# VIA PHONE

**Dan Hartman**

**Deputy Manager**
**ISS Program**

1
00:00:35,590 --> 00:00:33,270
hello everyone and welcome to today's

2
00:00:37,110 --> 00:00:35,600
pre-launch status briefing for the orb 2

3
00:00:38,150 --> 00:00:37,120
mission to the international space

4
00:00:39,990 --> 00:00:38,160
station

5
00:00:43,110 --> 00:00:40,000
orbital science's cygnus cargo

6
00:00:45,029 --> 00:00:43,120
spacecraft is loaded with about 3 000

7
00:00:47,510 --> 00:00:45,039
pounds of cargo for the space station

8
00:00:50,389 --> 00:00:47,520
and its crew the antares rocket is

9
00:00:52,549 --> 00:00:50,399
poised for liftoff tomorrow at 12 52 pm

10
00:00:55,029 --> 00:00:52,559
eastern time from the mid-atlantic

11
00:00:56,869 --> 00:00:55,039
regional spaceport's launch pad zero a

12
00:00:59,110 --> 00:00:56,879
here at nasa's wallops flight facility

13
00:01:00,950 --> 00:00:59,120

in virginia here to talk about how

14
00:01:03,430 --> 00:01:00,960
preparations for tomorrow's launch are

15
00:01:05,350 --> 00:01:03,440
going are frank culbertson

16
00:01:07,429 --> 00:01:05,360
executive vice president of orbital

17
00:01:08,710 --> 00:01:07,439
sciences

18
00:01:11,990 --> 00:01:08,720
mike pinkston

19
00:01:14,469 --> 00:01:12,000
antares program manager for orbital

20
00:01:16,390 --> 00:01:14,479
sarah doherty test director at wallops

21
00:01:19,030 --> 00:01:16,400
flight facility

22
00:01:21,190 --> 00:01:19,040
and joining us by phone from houston dan

23
00:01:23,270 --> 00:01:21,200
hartman deputy international space

24
00:01:25,350 --> 00:01:23,280
station program manager

25
00:01:26,710 --> 00:01:25,360
for those of you watching us on tv today

26
00:01:29,190 --> 00:01:26,720
or through the web we'll take your

27
00:01:32,950 --> 00:01:29,200
questions through social media

28
00:01:35,590 --> 00:01:32,960
you can use the hashtag asknasa and

29
00:01:37,429 --> 00:01:35,600
we'll get your question asked in here

30
00:01:38,789 --> 00:01:37,439
dan why don't we start with you on the

31
00:01:40,310 --> 00:01:38,799
phone

32
00:01:42,550 --> 00:01:40,320
all right thank you rachel and good

33
00:01:44,870 --> 00:01:42,560
afternoon everybody from houston

34
00:01:46,550 --> 00:01:44,880
let's see teams uh teams at orbital here

35
00:01:48,950 --> 00:01:46,560
in the control center and our crew on

36
00:01:50,710 --> 00:01:48,960
board iss we've been extremely busy in

37
00:01:51,990 --> 00:01:50,720
preparation for the launch of warp two

38
00:01:53,510 --> 00:01:52,000

tomorrow

39
00:01:55,350 --> 00:01:53,520
i just checked in with the with the

40
00:01:58,550 --> 00:01:55,360
flight director in the control room and

41
00:02:00,870 --> 00:01:58,560
the iss is ready to receive cygnus

42
00:02:04,630 --> 00:02:00,880
we've checked out our proximity control

43
00:02:07,510 --> 00:02:04,640
system inspected the node 2 cbm port

44
00:02:09,270 --> 00:02:07,520
installed our centerline birthing camera

45
00:02:11,190 --> 00:02:09,280
and we provided some extra time for the

46
00:02:13,750 --> 00:02:11,200
control for the crew to conduct some

47
00:02:16,150 --> 00:02:13,760
ssrms proficiency proficiency training

48
00:02:18,150 --> 00:02:16,160
for the for the birthing operation all

49
00:02:19,190 --> 00:02:18,160
this was completed successfully last

50
00:02:21,670 --> 00:02:19,200
week

51
00:02:23,670 --> 00:02:21,680
all other systems on board the iss are

52
00:02:26,309 --> 00:02:23,680
ready uh we conducted

53
00:02:28,710 --> 00:02:26,319
a readiness review with at the imt with

54
00:02:31,110 --> 00:02:28,720
with the partnership and uh

55
00:02:32,550 --> 00:02:31,120
gave a go for the mission so so we're

56
00:02:34,070 --> 00:02:32,560
good to go and look forward to it

57
00:02:36,309 --> 00:02:34,080
tomorrow

58
00:02:38,949 --> 00:02:36,319
on friday morning we did move up a

59
00:02:40,229 --> 00:02:38,959
planned reboost that we had for later in

60
00:02:42,229 --> 00:02:40,239
the week

61
00:02:45,589 --> 00:02:42,239
we'd been tracking a repeating debris

62
00:02:48,390 --> 00:02:45,599
item and teams agreed on a new burn plan

63
00:02:50,470 --> 00:02:48,400

so we performed that re-boost debris

64
00:02:52,869 --> 00:02:50,480
avoidance maneuver yesterday

65
00:02:55,670 --> 00:02:52,879
uh it's posing no problems for for

66
00:02:58,869 --> 00:02:55,680
cygnus berthing and also sets us up for

67
00:03:00,869 --> 00:02:58,879
the 56p docking later in the month

68
00:03:02,790 --> 00:03:00,879
as far as the orb 2 mission uh with the

69
00:03:05,509 --> 00:03:02,800
launch tomorrow suwanee will capture

70
00:03:06,790 --> 00:03:05,519
cygnus on on wednesday the 16th and then

71
00:03:08,470 --> 00:03:06,800
we will begin

72
00:03:10,470 --> 00:03:08,480
uh cargo transfer

73
00:03:12,869 --> 00:03:10,480
operations almost immediately

74
00:03:15,030 --> 00:03:12,879
and start our new research campaign with

75
00:03:17,430 --> 00:03:15,040
uh with the resupply of

76
00:03:20,070 --> 00:03:17,440
that cargo to the iss

77
00:03:22,949 --> 00:03:20,080
as rachel mentioned total cargo transfer

78
00:03:25,990 --> 00:03:22,959
is just over 1650 kilogram

79
00:03:28,390 --> 00:03:26,000
uh 650 kilograms of food which we'll

80
00:03:29,830 --> 00:03:28,400
we're glad to be receiving to replenish

81
00:03:32,710 --> 00:03:29,840
our pantries

82
00:03:34,149 --> 00:03:32,720
and we have about 325 kilograms of

83
00:03:35,830 --> 00:03:34,159
additional research that we've taken on

84
00:03:38,309 --> 00:03:35,840
board

85
00:03:40,630 --> 00:03:38,319
we'll also be carrying a pump for the

86
00:03:42,070 --> 00:03:40,640
for the japanese module uh they've they

87
00:03:43,830 --> 00:03:42,080
suffered a failure

88
00:03:46,390 --> 00:03:43,840

a few months back and so we're carrying

89
00:03:48,869 --> 00:03:46,400
a replacement pump up for them that'll

90
00:03:51,589 --> 00:03:48,879
get them back up to complete redundancy

91
00:03:53,670 --> 00:03:51,599
and we also have a new installation kit

92
00:03:55,830 --> 00:03:53,680
for our nitrogen and oxygen delivery

93
00:03:58,390 --> 00:03:55,840
system this is just a kit that we will

94
00:03:59,990 --> 00:03:58,400
use to outfit the air lock

95
00:04:02,229 --> 00:04:00,000
and subsequent missions we'll be

96
00:04:05,830 --> 00:04:02,239
carrying the actual tanks to resupply

97
00:04:07,589 --> 00:04:05,840
our o2 and into high pressure needs

98
00:04:10,070 --> 00:04:07,599
so our plan is to keep cygnus on board

99
00:04:12,470 --> 00:04:10,080
for about a month fill it with the

100
00:04:15,030 --> 00:04:12,480
disposal cargo uh

101
00:04:16,310 --> 00:04:15,040
and then uh prepare uh ourselves for the

102
00:04:19,509 --> 00:04:16,320
for the next mission which will be the

103
00:04:20,949 --> 00:04:19,519
atv uh in in in late july

104
00:04:22,790 --> 00:04:20,959
uh we're really looking forward to this

105
00:04:24,390 --> 00:04:22,800
resupply mission and so

106
00:04:25,990 --> 00:04:24,400
i know the teams that wallace have been

107
00:04:27,510 --> 00:04:26,000
working tirelessly to prepare the

108
00:04:31,110 --> 00:04:27,520
vehicle for launch so i'll turn it over

109
00:04:32,790 --> 00:04:31,120
to frank for the for the orbital status

110
00:04:34,469 --> 00:04:32,800
okay thank you very much dan that was a

111
00:04:36,230 --> 00:04:34,479
good summary of the contents of the

112
00:04:37,350 --> 00:04:36,240
mission and what we're trying to

113
00:04:39,510 --> 00:04:37,360

accomplish

114
00:04:40,950 --> 00:04:39,520
um on behalf of david thompson and the

115
00:04:42,710 --> 00:04:40,960
rest of the orbital team i want to say

116
00:04:44,390 --> 00:04:42,720
we're very proud and pleased to be back

117
00:04:46,469 --> 00:04:44,400
here at wallops again

118
00:04:48,310 --> 00:04:46,479
conducting this operation leading up to

119
00:04:49,749 --> 00:04:48,320
the launch of antares and the rendezvous

120
00:04:50,710 --> 00:04:49,759
