:23:31,909 --> 00:23:30,400

when i got that email from josef and his

587

00:23:33,590 --> 00:23:31,919

european partners was one of those

588

00:23:35,430 --> 00:23:33,600

moments

589

00:23:38,870 --> 00:23:35,440

because you can't

590

00:23:40,070 --> 00:23:38,880

talk more about friendship

591

00:23:41,909 --> 00:23:40,080

you cannot

592

00:23:43,430 --> 00:23:41,919

talk more about

593

00:23:45,430 --> 00:23:43,440

trust

594

00:23:46,230 --> 00:23:45,440

than coming

595

00:23:48,390 --> 00:23:46,240

to

596

00:23:51,269 --> 00:23:48,400

your cross-agency partner and your

597

00:23:53,510 --> 00:23:51,279

international partner and naming your

598

00:23:55,750 --> 00:23:53,520

spacecraft that was conceived initially

599

00:23:56,870 --> 00:23:55,760

of course in europe

600

00:23:58,789 --> 00:23:56,880

after

601
00:24:00,870 --> 00:23:58,799
your international colleague

602
00:24:03,110 --> 00:24:00,880
that has my friends has never occurred

603
00:24:04,789 --> 00:24:03,120
in history in history of this agency and

604
00:24:06,149 --> 00:24:04,799
any other agency in fact this is only

605
00:24:08,630 --> 00:24:06,159
the second time

606
00:24:10,549 --> 00:24:08,640
where a mission is named after a person

607
00:24:11,990 --> 00:24:10,559
who sees that naming ceremony i'm just

608
00:24:14,310 --> 00:24:12,000
so excited

609
00:24:17,029 --> 00:24:14,320
that you're right here uh with us but

610
00:24:18,630 --> 00:24:17,039
what i'm just so excited about

611
00:24:19,669 --> 00:24:18,640
is what

612
00:24:25,990 --> 00:24:19,679
this

613
00:24:27,990 --> 00:24:26,000

about the hope and the optimism

614

00:24:29,909 --> 00:24:28,000

of us coming together

615

00:24:31,750 --> 00:24:29,919

and doing the right thing the right

616

00:24:32,470 --> 00:24:31,760

thing in partnership

617

00:24:34,149 --> 00:24:32,480

to

618

00:24:37,830 --> 00:24:34,159

really advance the understanding of this

619

00:24:40,870 --> 00:24:37,840

planet and recommit to the very values

620

00:24:41,750 --> 00:24:40,880

that mike stood for his entire career

621

00:24:43,590 --> 00:24:41,760

here

622

00:24:46,310 --> 00:24:43,600

that i learned from that many of us

623

00:24:49,669 --> 00:24:46,320

learn from and that we're committing our

624

00:24:51,590 --> 00:24:49,679

careers our lives to continue uh in this

625

00:24:54,310 --> 00:24:51,600

legacy i could not be more excited to be

626
00:24:56,149 --> 00:24:54,320
here today and i'm so excited now to

627
00:24:59,350 --> 00:24:56,159
introduce one of those international

628
00:25:00,950 --> 00:24:59,360
partners mercedes garcia perez

629
00:25:03,269 --> 00:25:00,960
the head of global issues of the

630
00:25:10,890 --> 00:25:03,279
european union delegation thank you so

631
00:25:10,900 --> 00:25:19,110
[Applause]

