
SENTINEL-6
MICHAEL FREILICH

1
00:00:00,510 --> 00:00:08,549
[Music]

2
00:00:12,470 --> 00:00:09,830
welcome to vandenberg

3
00:00:14,789 --> 00:00:12,480
air force base in central california as

4
00:00:16,870 --> 00:00:14,799
we prepare for tomorrow's launch of the

5
00:00:18,950 --> 00:00:16,880
joint u.s european effort

6
00:00:20,390 --> 00:00:18,960
that will launch the next spacecraft to

7
00:00:22,950 --> 00:00:20,400
continue this legacy

8
00:00:25,509 --> 00:00:22,960
of monitoring sea surface height i am

9
00:00:26,310 --> 00:00:25,519
marina jureka from nasa's jet propulsion

10
00:00:28,310 --> 00:00:26,320
laboratory

11
00:00:29,509 --> 00:00:28,320
and i am your host today as we share

12
00:00:31,830 --> 00:00:29,519
details on the launch

13
00:00:33,430 --> 00:00:31,840

readiness of our satellite and the

14
00:00:35,670 --> 00:00:33,440
preparations that are being made

15
00:00:38,069 --> 00:00:35,680
for tomorrow's launch this has been a

16
00:00:39,430 --> 00:00:38,079
true international collaboration among

17
00:00:42,229 --> 00:00:39,440
several agencies

18
00:00:43,990 --> 00:00:42,239
in a first joint earth mission teaming

19
00:00:46,549 --> 00:00:44,000
nasa and the european space

20
00:00:47,270 --> 00:00:46,559
agency along with other partners the

21
00:00:49,670 --> 00:00:47,280
european

22
00:00:52,310 --> 00:00:49,680
organization for the exploitation of

23
00:00:54,790 --> 00:00:52,320
meteorological satellites or umetsat

24
00:00:55,670 --> 00:00:54,800
the national oceanic and atmospheric

25
00:00:58,549 --> 00:00:55,680
administration

26
00:00:59,270 --> 00:00:58,559
or noaa and the french space agency

27
00:01:01,510 --> 00:00:59,280
canes

28
00:01:03,349 --> 00:01:01,520
and the european commission this sea

29
00:01:06,469 --> 00:01:03,359
level scout will collect the most

30
00:01:07,429 --> 00:01:06,479
accurate data yet on sea level and how

31
00:01:09,990 --> 00:01:07,439
it changes

32
00:01:12,070 --> 00:01:10,000
over time for this news briefing we are

33
00:01:13,190 --> 00:01:12,080
taking questions from the media via the

34
00:01:15,670 --> 00:01:13,200
telecom line

35
00:01:18,310 --> 00:01:15,680
press star one to get into the queue or

36
00:01:20,870 --> 00:01:18,320
via social media with the hashtag

37
00:01:22,630 --> 00:01:20,880
seeing the seas as we are social

38
00:01:23,270 --> 00:01:22,640

distancing i will introduce you

39
00:01:24,710 --> 00:01:23,280
virtually

40
00:01:27,109 --> 00:01:24,720
to some of the people behind the

41
00:01:29,109 --> 00:01:27,119
sentinel 6 michael freilix satellite

42
00:01:31,270 --> 00:01:29,119
and those preparing it for launch

43
00:01:34,149 --> 00:01:31,280
tomorrow on our panel today

44
00:01:36,310 --> 00:01:34,159
we have nasa's associate administrator

45
00:01:40,310 --> 00:01:36,320
for the science omission directorate

46
00:01:43,109 --> 00:01:40,320
thomas zurbukin remarks from the general

47
00:01:44,149 --> 00:01:43,119
of the european space agency johann

48
00:01:47,270 --> 00:01:44,159
dietrich

49
00:01:51,910 --> 00:01:47,280
verner esa project

50
00:01:55,590 --> 00:01:54,630
tim dunn the nasa launch director for

51
00:01:58,870 --> 00:01:55,600
sentinel 6

52
00:02:04,310 --> 00:02:01,910
colonel anthony massilier commander of

53
00:02:06,789 --> 00:02:04,320
30th space wing

54
00:02:07,749 --> 00:02:06,799
spacex program manager for nasa launch

55
00:02:11,270 --> 00:02:07,759
services

56
00:02:14,470 --> 00:02:11,280
juliana shimon the mission's

57
00:02:18,229 --> 00:02:14,480
nasa project manager parag vasay

58
00:02:21,110 --> 00:02:18,239
of nasa's jet propulsion laboratory

59
00:02:22,229 --> 00:02:21,120
lastly from vandenberg air force base

60
00:02:25,270 --> 00:02:22,239
weather officer

61
00:02:26,869 --> 00:02:25,280
captain john ott we will begin with

62
00:02:30,309 --> 00:02:26,879
thomas zurbukin

63
00:02:35,430 --> 00:02:33,030

well i'm so excited to be here today and

64
00:02:37,190 --> 00:02:35,440
uh to really showcase this great

65
00:02:39,750 --> 00:02:37,200
international mission

66
00:02:41,910 --> 00:02:39,760
and of course what's on this mission

67
00:02:45,030 --> 00:02:41,920
because of our european friends is

68
00:02:48,070 --> 00:02:45,040
the name of our friend michael freilick

69
00:02:50,150 --> 00:02:48,080
and here's what he said earth system

70
00:02:53,509 --> 00:02:50,160
science is bigger than any particular

71
00:02:55,030 --> 00:02:53,519
agency it's bigger than any single

72
00:02:57,910 --> 00:02:55,040
nation

73
00:02:59,430 --> 00:02:57,920
it's bigger than any single continent

74
00:03:02,710 --> 00:02:59,440
and i surely hope

75
00:03:04,470 --> 00:03:02,720
because humanity requires it that we

76
00:03:06,470 --> 00:03:04,480
make some significant progress

77
00:03:07,509 --> 00:03:06,480
in understanding it with this i'll ask

78
00:03:10,630 --> 00:03:07,519
for the first

79
00:03:12,869 --> 00:03:10,640
graphic and of course tell you that this

80
00:03:15,190 --> 00:03:12,879
mission just like you say marina

81
00:03:16,790 --> 00:03:15,200
is an international global in fact

82
00:03:20,070 --> 00:03:16,800
partnership

83
00:03:23,589 --> 00:03:20,080
required to study our planet

84
00:03:26,229 --> 00:03:23,599
and it because it belongs to all of us

85
00:03:28,470 --> 00:03:26,239
and this partnership here is very much

86
00:03:30,949 --> 00:03:28,480
aligned with what mike freilich

87
00:03:32,470 --> 00:03:30,959
passions mike felix passion has been

88
00:03:34,630 --> 00:03:32,480

because of course

89
00:03:36,229 --> 00:03:34,640
it was ocean sciences both as a

90
00:03:39,350 --> 00:03:36,239
researcher

91
00:03:41,430 --> 00:03:39,360
as a professor and as the director for a

92
00:03:43,350 --> 00:03:41,440
dozen years or so

93
00:03:44,710 --> 00:03:43,360
of the entire earth science program at

94
00:03:46,470 --> 00:03:44,720
nasa

95
00:03:48,949 --> 00:03:46,480
this mission will provide critical

96
00:03:52,470 --> 00:03:48,959
continuity for our knowledge

97
00:03:53,670 --> 00:03:52,480
of the rising seas and it will help us

98
00:03:58,309 --> 00:03:53,680
better predict

99
00:04:00,149 --> 00:03:58,319
weather no no one on the planet is not

100
00:04:00,949 --> 00:04:00,159
affected by these things in many ways

101
00:04:04,470 --> 00:04:00,959
the seas

102
00:04:05,429 --> 00:04:04,480
are an integrator of our past the ice

103
00:04:08,550 --> 00:04:05,439
that has melted

104
00:04:11,589 --> 00:04:08,560
is in the sea and it stays there

105
00:04:14,309 --> 00:04:11,599
uh for a long long time

106
00:04:15,670 --> 00:04:14,319
so the earth is an ocean world and

107
00:04:18,629 --> 00:04:15,680
that's what makes it

108
00:04:21,509 --> 00:04:18,639
the blue marble from space we see one

109
00:04:25,270 --> 00:04:21,519
big ocean world's over two-thirds

110
00:04:28,710 --> 00:04:25,280
of the planet so studying these oceans

111
00:04:31,510 --> 00:04:28,720
on the processes that actually you know

112
00:04:33,030 --> 00:04:31,520
shape them and fill that you know the

113
00:04:37,030 --> 00:04:33,040

processes that fill them

114
00:04:39,350 --> 00:04:37,040
whether it's you know ice melt or other

115
00:04:40,390 --> 00:04:39,360
is a critical function of nasa science

116
00:04:42,950 --> 00:04:40,400
program

117
00:04:44,070 --> 00:04:42,960
so to understand what climate change

118
00:04:47,270 --> 00:04:44,080
means for the planet

119
00:04:48,230 --> 00:04:47,280
or for humanity scientists need to take

120
00:04:50,710 --> 00:04:48,240
a long view

121
00:04:51,510 --> 00:04:50,720
and so what's exciting is that this

122
00:04:54,870 --> 00:04:51,520
mission is

123
00:04:58,070 --> 00:04:54,880
is really a follow-up of 30 years

124
00:05:00,310 --> 00:04:58,080
of uninterrupted measurements that of

125
00:05:02,790 --> 00:05:00,320
spacecraft that have circled the earth

126
00:05:05,430 --> 00:05:02,800
taking the data that are there

127
00:05:06,710 --> 00:05:05,440
so 706 michael fralick and its twin

128
00:05:09,830 --> 00:05:06,720
launched in five

129
00:05:12,150 --> 00:05:09,840
years sentinels 6b

130
00:05:13,110 --> 00:05:12,160
will add another decade of critical

131
00:05:15,590 --> 00:05:13,120
measurements

132
00:05:16,469 --> 00:05:15,600
from that perspective and it's just so

133
00:05:19,670 --> 00:05:16,479
exciting

134
00:05:22,070 --> 00:05:19,680
to emphasize yet again how

135
00:05:23,830 --> 00:05:22,080
we do this together earth observations

136
00:05:25,830 --> 00:05:23,840
we do this together

137
00:05:27,670 --> 00:05:25,840
as an international community and that

138
00:05:28,790 --> 00:05:27,680

makes us stronger that makes these

139
00:05:30,710 --> 00:05:28,800
measurements

140
00:05:32,550 --> 00:05:30,720
better and in fact enables a critical

141
00:05:36,310 --> 00:05:32,560
collaboration by the colleagues

142
00:05:40,390 --> 00:05:36,320
that are with me on this call the next

143
00:05:43,670 --> 00:05:40,400
figure is one that i want to talk about

144
00:05:44,710 --> 00:05:43,680
uh a little bit and that is uh michael

145
00:05:46,629 --> 00:05:44,720
freilick uh

146
00:05:48,469 --> 00:05:46,639
with me uh the last time i was here

147
00:05:50,390 --> 00:05:48,479
frankly sitting next to me because we

148
00:05:51,029 --> 00:05:50,400
launched icesat-2 remember we talked

149
00:05:54,469 --> 00:05:51,039
about

150
00:05:56,230 --> 00:05:54,479
just now the relationship of melting ice

151
00:05:57,670 --> 00:05:56,240
and the oceans and he was there at

152
00:05:59,670 --> 00:05:57,680
launch that was his

153
00:06:01,749 --> 00:05:59,680
last launch frankly he was in tears just

154
00:06:03,430 --> 00:06:01,759
before we took that image because

155
00:06:05,350 --> 00:06:03,440
his colleagues had set up the

156
00:06:05,670 --> 00:06:05,360
opportunity for him to write his name on

157
00:06:09,270 --> 00:06:05,680
that

158
00:06:10,550 --> 00:06:09,280
record his last launch and i just want

159
00:06:13,990 --> 00:06:10,560
to tell you

160
00:06:17,510 --> 00:06:14,000
how honored i feel and how it still

161
00:06:19,029 --> 00:06:17,520
moves me today that the name of michael