of cygnus with the international space

121
00:04:54,070 --> 00:04:50,720
station

122
00:04:55,830 --> 00:04:54,080
to carry over 1650 kilograms of cargo to

123
00:04:57,590 --> 00:04:55,840
the station

124
00:04:59,510 --> 00:04:57,600
we're real proud to be a part of the

125
00:05:01,110 --> 00:04:59,520
team that is keeping the station flying

126
00:05:02,790 --> 00:05:01,120
and providing the crew with the cargo

127
00:05:04,469 --> 00:05:02,800
and the research that they need

128
00:05:06,070 --> 00:05:04,479
the research really is one of the most

129
00:05:07,990 --> 00:05:06,080
important aspects of

130
00:05:09,430 --> 00:05:08,000
what we are resupplying them with

131
00:05:12,070 --> 00:05:09,440
because that's what the station is there

132
00:05:13,189 --> 00:05:12,080
for is to conduct research and we uh we

133
00:05:14,950 --> 00:05:13,199
like being a part of that we like

134
00:05:16,870 --> 00:05:14,960
knowing what we're carrying and uh and

135
00:05:18,550 --> 00:05:16,880
we like participating in some of the

136
00:05:20,710 --> 00:05:18,560
activities that occur afterwards and

137
00:05:22,070 --> 00:05:20,720
explaining to students and teachers and

138
00:05:23,590 --> 00:05:22,080

other interested people of what we're

139
00:05:25,510 --> 00:05:23,600
doing up there and why it's important

140
00:05:27,270 --> 00:05:25,520
that we carry this cargo

141
00:05:30,230 --> 00:05:27,280
it's been a little bit of a challenge to

142
00:05:31,510 --> 00:05:30,240
get to this uh this point l minus one

143
00:05:33,430 --> 00:05:31,520
there have been a number of issues we

144
00:05:36,070 --> 00:05:33,440
started back in may with an anticipated

145
00:05:37,430 --> 00:05:36,080
launch date that was moved because of

146
00:05:39,350 --> 00:05:37,440
issues with other

147
00:05:40,790 --> 00:05:39,360
launch ranges and launch vehicles and

148
00:05:42,710 --> 00:05:40,800
then we moved into june and then we had

149
00:05:44,710 --> 00:05:42,720
to delay off of the earlier

150
00:05:46,469 --> 00:05:44,720
june date uh to work some technical

151
00:05:49,430 --> 00:05:46,479
issues and here we are getting ready to

152
00:05:50,950 --> 00:05:49,440
launch on june 13th

153
00:05:52,790 --> 00:05:50,960
mike pinkston will talk a little bit

154
00:05:55,350 --> 00:05:52,800
more about the issues we worked through

155
00:05:57,990 --> 00:05:55,360
on the launch vehicle itself on cygnus

156
00:06:00,309 --> 00:05:58,000
we've conducted all the necessary uh

157
00:06:03,189 --> 00:06:00,319
rehearsals the integrated training with

158
00:06:05,670 --> 00:06:03,199
nasa uh trained the crew and and the

159
00:06:08,469 --> 00:06:05,680
team is uh really ready to go and and

160
00:06:09,990 --> 00:06:08,479
conduct this mission as uh dan said we

161
00:06:11,189 --> 00:06:10,000
will rendezvous early on the morning of

162
00:06:13,510 --> 00:06:11,199
the 16th

163
00:06:15,909 --> 00:06:13,520

and uh begin unloading the the cargo

164
00:06:18,150 --> 00:06:15,919
will remain on orbit for 30 to 45 days

165
00:06:20,150 --> 00:06:18,160
after that depending on the iss traffic

166
00:06:21,350 --> 00:06:20,160
model they've got quite a problem

167
00:06:23,270 --> 00:06:21,360
they're having to deal with in terms of

168
00:06:24,710 --> 00:06:23,280
so many vehicles coming it's a good

169
00:06:26,710 --> 00:06:24,720
problem

170
00:06:28,710 --> 00:06:26,720
but we will in fact

171
00:06:29,510 --> 00:06:28,720
stay up there as long as necessary to to

172
00:06:32,309 --> 00:06:29,520
fill

173
00:06:34,070 --> 00:06:32,319
the um the cargo

174
00:06:36,950 --> 00:06:34,080
module with with as much disposable

175
00:06:39,350 --> 00:06:36,960
cargo as possible and then re-enter

176
00:06:40,629 --> 00:06:39,360
about five days after we finish uh

177
00:06:41,670 --> 00:06:40,639
closing the hatch and leaving the

178
00:06:43,270 --> 00:06:41,680
station

179
00:06:45,110 --> 00:06:43,280
uh we're going to conduct uh some

180
00:06:47,510 --> 00:06:45,120
experiments of our own during that those

181
00:06:49,589 --> 00:06:47,520
five days to continue to improve on the

182
00:06:51,350 --> 00:06:49,599
performance of our systems make sure

183
00:06:52,309 --> 00:06:51,360
that we can give nasa the best service

184
00:06:54,230 --> 00:06:52,319
possible

185
00:06:55,510 --> 00:06:54,240
both coming and going to and from the

186
00:06:58,629 --> 00:06:55,520
station so

187
00:07:00,070 --> 00:06:58,639
we'll stay up for a few extra days

188
00:07:01,589 --> 00:07:00,080

i do want to mention a couple of other

189
00:07:03,749 --> 00:07:01,599
things one is that

190
00:07:05,670 --> 00:07:03,759
this particular spacecraft is named the

191
00:07:07,990 --> 00:07:05,680
ss janus voss

192
00:07:10,150 --> 00:07:08,000
janus is a friend of many of us both at

193
00:07:11,589 --> 00:07:10,160
orbital and in the nasa

194
00:07:12,870 --> 00:07:11,599
community particularly the nasa

195
00:07:15,110 --> 00:07:12,880
astronaut office

196
00:07:17,909 --> 00:07:15,120
early in her career after attending

197
00:07:19,830 --> 00:07:17,919
purdue she worked at orbital sciences

198
00:07:21,350 --> 00:07:19,840
for about three or four years as an

199
00:07:23,909 --> 00:07:21,360
engineer and then was selected as an

200
00:07:24,870 --> 00:07:23,919
astronaut and flew five missions for

201
00:07:26,390 --> 00:07:24,880
nasa

202
00:07:28,710 --> 00:07:26,400
unfortunately she passed away a couple

203
00:07:30,390 --> 00:07:28,720
years ago and it was a great loss to the

204
00:07:32,150 --> 00:07:30,400
whole team and to

205
00:07:34,390 --> 00:07:32,160
the nasa community but we wanted to

206
00:07:37,029 --> 00:07:34,400
honor her and her family by naming the

207
00:07:39,749 --> 00:07:37,039
spacecraft after janus and we think it's

208
00:07:41,830 --> 00:07:39,759
a fitting tribute to a really fine

209
00:07:44,550 --> 00:07:41,840
engineer and an outstanding astronaut

210
00:07:46,070 --> 00:07:44,560
and a great human being

211
00:07:47,510 --> 00:07:46,080
and we're proud to be able to continue

212
00:07:48,950 --> 00:07:47,520
that tradition

213
00:07:54,150 --> 00:07:48,960

the

214
00:07:54,950 --> 00:07:54,160
space station in my view continues to

215
00:07:57,110 --> 00:07:54,960
grow

216
00:07:59,350 --> 00:07:57,120
the complication of keeping it supplied

217
00:08:01,270 --> 00:07:59,360
of keeping it uh flying and even

218
00:08:03,350 --> 00:08:01,280
politically keeping it supported by the

219
00:08:05,670 --> 00:08:03,360
various governments around the world uh

220
00:08:06,869 --> 00:08:05,680
continues to be a challenge but uh i

221
00:08:09,350 --> 00:08:06,879
think that

222
00:08:11,029 --> 00:08:09,360
almost everybody involved in it around

223
00:08:13,110 --> 00:08:11,039
the world understands the importance of

224
00:08:15,589 --> 00:08:13,120
maintaining this foothold on the high

225
00:08:16,790 --> 00:08:15,599
ground in space because it is the next

226
00:08:18,869 --> 00:08:16,800
stepping stone to wherever we're going

227
00:08:20,950 --> 00:08:18,879
to go next whether it's the moon mars

228
00:08:23,749 --> 00:08:20,960
asteroids further out into the solar

229
00:08:25,749 --> 00:08:23,759
system we need to continue to do that

230
00:08:28,309 --> 00:08:25,759
if you think about it when we have

231
00:08:30,550 --> 00:08:28,319
people in space

232
00:08:32,630 --> 00:08:30,560
the ones we are supplying up there it's

233
00:08:34,389 --> 00:08:32,640
it's real important that we

234
00:08:36,550 --> 00:08:34,399
use the opportunity of having humans in

235
00:08:38,550 --> 00:08:36,560
space to look back on the earth

236
00:08:40,310 --> 00:08:38,560
when i was in space i looked at it as

237
00:08:41,829 --> 00:08:40,320
what we in my day used to call a

238
00:08:44,630 --> 00:08:41,839

self-portrait now i guess we call it a

239
00:08:46,150 --> 00:08:44,640
selfie um but uh we're looking at the

240
00:08:47,350 --> 00:08:46,160
earth to see what we look like and then