632
00:25:23,510 --> 00:25:21,190
thank you dr zurbukin

633
00:25:25,190 --> 00:25:23,520
it is a great pleasure and a real honor

634
00:25:26,630 --> 00:25:25,200
to represent the european commission and

635
00:25:29,190 --> 00:25:26,640
the entire european union at the

636
00:25:30,789 --> 00:25:29,200
renaming of the sentinel 6a satellite to

637
00:25:32,149 --> 00:25:30,799
honor dr mike

638
00:25:34,789 --> 00:25:32,159

freilich

639

00:25:37,430 --> 00:25:34,799

sentinel 6 is essential to the mission

640

00:25:40,470 --> 00:25:37,440

of copernicus and copernicus is

641

00:25:42,470 --> 00:25:40,480

essential to the future of humanity

642

00:25:44,870 --> 00:25:42,480

this is no exaggeration

643

00:25:47,430 --> 00:25:44,880

copernicus is a factor of change to

644

00:25:50,070 --> 00:25:47,440

address the greatest challenges humanity

645

00:25:52,549 --> 00:25:50,080

is faced with climate change

646

00:25:54,630 --> 00:25:52,559

and environmental degradation

647

00:25:57,029 --> 00:25:54,640

we need copernicus as a tool for

648

00:25:59,029 --> 00:25:57,039

accurate diagnosis

649

00:26:01,990 --> 00:25:59,039

and in the case of satellite of this

650

00:26:03,510 --> 00:26:02,000

satellite it's about sea level rise

651
00:26:05,430 --> 00:26:03,520
we need copernicus as a tool for

652
00:26:07,750 --> 00:26:05,440
monitoring the effectiveness of the

653
00:26:09,590 --> 00:26:07,760
remedies we apply

654
00:26:10,789 --> 00:26:09,600
we need it as a tool to identify new

655
00:26:13,190 --> 00:26:10,799
threats

656
00:26:16,710 --> 00:26:13,200
and because we need all the data we can

657
00:26:18,630 --> 00:26:16,720
gather to understand whether our planet

658
00:26:20,549 --> 00:26:18,640
but as it has been explained before we

659
00:26:23,029 --> 00:26:20,559
cannot do this alone

660
00:26:24,870 --> 00:26:23,039
because it is a global challenge

661
00:26:27,590 --> 00:26:24,880
we need to work together

662
00:26:29,350 --> 00:26:27,600
and indeed together is the key word

663
00:26:31,909 --> 00:26:29,360

because working together is dr

664

00:26:33,909 --> 00:26:31,919

freilich's way of doing things

665

00:26:36,630 --> 00:26:33,919

it is therefore only fair that the

666

00:26:39,990 --> 00:26:36,640

sentinel-6 satellite is now

667

00:26:42,070 --> 00:26:40,000

named sentinel 6 michael freilig it is a

668

00:26:44,390 --> 00:26:42,080

gesture of friendship and a celebration

669

00:26:46,310 --> 00:26:44,400

of our joint cooperation

670

00:26:47,990 --> 00:26:46,320

dr freilich you have been instrumental

671

00:26:50,470 --> 00:26:48,000

in enabling this mission through

672

00:26:52,710 --> 00:26:50,480

significant contributions from nasa

673

00:26:54,950 --> 00:26:52,720

you let us in showing how our

674

00:26:57,669 --> 00:26:54,960

organizations can work together on

675

00:26:59,830 --> 00:26:57,679

shared projects and objectives despite

676
00:27:02,789 --> 00:26:59,840
our challenges and our differences

677
00:27:04,070 --> 00:27:02,799
you created a space where collaboration

678
00:27:06,470 --> 00:27:04,080
can grow

679
00:27:08,870 --> 00:27:06,480
and you nurtured it you nourished it so

680
00:27:10,230 --> 00:27:08,880
it could flourish and this is the result

681
00:27:11,990 --> 00:27:10,240
today

682
00:27:14,070 --> 00:27:12,000
we're so grateful

683
00:27:16,710 --> 00:27:14,080
and this is not all you also change the

684
00:27:18,070 --> 00:27:16,720
discipline of earth science in a

685
00:27:19,909 --> 00:27:18,080
profound way

686
00:27:23,110 --> 00:27:19,919
combining science and technology to

687
00:27:25,830 --> 00:27:23,120
understand our beautiful planet

688
00:27:28,870 --> 00:27:25,840

you did good dr freilich for all of us

689

00:27:31,110 --> 00:27:28,880

and for that we're all very grateful

690

00:27:32,870 --> 00:27:31,120

let me now hand over to dr steele volts

691

00:27:39,640 --> 00:27:32,880

noah's assistant administrator for

692

00:27:47,269 --> 00:27:45,590

[Applause]