162
00:06:22,309 --> 00:06:19,039
freilich is in fact

163
00:06:24,150 --> 00:06:22,319

on this on this uh spacecraft today

164
00:06:25,350 --> 00:06:24,160
and it's because of our european

165
00:06:26,550 --> 00:06:25,360
colleagues and the tremendous

166
00:06:28,230 --> 00:06:26,560
partnership

167
00:06:30,550 --> 00:06:28,240
and friendship that they have brought to

168
00:06:33,270 --> 00:06:30,560
this and i'm just so excited

169
00:06:34,070 --> 00:06:33,280
to get ready as we go forward to launch

170
00:06:37,830 --> 00:06:34,080
this amazing

171
00:06:39,909 --> 00:06:37,840
investigation again an important perhaps

172
00:06:41,990 --> 00:06:39,919
one of the most important investigations

173
00:06:45,270 --> 00:06:42,000
we could do right now

174
00:06:48,150 --> 00:06:45,280
on this planet but equally importantly

175
00:06:49,189 --> 00:06:48,160
an investigation that honors one of our

176
00:06:52,230 --> 00:06:49,199
friends

177
00:06:53,830 --> 00:06:52,240
a friend who connected us and because of

178
00:06:58,070 --> 00:06:53,840
whom we sit here today

179
00:07:02,309 --> 00:06:59,749
and now we will have a message from

180
00:07:07,029 --> 00:07:02,319
director general of the european space

181
00:07:12,629 --> 00:07:10,790
sentinel 6 mike freilisch this is a very

182
00:07:14,070 --> 00:07:12,639
important mission for us and a very

183
00:07:16,550 --> 00:07:14,080
important satellite

184
00:07:17,430 --> 00:07:16,560
because of several reasons of course

185
00:07:20,230 --> 00:07:17,440
reason number one

186
00:07:20,950 --> 00:07:20,240
is with sentinel-6 magfiles we will

187
00:07:23,430 --> 00:07:20,960
observe

188
00:07:24,469 --> 00:07:23,440

the sea level rise which is a strong

189
00:07:26,150 --> 00:07:24,479
indicator

190
00:07:28,790 --> 00:07:26,160
for the climate change and this will

191
00:07:31,990 --> 00:07:28,800
help us to understand the climate change

192
00:07:34,550 --> 00:07:32,000
and also to counteract number two

193
00:07:36,309 --> 00:07:34,560
it is international partnership we are

194
00:07:36,950 --> 00:07:36,319
working together here with the european

195
00:07:40,550 --> 00:07:36,960
commission

196
00:07:42,870 --> 00:07:40,560
with umitzat with noah andris nasa

197
00:07:43,749 --> 00:07:42,880
and this cooperation is important

198
00:07:45,909 --> 00:07:43,759
because only

199
00:07:48,070 --> 00:07:45,919
in that way we will have data which will

200
00:07:49,909 --> 00:07:48,080
also be accepted worldwide

201
00:07:51,270 --> 00:07:49,919
and it will be part of the copernicus

202
00:07:53,189 --> 00:07:51,280
fleet in the future

203
00:07:55,110 --> 00:07:53,199
but there is a third aspect and this is

204
00:07:58,309 --> 00:07:55,120
the name mike freilisch

205
00:08:02,629 --> 00:07:58,319
mike freudish was a space science

206
00:08:03,589 --> 00:08:02,639
director at nasa unfortunately he passed

207
00:08:05,510 --> 00:08:03,599
away

208
00:08:06,710 --> 00:08:05,520
but because he was so important for all

209
00:08:09,589 --> 00:08:06,720
the earth scientists

210
00:08:11,350 --> 00:08:09,599
science activities we named these

211
00:08:14,390 --> 00:08:11,360
satellites to mike varnish

212
00:08:16,790 --> 00:08:14,400
so i hope that we will see very very

213
00:08:18,950 --> 00:08:16,800

nice uh data from mike fry

214
00:08:20,070 --> 00:08:18,960
satellite because this will help us

215
00:08:22,309 --> 00:08:20,080
really to understand

216
00:08:23,270 --> 00:08:22,319
climate change and to go further in our

217
00:08:28,550 --> 00:08:23,280
understanding

218
00:08:32,630 --> 00:08:31,029
thank you so much mr verner now we will

219
00:08:42,149 --> 00:08:32,640
hear from european space

220
00:08:46,470 --> 00:08:43,829
thank you marina i'm very happy to be

221
00:08:49,590 --> 00:08:46,480
here the day before the launch of our

222
00:08:53,030 --> 00:08:49,600
centennial six microfarad satellite so

223
00:08:56,150 --> 00:08:53,040
a lot of work has been put into

224
00:08:58,070 --> 00:08:56,160
bringing the mission to today and

225
00:08:59,990 --> 00:08:58,080
i would like maybe to show a few slides

226
00:09:02,470 --> 00:09:00,000
to show you how the campaign

227
00:09:04,550 --> 00:09:02,480
evolved and then reflect a little bit on

228
00:09:07,509 --> 00:09:04,560
what the mission is about

229
00:09:08,070 --> 00:09:07,519
on the 24th of september the the

230
00:09:09,670 --> 00:09:08,080
satellite

231
00:09:11,829 --> 00:09:09,680
and all the material landed here in

232
00:09:14,310 --> 00:09:11,839
vandenberg southern california

233
00:09:15,990 --> 00:09:14,320
and immediately the team took on the job

234
00:09:17,910 --> 00:09:16,000
to move the satellites further we can

235
00:09:20,070 --> 00:09:17,920
move to the next slide

236
00:09:22,389 --> 00:09:20,080
so it gives you a feel on how things

237
00:09:24,550 --> 00:09:22,399
happen on the field yeah here

238
00:09:27,190 --> 00:09:24,560

the fairly big container and the truck

239
00:09:29,829 --> 00:09:27,200
started like 15 kilometer

240
00:09:31,350 --> 00:09:29,839
kilometers right to the payload

241
00:09:37,350 --> 00:09:31,360
processing facility

242
00:09:40,230 --> 00:09:37,360
and then if you go to the next slide

243
00:09:41,269 --> 00:09:40,240
next slide yeah finally we could uh

244
00:09:43,430 --> 00:09:41,279
let's say

245
00:09:44,470 --> 00:09:43,440
prepare or satellite into the clean room

246
00:09:47,430 --> 00:09:44,480
here you see

247
00:09:49,509 --> 00:09:47,440
sentinel 6 in a folded configuration

248
00:09:51,509 --> 00:09:49,519
like it will be in the fairing soon

249
00:09:53,269 --> 00:09:51,519
in the launcher you also see two

250
00:09:56,230 --> 00:09:53,279
important things on the satellite

251
00:09:57,269 --> 00:09:56,240
the black cone is uh the heart of the of

252
00:09:59,670 --> 00:09:57,279
the system is the

253
00:10:00,470 --> 00:09:59,680
deposit on four altimeter which is a new

254
00:10:02,630 --> 00:10:00,480
technology

255
00:10:04,630 --> 00:10:02,640
developed for this mission and that will

256
00:10:05,110 --> 00:10:04,640
really make a breakthrough compared to

257
00:10:08,710 --> 00:10:05,120
the

258
00:10:10,870 --> 00:10:08,720
to follow

259
00:10:11,750 --> 00:10:10,880
on top and perhaps we'll talk about it

260
00:10:14,949 --> 00:10:11,760
much more

261
00:10:18,630 --> 00:10:14,959
you notice the amrc the microwave

262
00:10:20,470 --> 00:10:18,640
radiometer developed by jpl you also see

263
00:10:22,310 --> 00:10:20,480

that the people are wearing masks

264
00:10:23,509 --> 00:10:22,320
in the clean room this is a

265
00:10:25,430 --> 00:10:23,519
demonstration on

266
00:10:26,870 --> 00:10:25,440
the covet constraint we had to go

267
00:10:29,829 --> 00:10:26,880
through for march

268
00:10:30,870 --> 00:10:29,839
and despite all these constraints we

269
00:10:33,670 --> 00:10:30,880
have managed to

270
00:10:35,269 --> 00:10:33,680
keep the schedule bring the satellite in

271
00:10:37,590 --> 00:10:35,279
full operational way here

272
00:10:38,710 --> 00:10:37,600
until vandenberg ready for flight so i

273
00:10:41,910 --> 00:10:38,720
think it's a big credit

274
00:10:42,550 --> 00:10:41,920
to the flexibility of the people and the

275
00:10:44,550 --> 00:10:42,560
the

276
00:10:46,069 --> 00:10:44,560
collaboration between all departments to

277
00:10:52,710 --> 00:10:46,079
to achieve that

278
00:10:58,790 --> 00:10:56,150
just as thomas said and

279
00:11:00,710 --> 00:10:58,800
leonard said of course sentimental six

280
00:11:02,870 --> 00:11:00,720
is very much a collaboration

281
00:11:04,790 --> 00:11:02,880
project it's i think it's the first time

282
00:11:06,870 --> 00:11:04,800
is and nasa really collaborate

283
00:11:08,470 --> 00:11:06,880
in such an integrated way on an earth

284
00:11:10,550 --> 00:11:08,480
observation satellite

285
00:11:12,389 --> 00:11:10,560
and i wanted to just fully acknowledge

286
00:11:15,350 --> 00:11:12,399
the excellent collaboration

287
00:11:17,110 --> 00:11:15,360
we have had not only with nasa and we

288
00:11:18,230 --> 00:11:17,120

from the european space agency together

289
00:11:21,350 --> 00:11:18,240
with uh

290
00:11:25,030 --> 00:11:21,360
and noah and all this collaboration

291
00:11:28,790 --> 00:11:25,040
is established in the framework of the

292
00:11:33,350 --> 00:11:28,800
copernicus program of the european union

293
00:11:35,750 --> 00:11:33,360
and i think sentinel 6 is one of the

294
00:11:37,030 --> 00:11:35,760
satellites in the copenhagen fleet

295
00:11:40,630 --> 00:11:37,040
providing

296
00:11:42,870 --> 00:11:40,640
mission data and products to

297
00:11:44,069 --> 00:11:42,880
everybody on a free and open basis so

298
00:11:46,710 --> 00:11:44,079
this is

299
00:11:49,030 --> 00:11:46,720
i think an important added value for for

300
00:11:54,949 --> 00:11:49,040
the society

301
00:11:58,790 --> 00:11:57,829
this slide is like a summary of what

302
00:12:00,790 --> 00:11:58,800
sentinel 6

303
00:12:02,629 --> 00:12:00,800
is all about we have been measuring sea

304
00:12:06,470 --> 00:12:02,639
level from space

305
00:12:09,110 --> 00:12:06,480
since almost 30 years and this

306
00:12:09,990 --> 00:12:09,120
enormous amount of measurements and

307
00:12:12,550 --> 00:12:10,000
processing

308
00:12:13,030 --> 00:12:12,560
is summarized in this curve this shows

309
00:12:15,829 --> 00:12:13,040
the

310
00:12:17,509 --> 00:12:15,839
global sea level increase due to global

311
00:12:19,269 --> 00:12:17,519
warming we are experiencing

312
00:12:20,870 --> 00:12:19,279
and measuring so accurately from space

313
00:12:23,030 --> 00:12:20,880

and and this

314
00:12:24,550 --> 00:12:23,040
sea level is even accelerating over the

315
00:12:25,910 --> 00:12:24,560
last five years so

316
00:12:27,750 --> 00:12:25,920
in average we have like three

317
00:12:29,190 --> 00:12:27,760
millimeters every year over the last

318
00:12:31,590 --> 00:12:29,200
five years we reach

319
00:12:32,949 --> 00:12:31,600
almost five millimeters every year so

320
00:12:36,230 --> 00:12:32,959
melting of ice

321
