
ATLAS
ULA
United Launch Alliance

1
00:00:37,270 --> 00:00:34,870
good afternoon everybody and welcome to

2
00:00:39,110 --> 00:00:37,280
nasa's kennedy space center in florida

3
00:00:41,430 --> 00:00:39,120
we're here today for the pre-launch news

4
00:00:44,229 --> 00:00:41,440
conference for the geostationary

5
00:00:47,350 --> 00:00:44,239
operational environmental satellite r

6
00:00:50,709 --> 00:00:47,360
series or goes-r whose launch is on

7
00:00:53,830 --> 00:00:50,719
target for saturday november 19th at 5

8
00:00:56,310 --> 00:00:53,840
42 pm eastern time today a launch

9
00:00:58,790 --> 00:00:56,320
readiness review was held and i'll let

10
00:01:01,110 --> 00:00:58,800
the folks near me fill you in on all the

11
00:01:02,869 --> 00:01:01,120
details we're very excited to be here

12
00:01:03,830 --> 00:01:02,879
i'd like to introduce the members of the

13
00:01:05,350 --> 00:01:03,840

panel

14
00:01:06,789 --> 00:01:05,360
to my left

15
00:01:08,630 --> 00:01:06,799
stephen volts

16
00:01:10,390 --> 00:01:08,640
assistant administrator for satellite

17
00:01:12,390 --> 00:01:10,400
and information services for the

18
00:01:16,390 --> 00:01:12,400
national oceanic and atmospheric

19
00:01:23,910 --> 00:01:19,109
greg mant goes our system program

20
00:01:27,590 --> 00:01:25,510
sandra smalley

21
00:01:31,910 --> 00:01:27,600
director for nasa's joint agency

22
00:01:39,429 --> 00:01:34,870
omar baez launch director here at nasa

23
00:01:46,469 --> 00:01:41,990
scott messer program manager for nasa

24
00:01:50,149 --> 00:01:48,069
and clay flynn

25
00:01:52,149 --> 00:01:50,159
launch weather officer from the 45th

26
00:01:53,670 --> 00:01:52,159
weather squadron at cape canaveral air

27
00:01:55,350 --> 00:01:53,680
force station

28
00:01:57,510 --> 00:01:55,360
thank you all for being here

29
00:01:58,709 --> 00:01:57,520
we'll begin with opening remarks and

30
00:02:01,109 --> 00:01:58,719
then we'll be happy to take your

31
00:02:02,550 --> 00:02:01,119
questions after that steve

32
00:02:03,510 --> 00:02:02,560
thank you mike and good afternoon

33
00:02:05,109 --> 00:02:03,520
everyone

34
00:02:07,350 --> 00:02:05,119
so now we're just two days away from

35
00:02:09,749 --> 00:02:07,360
launching the first of noaa's goes-r

36
00:02:12,070 --> 00:02:09,759
satellites will take our ability to

37
00:02:13,830 --> 00:02:12,080
produce a life-saving weather forecast

38
00:02:15,270 --> 00:02:13,840

to a much higher level throughout the

39
00:02:16,550 --> 00:02:15,280
united states and throughout the western

40
00:02:18,550 --> 00:02:16,560
hemisphere

41
00:02:21,270 --> 00:02:18,560
goes-r is a noaa mission

42
00:02:23,030 --> 00:02:21,280
noaa will operate the satellite develop

43
00:02:24,869 --> 00:02:23,040
the product the science applications and

44
00:02:26,949 --> 00:02:24,879
services and deliver those products and

45
00:02:28,869 --> 00:02:26,959
information to our primary user noaa's

46
00:02:30,229 --> 00:02:28,879
national weather service and to users

47
00:02:31,589 --> 00:02:30,239
around the nation and again the western

48
00:02:34,229 --> 00:02:31,599
hemisphere

49
00:02:35,589 --> 00:02:34,239
when it launches on saturday noaa's goes

50
00:02:37,670 --> 00:02:35,599
our satellite with its advanced

51
00:02:39,190 --> 00:02:37,680
technologies will be a game changer for

52
00:02:41,030 --> 00:02:39,200
weather forecasting and climate science

53
00:02:42,869 --> 00:02:41,040
for many years to come

54
00:02:44,869 --> 00:02:42,879
for decades now noaa satellites have

55
00:02:47,110 --> 00:02:44,879
been the backbone of our increasingly

56
00:02:49,270 --> 00:02:47,120
accurate and timely weather and climate

57
00:02:51,270 --> 00:02:49,280
forecasts however this new four

58
00:02:53,350 --> 00:02:51,280
satellite goes-r series is really a

59
00:02:54,630 --> 00:02:53,360
quantum leap above any satellite noaa

60
00:02:56,710 --> 00:02:54,640
has ever flown

61
00:02:58,949 --> 00:02:56,720
without a doubt goes-r will

62
00:03:01,430 --> 00:02:58,959
revolutionize weather forecasting as we

63
00:03:03,430 --> 00:03:01,440

know it for weather forecasters goes-r

64
00:03:07,190 --> 00:03:03,440
will be similar to be going from a black

65
00:03:09,110 --> 00:03:07,200
and white tv to super high definition tv

66
00:03:10,949 --> 00:03:09,120
for the american public that will mean

67
00:03:13,110 --> 00:03:10,959
faster more accurate weather forecasts

68
00:03:15,030 --> 00:03:13,120
and warnings that also will mean more

69
00:03:16,949 --> 00:03:15,040
lives saved and better environmental

70
00:03:19,110 --> 00:03:16,959
intelligence for state and local

71
00:03:21,430 --> 00:03:19,120
officials and all decision makers who

72
00:03:23,589 --> 00:03:21,440
need for example to make decisions about

73
00:03:25,110 --> 00:03:23,599
activities related to evacuations for

74
00:03:27,430 --> 00:03:25,120
example for an approaching hurricane

75
00:03:29,589 --> 00:03:27,440
should come our way

76
00:03:31,910 --> 00:03:29,599
goes our many exciting benefits will

77
00:03:34,550 --> 00:03:31,920
extend beyond the u.s borders since the

78
00:03:36,789 --> 00:03:34,560
early 1970s noaa has maintained a full

79
00:03:39,110 --> 00:03:36,799
and open policy regarding its satellite

80
00:03:41,030 --> 00:03:39,120
data and information and has provided

81
00:03:42,949 --> 00:03:41,040
real-time geostationary satellite

82
00:03:45,030 --> 00:03:42,959
imagery to countries and organizations

83
00:03:46,229 --> 00:03:45,040
throughout the western hemisphere our

84
00:03:48,149 --> 00:03:46,239
weather forecasting colleagues

85
00:03:50,309 --> 00:03:48,159
throughout latin america for example

86
00:03:52,550 --> 00:03:50,319
will also have direct access to goes-r

87
00:03:53,990 --> 00:03:52,560
data which will help them issue faster

88
00:03:56,070 --> 00:03:54,000

more accurate weather forecasts and

89
00:03:57,670 --> 00:03:56,080
warnings for heavy rains as an example

90
00:04:00,070 --> 00:03:57,680
that could trigger disastrous or

91
00:04:01,670 --> 00:04:00,080
destructive mudslides monitor volcanic

92
00:04:04,309 --> 00:04:01,680
ash clouds and other natural hazards

93
00:04:06,550 --> 00:04:04,319
that threaten life and safety

94
00:04:09,190 --> 00:04:06,560
the goes-r mission could not be possible

95
00:04:11,350 --> 00:04:09,200
without our partner nasa nasa scientists

96
00:04:12,949 --> 00:04:11,360
and engineers have been working with

97
00:04:14,630 --> 00:04:12,959
noaa for generations and i mean that

98
00:04:17,030 --> 00:04:14,640
literally because this program is more

99
00:04:18,550 --> 00:04:17,040
than 40 years old on our critical

100
00:04:20,069 --> 00:04:18,560
weather mission and this is just a

101
00:04:22,710 --> 00:04:20,079
continuation of that long-standing

102
00:04:24,469 --> 00:04:22,720
tradition now and into the future

103
00:04:26,710 --> 00:04:24,479
nasa's goddard space flight center

104
00:04:28,950 --> 00:04:26,720
oversees the acquisition of the goes-r

105
00:04:30,710 --> 00:04:28,960
series spacecraft and instruments and

106
00:04:33,430 --> 00:04:30,720
it's a partnership of many other

107
00:04:35,270 --> 00:04:33,440
partners beyond nasa lockheed martin is

108
00:04:37,110 --> 00:04:35,280
responsible for the design creation and

109
00:04:39,270 --> 00:04:37,120
testing of the satellites and for the

110
00:04:41,350 --> 00:04:39,280
space and spacecraft processing along

111
00:04:42,950 --> 00:04:41,360
with two of the primary instruments the

112
00:04:44,710 --> 00:04:42,960
geostationary lightning mapper and a

113
00:04:47,430 --> 00:04:44,720

solar uv imager

114
00:04:49,830 --> 00:04:47,440
the harris corporation provides goes-r's

115
00:04:51,990 --> 00:04:49,840
main instrument the advanced baseline

116
00:04:53,430 --> 00:04:52,000
imager as well as the antenna system and

117
00:04:55,590 --> 00:04:53,440
the ground segment for processing and

118
00:04:56,870 --> 00:04:55,600
delivering the data the laboratory for

119
00:04:58,790 --> 00:04:56,880
atmospheric and space physics in

120
00:05:00,710 --> 00:04:58,800
colorado provided the extreme

121
00:05:02,629 --> 00:05:00,720
ultraviolet and x-ray irradiance sensor

122
00:05:04,310 --> 00:05:02,639
another space weather instrument

123
00:05:06,230 --> 00:05:04,320
observing the sun and the insurance

124
00:05:07,830 --> 00:05:06,240
technology corporation provided the

125
00:05:09,189 --> 00:05:07,840
space environmental and situ suite

126
00:05:10,469 --> 00:05:09,199
another space weather instrument of

127
00:05:13,270 --> 00:05:10,479
critical need

128
00:05:15,270 --> 00:05:13,280
so on saturday we'll see not 10 years of

129
00:05:16,950 --> 00:05:15,280
hard work but a generation of dedication

130
00:05:19,189 --> 00:05:16,960
and focus to the

131
00:05:21,510 --> 00:05:19,199
by the goes-r community to coming to

132
00:05:23,430 --> 00:05:21,520
fruition when goes-r launches into orbit

133
00:05:25,350 --> 00:05:23,440
thank you to the entire gozar team and i

134
00:05:26,310 --> 00:05:25,360
look forward to its spectacular launch

135
00:05:31,590 --> 00:05:26,320
thank you

136
00:05:35,110 --> 00:05:31,600
thanks mike i'm honored to be here today

137
00:05:36,870 --> 00:05:35,120
to represent a fabulous team that has

138
00:05:38,790 --> 00:05:36,880

worked for over a decade to bring this

139
00:05:40,790 --> 00:05:38,800
mission to fruition it's been an

140
00:05:42,870 --> 00:05:40,800
incredible team of noaa nasa working

141
00:05:45,510 --> 00:05:42,880
very very closely together as well as

142
00:05:49,110 --> 00:05:45,520
the contractors as steve just mentioned

143
00:05:51,110 --> 00:05:49,120
lockheed harris last atc it's been a

144
00:05:53,270 --> 00:05:51,120
fabulous team working together on a

145
00:05:55,590 --> 00:05:53,280
incredible mission in fact i could say

146
00:05:57,110 --> 00:05:55,600
this is a historic mission for noaa

147
00:05:59,510 --> 00:05:57,120
because we are bringing a level of

148
00:06:01,189 --> 00:05:59,520
technology into this mission that is

149
00:06:02,629 --> 00:06:01,199
really going to revolutionize weather

150
00:06:04,629 --> 00:06:02,639
forecasting

151
00:06:06,950 --> 00:06:04,639
just as a lead into some of our

152
00:06:09,110 --> 00:06:06,960
excitement uh we have a little film i'll

153
00:06:10,950 --> 00:06:09,120
i'll play in the background as i talk

154
00:06:14,230 --> 00:06:10,960
that represents the the satellite

155
00:06:15,749 --> 00:06:14,240
landing here at kennedy's so if i uh if

156
00:06:17,270 --> 00:06:15,759
i bore some of you you can at least get

157
00:06:18,469 --> 00:06:17,280
excited about the satellite rolling in

158
00:06:21,350 --> 00:06:18,479
here

159
00:06:22,950 --> 00:06:21,360
the uh satellite has a

160
00:06:25,029 --> 00:06:22,960
series of uh

161
00:06:27,590 --> 00:06:25,039
of six new instruments

162
00:06:29,749 --> 00:06:27,600
the uh primary instrument is our

163
00:06:33,029 --> 00:06:29,759

advanced baseline imager

164
00:06:34,790 --> 00:06:33,039
this uh this great imager is gonna be

165
00:06:36,309 --> 00:06:34,800
have three times as many channels as the

166
00:06:39,350 --> 00:06:36,319
existing system

167
00:06:41,350 --> 00:06:39,360
four times the resolution and five times

168
00:06:43,590 --> 00:06:41,360
the scan speed and when you put all that

169
00:06:45,670 --> 00:06:43,600
together it results in what steve just

170
00:06:47,749 --> 00:06:45,680
mentioned the forecaster's view of the

171
00:06:50,870 --> 00:06:47,759
earth will be going from a black and

172
00:06:52,950 --> 00:06:50,880
white television type of view to hdtv so

173
00:06:54,309 --> 00:06:52,960
what the forecaster will be able to see

174
00:06:56,469 --> 00:06:54,319
will be something like they've never

175
00:06:58,469 --> 00:06:56,479
seen before and it'll have incredible

176
00:07:00,710 --> 00:06:58,479
applications to the warning and weather

177
00:07:02,390 --> 00:07:00,720
forecasting process

178
00:07:04,629 --> 00:07:02,400
in addition to this

179
00:07:05,909 --> 00:07:04,639
advanced capability in the imager we're

180
00:07:08,469 --> 00:07:05,919
introducing for the first time in

181
00:07:09,510 --> 00:07:08,479
operations a geostationary lightning

182
00:07:11,510 --> 00:07:09,520
mapper

183
00:07:13,589 --> 00:07:11,520
so here we have an instrument that will

184
00:07:15,430 --> 00:07:13,599
be taking photos of the

185
00:07:16,550 --> 00:07:15,440
lightning fields of the western

186
00:07:18,710 --> 00:07:16,560
hemisphere

187
00:07:21,510 --> 00:07:18,720
about 200 times a second and when you

188
00:07:23,110 --> 00:07:21,520

compare all those you get a sense of

189
00:07:25,830 --> 00:07:23,120
where the severe weather is starting to

190
00:07:27,430 --> 00:07:25,840
really brew so with this information the

191
00:07:29,189 --> 00:07:27,440
weather service will be able to make a

192
00:07:31,189 --> 00:07:29,199
longer lead time forecast of severe

193
00:07:33,830 --> 00:07:31,199
weather and do it with much higher

194
00:07:35,589 --> 00:07:33,840
confidence reducing false alarms

195
00:07:37,830 --> 00:07:35,599
but in addition to these earth pointing

196
00:07:40,070 --> 00:07:37,840
platforms we also have a lot of space

197
00:07:42,629 --> 00:07:40,080
weather instrumentation we have a couple

198
00:07:44,869 --> 00:07:42,639
of telescopes in our ultraviolet imager

199
00:07:46,629 --> 00:07:44,879
that's imaging the surface of the sun do

200
00:07:48,230 --> 00:07:46,639
it to the surface of sun similar to what

201
00:07:50,309 --> 00:07:48,240
the earth pointing thing is doing to the

202
00:07:52,469 --> 00:07:50,319
surface of the earth we've also got a

203
00:07:55,029 --> 00:07:52,479
radiant sensor the xs which is measuring

204
00:07:57,029 --> 00:07:55,039
the energy from the sun so that the

205
00:07:59,589 --> 00:07:57,039
forecasters in the solar the space

206
00:08:02,070 --> 00:07:59,599
weather forecasters can help understand

207
00:08:04,550 --> 00:08:02,080
the impact of the solar activity on the

208
00:08:05,990 --> 00:08:04,560
earth whether it's communications gps

209
00:08:07,830 --> 00:08:06,000
signals or whatever

210
00:08:09,430 --> 00:08:07,840
we also have a couple of instruments the

211
00:08:11,110 --> 00:08:09,440
size and the magnetometer that's

212
00:08:13,189 --> 00:08:11,120
measuring the near field around the

213
00:08:15,270 --> 00:08:13,199

earth the size is measuring energetic

214
00:08:18,230 --> 00:08:15,280
particles and the magnetometer is the

215
00:08:20,629 --> 00:08:18,240
magnetic field all these combine to

216
00:08:21,670 --> 00:08:20,639
provide an incredible capability for the

217
00:08:24,150 --> 00:08:21,680
nation

218
00:08:26,070 --> 00:08:24,160
so we're all getting excited this goes-r

219
00:08:27,830 --> 00:08:26,080
is the first of four satellites so we're

220
00:08:29,589 --> 00:08:27,840
buying four of these

221
00:08:31,830 --> 00:08:29,599
uh this first one will be launched here

222
00:08:34,389 --> 00:08:31,840
coming up and these four satellites will

223
00:08:36,070 --> 00:08:34,399
give continuity in the uh nation's

224
00:08:38,709 --> 00:08:36,080
geostationary weather satellite program

225
00:08:41,110 --> 00:08:38,719
through 2020 2036.