693

00:27:49,110 --> 00:27:47,279

thank you madam garcia perez for the

694

00:27:50,950 --> 00:27:49,120

introduction and for your words

695

00:27:52,870 --> 00:27:50,960

it's really an honor and a privilege to

696

00:27:54,549 --> 00:27:52,880

be here with friends and colleagues to

697

00:27:56,950 --> 00:27:54,559

to pay tribute to michael freilich's

698

00:27:58,549 --> 00:27:56,960

career his significant contributions to

699

00:27:59,990 --> 00:27:58,559

earth science and satellite altimetry

700

00:28:02,389 --> 00:28:00,000

specifically

701
00:28:03,669 --> 00:28:02,399
isa the commission and yumezah's

702
00:28:06,149 --> 00:28:03,679
generous

703
00:28:08,710 --> 00:28:06,159
offer decision to rename the satellite

704
00:28:11,190 --> 00:28:08,720
is a suitable tren suitable recognition

705
00:28:13,350 --> 00:28:11,200
of dr freilich's career and lifetime of

706
00:28:15,669 --> 00:28:13,360
contributions not just to altimetry but

707
00:28:18,230 --> 00:28:15,679
to earth science in general and and the

708
00:28:19,269 --> 00:28:18,240
collective objective that we all have

709
00:28:21,110 --> 00:28:19,279
you've heard about the importance of

710
00:28:23,269 --> 00:28:21,120
this mission from climate sea level rise

711
00:28:24,389 --> 00:28:23,279
and the like from the noaa perspective

712
00:28:26,070 --> 00:28:24,399
and i imagine from you mets that

713
00:28:28,070 --> 00:28:26,080

perspective as well it's not just what's

714

00:28:29,909 --> 00:28:28,080

happening years from now as a sea level

715

00:28:32,630 --> 00:28:29,919

rise but we use these in the information

716

00:28:34,310 --> 00:28:32,640

the satellite daily as we might monitor

717

00:28:36,149 --> 00:28:34,320

storms and how hurricanes are formed and

718

00:28:37,990 --> 00:28:36,159

how they're created so the impact of

719

00:28:40,070 --> 00:28:38,000

these missions and this and many others

720

00:28:41,590 --> 00:28:40,080

is not just in understanding the planet

721

00:28:43,510 --> 00:28:41,600

but it's actually adapting to it and

722

00:28:44,870 --> 00:28:43,520

mitigating the impacts of the um of the

723

00:28:47,590 --> 00:28:44,880

weather and the events that occur on

724

00:28:49,350 --> 00:28:47,600

this planet so it is it is a a set of

725

00:28:51,350 --> 00:28:49,360

data and information that is used daily

726

00:28:53,430 --> 00:28:51,360

and and by all of us around the planet

727

00:28:55,350 --> 00:28:53,440

and we all benefit from this

728

00:28:56,789 --> 00:28:55,360

but i would say at the center of today's

729

00:28:58,950 --> 00:28:56,799

discussion is about partnerships and

730

00:29:00,630 --> 00:28:58,960

about joint ventures and and jim

731

00:29:01,990 --> 00:29:00,640

breidenstein opened up the conversation

732

00:29:04,389 --> 00:29:02,000

talking about how bureaucracies are

733

00:29:05,669 --> 00:29:04,399

difficult to work with and work through

734

00:29:07,110 --> 00:29:05,679

i'll give you a different perspective

735

00:29:09,269 --> 00:29:07,120

bureaucracies are what make this

736

00:29:11,590 --> 00:29:09,279

possible this mission and the others we

737

00:29:13,750 --> 00:29:11,600

do which involve billions and billions

738

00:29:15,590 --> 00:29:13,760

of euros and dollars could never be done

739

00:29:18,149 --> 00:29:15,600

by an individual with an idea they're

740

00:29:20,549 --> 00:29:18,159

done by a collective by a community of

741

00:29:22,389 --> 00:29:20,559

people with a common idea and it takes

742

00:29:24,630 --> 00:29:22,399

work to get those communities to work

