



1
00:00:08,059 --> 00:00:06,139
good afternoon from the Wallops Flight

2
00:00:09,530 --> 00:00:08,069
Facility in Virginia I'm NASA's Josh

3
00:00:11,210 --> 00:00:09,540
Byerly well as you can see from the

4
00:00:13,340 --> 00:00:11,220
empty launch pad outside and the smiles

5
00:00:14,510 --> 00:00:13,350
in the room and tearing seasickness are

6
00:00:17,330 --> 00:00:14,520
on their way to the International Space

7
00:00:20,960 --> 00:00:17,340
Station launch took place at 1058 a.m.

8
00:00:22,700 --> 00:00:20,970
eastern time today 958 a.m. central time

9
00:00:25,159 --> 00:00:22,710
rendezvous now set with the space

10
00:00:26,659 --> 00:00:25,169
station 4 sep tember 22nd and here to

11
00:00:28,669 --> 00:00:26,669
talk about today's launch and what's

12
00:00:30,559 --> 00:00:28,679
ahead for the vehicle as well as nasa

13
00:00:32,210 --> 00:00:30,569

and orbital is our panel we're joined by

14

00:00:34,760 --> 00:00:32,220

Robert Lightfoot NASA associate

15

00:00:36,800 --> 00:00:34,770

administrator from NASA headquarters we

16

00:00:38,540 --> 00:00:36,810

also have Alan Linda Moyer NASA's

17

00:00:41,210 --> 00:00:38,550

Commercial Crew and cargo program

18

00:00:43,310 --> 00:00:41,220

manager and we're also joined by Frank

19

00:00:44,690 --> 00:00:43,320

Culbertson executive vice president of

20

00:00:45,620 --> 00:00:44,700

Orbital Sciences will hear from each one

21

00:00:47,420 --> 00:00:45,630

of them then we'll take some questions

22

00:00:49,760 --> 00:00:47,430

I'm sure it's going to be a good day for

23

00:00:51,320 --> 00:00:49,770

everybody so mr. Lightfoot thanks Josh

24

00:00:53,000 --> 00:00:51,330

appreciate it and thank you all for

25

00:00:55,460 --> 00:00:53,010

being here very exciting day for us

26

00:00:56,930 --> 00:00:55,470

first of all I want to I want to pass on

27

00:00:59,480 --> 00:00:56,940

that I've got word from Administrator

28

00:01:01,760 --> 00:00:59,490

Charlie Bolden congratulating orbital

29

00:01:03,680 --> 00:01:01,770

science for a successful launch and

30

00:01:05,569 --> 00:01:03,690

congratulating the NASA team that the

31

00:01:07,700 --> 00:01:05,579

partnership that we worked alongside

32

00:01:10,280 --> 00:01:07,710

these guys to make this successful good

33

00:01:11,510 --> 00:01:10,290

day for us with the launch today you

34

00:01:12,680 --> 00:01:11,520

know orbital science is now

35

00:01:14,270 --> 00:01:12,690

accomplishing one of our critical

36

00:01:16,490 --> 00:01:14,280

spaceflight objectives that we that we

37

00:01:19,070 --> 00:01:16,500

want the maiden voyage of Cygnus going

38

00:01:21,290 --> 00:01:19,080

to the International Space Station here

39

00:01:23,780 --> 00:01:21,300

in Virginia with in partnership with the

40

00:01:25,840 --> 00:01:23,790

mid-atlantic regional spaceport folks

41

00:01:27,800 --> 00:01:25,850

this is a good this is a good day

42

00:01:32,780 --> 00:01:27,810

orbital to now one of the two carriers

43

00:01:34,310 --> 00:01:32,790

for us to supply cargo and the things we

44

00:01:35,960 --> 00:01:34,320

need for the International Space Station

45

00:01:39,050 --> 00:01:35,970

and as you know the International Space

46

00:01:40,640 --> 00:01:39,060

Station is our is our key piece right

47

00:01:42,980 --> 00:01:40,650

now for human exploration we want to get

48

00:01:45,710 --> 00:01:42,990

that station utilized as much as we can

49

00:01:47,750 --> 00:01:45,720

and by having the extra cargo capability

50

00:01:49,700 --> 00:01:47,760

that orbital is going to bring with

51
00:01:51,590 --> 00:01:49,710
sickness it allows us to do more and

52
00:01:53,899 --> 00:01:51,600
more of the experiments and science that

53
00:01:55,460 --> 00:01:53,909
we want to do to continue our pursuit of

54
00:01:57,830 --> 00:01:55,470
human exploration beyond low Earth orbit

55
00:01:59,780 --> 00:01:57,840
