
AERO
AND

1
00:00:07,190 --> 00:00:05,110
good afternoon and welcome to nasa

2
00:00:09,830 --> 00:00:07,200
headquarters i'm steve cole from the

3
00:00:11,990 --> 00:00:09,840
office of communications

4
00:00:13,910 --> 00:00:12,000
a new type of earth science satellite is

5
00:00:17,670 --> 00:00:13,920
in california right now getting ready to

6
00:00:20,550 --> 00:00:17,680
launch into space in two weeks npp

7
00:00:23,029 --> 00:00:20,560
the npo's preparatory project

8
00:00:24,790 --> 00:00:23,039
it will be nasa's earth's first earth

9
00:00:27,509 --> 00:00:24,800
observing satellite to measure both

10
00:00:29,269 --> 00:00:27,519
climate changes and key aspects of

11
00:00:31,189 --> 00:00:29,279
day-to-day weather

12
00:00:33,750 --> 00:00:31,199
today we have four speakers here to tell

13
00:00:36,389 --> 00:00:33,760

you more about npp and its mission

14
00:00:39,590 --> 00:00:36,399
our speakers are first

15
00:00:41,670 --> 00:00:39,600
andrew carson npp program executive at

16
00:00:44,709 --> 00:00:41,680
nasa headquarters

17
00:00:47,190 --> 00:00:44,719
ken schwer npp project manager at

18
00:00:50,869 --> 00:00:47,200
goddard space flight center

19
00:00:52,709 --> 00:00:50,879
dr jim gleason npp project scientist at

20
00:00:55,430 --> 00:00:52,719
nasa goddard

21
00:00:57,350 --> 00:00:55,440
and dr louis uchillini director of the

22
00:00:58,790 --> 00:00:57,360
national oceanic and atmospheric

23
00:01:00,630 --> 00:00:58,800
administration's

24
00:01:02,630 --> 00:01:00,640
national centers for environmental

25
00:01:04,390 --> 00:01:02,640
prediction representing the national

26
00:01:06,630 --> 00:01:04,400
weather service

27
00:01:08,390 --> 00:01:06,640
the presentations will last about 15

28
00:01:10,310 --> 00:01:08,400
minutes after which we'll open up the

29
00:01:12,469 --> 00:01:10,320
floor to journalists here in the

30
00:01:14,310 --> 00:01:12,479
audience as well as online

31
00:01:16,789 --> 00:01:14,320
so our first speaker

32
00:01:19,030 --> 00:01:16,799
let me hand it over to andy andy

33
00:01:21,270 --> 00:01:19,040
thank you steve we're very excited about

34
00:01:22,710 --> 00:01:21,280
the upcoming launch of mpp in just a few

35
00:01:24,789 --> 00:01:22,720
short weeks

36
00:01:26,469 --> 00:01:24,799
mpp is a bridge to the next generation

37
00:01:29,910 --> 00:01:26,479
of earth observing satellites that will

38
00:01:31,429 --> 00:01:29,920

provide climate data that'll help

39
00:01:33,030 --> 00:01:31,439
that are critical to nasa's earth

40
00:01:34,950 --> 00:01:33,040
science research

41
00:01:37,670 --> 00:01:34,960
mpp will help us understand what

42
00:01:39,749 --> 00:01:37,680
tomorrow will bring whether by tomorrow

43
00:01:43,109 --> 00:01:39,759
we mean tomorrow's forecast or whether

44
00:01:45,270 --> 00:01:43,119
we mean years or decades from now

45
00:01:47,109 --> 00:01:45,280
nasa is currently operating 14 earth

46
00:01:48,870 --> 00:01:47,119
science missions

47
00:01:51,190 --> 00:01:48,880
in including a series of satellites

48
00:01:52,469 --> 00:01:51,200
known as the earth observing system or

49
00:01:55,990 --> 00:01:52,479
eos

50
00:01:58,069 --> 00:01:56,000
these satellites terra aqua and aura

51
00:01:59,830 --> 00:01:58,079
provide measurements about land oceans

52
00:02:02,709 --> 00:01:59,840
and atmosphere

53
00:02:04,950 --> 00:02:02,719
mpp will continue these key measurements

54
00:02:07,270 --> 00:02:04,960
which are critical to understanding the

55
00:02:10,389 --> 00:02:07,280
health of our planet now as well as how

56
00:02:11,990 --> 00:02:10,399
things might change in the future

57
00:02:14,550 --> 00:02:12,000
nasa is taking what we learned from the

58
00:02:16,550 --> 00:02:14,560
eos system and helping noaa create the

59
00:02:18,630 --> 00:02:16,560
next generation of satellites to extend

60
00:02:20,949 --> 00:02:18,640
these measurements into the future

61
00:02:23,430 --> 00:02:20,959
through the joint polar satellite system

62
00:02:27,510 --> 00:02:23,440
or jpss

63
00:02:29,670 --> 00:02:27,520

proving out the technologies and

64
00:02:31,509 --> 00:02:29,680
capabilities of that system

65
00:02:33,670 --> 00:02:31,519
both in the instruments and the ground

66
00:02:36,150 --> 00:02:33,680
system

67
00:02:37,509 --> 00:02:36,160
mpp data will also be incorporated into

68
00:02:40,229 --> 00:02:37,519
the national

69
00:02:42,229 --> 00:02:40,239
operational weather forecast models

70
00:02:43,509 --> 00:02:42,239
providing higher resolution data and

71
00:02:46,869 --> 00:02:43,519
improving the weather forecast

72
00:02:49,270 --> 00:02:46,879
capabilities so mpp is a critical first

73
00:02:51,990 --> 00:02:49,280
step in building a climate capable

74
00:02:53,270 --> 00:02:52,000
operational system

75
00:02:55,110 --> 00:02:53,280
this mission was developed in

76
00:02:57,190 --> 00:02:55,120
collaboration with our partners at noaa

77
00:02:59,430 --> 00:02:57,200
and the department of defense

78
00:03:03,190 --> 00:02:59,440
as well as our industry partners at ball

79
00:03:04,790 --> 00:03:03,200
north of grumman raytheon and itt

80
00:03:06,949 --> 00:03:04,800
we are finishing up the last of launch

81
00:03:09,589 --> 00:03:06,959
preparations for mpp and are looking

82
00:03:11,430 --> 00:03:09,599
forward to launch on october 27th

83
00:03:13,270 --> 00:03:11,440
we expect it will become a significant

84
00:03:14,949 --> 00:03:13,280
part of our nation's climate and weather

85
00:03:16,710 --> 00:03:14,959
capabilities

86
00:03:18,869 --> 00:03:16,720
now i'll turn it over to ken schwier the

87
00:03:20,149 --> 00:03:18,879
mpp project manager

88