743

00:29:26,389 --> 00:29:24,640

together all of us and michael in

744

00:29:29,350 --> 00:29:26,399

particular understood the trust that we

745

00:29:30,470 --> 00:29:29,360

had to use citizens money to invest in

746

00:29:33,909 --> 00:29:30,480

earth understanding and earth

747

00:29:36,389 --> 00:29:33,919

observations so the bureaucracy was not

748

00:29:38,710 --> 00:29:36,399

an enemy but a tool it was a mechanism

749

00:29:40,549 --> 00:29:38,720

that which we had to work when dr k

750

00:29:41,669 --> 00:29:40,559

asked mike was he willing to come here

751

00:29:43,269 --> 00:29:41,679

it wasn't a question is if you're

752

00:29:45,430 --> 00:29:43,279

obviously good or bad is can i have an

753

00:29:47,909 --> 00:29:45,440

impact and mike came in with an admit

754

00:29:50,149 --> 00:29:47,919

with a message and a mission to have an

755

00:29:51,909 --> 00:29:50,159

impact to make a difference in using and

756

00:29:53,350 --> 00:29:51,919

working with the people he he had with

757

00:29:54,950 --> 00:29:53,360

us here

758

00:29:56,950 --> 00:29:54,960

and i think it goes without saying that

759

00:29:58,630 --> 00:29:56,960

um having worked with mike for 12 years

760

00:29:59,590 --> 00:29:58,640

here at earth science and as i'm over at

761

00:30:01,990 --> 00:29:59,600

noaa

762

00:30:04,149 --> 00:30:02,000

he has the ability to make a change to

763

00:30:05,830 --> 00:30:04,159

up upgrade the performance of every

764

00:30:07,750 --> 00:30:05,840

group he works with

765

00:30:08,389 --> 00:30:07,760

and that's in a very singular phrylic

766

00:30:09,909 --> 00:30:08,399

way

767

00:30:11,590 --> 00:30:09,919

it's not coming in and telling everybody

768

00:30:13,750 --> 00:30:11,600

what they're doing wrong or how they can

769

00:30:15,669 --> 00:30:13,760

do it better it's coming in and adding

770

00:30:18,070 --> 00:30:15,679

value to the mission adding value to the

771

00:30:19,830 --> 00:30:18,080

conversation asking the right questions

772

00:30:21,990 --> 00:30:19,840

that sometimes we look at and ignore or

773

00:30:23,990 --> 00:30:22,000

we don't even realize are there asking

774

00:30:25,669 --> 00:30:24,000

how how and why we're doing something a

775

00:30:27,750 --> 00:30:25,679

particular way and how we can do it

776

00:30:30,710 --> 00:30:27,760

better with the we as the operative part

777

00:30:32,870 --> 00:30:30,720

here i'll give one specific example

778

00:30:34,710 --> 00:30:32,880

mike sat through hundreds and hundreds

779

00:30:36,630 --> 00:30:34,720

of program management council meetings

780

00:30:38,549 --> 00:30:36,640

here in science in the in mass of the

781

00:30:40,070 --> 00:30:38,559

science directorate maybe a quarter of

782

00:30:42,470 --> 00:30:40,080

those were earth science the others were

783

00:30:44,870 --> 00:30:42,480

astrophysics planetary science and the

784

00:30:47,590 --> 00:30:44,880

like and and every one of those he

785

00:30:49,990 --> 00:30:47,600

participated he asked he made everybody

786

00:30:51,029 --> 00:30:50,000

else start to ask those same questions

787

00:30:52,710 --> 00:30:51,039

he made

788

00:30:54,149 --> 00:30:52,720

the pro it was not about personal

789

00:30:56,389 --> 00:30:54,159

performance but it was about what are we

790

00:30:58,549 --> 00:30:56,399

trying to achieve and i think in that ro

791

00:31:00,070 --> 00:30:58,559

and that role here and in other areas

792

00:31:02,149 --> 00:31:00,080

we're able to raise the bar of what we

793