241
00:08:49,030 --> 00:08:47,360
we send the pictures all around the

242
00:08:50,389 --> 00:08:49,040
world and i think it's a great

243
00:08:52,310 --> 00:08:50,399
opportunity

244
00:08:53,990 --> 00:08:52,320
to continue to do that and to continue

245
00:08:56,070 --> 00:08:54,000
to keep the interest up in in space

246
00:08:57,670 --> 00:08:56,080
flight so again we're proud to be a part

247
00:08:59,590 --> 00:08:57,680
of that look forward to the launch

248
00:09:01,030 --> 00:08:59,600
tomorrow and i look forward to the

249
00:09:03,190 --> 00:09:01,040
antares team doing their usual

250
00:09:05,910 --> 00:09:03,200
spectacular job of getting us into space

251
00:09:08,710 --> 00:09:05,920
and over to mike pinkston thanks frank

252
00:09:10,550 --> 00:09:08,720
i think we have a short video to show

253
00:09:12,310 --> 00:09:10,560
and get that rolling

254
00:09:14,870 --> 00:09:12,320
uh in the meantime

255
00:09:17,670 --> 00:09:14,880
uh i'd say we're extremely proud to be

256
00:09:19,269 --> 00:09:17,680
here uh and and i think the the launch

257
00:09:21,509 --> 00:09:19,279
vehicle is uh

258
00:09:23,030 --> 00:09:21,519
ready to go i think uh these are some

259
00:09:25,509 --> 00:09:23,040
shots of the uh

260
00:09:27,670 --> 00:09:25,519
getting prepared for the uh the final

261
00:09:28,790 --> 00:09:27,680
cargo load uh into

262
00:09:30,790 --> 00:09:28,800
cygnus

263
00:09:33,430 --> 00:09:30,800

uh and then here we go with uh with the

264
00:09:35,670 --> 00:09:33,440
team working to uh to load that final

265
00:09:38,310 --> 00:09:35,680
cargo into the cygnus in uh in our

266
00:09:41,910 --> 00:09:38,320
horizontal integration facility over uh

267
00:09:46,550 --> 00:09:43,990
lots of lots of good work going on there

268
00:09:51,030 --> 00:09:46,560
to to get that stuff you know configured

269
00:09:52,470 --> 00:09:51,040
and properly stowed and ready for flight

270
00:09:54,070 --> 00:09:52,480
here's some

271
00:09:57,430 --> 00:09:54,080
some more of that looks like some of

272
00:10:03,190 --> 00:10:00,470
research payloads

273
00:10:06,069 --> 00:10:03,200
going into the end of the cygnus

274
00:10:08,389 --> 00:10:06,079
and we do this very late in the flow uh

275
00:10:11,750 --> 00:10:08,399
and and once we get the uh the critical

276
00:10:12,550 --> 00:10:11,760
cargo into the cygnus it starts a very

277
00:10:14,550 --> 00:10:12,560
uh

278
00:10:17,190 --> 00:10:14,560
very short timeline

279
00:10:18,710 --> 00:10:17,200
for us to to get the launch vehicle

280
00:10:20,630 --> 00:10:18,720
prepared

281
00:10:23,030 --> 00:10:20,640
closed out and and ready to go there are

282
00:10:26,150 --> 00:10:23,040
a number of close-out activities

283
00:10:29,350 --> 00:10:26,160
tests that have to run and uh

284
00:10:32,710 --> 00:10:31,269
but before we can before we can prep to

285
00:10:35,030 --> 00:10:32,720
launch and and

286
00:10:36,550 --> 00:10:35,040
we really need uh

287
00:10:38,630 --> 00:10:36,560
we need we need everything to really go

288
00:10:40,790 --> 00:10:38,640

like clockwork in order to to hit our

289
00:10:43,190 --> 00:10:40,800
timeline to get to uh

290
00:10:44,069 --> 00:10:43,200
to get to launch

291
00:10:46,069 --> 00:10:44,079
uh

292
00:10:49,110 --> 00:10:46,079
and and you know as frank frank alluded

293
00:10:51,110 --> 00:10:49,120
as we continue to watch uh the cargo uh

294
00:10:53,829 --> 00:10:51,120
loading process into the end of the

295
00:10:55,110 --> 00:10:53,839
cygnus uh we did run into some uh you

296
00:10:56,710 --> 00:10:55,120
know some hiccups along the way this

297
00:10:59,590 --> 00:10:56,720
time around uh

298
00:11:03,110 --> 00:10:59,600
a lot of it uh weather related as you

299
00:11:05,110 --> 00:11:03,120
can imagine the the recent

300
00:11:07,430 --> 00:11:05,120
storms that we had in the area the last

301
00:11:09,110 --> 00:11:07,440
few days you know we can't we can't roll

302
00:11:10,949 --> 00:11:09,120
the rocket out to the pad

303
00:11:13,350 --> 00:11:10,959
and certainly not conduct hazardous

304
00:11:14,949 --> 00:11:13,360
ordnance ops with with that sort of

305
00:11:17,590 --> 00:11:14,959
weather in the area

306
00:11:20,230 --> 00:11:17,600
so we uh you know we ended up taking

307
00:11:23,509 --> 00:11:20,240
some significant delays uh you know

308
00:11:25,750 --> 00:11:23,519
several hours at a time as the team

309
00:11:27,269 --> 00:11:25,760
tried to work through i mean and around

310
00:11:28,949 --> 00:11:27,279
the weather

311
00:11:31,590 --> 00:11:28,959
as that threw us off course a couple of

312
00:11:34,069 --> 00:11:31,600
times and

313
00:11:36,150 --> 00:11:34,079

looks like the video's stopped ignore it

314
00:11:39,269 --> 00:11:36,160
okay so anyway we uh you know we worked

315
00:11:40,949 --> 00:11:39,279
through a lot of uh significant issues

316
00:11:42,949 --> 00:11:40,959
with with the weather i ran into a

317
00:11:45,430 --> 00:11:42,959
couple of technical issues along the way

318
00:11:46,710 --> 00:11:45,440
i think we finally got to roll out

319
00:11:49,190 --> 00:11:46,720
thursday night

320
00:11:51,590 --> 00:11:49,200
or sorry thursday morning early

321
00:11:53,269 --> 00:11:51,600
work work through the day and and you

322
00:11:55,030 --> 00:11:53,279
know worked through a couple of issues

323
00:11:56,389 --> 00:11:55,040
the last day or so and at this point

324
00:11:59,110 --> 00:11:56,399
we've

325
00:12:02,069 --> 00:11:59,120
got the vehicle in its final

326
00:12:03,990 --> 00:12:02,079
final throws of launch preps

327
00:12:06,230 --> 00:12:04,000
went through the lrr just

328
00:12:08,470 --> 00:12:06,240
about a couple hours ago

329
00:12:10,470 --> 00:12:08,480
and at this point we're

330
00:12:12,069 --> 00:12:10,480
ready to launch very proud to be here

331
00:12:15,269 --> 00:12:12,079
and you know the team has worked

332
00:12:18,710 --> 00:12:15,279
extremely hard both you know orbital

333
00:12:20,790 --> 00:12:18,720
uh the wallops mars and and nasa jsc

334
00:12:23,190 --> 00:12:20,800
customer uh to work around some

335
00:12:24,710 --> 00:12:23,200
significant hurdles and and and get us

336
00:12:26,629 --> 00:12:24,720
to where we are today ready to go we're

337
00:12:28,550 --> 00:12:26,639
looking forward to tomorrow

338
00:12:31,030 --> 00:12:28,560

so i think with that i'll uh pass it

339
00:12:33,670 --> 00:12:31,040
over to sarah all right thank you mike

340
00:12:36,150 --> 00:12:33,680
uh the nasa wall launch range is

341
00:12:39,509 --> 00:12:36,160
responsible for tracking and ensuring a

342
00:12:42,150 --> 00:12:39,519
safe flight of the antares vehicle

343
00:12:44,310 --> 00:12:42,160
and one of the final milestones in that

344
00:12:45,829 --> 00:12:44,320
process is our launch readiness review

345
00:12:46,790 --> 00:12:45,839
which we conducted just a little bit

346
00:12:49,190 --> 00:12:46,800
earlier

347
00:12:51,750 --> 00:12:49,200
today where our facility director

348
00:12:54,230 --> 00:12:51,760
granted the final authority to proceed

349
00:12:56,389 --> 00:12:54,240
with the launch operation so as far as

350
00:12:58,949 --> 00:12:56,399
that goes we've jumped over that final

351
00:13:00,790 --> 00:12:58,959
milestone and we're ready to go

352
00:13:02,550 --> 00:13:00,800
tomorrow

353
00:13:04,470 --> 00:13:02,560
i have an image

354
00:13:06,389 --> 00:13:04,480
here to show you all to talk about our

355
00:13:08,550 --> 00:13:06,399
range support

356
00:13:10,790 --> 00:13:08,560
from a data and communications

357
00:13:13,590 --> 00:13:10,800
perspective and range support we have

358
00:13:16,470 --> 00:13:13,600
instrumentation including radars and

359
00:13:19,190 --> 00:13:16,480
telemetry and command systems here

360
00:13:22,310 --> 00:13:19,200
located here at wallops as well as a

361
00:13:24,310 --> 00:13:22,320
downrange site in bermuda where we also

362
00:13:25,750 --> 00:13:24,320