00:12:36,710 --> 00:12:36,240
the the increase of heat content in the

322
00:12:39,350 --> 00:12:36,720
ocean

323
00:12:40,310 --> 00:12:39,360
is really the cause of what we measure

324
00:12:42,949 --> 00:12:40,320
from space

325
00:12:44,949 --> 00:12:42,959
these measurements started in the past

326
00:12:46,150 --> 00:12:44,959
from top exposed on followed by the

327
00:12:48,389 --> 00:12:46,160
jason one two

328
00:12:50,310 --> 00:12:48,399
and three series jason three is still in

329
00:12:52,870 --> 00:12:50,320
orbit and sentinel six

330
00:12:53,829 --> 00:12:52,880
is here to bring continuity to these

331
00:12:57,030 --> 00:12:53,839
measurements

332
00:12:58,230 --> 00:12:57,040
so we will launch and rejoin json3 in

333
00:13:02,150 --> 00:12:58,240
orbit

334
00:13:04,150 --> 00:13:02,160
to to fly together like 30 seconds apart

335
00:13:05,269 --> 00:13:04,160
on the same orbit to be able to compare

336
00:13:08,230 --> 00:13:05,279
the measurement

337
00:13:09,030 --> 00:13:08,240
and then sentinel 6a or sentinel 6

338
00:13:11,190 --> 00:13:09,040

microphones

339
00:13:12,550 --> 00:13:11,200
and finalists will add at least five

340
00:13:15,590 --> 00:13:12,560
years to this

341
00:13:17,990 --> 00:13:15,600
data series and then as mentioned before

342
00:13:19,030 --> 00:13:18,000
we have already a sentinel 6b satellite

343
00:13:21,430 --> 00:13:19,040
that will

344
00:13:23,110 --> 00:13:21,440
again be launched and replace sentence

345
00:13:25,190 --> 00:13:23,120
six in orbit to add

346
00:13:27,430 --> 00:13:25,200
another five years to the measurement so

347
00:13:28,949 --> 00:13:27,440
overall we will reach like almost 40

348
00:13:31,190 --> 00:13:28,959
years data record for

349
00:13:33,269 --> 00:13:31,200
for this measurement which is so

350
00:13:35,910 --> 00:13:33,279
essential to demonstrate that

351
00:13:36,949 --> 00:13:35,920
the earth is warming and sea level is

352
00:13:40,310 --> 00:13:36,959
rising

353
00:13:45,189 --> 00:13:43,030
thank you pierreck the mission's nasa

354
00:13:47,829 --> 00:13:45,199
project manager parag vaze

355
00:13:51,350 --> 00:13:47,839
of nasa's jet propulsion laboratory will

356
00:13:57,350 --> 00:13:54,790
thank you marina thank you marina um

357
00:13:59,110 --> 00:13:57,360
as uh sort of picking up where pirick

358
00:14:02,069 --> 00:13:59,120
left off with

359
00:14:02,629 --> 00:14:02,079
the journey of our satellite development

360
00:14:05,670 --> 00:14:02,639
and now

361
00:14:07,269 --> 00:14:05,680
arrival and and readiness for launch uh

362
00:14:10,870 --> 00:14:07,279
it's been a long way

363
00:14:13,189 --> 00:14:10,880

uh you know the this is a continuity

364
00:14:16,710 --> 00:14:13,199
mission and an operational mission

365
00:14:18,949 --> 00:14:16,720
uh so that has been our priority to

366
00:14:20,069 --> 00:14:18,959
get the satellite developed and and

367
00:14:23,269 --> 00:14:20,079
launched on time

368
00:14:23,910 --> 00:14:23,279
the measurement performance of course is

369
00:14:39,990 --> 00:14:23,920
a

370
00:14:41,829 --> 00:14:40,000
scientists

371
00:14:43,430 --> 00:14:41,839
across the world who have contributed

372
00:14:46,550 --> 00:14:43,440
towards uh

373
00:14:49,590 --> 00:14:46,560
this satellite development uh is

374
00:14:51,910 --> 00:14:49,600
is really important uh to be able to uh

375
00:14:53,910 --> 00:14:51,920
to reach this point today uh that we're

376
00:14:57,110 --> 00:14:53,920
at uh pirrick mentioned about the

377
00:14:58,150 --> 00:14:57,120
the main instrument the the altimeter uh

378
00:15:01,590 --> 00:14:58,160
that's being provided

379
00:15:03,910 --> 00:15:01,600
by the the european space agency

380
00:15:04,629 --> 00:15:03,920
on the nasa side we're providing three

381
00:15:07,670 --> 00:15:04,639
important

382
00:15:08,069 --> 00:15:07,680
instruments on this satellite the prime

383
00:15:10,389 --> 00:15:08,079
one

384
00:15:12,230 --> 00:15:10,399
for ocean altimetry is the advanced

385
00:15:15,189 --> 00:15:12,240
microwave radiometer

386
00:15:16,870 --> 00:15:15,199
we call it a dash c stands for climate

387
00:15:20,150 --> 00:15:16,880
quality

388
00:15:21,590 --> 00:15:20,160

this is an important enhancement for the

389
00:15:24,310 --> 00:15:21,600
radiometer

390
00:15:25,670 --> 00:15:24,320
on this mission our objective is to be

391
00:15:28,550 --> 00:15:25,680
able to provide

392
00:15:29,990 --> 00:15:28,560
additional stability and calibration

393
00:15:32,949 --> 00:15:30,000
throughout the life of the mission and

394
00:15:35,829 --> 00:15:32,959
to be able to do that very very quick

395
00:15:37,110 --> 00:15:35,839
so that we can get data out reliable

396
00:15:40,230 --> 00:15:37,120
data

397
00:15:42,550 --> 00:15:40,240
that is following that trend uh

398
00:15:44,389 --> 00:15:42,560
that of sea level rise but also

399
00:15:46,629 --> 00:15:44,399
providing operational data

400
00:15:47,990 --> 00:15:46,639
uh to the global user community as fast

401
00:15:50,310 --> 00:15:48,000
as possible

402
00:15:51,509 --> 00:15:50,320
we also have an additional uh instrument

403
00:15:54,230 --> 00:15:51,519
uh if

404
00:15:54,550 --> 00:15:54,240
you can show the uh the next animation

405
00:15:58,629 --> 00:15:54,560
uh

406
00:16:01,910 --> 00:15:58,639
that i have for that's called the

407
00:16:04,629 --> 00:16:01,920
gnss ro it's a

408
00:16:06,470 --> 00:16:04,639
an instrument that we're providing as an

409
00:16:09,350 --> 00:16:06,480
opportunity to really

410
00:16:10,230 --> 00:16:09,360
have some additional atmospheric data uh

411
00:16:12,310 --> 00:16:10,240
that's measuring

412
00:16:14,230 --> 00:16:12,320
satellite signals uh from the gps

413
00:16:16,790 --> 00:16:14,240

constellation and also

414
00:16:18,069 --> 00:16:16,800
the glonass constellation and and really

415
00:16:20,550 --> 00:16:18,079
measuring how

416
00:16:21,749 --> 00:16:20,560
those bend and change as they traverse

417
00:16:23,749 --> 00:16:21,759
the atmosphere

418
00:16:25,269 --> 00:16:23,759
this tells us a lot of important

419
00:16:27,430 --> 00:16:25,279
information

420
00:16:29,350 --> 00:16:27,440
about the temperature and humidity

421
00:16:30,470 --> 00:16:29,360
profiles within the atmosphere and will

422
00:16:33,910 --> 00:16:30,480
really help

423
00:16:35,269 --> 00:16:33,920
the weather agencies across the world

424
00:16:36,790 --> 00:16:35,279
nasa is providing an additional

425
00:16:38,389 --> 00:16:36,800
instrument called the laser retro

426
00:16:40,470 --> 00:16:38,399
reflector array

427
00:16:41,509 --> 00:16:40,480
and this is one of three instruments on

428
00:16:45,030 --> 00:16:41,519
the satellite

429
00:16:47,910 --> 00:16:45,040
that will help to determine the position

430
00:16:48,790 --> 00:16:47,920
of the satellite very clearly if you can

431
00:16:52,629 --> 00:16:48,800
roll the next

432
00:16:55,110 --> 00:16:52,639
animation as well so this

433
00:16:56,310 --> 00:16:55,120
this shows the the satellite moving and

434
00:16:59,269 --> 00:16:56,320
we have a

435
00:17:01,430 --> 00:16:59,279
a set of quartz cubes that are

436
00:17:04,390 --> 00:17:01,440
reflecting ground-based

437
00:17:06,150 --> 00:17:04,400
low-power laser signals which are being

438
00:17:08,470 --> 00:17:06,160

received back on the ground and

439
00:17:09,350 --> 00:17:08,480
helps us determine the position of the

440
00:17:12,390 --> 00:17:09,360
satellite

441
00:17:13,270 --> 00:17:12,400
very very precisely and and helps us

442
00:17:15,029 --> 00:17:13,280
measure

443
00:17:17,350 --> 00:17:15,039
uh the sea surface height to within a

444
00:17:18,069 --> 00:17:17,360
few centimeters it's been a long journey

445
00:17:19,990 --> 00:17:18,079
here

446
00:17:21,350 --> 00:17:20,000
uh satellite's doing well all the

447
00:17:23,429 --> 00:17:21,360
instruments are doing well

448
00:17:24,549 --> 00:17:23,439
and the operations teams now are ready

449
00:17:27,429 --> 00:17:24,559
to take over

450
00:17:28,789 --> 00:17:27,439
and uh produce the data uh and

451
00:17:30,230 --> 00:17:28,799
distribute it out to the global

452
00:17:33,750 --> 00:17:30,240
community

453
00:17:36,150 --> 00:17:33,760
back to you marina thank you perag

454
00:17:38,390 --> 00:17:36,160
next we will hear back from tim dunn who

455
00:17:40,150 --> 00:17:38,400
is the nasa launch director for this

456
00:17:40,470 --> 00:17:40,160
mission and then immediately following

457
00:17:42,950 --> 00:17:40,480
tim

458
00:17:45,029 --> 00:17:42,960
dunn we will turn it to julianna simon

459
00:17:49,990 --> 00:17:45,039
who is the spacex program manager

460
00:17:53,669 --> 00:17:52,630
thank you marina i'm proud to be here

461
00:17:56,230 --> 00:17:53,679
today

462
00:17:58,630 --> 00:17:56,240
representing the women and men of nasa's

463
00:18:00,390 --> 00:17:58,640

launch services program

464
00:18:03,270 --> 00:18:00,400
i'm nasa's launch director for the

465
00:18:06,230 --> 00:18:03,280
sentinel 6 michael freilick mission

466
00:18:07,029 --> 00:18:06,240
and i'm thrilled to be a very small part

467
00:18:09,270 --> 00:18:07,039
of this

468
00:18:10,630 --> 00:18:09,280
incredible team launching this critical

469
00:18:14,310 --> 00:18:10,640
international ocean

470
00:18:15,909 --> 00:18:14,320
altimetry satellite after being away

471
00:18:17,110 --> 00:18:15,919
from the vandenberg air force base for a

472
00:18:19,750 --> 00:18:17,120
couple of years

473
00:18:20,150 --> 00:18:19,760
the nasa launch team is thrilled to be

474
00:18:21,990 --> 00:18:20,160
back

475
00:18:25,430 --> 00:18:22,000
on the beautiful central california

476
00:18:27,909 --> 00:18:25,440
coast and ready to launch another rocket

477
00:18:29,029 --> 00:18:27,919
sentinel 6 michael frylick is the third

478
00:18:31,750 --> 00:18:29,039
nasa lsp

479
00:18:33,430 --> 00:18:31,760
science mission to launch on a falcon 9

480
00:18:36,070 --> 00:18:33,440
and it will depart

481
00:18:37,110 --> 00:18:36,080
earth from vandenberg air force base at

482
00:18:42,150 --> 00:18:37,120
space launch

483
00:18:44,470 --> 00:18:42,160
complex 4 the pad we call slick 4.