226
00:08:42,149 --> 00:08:41,120
thank you mike okay thank you greg

227
00:08:44,070 --> 00:08:42,159
sandra

228
00:08:45,910 --> 00:08:44,080
thank you and good afternoon everybody i

229
00:08:47,350 --> 00:08:45,920
have to tell you i am thrilled to be

230
00:08:49,190 --> 00:08:47,360
part of this program and have the

231
00:08:51,350 --> 00:08:49,200
opportunity to be here with you today to

232
00:08:52,550 --> 00:08:51,360
talk about it along with my fellow

233
00:08:54,550 --> 00:08:52,560
panelists

234
00:08:56,070 --> 00:08:54,560
about this very important mission that's

235
00:08:58,150 --> 00:08:56,080
going to transform our weather

236
00:09:00,230 --> 00:08:58,160
forecasting capabilities

237
00:09:02,949 --> 00:09:00,240
the launch of the goes-r program as

238
00:09:04,710 --> 00:09:02,959

steve had shared continues over 40 years

239
00:09:06,829 --> 00:09:04,720
of a noaa nasa partnership for the

240
00:09:09,350 --> 00:09:06,839
collaboration in the development of

241
00:09:11,110 --> 00:09:09,360
geostationary operational environmental

242
00:09:13,110 --> 00:09:11,120
satellites

243
00:09:14,630 --> 00:09:13,120
the joint agency satellite division

244
00:09:16,710 --> 00:09:14,640
within nasa's science mission

245
00:09:19,509 --> 00:09:16,720
directorate plays an important role in

246
00:09:21,990 --> 00:09:19,519
our partnership with noaa we serve as an

247
00:09:23,829 --> 00:09:22,000
acquisition arm for noaa where we bring

248
00:09:26,790 --> 00:09:23,839
to bear nasa's scientific and

249
00:09:29,030 --> 00:09:26,800
engineering expertise in the development

250
00:09:31,590 --> 00:09:29,040
of space flight and ground systems to

251
00:09:34,230 --> 00:09:31,600
support our partner organizations

252
00:09:36,389 --> 00:09:34,240
specifically for goes-r we support the

253
00:09:39,030 --> 00:09:36,399
development of the spacecraft

254
00:09:41,110 --> 00:09:39,040
we launch it we commission it and then

255
00:09:43,350 --> 00:09:41,120
we end up transitioning it to noaa for

256
00:09:44,949 --> 00:09:43,360
operations

257
00:09:46,870 --> 00:09:44,959
it continues to be a pleasure working

258
00:09:48,870 --> 00:09:46,880
with noaa to deliver this nationally

259
00:09:51,030 --> 00:09:48,880
critical weather system

260
00:09:52,870 --> 00:09:51,040
the partnership began as i mentioned 40

261
00:09:57,110 --> 00:09:52,880
years ago beginning with the goes

262
00:09:59,590 --> 00:09:57,120
satellite goes 1 on october 16 1975 and

263
00:10:01,750 --> 00:09:59,600

now 41 years later here we are ready to

264
00:10:03,269 --> 00:10:01,760
launch goes-r and as you've already

265
00:10:05,190 --> 00:10:03,279
heard it really is going to be

266
00:10:07,269 --> 00:10:05,200
revolutionizing how we

267
00:10:09,509 --> 00:10:07,279
are able to predict weather

268
00:10:11,750 --> 00:10:09,519
at this time i also would like to

269
00:10:13,110 --> 00:10:11,760
recognize the importance of our partners

270
00:10:14,790 --> 00:10:13,120
in this endeavor

271
00:10:16,550 --> 00:10:14,800
steve already mentioned goddard and the

272
00:10:18,150 --> 00:10:16,560
launch services program

273
00:10:20,230 --> 00:10:18,160
as well as lockheed martin for the

274
00:10:22,870 --> 00:10:20,240
development of the spacecraft the glm

275
00:10:25,350 --> 00:10:22,880
and suvi and magnetometer instruments

276
00:10:27,910 --> 00:10:25,360
the harris corporation for development

277
00:10:29,670 --> 00:10:27,920
of the abi and the ground system the

278
00:10:32,790 --> 00:10:29,680
laboratory for atmospheric and space

279
00:10:34,630 --> 00:10:32,800
physics for developing excess and the

280
00:10:36,550 --> 00:10:34,640
assurance technology corporation for

281
00:10:38,949 --> 00:10:36,560
developing size

282
00:10:40,790 --> 00:10:38,959
thank you for your team's hard work

283
00:10:43,030 --> 00:10:40,800
and dedication delivering to me this

284
00:10:45,030 --> 00:10:43,040
amazing next generation geostationary

285
00:10:46,949 --> 00:10:45,040
satellite and ground system that will

286
00:10:48,550 --> 00:10:46,959
serve to provide weather forecasters the

287
00:10:50,550 --> 00:10:48,560
information they need to protect the

288
00:10:52,150 --> 00:10:50,560

public and the nation

289
00:10:55,750 --> 00:10:52,160
go goes-r

290
00:10:58,069 --> 00:10:55,760
back to you mike thank you sandra omar

291
00:11:00,150 --> 00:10:58,079
thank you and uh

292
00:11:02,230 --> 00:11:00,160
thank you for attending today's brief i

293
00:11:04,550 --> 00:11:02,240
am again fortunate to be representing

294
00:11:06,389 --> 00:11:04,560
the men and women from nasa's launch

295
00:11:08,870 --> 00:11:06,399
services program here at kennedy space

296
00:11:10,630 --> 00:11:08,880
center and our partners united launch

297
00:11:13,269 --> 00:11:10,640
alliance

298
00:11:15,990 --> 00:11:13,279
our customer noah

299
00:11:16,949 --> 00:11:16,000
and and goddard space flight center and

300
00:11:19,509 --> 00:11:16,959
uh

301
00:11:22,150 --> 00:11:19,519
their provider lockheed martin these

302
00:11:24,389 --> 00:11:22,160
folks have been dedicated to analyzing

303
00:11:26,310 --> 00:11:24,399
uh fabricating and assembling and

304
00:11:29,829 --> 00:11:26,320
preparing the atlas 5 and the gozar

305
00:11:31,590 --> 00:11:29,839
spacecraft set for launch this saturday

306
00:11:33,750 --> 00:11:31,600
this will be the 67th flight of the

307
00:11:36,150 --> 00:11:33,760
atlas v vehicle in the fourth flight of

308
00:11:39,269 --> 00:11:36,160
the 541 configuration

309
00:11:40,550 --> 00:11:39,279
rather than bore you with those details

310
00:11:42,949 --> 00:11:40,560
let's roll a

311
00:11:48,069 --> 00:11:42,959
video of all those pieces coming

312
00:11:52,069 --> 00:11:50,470
that's the atlas or this is the centaur

313
00:11:53,750 --> 00:11:52,079

stage

314
00:11:55,829 --> 00:11:53,760
you're not going to see the

315
00:11:58,150 --> 00:11:55,839
the booster because the center was

316
00:12:01,269 --> 00:11:58,160
closed when that came in and we weren't

317
00:12:03,590 --> 00:12:01,279
able to videotape that we had had

318
00:12:06,550 --> 00:12:03,600
hurricane matthew pass by our coast here

319
00:12:08,949 --> 00:12:06,560
and made things difficult for us

320
00:12:11,430 --> 00:12:08,959
but there it is that's the

321
00:12:15,509 --> 00:12:11,440
atlas 5 booster with the

322
00:12:17,110 --> 00:12:15,519
rd180 motors that provide 861 pounds of

323
00:12:19,430 --> 00:12:17,120
thrust

324
00:12:21,990 --> 00:12:19,440
shortly you'll see how the

325
00:12:24,150 --> 00:12:22,000
solid rocket boosters

326
00:12:25,910 --> 00:12:24,160
are attached to it we're using four of

327
00:12:27,750 --> 00:12:25,920
them they each provide about three

328
00:12:29,110 --> 00:12:27,760
hundred thousand over three hundred

329
00:12:32,629 --> 00:12:29,120
thousand pounds of

330
00:12:35,110 --> 00:12:32,639
uh thrust uh making it to two million

331
00:12:36,790 --> 00:12:35,120
pounds of thrust in the end

332
00:12:38,949 --> 00:12:36,800
uh here you're seeing something a little

333
00:12:40,710 --> 00:12:38,959
different usually we just

334
00:12:43,670 --> 00:12:40,720
put up the

335
00:12:45,190 --> 00:12:43,680
centaur and the interstage and center

336
00:12:46,870 --> 00:12:45,200
our forward adapter in different stages

337
00:12:48,550 --> 00:12:46,880
there you saw it stacked we now call

338
00:12:50,389 --> 00:12:48,560

that the ovi

339
00:12:52,470 --> 00:12:50,399
and that is the

340
00:12:54,550 --> 00:12:52,480
the goes-r satellite within its

341
00:12:55,910 --> 00:12:54,560
five-meter fairing

342
00:12:56,790 --> 00:12:55,920
um

343
00:12:57,829 --> 00:12:56,800
so

344
00:12:59,110 --> 00:12:57,839
um

345
00:13:01,030 --> 00:12:59,120
it did

346
00:13:02,870 --> 00:13:01,040
this this hurricane meth

347
00:13:05,670 --> 00:13:02,880
uh that did come through here

348
00:13:08,310 --> 00:13:05,680
uh did slow us down a bit it uh took us

349
00:13:09,509 --> 00:13:08,320
out by by about 10 to 12 days and we had

350
00:13:11,670 --> 00:13:09,519
some

351
00:13:13,990 --> 00:13:11,680
issues between the west coast and here

352
00:13:14,870 --> 00:13:14,000
that we had to resolve

353
00:13:16,949 --> 00:13:14,880
that

354
00:13:19,670 --> 00:13:16,959
accounted for for losing about two weeks

355
00:13:22,389 --> 00:13:19,680
of schedule on this mission

356
00:13:24,790 --> 00:13:22,399
but this monday we uh did our

357
00:13:28,310 --> 00:13:24,800
mission dress rehearsal on tuesday we

358
00:13:30,949 --> 00:13:28,320
completed our flight readiness review

359
00:13:33,350 --> 00:13:30,959
um we we completed our launch readiness

360
00:13:35,350 --> 00:13:33,360
review uh this morning

361
00:13:36,230 --> 00:13:35,360
and we plan to roll the vehicle out of

362
00:13:38,550 --> 00:13:36,240
the

363
00:13:42,150 --> 00:13:38,560

vertical integration facility tomorrow

364
00:13:46,310 --> 00:13:44,710
then we'll load kerosene on board

365
00:13:48,550 --> 00:13:46,320
and

366
00:13:50,629 --> 00:13:48,560
just before 11 o'clock on saturday

367
00:13:52,790 --> 00:13:50,639
morning um

368
00:13:55,910 --> 00:13:52,800
the atlas team will will power up the

369
00:13:58,790 --> 00:13:55,920
vehicle do their flight control checks

370
00:14:00,629 --> 00:13:58,800
um our management team will be in place

371
00:14:02,710 --> 00:14:00,639
around one o'clock in the afternoon for

372
00:14:03,670 --> 00:14:02,720
a call to stations

373
00:14:06,550 --> 00:14:03,680
and

374
00:14:09,189 --> 00:14:06,560
at about 207

375
00:14:12,230 --> 00:14:09,199
in the afternoon we will have our first

376
00:14:13,670 --> 00:14:12,240
uh hold at 15 minutes the conclusion of

377
00:14:16,150 --> 00:14:13,680
that hole will pull the team for

378
00:14:19,030 --> 00:14:16,160
concurrence to proceed into the

379
00:14:21,350 --> 00:14:19,040
cryogenic tanking

380
00:14:23,110 --> 00:14:21,360
and that process will take approximately

381
00:14:25,269 --> 00:14:23,120
two hours

382
00:14:27,269 --> 00:14:25,279
at 5 29 i will

383
00:14:29,509 --> 00:14:27,279
pull the team for concurrence to enter

384
00:14:31,350 --> 00:14:29,519
terminal count again we enter another

385
00:14:32,790 --> 00:14:31,360
15-minute hold

386
00:14:35,910 --> 00:14:32,800
and uh

387
00:14:37,269 --> 00:14:35,920
and we're set to launch a t-zero 5 42 in

388
00:14:38,870 --> 00:14:37,279

the afternoon

389
00:14:42,870 --> 00:14:38,880
and with that i'll turn it back over to

390
00:14:45,110 --> 00:14:42,880
mike okay thank you omar scott

391
00:14:46,790 --> 00:14:45,120
yeah thanks mike uh on behalf of united

392
00:14:49,030 --> 00:14:46,800
launch lines i

393
00:14:51,910 --> 00:14:49,040
want to welcome you to the goes-r launch

394
00:14:54,710 --> 00:14:51,920
we are super excited to be here

395
00:14:56,949 --> 00:14:54,720
and prepare to launch this critical

396
00:14:58,389 --> 00:14:56,959
satellite for nasa again this will be

397
00:15:01,990 --> 00:14:58,399
the 11th

398
00:15:05,670 --> 00:15:02,000
launch for ula in 2016

399
00:15:08,310 --> 00:15:05,680
and the 113th consecutive successful

400
00:15:10,550 --> 00:15:08,320
launch since the company was formed in

401
00:15:12,470 --> 00:15:10,560
2006.