00:03:22,550 --> 00:03:20,159

thank you andy

89
00:03:25,509 --> 00:03:22,560
tomorrow is a monumental milestone for

90
00:03:27,830 --> 00:03:25,519
npp the npp satellite will be mated on

91
00:03:30,070 --> 00:03:27,840
top of the delta ii launch vehicle out

92
00:03:33,030 --> 00:03:30,080
of vanderberg air force base california

93
00:03:35,350 --> 00:03:33,040
as we prepare for october 27th launch

94
00:03:37,990 --> 00:03:35,360
the npp team has successfully maintained

95
00:03:39,910 --> 00:03:38,000
schedule the past two years while

96
00:03:42,149 --> 00:03:39,920
completing a comprehensive satellite

97
00:03:43,750 --> 00:03:42,159
environmental test program and ensuring

98
00:03:45,670 --> 00:03:43,760
the readiness of the ground system and

99
00:03:48,229 --> 00:03:45,680
the mission operations team

100
00:03:50,550 --> 00:03:48,239
the mpp spacecraft is built by ball

101
00:03:52,070 --> 00:03:50,560
aerospace in boulder colorado where all

102
00:03:54,309 --> 00:03:52,080
five instruments were delivered and

103
00:03:56,550 --> 00:03:54,319
integrated onto the spacecraft after

104
00:03:58,949 --> 00:03:56,560
integration the mpp satellite is

105
00:04:01,190 --> 00:03:58,959
actually about the size of an suv

106
00:04:03,110 --> 00:04:01,200
the npp team successfully completed a

107
00:04:05,110 --> 00:04:03,120
satellite pre-ship review and the

108
00:04:07,190 --> 00:04:05,120
mission operational readiness review

109
00:04:10,550 --> 00:04:07,200
back in mid-august

110
00:04:12,869 --> 00:04:10,560
after that the npp spacecraft was then

111
00:04:15,429 --> 00:04:12,879
shipped from boulder colorado via

112
00:04:18,150 --> 00:04:15,439
environmentally controlled spacecraft

113
00:04:20,710 --> 00:04:18,160

shipping container and a tractor trailer

114
00:04:22,310 --> 00:04:20,720
on august 28th and approximately 30

115
00:04:25,350 --> 00:04:22,320
hours later arrived to vandenberg air

116
00:04:27,430 --> 00:04:25,360
force base california on august 30th

117
00:04:30,150 --> 00:04:27,440
since then the npp spacecraft and

118
00:04:32,469 --> 00:04:30,160
instruments has successfully completed

119
00:04:33,990 --> 00:04:32,479
all checkouts and preparations for

120
00:04:37,030 --> 00:04:34,000
launch

121
00:04:39,189 --> 00:04:37,040
over the next two weeks the npp and

122
00:04:41,510 --> 00:04:39,199
delta ii teams

123
00:04:44,390 --> 00:04:41,520
will conduct a mission dress rehearsal

124
00:04:46,469 --> 00:04:44,400
on october 21st and the launch readiness

125
00:04:48,870 --> 00:04:46,479
review on october 25th

126
00:04:50,870 --> 00:04:48,880
the mission dress rehearsal actually

127
00:04:53,990 --> 00:04:50,880
exercises the satellite and launch

128
00:04:55,350 --> 00:04:54,000
vehicle teams with simulated anomalies

129
00:04:56,550 --> 00:04:55,360
while actually running the countdown

130
00:04:59,189 --> 00:04:56,560
procedure

131
00:05:02,230 --> 00:04:59,199
this ensures the launch readiness of the

132
00:05:03,990 --> 00:05:02,240
satellite and the launch vehicle teams

133
00:05:06,629 --> 00:05:04,000
the nasa goddard space flight center

134
00:05:08,150 --> 00:05:06,639
role for npp is to manage the entire

135
00:05:10,390 --> 00:05:08,160
mission for nasa's earth science

136
00:05:13,110 --> 00:05:10,400
division this includes acquiring the

137
00:05:14,710 --> 00:05:13,120
spacecraft two of the five instruments

138
00:05:16,710 --> 00:05:14,720

working with the kennedy space center

139
00:05:19,029 --> 00:05:16,720
for the delta ii launch vehicle and

140
00:05:21,029 --> 00:05:19,039
overall mission systems engineering and

141
00:05:24,390 --> 00:05:21,039
early orbit operations

142
00:05:26,710 --> 00:05:24,400
in fact over the past 50 years the nasa

143
00:05:29,909 --> 00:05:26,720
goddard space flight center has managed

144
00:05:31,670 --> 00:05:29,919
and launched over 260 successful

145
00:05:34,550 --> 00:05:31,680
missions into space

146
00:05:37,670 --> 00:05:34,560
after launch the npp satellite will

147
00:05:39,350 --> 00:05:37,680
orbit 512 miles above our homes it will

148
00:05:41,270 --> 00:05:39,360
actually be controlled from noaa's

149
00:05:42,629 --> 00:05:41,280
satellite operations facility in

150
00:05:45,029 --> 00:05:42,639
suitland maryland

151
00:05:46,629 --> 00:05:45,039
as you can see i am very excited and

152
00:05:48,710 --> 00:05:46,639
proud about my npp team's

153
00:05:49,830 --> 00:05:48,720
accomplishments and we look forward to a

154
00:05:51,350 --> 00:05:49,840
great mission

155
00:05:53,189 --> 00:05:51,360
thank you this time i'd like to turn

156
00:05:55,749 --> 00:05:53,199
over to jim gleason for the science

157
00:05:57,270 --> 00:05:55,759
overview thanks ken we are really

158
00:05:59,749 --> 00:05:57,280
excited to be here to be talking to you

159
00:06:01,590 --> 00:05:59,759
about the upcoming npp launch which is

160
00:06:04,070 --> 00:06:01,600
really the first mission

161
00:06:06,950 --> 00:06:04,080
that's designed to provide observations

162
00:06:08,390 --> 00:06:06,960
for both weather forecasters and climate

163
00:06:09,990 --> 00:06:08,400

researchers

164
00:06:12,230 --> 00:06:10,000
it's incredibly valuable to try to

165
00:06:13,189 --> 00:06:12,240
understand what the future environment

166
00:06:15,270 --> 00:06:13,199
may be

167
00:06:16,790 --> 00:06:15,280
and the future environment is as much

168
00:06:19,110 --> 00:06:16,800
tomorrow's weather

169
00:06:21,670 --> 00:06:19,120
as it is long-term climate

170
00:06:22,710 --> 00:06:21,680
people often confuse climate and weather

171
00:06:25,430 --> 00:06:22,720
weather is what's going to happen

172
00:06:27,189 --> 00:06:25,440