so the station remains that springboard

56
00:02:02,149 --> 00:01:59,790
for us and with this with this

57
00:02:03,890 --> 00:02:02,159
successful mission you know super

58
00:02:06,530 --> 00:02:03,900
excited about what that what that opens

59
00:02:08,059 --> 00:02:06,540
up for us as an agency we look forward

60
00:02:11,320 --> 00:02:08,069
to the rendezvous with the station on

61
00:02:13,730 --> 00:02:11,330
Sunday and in and with that we'll have

62
00:02:16,010 --> 00:02:13,740
orbital joining SpaceX as one of our

63
00:02:16,720 --> 00:02:16,020

providers to do to take care of this for

64

00:02:18,920 --> 00:02:16,730

us

65

00:02:20,450 --> 00:02:18,930

you know if we needed more tangible

66

00:02:23,600 --> 00:02:20,460

proof of this is a new era of

67

00:02:25,520 --> 00:02:23,610

exploration it's right here right now

68

00:02:27,680 --> 00:02:25,530

right here in Virginia the continuing

69

00:02:29,840 --> 00:02:27,690

success of our commercial partners and

70

00:02:31,520 --> 00:02:29,850

what they're doing to help us advance

71

00:02:33,530 --> 00:02:31,530

the goals of a human spaceflight

72

00:02:34,640 --> 00:02:33,540

expiration so with that let me turn it

73

00:02:36,080 --> 00:02:34,650

over to the folks that really know

74

00:02:38,840 --> 00:02:36,090

what's been going on the ones they've

75

00:02:39,950 --> 00:02:38,850

been working so hard and give you more

76

00:02:41,690 --> 00:02:39,960

detail on the mission and what you

77

00:02:45,110 --> 00:02:41,700

should expect to see in the in the days

78

00:02:48,770 --> 00:02:45,120

and weeks to come all right thank you

79

00:02:52,310 --> 00:02:48,780

Robert this is another historic day for

80

00:02:55,670 --> 00:02:52,320

commercial spaceflight a very proud day

81

00:02:59,200 --> 00:02:55,680

for NASA and an amazing accomplishment

82

00:03:01,340 --> 00:02:59,210

for our partner orbital sciences

83

00:03:03,290 --> 00:03:01,350

congratulations to the entire team

84

00:03:06,860 --> 00:03:03,300

thanks Frank leesville you've done

85

00:03:10,040 --> 00:03:06,870

operated flawlessly the teams came

86

00:03:13,130 --> 00:03:10,050

together beautifully today for a picture

87

00:03:15,650 --> 00:03:13,140

perfect launch of the Antares and

88

00:03:17,690 --> 00:03:15,660

sending our brand new spacecraft Cygnus

89

00:03:21,140 --> 00:03:17,700

on its way to the space station so we

90

00:03:24,740 --> 00:03:21,150

are certainly looking forward to the

91

00:03:28,550 --> 00:03:24,750

arrival of Cygnus Sunday morning and the

92

00:03:31,700 --> 00:03:28,560

completion of what has begun to be a

93

00:03:37,520 --> 00:03:31,710

absolutely beautiful mission Thanks

94

00:03:41,840 --> 00:03:37,530

thank you edit yeah thanks for you don't

95

00:03:43,520 --> 00:03:41,850

have six charts no charge well this is a

96

00:03:45,080 --> 00:03:43,530

very exciting day for us and as you can

97

00:03:47,210 --> 00:03:45,090

imagine there's a lot of happy people in

98

00:03:49,340 --> 00:03:47,220

the control center a lot of happy people

99

00:03:51,830 --> 00:03:49,350

all over the orbital campuses and a lot

100

00:03:55,340 --> 00:03:51,840

of people here at Wallops are smiling

101
00:03:57,170 --> 00:03:55,350
and very excited I'm going to show a

102
00:03:58,850 --> 00:03:57,180
quick video but before I do I do want to

103
00:04:01,010 --> 00:03:58,860
say thanks to the entire team that

104
00:04:02,960 --> 00:04:01,020
contributed to this obviously the folks

105
00:04:05,300 --> 00:04:02,970
in orbital that built and designed the

106
00:04:06,710 --> 00:04:05,310
rocket the spacecraft is working really

107
00:04:09,020 --> 00:04:06,720
well right now and I'll talk a little

108
00:04:10,880 --> 00:04:09,030
bit more about that the mid-atlantic

109
00:04:12,740 --> 00:04:10,890
regional spaceport team and the state of

110
00:04:15,110 --> 00:04:12,750
Virginia we really appreciate all their