402
00:15:15,910 --> 00:15:12,480
this is the fourth as omar said the

403
00:15:17,509 --> 00:15:15,920
fourth launch of our 541 configuration

404
00:15:20,389 --> 00:15:17,519
you can see the uh

405
00:15:22,949 --> 00:15:20,399
my the small model here to my right

406
00:15:25,030 --> 00:15:22,959
uh you can see the four solid uh

407
00:15:27,430 --> 00:15:25,040
boosters here and the and the five meter

408
00:15:32,710 --> 00:15:27,440
fairing um

409
00:15:35,030 --> 00:15:32,720
it's powered by a a rd amros rd-180 and

410
00:15:38,069 --> 00:15:35,040
uh the second stage engine is an aerojet

411
00:15:41,990 --> 00:15:38,079
rocketdyne rl10c

412
00:15:44,310 --> 00:15:42,000
so i did give you several numbers 113

413
00:15:46,389 --> 00:15:44,320

consecutive successful launches those

414
00:15:48,310 --> 00:15:46,399
are important to you because

415
00:15:49,430 --> 00:15:48,320
it helps you to know that nasa has

416
00:15:51,749 --> 00:15:49,440
chosen

417
00:15:53,829 --> 00:15:51,759
one of the most reliable launch vehicles

418
00:15:56,629 --> 00:15:53,839
in the world to go put this goes-r

419
00:15:59,110 --> 00:15:56,639
spacecraft up into

420
00:16:02,710 --> 00:15:59,120
into orbit and in fact they did a little

421
00:16:05,350 --> 00:16:02,720
history looking and ula and

422
00:16:07,430 --> 00:16:05,360
our parent vehicles have launched every

423
00:16:08,790 --> 00:16:07,440
go satellite in the last 30 years

424
00:16:10,470 --> 00:16:08,800
successfully

425
00:16:12,389 --> 00:16:10,480
for the uh

426
00:16:14,870 --> 00:16:12,399
for the ghost program so we have a rich

427
00:16:16,710 --> 00:16:14,880
history of working with nasa and and

428
00:16:19,110 --> 00:16:16,720
noaa and the ghost program

429
00:16:20,829 --> 00:16:19,120
and we are super excited to be back here

430
00:16:23,590 --> 00:16:20,839
again doing that for

431
00:16:26,790 --> 00:16:23,600
goes-r we do have a video that will show

432
00:16:28,310 --> 00:16:26,800
you a sequence of events for

433
00:16:29,189 --> 00:16:28,320
the mission that you should expect to

434
00:16:31,670 --> 00:16:29,199
see

435
00:16:34,790 --> 00:16:31,680
on saturday evening so let's roll that

436
00:16:38,629 --> 00:16:36,710
the following profile details the

437
00:16:40,949 --> 00:16:38,639
important events of this mission using

438
00:16:41,990 --> 00:16:40,959

approximate times

439
00:16:43,030 --> 00:16:42,000
five

440
00:16:44,069 --> 00:16:43,040
four

441
00:16:44,949 --> 00:16:44,079
three

442
00:16:46,550 --> 00:16:44,959
two

443
00:16:49,509 --> 00:16:46,560
we have ignition

444
00:16:52,470 --> 00:16:49,519
and liftoff

445
00:16:54,870 --> 00:16:52,480
the atlas v rd 180 main engine and four

446
00:16:57,110 --> 00:16:54,880
solid rocket boosters ignite to generate

447
00:16:59,430 --> 00:16:57,120
the two and a quarter million pounds of

448
00:17:02,629 --> 00:16:59,440
thrust to lift the rocket away from the

449
00:17:07,189 --> 00:17:04,710
shortly after liftoff atlas begins its

450
00:17:09,510 --> 00:17:07,199
initial pitch yaw and roll maneuvers to

451
00:17:13,990 --> 00:17:09,520
attain the proper ascent profile and

452
00:17:19,189 --> 00:17:16,549
the atlas 5 reaches mach 1 the speed of

453
00:17:21,990 --> 00:17:19,199
sound at 35 seconds

454
00:17:25,510 --> 00:17:22,000
at 46 seconds the vehicle experiences

455
00:17:27,590 --> 00:17:25,520
maximum dynamic pressure

456
00:17:30,390 --> 00:17:27,600
the first two solid rocket boosters or

457
00:17:32,230 --> 00:17:30,400
srbs are jettisoned at one minute 50

458
00:17:36,710 --> 00:17:32,240
seconds followed a second and a half

459
00:17:38,630 --> 00:17:36,720
later by the third and fourth srbs

460
00:17:41,669 --> 00:17:38,640
the payload fairing is jettisoned at

461
00:17:43,830 --> 00:17:41,679
three and a half minutes

462
00:17:45,830 --> 00:17:43,840
as it approaches booster engine cut off

463
00:17:46,830 --> 00:17:45,840

the atlas v is burning propellant at the

464
00:17:49,990 --> 00:17:46,840
rate of

465
00:17:54,390 --> 00:17:50,000
1856 pounds per second traveling at over

466
00:17:56,350 --> 00:17:54,400
12 440 miles per hour and located 92

467
00:18:01,190 --> 00:17:56,360
miles in altitude and

468
00:18:07,029 --> 00:18:03,029
booster engine cutoff occurs four

469
00:18:09,190 --> 00:18:07,039
minutes 21 seconds after liftoff

470
00:18:11,270 --> 00:18:09,200
six seconds later the booster stage is

471
00:18:13,270 --> 00:18:11,280
jettisoned the vehicle now weighs a

472
00:18:15,510 --> 00:18:13,280
little more than five percent of what it

473
00:18:17,830 --> 00:18:15,520
did at liftoff four and one half minutes

474
00:18:19,830 --> 00:18:17,840
earlier the first centaur main engine

475
00:18:22,070 --> 00:18:19,840
start takes place 10 seconds after

476
00:18:24,150 --> 00:18:22,080
booster separation

477
00:18:26,710 --> 00:18:24,160
cutoff of the centaur main engine occurs

478
00:18:29,029 --> 00:18:26,720
just over 12 minutes after launch the

479
00:18:30,390 --> 00:18:29,039
mission now enters a nearly 10 minute

480
00:18:32,870 --> 00:18:30,400
coast phase

481
00:18:34,230 --> 00:18:32,880
at 22 minutes the centaur main engine is

482
00:18:36,310 --> 00:18:34,240
restarted

483
00:18:38,310 --> 00:18:36,320
this burn will last five and a half

484
00:18:40,230 --> 00:18:38,320
minutes

485
00:18:43,190 --> 00:18:40,240
following the second centaur main engine

486
00:18:45,510 --> 00:18:43,200
cutoff at 27 minutes 35 seconds the

487
00:18:47,669 --> 00:18:45,520
mission now enters a three hour coast

488
00:18:50,230 --> 00:18:47,679

phase

489
00:18:52,870 --> 00:18:50,240
at 3 hours 27 and a half minutes after

490
00:18:56,150 --> 00:18:52,880
liftoff the centaur is started for a

491
00:18:58,630 --> 00:18:56,160
third and final burn

492
00:19:02,070 --> 00:18:58,640
a minute and a half later final cut off

493
00:19:04,390 --> 00:19:02,080
of the centaur main engine occurs

494
00:19:07,029 --> 00:19:04,400
at just under three hours 32 minutes

495
00:19:13,990 --> 00:19:07,039
centaur releases the goes-r satellite

496
00:19:18,950 --> 00:19:15,350
thank you

497
00:19:20,870 --> 00:19:18,960
so ula and the ula team is proud uh to

498
00:19:22,710 --> 00:19:20,880
deliver the ghost satellite to orbit and

499
00:19:24,230 --> 00:19:22,720
to contribute to the

500
00:19:26,230 --> 00:19:24,240
increase in improvement in weather

501
00:19:27,190 --> 00:19:26,240
predictions that you've heard about

502
00:19:29,190 --> 00:19:27,200
it

503
00:19:30,710 --> 00:19:29,200
interesting to me

504
00:19:32,710 --> 00:19:30,720
you know the rocket business is a

505
00:19:34,710 --> 00:19:32,720
technologically challenging business as

506
00:19:37,590 --> 00:19:34,720
you all know and we've seen

507
00:19:40,390 --> 00:19:37,600
and in fact precise weather

508
00:19:42,710 --> 00:19:40,400
predictions are critical for our launch

509
00:19:44,390 --> 00:19:42,720
campaigns and in fact i learned last

510
00:19:46,870 --> 00:19:44,400
night

511
00:19:48,870 --> 00:19:46,880
that fifty percent of all launch scrubs

512
00:19:50,789 --> 00:19:48,880
are caused as a result of weather so

513
00:19:53,510 --> 00:19:50,799

it's a big big boost

514
00:19:56,070 --> 00:19:53,520
to us as well as the public safety in

515
00:19:58,549 --> 00:19:56,080
order to have the goes mission up there

516
00:20:00,870 --> 00:19:58,559
and to get this increase

517
00:20:03,350 --> 00:20:00,880
improved ability for weather predictions

518
00:20:05,909 --> 00:20:03,360
as ulas are as america's ride to space

519
00:20:08,070 --> 00:20:05,919
ula is committed to continue to deliver

520
00:20:11,110 --> 00:20:08,080
reliable

521
00:20:13,430 --> 00:20:11,120
satellites and payloads for nasa

522
00:20:15,990 --> 00:20:13,440
and we want to conclude by just saying

523
00:20:18,070 --> 00:20:16,000
thank you to all of our our partners the

524
00:20:20,230 --> 00:20:18,080
entire ula team is

525
00:20:21,990 --> 00:20:20,240
excited to be part of the goes program

526
00:20:23,909 --> 00:20:22,000
and we look forward to a successful

527
00:20:25,750 --> 00:20:23,919
launch tomorrow evening thank you and

528
00:20:27,270 --> 00:20:25,760
back to you mike okay scott thank you it

529
00:20:31,029 --> 00:20:27,280
sounds like you made the perfect

530
00:20:33,029 --> 00:20:31,039
introduction for a clay clay

531
00:20:34,630 --> 00:20:33,039
thank you very much mike the weather is

532
00:20:37,270 --> 00:20:34,640
favorable for the balance of this week's

533
00:20:39,430 --> 00:20:37,280
pre-launch processing activities

534
00:20:40,630 --> 00:20:39,440
as well as the count on saturday if i

535
00:20:42,070 --> 00:20:40,640
could have a satellite picture brought

536
00:20:43,350 --> 00:20:42,080
up i'd appreciate it

537
00:20:44,549 --> 00:20:43,360
if you'll look at the satellite picture

538
00:20:46,549 --> 00:20:44,559

there you'll note that we have near

539
00:20:48,549 --> 00:20:46,559
clear skies over the southeast united

540
00:20:50,390 --> 00:20:48,559
states we're under high pressure with

541
00:20:51,909 --> 00:20:50,400
favorable weather conditions

542
00:20:53,590 --> 00:20:51,919
high pressure will persist until

543
00:20:54,870 --> 00:20:53,600
tomorrow and into the account on

544
00:20:57,190 --> 00:20:54,880
saturday

545
00:20:58,789 --> 00:20:57,200
so expecting very good conditions if you

546
00:21:00,470 --> 00:20:58,799
look out in the midwest you can see some

547
00:21:03,110 --> 00:21:00,480
clouds that are associated with the next

548
00:21:04,549 --> 00:21:03,120
system that will drag a relatively weak

549
00:21:06,630 --> 00:21:04,559
cold front through central florida

550
00:21:08,310 --> 00:21:06,640
saturday evening it should approach us

551
00:21:10,149 --> 00:21:08,320
in the panhandle of florida saturday

552
00:21:11,669 --> 00:21:10,159
morning but nevertheless we'll still be

553
00:21:13,669 --> 00:21:11,679
pre-frontal through the count with

554
00:21:15,590 --> 00:21:13,679
relatively dry conditions and not

555
00:21:17,350 --> 00:21:15,600
expecting significant weather associated

556
00:21:19,510 --> 00:21:17,360
with that front as it approaches us

557
00:21:20,789 --> 00:21:19,520
during the during the evening hours so i

558
00:21:23,029 --> 00:21:20,799
believe we should have pretty good

559
00:21:25,430 --> 00:21:23,039
weather conditions for friday when we

560
00:21:28,310 --> 00:21:25,440
roll to the pad as well as on saturday

561
00:21:30,230 --> 00:21:28,320
during the count so for tomorrow for mlp

562
00:21:32,070 --> 00:21:30,240
roll to the pad we'd be looking for a

563
00:21:33,669 --> 00:21:32,080

relatively light winds during the roll

564
00:21:36,070 --> 00:21:33,679
we should have northeast winds with the

565
00:21:37,909 --> 00:21:36,080
northeast winds we'll have a few clouds

566
00:21:39,990 --> 00:21:37,919
coming in off the water not expecting

567
00:21:41,669 --> 00:21:40,000
any rain and certainly no lightning so

568
00:21:43,510 --> 00:21:41,679
favorable weather tomorrow as i

569
00:21:45,270 --> 00:21:43,520
mentioned a

570
00:21:47,350 --> 00:21:45,280
winds should be gusting in the low teens

571
00:21:48,950 --> 00:21:47,360
tomorrow morning well below the roll

572
00:21:51,350 --> 00:21:48,960
constraint so really don't see whether

573
00:21:53,510 --> 00:21:51,360
there's any concern at all for any

574
00:21:55,270 --> 00:21:53,520
action any activities tomorrow

575
00:21:56,789 --> 00:21:55,280
once we get on console on saturday for

576
00:21:58,310 --> 00:21:56,799
the count with that frontal boundary

577
00:22:00,230 --> 00:21:58,320
that i mentioned coming into the

578
00:22:02,789 --> 00:22:00,240
panhandle of florida saturday morning

579
00:22:04,390 --> 00:22:02,799
we'll watch our winds go more northerly

580
00:22:05,750 --> 00:22:04,400
and then north northwesterly as that

581
00:22:07,590 --> 00:22:05,760
front encroaches

582
00:22:08,870 --> 00:22:07,600
our approach to central florida but

583
00:22:10,710 --> 00:22:08,880
nevertheless the pressure gradient

584
00:22:12,149 --> 00:22:10,720
remains relatively light so we would be

585
00:22:13,669 --> 00:22:12,159
looking for winds in the mid to upper

586
00:22:16,710 --> 00:22:13,679
teens during the count

587
00:22:18,549 --> 00:22:16,720
at a couple hundred feet and really just

588
00:22:20,789 --> 00:22:18,559

about 15 knots or so during the window

589
00:22:22,789 --> 00:22:20,799
so favorable conditions the front as i

590
00:22:24,310 --> 00:22:22,799
mentioned comes through saturday evening

591
00:22:25,590 --> 00:22:24,320
late saturday evening and during the

592
00:22:27,029 --> 00:22:25,600
overnight hours and that would increase

593
00:22:28,470 --> 00:22:27,039
our pressure gradient but we should beat

594
00:22:30,549 --> 00:22:28,480
that

595
00:22:31,909 --> 00:22:30,559
on saturday afternoon so if i can have

596
00:22:37,510 --> 00:22:31,919
the graphic for the forecast for

597
00:22:41,430 --> 00:22:38,870
what we'd be looking for is just

598
00:22:43,990 --> 00:22:41,440
scattered scatter skies at about 3 500

599
00:22:46,630 --> 00:22:44,000
feet maybe some thin cirrus about 26 000

600
00:22:48,310 --> 00:22:46,640
feet good visibility seven statute miles

601
00:22:50,470 --> 00:22:48,320
our winds out of the north northwest

602
00:22:52,950 --> 00:22:50,480
from about 330 degrees to 10 knots