provide tracking support for the flight

363
00:13:28,069 --> 00:13:25,760

of the vehicle

364
00:13:30,230 --> 00:13:28,079
and all those systems or instrumentation

365
00:13:31,910 --> 00:13:30,240
as we call it have been configured and

366
00:13:33,910 --> 00:13:31,920
verified ready to

367
00:13:35,750 --> 00:13:33,920
support launch we've gone through

368
00:13:37,590 --> 00:13:35,760
numerous procedures over the last couple

369
00:13:40,230 --> 00:13:37,600
days to check out those systems and

370
00:13:41,990 --> 00:13:40,240
verify that they are

371
00:13:45,350 --> 00:13:42,000
are ready to go

372
00:13:48,470 --> 00:13:45,360
another part of ensuring safe flight for

373
00:13:51,430 --> 00:13:48,480
launch is to ensure that the launch area

374
00:13:52,790 --> 00:13:51,440
and the hazard areas are clear so we do

375
00:13:55,829 --> 00:13:52,800
that by

376
00:13:59,269 --> 00:13:55,839
getting approval from external agencies

377
00:14:02,470 --> 00:13:59,279
like the faa and some military

378
00:14:04,949 --> 00:14:02,480
operations facili military operations

379
00:14:07,829 --> 00:14:04,959
organizations that control air space and

380
00:14:10,230 --> 00:14:07,839
sea surface space off our coast here so

381
00:14:13,110 --> 00:14:10,240
we have issued all of our notices to

382
00:14:14,629 --> 00:14:13,120
airmen notices to mariners

383
00:14:17,189 --> 00:14:14,639
to get the word out that we are

384
00:14:19,750 --> 00:14:17,199
launching and what our hazard areas are

385
00:14:22,710 --> 00:14:19,760
for tomorrow

386
00:14:24,949 --> 00:14:22,720
i'll roll into our weather forecast

387
00:14:26,790 --> 00:14:24,959
now which is looking very good for

388
00:14:28,629 --> 00:14:26,800

tomorrow so this is provided by our

389
00:14:31,110 --> 00:14:28,639
launch weather officer

390
00:14:34,069 --> 00:14:31,120
and tomorrow we're looking at partly

391
00:14:35,990 --> 00:14:34,079
cloudy skies with a slight breeze winds

392
00:14:38,470 --> 00:14:36,000
are going to be out of the south

393
00:14:41,829 --> 00:14:38,480
with about 10 to 15 knots

394
00:14:43,430 --> 00:14:41,839
temperatures in the mid 80s and taking

395
00:14:46,310 --> 00:14:43,440
all that into consideration that gives

396
00:14:48,150 --> 00:14:46,320
us a 90 percent probability of great

397
00:14:50,870 --> 00:14:48,160
conditions for launch so tomorrow is

398
00:14:53,030 --> 00:14:50,880
going to be a really nice day

399
00:14:55,269 --> 00:14:53,040
considering it's summer in july and

400
00:14:58,629 --> 00:14:55,279
we're in the in the mid-atlantic region

401
00:15:01,269 --> 00:14:58,639
so tomorrow looks really great and with

402
00:15:03,189 --> 00:15:01,279
that enroll into my next picture here

403
00:15:06,310 --> 00:15:03,199
you should get to see

404
00:15:08,069 --> 00:15:06,320
this launch from a pretty far distance

405
00:15:09,910 --> 00:15:08,079
so somewhere from about new jersey to

406
00:15:12,790 --> 00:15:09,920
north carolina with the good weather

407
00:15:15,030 --> 00:15:12,800
conditions will provide a really great

408
00:15:17,750 --> 00:15:15,040
view of anybody along the eastern

409
00:15:19,350 --> 00:15:17,760
seaboard there to check it out

410
00:15:21,430 --> 00:15:19,360
and with that i'll turn it back over to

411
00:15:23,509 --> 00:15:21,440
rachel okay thanks sarah all right we'll

412
00:15:25,189 --> 00:15:23,519
take some questions from folks here and

413
00:15:27,110 --> 00:15:25,199

on the phone as well

414
00:15:29,590 --> 00:15:27,120
as a reminder from the for those

415
00:15:31,910 --> 00:15:29,600
watching from afar you can

416
00:15:34,629 --> 00:15:31,920
send us your questions via social media

417
00:15:36,550 --> 00:15:34,639
using the hashtag asknasa

418
00:15:39,110 --> 00:15:36,560
and if you wouldn't mind stating your

419
00:15:41,189 --> 00:15:39,120
name and affiliation and to whom you're

420
00:15:43,030 --> 00:15:41,199
addressing your question that will

421
00:15:44,150 --> 00:15:43,040
really help us out especially with dan

422
00:15:46,470 --> 00:15:44,160
on the phone

423
00:15:48,790 --> 00:15:46,480
um ken do you want to start

424
00:15:50,870 --> 00:15:48,800
we have a mike

425
00:15:53,430 --> 00:15:50,880
thank you ken kramer for universe today

426
00:15:55,350 --> 00:15:53,440
my question is for uh frank and mike can

427
00:15:57,189 --> 00:15:55,360
you talk a little bit about the engine

428
00:15:59,509 --> 00:15:57,199
problem that you had

429
00:16:02,389 --> 00:15:59,519
with that what exactly was the problem

430
00:16:03,910 --> 00:16:02,399
in mississippi but the engine damage

431
00:16:05,829 --> 00:16:03,920
uh talk a little bit about the

432
00:16:07,269 --> 00:16:05,839
inspections what was the the lessons

433
00:16:08,949 --> 00:16:07,279
learned and what's the way forward

434
00:16:11,749 --> 00:16:08,959
please thank you

435
00:16:14,230 --> 00:16:11,759
i can i can take a a stab at that but

436
00:16:16,310 --> 00:16:14,240
you know i think as as you know we had a

437
00:16:20,550 --> 00:16:16,320
a failure in

438
00:16:24,790 --> 00:16:20,560

acceptance test of uh one of our engines

439
00:16:27,189 --> 00:16:24,800
engine 17 was the nomenclature

440
00:16:27,910 --> 00:16:27,199
that that obviously sparked

441
00:16:34,150 --> 00:16:27,920
a

442
00:16:37,590 --> 00:16:34,160
supplier but

443
00:16:39,350 --> 00:16:37,600
supported fully by orbital and and a lot

444
00:16:41,509 --> 00:16:39,360
of help from from nasa and some of the

445
00:16:43,670 --> 00:16:41,519
various nasa centers and and specific

446
00:16:46,069 --> 00:16:43,680
expertise that they brought to bear

447
00:16:48,870 --> 00:16:46,079
um you know that that was a you know a

448
00:16:52,069 --> 00:16:48,880
lengthy process and and uh you know the

449
00:16:54,150 --> 00:16:52,079
the primary source of of the delay from

450
00:16:56,069 --> 00:16:54,160
the early part of june to where we are

451
00:16:57,030 --> 00:16:56,079
today as we as we worked our way through

452
00:16:58,550 --> 00:16:57,040
that

453
00:17:01,269 --> 00:16:58,560
um you know one of the one of the

454
00:17:03,749 --> 00:17:01,279
outcomes of that uh of that process was

455
00:17:06,949 --> 00:17:03,759
a desire to go back and conduct some

456
00:17:09,429 --> 00:17:06,959
specific investigators inspections

457
00:17:11,750 --> 00:17:09,439
of the engines uh really it'll it'll

458
00:17:13,270 --> 00:17:11,760
happen to all engines but uh but first

459
00:17:15,029 --> 00:17:13,280
and foremost to the engines that we had

460
00:17:16,390 --> 00:17:15,039
on the orb ii vehicle out here wallops

461
00:17:17,990 --> 00:17:16,400
at the time

462
00:17:20,069 --> 00:17:18,000
to confirm the presence and proper

463
00:17:22,549 --> 00:17:20,079

configuration of some critical features

464
00:17:24,390 --> 00:17:22,559
uh within within the engine

465
00:17:26,710 --> 00:17:24,400
uh that were you know in areas of

466
00:17:28,710 --> 00:17:26,720
interest relative to the to the failure

467
00:17:30,470 --> 00:17:28,720
and the and the uh you know what what

468
00:17:32,549 --> 00:17:30,480
the investigation had concluded as far

469
00:17:33,510 --> 00:17:32,559
as some of the likely uh potential

470
00:17:36,549 --> 00:17:33,520
causes

471
00:17:38,710 --> 00:17:36,559
that was obviously a favorable result we

472
00:17:41,110 --> 00:17:38,720
we saw what we needed to see uh you know

473
00:17:42,950 --> 00:17:41,120
and with with that and and and with the

474
00:17:45,350 --> 00:17:42,960
fact that these engines have

475
00:17:47,990 --> 00:17:45,360
uh successfully passed uh you know the

476
00:17:50,390 --> 00:17:48,000
same acceptance process not only here in

477
00:17:52,150 --> 00:17:50,400
the united states but also kind of twice

478
00:17:54,070 --> 00:17:52,160
after original manufacturing in russia

479
00:17:55,590 --> 00:17:54,080
they've got a lot of test time on them

480
00:17:57,830 --> 00:17:55,600
we've got a lot of confidence that the

481