00:31:04,310 --> 00:31:02,159

can expect from ourselves from our

794

00:31:06,389 --> 00:31:04,320

partners and from our own and and from

795

00:31:08,230 --> 00:31:06,399

our larger global community and which is

796

00:31:10,470 --> 00:31:08,240

where the global part was really the

797

00:31:13,990 --> 00:31:10,480

essential part that make brought in so i

798

00:31:15,909 --> 00:31:14,000

i'll end with a personal note um mike

799

00:31:18,789 --> 00:31:15,919

the characterization of helping the

800

00:31:20,950 --> 00:31:18,799

group work better was epitomized by

801
00:31:22,950 --> 00:31:20,960
an observation the mentoring task mike

802
00:31:23,990 --> 00:31:22,960
gave me once he said never ask for

803
00:31:25,909 --> 00:31:24,000
information you're not going to do

804
00:31:27,909 --> 00:31:25,919
something with don't ask for something

805
00:31:30,310 --> 00:31:27,919
just because you can just because it's

806
00:31:31,990 --> 00:31:30,320
interesting understand that in asking a

807
00:31:33,509 --> 00:31:32,000
question you're asking somebody else to

808
00:31:35,110 --> 00:31:33,519
do a lot of work and that definitely

809
00:31:36,789 --> 00:31:35,120
happens in a position of power which

810
00:31:38,230 --> 00:31:36,799
mike had and i've learned in the one i

811
00:31:39,909 --> 00:31:38,240
have you don't ask for something for

812
00:31:41,990 --> 00:31:39,919
interest you ask because you need it

813
00:31:43,509 --> 00:31:42,000

it's necessary and it's essential now

814

00:31:45,990 --> 00:31:43,519

why is that important the message that

815

00:31:47,909 --> 00:31:46,000

sends back is i'm respectful of other

816

00:31:49,750 --> 00:31:47,919

people's time and effort i don't do

817

00:31:51,110 --> 00:31:49,760

something because i can i do something

818

00:31:52,950 --> 00:31:51,120

because it's important and it's

819

00:31:54,789 --> 00:31:52,960

necessary and that was the message mike

820

00:31:56,870 --> 00:31:54,799

constantly brought across we were doing

821

00:31:58,630 --> 00:31:56,880

this for a greater purpose not just to

822

00:32:00,149 --> 00:31:58,640

aggrandize a particular organization a

823

00:32:01,909 --> 00:32:00,159

particular mission but because the

824

00:32:04,070 --> 00:32:01,919

mission is part of a whole which is

825

00:32:06,470 --> 00:32:04,080

necessary for for all of us to thrive

826

00:32:08,870 --> 00:32:06,480

and i appreciate mike your mentoring and

827

00:32:11,269 --> 00:32:08,880

teaching so we can do that i think it

828

00:32:13,669 --> 00:32:11,279

really is is an epitome to mike's

829

00:32:15,909 --> 00:32:13,679

character and his contributions it is

830

00:32:17,509 --> 00:32:15,919

respectful of mission and of people

831

00:32:18,710 --> 00:32:17,519

respectful of the purpose and

832

00:32:19,990 --> 00:32:18,720

understanding of the greater goal which

833

00:32:22,389 --> 00:32:20,000

we only accomplish by working well

834

00:32:24,870 --> 00:32:22,399

together so mike you've done that and uh

835

00:32:26,789 --> 00:32:24,880

you've you've this tribute here is a

836

00:32:28,070 --> 00:32:26,799

testimony to what that's been able to do

837

00:32:30,070 --> 00:32:28,080

and what we will continue to follow

838

00:32:31,830 --> 00:32:30,080

through with as we've learned from you

839

00:32:34,070 --> 00:32:31,840

with that i'd like to introduce dr elan

840

00:32:35,590 --> 00:32:34,080

ratier the director general of gemetsat

841

00:32:40,270 --> 00:32:35,600

my partner in weather and earth

842

00:32:40,280 --> 00:32:46,789

[Applause]