603
00:22:54,630 --> 00:22:52,960
gusting to 15. with a 10 chance of

604
00:22:56,149 --> 00:22:54,640
violation that's a very low likelihood

605
00:22:58,149 --> 00:22:56,159
of any type of cumulus cloud rule

606
00:23:00,789 --> 00:22:58,159
violation we have a good substance or

607
00:23:02,310 --> 00:23:00,799
sinking air over us it'll cap the

608
00:23:03,990 --> 00:23:02,320
vertical development of the cumulus

609
00:23:05,270 --> 00:23:04,000
cloud so should have very favorable

610
00:23:07,510 --> 00:23:05,280
conditions on

611
00:23:09,909 --> 00:23:07,520
on the count on saturday

612
00:23:11,909 --> 00:23:09,919
and for a 24-hour delay as i mentioned

613
00:23:13,190 --> 00:23:11,919

that frontal boundary comes through late

614
00:23:14,710 --> 00:23:13,200
saturday evening and during the

615
00:23:16,310 --> 00:23:14,720
overnight hours the pressure gradient

616
00:23:18,549 --> 00:23:16,320
tightens up we get cooler air behind

617
00:23:20,070 --> 00:23:18,559
that front so we'd be gusting in the mid

618
00:23:22,149 --> 00:23:20,080
to upper 20s at a couple hundred feet

619
00:23:23,669 --> 00:23:22,159
during the overnight hours but as we get

620
00:23:26,149 --> 00:23:23,679
into the afternoon hours should we be on

621
00:23:27,750 --> 00:23:26,159
the pad for a for an attempt on sunday

622
00:23:29,190 --> 00:23:27,760
we should watch those winds come down

623
00:23:31,110 --> 00:23:29,200
and we'd be looking for winds gusting to

624
00:23:33,029 --> 00:23:31,120
about 20 knots or so at a couple hundred

625
00:23:34,549 --> 00:23:33,039
feet by the time we get to the window

626
00:23:36,390 --> 00:23:34,559
again that's well below the liftoff

627
00:23:38,230 --> 00:23:36,400
constraint so really we should be in

628
00:23:39,510 --> 00:23:38,240
pretty good shape sunday on sunday as

629
00:23:41,669 --> 00:23:39,520
well so we'd be looking for just

630
00:23:43,830 --> 00:23:41,679
scattered skies about 3 500 feet good

631
00:23:45,430 --> 00:23:43,840
visibility a little bit breezy as i

632
00:23:47,830 --> 00:23:45,440
mentioned gusts to about 20 knots with a

633
00:23:49,430 --> 00:23:47,840
20 chance of violation and again the

634
00:23:50,470 --> 00:23:49,440
principal concern there would be cumulus

635
00:23:52,070 --> 00:23:50,480
clouds

636
00:23:53,909 --> 00:23:52,080
so that's all i have penny any questions

637
00:23:55,430 --> 00:23:53,919
mike i'll turn it back to you all right

638
00:23:57,269 --> 00:23:55,440

thank you all right we're ready for

639
00:23:58,789 --> 00:23:57,279
questions and

640
00:24:00,710 --> 00:23:58,799
first off i would like to remind you if

641
00:24:01,909 --> 00:24:00,720
you're in the room to wait for the

642
00:24:04,070 --> 00:24:01,919
microphone

643
00:24:06,149 --> 00:24:04,080
state your name and affiliation and to

644
00:24:07,990 --> 00:24:06,159
whom you're addressing your question we

645
00:24:10,789 --> 00:24:08,000
have a phone bridge uh for those who are

646
00:24:12,549 --> 00:24:10,799
interested in in calling in and one

647
00:24:15,590 --> 00:24:12,559
thing if you're following on social

648
00:24:18,070 --> 00:24:15,600
media our nasa social media manager john

649
00:24:20,549 --> 00:24:18,080
yumbrick is here he's tuned in to the

650
00:24:22,070 --> 00:24:20,559
hashtag ask goes

651
00:24:23,990 --> 00:24:22,080
so if you have any questions and would

652
00:24:25,909 --> 00:24:24,000
like to convey them that way please go

653
00:24:28,070 --> 00:24:25,919
ahead and do so and we will be happy to

654
00:24:29,590 --> 00:24:28,080
start off with questions in the room and

655
00:24:33,430 --> 00:24:29,600
marcia done

656
00:24:36,870 --> 00:24:33,440
of the two noaa gentlemen i was hoping

657
00:24:39,029 --> 00:24:36,880
to get a cost on this satellite and if

658
00:24:40,070 --> 00:24:39,039
this satellite had been

659
00:24:42,549 --> 00:24:40,080
up there

660
00:24:44,149 --> 00:24:42,559
for hurricane matthew

661
00:24:45,750 --> 00:24:44,159
do you think you could have

662
00:24:46,470 --> 00:24:45,760
there would have been better tracking

663
00:24:48,149 --> 00:24:46,480

and

664
00:24:49,669 --> 00:24:48,159
knowing it that it would stay off the

665
00:24:51,110 --> 00:24:49,679
coast here or i'm just wondering how

666
00:24:55,909 --> 00:24:51,120
much improved would you have been able

667
00:25:00,630 --> 00:24:58,470
sure let me start off the cost

668
00:25:01,830 --> 00:25:00,640
the when we put big programs like this

669
00:25:03,590 --> 00:25:01,840
together obviously there's a lot of

670
00:25:06,149 --> 00:25:03,600
development implementation costs so we

671
00:25:07,669 --> 00:25:06,159
sort of start off in the mid 2000s

672
00:25:09,750 --> 00:25:07,679
estimating its life cycle so at that

673
00:25:10,870 --> 00:25:09,760
point we estimated about 11 billion life

674
00:25:12,870 --> 00:25:10,880
cycle

675
00:25:15,029 --> 00:25:12,880
which is buying four satellites putting

676
00:25:17,190 --> 00:25:15,039
the entire ground system in place and

677
00:25:19,669 --> 00:25:17,200
operating it for 20 years so there's a

678
00:25:22,789 --> 00:25:19,679
lot of cats and dogs in that

679
00:25:25,830 --> 00:25:24,390
is that

680
00:25:28,310 --> 00:25:25,840
usually people are interested in like

681
00:25:29,909 --> 00:25:28,320
the cost of what's riding right there

682
00:25:34,310 --> 00:25:29,919
and so

683
00:25:36,230 --> 00:25:34,320
think it's best looked at is if i had to

684
00:25:38,149 --> 00:25:36,240
go buy a replacement one so if i went to

685
00:25:39,590 --> 00:25:38,159
all of my vendors and said bring it back

686
00:25:42,470 --> 00:25:39,600
that would be about a half a billion

687
00:25:43,909 --> 00:25:42,480
dollars to replace the payload as we it

688
00:25:47,110 --> 00:25:43,919

was we see it so i'd like that that's

689
00:25:49,750 --> 00:25:47,120
sort of a nominal cost of 500 million

690
00:25:51,190 --> 00:25:49,760
500 million yeah

691
00:25:52,950 --> 00:25:51,200
and on the modeling side of the house

692
00:25:54,950 --> 00:25:52,960
then um so what would what would goes

693
00:25:57,110 --> 00:25:54,960
are do now as uh if we had it when

694
00:25:58,789 --> 00:25:57,120
hurricane matthew was rolling through

695
00:26:00,470 --> 00:25:58,799
first it's important to remember that

696
00:26:01,990 --> 00:26:00,480
goes the satellite is a piece of a

697
00:26:04,149 --> 00:26:02,000
larger observing system

698
00:26:06,390 --> 00:26:04,159
so the satellite is combined with ground

699
00:26:08,149 --> 00:26:06,400
observations with modeling and with

700
00:26:09,590 --> 00:26:08,159
other expertise that

701
00:26:12,149 --> 00:26:09,600
from our weather service and for others

702
00:26:14,390 --> 00:26:12,159
that pull together um what goes-r then

703
00:26:16,230 --> 00:26:14,400
adds to that is in its high resolution

704
00:26:18,870 --> 00:26:16,240
and its high repeat rate it really

705
00:26:20,630 --> 00:26:18,880
brings a different uh an acceleration to

706
00:26:21,669 --> 00:26:20,640
the knowledge of what's happening

707
00:26:23,830 --> 00:26:21,679
particularly in the case of

708
00:26:25,350 --> 00:26:23,840
intensification of a storm so you can

709
00:26:27,430 --> 00:26:25,360
see when it might move from a category

710
00:26:28,789 --> 00:26:27,440
two to a category three and four which

711
00:26:31,350 --> 00:26:28,799
right now might take a couple of hours

712
00:26:32,549 --> 00:26:31,360
between image suites to see we'll be

713
00:26:35,430 --> 00:26:32,559

able to see in minutes as that

714
00:26:37,669 --> 00:26:35,440
intensification occurs so for a steady

715
00:26:39,350 --> 00:26:37,679
grow a storm that just moves normally it

716
00:26:40,390 --> 00:26:39,360
won't be it won't be an obvious

717
00:26:42,230 --> 00:26:40,400
difference but for something where

718
00:26:44,230 --> 00:26:42,240
you're looking for dynamic changes the

719
00:26:46,230 --> 00:26:44,240
goes-r uh capabilities will really

720
00:26:48,070 --> 00:26:46,240
enhance that ability second is the

721
00:26:50,149 --> 00:26:48,080
higher resolution will allow a much

722
00:26:52,070 --> 00:26:50,159
greater intense visual visualization of

723
00:26:53,350 --> 00:26:52,080
the eye wall and of the scattering of

724
00:26:54,390 --> 00:26:53,360
storms around the perimeter so you'll be

725
00:26:56,310 --> 00:26:54,400
able to have

726
00:26:57,830 --> 00:26:56,320
more local observations of what might be

727
00:26:59,590 --> 00:26:57,840
happening on pieces as you look at the

728
00:27:01,029 --> 00:26:59,600
storm in different areas and different

729
00:27:02,549 --> 00:27:01,039
pieces so

730
00:27:05,350 --> 00:27:02,559
as a part of the overall system it'll

731
00:27:07,269 --> 00:27:05,360
take us a while to integrate the goes-r

732
00:27:08,549 --> 00:27:07,279
capabilities into our observing system

733
00:27:10,149 --> 00:27:08,559
and i think we'll still be seeing

734
00:27:12,070 --> 00:27:10,159
advances that we can't even anticipate

735
00:27:14,310 --> 00:27:12,080
right now as we as we do that over the

736
00:27:16,390 --> 00:27:14,320
next years and decades as we add goes r

737
00:27:17,750 --> 00:27:16,400
and s and t and u to the system but

738
00:27:19,750 --> 00:27:17,760

those are the immediate ones we would

739
00:27:21,350 --> 00:27:19,760
see both in the higher res temporal

740
00:27:23,029 --> 00:27:21,360
resolution so we see intensification

741
00:27:23,990 --> 00:27:23,039
when it occurs a higher spatial

742
00:27:25,750 --> 00:27:24,000
resolution so we can be more

743
00:27:27,830 --> 00:27:25,760
discriminating in what's happening in

744
00:27:31,430 --> 00:27:27,840
different regions in what might be a 500

745
00:27:36,389 --> 00:27:35,029
james did you have a question

746
00:27:38,470 --> 00:27:36,399
james dean florida today i mean really

747
00:27:39,750 --> 00:27:38,480
just following up on that uh idea i'm

748
00:27:41,510 --> 00:27:39,760
just curious if you know i'm not a

749
00:27:43,909 --> 00:27:41,520
forecaster will will i notice the

750
00:27:45,909 --> 00:27:43,919
difference um and

751
00:27:48,710 --> 00:27:45,919
you know still specifically with matthew

752
00:27:51,750 --> 00:27:48,720
i mean can you can we say with certainty

753
00:27:52,710 --> 00:27:51,760
that we would have had a better model

754
00:27:54,870 --> 00:27:52,720
we would have

755
00:27:56,230 --> 00:27:54,880
likely known

756
00:27:57,909 --> 00:27:56,240
where it really was going to end up

757
00:27:59,990 --> 00:27:57,919
rather than where we

758
00:28:01,990 --> 00:28:00,000
thought it was going to be and

759
00:28:02,950 --> 00:28:02,000
how that would affect evacuations and so

760
00:28:04,470 --> 00:28:02,960
forth

761
00:28:06,710 --> 00:28:04,480
so i think it's

762
00:28:09,110 --> 00:28:06,720
it's fair to say and it's that improved

763
00:28:10,950 --> 00:28:09,120

in res the improvements of goes-r will

764
00:28:13,029 --> 00:28:10,960
improve our ability to do those tracking

765
00:28:15,110 --> 00:28:13,039
and forecasting to say exactly whether

766
00:28:17,269 --> 00:28:15,120
it would be a 10 or a 50 increase in the

767
00:28:19,430 --> 00:28:17,279
resolution of a particular landfall is

768
00:28:21,590 --> 00:28:19,440
difficult to project specifically but

769
00:28:24,230 --> 00:28:21,600
yes you would have an improvement over

770
00:28:25,669 --> 00:28:24,240
time with the uh the intent the strength

771
00:28:27,190 --> 00:28:25,679
of the hurricane and the landfall

772
00:28:29,510 --> 00:28:27,200
probabilities as we've seen over the

773
00:28:32,230 --> 00:28:29,520
last 30 years as our projection

774
00:28:33,590 --> 00:28:32,240
projections on the landfall have

775
00:28:35,350 --> 00:28:33,600
narrowed down as we have much better

776
00:28:37,590 --> 00:28:35,360
accuracy now than we did 20 years ago

777
00:28:39,190 --> 00:28:37,600
and 10 years ago that's partially

778
00:28:40,870 --> 00:28:39,200
honorable capability but it's also our

779
00:28:41,990 --> 00:28:40,880
modeling and our understanding and

780
00:28:44,470 --> 00:28:42,000
that's what goes on we'll bring an

781
00:28:46,549 --> 00:28:44,480
entire new spectrum of of frequencies of

782
00:28:48,230 --> 00:28:46,559
bands of different uh visualizations

783
00:28:50,870 --> 00:28:48,240
that will improve our modeling over time

784
00:28:52,310 --> 00:28:50,880
so it will be an improvement in those

785
00:28:54,230 --> 00:28:52,320
model those um parameters that you

786
00:28:56,630 --> 00:28:54,240
mentioned as far as what the forecaster

787
00:28:58,230 --> 00:28:56,640
will use was mentioned earlier today

788
00:28:59,990 --> 00:28:58,240

instead of waiting three hours for us

789
00:29:01,590 --> 00:29:00,000
for an imagery update you'll be seeing

790
00:29:03,110 --> 00:29:01,600
it in near real time you'll see image

791
00:29:05,110 --> 00:29:03,120
updates every minute or every couple of

792
00:29:06,950 --> 00:29:05,120
minutes with about a five minute latency

793
00:29:09,029 --> 00:29:06,960
so there won't be a three hour wait for

794
00:29:10,950 --> 00:29:09,039
the next image of the full disk of the

795
00:29:13,430 --> 00:29:10,960
earth it will be minutes away so you

796
00:29:16,070 --> 00:29:13,440
will see on a regular basis

797
00:29:18,230 --> 00:29:16,080
within minutes the increased resolution