tomorrow or this upcoming weekend

173
00:06:28,230 --> 00:06:27,199
climate is what happens over years and

174
00:06:30,950 --> 00:06:28,240
decades

175
00:06:34,150 --> 00:06:30,960
so climate is long-term behavior

176
00:06:35,909 --> 00:06:34,160
weather patterns over time

177
00:06:39,029 --> 00:06:35,919
these are the patterns that make it

178
00:06:40,390 --> 00:06:39,039
easier to grow corn in iowa than in in

179
00:06:41,270 --> 00:06:40,400
arizona

180
00:06:43,670 --> 00:06:41,280
so

181
00:06:45,590 --> 00:06:43,680
simply put climate is what you expect

182
00:06:48,629 --> 00:06:45,600
weather is what you get

183
00:06:50,950 --> 00:06:48,639
and npp's observations will help

184
00:06:52,070 --> 00:06:50,960
scientists to better predict the future

185
00:06:53,670 --> 00:06:52,080
environment

186
00:06:56,790 --> 00:06:53,680
and these predictions are incredibly

187
00:06:59,589 --> 00:06:56,800
valuable for economic security and

188
00:07:02,390 --> 00:06:59,599

humanitarian reasons

189
00:07:04,790 --> 00:07:02,400
npp's observations will produce at least

190
00:07:06,870 --> 00:07:04,800
30 data sets

191
00:07:08,550 --> 00:07:06,880
that will contribute to

192
00:07:11,749 --> 00:07:08,560
our understanding of all parts of the

193
00:07:13,670 --> 00:07:11,759
earth earth system for example npp will

194
00:07:15,029 --> 00:07:13,680
help us understand temperature and water

195
00:07:17,510 --> 00:07:15,039
in the atmosphere

196
00:07:19,510 --> 00:07:17,520
npp will help us understand how clouds

197
00:07:21,270 --> 00:07:19,520
and aerosols affect temperature

198
00:07:22,150 --> 00:07:21,280
npp will help us understand the ozone

199
00:07:24,390 --> 00:07:22,160
layer

200
00:07:27,350 --> 00:07:24,400
and npp will help us understand the

201
00:07:31,270 --> 00:07:27,360
biosphere focusing on vegetation or

202
00:07:34,070 --> 00:07:31,280
plants on land and in in the ocean

203
00:07:35,990 --> 00:07:34,080
so why is npp important to nasa

204
00:07:37,270 --> 00:07:36,000
npp is important to nasa because it

205
00:07:39,589 --> 00:07:37,280
continues

206
00:07:42,390 --> 00:07:39,599
over 40 years of earth observations that

207
00:07:44,869 --> 00:07:42,400
nasa has been making and in particular

208
00:07:46,230 --> 00:07:44,879
npp carries on the earth observing

209
00:07:49,189 --> 00:07:46,240
satellites

210
00:07:50,469 --> 00:07:49,199
records from terra aqua and aura and

211
00:07:52,950 --> 00:07:50,479
hopefully

212
00:07:54,950 --> 00:07:52,960
will the observations from the joint

213
00:07:57,350 --> 00:07:54,960

polar satellite system will be added to

214
00:08:01,350 --> 00:07:57,360
npp's data records

215
00:08:03,909 --> 00:08:01,360
so npp's observations are will help nasa

216
00:08:06,790 --> 00:08:03,919
make better long-term data sets which

217
00:08:08,950 --> 00:08:06,800
help scientists make better models which

218
00:08:10,710 --> 00:08:08,960
then lead to better predictions which

219
00:08:12,950 --> 00:08:10,720
hopefully can be used to make better

220
00:08:15,830 --> 00:08:12,960
decisions and these decisions can be as

221
00:08:18,230 --> 00:08:15,840
simple as do i bring an umbrella or as

222
00:08:19,670 --> 00:08:18,240
complex as how do we respond to a change

223
00:08:20,790 --> 00:08:19,680
in climate

224
00:08:21,909 --> 00:08:20,800
so again

225
00:08:24,230 --> 00:08:21,919
npp

226
00:08:27,029 --> 00:08:24,240
better observations for

227
00:08:29,430 --> 00:08:27,039
for better models better predictions and

228
00:08:31,189 --> 00:08:29,440
hopefully better decisions and now i'd

229
00:08:33,589 --> 00:08:31,199
like to introduce dr louis ucelini of

230
00:08:35,029 --> 00:08:33,599
the national weather service

231
00:08:38,149 --> 00:08:35,039
thank you jim

232
00:08:40,070 --> 00:08:38,159
we've already heard about the potential

233
00:08:41,509 --> 00:08:40,080
of the mpp for improving weather

234
00:08:44,790 --> 00:08:41,519
forecasts

235
00:08:47,509 --> 00:08:44,800
enterprise serving a weather-ready

236
00:08:50,070 --> 00:08:47,519
nation is dependent on three components

237
00:08:52,630 --> 00:08:50,080
sophisticated numerical models run on

238
00:08:55,350 --> 00:08:52,640

the world's fastest computers

239
00:08:57,110 --> 00:08:55,360
ingesting over a billion observations

240
00:08:58,790 --> 00:08:57,120
per day

241
00:08:59,670 --> 00:08:58,800
to make these weather forecasts every

242
00:09:01,190 --> 00:08:59,680
day

243
00:09:03,990 --> 00:09:01,200
now the backbone for that global

244
00:09:07,110 --> 00:09:04,000
observing system is the polar satellite

245
00:09:08,710 --> 00:09:07,120
data that both nasa and noaa have worked

246
00:09:10,630 --> 00:09:08,720
on for decades

247
00:09:11,910 --> 00:09:10,640
to improve the operational forecast

248
00:09:14,150 --> 00:09:11,920
systems

249
00:09:15,590 --> 00:09:14,160
so the launch of the npp is a big deal

250
00:09:17,750 --> 00:09:15,600
for america

251
00:09:18,710 --> 00:09:17,760
mpp does represent a bridge from the

252
00:09:20,870 --> 00:09:18,720
current

253
00:09:23,269 --> 00:09:20,880
polar satellite systems

254
00:09:24,949 --> 00:09:23,279
to the future operational platforms

255
00:09:27,430 --> 00:09:24,959
known as the joint polish satellite

256
00:09:29,910 --> 00:09:27,440
system or jpss

257
00:09:31,509 --> 00:09:29,920
now the timing of this mpp launch could

258
00:09:32,910 --> 00:09:31,519
hardly be more

259
00:09:36,790 --> 00:09:32,920
appropriate

260
00:09:38,870 --> 00:09:36,800
2011 has been uh termed the year of the

261
00:09:41,590 --> 00:09:38,880
billion dollar weather disasters we've

262
00:09:43,430 --> 00:09:41,600