00:17:59,029 --> 00:17:57,840
the two engines on on orb 2 are ready to

482
00:18:01,350 --> 00:17:59,039
go

483
00:18:02,150 --> 00:18:01,360
i just just want to add to that that the

484
00:18:08,870 --> 00:18:02,160
uh

485
00:18:11,830 --> 00:18:08,880
problem with engine 17

486
00:18:12,549 --> 00:18:11,840
from orbital and uh aerojet to the to

487
00:18:15,510 --> 00:18:12,559
the

488
00:18:16,950 --> 00:18:15,520

nasa personnel at stennis marshall jsc

489
00:18:19,190 --> 00:18:16,960
and headquarters

490
00:18:21,669 --> 00:18:19,200
has been phenomenal and that helps us

491
00:18:23,830 --> 00:18:21,679
get to a favorable

492
00:18:25,350 --> 00:18:23,840
result as we deal with problems like

493
00:18:27,270 --> 00:18:25,360
this the same is what we've had this

494
00:18:30,230 --> 00:18:27,280
week in dealing with some of the issues

495
00:18:31,909 --> 00:18:30,240
we've had to work through the nasa mars

496
00:18:33,750 --> 00:18:31,919
orbital team has

497
00:18:35,669 --> 00:18:33,760
has started working together even more

498
00:18:37,350 --> 00:18:35,679
smoothly than before and i think we're

499
00:18:39,669 --> 00:18:37,360
going to see that this becomes a a

500
00:18:41,270 --> 00:18:39,679
routine situation where we work as one

501
00:18:43,990 --> 00:18:41,280
team when we're leading up to the launch

502
00:18:45,909 --> 00:18:44,000
and we attribu achieve success by by

503
00:18:47,270 --> 00:18:45,919
putting the pieces together with the

504
00:18:49,110 --> 00:18:47,280
best professionals available and

505
00:18:51,669 --> 00:18:49,120
everybody chips in and works really hard

506
00:18:56,950 --> 00:18:51,679
and we sure appreciate that

507
00:19:01,190 --> 00:18:59,350
jeff bowser's space review for sarah um

508
00:19:03,190 --> 00:19:01,200
you mentioned getting the notices out to

509
00:19:04,630 --> 00:19:03,200
mariners and such given that this launch

510
00:19:06,150 --> 00:19:04,640
is taking place in the middle of a day

511
00:19:07,990 --> 00:19:06,160
on a weekend in the height of tourist

512
00:19:10,150 --> 00:19:08,000
season do you do anything special to

513
00:19:12,150 --> 00:19:10,160

make sure that the range that there's no

514
00:19:13,990 --> 00:19:12,160
boats getting into the restricted areas

515
00:19:16,470 --> 00:19:14,000
given the also the very short launch

516
00:19:19,909 --> 00:19:16,480
window that's available sure

517
00:19:22,070 --> 00:19:19,919
typically we do do a lot of work uh to

518
00:19:25,350 --> 00:19:22,080
ensure those types of things for this

519
00:19:27,350 --> 00:19:25,360
one we have taken an extra step like you

520
00:19:29,830 --> 00:19:27,360
mentioned because of just the time of

521
00:19:32,870 --> 00:19:29,840
year that it is and it is a weekend day

522
00:19:36,630 --> 00:19:32,880
so we've made a huge effort to go out

523
00:19:39,190 --> 00:19:36,640
and talk to all the recreational boaters

524
00:19:40,470 --> 00:19:39,200
make some visits to the harbors that are

525
00:19:42,789 --> 00:19:40,480
here where people would be launching

526
00:19:46,230 --> 00:19:42,799
their boats from

527
00:19:48,470 --> 00:19:46,240
we also have per the code of

528
00:19:50,549 --> 00:19:48,480
federal regulations and with the help of

529
00:19:51,590 --> 00:19:50,559
the the coast guard and virginia marine

530
00:19:53,750 --> 00:19:51,600
police

531
00:19:56,549 --> 00:19:53,760
an area called a danger zone which is

532
00:19:58,549 --> 00:19:56,559
about a 30 nautical mile sector just off

533
00:20:00,390 --> 00:19:58,559
our coast here where we have

534
00:20:02,230 --> 00:20:00,400
fine and arrest authority there to

535
00:20:03,590 --> 00:20:02,240
actually clear people out of our hazard

536
00:20:06,470 --> 00:20:03,600
area so

537
00:20:08,710 --> 00:20:06,480
we do we have made those extra strides

538
00:20:09,750 --> 00:20:08,720

for this launch and we're confident that

539
00:20:12,149 --> 00:20:09,760
we can

540
00:20:15,830 --> 00:20:12,159
have a clear range for the first second

541
00:20:15,840 --> 00:20:19,430
let's see let's go here

542
00:20:24,789 --> 00:20:21,990
hi robert perlman with collect space um

543
00:20:26,789 --> 00:20:24,799
for frank and dan um

544
00:20:29,350 --> 00:20:26,799
it was noted today that it was the that

545
00:20:31,350 --> 00:20:29,360
today is the 5 000th uh day of

546
00:20:32,390 --> 00:20:31,360
continuous crude ops on the space

547
00:20:33,830 --> 00:20:32,400
station

548
00:20:36,149 --> 00:20:33,840
and um

549
00:20:39,110 --> 00:20:36,159
it may be a little obvious but i wonder

550
00:20:42,230 --> 00:20:39,120
how critical um deliveries such as

551
00:20:44,630 --> 00:20:42,240
cygnus is providing is to maintaining

552
00:20:45,510 --> 00:20:44,640
that record of continuous ops and

553
00:20:47,350 --> 00:20:45,520
and

554
00:20:49,750 --> 00:20:47,360
pushing it forward

555
00:20:51,430 --> 00:20:49,760
i suggest that dan uh answers the

556
00:20:53,430 --> 00:20:51,440
question of the actual criticality the

557
00:20:54,789 --> 00:20:53,440
way we look at it at orbital is every

558
00:20:57,270 --> 00:20:54,799
flight is critical

559
00:20:59,029 --> 00:20:57,280
we carry a variety of

560
00:21:01,590 --> 00:20:59,039
types of cargo on board which includes

561
00:21:03,909 --> 00:21:01,600
food and basic supplies for the crew and

562
00:21:05,350 --> 00:21:03,919
also the research research as i said

563
00:21:07,029 --> 00:21:05,360

they really can't afford to get behind

564
00:21:08,470 --> 00:21:07,039
on any of that with six people up there

565
00:21:10,149 --> 00:21:08,480
and if we're going to keep six people on

566
00:21:11,590 --> 00:21:10,159
the station we need a routine and

567
00:21:12,950 --> 00:21:11,600
regular delivery of cargo and that's

568
00:21:14,549 --> 00:21:12,960
what we're trying to establish with this

569
00:21:16,230 --> 00:21:14,559
service

570
00:21:18,230 --> 00:21:16,240
yeah and robert you know you mentioned

571
00:21:19,590 --> 00:21:18,240
five thousand days and that's certainly

572
00:21:21,510 --> 00:21:19,600
uh you know

573
00:21:23,590 --> 00:21:21,520
celebratory in its own right and just

574
00:21:25,750 --> 00:21:23,600
over a couple months ago we we reached

575
00:21:27,830 --> 00:21:25,760
five years on orbit with uh with six

576
00:21:29,510 --> 00:21:27,840
person crew and so uh you know the

577
00:21:32,470 --> 00:21:29,520
milestones that we're we're achieving

578
00:21:34,710 --> 00:21:32,480
are are pretty remarkable uh 15 years on

579
00:21:36,710 --> 00:21:34,720
board as well so you know but but as

580
00:21:38,710 --> 00:21:36,720
frank mentions right you got to you got

581
00:21:39,990 --> 00:21:38,720
to resupply the crew you got to keep the

582
00:21:47,029 --> 00:21:40,000
research

583
00:21:49,669 --> 00:21:47,039
samples uh you know there's a lot of

584
00:21:51,990 --> 00:21:49,679
system maturation that we need to do uh

585
00:21:53,669 --> 00:21:52,000
that we're testing out on the iss

586
00:21:55,510 --> 00:21:53,679
uh if we're gonna go deeper and further

587
00:21:57,270 --> 00:21:55,520
into space it could be the regen eclipse

588
00:21:59,350 --> 00:21:57,280

system understanding radiation a little

589
00:22:01,510 --> 00:21:59,360
bit better effects on the human body

590
00:22:03,430 --> 00:22:01,520
just just a host of uh

591
00:22:05,590 --> 00:22:03,440
of technical challenges that we know are

592
00:22:08,549 --> 00:22:05,600
out there and and the way to

593
00:22:10,950 --> 00:22:08,559
to to succeed and buy down all that risk

594
00:22:13,909 --> 00:22:10,960
is is to have these vehicles sicknesses

595
00:22:16,470 --> 00:22:13,919
atvs the hdvs the spacex's uh

596
00:22:18,870 --> 00:22:16,480
have a consistent resupply

597
00:22:21,430 --> 00:22:18,880
of uh not only uh you know the supplies

598
00:22:23,990 --> 00:22:21,440
needed for the crew but uh but also the

599
00:22:27,350 --> 00:22:24,000
you know the cutting edge uh technology

600