843

00:32:50,710 --> 00:32:48,470

thank you steve

844

00:32:52,310 --> 00:32:50,720

i think our presence today

845

00:32:54,070 --> 00:32:52,320

reflects our commitment to a

846

00:32:55,350 --> 00:32:54,080

long-standing and very special

847

00:32:57,909 --> 00:32:55,360

partnership

848

00:33:00,230 --> 00:32:57,919

for ocean and sea level monitoring

849

00:33:02,789 --> 00:33:00,240

nasa and nest started with the topex

850

00:33:05,990 --> 00:33:02,799

poseidon and json missions

851
00:33:07,509 --> 00:33:06,000
you met satan noah joined with jason ii

852
00:33:10,389 --> 00:33:07,519
the european commission joined with

853
00:33:13,029 --> 00:33:10,399
jason iii it's not known but it's true

854
00:33:14,549 --> 00:33:13,039
and isa with sentinel 6

855
00:33:16,789 --> 00:33:14,559
taking the lead on the satellite

856
00:33:19,509 --> 00:33:16,799
development and today

857
00:33:22,070 --> 00:33:19,519
we all stand as one

858
00:33:24,710 --> 00:33:22,080
this is a very special partnership and

859
00:33:26,630 --> 00:33:24,720
it started under the best

860
00:33:29,190 --> 00:33:26,640
transatlantic hospices

861
00:33:30,630 --> 00:33:29,200
believe it or not but the jason program

862
00:33:33,509 --> 00:33:30,640
was approved

863
00:33:39,669 --> 00:33:33,519

by the kness board of governors on the

864

00:33:44,070 --> 00:33:41,190

i remember

865

00:33:46,070 --> 00:33:44,080

we were close to renaming topex poseidon

866

00:33:49,190 --> 00:33:46,080

the name of laplace

867

00:33:52,789 --> 00:33:49,200

a famous french scientist who put tied

868

00:33:55,110 --> 00:33:52,799

ocean tides into equations emerged

869

00:33:57,509 --> 00:33:55,120

but it sounded a bit too french and

870

00:34:00,789 --> 00:33:57,519

nobody had met laplace

871

00:34:03,110 --> 00:34:00,799

so this time it was much easier to

872

00:34:04,549 --> 00:34:03,120

rename our next satellite sentinel 6

873

00:34:07,350 --> 00:34:04,559

michael frielek

874

00:34:09,270 --> 00:34:07,360

even if the european commission is a new

875

00:34:10,629 --> 00:34:09,280

exact had to agree on the copernicus

876
00:34:13,589 --> 00:34:10,639
side

877
00:34:16,149 --> 00:34:13,599
and yes jim we did not need an mou this

878
00:34:18,230 --> 00:34:16,159
time we had no bureaucracy

879
00:34:20,710 --> 00:34:18,240
because we all wish to communicate the

880
00:34:22,950 --> 00:34:20,720
value and resilience of our

881
00:34:25,190 --> 00:34:22,960
transatlantic cooperation and pay

882
00:34:26,550 --> 00:34:25,200
tribute to the unique personality of

883
00:34:28,950 --> 00:34:26,560
mike freilich

884
00:34:30,950 --> 00:34:28,960
mike feilik's commitment to earth system

885
00:34:33,430 --> 00:34:30,960
science with no borders and to

886
00:34:36,710 --> 00:34:33,440
cooperation is unrivaled

887
00:34:39,589 --> 00:34:36,720
and we in europe are delighted to honor

888
00:34:41,510 --> 00:34:39,599

a true american who is also a citizen of

889

00:34:44,470 --> 00:34:41,520

the world

890

00:34:46,790 --> 00:34:44,480

this is the best introduction i found

891

00:34:49,109 --> 00:34:46,800

for dr michael frylick

892

00:34:54,000 --> 00:34:49,119

and but i'm sure he will introduce

893

00:35:16,470 --> 00:35:12,560

[Applause]

894

00:35:20,470 --> 00:35:17,829

well thanks if i'm going to do my

895

00:35:22,470 --> 00:35:20,480

45-minute lecture on altimetry we have

896

00:35:24,310 --> 00:35:22,480

to get going

897

00:35:27,910 --> 00:35:24,320

seriously i'm

898

00:35:28,950 --> 00:35:27,920

more than humbled by this great honor

899

00:35:33,109 --> 00:35:28,960

thank you

900

00:35:36,790 --> 00:35:33,119

so much from the bottom of my heart

901
00:35:39,349 --> 00:35:36,800
now decadal scale trends in regional and

902
00:35:42,950 --> 00:35:39,359
global sea level

903
00:35:46,069 --> 00:35:42,960
are perhaps the most robust evidence

904
00:35:48,950 --> 00:35:46,079
that earth's climate is changing

905
00:35:50,950 --> 00:35:48,960
and that's why humanity

906
00:35:53,030 --> 00:35:50,960
not one agency

907
00:35:56,790 --> 00:35:53,040
not one country

908
00:35:58,950 --> 00:35:56,800
not one continent but why humanity has

909
00:36:03,270 --> 00:35:58,960
been monitoring global sea level from

910
00:36:06,069 --> 00:36:03,280
space with exquisite accuracy for more

911
00:36:08,470 --> 00:36:06,079
than 28 years

912
00:36:11,510 --> 00:36:08,480
like the sentinel 6 missions

913
00:36:14,710 --> 00:36:11,520

that we've heard about today each one of

914

00:36:17,750 --> 00:36:14,720

the previous precision nader altimetry

915

00:36:20,950 --> 00:36:17,760

missions has involved essential

916

00:36:24,710 --> 00:36:20,960

international collaboration between

917

00:36:27,670 --> 00:36:24,720

european and u.s agencies

918

00:36:30,630 --> 00:36:27,680

and based on my research at least if you

919

00:36:33,510 --> 00:36:30,640

take all the altimeter missions together

920

00:36:36,230 --> 00:36:33,520

the continuous altimeter mission set

921

00:36:37,790 --> 00:36:36,240

represents the longest and most

922

00:36:40,990 --> 00:36:37,800

successful

923

00:36:43,750 --> 00:36:41,000

multinational and intercontinental

924

00:36:48,710 --> 00:36:43,760

collaborative earth remote sensing

925

00:36:58,540 --> 00:36:48,720

program that our species has achieved

926
00:37:02,950 --> 00:37:00,150
[Applause]