already had 10 separate weather events

263
00:09:45,590 --> 00:09:43,440

each inflicting at least one billion

264
00:09:46,870 --> 00:09:45,600
dollars in damages including the tornado

265
00:09:47,990 --> 00:09:46,880
outbreaks

266
00:09:50,070 --> 00:09:48,000
fires

267
00:09:52,870 --> 00:09:50,080
we've had hurricanes that have affected

268
00:09:54,550 --> 00:09:52,880
the east coast of the united states and

269
00:09:56,949 --> 00:09:54,560
we've had floods that have affected a

270
00:09:59,990 --> 00:09:56,959
large portion of the north central

271
00:10:02,949 --> 00:10:00,000
and central part of the united states

272
00:10:04,710 --> 00:10:02,959
with npp's advanced microwave infrared

273
00:10:07,190 --> 00:10:04,720
and visible data feeding noaa's

274
00:10:10,470 --> 00:10:07,200
operational weather prediction models we

275
00:10:12,630 --> 00:10:10,480
expect to improve our forecast skills

276
00:10:14,790 --> 00:10:12,640
and extend those forecast skills out to

277
00:10:17,269 --> 00:10:14,800
five to seven days in advance

278
00:10:19,829 --> 00:10:17,279
for hurricanes severe weather outbreaks

279
00:10:21,910 --> 00:10:19,839
and other extreme weather events

280
00:10:23,110 --> 00:10:21,920
we expect these advanced instruments on

281
00:10:25,910 --> 00:10:23,120
npp

282
00:10:28,230 --> 00:10:25,920
uh and a high resolution immature on on

283
00:10:30,550 --> 00:10:28,240
the spacecraft to become a foundation

284
00:10:32,630 --> 00:10:30,560
for the global observing system that

285
00:10:34,389 --> 00:10:32,640
will be absolutely essential for noaa's

286
00:10:37,190 --> 00:10:34,399
prediction models

287
00:10:39,030 --> 00:10:37,200
especially for extreme events such as

288
00:10:40,550 --> 00:10:39,040

the recent occurrence of hurricane irene

289
00:10:42,389 --> 00:10:40,560
along the east coast of the united

290
00:10:44,389 --> 00:10:42,399
states

291
00:10:47,430 --> 00:10:44,399
beyond the weather forecasting noaa will

292
00:10:50,230 --> 00:10:47,440
use npp data to track ash plumes from

293
00:10:51,190 --> 00:10:50,240
volcanic eruptions to enhance aviation

294
00:10:53,829 --> 00:10:51,200
safety

295
00:10:55,350 --> 00:10:53,839
monitor crops vegetation potential for

296
00:10:58,150 --> 00:10:55,360
drought and fires

297
00:11:00,389 --> 00:10:58,160
measure variation in the arctic sea ice

298
00:11:02,069 --> 00:11:00,399
and detect harmful algae blooms and

299
00:11:05,910 --> 00:11:02,079
other hazards that might endanger

300
00:11:08,310 --> 00:11:05,920
fisheries and fragile ocean ecosystems

301
00:11:10,870 --> 00:11:08,320
noaa's looking uh really looking forward

302
00:11:13,110 --> 00:11:10,880
to a successful launch i am excited

303
00:11:15,269 --> 00:11:13,120
about the potential for npp and its use

304
00:11:16,790 --> 00:11:15,279
in the operational numerical weather

305
00:11:18,230 --> 00:11:16,800
prediction models

306
00:11:19,670 --> 00:11:18,240
back to you steve

307
00:11:21,750 --> 00:11:19,680
okay thank you thank you to all our

308
00:11:23,509 --> 00:11:21,760
speakers uh we'll take questions from

309
00:11:25,269 --> 00:11:23,519
the media in just a minute

310
00:11:26,310 --> 00:11:25,279
both in the audience if you have a

311
00:11:28,230 --> 00:11:26,320
question

312
00:11:29,910 --> 00:11:28,240
please raise your hand a microphone will

313
00:11:33,110 --> 00:11:29,920

come to you or if you're on the phone

314
00:11:35,350 --> 00:11:33,120
lines you dial star one but first i

315
00:11:36,389 --> 00:11:35,360
wanted to remind everybody watching and

316
00:11:38,069 --> 00:11:36,399
listening

317
00:11:41,590 --> 00:11:38,079
that there's a lot more information

318
00:11:45,750 --> 00:11:41,600
about npp online on the nasa website

319
00:11:49,670 --> 00:11:48,310
npp you can keep up with the launch

320
00:11:53,030 --> 00:11:49,680
milestones all the way up through

321
00:11:54,949 --> 00:11:53,040
watching launch on that website

322
00:11:56,710 --> 00:11:54,959
okay so we'll see if we have any

323
00:11:59,269 --> 00:11:56,720
questions here any questions in the

324
00:11:59,279 --> 00:12:02,550
okay first

325
00:12:06,870 --> 00:12:04,710
hi um this question is addressed to uh

326
00:12:09,750 --> 00:12:06,880
louie

327
00:12:11,190 --> 00:12:09,760
what advances in the new system with

328
00:12:12,790 --> 00:12:11,200
respect to the

329
00:12:15,110 --> 00:12:12,800
sounders

330
00:12:17,190 --> 00:12:15,120
are in place in npp

331
00:12:19,430 --> 00:12:17,200
that differ and increase the

332
00:12:20,790 --> 00:12:19,440
capabilities in the current satellite

333
00:12:23,030 --> 00:12:20,800
system

334
00:12:25,269 --> 00:12:23,040
well the en the npp has an advanced

335
00:12:27,110 --> 00:12:25,279
microwave

336
00:12:29,670 --> 00:12:27,120
sounder in the

337
00:12:30,949 --> 00:12:29,680
infrared which is a chris

338
00:12:33,110 --> 00:12:30,959

which is uh

339
00:12:34,790 --> 00:12:33,120
basically equivalent

340
00:12:36,790 --> 00:12:34,800
a slight improvement over what we're

341
00:12:39,829 --> 00:12:36,800
using from the med-op the european

342
00:12:41,990 --> 00:12:39,839
satellites so um

343
00:12:45,350 --> 00:12:42,000
we have experience with these sounders

344
00:12:47,110 --> 00:12:45,360
and and what this will allow us to do is

345
00:12:49,750 --> 00:12:47,120
because this will be at a different

346
00:12:51,829 --> 00:12:49,760
orbit than than what we have for met up

347
00:12:54,470 --> 00:12:51,839
we'll be able to have that type of

348
00:12:57,030 --> 00:12:54,480
advanced observations that will help us

349
00:13:01,590 --> 00:12:57,040
fill in data gaps in a temporal sense