00:22:30,630 --> 00:22:27,360
demonstrations that we need to to to fly

601
00:22:33,270 --> 00:22:30,640
to uh to test uh yes fail at times

602
00:22:36,390 --> 00:22:33,280
retest uh just uh just to have that big

603
00:22:37,909 --> 00:22:36,400
learning experience as we go forward

604
00:22:40,950 --> 00:22:37,919
okay a couple more here and then we'll

605
00:22:44,310 --> 00:22:40,960
go to the phone

606
00:22:47,909 --> 00:22:44,320
harvey leifert freelance science writer

607
00:22:50,390 --> 00:22:47,919
my question i think is for dan hartman

608
00:22:51,750 --> 00:22:50,400
i'm concerned about the the garbage

609
00:22:53,590 --> 00:22:51,760
issue

610
00:22:55,110 --> 00:22:53,600
as i understand it the

611
00:22:57,590 --> 00:22:55,120
return trip

612
00:22:59,430 --> 00:22:57,600
which will end in the atlantic ocean

613
00:23:00,870 --> 00:22:59,440

will be carrying a lot of trash from the

614
00:23:02,950 --> 00:23:00,880
space station

615
00:23:04,470 --> 00:23:02,960
and i wonder why rather than further

616
00:23:07,110 --> 00:23:04,480
pollute the ocean

617
00:23:10,549 --> 00:23:07,120
it isn't simply figuratively kicked out

618
00:23:11,990 --> 00:23:10,559
the door on a downward uh trajectory

619
00:23:13,190 --> 00:23:12,000
that will cause it to burn up in the

620
00:23:14,070 --> 00:23:13,200
atmosphere

621
00:23:15,750 --> 00:23:14,080
yeah

622
00:23:18,549 --> 00:23:15,760
and i'm sorry i didn't copy the name but

623
00:23:20,310 --> 00:23:18,559
that's exactly what we do uh there there

624
00:23:21,990 --> 00:23:20,320
is you know and frank can explain with

625
00:23:23,909 --> 00:23:22,000
the with the cygnus vehicle you know

626
00:23:25,669 --> 00:23:23,919
himself but the the trash the

627
00:23:28,310 --> 00:23:25,679
trajectories we take to come in through

628
00:23:31,110 --> 00:23:28,320
the atmosphere uh it is a completely

629
00:23:34,230 --> 00:23:31,120
burn up of those vehicles uh and so

630
00:23:36,710 --> 00:23:34,240
uh at times we do have very very uh

631
00:23:37,430 --> 00:23:36,720
heavy items that we do specific analysis

632
00:23:39,830 --> 00:23:37,440
on

633
00:23:42,149 --> 00:23:39,840
uh that you know

634
00:23:43,909 --> 00:23:42,159
very very rarely but uh and then we we

635
00:23:47,350 --> 00:23:43,919
build a trajectory of where those

636
00:23:49,269 --> 00:23:47,360
specific items uh should hit uh earth

637
00:23:51,510 --> 00:23:49,279
but uh you know in general all these

638
00:23:53,909 --> 00:23:51,520

vehicles the russian vehicles the htvs

639
00:23:56,230 --> 00:23:53,919
the atvs the cygnus vehicles they all

640
00:23:57,510 --> 00:23:56,240
completely burn up on re-entry uh and

641
00:24:00,310 --> 00:23:57,520
nothing makes it back down into the

642
00:24:00,320 --> 00:24:02,710
okay

643
00:24:06,870 --> 00:24:05,190
this is jd taylor with usa in space uh

644
00:24:08,870 --> 00:24:06,880
first i want to say thank you for uh

645
00:24:11,190 --> 00:24:08,880
launching from wallops it's nice to have

646
00:24:13,110 --> 00:24:11,200
it much more local for myself but also i

647
00:24:14,950 --> 00:24:13,120
think it's a beautiful location are all

648
00:24:17,590 --> 00:24:14,960
of your flights is for dan uh earlier

649
00:24:20,149 --> 00:24:17,600
flights going to be from wallops and are

650
00:24:22,950 --> 00:24:20,159
you finding some advantage to that as as

651
00:24:24,950 --> 00:24:22,960
being visible from dc that might help

652
00:24:27,590 --> 00:24:24,960
more of the space interest is that for

653
00:24:29,909 --> 00:24:27,600
us yes i'm sorry yeah i'm sorry

654
00:24:32,390 --> 00:24:29,919
uh yes right now the antares the only

655
00:24:34,230 --> 00:24:32,400
launch site that is prepared for antares

656
00:24:35,669 --> 00:24:34,240
is here at orbital and uh of course it

657
00:24:37,830 --> 00:24:35,679
belongs to the mid-atlantic regional

658
00:24:39,350 --> 00:24:37,840
spaceport uh an offshoot of virginia

659
00:24:42,390 --> 00:24:39,360
space flight authority

660
00:24:43,990 --> 00:24:42,400
uh they are a tenant here at nasa and uh

661
00:24:46,870 --> 00:24:44,000
and it's been a really good

662
00:24:48,390 --> 00:24:46,880
teamwork effort to bring this launch

663
00:24:49,190 --> 00:24:48,400

facility here and to bring the rocket

664
00:24:50,070 --> 00:24:49,200
here

665
00:24:52,390 --> 00:24:50,080
um

666
00:24:54,070 --> 00:24:52,400
the antares is designed specifically to

667
00:24:55,990 --> 00:24:54,080
operate out of this field but out of

668
00:24:58,070 --> 00:24:56,000
this spaceport but it could operate out

669
00:25:00,470 --> 00:24:58,080
of others if we have enough customers

670
00:25:02,230 --> 00:25:00,480
and we require enough increase in launch

671
00:25:04,390 --> 00:25:02,240
rate to go other places

672
00:25:05,350 --> 00:25:04,400
uh but we like lancashire out of wallops

673
00:25:06,950 --> 00:25:05,360
it's uh

674
00:25:08,390 --> 00:25:06,960
we got a good relationship with

675
00:25:10,390 --> 00:25:08,400
everybody in the area

676
00:25:12,149 --> 00:25:10,400
and uh it also gets us a little bit away

677
00:25:14,870 --> 00:25:12,159
from the congestion of traffic that

678
00:25:17,430 --> 00:25:14,880
other launch sites occasionally have and

679
00:25:20,230 --> 00:25:17,440
and it also is well situated to put us

680
00:25:23,190 --> 00:25:20,240
in the uh space station orbit uh as we

681
00:25:24,630 --> 00:25:23,200
leave and fly to the southeast

682
00:25:26,789 --> 00:25:24,640
okay i think we have a couple on the

683
00:25:28,789 --> 00:25:26,799
phone we'll start with iron cloths of

684
00:25:31,110 --> 00:25:28,799
reuters

685
00:25:34,310 --> 00:25:31,120
thanks rachel um i have uh several

686
00:25:36,230 --> 00:25:34,320
questions the first is for you frank

687
00:25:38,710 --> 00:25:36,240
six months ago you said that you weren't

688
00:25:41,110 --> 00:25:38,720

able to discuss any other prospective

689
00:25:43,110 --> 00:25:41,120
customers for antares because anything

690
00:25:45,750 --> 00:25:43,120
changed on that count

691
00:25:49,909 --> 00:25:46,710
thank you

692
00:25:51,990 --> 00:25:49,919
thanks um and if if mike went into this

693
00:25:54,470 --> 00:25:52,000
a little bit it got cut out by the

694
00:25:56,549 --> 00:25:54,480
operator on the call about the upshot of

695
00:25:59,029 --> 00:25:56,559
the aj26 failure

696
00:26:01,269 --> 00:25:59,039
um what was what was the problem there

697
00:26:03,430 --> 00:26:01,279
and then i have two quick ones for dan

698
00:26:04,470 --> 00:26:03,440
thanks

699
00:26:06,870 --> 00:26:04,480
yeah well

700
00:26:09,669 --> 00:26:06,880
uh as i mentioned earlier uh you know

701
00:26:11,590 --> 00:26:09,679
can't can't get in too much detail about

702
00:26:13,750 --> 00:26:11,600
the the actual nature of the problem but

703
00:26:15,830 --> 00:26:13,760
uh you know i did mention that uh you

704
00:26:16,630 --> 00:26:15,840
know based on on our investigation we

705
00:26:19,029 --> 00:26:16,640
did

706
00:26:21,269 --> 00:26:19,039
do some uh uh specific targeted

707
00:26:23,350 --> 00:26:21,279
inspections of the of the fleet of

708
00:26:25,750 --> 00:26:23,360
engines we have most notably the two

709
00:26:26,950 --> 00:26:25,760
that are on on the orb 2 rocket right

710
00:26:28,870 --> 00:26:26,960
now

711
00:26:31,269 --> 00:26:28,880
and it did see what we needed to see in

712
00:26:34,310 --> 00:26:31,279
terms of proper configuration and

713
00:26:36,390 --> 00:26:34,320

of some specific features of concern

714
00:26:38,870 --> 00:26:36,400
uh you know and then obviously those

715
00:26:40,950 --> 00:26:38,880
engines have have a pretty solid test

716
00:26:42,390 --> 00:26:40,960
history behind them as well so we're

717
00:26:44,950 --> 00:26:42,400
very confident that we got two good

718
00:26:47,510 --> 00:26:44,960
engines on the vehicle

719
00:26:50,710 --> 00:26:47,520
thanks very much and for dan what is the

720
00:26:53,430 --> 00:26:50,720