798
00:29:20,710 --> 00:29:18,240
the new imagery as the storm is changing

799
00:29:23,350 --> 00:29:20,720
and moving over time so that that and

800
00:29:25,669 --> 00:29:23,360
his direct broadcast to everybody in the

801
00:29:27,350 --> 00:29:25,679
the united states and to particularly to

802
00:29:28,870 --> 00:29:27,360
the regions that are experiencing severe

803
00:29:30,149 --> 00:29:28,880
storms we'll be looking i'm sure be

804
00:29:33,110 --> 00:29:30,159
waiting for that and watching that in

805
00:29:38,230 --> 00:29:34,549
ken

806
00:29:40,470 --> 00:29:38,240
northeast astronomy reform i get two

807
00:29:42,470 --> 00:29:40,480
quick questions for nasa noah people

808
00:29:44,070 --> 00:29:42,480
uh one is you talked a little bit about

809
00:29:46,389 --> 00:29:44,080
the ground systems and following up on

810
00:29:47,990 --> 00:29:46,399
what you just said

811
00:29:50,549 --> 00:29:48,000
how have you improved those ground

812
00:29:52,830 --> 00:29:50,559
systems and how will that help get this

813
00:29:55,110 --> 00:29:52,840

vastly increased data out to the weather

814
00:29:57,909 --> 00:29:55,120
forecasters um

815
00:29:59,190 --> 00:29:57,919
more quickly and the other question is

816
00:30:01,350 --> 00:29:59,200
talk about the benefits of the

817
00:30:03,590 --> 00:30:01,360
partnership between nasa and noaa as

818
00:30:06,389 --> 00:30:03,600
opposed to just nasa doing this or just

819
00:30:08,710 --> 00:30:06,399
noaa doing this thanks

820
00:30:10,870 --> 00:30:08,720
so the first one the investment of the

821
00:30:12,470 --> 00:30:10,880
ground system was really driven by the

822
00:30:13,750 --> 00:30:12,480
amount of data that's coming down from

823
00:30:15,830 --> 00:30:13,760
this mission

824
00:30:18,149 --> 00:30:15,840
about you know 30 megabits a second is

825
00:30:20,389 --> 00:30:18,159
pouring down and we're creating products

826
00:30:22,549 --> 00:30:20,399
on the fly continuously

827
00:30:24,149 --> 00:30:22,559
and so you can never get behind or

828
00:30:26,070 --> 00:30:24,159
you'll you know the data will just stack

829
00:30:27,430 --> 00:30:26,080
up so we're processing putting products

830
00:30:29,590 --> 00:30:27,440
and getting to the

831
00:30:31,909 --> 00:30:29,600
weather service on that kind of uh cycle

832
00:30:33,750 --> 00:30:31,919
just immediately pass through these data

833
00:30:35,430 --> 00:30:33,760
so very perishable stuff that like the

834
00:30:37,669 --> 00:30:35,440
lightning data is getting to the weather

835
00:30:40,070 --> 00:30:37,679
service forecast within seconds

836
00:30:41,669 --> 00:30:40,080
i had a forecaster we ran simulated data

837
00:30:43,830 --> 00:30:41,679
runs of all this two

838
00:30:44,789 --> 00:30:43,840

many weather forecast offices and the

839
00:30:46,950 --> 00:30:44,799
best way i've heard one of the

840
00:30:49,669 --> 00:30:46,960
forecasters says greg in the past when

841
00:30:51,590 --> 00:30:49,679
you've delivered the goes satellite data

842
00:30:52,710 --> 00:30:51,600
you've been showing me loops of what has

843
00:30:54,470 --> 00:30:52,720
happened

844
00:30:56,870 --> 00:30:54,480
you are now providing me a movie of

845
00:30:59,750 --> 00:30:56,880
what's going on right now so in a sense

846
00:31:01,430 --> 00:30:59,760
that latency is so short that this data

847
00:31:03,590 --> 00:31:01,440
is getting to their hands immediately

848
00:31:05,669 --> 00:31:03,600
and their their excitement about how

849
00:31:08,149 --> 00:31:05,679
they can use it in real time forecasting

850
00:31:09,029 --> 00:31:08,159
is is really increasing so there's a lot

851
00:31:11,269 --> 00:31:09,039
of uh

852
00:31:13,430 --> 00:31:11,279
my friend down at the end here will be

853
00:31:15,909 --> 00:31:13,440
very excited to use these data sets in

854
00:31:17,590 --> 00:31:15,919
his everyday forecasting

855
00:31:19,830 --> 00:31:17,600
so on the nasa nolan i'll start and then

856
00:31:21,350 --> 00:31:19,840
i'll ask sandra to pick it up um when i

857
00:31:23,190 --> 00:31:21,360
look at the nasa noaa partnership i

858
00:31:25,430 --> 00:31:23,200
would uh characterize it in the way that

859
00:31:27,750 --> 00:31:25,440
there's breadth and depth on the breadth

860
00:31:29,269 --> 00:31:27,760
side noaa has the the breadth of the

861
00:31:31,269 --> 00:31:29,279
global mission the

862
00:31:33,269 --> 00:31:31,279
weather mission and we have the access

863
00:31:35,029 --> 00:31:33,279

to and connections to the weather

864
00:31:37,509 --> 00:31:35,039
forecasters the weather forecast offices

865
00:31:39,029 --> 00:31:37,519
the users on a national scale and we

866
00:31:40,630 --> 00:31:39,039
have the modeling and the capabilities

867
00:31:42,230 --> 00:31:40,640
to interpret the data from multiple

868
00:31:44,630 --> 00:31:42,240
sources not just satellites but others

869
00:31:46,950 --> 00:31:44,640
to say ground radars radio signs

870
00:31:49,350 --> 00:31:46,960
balloons etc to integrate that into a

871
00:31:50,710 --> 00:31:49,360
forecasting model and capability and the

872
00:31:53,269 --> 00:31:50,720
ability to foresee what would be the

873
00:31:55,430 --> 00:31:53,279
next big step we would be we would need

874
00:31:57,590 --> 00:31:55,440
to improve that capability

875
00:31:59,750 --> 00:31:57,600
what nasa brings is the depth that nasa

876
00:32:01,350 --> 00:31:59,760
has the technical and the scientific the

877
00:32:03,509 --> 00:32:01,360
technical engineering expertise to

878
00:32:05,990 --> 00:32:03,519
figure out how to turn that envisioned

879
00:32:08,149 --> 00:32:06,000
future observing system into a reality

880
00:32:10,310 --> 00:32:08,159
working with noaa so so it really is a

881
00:32:12,230 --> 00:32:10,320
good mesh of we have the the user

882
00:32:15,110 --> 00:32:12,240
requirements we have the mission

883
00:32:17,190 --> 00:32:15,120
ownership nasa has the capability with

884
00:32:18,870 --> 00:32:17,200
and they have of to take that and to

885
00:32:20,310 --> 00:32:18,880
make it a reality working with us on a

886
00:32:21,750 --> 00:32:20,320
day-to-day basis and turn it over to

887
00:32:24,149 --> 00:32:21,760
sender if you want to sure yeah i'll

888
00:32:26,310 --> 00:32:24,159

just add um i i think the partnership is

889
00:32:28,470 --> 00:32:26,320
multi-faceted so in addition to what

890
00:32:30,789 --> 00:32:28,480
steve said i mean there's the whole

891
00:32:31,990 --> 00:32:30,799
concept of research to operation so you

892
00:32:34,310 --> 00:32:32,000
know nasa

893
00:32:36,630 --> 00:32:34,320
is focused on advancing research

894
00:32:39,990 --> 00:32:36,640
advancing our technologies understanding

895
00:32:41,669 --> 00:32:40,000
you know the intricacies of how

896
00:32:43,269 --> 00:32:41,679
in this case how weather operates on

897
00:32:45,190 --> 00:32:43,279
earth you know the interactions between

898
00:32:47,750 --> 00:32:45,200
the ocean the earth the atmosphere et

899
00:32:50,470 --> 00:32:47,760
cetera the the sun

900
00:32:51,750 --> 00:32:50,480
and so we develop

901
00:32:54,230 --> 00:32:51,760
our understanding or advance our

902
00:32:57,430 --> 00:32:54,240
understanding of these those critical

903
00:32:59,909 --> 00:32:57,440
interactions and partner with noaa

904
00:33:02,470 --> 00:32:59,919
to actually utilize it in an operational

905
00:33:04,230 --> 00:33:02,480
mode to support the weather forecasting

906
00:33:05,350 --> 00:33:04,240
and i would say that this partnership

907
00:33:07,509 --> 00:33:05,360
the science

908
00:33:09,190 --> 00:33:07,519
the scientists on in both organizations

909
00:33:11,029 --> 00:33:09,200
and really around the world use data

910
00:33:12,950 --> 00:33:11,039
from both the research satellites at

911
00:33:15,669 --> 00:33:12,960
nasa builds as well what as well as the

912
00:33:17,669 --> 00:33:15,679
weather satellites that noaa builds um

913
00:33:19,110 --> 00:33:17,679

and there's even a partnership in terms

914
00:33:21,430 --> 00:33:19,120
of uh

915
00:33:24,149 --> 00:33:21,440
at time sharing platforms so for example

916
00:33:27,830 --> 00:33:24,159
there's a you know we're planning to uh

917
00:33:30,149 --> 00:33:27,840
fly rbi on the jpss mission so it's a

918
00:33:32,310 --> 00:33:30,159
case where you know both in the past and

919
00:33:33,830 --> 00:33:32,320
in the future sometimes we

920
00:33:35,029 --> 00:33:33,840
share instrumentation on common

921
00:33:39,029 --> 00:33:35,039
platforms depending on whether it's a

922
00:33:40,950 --> 00:33:39,039
nasa platform or a noaa platform

923
00:33:42,389 --> 00:33:40,960
okay we'll take a question over here

924
00:33:43,830 --> 00:33:42,399
thank you sorry rosenstein with talking

925
00:33:45,990 --> 00:33:43,840
space this is for anybody involved with

926
00:33:47,509 --> 00:33:46,000
the launch processing uh i know

927
00:33:48,950 --> 00:33:47,519
obviously matthew caused a bunch of the

928
00:33:50,470 --> 00:33:48,960
delays but so did a problem with i

929
00:33:51,830 --> 00:33:50,480
believe it was the common core booster

930
00:33:53,750 --> 00:33:51,840
sorry if you go into a little bit more

931
00:33:55,350 --> 00:33:53,760
detail on what you guys actually did or

932
00:33:56,870 --> 00:33:55,360
what what problem was and what you guys

933
00:33:58,789 --> 00:33:56,880
did with this vehicle and if it was the

934
00:34:00,310 --> 00:33:58,799
same thing that you did the 401 that

935
00:34:01,669 --> 00:34:00,320
recently launched out of vandenberg

936
00:34:05,029 --> 00:34:01,679
thanks

937
00:34:07,029 --> 00:34:05,039
so i'll go ahead and take that so we did

938
00:34:10,069 --> 00:34:07,039

we have worked a couple of different uh

939
00:34:11,829 --> 00:34:10,079
small issues uh throughout the launch

940
00:34:13,750 --> 00:34:11,839
campaign that's not uncommon we have a

941
00:34:16,790 --> 00:34:13,760
very aggressive

942
00:34:20,230 --> 00:34:16,800
approach to prepare the vehicle to make

943
00:34:21,990 --> 00:34:20,240
sure we get to that 113th consecutive

944
00:34:23,349 --> 00:34:22,000
successful launch so

945
00:34:25,750 --> 00:34:23,359
we had a couple

946
00:34:27,589 --> 00:34:25,760
of issues with a with a valve we had

947
00:34:29,750 --> 00:34:27,599
we've worked an issue with a

948
00:34:31,909 --> 00:34:29,760
battery on the centaur

949
00:34:33,270 --> 00:34:31,919
and just a couple of minor things that

950
00:34:35,510 --> 00:34:33,280
we've done to

951
00:34:38,470 --> 00:34:35,520
make sure that we've got the

952
00:34:39,990 --> 00:34:38,480
best chance of being successful for the

953
00:34:42,710 --> 00:34:40,000
the goes mission

954
00:34:44,629 --> 00:34:42,720
i i wouldn't say that it's similar to

955
00:34:47,510 --> 00:34:44,639
what we did on

956
00:34:48,790 --> 00:34:47,520
osiris-rex every everyone seems to have

957
00:34:50,629 --> 00:34:48,800
its own

958
00:34:53,589 --> 00:34:50,639
separate little things that we we have

959
00:34:55,750 --> 00:34:53,599
to deal with but uh we've definitely

960
00:34:57,430 --> 00:34:55,760
uh taken a very conservative approach

961
00:34:59,270 --> 00:34:57,440
we've worked it hard and we're very

962
00:35:00,630 --> 00:34:59,280
confident that uh

963
00:35:05,750 --> 00:35:00,640

the launch on saturday will be

964
00:35:11,349 --> 00:35:09,030
so we did have a couple of issues that

965
00:35:13,750 --> 00:35:11,359
were similar to the worldview 4 launch

966
00:35:15,910 --> 00:35:13,760
which we had on friday

967
00:35:18,550 --> 00:35:15,920
of last week

968
00:35:19,910 --> 00:35:18,560
and so we worked those simultaneously

969
00:35:21,750 --> 00:35:19,920
at one point we

970
00:35:24,150 --> 00:35:21,760
had a charter airplane in the air

971
00:35:26,230 --> 00:35:24,160
picking up new parts for both vehicles

972
00:35:30,550 --> 00:35:26,240
and and going coast to coast to make

973
00:35:32,310 --> 00:35:30,560
sure that both vehicles were ready to go

974
00:35:35,109 --> 00:35:32,320
okay john yambrick has been monitoring

975
00:35:36,630 --> 00:35:35,119
the hashtag askgoes and has a couple of

976
00:35:38,630 --> 00:35:36,640
questions yeah there's quite a few good

977
00:35:40,069 --> 00:35:38,640
questions here actually uh one is uh

978
00:35:41,589 --> 00:35:40,079
will there be any evolution additional

979
00:35:43,190 --> 00:35:41,599
evolutionary changes to each ghost

980
00:35:47,430 --> 00:35:43,200
satellite in the series or all basic

981
00:35:51,510 --> 00:35:49,349
yeah the we are building four identical

982
00:35:53,910 --> 00:35:51,520
spacecraft that's one of the ways you

983
00:35:55,990 --> 00:35:53,920
keep the cost under control as you build

984
00:35:58,550 --> 00:35:56,000
that so we we will provide the same

985
00:36:01,349 --> 00:35:58,560
capability over the next 20 years

986
00:36:02,870 --> 00:36:01,359
series was 2036 you said the lifespan of

987
00:36:04,550 --> 00:36:02,880
series but what specifically this

988
00:36:07,030 --> 00:36:04,560

satellite itself what is the expectation

989
00:36:08,950 --> 00:36:07,040
lifespan we expect each satellite to

990
00:36:10,790 --> 00:36:08,960
last about 10 years of operations so

991
00:36:13,670 --> 00:36:10,800
they're they have enough fuel to last

992
00:36:15,910 --> 00:36:13,680
about 18 but the design is for about 10.