350
00:13:04,389 --> 00:13:03,670
jazz i believe i forget who the authors

351
00:13:07,829 --> 00:13:04,399
are

352
00:13:09,030 --> 00:13:07,839
who argue that the resolution at least

353
00:13:11,110 --> 00:13:09,040
of the current

354
00:13:12,389 --> 00:13:11,120
founders and i'm not quite sure if this

355
00:13:15,910 --> 00:13:12,399
is true for the

356
00:13:18,389 --> 00:13:15,920
npp and advanced jpss

357
00:13:22,069 --> 00:13:18,399
equipment uh is

358
00:13:25,590 --> 00:13:22,079
is insufficient for input and value into

359
00:13:27,430 --> 00:13:25,600
high-resolution forecast models

360
00:13:29,670 --> 00:13:27,440
you have any comment on that

361
00:13:31,829 --> 00:13:29,680
i think that the we've already shown

362
00:13:34,389 --> 00:13:31,839
with the use of the current advanced

363
00:13:35,590 --> 00:13:34,399

systems that the resolution

364
00:13:37,990 --> 00:13:35,600
of those

365
00:13:40,790 --> 00:13:38,000
instruments are

366
00:13:41,509 --> 00:13:40,800
not only sufficient they are

367
00:13:43,189 --> 00:13:41,519
they

368
00:13:44,870 --> 00:13:43,199
meet all our requirements with respect

369
00:13:47,750 --> 00:13:44,880
to the global models

370
00:13:50,069 --> 00:13:47,760
and as you get down to the meso scale

371
00:13:52,790 --> 00:13:50,079
we can use those global models to help

372
00:13:55,030 --> 00:13:52,800
force the mesoscale

373
00:13:58,150 --> 00:13:55,040
initial conditions so

374
00:14:01,829 --> 00:14:00,150
well we're also we're also assimilating

375
00:14:04,389 --> 00:14:01,839
the satellite data into those higher

376
00:14:06,870 --> 00:14:04,399
resolution models as well as you know we

377
00:14:09,350 --> 00:14:06,880
don't have any data sets that match the

378
00:14:10,870 --> 00:14:09,360
resolution of those high resolution

379
00:14:12,710 --> 00:14:10,880
models

380
00:14:14,790 --> 00:14:12,720
the real trick of data assimilation is

381
00:14:17,189 --> 00:14:14,800
to take the strengths of observing

382
00:14:18,710 --> 00:14:17,199
systems and make them applicable to any

383
00:14:20,710 --> 00:14:18,720
resolution in those models and we've

384
00:14:23,430 --> 00:14:20,720
been successful in doing that so i i

385
00:14:25,590 --> 00:14:23,440
really don't see that as as an issue

386
00:14:27,509 --> 00:14:25,600
okay we have another question here

387
00:14:29,350 --> 00:14:27,519
please identify yourself hi i'm mary

388
00:14:31,189 --> 00:14:29,360

orndorff with the birmingham news i

389
00:14:32,949 --> 00:14:31,199
guess this question is for noah how long

390
00:14:35,350 --> 00:14:32,959
will the npp last

391
00:14:36,949 --> 00:14:35,360
and what is the latest on what it will

392
00:14:38,310 --> 00:14:36,959
be replaced with and whether or not

393
00:14:39,269 --> 00:14:38,320
there'll be a gap in that weather

394
00:14:41,110 --> 00:14:39,279
coverage

395
00:14:43,350 --> 00:14:41,120
well actually in terms of expected

396
00:14:45,750 --> 00:14:43,360
lifetime it has to go over to the

397
00:14:48,870 --> 00:14:45,760
project but we're we're hopeful that

398
00:14:50,150 --> 00:14:48,880
it'll be five years and beyond but let's

399
00:14:52,230 --> 00:14:50,160
get the

400
00:14:54,069 --> 00:14:52,240
yes it's uh it's always hard to predict

401
00:14:54,949 --> 00:14:54,079
how long you know satellite is going to

402
00:14:57,110 --> 00:14:54,959
live

403
00:14:59,829 --> 00:14:57,120
um i can tell you that the instruments

404
00:15:02,629 --> 00:14:59,839
were designed under the impose

405
00:15:05,030 --> 00:15:02,639
regime for seven year lifetime

406
00:15:06,949 --> 00:15:05,040
however during manufacturing testing and

407
00:15:09,990 --> 00:15:06,959
calibration of these instruments

408
00:15:12,069 --> 00:15:10,000
significant anomalies arose that give us

409
00:15:13,829 --> 00:15:12,079
concern that there's residual risk with

410
00:15:15,750 --> 00:15:13,839
these instruments that could actually

411
00:15:17,509 --> 00:15:15,760
affect the arnold lifetime the

412
00:15:19,189 --> 00:15:17,519
instruments are performing well but we

413
00:15:21,269 --> 00:15:19,199

are concerned about the on orbit

414
00:15:23,910 --> 00:15:21,279
lifetime on some of these instruments

415
00:15:25,189 --> 00:15:23,920
keep in mind npp was always a pathfinder

416
00:15:27,350 --> 00:15:25,199
mission

417
00:15:29,189 --> 00:15:27,360
in the lessons learned from npp we're

418
00:15:31,990 --> 00:15:29,199
going to go back into the design and

419
00:15:34,389 --> 00:15:32,000
manufacturing of these instruments for

420
00:15:35,829 --> 00:15:34,399
the follow-on operational program

421
00:15:37,430 --> 00:15:35,839
it was always envisioned that would take

422
00:15:39,030 --> 00:15:37,440
approximately like 18 months to go

423
00:15:40,949 --> 00:15:39,040
through the calibration validation of

424
00:15:43,110 --> 00:15:40,959
these instruments and that would give

425
00:15:44,550 --> 00:15:43,120
noaa time to update the data product

426
00:15:46,710 --> 00:15:44,560
algorithms

427
00:15:48,710 --> 00:15:46,720
for use on the ground so we can improve

428
00:15:51,430 --> 00:15:48,720
the data products before the operational

429
00:15:54,870 --> 00:15:51,440
system would be launched

430
00:15:58,470 --> 00:15:54,880
okay we have a question on on the phone

431
00:16:03,110 --> 00:15:58,480
lines uh alan boyle from msnbc go ahead

432
00:16:08,389 --> 00:16:06,829
hi uh this mission comes after a years

433
00:16:09,829 --> 00:16:08,399
long

434
00:16:10,629 --> 00:16:09,839
face over

435
00:16:12,470 --> 00:16:10,639
uh

436
00:16:15,590 --> 00:16:12,480
ohss and

437
00:16:18,150 --> 00:16:15,600