484
00:18:46,870 --> 00:18:44,480
i'd like to recognize the falcon 9

485
00:18:49,990 --> 00:18:46,880
sentinel 6 michael frylick launch team

486
00:18:53,750 --> 00:18:50,000
it's composed of spacex nasa

487
00:18:56,390 --> 00:18:53,760
jpl european space agency airbus

488
00:18:57,990 --> 00:18:56,400

and united states space forces 30th

489
00:19:00,870 --> 00:18:58,000
space wing

490
00:19:02,150 --> 00:19:00,880
this assembled group of professionals is

491
00:19:04,870 --> 00:19:02,160
world class

492
00:19:07,510 --> 00:19:04,880
and a real joy to work with i'm really

493
00:19:10,310 --> 00:19:07,520
proud that i can be on the same panel

494
00:19:11,830 --> 00:19:10,320
with perrag and pirrick juliana is going

495
00:19:13,590 --> 00:19:11,840
to come up next

496
00:19:15,029 --> 00:19:13,600
colonel mastalir is going to represent

497
00:19:17,430 --> 00:19:15,039
the 30th space wing

498
00:19:18,950 --> 00:19:17,440
and just what an honor it is to have

499
00:19:21,110 --> 00:19:18,960
this team assembled

500
00:19:24,470 --> 00:19:21,120
to do this important work here from the

501
00:19:26,630 --> 00:19:24,480
central coast

502
00:19:28,310 --> 00:19:26,640
so here we are in the midst of a

503
00:19:30,230 --> 00:19:28,320
pandemic and we're successfully

504
00:19:32,789 --> 00:19:30,240
executing a launch campaign

505
00:19:34,710 --> 00:19:32,799
and that takes a lot of work due to

506
00:19:35,350 --> 00:19:34,720
covid we've done numerous things

507
00:19:37,510 --> 00:19:35,360
differently

508
00:19:38,870 --> 00:19:37,520
on this launch campaign than we would

509
00:19:41,830 --> 00:19:38,880
typically do

510
00:19:43,510 --> 00:19:41,840
we've had to quarantine after travel we

511
00:19:47,029 --> 00:19:43,520
had to reduce our on

512
00:19:48,150 --> 00:19:47,039
console footprint uh by 50 so we can

513
00:19:50,950 --> 00:19:48,160

space out and be

514
00:19:52,870 --> 00:19:50,960
more socially distanced we've

515
00:19:54,789 --> 00:19:52,880
implemented all the covid protocols of

516
00:19:56,150 --> 00:19:54,799
temperature checks of our team as they

517
00:19:59,510 --> 00:19:56,160
enter buildings

518
00:20:03,350 --> 00:19:59,520
we do frequent sanitizations and

519
00:20:05,590 --> 00:20:03,360
mandatory mask wear while on console

520
00:20:07,270 --> 00:20:05,600
so we're all keeping each other safe we

521
00:20:09,430 --> 00:20:07,280
can't afford to lose a single launch

522
00:20:11,669 --> 00:20:09,440
team member

523
00:20:13,270 --> 00:20:11,679
over the past month the falcon 9 team

524
00:20:16,470 --> 00:20:13,280
has been busy with our final

525
00:20:18,310 --> 00:20:16,480
launch preparations two weeks ago we

526
00:20:19,430 --> 00:20:18,320
encapsulated the sentinel six michael

527
00:20:21,350 --> 00:20:19,440
frilek spacecraft

528
00:20:23,430 --> 00:20:21,360
in its payload fairing i'm going to show

529
00:20:24,870 --> 00:20:23,440
you a video in a little bit about that

530
00:20:26,950 --> 00:20:24,880
then last week we performed the

531
00:20:29,510 --> 00:20:26,960
successful mission dress rehearsal

532
00:20:32,070 --> 00:20:29,520
and this past monday the combined launch

533
00:20:34,230 --> 00:20:32,080
team held the flight readiness review

534
00:20:35,990 --> 00:20:34,240
as a readiness assessment for a static

535
00:20:38,390 --> 00:20:36,000
fire event

536
00:20:41,750 --> 00:20:38,400
a day later on tuesday the launch team

537
00:20:43,750 --> 00:20:41,760
performed a successful static fire

538
00:20:45,510 --> 00:20:43,760

and we burned the first stage engines

539
00:20:49,350 --> 00:20:45,520
for a full duration of seven

540
00:20:50,070 --> 00:20:49,360
seconds and that uh told us that falcon

541
00:20:53,270 --> 00:20:50,080
9

542
00:20:54,950 --> 00:20:53,280
is ready to launch the team then

543
00:20:55,270 --> 00:20:54,960
returned the rocket to its hangar and

544
00:20:58,549 --> 00:20:55,280
just

545
00:21:00,870 --> 00:20:58,559
yesterday we made it that critical

546
00:21:02,630 --> 00:21:00,880
spacecraft asset the sentinel 6

547
00:21:05,830 --> 00:21:02,640
microphone spacecraft

548
00:21:07,669 --> 00:21:05,840
to the falcon 9 rocket now i'd like to

549
00:21:09,750 --> 00:21:07,679
show a video of the spacex crew

550
00:21:12,470 --> 00:21:09,760
encapsulating the spacecraft and then

551
00:21:14,390 --> 00:21:12,480
preparing the falcon 9 launch vehicle

552
00:21:16,470 --> 00:21:14,400
so here you see some stills in the

553
00:21:19,430 --> 00:21:16,480
spacex hangers payload

554
00:21:21,110 --> 00:21:19,440
processing facility shows that beautiful

555
00:21:25,029 --> 00:21:21,120
payload fairing with that

556
00:21:27,430 --> 00:21:25,039
gorgeous sentinel 6 decal on the outside

557
00:21:28,230 --> 00:21:27,440
here we are this is a representation of

558
00:21:29,750 --> 00:21:28,240
what

559
00:21:31,270 --> 00:21:29,760
happened this morning at the slick 4

560
00:21:32,870 --> 00:21:31,280
hangar this is actually

561
00:21:34,470 --> 00:21:32,880
tess a mission that we launched a few

562
00:21:36,390 --> 00:21:34,480
years ago from the east coast but it

563
00:21:37,430 --> 00:21:36,400

shows it moving out of the hangar

564
00:21:39,430 --> 00:21:37,440
and i'm going to go back a little

565
00:21:41,110 --> 00:21:39,440
further this is actually our jason 3

566
00:21:43,029 --> 00:21:41,120
mission here four and a half years ago

567
00:21:43,430 --> 00:21:43,039
from vandenberg but it shows the falcon

568
00:21:46,230 --> 00:21:43,440
9

569
00:21:48,470 --> 00:21:46,240
translating out to the launch pad going

570
00:21:50,390 --> 00:21:48,480
erect there's the beautiful coast in the

571
00:21:53,430 --> 00:21:50,400
pacific ocean in the background of

572
00:21:55,750 --> 00:21:53,440
below slick 4 and this was launch day

573
00:21:56,789 --> 00:21:55,760
for jason 3 and this is exactly what

574
00:21:59,350 --> 00:21:56,799
it's going to look like

575
00:22:00,630 --> 00:21:59,360
tomorrow morning maybe we can do without

576
00:22:02,710 --> 00:22:00,640
that fog

577
00:22:03,990 --> 00:22:02,720
but i'm going to let the weather officer

578
00:22:06,950 --> 00:22:04,000
tell us about that

579
00:22:07,909 --> 00:22:06,960
coming up a little bit so just this

580
00:22:10,870 --> 00:22:07,919
morning

581
00:22:11,990 --> 00:22:10,880
we held both the nasa spacex and the

582
00:22:14,230 --> 00:22:12,000
30th space wing

583
00:22:16,070 --> 00:22:14,240
launch readiness reviews where we

584
00:22:17,909 --> 00:22:16,080
received approval from senior management

585
00:22:20,149 --> 00:22:17,919
to continue processing toward launch

586
00:22:23,110 --> 00:22:20,159
countdown tomorrow

587
00:22:23,990 --> 00:22:23,120
as slick for today we did begin that

588
00:22:26,310 --> 00:22:24,000

process

589
00:22:28,470 --> 00:22:26,320
of rolling the rocket out and i can now

590
00:22:29,270 --> 00:22:28,480
say that we have successfully exited the

591
00:22:31,430 --> 00:22:29,280
hangar

592
00:22:32,310 --> 00:22:31,440
and the rocket is at the launch pad

593
00:22:34,149 --> 00:22:32,320
launch deck

594
00:22:36,149 --> 00:22:34,159
and we'll be going vertical with it this

595
00:22:37,669 --> 00:22:36,159
afternoon

596
00:22:39,830 --> 00:22:37,679
early tomorrow morning the launch team

597
00:22:42,310 --> 00:22:39,840
will arrive on console to perform final

598
00:22:43,750 --> 00:22:42,320
pressurization in vehicle checkouts

599
00:22:46,630 --> 00:22:43,760
the launch team will be polled for

600
00:22:50,310 --> 00:22:46,640
concurrence to load falcon 9 propellants

601
00:22:54,710 --> 00:22:50,320
both rp1 kerosene and liquid oxygen

602
00:22:57,270 --> 00:22:54,720
at about 8 30 a.m pacific time

603
00:22:58,230 --> 00:22:57,280
so after those propellants are loaded

604
00:23:01,750 --> 00:22:58,240
and

605
00:23:03,990 --> 00:23:01,760
we do follow that by follow the rp1

606
00:23:06,230 --> 00:23:04,000
with the densified cryogenic liquid

607
00:23:09,350 --> 00:23:06,240
oxygen into both stages

608
00:23:12,230 --> 00:23:09,360
we'll do a final readiness assessment

609
00:23:13,830 --> 00:23:12,240
and know that we're ready to launch that

610
00:23:17,350 --> 00:23:13,840
launch time tomorrow morning

611
00:23:21,029 --> 00:23:17,360
is going to be 9 17 and 8 seconds

612
00:23:22,710 --> 00:23:21,039
a.m pacific time so set your clocks

613
00:23:24,230 --> 00:23:22,720

for tomorrow morning if you're on the

614
00:23:26,390 --> 00:23:24,240
california coast

615
00:23:27,750 --> 00:23:26,400
a little bit later in the day if you're

616
00:23:29,110 --> 00:23:27,760
on the east coast

617
00:23:30,870 --> 00:23:29,120
we're going to have a single

618
00:23:33,430 --> 00:23:30,880
instantaneous window we've got

619
00:23:36,470 --> 00:23:33,440
got one chance to do this tomorrow and

620
00:23:39,029 --> 00:23:36,480
things look really good for us right now

621
00:23:39,669 --> 00:23:39,039
so in summary the falcon 9 rocket the

622
00:23:42,149 --> 00:23:39,679
sentinel

623
00:23:42,950 --> 00:23:42,159
6 michael friedlich spacecraft are both

624
00:23:44,870 --> 00:23:42,960
ready

625
00:23:46,310 --> 00:23:44,880
and the launch team is prepared and

626
00:23:47,990 --> 00:23:46,320
we're all excited

627
00:23:49,350 --> 00:23:48,000
to be here at vandenberg poised to

628
00:23:51,269 --> 00:23:49,360
launch this very

629
00:23:52,950 --> 00:23:51,279
important mission for scientists

630
00:23:59,110 --> 00:23:52,960
worldwide

631
00:24:02,870 --> 00:24:02,070
thank you tim spacex program manager for

632
00:24:05,669 --> 00:24:02,880
nasa launch

633
00:24:08,149 --> 00:24:05,679
services juliana shyman joins us now

634
00:24:11,190 --> 00:24:08,159
hello julianna

635
00:24:11,830 --> 00:24:11,200
hello thank you marina well first i'd

636
00:24:14,470 --> 00:24:11,840
like to

637
00:24:15,750 --> 00:24:14,480
start by saying a big thank you to our

638
00:24:18,710 --> 00:24:15,760

customer nasa

639
00:24:19,110 --> 00:24:18,720
our partners at esa in the 30th space

640
00:24:20,710 --> 00:24:19,120
wing

641
00:24:22,710 --> 00:24:20,720
for their support ahead of tomorrow's

642
00:24:24,630 --> 00:24:22,720
mission it's a real honor to be here

643
00:24:27,029 --> 00:24:24,640
today with all of you

644
00:24:28,070 --> 00:24:27,039
spacex is targeting an instantaneous

645
00:24:30,310 --> 00:24:28,080
falcon 9 launch

646
00:24:31,190 --> 00:24:30,320
tomorrow morning with a liftoff time of

647
00:24:33,750 --> 00:24:31,200
9

648
00:24:36,470 --> 00:24:33,760
am pacific for the sentinel 6 michael

649
00:24:38,470 --> 00:24:36,480
fry like spacecraft

650
00:24:40,390 --> 00:24:38,480
if needed we're launching tomorrow from

651
00:24:42,149 --> 00:24:40,400
space launch complex 4 east

652
00:24:43,430 --> 00:24:42,159
here at vandenberg air force base in

653
00:24:45,269 --> 00:24:43,440
california

654
00:24:47,269 --> 00:24:45,279
if needed for any reason we have a

655
00:24:47,669 --> 00:24:47,279
backup launch opportunity the following

656
00:24:50,950 --> 00:24:47,679
day

657
00:24:53,909 --> 00:24:50,960
with a different liftoff time of 904 am

658
00:24:55,430 --> 00:24:53,919
pacific the rocket and the payload are

659
00:24:57,029 --> 00:24:55,440
looking healthy and we're counting on

660
00:24:57,669 --> 00:24:57,039
the weather officer to provide clear

661
00:25:01,510 --> 00:24:57,679
skies

662
00:25:03,029 --> 00:25:01,520
no more fog from jason 3.