current schedule for the next spacex

721
00:26:54,950 --> 00:26:53,440
launch and um are you still planning on

722
00:26:58,870 --> 00:26:54,960
issuing the

723
00:27:00,549 --> 00:26:58,880
final rfp for the crcrs2

724
00:27:01,350 --> 00:27:00,559
follow-on contract

725
00:27:04,390 --> 00:27:01,360
on

726
00:27:07,029 --> 00:27:04,400
september 30th thank you

727
00:27:08,390 --> 00:27:07,039
yeah let's see uh uh who actually would

728
00:27:10,549 --> 00:27:08,400
i think was irene right we're we're

729
00:27:12,390 --> 00:27:10,559
having uh what we call our uh

730
00:27:13,909 --> 00:27:12,400
space station control board on tuesday

731
00:27:17,510 --> 00:27:13,919
where we're gonna go over our our

732
00:27:19,909 --> 00:27:17,520
forward manifesting plans uh right now

733
00:27:21,350 --> 00:27:19,919
what we'll show at that review is spacex

734
00:27:22,710 --> 00:27:21,360
4 on

735
00:27:24,310 --> 00:27:22,720
9 12

736
00:27:25,269 --> 00:27:24,320
september 12th

737
00:27:29,269 --> 00:27:25,279
um

738
00:27:31,430 --> 00:27:29,279

and then i'm sorry oh the the rfp

739
00:27:35,350 --> 00:27:31,440
i probably need to check

740
00:27:36,870 --> 00:27:35,360
we put an rfi out for uh recently for

741
00:27:38,870 --> 00:27:36,880
the crs2

742
00:27:40,310 --> 00:27:38,880
i know it is planned to come out later

743
00:27:42,070 --> 00:27:40,320
in the year

744
00:27:46,830 --> 00:27:42,080
and i'll just have to take an action to

745
00:27:53,269 --> 00:27:49,830
that okay i think we have one other

746
00:27:59,350 --> 00:27:55,430
it got cut out by the operator on the

747
00:28:15,590 --> 00:27:59,360
call about the upcoming 26 days

748
00:28:15,600 --> 00:28:21,669
let's take a question here in the room

749
00:28:25,510 --> 00:28:24,149
the money tmc net um can you talk a

750
00:28:27,430 --> 00:28:25,520
little bit about the inspections it

751
00:28:28,789 --> 00:28:27,440
sounds like they were all visual and

752
00:28:30,549 --> 00:28:28,799
something that you didn't have to tear

753
00:28:32,230 --> 00:28:30,559
down

754
00:28:33,750 --> 00:28:32,240
the engines for it was something that

755
00:28:36,389 --> 00:28:33,760
was relatively easy you could do with a

756
00:28:38,149 --> 00:28:36,399
bore scope or just opening up a panel is

757
00:28:40,389 --> 00:28:38,159
that correct

758
00:28:42,870 --> 00:28:40,399
yeah that that's generally right it was

759
00:28:44,950 --> 00:28:42,880
uh it was pretty non-invasive but

760
00:28:47,590 --> 00:28:44,960
conducted with a borescope and and

761
00:28:49,029 --> 00:28:47,600
visual uh through a port that gives us

762
00:28:51,110 --> 00:28:49,039
access

763
00:28:53,190 --> 00:28:51,120

to some areas of interest and we were

764
00:28:55,590 --> 00:28:53,200
able to visually confirm that

765
00:28:57,350 --> 00:28:55,600
you know the the configuration of the

766
00:28:59,830 --> 00:28:57,360
hardware that we were interested in was

767
00:29:01,590 --> 00:28:59,840
as we expected

768
00:29:03,350 --> 00:29:01,600
okay and i think we have a couple from

769
00:29:04,070 --> 00:29:03,360
social media

770
00:29:07,029 --> 00:29:04,080
sure

771
00:29:07,990 --> 00:29:07,039
first question is for frank from gene on

772
00:29:09,350 --> 00:29:08,000
twitter

773
00:29:11,430 --> 00:29:09,360
he's wondering if you can discuss what

774
00:29:14,230 --> 00:29:11,440
the experiments are that orbital will be

775
00:29:16,549 --> 00:29:14,240
performing on cygnus

776
00:29:18,470 --> 00:29:16,559
we'll be looking at uh

777
00:29:21,029 --> 00:29:18,480
rendezvous with a new system that we're

778
00:29:21,750 --> 00:29:21,039
incorporating into cygnus that will

779
00:29:23,590 --> 00:29:21,760
be

780
00:29:25,990 --> 00:29:23,600
more cost effective and a little bit

781
00:29:27,350 --> 00:29:26,000
less weight less mass on board and so we

782
00:29:29,350 --> 00:29:27,360
want to check it out thoroughly before

783
00:29:30,710 --> 00:29:29,360
we continue to fly with it routinely on

784
00:29:33,029 --> 00:29:30,720
future missions

785
00:29:34,950 --> 00:29:33,039
we're also looking at new profiles for

786
00:29:37,430 --> 00:29:34,960
re-entry which will ensure that we do

787
00:29:39,029 --> 00:29:37,440
burn up as we as we re-enter

788
00:29:41,350 --> 00:29:39,039

but also might be more efficient in

789
00:29:42,310 --> 00:29:41,360
terms of saving fuel for other uses

790
00:29:45,990 --> 00:29:42,320
during the

791
00:29:47,750 --> 00:29:46,000
we want to be able to fly cygnus for

792
00:29:48,870 --> 00:29:47,760
extended periods of time after it leaves

793
00:29:49,750 --> 00:29:48,880
the station

794
00:29:54,070 --> 00:29:49,760
and

795
00:29:55,750 --> 00:29:54,080
there are nasa centers that want to

796
00:29:57,750 --> 00:29:55,760
conduct other experiments and the longer

797
00:30:00,070 --> 00:29:57,760
we can stay in space the better and so

798
00:30:01,590 --> 00:30:00,080
we're looking at ways to ensure that we

799
00:30:03,430 --> 00:30:01,600
understand the most efficient operation

800
00:30:06,630 --> 00:30:03,440
of the spacecraft once it leaves the

801
00:30:11,190 --> 00:30:08,630
the next step is from marsha smith on

802
00:30:12,710 --> 00:30:11,200
twitter for sarah what's the 10

803
00:30:14,710 --> 00:30:12,720
probability that you won't be able to

804
00:30:16,230 --> 00:30:14,720
watch tomorrow is it thunderstorms or

805
00:30:18,470 --> 00:30:16,240
winds

806
00:30:21,029 --> 00:30:18,480
that's a great question uh the 10 is

807
00:30:24,070 --> 00:30:21,039
just for potential like cumulus clouds

808
00:30:27,029 --> 00:30:24,080
forming in the area that may have convec

809
00:30:29,510 --> 00:30:27,039
be convective in nature and

810
00:30:31,990 --> 00:30:29,520
potentially come up but it's very small

811
00:30:34,710 --> 00:30:32,000
it was hard to give it zero so we had to

812
00:30:36,310 --> 00:30:34,720
had to give it 10 on that

813
00:30:38,470 --> 00:30:36,320

they'd never give they never give us a

814
00:30:40,789 --> 00:30:38,480
hundred

815
00:30:42,950 --> 00:30:40,799
and more from social media sure ron from

816
00:30:45,350 --> 00:30:42,960
twitter is asking what the launch window

817
00:30:47,190 --> 00:30:45,360
looks like for tomorrow

818
00:30:48,950 --> 00:30:47,200
the launch window is uh five minutes

819
00:30:51,669 --> 00:30:48,960
long which is our typical window for

820
00:30:53,909 --> 00:30:51,679
operating out of wallops and

821
00:30:55,350 --> 00:30:53,919
as as she said the weather looks good

822
00:30:56,870 --> 00:30:55,360
during that time frame that gives us a

823
00:30:58,470 --> 00:30:56,880
little bit of flexibility to work a few

824
00:30:59,350 --> 00:30:58,480
minor problems if we need to during the

825
00:31:02,470 --> 00:30:59,360
count

826
00:31:04,630 --> 00:31:02,480
uh but uh it it works for us and so

827
00:31:06,950 --> 00:31:04,640
typically it'll be five minutes

828
00:31:10,950 --> 00:31:06,960
okay a few more from the room

829
00:31:15,430 --> 00:31:13,509
again again from space.com um i was

830
00:31:18,070 --> 00:31:15,440
wondering if you've had to do any

831
00:31:20,470 --> 00:31:18,080
wildlife mitigation for this launch

832
00:31:22,149 --> 00:31:20,480
looks very green near the pad right now

833
00:31:23,669 --> 00:31:22,159
do you have to worry about grass fires

834
00:31:27,110 --> 00:31:23,679
or are there any

835
00:31:29,750 --> 00:31:27,120
specific problems to launching in july

836
00:31:32,389 --> 00:31:29,760
i can take that one if you want

837
00:31:35,110 --> 00:31:32,399
there aren't any concerns that we have

838
00:31:36,310 --> 00:31:35,120

we do have a plan for

839
00:31:38,230 --> 00:31:36,320
some

840
00:31:40,310 --> 00:31:38,240
an indigenous plant species that we have

841
00:31:42,389 --> 00:31:40,320
here to kind of control them around the

842
00:31:44,149 --> 00:31:42,399
pad they're called phragmites

843
00:31:48,149 --> 00:31:44,159
but right now this time of year that's