i wondered if you could reflect on

438
00:16:19,990 --> 00:16:18,160

how that whole debate turned out so

439
00:16:25,030 --> 00:16:20,000
whether there were lessons learned from

440
00:16:29,030 --> 00:16:27,430
that process and what you'd be missing

441
00:16:31,670 --> 00:16:29,040
because of the way that the mission has

442
00:16:35,509 --> 00:16:33,430
alan we lost a little bit of the last

443
00:16:38,150 --> 00:16:35,519
half of your question

444
00:16:40,069 --> 00:16:38,160
yeah um but let go ahead andy okay i

445
00:16:41,110 --> 00:16:40,079
think i can address part of part of his

446
00:16:43,670 --> 00:16:41,120
question

447
00:16:46,150 --> 00:16:43,680
um as you know back in in february of

448
00:16:48,550 --> 00:16:46,160
2010 the administration decided to

449
00:16:51,110 --> 00:16:48,560
restructure the unposed program

450
00:16:53,350 --> 00:16:51,120
and break the program up into two one

451
00:16:55,509 --> 00:16:53,360
with the air force handling the the

452
00:16:57,829 --> 00:16:55,519
early morning orbit and noaa handling

453
00:17:00,150 --> 00:16:57,839
the afternoon orbit

454
00:17:02,470 --> 00:17:00,160
uh nasa is the acquisition agent for the

455
00:17:03,430 --> 00:17:02,480
afternoon orbit for noaa for the jpss

456
00:17:06,549 --> 00:17:03,440
program

457
00:17:08,710 --> 00:17:06,559
and and noaa nasa have uh 40 plus years

458
00:17:11,029 --> 00:17:08,720
of working together in building weather

459
00:17:13,750 --> 00:17:11,039
satellites and through the pose and goes

460
00:17:15,429 --> 00:17:13,760
programs so relying on that 40 plus

461
00:17:18,150 --> 00:17:15,439
years of of cooperation and

462
00:17:20,630 --> 00:17:18,160
collaboration is what we're gonna fall

463
00:17:22,470 --> 00:17:20,640

back on in in in this new regime for the

464
00:17:24,710 --> 00:17:22,480
jpss system

465
00:17:27,110 --> 00:17:24,720
um i would like to give you kind of a

466
00:17:28,789 --> 00:17:27,120
a real life aspect of

467
00:17:30,549 --> 00:17:28,799
how this has improved the situation

468
00:17:33,669 --> 00:17:30,559
greatly for npp

469
00:17:34,710 --> 00:17:33,679
um under the old npos program when we

470
00:17:36,630 --> 00:17:34,720
were doing

471
00:17:37,909 --> 00:17:36,640
specific like testing for the mpp

472
00:17:39,990 --> 00:17:37,919
satellite where you brought in all the

473
00:17:42,150 --> 00:17:40,000
segments and all the parties flight

474
00:17:44,310 --> 00:17:42,160
hardware ground hardware and we would

475
00:17:46,470 --> 00:17:44,320
have an issue during this test

476
00:17:49,029 --> 00:17:46,480
i as the mpp project manager would have

477
00:17:50,870 --> 00:17:49,039
to work with the npos program which was

478
00:17:53,669 --> 00:17:50,880
a try agency group

479
00:17:54,390 --> 00:17:53,679
that noaa had functional responsibility

480
00:17:56,390 --> 00:17:54,400
to

481
00:17:58,789 --> 00:17:56,400
but the contracts were air force

482
00:18:01,510 --> 00:17:58,799
contracts out of smc

483
00:18:03,430 --> 00:18:01,520
space missile command in california

484
00:18:04,870 --> 00:18:03,440
and the prime contract was with northrop

485
00:18:05,990 --> 00:18:04,880
grumman in la

486
00:18:08,230 --> 00:18:06,000
and then each of the instrument

487
00:18:10,710 --> 00:18:08,240
contractors and the ground contractors

488
00:18:12,310 --> 00:18:10,720

then had contracts with northrop grumman

489
00:18:14,310 --> 00:18:12,320
so you can see if i needed something

490
00:18:16,150 --> 00:18:14,320
work i had a pretty big loop in order to

491
00:18:18,870 --> 00:18:16,160
go around to make that happen

492
00:18:19,909 --> 00:18:18,880
after the reorganization now i can tell

493
00:18:21,830 --> 00:18:19,919
you that

494
00:18:23,190 --> 00:18:21,840
all of those groups the ground the

495
00:18:24,950 --> 00:18:23,200
flight

496
00:18:26,789 --> 00:18:24,960
live in the same building

497
00:18:29,750 --> 00:18:26,799
and the project managers of those

498
00:18:31,909 --> 00:18:29,760
organizations used to be my deputies

499
00:18:34,070 --> 00:18:31,919
so if i have a problem

500
00:18:35,590 --> 00:18:34,080
uh not only is it easy it's usually

501
00:18:38,630 --> 00:18:35,600
being worked before you ever even ask

502
00:18:40,789 --> 00:18:38,640
them so it's really what's enhanced npp

503
00:18:42,549 --> 00:18:40,799
to stay on schedule for this time and

504
00:18:45,830 --> 00:18:42,559
produce a quality product to be launched

505
00:18:48,070 --> 00:18:45,840
on october 27th

506
00:18:50,470 --> 00:18:48,080
okay uh we have one other question on

507
00:18:56,070 --> 00:18:50,480
the phone lines mark caro from aviation

508
00:19:03,669 --> 00:18:57,510
thank you um

509
00:19:08,070 --> 00:19:05,430
could you tell us the cost of this

510
00:19:09,750 --> 00:19:08,080
mission and uh what's the current

511
00:19:12,789 --> 00:19:09,760
projected

512
00:19:18,150 --> 00:19:12,799
launch date for the jpss operational

513
00:19:21,750 --> 00:19:20,230

okay well i'll address the the cost

514
00:19:25,029 --> 00:19:21,760
question um

515
00:19:27,669 --> 00:19:25,039
the the mpp mission is um the the costly

516
00:19:30,230 --> 00:19:27,679
mpp mission is just over 1.5 billion

517
00:19:32,630 --> 00:19:30,240
dollars and that includes both the the

518
00:19:34,950 --> 00:19:32,640
the nasa cost uh for for mission

519
00:19:36,870 --> 00:19:34,960
management for project management for

520
00:19:38,870 --> 00:19:36,880
for the spacecraft and launch vehicle

521
00:19:41,350 --> 00:19:38,880
and the two instruments that nasa

522
00:19:46,870 --> 00:19:41,360
provided and it also includes the costs

523
00:19:50,390 --> 00:19:48,390