663
00:25:05,029 --> 00:25:03,039

tomorrow morning's countdown will be

664
00:25:06,470 --> 00:25:05,039
similar to previous missions

665
00:25:08,390 --> 00:25:06,480
with propellant loading beginning

666
00:25:09,190 --> 00:25:08,400
approximately 35 minutes prior to

667
00:25:10,630 --> 00:25:09,200
liftoff

668
00:25:12,789 --> 00:25:10,640
i think i have an image to walk you

669
00:25:15,510 --> 00:25:12,799
through the launch sequence

670
00:25:16,789 --> 00:25:15,520
thank you um so following liftoff and

671
00:25:18,710 --> 00:25:16,799
stage separation

672
00:25:21,190 --> 00:25:18,720
falcon 9's first stage booster will

673
00:25:23,510 --> 00:25:21,200
return to land we'll return to earth

674
00:25:26,070 --> 00:25:23,520
and land back at space launch complex 4

675
00:25:27,909 --> 00:25:26,080
here at vandenberg air force base

676
00:25:29,669 --> 00:25:27,919
the landing zone is adjacent to the

677
00:25:31,269 --> 00:25:29,679
launch pad

678
00:25:33,510 --> 00:25:31,279
also following liftoff and stage

679
00:25:35,669 --> 00:25:33,520
separation falcon 9's second stage will

680
00:25:37,909 --> 00:25:35,679
perform two burns to deploy the sentinel

681
00:25:38,390 --> 00:25:37,919
6 mycophyllic spacecraft to its intended

682
00:25:42,230 --> 00:25:38,400
orbit

683
00:25:45,269 --> 00:25:42,240
approximately one hour after liftoff

684
00:25:48,070 --> 00:25:45,279
the payload and the rocket are looking

685
00:25:49,830 --> 00:25:48,080
super healthy um and and overall we're

686
00:25:52,230 --> 00:25:49,840
really excited about the mission

687
00:25:53,029 --> 00:25:52,240
uh it's particularly exciting for me

688
00:25:55,029 --> 00:25:53,039

because

689
00:25:56,149 --> 00:25:55,039
my first launch with spacex was the

690
00:25:57,830 --> 00:25:56,159
jason 3 mission

691
00:25:59,590 --> 00:25:57,840
and as you've heard from some of the

692
00:26:02,390 --> 00:25:59,600
team members on the panel today

693
00:26:04,310 --> 00:26:02,400
the sentinel 6 spacecraft mission is a

694
00:26:06,230 --> 00:26:04,320
content continuity mission from the

695
00:26:06,630 --> 00:26:06,240
jason 3 and the series of basic missions

696
00:26:09,110 --> 00:26:06,640
so

697
00:26:10,310 --> 00:26:09,120
particularly exciting for me um the

698
00:26:12,470 --> 00:26:10,320
launch tomorrow will be

699
00:26:13,430 --> 00:26:12,480
the first from vandenberg since june of

700
00:26:16,549 --> 00:26:13,440
last year

701
00:26:19,269 --> 00:26:16,559
successfully completed our

702
00:26:20,470 --> 00:26:19,279
second land landing here at vandenberg

703
00:26:22,789 --> 00:26:20,480
um so it's been a while

704
00:26:24,630 --> 00:26:22,799
but we have this is the start of many

705
00:26:26,390 --> 00:26:24,640
exciting things to come at vandenberg

706
00:26:28,230 --> 00:26:26,400
we have a suite of very exciting

707
00:26:30,710 --> 00:26:28,240
missions so tomorrow

708
00:26:32,710 --> 00:26:30,720
is going to be a great day so big thank

709
00:26:36,830 --> 00:26:32,720
you to nasa and the rest of our partners

710
00:26:41,190 --> 00:26:39,350
tomorrow

711
00:26:42,630 --> 00:26:41,200
thank you so much everyone is looking

712
00:26:45,510 --> 00:26:42,640
forward to launch tomorrow

713
00:26:46,950 --> 00:26:45,520

colonel anthony mastellier commander of

714
00:27:02,470 --> 00:26:46,960
the 30th space wing

715
00:27:07,750 --> 00:27:05,590
okay thank you very much marina um

716
00:27:09,909 --> 00:27:07,760
listen ladies and gentlemen i am

717
00:27:11,430 --> 00:27:09,919
absolutely privileged to be part of the

718
00:27:14,870 --> 00:27:11,440
fantastic team

719
00:27:17,269 --> 00:27:14,880
the lineup that you've seen here today

720
00:27:18,710 --> 00:27:17,279
all the hard work that has gone into

721
00:27:22,389 --> 00:27:18,720
this culminates

722
00:27:23,190 --> 00:27:22,399
uh you know tomorrow morning at 9 17

723
00:27:24,789 --> 00:27:23,200
like you heard

724
00:27:26,230 --> 00:27:24,799
and i can tell you that all of team

725
00:27:30,389 --> 00:27:26,240
vandenberg

726
00:27:32,470 --> 00:27:30,399
the 6 000 men and women who represent

727
00:27:33,590 --> 00:27:32,480
team vandenberg as well as the 30th

728
00:27:36,789 --> 00:27:33,600
space wing we are

729
00:27:39,990 --> 00:27:36,799
absolutely thrilled to be part of this

730
00:27:41,350 --> 00:27:40,000
very very important mission i can tell

731
00:27:45,909 --> 00:27:41,360
you that

732
00:27:48,389 --> 00:27:45,919
our customer spacex a partnership that

733
00:27:50,470 --> 00:27:48,399
we feel really really good about and

734
00:27:51,269 --> 00:27:50,480
have had a great pass and a promising

735
00:27:53,750 --> 00:27:51,279
future

736
00:27:55,830 --> 00:27:53,760
and of course spacex's customer nasa and

737
00:27:58,070 --> 00:27:55,840
our european partners

738
00:27:59,190 --> 00:27:58,080

all of the mission integration the

739
00:28:00,870 --> 00:27:59,200
coordination

740
00:28:02,230 --> 00:28:00,880
leading up throughout this launch

741
00:28:05,110 --> 00:28:02,240
campaign

742
00:28:06,470 --> 00:28:05,120
during as you heard from mr tim dunn

743
00:28:08,789 --> 00:28:06,480
during a period of

744
00:28:09,909 --> 00:28:08,799
you know global pandemic unprecedented

745
00:28:12,630 --> 00:28:09,919
challenges

746
00:28:13,669 --> 00:28:12,640
it's really remarkable i am so impressed

747
00:28:16,230 --> 00:28:13,679
at the continued

748
00:28:18,070 --> 00:28:16,240
strong partnership and working through

749
00:28:20,470 --> 00:28:18,080
these challenges and and making sure

750
00:28:23,990 --> 00:28:20,480
that we can get to launch day

751
00:28:26,549 --> 00:28:24,000
safely and responsibly i can tell you

752
00:28:29,110 --> 00:28:26,559
for our part at the 30th space wing it's

753
00:28:32,149 --> 00:28:29,120
all about providing a green range

754
00:28:34,470 --> 00:28:32,159
right um this is an air a place

755
00:28:36,389 --> 00:28:34,480
so what so what does that mean from a

756
00:28:38,710 --> 00:28:36,399
range perspective

757
00:28:41,110 --> 00:28:38,720
for one we're at we're an attractive

758
00:28:43,190 --> 00:28:41,120
location geographically

759
00:28:44,389 --> 00:28:43,200
as you know you can fly south from

760
00:28:46,470 --> 00:28:44,399
vandenberg and

761
00:28:48,389 --> 00:28:46,480
pretty much you don't hit any land until

762
00:28:50,630 --> 00:28:48,399
you fly over antarctica

763
00:28:52,149 --> 00:28:50,640

so it's a very safe corridor for the

764
00:28:54,389 --> 00:28:52,159
polar launches

765
00:28:56,470 --> 00:28:54,399
perfectly suited for the sentinel 6

766
00:28:58,549 --> 00:28:56,480
microphilic mission

767
00:28:59,590 --> 00:28:58,559
and we're really pleased to be part of

768
00:29:01,909 --> 00:28:59,600
it um

769
00:29:04,549 --> 00:29:01,919
but as part of the range our

770
00:29:06,789 --> 00:29:04,559
responsibility is also to make sure that

771
00:29:08,630 --> 00:29:06,799
all of the infrastructure is ready to go

772
00:29:12,470 --> 00:29:08,640
to support our customers

773
00:29:15,750 --> 00:29:12,480
everything from the roads electric

774
00:29:18,149 --> 00:29:15,760
water making sure that necessary

775
00:29:20,950 --> 00:29:18,159
commodities are available

776
00:29:21,350 --> 00:29:20,960
so that our customers have everything

777
00:29:24,549 --> 00:29:21,360
they

778
00:29:27,110 --> 00:29:24,559
need to be successful on launch day

779
00:29:27,990 --> 00:29:27,120
of course that starts well before launch

780
00:29:30,070 --> 00:29:28,000
day

781
00:29:31,590 --> 00:29:30,080
and it involves working very closely

782
00:29:33,510 --> 00:29:31,600
with our engineers

783
00:29:35,830 --> 00:29:33,520
it involves working very closely with

784
00:29:40,549 --> 00:29:35,840
our safety representatives

785
00:29:43,430 --> 00:29:40,559
who look at every single possible

786
00:29:45,830 --> 00:29:43,440
failure mode to ensure that no matter

787
00:29:48,870 --> 00:29:45,840
what happens on launch day

788
00:29:50,870 --> 00:29:48,880

we can maintain safety public safety

789
00:29:52,389 --> 00:29:50,880
here in the central coast

790
00:29:54,470 --> 00:29:52,399
and that's one of the primary missions

791
00:29:56,389 --> 00:29:54,480
of the range is to ensure

792
00:29:58,149 --> 00:29:56,399
that we can provide a safe place to

793
00:30:00,230 --> 00:29:58,159
conduct operations

794
00:30:01,350 --> 00:30:00,240
and that of course requires a lot of

795
00:30:04,149 --> 00:30:01,360
coordination

796
00:30:05,190 --> 00:30:04,159
not just what with other services but

797
00:30:08,950 --> 00:30:05,200
with other

798
00:30:11,909 --> 00:30:08,960
agencies and and deconflicting airspace

799
00:30:13,430 --> 00:30:11,919
uh area clearance ensuring that we have

800
00:30:16,950 --> 00:30:13,440
all the necessary

801
00:30:19,590 --> 00:30:16,960
uh evacuations uh in place

802
00:30:20,710 --> 00:30:19,600
so that we can ensure a safe flight for

803
00:30:24,230 --> 00:30:20,720
the falcon 9

804
00:30:26,950 --> 00:30:24,240
as it climbs into its required orbit

805
00:30:28,470 --> 00:30:26,960
now in addition we do provide a good

806
00:30:31,190 --> 00:30:28,480
deal of instrumentation

807
00:30:31,909 --> 00:30:31,200
here on the range spacex is a great

808
00:30:33,269 --> 00:30:31,919
partner they

809
00:30:35,350 --> 00:30:33,279
they bring a lot of their own

810
00:30:37,669 --> 00:30:35,360
instrumentation in fact they have a

811
00:30:40,310 --> 00:30:37,679
they have a sizable footprint but we

812
00:30:41,430 --> 00:30:40,320
also maintain instrumentation to enable

813
00:30:44,070 --> 00:30:41,440

us to do that

814
00:30:46,070 --> 00:30:44,080
that emergency response mission if we

815
00:30:49,029 --> 00:30:46,080
need to

816
00:30:49,990 --> 00:30:49,039
finally uh i'd like to give a shout out

817
00:30:52,630 --> 00:30:50,000
to our local

818
00:30:54,070 --> 00:30:52,640
community because we can't do this here

819
00:30:56,789 --> 00:30:54,080
at vandenberg alone

820
00:30:59,269 --> 00:30:56,799
and we work very closely with the city

821
00:31:01,509 --> 00:30:59,279
of lompoc with the county santa barbara

822
00:31:03,029 --> 00:31:01,519
county and the sheriff's office

823
00:31:05,669 --> 00:31:03,039
with the state of california and the

824
00:31:08,870 --> 00:31:05,679
california highway patrol

825
00:31:11,830 --> 00:31:08,880
in the wheats and months

826
00:31:12,950 --> 00:31:11,840
leading up to this this event so that we

827
00:31:14,950 --> 00:31:12,960
can make sure that

828
00:31:17,430 --> 00:31:14,960
everything is in place and ready to

829
00:31:20,630 --> 00:31:17,440
support this mission

830
00:31:22,389 --> 00:31:20,640
in summary if we do our job right our

831
00:31:24,710 --> 00:31:22,399
customers can worry

832
00:31:26,310 --> 00:31:24,720
uh and focus their attention rather on

833
00:31:29,029 --> 00:31:26,320
their important job

834
00:31:29,669 --> 00:31:29,039
which is getting this satellite up into

835
00:31:32,070 --> 00:31:29,679
orbit

836
00:31:33,110 --> 00:31:32,080
to performance extremely important

837
00:31:35,110 --> 00:31:33,120
mission

838
00:31:36,549 --> 00:31:35,120

so we're proud to be part of the team

839
00:31:38,470 --> 00:31:36,559
and and

840
00:31:39,909 --> 00:31:38,480
absolutely looking for an outstanding

841
00:31:44,549 --> 00:31:39,919
day tomorrow morning

842
00:31:47,830 --> 00:31:46,549
thank you so much colonel and of course

843
00:31:50,950 --> 00:31:47,840
now all eyes

844
00:31:53,190 --> 00:31:50,960
are on the skies as we look for the most

845
00:31:55,350 --> 00:31:53,200
important weather forecast it was a

846
00:31:56,789 --> 00:31:55,360
beautiful crystal clear sunny day when

847
00:31:58,070 --> 00:31:56,799
we all woke up this morning here in

848
00:31:59,750 --> 00:31:58,080
central california

849
00:32:01,909 --> 00:31:59,760
but we know that the rocket cares about

850
00:32:04,310 --> 00:32:01,919
what's happening in the upper levels

851
00:32:04,950 --> 00:32:04,320
of the atmosphere so here to give us the

852
00:32:07,350 --> 00:32:04,960
critical

853
00:32:08,310 --> 00:32:07,360
weather report is vandenberg air force

854
00:32:12,710 --> 00:32:08,320
base weather

855
00:32:15,110 --> 00:32:12,720
officer captain john ott

856
00:32:16,630 --> 00:32:15,120
thank you so weather along the central

857
00:32:18,230 --> 00:32:16,640
california coast this time of the year

858
00:32:19,590 --> 00:32:18,240
typically involves high pressure with

859
00:32:21,029 --> 00:32:19,600
the occasional cold front

860
00:32:22,870 --> 00:32:21,039
that will bring some gusty winds in the

861
00:32:25,110 --> 00:32:22,880
afternoon currently

862
00:32:26,310 --> 00:32:25,120
california is experiencing a mix of high

863
00:32:28,230 --> 00:32:26,320

pressure systems both

864
00:32:29,669 --> 00:32:28,240
inland along the great basin as well as

865
00:32:31,830 --> 00:32:29,679
over the pacific ocean

866
00:32:33,029 --> 00:32:31,840
which is bringing us pretty much fairly

867
00:32:34,870 --> 00:32:33,039
pretty fair weather

868
00:32:36,549 --> 00:32:34,880
however aloft we have the jet stream

869
00:32:38,870 --> 00:32:36,559
going through the state

870
00:32:42,230 --> 00:32:38,880
which is bringing winds strongly out of

871
00:32:44,070 --> 00:32:42,240
the west at 90 to 105 knots

872
00:32:45,430 --> 00:32:44,080
moving over to the satellite image that

873
00:32:46,630 --> 00:32:45,440
we have for the state

874
00:32:48,310 --> 00:32:46,640
we can see that that high pressure is

875
00:32:49,909 --> 00:32:48,320
bringing some high-level cirrus clouds

876
00:32:51,669 --> 00:32:49,919
over the area

877
00:32:54,149 --> 00:32:51,679
moving on to our primary forecast day

878
00:32:57,269 --> 00:32:55,909
we can see that high pressure is

879
00:32:59,909 --> 00:32:57,279
dominating the region

880
00:33:01,750 --> 00:32:59,919
visibility at t0 will be unrestricted

881
00:33:03,509 --> 00:33:01,760
winds will be out of the north at 8 to

882
00:33:04,870 --> 00:33:03,519
12 knots with maybe the occasional gust

883
00:33:06,389 --> 00:33:04,880
of 16.