111
00:04:16,550 --> 00:04:15,120
hard work and in renovating the pad

112
00:04:18,440 --> 00:04:16,560
after the last launch and getting it

113
00:04:20,780 --> 00:04:18,450

ready and making improvements which

114

00:04:22,610 --> 00:04:20,790

allowed us to get through this we worked

115

00:04:26,510 --> 00:04:22,620

closely with the FAA to get through the

116

00:04:27,920 --> 00:04:26,520

launch approval that's never an easy

117

00:04:29,150 --> 00:04:27,930

task because there's a lot of things

118

00:04:30,170 --> 00:04:29,160

that have to be considered and we

119

00:04:31,879 --> 00:04:30,180

appreciate them working

120

00:04:33,469 --> 00:04:31,889

those issues hard and of course we

121

00:04:35,960 --> 00:04:33,479

certainly appreciate the hospitality of

122

00:04:37,700 --> 00:04:35,970

wallops flight facility and all the

123

00:04:40,010 --> 00:04:37,710

people here who work so hard to make

124

00:04:41,240 --> 00:04:40,020

this happen it was a real partnership we

125

00:04:42,860 --> 00:04:41,250

also had a lot of support from NASA

126

00:04:47,510 --> 00:04:42,870

headquarters they showed up today to

127

00:04:48,950 --> 00:04:47,520

help is what they said thanks Robert but

128

00:04:50,930 --> 00:04:48,960

they were here and they were helpful and

129

00:04:52,640 --> 00:04:50,940

they have been all along as well as the

130

00:04:54,920 --> 00:04:52,650

International Space Station program who

131

00:04:55,939 --> 00:04:54,930

is of course the recipient of these

132

00:04:58,760 --> 00:04:55,949

services that we're going to be

133

00:05:00,110 --> 00:04:58,770

providing and as Robert said is very

134

00:05:02,600 --> 00:05:00,120

important to the future of the space

135

00:05:04,580 --> 00:05:02,610

station which we certainly recognize and

136

00:05:07,100 --> 00:05:04,590

understand and we are committed to

137

00:05:09,620 --> 00:05:07,110

making sure that the space station is

138

00:05:11,600 --> 00:05:09,630

able to contend be continued be

139

00:05:14,659 --> 00:05:11,610

functional and be productive for the

140

00:05:17,029 --> 00:05:14,669

long for the long term I think we have a

141

00:05:20,420 --> 00:05:17,039

little bit of video of the launch and if

142

00:05:23,330 --> 00:05:20,430

we could roll that Tony you can see the

143

00:05:24,409 --> 00:05:23,340

moment of liftoff there we do a little

144

00:05:26,390 --> 00:05:24,419

maneuver to make sure that we don't

145

00:05:28,990 --> 00:05:26,400

damage the transporter erector as we

146

00:05:31,129 --> 00:05:29,000

lift off but it looked very steady and

147

00:05:32,990 --> 00:05:31,139

always a good feeling in Mission Control

148

00:05:36,589 --> 00:05:33,000

when you have a clean ignition and it

149

00:05:38,510 --> 00:05:36,599

clears the tower it accelerated pretty

150

00:05:40,850 --> 00:05:38,520

much by the book and it was right on the

151
00:05:44,270 --> 00:05:40,860
trajectory planned everything looked at

152
00:05:46,279 --> 00:05:44,280
the very smooth inside and our chief

153
00:05:48,020 --> 00:05:46,289
engineer Mike dorsch actually learned a

154
00:05:51,680 --> 00:05:48,030
few words besides nominal for this one

155
00:05:54,350 --> 00:05:51,690
and but Mike does a great job of

156
00:05:56,300 --> 00:05:54,360
describing it and and where we were we

157
00:05:57,800 --> 00:05:56,310
had the rocket cam operating for part of

158
00:06:01,700 --> 00:05:57,810
the launch she didn't last the entire

159
00:06:03,140 --> 00:06:01,710
asset but as you'll see in a moment and

160
00:06:07,610 --> 00:06:03,150
I'm not sure if this is abbreviated or

161
00:06:10,159 --> 00:06:07,620
not but we had a very clean Miko right

162
00:06:13,129 --> 00:06:10,169
on target actually a little bit high

163
00:06:15,499 --> 00:06:13,139

which is okay and and then a good

164

00:06:18,260 --> 00:06:15,509

separation and the second stage burned

165