993
00:36:18,310 --> 00:36:15,920
so for four of them that's two then you

994
00:36:20,390 --> 00:36:18,320
use two simultaneously and east and west

995
00:36:22,069 --> 00:36:20,400
so two in east and two in the west is

996
00:36:23,910 --> 00:36:22,079
what adds up to 20 years

997
00:36:25,510 --> 00:36:23,920
thanks and last question uh for greg

998
00:36:26,630 --> 00:36:25,520
when do you expect the first images to

999
00:36:29,510 --> 00:36:26,640
come down

1000
00:36:31,589 --> 00:36:29,520
we expect the first abi images for about

1001
00:36:33,589 --> 00:36:31,599
two months in and we'll be having a

1002
00:36:35,670 --> 00:36:33,599
great press release on the it'll be like

1003
00:36:37,670 --> 00:36:35,680
your baby picture right yeah

1004
00:36:39,349 --> 00:36:37,680
first image of the abi so we'll let you

1005
00:36:40,710 --> 00:36:39,359
all know when that's coming

1006
00:36:43,109 --> 00:36:40,720
subsequent instruments will be a little

1007
00:36:45,670 --> 00:36:43,119
bit longer about three months in we'll

1008
00:36:47,829 --> 00:36:45,680
see the raw data start to flow so the

1009
00:36:50,550 --> 00:36:47,839
weather forecast will start to see the

1010
00:36:52,630 --> 00:36:50,560
first flow of data about halfway through

1011
00:36:53,829 --> 00:36:52,640
our test period so

1012
00:36:56,069 --> 00:36:53,839
i'd like to follow up on that first

1013
00:36:57,750 --> 00:36:56,079

question um about the the stability of

1014
00:36:59,349 --> 00:36:57,760
the goes-r platform as greg mentioned is

1015
00:37:01,589 --> 00:36:59,359
we've built forward once and that was

1016
00:37:03,589 --> 00:37:01,599
for very consciously to make sure we

1017
00:37:04,870 --> 00:37:03,599
retired the risk of building complex new

1018
00:37:06,950 --> 00:37:04,880
instruments and we built a bunch of them

1019
00:37:10,230 --> 00:37:06,960
so that we have a consistent reliable

1020
00:37:12,230 --> 00:37:10,240
data set but to uh to take off of what

1021
00:37:14,150 --> 00:37:12,240
sandra smalley had said a moment ago too

1022
00:37:16,069 --> 00:37:14,160
these are a piece of a larger system

1023
00:37:17,670 --> 00:37:16,079
nasa flies other measurements the other

1024
00:37:19,829 --> 00:37:17,680
nations fly other measurements in orbit

1025
00:37:22,150 --> 00:37:19,839
geostationary and low earth orbit so the

1026
00:37:24,550 --> 00:37:22,160
goes-r platform is a basic perform a

1027
00:37:26,230 --> 00:37:24,560
very high performing baseline but we

1028
00:37:27,990 --> 00:37:26,240
augment that with observations that we

1029
00:37:29,910 --> 00:37:28,000
introduce over over the period of that

1030
00:37:31,829 --> 00:37:29,920
life cycle so even though the goes-r

1031
00:37:33,430 --> 00:37:31,839
will be a flat performance over the next

1032
00:37:34,710 --> 00:37:33,440
20 you know consistent performance of

1033
00:37:36,870 --> 00:37:34,720
the next 20 years we will be

1034
00:37:38,310 --> 00:37:36,880
consistently adding and mixing different

1035
00:37:39,510 --> 00:37:38,320
measurements to

1036
00:37:42,870 --> 00:37:39,520
to increase the capability of the

1037
00:37:45,750 --> 00:37:42,880
overall observing system as we do that

1038
00:37:47,510 --> 00:37:45,760

okay we have a question here behind john

1039
00:37:49,670 --> 00:37:47,520
hi michael phillips with weather boy

1040
00:37:51,910 --> 00:37:49,680
weather my question is for the noaa

1041
00:37:53,990 --> 00:37:51,920
gentleman in the extremely unlikely

1042
00:37:56,390 --> 00:37:54,000
event there's an anomaly either with the

1043
00:37:57,670 --> 00:37:56,400
launch of the deployment how vulnerable

1044
00:37:58,550 --> 00:37:57,680
is the u.s

1045
00:38:00,710 --> 00:37:58,560
um

1046
00:38:02,150 --> 00:38:00,720
to coverage from the existing uh go

1047
00:38:04,550 --> 00:38:02,160
satellite

1048
00:38:07,190 --> 00:38:04,560
if there is a failure with this one can

1049
00:38:09,510 --> 00:38:07,200
the third generation um

1050
00:38:11,589 --> 00:38:09,520
just be sustained while we wait for the

1051
00:38:12,870 --> 00:38:11,599
next ghost to be launched i guess in

1052
00:38:13,910 --> 00:38:12,880
2018

1053
00:38:14,950 --> 00:38:13,920
are you the gentleman or am i the

1054
00:38:17,990 --> 00:38:14,960
gentleman

1055
00:38:20,150 --> 00:38:18,000
nobody's ever called me

1056
00:38:21,910 --> 00:38:20,160
um i'll take that one um

1057
00:38:23,670 --> 00:38:21,920
as greg mentioned a moment ago we have a

1058
00:38:25,190 --> 00:38:23,680
constellation in orbit now it's three

1059
00:38:27,430 --> 00:38:25,200
satellites in orbit we have one called

1060
00:38:29,109 --> 00:38:27,440
ghost east and goes west one over each

1061
00:38:31,910 --> 00:38:29,119
side of the continental u.s together

1062
00:38:33,990 --> 00:38:31,920
they provide observations 24 7 and we

1063
00:38:35,589 --> 00:38:34,000

have a third is our ghost spare which

1064
00:38:37,270 --> 00:38:35,599
sits in the middle so we can pivot to

1065
00:38:39,190 --> 00:38:37,280
either direction if we have a problem

1066
00:38:40,790 --> 00:38:39,200
those three satellites are of different

1067
00:38:42,310 --> 00:38:40,800
ages there are fully meeting all

1068
00:38:43,910 --> 00:38:42,320
observing requirements some of them are

1069
00:38:45,190 --> 00:38:43,920
showing signs of age

1070
00:38:46,790 --> 00:38:45,200
but all of them are fully functioning

1071
00:38:48,630 --> 00:38:46,800
our observing system is fully capable

1072
00:38:50,630 --> 00:38:48,640
today and we expect to be capable a

1073
00:38:52,390 --> 00:38:50,640
month from now if in the event of an

1074
00:38:54,069 --> 00:38:52,400
anomaly which we don't expect based on

1075
00:38:55,670 --> 00:38:54,079
what scott mentioned the capability and

1076
00:38:56,870 --> 00:38:55,680
the focus we did on making sure we have

1077
00:38:58,550 --> 00:38:56,880
a good system

1078
00:39:00,390 --> 00:38:58,560
we those operations those satellites

1079
00:39:02,230 --> 00:39:00,400
will continue to operate

1080
00:39:03,910 --> 00:39:02,240
and we expect to provide the continued

1081
00:39:06,310 --> 00:39:03,920
service that we have

1082
00:39:08,390 --> 00:39:06,320
goes-s is the fall the second of this

1083
00:39:10,950 --> 00:39:08,400
four satellite series is now targeting a

1084
00:39:12,870 --> 00:39:10,960
spring of 2018 launch and actually i

1085
00:39:14,230 --> 00:39:12,880
just heard from tim gasparini from

1086
00:39:16,390 --> 00:39:14,240
lockheed just went through its

1087
00:39:18,150 --> 00:39:16,400
environmental acoustics test yesterday

1088
00:39:19,430 --> 00:39:18,160

so it is an assembled spacecraft and

1089
00:39:21,510 --> 00:39:19,440
system going through its environmental

1090
00:39:23,430 --> 00:39:21,520
testing now and is well on the road to

1091
00:39:25,589 --> 00:39:23,440
be launched in about 18 months or a

1092
00:39:28,150 --> 00:39:25,599
little less about 16 months i guess so

1093
00:39:30,150 --> 00:39:28,160
we have a system in orbit right now with

1094
00:39:32,069 --> 00:39:30,160
three satellites we expect those to

1095
00:39:34,550 --> 00:39:32,079
continue to provide capable service for

1096
00:39:37,270 --> 00:39:34,560
the foreseeable future and in the event

1097
00:39:38,870 --> 00:39:37,280
of a of a really really bad day we have

1098
00:39:40,710 --> 00:39:38,880
another satellite goes-s coming along

1099
00:39:42,390 --> 00:39:40,720
right behind us and we will expect to

1100
00:39:44,550 --> 00:39:42,400
continue to perform as expected from the

1101
00:39:46,470 --> 00:39:44,560
for the nation

1102
00:39:48,630 --> 00:39:46,480
question in the back of the room hi dave

1103
00:39:50,630 --> 00:39:48,640
jones with storm center communications

1104
00:39:52,950 --> 00:39:50,640
this is questions for greg greg i know

1105
00:39:55,430 --> 00:39:52,960
that goes our satellite doesn't happen

1106
00:39:57,430 --> 00:39:55,440
overnight and it took a lot of time

1107
00:39:58,630 --> 00:39:57,440
and effort to put together the the whole

1108
00:40:00,230 --> 00:39:58,640
program i was just wondering if you

1109
00:40:01,349 --> 00:40:00,240
could give us a quick little

1110
00:40:03,270 --> 00:40:01,359
um

1111
00:40:06,069 --> 00:40:03,280
description of when

1112
00:40:07,750 --> 00:40:06,079
the the vision for goes-r started and

1113
00:40:09,190 --> 00:40:07,760

how you got the

1114
00:40:11,910 --> 00:40:09,200
weather service and these other

1115
00:40:13,910 --> 00:40:11,920
organizations to get ready to accept

1116
00:40:15,190 --> 00:40:13,920
the goes-r data once it gets up and

1117
00:40:18,069 --> 00:40:15,200
operating

1118
00:40:22,550 --> 00:40:20,550
the formulation you know the ideas come

1119
00:40:23,430 --> 00:40:22,560
out in the formulation stages where you

1120
00:40:25,109 --> 00:40:23,440
have

1121
00:40:27,349 --> 00:40:25,119
contractors and the government start

1122
00:40:29,430 --> 00:40:27,359
thinking well what do we have today what

1123
00:40:31,109 --> 00:40:29,440
the scientists are saying what could be

1124
00:40:33,670 --> 00:40:31,119
those kind of ideas were floating around

1125
00:40:35,190 --> 00:40:33,680
actually in the late 90s then in the

1126
00:40:36,790 --> 00:40:35,200
early 2000s

1127
00:40:37,910 --> 00:40:36,800
you start formulating well i could do

1128
00:40:39,670 --> 00:40:37,920
this we could do it with multiple

1129
00:40:41,750 --> 00:40:39,680
different satellites you know you start

1130
00:40:43,430 --> 00:40:41,760
coming up with ideas our first

1131
00:40:46,630 --> 00:40:43,440
development production contract was let

1132
00:40:47,750 --> 00:40:46,640
in 2004 for the imager so that tells you

1133
00:40:49,510 --> 00:40:47,760
once you know that was the first

1134
00:40:51,589 --> 00:40:49,520
hardware contract so

1135
00:40:52,790 --> 00:40:51,599
subsequent to that by 2008 we had the

1136
00:40:54,790 --> 00:40:52,800
rest of the

1137
00:40:56,630 --> 00:40:54,800
systems under contract

1138
00:40:59,190 --> 00:40:56,640

but that's the for us engineers that's

1139
00:41:01,430 --> 00:40:59,200
the uh the easy part

1140
00:41:03,270 --> 00:41:01,440
the the working with the user community

1141
00:41:05,589 --> 00:41:03,280
is the very uh

1142
00:41:07,190 --> 00:41:05,599
is equally challenging because

1143
00:41:09,510 --> 00:41:07,200
they're very much focused on today and

1144
00:41:11,990 --> 00:41:09,520