884
00:33:09,110 --> 00:33:06,399
temperatures will be in the mid to upper

885
00:33:11,750 --> 00:33:09,120
50s the overall probability of violation

886
00:33:13,509 --> 00:33:11,760
at t 0 will be due to ground winds and

887
00:33:16,389 --> 00:33:13,519
that'll be 20

888
00:33:17,029 --> 00:33:16,399

of launch agency constraints going on to

889
00:33:20,630 --> 00:33:17,039
our scrub

890
00:33:22,389 --> 00:33:20,640
forecast day it is much thick

891
00:33:24,070 --> 00:33:22,399
high pressure will continue to dominate

892
00:33:25,590 --> 00:33:24,080
visibility will remain unrestricted

893
00:33:27,190 --> 00:33:25,600
winds will be out of the north 8 to 12

894
00:33:29,269 --> 00:33:27,200
knots temperatures will be

895
00:33:30,870 --> 00:33:29,279
in the mid to upper 50s and the overall

896
00:33:32,070 --> 00:33:30,880
probability of violation at t0 will

897
00:33:33,830 --> 00:33:32,080
remain at 20

898
00:33:36,070 --> 00:33:33,840
due to the launch agency constraint of

899
00:33:43,110 --> 00:33:36,080
ground winds

900
00:33:47,430 --> 00:33:45,430
thank you so much john we are now ready

901
00:33:49,830 --> 00:33:47,440
to take media questions remember to

902
00:33:52,230 --> 00:33:49,840
press star one to get put in the queue

903
00:33:53,990 --> 00:33:52,240
and please direct your questions to one

904
00:33:54,630 --> 00:33:54,000
of the panelists that are here with us

905
00:33:56,549 --> 00:33:54,640
today

906
00:33:57,990 --> 00:33:56,559
we're also taking questions through the

907
00:34:00,710 --> 00:33:58,000
seeing the seas

908
00:34:01,669 --> 00:34:00,720
hashtag we have our first phone call

909
00:34:04,710 --> 00:34:01,679
that comes from

910
00:34:08,629 --> 00:34:04,720
stephen clark at space flight now

911
00:34:12,470 --> 00:34:10,710
hi thank you for uh for doing this this

912
00:34:14,629 --> 00:34:12,480
is stephen clark space flight now

913
00:34:15,669 --> 00:34:14,639

i believe my question is for uh colonel

914
00:34:18,470 --> 00:34:15,679
mastellier

915
00:34:20,069 --> 00:34:18,480
this is the first uh orbital launch from

916
00:34:22,869 --> 00:34:20,079
vandenberg in quite some time

917
00:34:23,750 --> 00:34:22,879
since last year i believe i just wanted

918
00:34:25,909 --> 00:34:23,760
to

919
00:34:26,950 --> 00:34:25,919
you know get your thoughts on on some of

920
00:34:28,710 --> 00:34:26,960
the activities

921
00:34:30,149 --> 00:34:28,720
uh maybe during this down or quiet

922
00:34:31,589 --> 00:34:30,159
period at least in terms of launches

923
00:34:32,790 --> 00:34:31,599
what's been going on at vandenberg in

924
00:34:34,470 --> 00:34:32,800
terms of

925
00:34:36,389 --> 00:34:34,480
you know attracting new customers or

926
00:34:38,950 --> 00:34:36,399
infrastructure upgrades

927
00:34:39,909 --> 00:34:38,960
and also can you preview uh you know

928
00:34:41,510 --> 00:34:39,919
after this mission

929
00:34:43,349 --> 00:34:41,520
i think you have some more launches

930
00:34:45,669 --> 00:34:43,359
later this year early next year

931
00:34:47,669 --> 00:34:45,679
can you just walk me through uh sort of

932
00:34:47,990 --> 00:34:47,679
your manifest and missions coming up for

933
00:34:49,990 --> 00:34:48,000
the next

934
00:34:51,750 --> 00:34:50,000
few months and quickly if i could from

935
00:34:53,589 --> 00:34:51,760
tim dunn can you provide the

936
00:34:57,589 --> 00:34:53,599
exact launch time for sunday if

937
00:35:03,349 --> 00:35:00,790
sure i i'll i'll take the first piece

938
00:35:04,230 --> 00:35:03,359

um so as many of you probably know

939
00:35:07,270 --> 00:35:04,240
vandenberg

940
00:35:09,349 --> 00:35:07,280
in terms of our capacity as a range we

941
00:35:11,270 --> 00:35:09,359
have many customers not just space

942
00:35:14,470 --> 00:35:11,280
launch but of course we also do

943
00:35:17,190 --> 00:35:14,480
a lot of testing for global strike

944
00:35:19,510 --> 00:35:17,200
the minuteman 3 weapon system tests here

945
00:35:21,910 --> 00:35:19,520
at vandenberg air force base

946
00:35:23,910 --> 00:35:21,920
missile defense agencies ground-based

947
00:35:26,950 --> 00:35:23,920
interceptor tests here

948
00:35:29,990 --> 00:35:26,960
so we have been continuing the the tempo

949
00:35:33,990 --> 00:35:30,000
the test tempo has been fairly

950
00:35:36,230 --> 00:35:34,000
regular since our last space launch

951
00:35:37,510 --> 00:35:36,240
and that's good because that keeps the

952
00:35:40,950 --> 00:35:37,520
range crews

953
00:35:43,109 --> 00:35:40,960
keeps their expertise honed making sure

954
00:35:45,510 --> 00:35:43,119
that they're ready the procedures

955
00:35:47,270 --> 00:35:45,520
although each procedure and set of

956
00:35:50,630 --> 00:35:47,280
procedures is tailored

957
00:35:53,030 --> 00:35:50,640
for that particular mission um in

958
00:35:54,310 --> 00:35:53,040
aggregate there's the same skill sets

959
00:35:56,150 --> 00:35:54,320
apply across

960
00:35:57,430 --> 00:35:56,160
you know running various functions on

961
00:35:59,670 --> 00:35:57,440
the range

962
00:36:00,550 --> 00:35:59,680
so we have been very busy with that and

963
00:36:03,510 --> 00:36:00,560

in addition

964
00:36:05,270 --> 00:36:03,520
you alluded to this we are we are

965
00:36:08,390 --> 00:36:05,280
working very closely

966
00:36:11,670 --> 00:36:08,400
uh with the state of california and

967
00:36:14,550 --> 00:36:11,680
cal poly university and some non-federal

968
00:36:16,150 --> 00:36:14,560
entities such as reach which is a

969
00:36:19,109 --> 00:36:16,160
regional economic

970
00:36:20,470 --> 00:36:19,119
action coalition uh to explore the

971
00:36:24,150 --> 00:36:20,480
possibility

972
00:36:27,430 --> 00:36:24,160
of uh creating kind of a commercial zone

973
00:36:29,430 --> 00:36:27,440
here at vandenberg and and we believe

974
00:36:31,510 --> 00:36:29,440
you know of course the federal

975
00:36:34,870 --> 00:36:31,520
government and the department of defense

976
00:36:37,030 --> 00:36:34,880
uh believe strongly that competition um

977
00:36:38,310 --> 00:36:37,040
is very very important in the space

978
00:36:41,589 --> 00:36:38,320
launch industry

979
00:36:43,990 --> 00:36:41,599
um and and that will benefit all of us

980
00:36:45,670 --> 00:36:44,000
uh in the long run so we're doing what

981
00:36:48,790 --> 00:36:45,680
we can to facilitate

982
00:36:51,510 --> 00:36:48,800
uh commercial space lift and the

983
00:36:52,710 --> 00:36:51,520
growth of commercial space zone here at

984
00:36:55,589 --> 00:36:52,720
miami

985
00:36:57,910 --> 00:36:55,599
um i guess finally in terms of what's

986
00:37:00,950 --> 00:36:57,920
coming up next uh of course we

987
00:37:02,470 --> 00:37:00,960
we have a delta iv heavy on the manifest

988
00:37:04,950 --> 00:37:02,480

um that will become coming up in the

989
00:37:06,710 --> 00:37:04,960
next few months um and another

990
00:37:08,310 --> 00:37:06,720
commercial company that we have a

991
00:37:11,990 --> 00:37:08,320
partnership with

992
00:37:14,069 --> 00:37:12,000
here is firefly and they have a booster

993
00:37:16,150 --> 00:37:14,079
they have flight hardware here

994
00:37:17,750 --> 00:37:16,160
on the installation and are working

995
00:37:19,190 --> 00:37:17,760
toward a launch date hopefully in

996
00:37:22,630 --> 00:37:19,200
january

997
00:37:25,109 --> 00:37:22,640
so we continue to talk to new customers

998
00:37:27,109 --> 00:37:25,119
uh all the time about the possibility of

999
00:37:28,470 --> 00:37:27,119
launching at vandenberg and utilizing

1000
00:37:30,310 --> 00:37:28,480
our facilities

1001
00:37:32,069 --> 00:37:30,320
and we're excited about the future of

1002
00:37:34,390 --> 00:37:32,079
commercial space lift

1003
00:37:35,270 --> 00:37:34,400
as well as national security space lift

1004
00:37:37,430 --> 00:37:35,280
it's a

1005
00:37:43,910 --> 00:37:37,440
very promising future here at vandenberg

1006
00:37:47,510 --> 00:37:45,990
all right and i'll take the question

1007
00:37:50,230 --> 00:37:47,520
from stephen about the

1008
00:37:50,630 --> 00:37:50,240
time for our backup day first i want to

1009
00:37:53,270 --> 00:37:50,640
thank

1010
00:37:55,030 --> 00:37:53,280
colonel mastelier earlier this week we

1011
00:37:58,150 --> 00:37:55,040
did not have approval for

1012
00:37:58,630 --> 00:37:58,160
a backup date for the this mission and

1013
00:38:00,710 --> 00:37:58,640

uh

1014
00:38:02,950 --> 00:38:00,720
colonel mastelier and his scheduling

1015
00:38:04,310 --> 00:38:02,960
team worked very well

1016
00:38:07,270 --> 00:38:04,320
with our neighbors to the south of

1017
00:38:08,950 --> 00:38:07,280
vandenberg the naval air warfare center

1018
00:38:11,109 --> 00:38:08,960
so our friends in the navy we were able

1019
00:38:13,030 --> 00:38:11,119
to work with them colonel massler your

1020
00:38:14,310 --> 00:38:13,040
team did a great job we're now approved

1021
00:38:16,390 --> 00:38:14,320
for the 22nd of

1022
00:38:19,390 --> 00:38:16,400
november as a backup date should we need

1023
00:38:22,310 --> 00:38:19,400
it and stephen that t0 would be

1024
00:38:28,630 --> 00:38:22,320
904 and 27 seconds am

1025
00:38:31,990 --> 00:38:31,190
thank you for that tim our next question

1026
00:38:35,430 --> 00:38:32,000
comes from

1027
00:38:38,230 --> 00:38:35,440
elizabeth howell at space.com

1028
00:38:39,430 --> 00:38:38,240
good afternoon elizabeth good afternoon

1029
00:38:41,910 --> 00:38:39,440
this one will be for tim

1030
00:38:43,270 --> 00:38:41,920
so you had already alluded to the newer

1031
00:38:44,950 --> 00:38:43,280
procedures that have been put in for

1032
00:38:45,430 --> 00:38:44,960
covid and i just wanted to get a sense

1033
00:38:47,349 --> 00:38:45,440
of

1034
00:38:49,030 --> 00:38:47,359
how all the teams are doing you know in

1035
00:38:49,750 --> 00:38:49,040
terms of their uh their workload and

1036
00:38:54,630 --> 00:38:49,760
also their

1037
00:38:58,950 --> 00:38:57,430
well that's a that's a very insightful

1038
00:39:01,430 --> 00:38:58,960

question to ask

1039
00:39:03,510 --> 00:39:01,440
so as you can imagine some of our team

1040
00:39:04,950 --> 00:39:03,520
has been here on the central coast uh

1041
00:39:07,589 --> 00:39:04,960
for a while now

1042
00:39:09,190 --> 00:39:07,599
our spacecraft team has been here uh for

1043
00:39:10,870 --> 00:39:09,200
a couple of months now

1044
00:39:12,630 --> 00:39:10,880
and there are worse places you can be

1045
00:39:13,510 --> 00:39:12,640
than being trapped on the central coast

1046
00:39:15,829 --> 00:39:13,520
of california

1047
00:39:19,030 --> 00:39:15,839
it's a wonderful area the 30th space

1048
00:39:21,109 --> 00:39:19,040
wing are tremendous hosts to us

1049
00:39:22,710 --> 00:39:21,119
so i would say in general the team has

1050
00:39:25,030 --> 00:39:22,720
really come together

1051
00:39:26,230 --> 00:39:25,040
uh not everyone has been here two months

1052
00:39:28,710 --> 00:39:26,240
i've been here almost

1053
00:39:30,390 --> 00:39:28,720
a little over three weeks now i do look

1054
00:39:32,310 --> 00:39:30,400
forward to returning home at some

1055
00:39:34,150 --> 00:39:32,320
point in time but it's really nice to

1056
00:39:37,510 --> 00:39:34,160
come together with the team

1057
00:39:38,310 --> 00:39:37,520
uh and to know the importance of what

1058
00:39:40,550 --> 00:39:38,320
we're doing

1059
00:39:41,829 --> 00:39:40,560
and it really does energize us and give

1060
00:39:44,870 --> 00:39:41,839
us

1061
00:39:46,390 --> 00:39:44,880
the necessary energy to continue to

1062
00:39:48,310 --> 00:39:46,400
press forward

1063
00:39:49,589 --> 00:39:48,320

we put all of those covet protocols in

1064
00:39:52,390 --> 00:39:49,599
place and

1065
00:39:53,430 --> 00:39:52,400
as you can imagine one of them is taking

1066
00:39:55,990 --> 00:39:53,440
out one of the most

1067
00:39:57,190 --> 00:39:56,000
popular things that a deployed launch

1068
00:39:59,910 --> 00:39:57,200
team can do

1069
00:40:01,270 --> 00:39:59,920
and that is frequently dine together

1070
00:40:03,990 --> 00:40:01,280
each evening we know

1071
00:40:05,510 --> 00:40:04,000
we work hard and so we kind of like to

1072
00:40:08,069 --> 00:40:05,520
get together in the evenings

1073
00:40:09,750 --> 00:40:08,079
and have a share a meal together and

1074
00:40:12,309 --> 00:40:09,760