00:06:21,379 --> 00:06:18,270

flawlessly took us into orbit we had a

166

00:06:23,120 --> 00:06:21,389

great fairing separation which we always

167

00:06:26,990 --> 00:06:23,130

look forward to as well as the fairing

168

00:06:29,390 --> 00:06:27,000

adapter prior to that we coast for a

169

00:06:30,980 --> 00:06:29,400

little while after second stage shuts

170

00:06:33,589 --> 00:06:30,990

down in order to make sure that

171

00:06:35,749 --> 00:06:33,599

everything is stable and and then we

172

00:06:38,240 --> 00:06:35,759

separate the Cygnus about ten minutes

173

00:06:41,330 --> 00:06:38,250

after liftoff we don't have a lot of

174

00:06:41,519 --> 00:06:41,340

video I'm sorry a lot of data normally

175

00:06:43,079 --> 00:06:41,529

it

176

00:06:44,849 --> 00:06:43,089

time but we did manage to pick up a

177

00:06:47,279 --> 00:06:44,859

little bit of data through tedious and

178

00:06:50,099 --> 00:06:47,289

we could see that it was stable and and

179

00:06:52,739 --> 00:06:50,109

we have since had good luck with the

180

00:06:57,299 --> 00:06:52,749

with the spacecraft and the status is

181

00:06:59,009 --> 00:06:57,309

all great it's the solar arrays have

182

00:07:01,169 --> 00:06:59,019

deployed we're getting good power from

183

00:07:03,659 --> 00:07:01,179

them the prop system has activated we're

184

00:07:05,429 --> 00:07:03,669

getting good stable control of the

185

00:07:08,189 --> 00:07:05,439

spacecraft and it's pointing towards the

186

00:07:09,539 --> 00:07:08,199

Sun and getting ready to execute the

187

00:07:11,309 --> 00:07:09,549

maneuvers that will take it to the

188

00:07:13,619 --> 00:07:11,319

international space station in about

189

00:07:16,409 --> 00:07:13,629

four days and we can stop the video

190

00:07:18,149 --> 00:07:16,419

there I think you'll have a chance to

191

00:07:23,249 --> 00:07:18,159

see it over and over on NASA TV if you

192

00:07:25,259 --> 00:07:23,259

want and I hope you do the spacecraft of

193

00:07:29,009 --> 00:07:25,269

course is loaded with about 700

194

00:07:31,649 --> 00:07:29,019

kilograms of cargo I'll point out this

195

00:07:34,129 --> 00:07:31,659

is the the most cargo delivered by a

196

00:07:36,749 --> 00:07:34,139

commercial spacecraft to orbit to date

197

00:07:39,569 --> 00:07:36,759

and you can do whatever math and history

198

00:07:42,509 --> 00:07:39,579

checking you want to but 700 kilograms

199

00:07:44,369 --> 00:07:42,519

is a good bit of cargo to demonstrate

200

00:07:47,069 --> 00:07:44,379

that capability our next mission is

201
00:07:48,989 --> 00:07:47,079
coming up in December December between

202
00:07:52,019 --> 00:07:48,999
december eight and december 21st is our

203
00:07:53,819 --> 00:07:52,029
target and we'll deliver almost 1,300

204
00:07:56,489 --> 00:07:53,829
kilograms at that time maybe more if

205
00:07:59,159 --> 00:07:56,499
NASA comes up with some requirements so

206
00:08:02,969 --> 00:07:59,169
we'll be ready to go before the end of

207
00:08:05,279 --> 00:08:02,979
the year to deliver again this was hard

208
00:08:06,600 --> 00:08:05,289
this difficult to get a rocket off of a

209
00:08:08,039 --> 00:08:06,610
launch pad there's a lot of things that

210
00:08:10,379 --> 00:08:08,049
have to come together no matter how many

211
00:08:12,389 --> 00:08:10,389
times you do it what type of rocket it

212
00:08:15,539 --> 00:08:12,399
is and what type of team you have it's

213
00:08:17,789 --> 00:08:15,549

complicated that the systems are complex

214

00:08:19,649 --> 00:08:17,799

and there's a lot of factors outside

215

00:08:21,899 --> 00:08:19,659

your control such as whether that you

216

00:08:23,729 --> 00:08:21,909

have to deal with but it all came

217

00:08:25,139 --> 00:08:23,739

together because the team knows how to

218

00:08:27,149 --> 00:08:25,149

work these issues knows how to work

219

00:08:29,689 --> 00:08:27,159