forecasting that and so what we had to

1145
00:41:13,990 --> 00:41:12,000
do is we put a number of scientists out

1146
00:41:16,230 --> 00:41:14,000
into the weather service to start

1147
00:41:18,150 --> 00:41:16,240
engaging them on what the future looked

1148
00:41:19,990 --> 00:41:18,160
like to start engaging them on what

1149
00:41:21,910 --> 00:41:20,000
these data sets to start looking like

1150
00:41:24,230 --> 00:41:21,920
start engaging them on what they could

1151
00:41:26,150 --> 00:41:24,240
possibly do differently and better

1152
00:41:28,630 --> 00:41:26,160
and so we did that started that about

1153
00:41:31,030 --> 00:41:28,640
six years ago we started flowing data

1154
00:41:33,430 --> 00:41:31,040
sets we actually simulated the goes-r

1155
00:41:35,750 --> 00:41:33,440
data by running models

1156
00:41:37,589 --> 00:41:35,760
of the atmosphere sampling like oh

1157
00:41:39,190 --> 00:41:37,599
sample take those samples running it

1158
00:41:40,550 --> 00:41:39,200
through our processing system to create

1159
00:41:42,870 --> 00:41:40,560
products just like

1160
00:41:45,190 --> 00:41:42,880
and then streaming those products out

1161
00:41:47,109 --> 00:41:45,200
into the weather resources to start

1162
00:41:49,670 --> 00:41:47,119
getting feedback from them and to start

1163
00:41:52,309 --> 00:41:49,680

to get them used to the tempo and what

1164
00:41:53,670 --> 00:41:52,319
what you know high tempo resolution

1165
00:41:55,829 --> 00:41:53,680
imagery would do for them or what

1166
00:41:57,990 --> 00:41:55,839
lightning data do for them and over

1167
00:42:00,870 --> 00:41:58,000
about three years the excitement started

1168
00:42:02,470 --> 00:42:00,880
to build and so we have gotten really

1169
00:42:04,630 --> 00:42:02,480
good engagement across the weather

1170
00:42:06,470 --> 00:42:04,640
service over those years where the

1171
00:42:08,630 --> 00:42:06,480
enthusiasm is bigger than anything i've

1172
00:42:09,589 --> 00:42:08,640
seen in terms of what's coming down the

1173
00:42:11,670 --> 00:42:09,599
stream

1174
00:42:13,510 --> 00:42:11,680
uh when we first started doing this they

1175
00:42:16,150 --> 00:42:13,520
gave me sort of a i look saying

1176
00:42:17,589 --> 00:42:16,160
well yeah everybody promises stuff greg

1177
00:42:18,630 --> 00:42:17,599
and after about three years of working

1178
00:42:21,190 --> 00:42:18,640
with them

1179
00:42:22,870 --> 00:42:21,200
the feedback we started get was

1180
00:42:26,230 --> 00:42:22,880
this is wonderful i wanted my office

1181
00:42:27,829 --> 00:42:26,240
yesterday so it's an example of how much

1182
00:42:29,589 --> 00:42:27,839
work it takes to get the weather

1183
00:42:31,190 --> 00:42:29,599
community used to new data sets and

1184
00:42:32,710 --> 00:42:31,200
familiar with that but we the fact that

1185
00:42:35,030 --> 00:42:32,720
we put all this work in for all these

1186
00:42:36,550 --> 00:42:35,040
years means once we get the data turned

1187
00:42:38,390 --> 00:42:36,560
on from the satellite we're going to

1188
00:42:39,990 --> 00:42:38,400

have a very engaged user community ready

1189
00:42:41,910 --> 00:42:40,000
to use it from day one so we're very

1190
00:42:44,870 --> 00:42:41,920
excited about the success in working

1191
00:42:47,670 --> 00:42:44,880
with users on that

1192
00:42:49,990 --> 00:42:47,680
hi matt safino kgw tv and i guess this

1193
00:42:53,270 --> 00:42:50,000
would be for greg or steve um what

1194
00:42:56,150 --> 00:42:53,280
factors in pressure go into determining

1195
00:42:56,950 --> 00:42:56,160
if goes-r will become goes west or goes

1196
00:42:58,230 --> 00:42:56,960
east

1197
00:43:00,150 --> 00:42:58,240
and when do you think that decision

1198
00:43:02,069 --> 00:43:00,160
would be made

1199
00:43:03,829 --> 00:43:02,079
okay good question because

1200
00:43:06,309 --> 00:43:03,839
this is a big change from

1201
00:43:08,069 --> 00:43:06,319
existing capabilities so uh we will look

1202
00:43:09,430 --> 00:43:08,079
at several factors one is the health of

1203
00:43:11,030 --> 00:43:09,440
the constellation i mentioned earlier we

1204
00:43:12,710 --> 00:43:11,040
have three satellites in orbit they have

1205
00:43:14,950 --> 00:43:12,720
different ages and different

1206
00:43:16,950 --> 00:43:14,960
performances on orbit so we'll make a

1207
00:43:19,270 --> 00:43:16,960
decision partially based on which

1208
00:43:21,670 --> 00:43:19,280
constellation element is the

1209
00:43:23,990 --> 00:43:21,680
most in need of replacement second is

1210
00:43:26,069 --> 00:43:24,000
the checkout of goes-r itself

1211
00:43:27,910 --> 00:43:26,079
we've mentioned what we expected to be

1212
00:43:29,670 --> 00:43:27,920
able to do we have examples from other

1213
00:43:31,510 --> 00:43:29,680

uh from the japanese are flying a

1214
00:43:33,910 --> 00:43:31,520
similar instrument so we we have an idea

1215
00:43:35,589 --> 00:43:33,920
but we'll take uh the first six months

1216
00:43:37,030 --> 00:43:35,599
to go through and and really look at the

1217
00:43:38,069 --> 00:43:37,040
performance and how well it integrates

1218
00:43:40,470 --> 00:43:38,079
with our weather models with our

1219
00:43:42,230 --> 00:43:40,480
forecasters to get a feedback on on how

1220
00:43:44,630 --> 00:43:42,240
we're utilizing how well we're utilizing

1221
00:43:46,309 --> 00:43:44,640
it um and at that point about l plus six

1222
00:43:48,470 --> 00:43:46,319
months launch plus six months we'll make

1223
00:43:51,190 --> 00:43:48,480
a determination whether it should go to

1224
00:43:53,190 --> 00:43:51,200
east or west with the location time to

1225
00:43:55,910 --> 00:43:53,200
be about l plus launch plus one year so

1226
00:43:57,829 --> 00:43:55,920
about this time next year um goes-r will

1227
00:43:59,670 --> 00:43:57,839
become goes sixty it'll become ghost 16

1228
00:44:02,630 --> 00:43:59,680
sooner it'll become ghost easter goes

1229
00:44:04,630 --> 00:44:02,640
west um as we go through that and and as

1230
00:44:06,550 --> 00:44:04,640
as i fully expect there'll be a lot of

1231
00:44:07,910 --> 00:44:06,560
interest in getting it to one or to get

1232
00:44:09,190 --> 00:44:07,920
into both

1233
00:44:11,349 --> 00:44:09,200
which will be a challenge of course to

1234
00:44:13,349 --> 00:44:11,359
go to both uh so

1235
00:44:14,710 --> 00:44:13,359
this will be not something that happens

1236
00:44:16,150 --> 00:44:14,720
behind closed doors there'll be a lot of

1237
00:44:18,309 --> 00:44:16,160
interest a lot of public discussion i'm

1238
00:44:19,829 --> 00:44:18,319

sure from all the user communities but

1239
00:44:21,510 --> 00:44:19,839
about a year from now it'll be located

1240
00:44:24,550 --> 00:44:21,520
about six from now is or six months from

1241
00:44:27,030 --> 00:44:24,560
now is our target to to say where it's

1242
00:44:28,390 --> 00:44:27,040
going to be headed

1243
00:44:39,910 --> 00:44:28,400
okay we have a

1244
00:44:43,990 --> 00:44:42,150
hi i'm mike augustanak with cbs in

1245
00:44:45,990 --> 00:44:44,000
minneapolis kind of piggybacking off of

1246
00:44:47,750 --> 00:44:46,000
dave's question we know when this new

1247
00:44:50,069 --> 00:44:47,760
technology was starting to be developed

1248
00:44:51,270 --> 00:44:50,079
but remind us how old is the technology

1249
00:44:52,950 --> 00:44:51,280
that we're dealing with on the current

1250
00:44:55,270 --> 00:44:52,960
goes platform when was that sort of

1251
00:44:57,670 --> 00:44:55,280
being worked on

1252
00:44:59,670 --> 00:44:57,680
the current goes

1253
00:45:02,550 --> 00:44:59,680
the instruments on the current go's were

1254
00:45:05,430 --> 00:45:02,560
actually first go down on goes-i so that

1255
00:45:09,109 --> 00:45:05,440
was mid-80s so that design was really

1256
00:45:11,270 --> 00:45:09,119
you know late 70s early 80s

1257
00:45:13,270 --> 00:45:11,280
and so this and actually what we just

1258
00:45:15,829 --> 00:45:13,280
did with those instruments we

1259
00:45:17,670 --> 00:45:15,839
before goes i were spin stabilized

1260
00:45:19,109 --> 00:45:17,680
spacecraft so he had a little bit

1261
00:45:21,109 --> 00:45:19,119
different technology for the instruments

1262
00:45:23,510 --> 00:45:21,119
but you really talked about the same

1263
00:45:24,790 --> 00:45:23,520

from a channel perspective

1264
00:45:26,150 --> 00:45:24,800
and just made it

1265
00:45:27,750 --> 00:45:26,160
off of a three-axis stabilized

1266
00:45:30,470 --> 00:45:27,760
spacecraft so it wasn't really dramatic

1267
00:45:31,829 --> 00:45:30,480
from a user a big jump at that point so

1268
00:45:34,710 --> 00:45:31,839
i really look back and say you know

1269
00:45:36,710 --> 00:45:34,720
since the ins start of the goes program

1270
00:45:38,950 --> 00:45:36,720
there's been a couple of channels added

1271
00:45:41,109 --> 00:45:38,960
for example to the imager but this is a

1272
00:45:42,630 --> 00:45:41,119
quantum leap that we haven't seen since

1273
00:45:45,510 --> 00:45:42,640
the introduction of the geostationary

1274
00:45:47,510 --> 00:45:45,520
program in the 70s

1275
00:45:49,109 --> 00:45:47,520
okay we're going to uh take a question

1276
00:45:50,550 --> 00:45:49,119
from the phone bridge then we'll come

1277
00:45:52,230 --> 00:45:50,560
back in the room with a question from

1278
00:45:54,390 --> 00:45:52,240
rick and then we'll go over across the

1279
00:45:56,550 --> 00:45:54,400
room here i believe that we have mark

1280
00:45:58,950 --> 00:45:56,560
gotch on the phone mark

1281
00:46:01,750 --> 00:45:58,960
yes good afternoon thank you for your

1282
00:46:05,190 --> 00:46:01,760
informative briefing

1283
00:46:08,790 --> 00:46:05,200
the thing of it is we have learned due

1284
00:46:11,750 --> 00:46:08,800
to nasa's dedicated research

1285
00:46:13,910 --> 00:46:11,760
that our par our planet's population

1286
00:46:15,349 --> 00:46:13,920
will be more vulnerable to extreme

1287
00:46:18,550 --> 00:46:15,359
weather events

1288
00:46:21,030 --> 00:46:18,560

tornadoes hurricanes etc in our future

1289
00:46:22,950 --> 00:46:21,040
we thank you for your dedication to this

1290
00:46:25,430 --> 00:46:22,960
mission and what it will do to the

1291
00:46:28,069 --> 00:46:25,440
future of forecasting

1292
00:46:30,069 --> 00:46:28,079
goes-r is ready to go we look forward to

1293
00:46:31,510 --> 00:46:30,079
your mission success

1294