we've lost a lot of that

1075
00:40:13,990 --> 00:40:12,319
due to covet but we found other ways for

1076
00:40:14,950 --> 00:40:14,000
the team to come together in a safe

1077
00:40:18,069 --> 00:40:14,960
environment

1078
00:40:20,710 --> 00:40:18,079
outdoor activities outdoor patios

1079
00:40:22,550 --> 00:40:20,720
gatherings but i would say morale

1080
00:40:24,950 --> 00:40:22,560
especially when we're this close morale

1081
00:40:28,390 --> 00:40:24,960
is really high and i'm so proud

1082
00:40:30,630 --> 00:40:28,400
of just the entire team uh perag

1083
00:40:31,589 --> 00:40:30,640
and pirrick and their their spacecraft

1084
00:40:33,670 --> 00:40:31,599
team uh

1085
00:40:35,510 --> 00:40:33,680
interfacing with the spacex team and

1086
00:40:37,589 --> 00:40:35,520
watching them do the amazing work in

1087
00:40:39,270 --> 00:40:37,599
these challenging circumstances

1088
00:40:42,950 --> 00:40:39,280

i'm really proud of the team and we're

1089
00:40:47,270 --> 00:40:45,750
we are ready thank you so much tim now

1090
00:40:48,870 --> 00:40:47,280
we're going to our social media

1091
00:40:50,710 --> 00:40:48,880
questions if you have a question for our

1092
00:40:51,750 --> 00:40:50,720
panelists make sure that you use the

1093
00:40:54,710 --> 00:40:51,760
hashtag

1094
00:40:56,309 --> 00:40:54,720
seeing the seas our first question comes

1095
00:40:59,109 --> 00:40:56,319
from srini mohana

1096
00:41:00,790 --> 00:40:59,119
on twitter asking how many satellites

1097
00:41:03,510 --> 00:41:00,800
will be launched from nasa

1098
00:41:03,990 --> 00:41:03,520
every year and how many are already

1099
00:41:06,309 --> 00:41:04,000
there

1100
00:41:08,470 --> 00:41:06,319
in space dr z would you like to take

1101
00:41:10,470 --> 00:41:08,480
that oh i'm excited to talk about that

1102
00:41:12,710 --> 00:41:10,480
i'm so glad about this question

1103
00:41:14,230 --> 00:41:12,720
because the answer is really exciting so

1104
00:41:16,390 --> 00:41:14,240
of course the answer it depends on the

1105
00:41:18,069 --> 00:41:16,400
year so this year

1106
00:41:20,550 --> 00:41:18,079
if you paid attention you already know

1107
00:41:22,069 --> 00:41:20,560
we already went to space with a mars

1108
00:41:24,069 --> 00:41:22,079
mission it's already

1109
00:41:25,190 --> 00:41:24,079
over halfway to mars and we're going to

1110
00:41:27,510 --> 00:41:25,200
land

1111
00:41:28,390 --> 00:41:27,520
in february there we have this mission

1112
00:41:31,349 --> 00:41:28,400
now

1113
00:41:33,829 --> 00:41:31,359

but next year currently we have eight

1114
00:41:34,230 --> 00:41:33,839
different launches uh going into space

1115
00:41:37,030 --> 00:41:34,240
on

1116
00:41:38,470 --> 00:41:37,040
our plan eight different times the eight

1117
00:41:40,069 --> 00:41:38,480
different rockets will go

1118
00:41:42,309 --> 00:41:40,079
lift the earth and you know punch that

1119
00:41:45,030 --> 00:41:42,319
hole in the sky and go up

1120
00:41:46,390 --> 00:41:45,040
and how many are in space right now we

1121
00:41:48,950 --> 00:41:46,400
have close to

1122
00:41:49,430 --> 00:41:48,960
50 spacecraft big spacecraft in space

1123
00:41:53,990 --> 00:41:49,440
and

1124
00:41:56,069 --> 00:41:54,000
in addition to that so

1125
00:41:57,829 --> 00:41:56,079
so those are the spacecraft that all

1126
00:41:59,670 --> 00:41:57,839
have nasa labels on it

1127
00:42:00,870 --> 00:41:59,680
if i asked our european colleagues to

1128
00:42:02,550 --> 00:42:00,880
have their own

1129
00:42:05,349 --> 00:42:02,560
set of missions and then of course the

1130
00:42:07,990 --> 00:42:05,359
japanese other countries as well

1131
00:42:09,190 --> 00:42:08,000
but for nasa it's about that that number

1132
00:42:12,470 --> 00:42:09,200
marina

1133
00:42:15,990 --> 00:42:12,480
thank you dr z carl on facebook

1134
00:42:19,589 --> 00:42:16,000
asks how do you maintain sentinel-6

1135
00:42:21,990 --> 00:42:19,599
orbit so precisely and how do you know

1136
00:42:24,470 --> 00:42:22,000
where you are perag would you like to

1137
00:42:27,910 --> 00:42:26,710
yeah thank you uh really really great

1138
00:42:30,550 --> 00:42:27,920

question um

1139
00:42:31,349 --> 00:42:30,560
so first of all as we're orbiting the

1140
00:42:32,950 --> 00:42:31,359
earth uh

1141
00:42:35,109 --> 00:42:32,960
you know we're going about seven

1142
00:42:36,630 --> 00:42:35,119
kilometers per second so we're going

1143
00:42:40,470 --> 00:42:36,640
really really fast

1144
00:42:41,910 --> 00:42:40,480
and a key uh item that we need to know

1145
00:42:44,069 --> 00:42:41,920
in terms of being able to make this

1146
00:42:47,190 --> 00:42:44,079
measurement is where the satellite

1147
00:42:48,870 --> 00:42:47,200
is precisely to within again

1148
00:42:50,630 --> 00:42:48,880
centimeters that we have and we have

1149
00:42:51,910 --> 00:42:50,640
three sets of instruments on the

1150
00:42:54,790 --> 00:42:51,920
satellite

1151
00:42:55,430 --> 00:42:54,800
that really help us determine our

1152
00:42:59,670 --> 00:42:55,440
position

1153
00:43:00,630 --> 00:42:59,680
very accurately one one system is a gps

1154
00:43:06,550 --> 00:43:00,640
receiver

1155
00:43:08,230 --> 00:43:06,560
uses a similar system like other people

1156
00:43:10,630 --> 00:43:08,240
might have on their phone and other

1157
00:43:11,670 --> 00:43:10,640
equipment but again since we're

1158
00:43:15,030 --> 00:43:11,680
traveling in space

1159
00:43:16,950 --> 00:43:15,040
we need a really high performance system

1160
00:43:18,470 --> 00:43:16,960
to be able to do that and determine our

1161
00:43:21,510 --> 00:43:18,480
position to within

1162
00:43:21,990 --> 00:43:21,520
centimetric kind of accuracies we also

1163
00:43:24,150 --> 00:43:22,000

have

1164
00:43:26,150 --> 00:43:24,160
a another instrument called the doris

1165
00:43:29,430 --> 00:43:26,160
instrument which is sort of a

1166
00:43:31,829 --> 00:43:29,440
a set of ground-based beacons providing

1167
00:43:34,150 --> 00:43:31,839
a signal back up to the spacecraft and

1168
00:43:37,589 --> 00:43:34,160
we're using kind of a similar principle

1169
00:43:39,750 --> 00:43:37,599
like gps but helping to

1170
00:43:41,750 --> 00:43:39,760
use those radio signals to figure out

1171
00:43:43,109 --> 00:43:41,760
exactly where the satellite is

1172
00:43:45,750 --> 00:43:43,119
and then we have the laser retro

1173
00:43:47,510 --> 00:43:45,760
reflector as well so we really have a

1174
00:43:49,270 --> 00:43:47,520
combination of three systems we have

1175
00:43:53,270 --> 00:43:49,280
three because this is such an

1176
00:43:55,109 --> 00:43:53,280
important measurement to really perform

1177
00:43:56,309 --> 00:43:55,119
the altimetry sea surface height

1178
00:44:00,309 --> 00:43:56,319
measurement

1179
00:44:02,470 --> 00:44:00,319
with that sort of precision and accuracy

1180
00:44:03,750 --> 00:44:02,480
thank you prague and now we turn to the

1181
00:44:07,270 --> 00:44:03,760
phone lines

1182
00:44:09,670 --> 00:44:07,280
irene klotz from aviation week joins us

1183
00:44:12,150 --> 00:44:09,680
now good afternoon irene

1184
00:44:13,349 --> 00:44:12,160
good afternoon um i was wondering if

1185
00:44:16,470 --> 00:44:13,359
somebody has a

1186
00:44:20,309 --> 00:44:16,480
mission cost and what the

1187
00:44:23,109 --> 00:44:20,319
share was between nasa and european

1188
00:44:24,630 --> 00:44:23,119

not including launch costs and then i

1189
00:44:31,190 --> 00:44:24,640
have a follow-up question about the

1190
00:44:35,109 --> 00:44:32,950
thomas would you like to take that i'm

1191
00:44:40,630 --> 00:44:35,119
happy to answer that

1192
00:44:42,710 --> 00:44:40,640
the total cost of the nasa contribution

1193
00:44:43,670 --> 00:44:42,720
uh for both spacecraft remember we

1194
00:44:45,990 --> 00:44:43,680
talked about uh

1195
00:44:47,030 --> 00:44:46,000
sentinel 6 michael freilick and sentinel

1196
00:44:49,190 --> 00:44:47,040
6p

1197
00:44:50,870 --> 00:44:49,200
is of the order half a billion dollars

1198
00:44:53,589 --> 00:44:50,880
and i'm told

1199
00:44:55,750 --> 00:44:53,599
in a previous uh presentation by my

1200
00:44:57,510 --> 00:44:55,760
european colleague who uh

1201
00:44:59,750 --> 00:44:57,520
works at the european space agency my

1202
00:45:01,190 --> 00:44:59,760
good friend jose flashbacher

1203
00:45:03,270 --> 00:45:01,200
that the contribution from europe is

1204
00:45:04,870 --> 00:45:03,280
about approximately the same number just

1205
00:45:07,430 --> 00:45:04,880
as an order of magnitude those are the

1206
00:45:11,589 --> 00:45:10,950
and um when the uh nasa lawn services

1207
00:45:14,069 --> 00:45:11,599
program

1208
00:45:14,870 --> 00:45:14,079
awarded the flight contract to spacex i

1209
00:45:19,270 --> 00:45:14,880
believe it was

1210
00:45:22,069 --> 00:45:19,280
for 97 97 million and just wondered if

1211
00:45:22,550 --> 00:45:22,079
that number is still good or has that

1212
00:45:25,430 --> 00:45:22,560
gone

1213
00:45:26,950 --> 00:45:25,440

up or down sometimes i know they go down

1214
00:45:32,069 --> 00:45:26,960
with booster reuse

1215
00:45:35,670 --> 00:45:32,079
thank you

1216
00:45:38,230 --> 00:45:35,680
irene so i can tell you that

1217
00:45:39,349 --> 00:45:38,240
when we awarded the sentinel 6 michael

1218
00:45:41,910 --> 00:45:39,359
freilich mission

1219
00:45:42,870 --> 00:45:41,920
we were scheduled to launch on the 15th

1220
00:45:46,309 --> 00:45:42,880
of november

1221
00:45:48,790 --> 00:45:46,319
of 2020 and here we are about to launch

1222
00:45:50,630 --> 00:45:48,800
on the 1st of november 20 so there has

1223
00:45:52,550 --> 00:45:50,640
not been any significant

1224
00:45:54,790 --> 00:45:52,560
delays that would have driven up any of

1225
00:45:58,150 --> 00:45:54,800
our launch service costs

1226
00:46:01,030 --> 00:45:58,160
so that 97 million dollar full launch

1227
00:46:01,990 --> 00:46:01,040
service price that we acquired the

1228
00:46:03,829 --> 00:46:02,000
falcon 9

1229
00:46:06,150 --> 00:46:03,839
that also includes more than just the

1230
00:46:08,870 --> 00:46:06,160
hardware of falcon 9 it includes

1231
00:46:10,390 --> 00:46:08,880
us paying spacex to take care of our

1232
00:46:13,430 --> 00:46:10,400
spacecraft in their payload

1233
00:46:14,950 --> 00:46:13,440
processing facility for a couple

1234
00:46:17,430 --> 00:46:14,960
months prior to launch and a few other

1235
00:46:21,589 --> 00:46:17,440
things but that number still valid 97

1236
00:46:25,270 --> 00:46:23,430
thank you for that information tim now

1237
00:46:26,950 --> 00:46:25,280
we're going back to our social media

1238
00:46:30,069 --> 00:46:26,960

questions with the hashtag

1239
00:46:33,430 --> 00:46:30,079
seeing the seas luis on facebook

1240
00:46:38,790 --> 00:46:33,440
asks how high is sentinel 6

1241
00:46:42,950 --> 00:46:41,750
oh i could take a stab at it i think i'm

1242
00:46:43,510 --> 00:46:42,960
going to turn it over to prague it's

1243
00:46:46,069 --> 00:46:43,520
around

1244
00:46:47,589 --> 00:46:46,079
1300 kilometers but frog i'm going to

1245
00:46:51,510 --> 00:46:47,599
turn it over to you for that

1246
00:46:55,510 --> 00:46:51,520
exact answer sure

1247
00:46:59,030 --> 00:46:55,520
sure yeah uh it's it's 336 kilometers

1248
00:47:02,470 --> 00:46:59,040
about 800 miles up in the sky so

1249
00:47:04,950 --> 00:47:02,480
uh it is the exact same orbit as uh

1250
00:47:06,710 --> 00:47:04,960
our prior missions uh the the json

1251
00:47:09,270 --> 00:47:06,720
series of missions are following

1252
00:47:10,470 --> 00:47:09,280
so we're we're planning to launch right

1253
00:47:14,069 --> 00:47:10,480
into that

1254
00:47:17,270 --> 00:47:14,079
exact orbit 1336 kilometers

1255
00:47:19,910 --> 00:47:17,280
and basically continue

1256
00:47:21,829 --> 00:47:19,920
this mission going forward following uh

1257
00:47:24,710 --> 00:47:21,839
the the json series of missions that are

1258
00:47:26,150 --> 00:47:24,720
already up there thank you for that

1259
00:47:29,670 --> 00:47:26,160
prague

1260
00:47:31,990 --> 00:47:29,680
now fernanda on facebook would like to

1261
00:47:32,950 --> 00:47:32,000
say hello from germany so thank you for

1262
00:47:35,670 --> 00:47:32,960
tuning in

1263
00:47:36,150 --> 00:47:35,680

will you collect data about the climate