927
00:37:05,109 --> 00:37:02,960
as we've evolved our instrument and our

928
00:37:06,230 --> 00:37:05,119
spacecraft designs

929
00:37:09,190 --> 00:37:06,240
so too

930
00:37:12,069 --> 00:37:09,200
have we strengthened and broadened our

931
00:37:13,990 --> 00:37:12,079
transatlantic collaborations

932
00:37:16,630 --> 00:37:14,000
i actually thought that you know as sea

933
00:37:20,069 --> 00:37:16,640
level rises and the ocean deepens

934
00:37:21,589 --> 00:37:20,079
we have deepened our collaborations as

935
00:37:23,670 --> 00:37:21,599
well

936
00:37:26,470 --> 00:37:23,680
but make no mistake

937
00:37:28,230 --> 00:37:26,480
our ability to do precision altimetry

938
00:37:31,190 --> 00:37:28,240

over the decades

939

00:37:34,790 --> 00:37:31,200
and to implement sentinel 6 now

940

00:37:38,470 --> 00:37:34,800
is possible only because of the vision

941

00:37:39,910 --> 00:37:38,480
and the contributions of many thousands

942

00:37:41,670 --> 00:37:39,920
thousands

943

00:37:43,750 --> 00:37:41,680
of scientists

944

00:37:45,510 --> 00:37:43,760
engineers

945

00:37:48,390 --> 00:37:45,520
managers

946

00:37:50,790 --> 00:37:48,400
and yeah diplomats

947

00:37:53,270 --> 00:37:50,800
from both sides of the atlantic

948

00:37:54,470 --> 00:37:53,280
and from academia

949

00:37:55,829 --> 00:37:54,480
government

950

00:37:58,950 --> 00:37:55,839
and industry

951
00:38:02,230 --> 00:37:58,960
each and every one of those thousands of

952
00:38:04,870 --> 00:38:02,240
contributors deserves to have their name

953
00:38:08,150 --> 00:38:04,880
associated with this mission and i

954
00:38:10,470 --> 00:38:08,160
personally salute you all

955
00:38:11,990 --> 00:38:10,480
thank you administer administrator

956
00:38:13,750 --> 00:38:12,000
bridenstine

957
00:38:14,950 --> 00:38:13,760
thank you joseph

958
00:38:16,150 --> 00:38:14,960
thomas

959
00:38:17,670 --> 00:38:16,160
alain

960
00:38:21,030 --> 00:38:17,680
mercedes

961
00:38:23,829 --> 00:38:21,040
and steve for your kind words and your

962
00:38:25,190 --> 00:38:23,839
strong support over the years and the

963
00:38:26,710 --> 00:38:25,200

decades

964

00:38:29,349 --> 00:38:26,720

speaking to you

965

00:38:32,150 --> 00:38:29,359

and to everyone who contributed to the

966

00:38:34,950 --> 00:38:32,160

successful development of sentinel 6

967

00:38:36,790 --> 00:38:34,960

it's been a privilege to work with you

968

00:38:38,950 --> 00:38:36,800

to learn from you

969

00:38:40,950 --> 00:38:38,960

and to be able to call you

970

00:38:43,670 --> 00:38:40,960

friends

971

00:38:47,349 --> 00:38:43,680

the entire world is expecting great

972

00:38:49,910 --> 00:38:47,359

things from sentinel 6 and i know

973

00:38:52,370 --> 00:38:49,920

that you will deliver

974

00:39:03,829 --> 00:38:52,380

go sentinel 6.

975

00:39:23,510 --> 00:39:05,600

so

976
00:39:31,430 --> 00:39:23,520
[Applause]