00:46:34,390 --> 00:46:31,520
can you tell me

1295
00:46:37,750 --> 00:46:34,400
based on the future going forward you

1296
00:46:38,710 --> 00:46:37,760
launching four goes-r satellites in the

1297
00:46:43,109 --> 00:46:38,720
future

1298
00:46:45,990 --> 00:46:43,119
what will determine the spacing of those

1299
00:46:46,710 --> 00:46:46,000
goes-r satellites being launched

1300
00:46:48,150 --> 00:46:46,720
and

1301
00:46:50,230 --> 00:46:48,160
will there be

1302
00:46:52,069 --> 00:46:50,240
advancements i would expect in

1303
00:46:54,069 --> 00:46:52,079
technologies going forward you had

1304
00:46:56,630 --> 00:46:54,079
mentioned they were built the same

1305
00:46:58,150 --> 00:46:56,640
currently will there be changes to them

1306
00:47:01,510 --> 00:46:58,160
at the times they are going to be

1307
00:47:04,230 --> 00:47:02,950
actually the

1308
00:47:06,630 --> 00:47:04,240
uh

1309
00:47:09,349 --> 00:47:06,640
we had steve mentioned that goes-s is

1310
00:47:12,069 --> 00:47:09,359
already built and in testing

1311
00:47:14,950 --> 00:47:12,079
the instruments are basically built we

1312
00:47:17,030 --> 00:47:14,960
have four of our imagers completed and

1313
00:47:19,349 --> 00:47:17,040

harris has finished all four of them the

1314
00:47:22,549 --> 00:47:19,359
four x's are finished so in a sense the

1315
00:47:24,630 --> 00:47:22,559
capability is is all being built in one

1316
00:47:25,990 --> 00:47:24,640
fell swoop and again to re-emphasize

1317
00:47:28,150 --> 00:47:26,000
what steve said

1318
00:47:31,190 --> 00:47:28,160
it's this is just one piece of the

1319
00:47:33,430 --> 00:47:31,200
overall operational uh observational

1320
00:47:35,990 --> 00:47:33,440
constellation so other improvements can

1321
00:47:38,150 --> 00:47:36,000
be done in other platforms and other

1322
00:47:40,549 --> 00:47:38,160
capabilities that blend with it to make

1323
00:47:42,950 --> 00:47:40,559
it a complete observing system let me

1324
00:47:45,190 --> 00:47:42,960
let me add a point to that as well um

1325
00:47:47,270 --> 00:47:45,200
greg to what greg just said is all true

1326
00:47:49,990 --> 00:47:47,280
and important but remember the

1327
00:47:51,589 --> 00:47:50,000
contribution of goes-r this 40-year leap

1328
00:47:54,390 --> 00:47:51,599
as mentioned in the previous question in

1329
00:47:56,390 --> 00:47:54,400
terms of technology and capabilities is

1330
00:47:58,549 --> 00:47:56,400
being added to an existing system when

1331
00:48:01,190 --> 00:47:58,559
you introduce that level of significant

1332
00:48:03,270 --> 00:48:01,200
enhancement that quantum leap forward it

1333
00:48:04,950 --> 00:48:03,280
makes everybody else smarter too it

1334
00:48:06,710 --> 00:48:04,960
makes all the other pieces of observing

1335
00:48:08,790 --> 00:48:06,720
system more capable so

1336
00:48:11,109 --> 00:48:08,800
now with goes-r's high resolution high

1337
00:48:13,190 --> 00:48:11,119
repeat rate and number of channels it is

1338
00:48:15,349 --> 00:48:13,200

comparable to our low earth orbiters

1339
00:48:17,349 --> 00:48:15,359
that also provide with less space with

1340
00:48:19,349 --> 00:48:17,359
less temporal frequency a very high

1341
00:48:21,829 --> 00:48:19,359
resolution image of the earth we we

1342
00:48:23,910 --> 00:48:21,839
fully expect that in time as we learn

1343
00:48:25,910 --> 00:48:23,920
goes-r and we learn how to process the

1344
00:48:27,990 --> 00:48:25,920
data of that plus our ground our

1345
00:48:30,470 --> 00:48:28,000
low-earth orbit satellites we will find

1346
00:48:32,549 --> 00:48:30,480
abilities and products and information

1347
00:48:33,990 --> 00:48:32,559
sources from the combination of the

1348
00:48:36,390 --> 00:48:34,000
different elements of the satellite

1349
00:48:37,990 --> 00:48:36,400
which will continue to grow over time so

1350
00:48:40,150 --> 00:48:38,000
even though we know right now what we

1351
00:48:42,150 --> 00:48:40,160
expect goes-r to do we design the

1352
00:48:43,990 --> 00:48:42,160
instruments we know what it's capable of

1353
00:48:45,670 --> 00:48:44,000
we don't yet know what the system is

1354
00:48:47,589 --> 00:48:45,680
capable of when we bring all these

1355
00:48:49,109 --> 00:48:47,599
different elements together so

1356
00:48:50,549 --> 00:48:49,119
as to put it differently we know what

1357
00:48:52,390 --> 00:48:50,559
goes-r does but we don't know what we

1358
00:48:54,230 --> 00:48:52,400
can do with what goes-r does yet and

1359
00:48:55,990 --> 00:48:54,240
that's going to evolve and increase over

1360
00:48:57,589 --> 00:48:56,000
time and it's going to be continually

1361
00:49:00,470 --> 00:48:57,599
increasing as we add other instruments

1362
00:49:02,549 --> 00:49:00,480
into the mix so even though what a piece

1363
00:49:04,230 --> 00:49:02,559

is static the system continuously

1364
00:49:05,750 --> 00:49:04,240
improves as we integrate all the

1365
00:49:07,750 --> 00:49:05,760
different elements together and that's

1366
00:49:09,910 --> 00:49:07,760
going to be a characteristic of this

1367
00:49:10,950 --> 00:49:09,920
system for the for the next generation

1368
00:49:12,950 --> 00:49:10,960
as well

1369
00:49:14,950 --> 00:49:12,960
okay we have time for two possibly three

1370
00:49:16,630 --> 00:49:14,960
more questions rick

1371
00:49:19,109 --> 00:49:16,640
yes this is a question of rick lansby

1372
00:49:21,430 --> 00:49:19,119
with wfit i guess this is a question for

1373
00:49:23,510 --> 00:49:21,440
sandra could you compare the overall

1374
00:49:25,430 --> 00:49:23,520
capabilities of the goes-r with the

1375
00:49:28,150 --> 00:49:25,440
cygnus mission which will be launched

1376
00:49:30,390 --> 00:49:28,160
here next month from the cave

1377
00:49:32,549 --> 00:49:30,400
so i am probably not the best person to

1378
00:49:35,430 --> 00:49:32,559
answer that question but i'm happy to

1379
00:49:37,349 --> 00:49:35,440
get back to you on that one

1380
00:49:38,390 --> 00:49:37,359
okay we have a question in the second

1381
00:49:43,430 --> 00:49:38,400
row

1382
00:49:44,710 --> 00:49:43,440
meteorologist from wnbc um i had the

1383
00:49:46,230 --> 00:49:44,720
opportunity to participate in the

1384
00:49:48,630 --> 00:49:46,240
hazardous weather testbed experimental

1385
00:49:50,309 --> 00:49:48,640
warning program back in 2014 in norman

1386
00:49:51,670 --> 00:49:50,319
uh so i got to fiddle around with some

1387
00:49:53,190 --> 00:49:51,680
of the um

1388
00:49:55,109 --> 00:49:53,200

uh you know

1389
00:49:57,750 --> 00:49:55,119
pseudo instrumentation that we're going

1390
00:49:58,549 --> 00:49:57,760
to be uh getting access to in the near

1391
00:50:00,390 --> 00:49:58,559
future

1392
00:50:01,670 --> 00:50:00,400
um what i'm curious about because

1393
00:50:04,230 --> 00:50:01,680
there's been a lot of talk about how

1394
00:50:06,710 --> 00:50:04,240
this is going to improve now casting um

1395
00:50:09,030 --> 00:50:06,720
what about as people talked about just

1396
00:50:12,150 --> 00:50:09,040
in front of me here um

1397
00:50:14,630 --> 00:50:12,160
what about the hurricanes what about the

1398
00:50:16,790 --> 00:50:14,640
mid-latitude cyclones what about the

1399
00:50:19,589 --> 00:50:16,800
hazardous weather events that involve

1400
00:50:21,510 --> 00:50:19,599
snowfall things that are more

1401
00:50:24,630 --> 00:50:21,520
day-to-day even

1402
00:50:27,589 --> 00:50:24,640
how is goes-r going to

1403
00:50:28,630 --> 00:50:27,599
make our forecast better is this data uh

1404
00:50:30,710 --> 00:50:28,640
going to be better because of the

1405
00:50:33,589 --> 00:50:30,720
resolution or because we have three

1406
00:50:35,910 --> 00:50:33,599
times as many uh channels uh on the

1407
00:50:38,069 --> 00:50:35,920
infrared or is it a combination of those

1408
00:50:39,589 --> 00:50:38,079
is this data all going into the gfs

1409
00:50:42,950 --> 00:50:39,599
model like how is it going to benefit us

1410
00:50:45,510 --> 00:50:42,960
directly as operational forecasters

1411
00:50:48,150 --> 00:50:45,520
yeah the you you will have a chance with

1412
00:50:50,390 --> 00:50:48,160
our scientists in a little bit on their

1413
00:50:52,150 --> 00:50:50,400

press conference so you can ask that one

1414
00:50:54,870 --> 00:50:52,160
again i would say that

1415
00:50:56,790 --> 00:50:54,880
you know we extrapolate from what we use

1416
00:50:58,710 --> 00:50:56,800
goes today which is heavily in the

1417
00:51:00,710 --> 00:50:58,720
warning program

1418
00:51:02,790 --> 00:51:00,720
so we've really worked with the weather

1419
00:51:05,990 --> 00:51:02,800
service on how to do that

1420
00:51:07,910 --> 00:51:06,000
once we get the data streams flowing we

1421
00:51:09,750 --> 00:51:07,920
have done some work with the modeling

1422
00:51:10,870 --> 00:51:09,760
community primarily with the rapid

1423
00:51:13,190 --> 00:51:10,880
update

1424
00:51:16,309 --> 00:51:13,200
models that really can take advantage of

1425
00:51:18,470 --> 00:51:16,319
the temporal refresh capability of goes

1426
00:51:20,950 --> 00:51:18,480
but until we get that data stream really

1427
00:51:22,950 --> 00:51:20,960
flowing and fine-tuning it that we'll

1428
00:51:25,589 --> 00:51:22,960
start to see where those benefits will

1429
00:51:27,589 --> 00:51:25,599
really play out so again where goes as

1430
00:51:29,829 --> 00:51:27,599
big impact today is in the warning

1431
00:51:31,990 --> 00:51:29,839
program we do see

1432
00:51:34,470 --> 00:51:32,000
a lot of impact in the modeling program

1433
00:51:36,870 --> 00:51:34,480
but as you know the modeling and the

1434
00:51:38,790 --> 00:51:36,880
data assimilation is a is quite a

1435
00:51:41,030 --> 00:51:38,800
significant science and while we've

1436
00:51:42,630 --> 00:51:41,040
started that work when the data flows i

1437
00:51:45,270 --> 00:51:42,640
think we'll start seeing some major

1438
00:51:47,270 --> 00:51:45,280

growth and impact with these data sets

1439
00:51:49,670 --> 00:51:47,280
in the models

1440
00:51:51,990 --> 00:51:49,680
thanks greg unfortunately we are out of

1441
00:51:54,150 --> 00:51:52,000
time for this briefing but uh as greg

1442
00:51:56,230 --> 00:51:54,160
mentioned we do have a mission science

1443
00:51:58,710 --> 00:51:56,240
briefing for goes-r up and coming and

1444
00:52:00,870 --> 00:51:58,720
that one will be on nasa television's