1264
00:47:39,430 --> 00:47:36,160
change

1265
00:47:43,589 --> 00:47:39,440
above rivers like the amazon

1266
00:47:47,589 --> 00:47:45,349
yes thank you marina thank you for the

1267
00:47:50,630 --> 00:47:47,599
question indeed

1268
00:47:52,549 --> 00:47:50,640
the sea level are measured from space

1269
00:47:55,109 --> 00:47:52,559
but with the new technology we are

1270
00:47:55,829 --> 00:47:55,119
developing the altimeter is getting more

1271
00:47:58,230 --> 00:47:55,839
accurate

1272
00:47:59,190 --> 00:47:58,240
and the high frequency radiometer we are

1273
00:48:02,150 --> 00:47:59,200
using

1274
00:48:02,870 --> 00:48:02,160
allow to also start measuring the the

1275
00:48:06,710 --> 00:48:02,880
level of

1276
00:48:09,270 --> 00:48:06,720
reverse large rivers and lakes so indeed

1277
00:48:11,910 --> 00:48:09,280
this hydrology aspect of the the

1278
00:48:14,710 --> 00:48:11,920
ultimate remission is now a new topic

1279
00:48:16,549 --> 00:48:14,720
and will develop in the future our

1280
00:48:19,349 --> 00:48:16,559
colleagues at nasa are busy with

1281
00:48:21,270 --> 00:48:19,359
swots and we are looking into making

1282
00:48:27,109 --> 00:48:21,280
this ideology type mission

1283
00:48:32,790 --> 00:48:30,390
avenue valencia on twitter wants to know

1284
00:48:33,589 --> 00:48:32,800
how is this satellite different from

1285
00:48:36,230 --> 00:48:33,599
previous

1286
00:48:40,069 --> 00:48:36,240
sea level monitoring satellites and i

1287
00:48:45,829 --> 00:48:43,270
okay yeah um it's uh it you know

1288
00:48:47,670 --> 00:48:45,839

our job is to do two things is

1289
00:48:50,470 --> 00:48:47,680
continuity on one hand

1290
00:48:52,710 --> 00:48:50,480
so that's very very important for us to

1291
00:48:56,309 --> 00:48:52,720
be able to establish that

1292
00:48:57,910 --> 00:48:56,319
and do do at least as good as our

1293
00:49:00,870 --> 00:48:57,920
predecessors are but

1294
00:49:01,510 --> 00:49:00,880
really we are trying to do even better

1295
00:49:04,630 --> 00:49:01,520
than

1296
00:49:07,750 --> 00:49:04,640
jason series of missions

1297
00:49:10,790 --> 00:49:07,760
uh pirrick describes the the uh the main

1298
00:49:11,910 --> 00:49:10,800
instrument the the altimeter that uh isa

1299
00:49:15,190 --> 00:49:11,920
is providing

1300
00:49:18,309 --> 00:49:15,200
it's a significant enhancement uh

1301
00:49:21,030 --> 00:49:18,319
in in many of the features that the main

1302
00:49:23,270 --> 00:49:21,040
instrument provides in terms of

1303
00:49:25,510 --> 00:49:23,280
measurement accuracy at resolution

1304
00:49:28,470 --> 00:49:25,520
getting much closer to the coasts

1305
00:49:29,990 --> 00:49:28,480
the nasa radiometer is is very

1306
00:49:32,150 --> 00:49:30,000
complementary to that

1307
00:49:33,750 --> 00:49:32,160
uh goal of of being able to provide

1308
00:49:36,390 --> 00:49:33,760
higher resolution

1309
00:49:36,870 --> 00:49:36,400
and uh get much closer to the coast as

1310
00:49:39,589 --> 00:49:36,880
much as

1311
00:49:40,470 --> 00:49:39,599
possible um we have been measuring the

1312
00:49:43,589 --> 00:49:40,480
open ocean

1313
00:49:45,910 --> 00:49:43,599

uh uh over the last uh uh 20

1314
00:49:46,630 --> 00:49:45,920
30 years with these series of missions

1315
00:49:48,230 --> 00:49:46,640
and

1316
00:49:49,750 --> 00:49:48,240
we're trying to of course continue that

1317
00:49:53,430 --> 00:49:49,760
but even get closer

1318
00:49:55,109 --> 00:49:53,440
uh to the coasts uh and help to inform

1319
00:49:55,510 --> 00:49:55,119
the hundreds of millions of people who

1320
00:49:58,630 --> 00:49:55,520
live

1321
00:50:00,870 --> 00:49:58,640
along the coast

1322
00:50:02,790 --> 00:50:00,880
really interested my colleagues here so

1323
00:50:04,309 --> 00:50:02,800
this looks like a little house

1324
00:50:06,390 --> 00:50:04,319
are there other spacecraft that look

1325
00:50:09,270 --> 00:50:06,400
like this in this series of heritage

1326
00:50:11,589 --> 00:50:09,280
spacecraft in europe or in the us

1327
00:50:13,670 --> 00:50:11,599
kirk you want to take that yes indeed

1328
00:50:14,549 --> 00:50:13,680
the the form factor of centennial sixth

1329
00:50:17,990 --> 00:50:14,559
seal is a bit

1330
00:50:20,150 --> 00:50:18,000
peculiar um that's got to do with the

1331
00:50:21,190 --> 00:50:20,160
orientation of the solar panel we need

1332
00:50:23,589 --> 00:50:21,200
to maintain

1333
00:50:25,430 --> 00:50:23,599
on this very particular orbit most of

1334
00:50:27,109 --> 00:50:25,440
the satellite orbit are normally

1335
00:50:29,349 --> 00:50:27,119
synchronous with the sun so you get the

1336
00:50:31,670 --> 00:50:29,359
sun always from the same direction

1337
00:50:32,870 --> 00:50:31,680
which is not the case here so we've

1338
00:50:35,190 --> 00:50:32,880

decided to

1339
00:50:36,230 --> 00:50:35,200
not have any moving part on the

1340
00:50:38,470 --> 00:50:36,240
spacecraft so

1341
00:50:40,710 --> 00:50:38,480
having fixed panel and therefore to

1342
00:50:44,230 --> 00:50:40,720
cover all direction we have this kind of

1343
00:50:45,270 --> 00:50:44,240
roof shape let's say arrangement for the

1344
00:50:47,030 --> 00:50:45,280
solar panel

1345
00:50:49,430 --> 00:50:47,040
this is also fitting very well into a

1346
00:50:51,270 --> 00:50:49,440
fairing so this is why you will find

1347
00:50:53,270 --> 00:50:51,280
similar shape for example

1348
00:50:55,030 --> 00:50:53,280
in the very well known spacecraft here

1349
00:50:58,309 --> 00:50:55,040
the the grace and grace full-on

1350
00:51:01,589 --> 00:51:00,630
yes i agree it does look very much like

1351
00:51:03,109 --> 00:51:01,599
a little house

1352
00:51:05,510 --> 00:51:03,119
sometimes people say that it looks a

1353
00:51:07,270 --> 00:51:05,520
little bit like snoopy's house

1354
00:51:08,870 --> 00:51:07,280
all right now we have another person on

1355
00:51:12,470 --> 00:51:08,880
the phone

1356
00:51:13,270 --> 00:51:12,480
we have stephen clark from space flight

1357
00:51:16,870 --> 00:51:13,280
now

1358
00:51:22,470 --> 00:51:20,069
hi thank you my question i think

1359
00:51:24,150 --> 00:51:22,480
might be for juliana i think you have

1360
00:51:25,750 --> 00:51:24,160
two launches from different coasts

1361
00:51:27,349 --> 00:51:25,760
this weekend tomorrow and then

1362
00:51:30,790 --> 00:51:27,359
potentially sunday night

1363
00:51:33,750 --> 00:51:30,800

uh from uh here at cape canaveral

1364
00:51:35,589 --> 00:51:33,760
any concerns or any any requirement to

1365
00:51:36,710 --> 00:51:35,599
have a certain amount of spacing between

1366
00:51:39,109 --> 00:51:36,720
two different launches from two

1367
00:51:41,510 --> 00:51:39,119
different pads from a spacex perspective

1368
00:51:42,549 --> 00:51:41,520
and you know just how busy will the team

1369
00:51:46,390 --> 00:51:42,559
be this weekend

1370
00:51:47,990 --> 00:51:46,400
thanks thank you for the question

1371
00:51:49,349 --> 00:51:48,000
stephen i appreciate the opportunity to

1372
00:51:51,270 --> 00:51:49,359
address that

1373
00:51:53,670 --> 00:51:51,280
so we have as you mentioned there are

1374
00:51:55,510 --> 00:51:53,680
two uh launches that are currently

1375
00:51:57,430 --> 00:51:55,520
there's the sentinel 6 launch and a

1376
00:51:58,870 --> 00:51:57,440
launch starlink launch so those are

1377
00:52:00,950 --> 00:51:58,880
spacex satellites

1378
00:52:02,710 --> 00:52:00,960
um the most important launch happening

1379
00:52:04,309 --> 00:52:02,720
is the one for our customer nasa and

1380
00:52:06,710 --> 00:52:04,319
that's the sentinel six mission

1381
00:52:08,309 --> 00:52:06,720
and so we will be uh prioritizing this

1382
00:52:10,470 --> 00:52:08,319
ml6 mission accordingly

1383
00:52:11,349 --> 00:52:10,480
and if needed we will hold the starlink

1384
00:52:12,470 --> 00:52:11,359
launch um

1385
00:52:14,710 --> 00:52:12,480
right now the starling launch is

1386
00:52:20,470 --> 00:52:14,720
scheduled for sunday after our

1387
00:52:25,190 --> 00:52:22,790
thank you juliana and we have one last

1388
00:52:25,829 --> 00:52:25,200

social media question from hussein on

1389
00:52:27,750 --> 00:52:25,839
facebook

1390
00:52:29,990 --> 00:52:27,760
asking what is the difference between

1391
00:52:31,430 --> 00:52:30,000
the jason missions and this mission and

1392
00:52:31,829 --> 00:52:31,440
perrag you talked a little bit about

1393
00:52:33,670 --> 00:52:31,839
this

1394
00:52:35,430 --> 00:52:33,680
already but maybe you could also talk

1395
00:52:38,309 --> 00:52:35,440
about how close they'll be in orbit

1396
00:52:42,630 --> 00:52:40,790
yeah that's uh that's a good point um

1397
00:52:44,470 --> 00:52:42,640
you know one of the

1398
00:52:45,990 --> 00:52:44,480
objectives again when i was saying about

1399
00:52:49,750 --> 00:52:46,000
continuity is being able

1400
00:52:52,150 --> 00:52:49,760
to have um being able to compare

1401
00:52:52,870 --> 00:52:52,160
how well uh our our newest satellite

1402
00:52:56,790 --> 00:52:52,880
does

1403
00:52:59,750 --> 00:52:56,800
and and be able to to look back at the

1404
00:53:00,549 --> 00:52:59,760
20 30-year record that we have uh

1405
00:53:02,470 --> 00:53:00,559
backwards but

1406
00:53:03,589 --> 00:53:02,480
and and then of course going and

1407
00:53:06,630 --> 00:53:03,599
extending that

1408
00:53:09,109 --> 00:53:06,640
uh that that forward so um

1409
00:53:09,910 --> 00:53:09,119
we will be launching into an orbit and

1410
00:53:11,910 --> 00:53:09,920
and and then

1411
00:53:13,349 --> 00:53:11,920
eventually getting into an orbit that's

1412
00:53:15,829 --> 00:53:13,359
very very close

1413
00:53:17,349 --> 00:53:15,839

to json3 within our goal is to get

1414
00:53:20,549 --> 00:53:17,359
within 30 seconds of

1415
00:53:23,109 --> 00:53:20,559
basically uh the json-3 satellite and

1416
00:53:25,589 --> 00:53:23,119
then once we're in orbit and we have our

1417
00:53:26,390 --> 00:53:25,599
instruments turned on we'll be able to

1418
00:53:29,030 --> 00:53:26,400
compare

1419
00:53:30,790 --> 00:53:29,040
and cross-calibrate that that data back

1420
00:53:33,030 --> 00:53:30,800
again to to json3

1421
00:53:34,549 --> 00:53:33,040
very quickly it's our best source of

1422
00:53:37,589 --> 00:53:34,559
truth and comparison

1423
00:53:40,230 --> 00:53:37,599
so that's uh that's the that's the plan

1424
00:53:42,630 --> 00:53:40,240
thank you so much parag we are all very

1425
00:53:44,309 --> 00:53:42,640
excited and eager to anticipation for

1426
00:53:45,030 --> 00:53:44,319
tomorrow now thank you to all of you who

1427
00:53:47,109 --> 00:53:45,040
called in

1428
00:53:48,549 --> 00:53:47,119
both on our media line and also in our

1429
00:53:50,069 --> 00:53:48,559
social media questions

1430
00:53:52,630 --> 00:53:50,079
and thank you so much for all of our

1431
00:53:55,030 --> 00:53:52,640
panelists who joined us here today

1432
00:53:56,710 --> 00:53:55,040
the u.s european sentinel 6 michael

1433
00:53:58,630 --> 00:53:56,720
freilix satellite will launch from

1434
00:53:59,270 --> 00:53:58,640
vandenberg air force base tomorrow

1435
00:54:02,790 --> 00:53:59,280
morning

1436
00:54:05,190 --> 00:54:02,800
at 9 17 a.m pacific time so make sure

1437
00:54:07,990 --> 00:54:05,200
you tune into nasa tv for that

1438
00:54:09,430 --> 00:54:08,000

for more information on the satellite go

1439
00:54:12,630 --> 00:54:09,440
to www

1440
00:54:14,790 --> 00:54:12,640
dot sentinel6

1441
00:54:16,150 --> 00:54:14,800
you can also follow us on all social

1442
00:54:18,470 --> 00:54:16,160
media platforms

1443
00:54:19,430 --> 00:54:18,480
at nasa earth to keep up with this

1444
00:54:21,829 --> 00:54:19,440
mission and

1445
00:54:22,549 --> 00:54:21,839
all of the earth missions that we are a

1446
00:54:25,109 --> 00:54:22,559
part of

1447
00:54:26,870 --> 00:54:25,119
thanks so much for joining us today at

1448
00:54:36,829 --> 00:54:26,880
nasa earth science

1449
00:54:36,839 --> 00:54:45,109
watching

1450
00:54:49,349 --> 00:54:46,549
getting us back to the moon in this

1451
00:54:52,630 --> 00:54:49,359
generation sparks a whole new

1452
00:54:54,069 --> 00:54:52,640
generation of explorers hi my name is dr

1453
00:54:57,190 --> 00:54:54,079
k renee horton

1454
00:54:59,190 --> 00:54:57,200
and i am boots on the ground for sls