okay we have a question here in the

524
00:19:51,750 --> 00:19:50,400
audience please identify yourself

525
00:19:53,669 --> 00:19:51,760
titus ledbetter from the publication

526
00:19:55,430 --> 00:19:53,679
inside the air force um can you describe

527
00:19:59,669 --> 00:19:55,440
the air the nature of the air force's

528
00:20:02,950 --> 00:20:01,430
well the air force was part of the

529
00:20:05,110 --> 00:20:02,960
impose program

530
00:20:06,789 --> 00:20:05,120
which was responsible for

531
00:20:08,230 --> 00:20:06,799
half the funding for the three of the

532
00:20:11,110 --> 00:20:08,240
instruments that we were talking about

533
00:20:13,190 --> 00:20:11,120
chris omps and viirs and also the ground

534
00:20:15,830 --> 00:20:13,200
system the data products and algorithms

535
00:20:17,510 --> 00:20:15,840
and all of that uh and in the you know

536
00:20:18,470 --> 00:20:17,520
the beginning of 2010 when it split

537
00:20:20,230 --> 00:20:18,480
apart

538
00:20:21,830 --> 00:20:20,240

air force went on their morning orbit

539
00:20:22,789 --> 00:20:21,840
and noah nasa went in the afternoon

540
00:20:24,950 --> 00:20:22,799
orbit

541
00:20:27,750 --> 00:20:24,960
we're still working very close with them

542
00:20:29,270 --> 00:20:27,760
all the data that is produced by npp

543
00:20:31,990 --> 00:20:29,280
goes through this what we call a common

544
00:20:33,990 --> 00:20:32,000
ground system and air force has access

545
00:20:35,430 --> 00:20:34,000
to all that information the same way

546
00:20:36,870 --> 00:20:35,440
when they eventually get around to their

547
00:20:38,870 --> 00:20:36,880
morning orbit

548
00:20:40,470 --> 00:20:38,880
we will have access to that information

549
00:20:43,029 --> 00:20:40,480
so all the agreements that were in place

550
00:20:46,390 --> 00:20:43,039
for these agencies to share this data

551
00:20:49,990 --> 00:20:46,400
across these orbits is still in place

552
00:20:51,909 --> 00:20:50,000
and some lawmakers uh have called for

553
00:20:53,830 --> 00:20:51,919
the possible cancellation of the defense

554
00:20:55,909 --> 00:20:53,840
weather satellite system i was wondering

555
00:20:57,430 --> 00:20:55,919
your thoughts on how such a move might

556
00:20:59,430 --> 00:20:57,440
affect um

557
00:21:03,029 --> 00:20:59,440
the joint polar silent system and

558
00:21:06,470 --> 00:21:03,039
projects moving forward

559
00:21:08,070 --> 00:21:06,480
yeah i i guess for jpss questions maybe

560
00:21:10,149 --> 00:21:08,080
we could take those offline and get

561
00:21:12,230 --> 00:21:10,159
somebody who's who's better versed in

562
00:21:13,190 --> 00:21:12,240
the jpss program to answer those

563
00:21:14,710 --> 00:21:13,200

questions

564
00:21:16,870 --> 00:21:14,720
again those are different contacts we

565
00:21:19,270 --> 00:21:16,880
can get you there the panel is not on

566
00:21:22,070 --> 00:21:19,280
the jpss system so we can get you people

567
00:21:25,430 --> 00:21:22,080
to talk to after this if that's okay

568
00:21:27,590 --> 00:21:25,440
we have another question online uh doyle

569
00:21:32,070 --> 00:21:27,600
rice from usa today

570
00:21:35,990 --> 00:21:34,070
oh yes i think most of my question was

571
00:21:39,750 --> 00:21:36,000
already answered but i just wondered how

572
00:21:49,510 --> 00:21:41,750
i think all we heard was how soon could

573
00:21:59,110 --> 00:21:51,750
yeah how soon after it's launched will

574
00:22:05,830 --> 00:22:02,310
um yeah we have the it depends there's

575
00:22:08,070 --> 00:22:05,840
um over 30 data products from npp um

576
00:22:10,070 --> 00:22:08,080
we've been saying you know we expect to

577
00:22:12,630 --> 00:22:10,080
have um some

578
00:22:14,549 --> 00:22:12,640
operational data within 18 months my my

579
00:22:16,390 --> 00:22:14,559
guess is from looking at things that

580
00:22:18,230 --> 00:22:16,400
there'll be a spectrum and the most

581
00:22:19,830 --> 00:22:18,240
critical data sets will be done much

582
00:22:22,070 --> 00:22:19,840
sooner so we're looking at for the first

583
00:22:25,190 --> 00:22:22,080
data sets probably in the six month time

584
00:22:27,190 --> 00:22:25,200
frame for for microwave radiances and

585
00:22:28,789 --> 00:22:27,200
longer for the more complicated data

586
00:22:30,710 --> 00:22:28,799
products

587
00:22:32,070 --> 00:22:30,720
and if i could add and

588
00:22:33,590 --> 00:22:32,080

also

589
00:22:37,350 --> 00:22:33,600
with respect to the

590
00:22:41,510 --> 00:22:39,669
noaa nasa and dod

591
00:22:43,190 --> 00:22:41,520
partaking the joint center for satellite

592
00:22:46,310 --> 00:22:43,200
data assimilation

593
00:22:47,029 --> 00:22:46,320
and we've been working together uh

594
00:22:51,190 --> 00:22:47,039
to

595
00:22:54,470 --> 00:22:51,200
op and use those

596
00:22:55,750 --> 00:22:54,480
data sets and we are preparing for the

597
00:22:57,590 --> 00:22:55,760
npp

598
00:22:59,750 --> 00:22:57,600
so as soon as this data goes through

599
00:23:01,909 --> 00:22:59,760
engineering checkout and calibration

600
00:23:04,549 --> 00:23:01,919
validation activities

601
00:23:07,510 --> 00:23:04,559
uh we'll be uh relying on the ground

602
00:23:11,029 --> 00:23:07,520
system uh work that's already been done

603
00:23:12,630 --> 00:23:11,039
and the air force the navy us will all

604
00:23:14,470 --> 00:23:12,640
be working together for the data

605
00:23:16,630 --> 00:23:14,480
assimilation into the numerical models

606
00:23:18,149 --> 00:23:16,640
which we use for all our prediction

607
00:23:19,510 --> 00:23:18,159
activities so

608
00:23:21,510 --> 00:23:19,520
we're setting up for that and we're