977
00:39:36,390 --> 00:39:33,030
what i'm gonna do

978
00:39:37,829 --> 00:39:36,400
is close off this uh really exciting

979
00:39:39,990 --> 00:39:37,839
event

980
00:39:42,390 --> 00:39:40,000
of course today is all about earth

981
00:39:44,790 --> 00:39:42,400
science the life of our planet

982
00:39:46,150 --> 00:39:44,800
and our desire to understand it

983
00:39:47,430 --> 00:39:46,160
it's about

984
00:39:48,550 --> 00:39:47,440
international

985
00:39:50,150 --> 00:39:48,560
partnership

986
00:39:52,069 --> 00:39:50,160
and friendship

987
00:39:53,829 --> 00:39:52,079
and it's about quote a unique

988
00:39:58,069 --> 00:39:53,839

personality

989

00:40:00,870 --> 00:39:58,079

mike freilich our friend and his impact

990

00:40:03,270 --> 00:40:00,880

in this uh really in this desire to

991

00:40:04,790 --> 00:40:03,280

understand our planet better i want to

992

00:40:06,950 --> 00:40:04,800

thank you jim

993

00:40:08,470 --> 00:40:06,960

uh breinstein and your team uh what's

994

00:40:11,349 --> 00:40:08,480

really important to me

995

00:40:13,430 --> 00:40:11,359

is whether we're in front of cameras or

996

00:40:15,750 --> 00:40:13,440

in a room by ourselves at eight o'clock

997

00:40:17,750 --> 00:40:15,760

at night you've always been consistent

998

00:40:19,990 --> 00:40:17,760

about your support

999

00:40:21,910 --> 00:40:20,000

and uh of earth signs enough

1000

00:40:23,589 --> 00:40:21,920

partnerships and so i just really want

1001
00:40:25,910 --> 00:40:23,599
to thank you for being here today in

1002
00:40:27,990 --> 00:40:25,920
fact i want to thank you for actually

1003
00:40:29,750 --> 00:40:28,000
recommending as the first person that we

1004
00:40:31,430 --> 00:40:29,760
should really consider on aiming a

1005
00:40:33,670 --> 00:40:31,440
mission of our mike and we will always

1006
00:40:35,670 --> 00:40:33,680
have that credit uh from where i'm at

1007
00:40:36,790 --> 00:40:35,680
you you were the first one who brought

1008
00:40:38,470 --> 00:40:36,800
that up i want to thank the

1009
00:40:41,430 --> 00:40:38,480
representatives from centers dennis

1010
00:40:43,910 --> 00:40:41,440
andreuzik the senate director i gotta

1011
00:40:45,349 --> 00:40:43,920
representatives from jpl of course where

1012
00:40:47,030 --> 00:40:45,359
a lot of this work

1013
00:40:47,829 --> 00:40:47,040

will happen there's still a lot of work

1014

00:40:49,109 --> 00:40:47,839

to do

1015

00:40:51,349 --> 00:40:49,119

with sentinel

1016

00:40:52,630 --> 00:40:51,359

6 michael freilich and i want to thank

1017

00:40:55,589 --> 00:40:52,640

the international partners who have

1018

00:40:57,430 --> 00:40:55,599

spoken here already mentioned their name

1019

00:40:59,430 --> 00:40:57,440

i want to thank all the colleagues who

1020

00:41:00,710 --> 00:40:59,440

took time out of their day you're all

1021

00:41:03,349 --> 00:41:00,720

busy i know

1022

00:41:04,630 --> 00:41:03,359

and to celebrate with us

1023

00:41:08,230 --> 00:41:04,640

both mike

1024

00:41:11,270 --> 00:41:08,240

but also this important event and i want

1025

00:41:16,150 --> 00:41:11,280

to thank mike and sushana for being here

1026
00:41:20,870 --> 00:41:19,589
november 10th 2020. i want to see all of

1027
00:41:23,270 --> 00:41:20,880
you again

1028
00:41:25,349 --> 00:41:23,280
mike and everybody else we're going to

1029
00:41:27,030 --> 00:41:25,359
be in vanderberg together

1030
00:41:29,190 --> 00:41:27,040
and we're going to look

1031
00:41:31,670 --> 00:41:29,200
at this rocket that stands there with

1032
00:41:34,790 --> 00:41:31,680
that spacecraft on top of it ready to

1033
00:41:36,309 --> 00:41:34,800
launch having the hopes and work of all

1034
00:41:37,349 --> 00:41:36,319
these thousands of

1035
00:41:41,910 --> 00:41:37,359
colleagues

1036
00:41:43,990 --> 00:41:41,920
ready to launch

1037
00:41:46,710 --> 00:41:44,000
i'm going to be very nervous

1038
00:41:49,990 --> 00:41:46,720

as will be yourself it's not because we

1039

00:41:52,069 --> 00:41:50,000

don't trust the amazing industry that

1040

00:41:54,230 --> 00:41:52,079

has over many years successfully put

1041

00:41:56,950 --> 00:41:54,240

these spacecraft up it's wait that

1042

00:41:59,430 --> 00:41:56,960

moment occurs where we lift out

1043

00:42:02,390 --> 00:41:59,440

of away from this planet it's a historic

1044

00:42:04,470 --> 00:42:02,400

moment any time a moment that you laugh

1045

00:42:05,589 --> 00:42:04,480

every time i know i sat next to you for

1046

00:42:08,230 --> 00:42:05,599

one of them

1047

00:42:09,750 --> 00:42:08,240

and uh and we've celebrated and we're

1048

00:42:11,109 --> 00:42:09,760

all going to be there

1049

00:42:12,550 --> 00:42:11,119

and we're going to shout i'm going to

1050

00:42:15,190 --> 00:42:12,560

tell you what i'm going to say and i

1051

00:42:17,430 --> 00:42:15,200

want to have you repeat after me before

1052

00:42:20,230 --> 00:42:17,440

we close off i'm going to say there

1053

00:42:23,670 --> 00:42:20,240

go sentinel 6 michael freilich

1054

00:42:27,700 --> 00:42:23,680

go sentinel 6 microflip

1055

00:42:27,710 --> 00:42:58,450

[Applause]