844
00:31:53,909 --> 00:31:50,870
robert

845
00:31:56,070 --> 00:31:53,919
again

846
00:31:58,389 --> 00:31:56,080
for frank for today's launch readiness

847
00:32:00,630 --> 00:31:58,399
review i just wonder i know you came out

848
00:32:02,630 --> 00:32:00,640
with a go but were there any pending

849
00:32:04,149 --> 00:32:02,640
issues that needed review

850
00:32:05,830 --> 00:32:04,159
yesterday during the science briefing

851
00:32:07,669 --> 00:32:05,840
someone noted that there was a cherry

852
00:32:09,110 --> 00:32:07,679
picker up against the

853
00:32:10,789 --> 00:32:09,120
antares

854
00:32:11,830 --> 00:32:10,799
were there any last-minute issues you're

855
00:32:15,350 --> 00:32:11,840
working

856
00:32:17,590 --> 00:32:15,360
occasionally we have to have people

857
00:32:19,350 --> 00:32:17,600
around the vehicle to adjust something

858
00:32:21,269 --> 00:32:19,360
or to take a look and see if

859
00:32:22,470 --> 00:32:21,279
an anomalous reading is accurate or not

860
00:32:23,909 --> 00:32:22,480
and we had a little bit of that that we

861
00:32:25,190 --> 00:32:23,919
had to work through

862
00:32:26,870 --> 00:32:25,200
during the count and everything is

863
00:32:28,630 --> 00:32:26,880

checked out and looking good there

864
00:32:31,190 --> 00:32:28,640
really were no issues

865
00:32:32,950 --> 00:32:31,200
open uh for the remainder of the count

866
00:32:34,470 --> 00:32:32,960
and we anticipate it should be fairly

867
00:32:35,750 --> 00:32:34,480
smooth

868
00:32:36,789 --> 00:32:35,760
i did want to mention a little bit about

869
00:32:38,630 --> 00:32:36,799
the future now that i've got the

870
00:32:39,830 --> 00:32:38,640
microphone um

871
00:32:42,070 --> 00:32:39,840
we

872
00:32:45,269 --> 00:32:42,080
are anticipating another launch this

873
00:32:48,070 --> 00:32:45,279
year should be in october or three and

874
00:32:50,630 --> 00:32:48,080
then three more launches next year

875
00:32:53,590 --> 00:32:50,640
three spacecraft are in various stages

876
00:32:55,350 --> 00:32:53,600
of completion at our dulles facility

877
00:32:57,750 --> 00:32:55,360
and we've got preparations for the next

878
00:32:58,710 --> 00:32:57,760
two going on actually the next three

879
00:33:00,630 --> 00:32:58,720
going on

880
00:33:01,509 --> 00:33:00,640
as we speak and so we are we are

881
00:33:03,509 --> 00:33:01,519
building

882
00:33:06,549 --> 00:33:03,519
steadily to continue to provide this

883
00:33:08,630 --> 00:33:06,559
this service and the ontario's guys are

884
00:33:10,470 --> 00:33:08,640
bringing in their hardware and

885
00:33:11,830 --> 00:33:10,480
and things are arriving on time and

886
00:33:13,750 --> 00:33:11,840
we're going to be able to maintain this

887
00:33:15,909 --> 00:33:13,760
schedule as long as we can fit it in

888
00:33:17,669 --> 00:33:15,919

between the traffic models and the and

889
00:33:20,549 --> 00:33:17,679
the other range constraints we might run

890
00:33:22,310 --> 00:33:20,559
into but uh this is an exciting time to

891
00:33:25,190 --> 00:33:22,320
to be involved with the space station on

892
00:33:28,710 --> 00:33:25,200
a commercial basis and we applaud nasa

893
00:33:31,269 --> 00:33:28,720
for continuing to to push that

894
00:33:34,389 --> 00:33:31,279
commercial capability and allow industry

895
00:33:36,230 --> 00:33:34,399
to to help further uh the exploration of

896
00:33:40,710 --> 00:33:36,240
of space using the international space

897
00:33:44,950 --> 00:33:43,350
say in space again uh for frank

898
00:33:47,990 --> 00:33:44,960
uh i know we're coming up with some bad

899
00:33:49,909 --> 00:33:48,000
weather uh after this this attempt do

900
00:33:53,269 --> 00:33:49,919
you have a backup date if it doesn't

901
00:33:54,630 --> 00:33:53,279
launch uh tomorrow we'll just keep going

902
00:33:56,389 --> 00:33:54,640
day by day

903
00:33:58,950 --> 00:33:56,399
and check the weather and make sure the

904
00:34:01,029 --> 00:33:58,960
systems are working

905
00:34:02,789 --> 00:34:01,039
if we don't launch tomorrow it depends

906
00:34:05,269 --> 00:34:02,799
on the reason we don't launch if it's a

907
00:34:06,870 --> 00:34:05,279
technical problem that takes less than a

908
00:34:08,629 --> 00:34:06,880
day to fix them we'll we'll do that if

909
00:34:11,829 --> 00:34:08,639
it's uh something longer we'll we'll

910
00:34:13,430 --> 00:34:11,839
adjust but as i said uh nasa and mars

911
00:34:15,669 --> 00:34:13,440
work very closely with us on range

912
00:34:17,190 --> 00:34:15,679
availability uh and we of course work

913
00:34:19,430 --> 00:34:17,200

with the international space station on

914
00:34:21,990 --> 00:34:19,440
its availability for receiving us

915
00:34:24,310 --> 00:34:22,000
we've got about uh

916
00:34:26,710 --> 00:34:24,320
four more days of

917
00:34:28,790 --> 00:34:26,720
launch capability uh if the weather

918
00:34:30,389 --> 00:34:28,800
cooperates if it doesn't then we'll just

919
00:34:32,550 --> 00:34:30,399
we'll

920
00:34:34,950 --> 00:34:32,560
scrub if we need to and go to the next

921
00:34:36,710 --> 00:34:34,960
day there is a cut out later in july

922
00:34:37,909 --> 00:34:36,720
when the progress operation is being

923
00:34:39,190 --> 00:34:37,919
conducted

924
00:34:40,629 --> 00:34:39,200
but after that i think we'll have more

925
00:34:44,470 --> 00:34:40,639
opportunities if we need them but let's

926
00:34:51,510 --> 00:34:47,430
any other last questions here

927
00:34:55,669 --> 00:34:53,190
yeah just a quick follow-up on on that

928
00:34:57,349 --> 00:34:55,679
one um and uh maybe this is for sarah

929
00:34:59,190 --> 00:34:57,359
again uh

930
00:35:02,150 --> 00:34:59,200
there's a launch from the cape schedule

931
00:35:03,670 --> 00:35:02,160
for monday morning can you support if if

932
00:35:05,430 --> 00:35:03,680
the launch here gets delayed from sunday

933
00:35:06,870 --> 00:35:05,440
to monday can you still support that

934
00:35:09,109 --> 00:35:06,880
launch if there's also a launch of the

935
00:35:10,390 --> 00:35:09,119
cape are there any range tracking assets

936
00:35:11,270 --> 00:35:10,400
that are shared that would cause an

937
00:35:13,990 --> 00:35:11,280
issue

938
00:35:15,109 --> 00:35:14,000

yeah we have we have looked at that so

939
00:35:17,829 --> 00:35:15,119
there are some

940
00:35:19,670 --> 00:35:17,839
periods of time during uh both of

941
00:35:20,870 --> 00:35:19,680
the countdowns from the cape and from

942
00:35:23,750 --> 00:35:20,880
here where

943
00:35:25,670 --> 00:35:23,760
we will be real-time coordinating um

944
00:35:27,910 --> 00:35:25,680
just radio frequency

945
00:35:29,430 --> 00:35:27,920
deconfliction that's the the main thing

946
00:35:32,069 --> 00:35:29,440
so that we're not

947
00:35:35,190 --> 00:35:32,079
operating on a frequency that they are

948
00:35:37,109 --> 00:35:35,200
using for uh command confidence checks

949
00:35:39,030 --> 00:35:37,119
and things of that nature so but we've

950
00:35:40,870 --> 00:35:39,040
already got that all worked out and

951
00:35:43,670 --> 00:35:40,880
we'll be working that real time if we

952
00:35:48,069 --> 00:35:43,680
are you know looking at a one day slip

953
00:35:53,109 --> 00:35:51,190
okay and we have time for one more here

954
00:35:55,510 --> 00:35:53,119
a little a question here

955
00:35:57,109 --> 00:35:55,520
nope okay

956
00:35:58,550 --> 00:35:57,119
just waving at you

957
00:36:00,150 --> 00:35:58,560
all right well i want to thank everyone

958
00:36:01,510 --> 00:36:00,160
for joining us today especially our

959
00:36:03,109 --> 00:36:01,520
participants

960
00:36:05,270 --> 00:36:03,119
for those of you who want to tune in to

961
00:36:08,470 --> 00:36:05,280
our launch coverage tomorrow that begins

962
00:36:09,910 --> 00:36:08,480
at noon eastern time on nasa tv

963
00:36:11,750 --> 00:36:09,920

you can find more about the

964
00:36:16,630 --> 00:36:11,760
international space station and about