609
00:23:22,789 --> 00:23:21,520
really looking forward to

610
00:23:25,110 --> 00:23:22,799
getting through the cal val the

611
00:23:27,830 --> 00:23:25,120
instrument uh cowbell process so we can

612
00:23:30,630 --> 00:23:27,840
start uh testing it within our models

613
00:23:32,950 --> 00:23:30,640

and and like was indicated here uh

614
00:23:35,270 --> 00:23:32,960
probably hopefully within the six month

615
00:23:40,470 --> 00:23:35,280
period we'll be testing those data sets

616
00:23:46,070 --> 00:23:42,950
okay um i guess we have another question

617
00:23:49,909 --> 00:23:48,390
uh just a follow-up on the budget

618
00:23:51,909 --> 00:23:49,919
question

619
00:23:54,230 --> 00:23:51,919
it may be obvious but i'm not aware of

620
00:23:56,549 --> 00:23:54,240
the actual answer is the budget for the

621
00:24:00,549 --> 00:23:56,559
mpp independent

622
00:24:01,909 --> 00:24:00,559
of the noaa budget for the jpss

623
00:24:04,149 --> 00:24:01,919
and its

624
00:24:08,549 --> 00:24:04,159
difficulties that it's had in the past

625
00:24:13,669 --> 00:24:10,630
um i'm not completely clear on the

626
00:24:15,350 --> 00:24:13,679
question but i i believe that the the

627
00:24:19,590 --> 00:24:15,360
cost of the mission that i provided

628
00:24:21,510 --> 00:24:19,600
earlier was both the the nasa costs and

629
00:24:23,269 --> 00:24:21,520
uh the noaa costs that were for the

630
00:24:25,830 --> 00:24:23,279
viirs chris and amps instruments that

631
00:24:27,350 --> 00:24:25,840
were uh delivered from the impose ipo

632
00:24:29,269 --> 00:24:27,360
and knowing that

633
00:24:31,350 --> 00:24:29,279
noaa shared the cost

634
00:24:36,070 --> 00:24:31,360
of those instruments with the dod during

635
00:24:41,830 --> 00:24:38,950
okay

636
00:24:45,590 --> 00:24:44,149
question online that i'll have to read

637
00:24:48,310 --> 00:24:45,600
as we're having some phone difficulties

638
00:24:50,149 --> 00:24:48,320

is from climate wire lauren morello

639
00:24:53,750 --> 00:24:50,159
will the design of the instruments the

640
00:24:58,830 --> 00:24:53,760
five instruments on npp be repeated for

641
00:25:03,269 --> 00:25:01,430
um that's that's a very good question a

642
00:25:05,669 --> 00:25:03,279
lot of work has been done in that area

643
00:25:07,430 --> 00:25:05,679
have you as i mentioned earlier

644
00:25:08,950 --> 00:25:07,440
there were significant anomalies during

645
00:25:11,190 --> 00:25:08,960
the manufacturing and testing and

646
00:25:13,750 --> 00:25:11,200
calibration of these instruments

647
00:25:15,830 --> 00:25:13,760
i know for a fact the jpss organization

648
00:25:17,909 --> 00:25:15,840
the instrument organization has spent

649
00:25:19,590 --> 00:25:17,919
the last year and a half going through

650
00:25:20,789 --> 00:25:19,600
all the requirements all the design

651
00:25:22,630 --> 00:25:20,799
requirements mission assurance

652
00:25:24,710 --> 00:25:22,640
requirements the way they want to test

653
00:25:27,190 --> 00:25:24,720
the way they want to calibrate lessons

654
00:25:28,950 --> 00:25:27,200
learned from npp and are systematically

655
00:25:31,590 --> 00:25:28,960
fixing the things that i had mentioned

656
00:25:33,590 --> 00:25:31,600
that could uh preclude on orbit lifetime

657
00:25:36,070 --> 00:25:33,600
of these instruments so how long will

658
00:25:37,750 --> 00:25:36,080
they last once again that's hard to tell

659
00:25:39,669 --> 00:25:37,760
but i can tell you a lot of improvements

660
00:25:41,750 --> 00:25:39,679
are being made on these instruments

661
00:25:45,510 --> 00:25:41,760
based on the lessons learned from npp

662
00:25:47,830 --> 00:25:45,520
and the jpss program is doing that

663
00:25:49,510 --> 00:25:47,840

okay we have one question we received

664
00:25:51,909 --> 00:25:49,520
today from one of our

665
00:25:54,789 --> 00:25:51,919
followers on twitter

666
00:25:56,470 --> 00:25:54,799
simple question nasa has launched

667
00:25:59,110 --> 00:25:56,480
three satellites this year from

668
00:26:01,590 --> 00:25:59,120
vandenberg air force base in california

669
00:26:03,350 --> 00:26:01,600
why does nasa launch satellites from

670
00:26:04,149 --> 00:26:03,360
vandenberg when you've got a perfectly

671
00:26:06,950 --> 00:26:04,159
good

672
00:26:09,430 --> 00:26:06,960
launch site on the east coast

673
00:26:11,669 --> 00:26:09,440
um the satellites that are launched from

674
00:26:13,909 --> 00:26:11,679
vandenberg go into a polar orbit

675
00:26:15,430 --> 00:26:13,919
so they're they're launched so they go

676
00:26:18,549 --> 00:26:15,440
over the poles

677
00:26:19,909 --> 00:26:18,559
and uh because the earth is spinning

678
00:26:22,390 --> 00:26:19,919
if you want to put things in a polar

679
00:26:25,510 --> 00:26:22,400
orbit you want to go as high latitude as

680
00:26:27,590 --> 00:26:25,520
you can so you can overcome the

681
00:26:30,470 --> 00:26:27,600
uh force of the earth earth spinning so

682
00:26:33,029 --> 00:26:30,480
you take some you can put um satellites

683
00:26:34,870 --> 00:26:33,039
in polar orbit from the east coast

684
00:26:36,950 --> 00:26:34,880
but it just takes a much larger more

685
00:26:39,029 --> 00:26:36,960
expensive rocket

686
00:26:41,430 --> 00:26:39,039
okay thank you i think that's all the

687
00:26:43,590 --> 00:26:41,440
questions we have on the phone line and

688
00:26:45,350 --> 00:26:43,600

hear from the press so let me remind

689
00:26:48,470 --> 00:26:45,360
everyone that uh we have a lot of

690
00:26:50,870 --> 00:26:48,480
information online uh continue following

691
00:26:55,110 --> 00:26:50,880
npp up through launch the website again