these problems and by the team i mean

220

00:08:31,799 --> 00:08:29,699

the combined team of all the the

221

00:08:34,860 --> 00:08:31,809

organizations involved government and

222

00:08:36,119 --> 00:08:34,870

industry this is the way of the future

223

00:08:37,829 --> 00:08:36,129

this is how we're going to have to

224

00:08:40,469 --> 00:08:37,839

operate going forward in order to

225

00:08:42,619 --> 00:08:40,479

maintain a robust space program and I

226

00:08:45,720 --> 00:08:42,629

think we're demonstrating it can be done

227

00:08:48,809 --> 00:08:45,730

but this was just step one of the hard

228

00:08:50,429 --> 00:08:48,819

part step two is coming up as we begin

229

00:08:52,110 --> 00:08:50,439

the rendezvous and the maneuvers to get

230

00:08:54,210 --> 00:08:52,120

to the station to demonstrate that we

231

00:08:55,740 --> 00:08:54,220

can in fact control the spacecraft

232

00:08:59,300 --> 00:08:55,750

and we'll be doing that over the next

233

00:09:01,829 --> 00:08:59,310

three days shortly after midnight on the

234

00:09:05,340 --> 00:09:01,839

22nd the morning Sunday morning we will

235

00:09:07,499 --> 00:09:05,350

begin the approach to the station will

236

00:09:09,990 --> 00:09:07,509

come from underneath and in gradual

237

00:09:11,340 --> 00:09:10,000

steps getting closer and closer working

238

00:09:13,230 --> 00:09:11,350

in conjunction with Mission Control

239

00:09:16,619 --> 00:09:13,240

Center in Houston our team in dulles

240

00:09:18,150 --> 00:09:16,629

will will control the spacecraft monitor

241

00:09:20,040 --> 00:09:18,160

the activity and then when we reach the

242

00:09:21,990 --> 00:09:20,050

what we call the r bar which is the line

243

00:09:23,970 --> 00:09:22,000

directly below the station pointing

244

00:09:26,129 --> 00:09:23,980

towards the center of the earth we will

245

00:09:28,769 --> 00:09:26,139

begin our approach final approach to the

246

00:09:30,840 --> 00:09:28,779

station will do a couple of approaches

247

00:09:32,369 --> 00:09:30,850

and retreat so if you see us go up and

248

00:09:34,650 --> 00:09:32,379

down don't worry it's part of the plan

249

00:09:37,230 --> 00:09:34,660

and then when we get inside 200 meters

250

00:09:39,240 --> 00:09:37,240

will continue autonomously to a point

251
00:09:41,460 --> 00:09:39,250
about 10 meters below the station at

252
00:09:43,590 --> 00:09:41,470
that point the the cruel command us to

253
00:09:46,079 --> 00:09:43,600
free drift and we will sit there until

254
00:09:48,210 --> 00:09:46,089
they grapple us with the robotic arm the

255
00:09:50,249 --> 00:09:48,220
canadian armed and and then they'll

256
00:09:52,650 --> 00:09:50,259
maneuver the spacecraft to the bottom of

257
00:09:55,619 --> 00:09:52,660
the of the node to the nadir port and

258
00:09:57,780 --> 00:09:55,629
attach us using the standard common

259
00:09:59,900 --> 00:09:57,790
berthing mechanism that all modules have

260
00:10:01,799 --> 00:09:59,910
been used to attach to the u.s. segment

261
00:10:03,360 --> 00:10:01,809
we're really looking forward to that day

262
00:10:05,970 --> 00:10:03,370
but it's going to be a long day for all

263
00:10:07,590 --> 00:10:05,980

the teams involved and we may or may not

264

00:10:10,619 --> 00:10:07,600

get to the point where we can after

265

00:10:12,179 --> 00:10:10,629

birthing and after pressure checks where

266

00:10:15,059 --> 00:10:12,189

we can open that open the hatch and

267

00:10:16,769 --> 00:10:15,069

check the cargo if not we'll do it the

268

00:10:18,960 --> 00:10:16,779

next day first thing and the crew will

269

00:10:21,689 --> 00:10:18,970

have a chance to to take a look at what

270

00:10:23,970 --> 00:10:21,699

we've sent to them and and start

271

00:10:25,230 --> 00:10:23,980

unloading shortly after they've unloaded

272

00:10:27,629 --> 00:10:25,240

everything they'll probably start

273

00:10:29,879 --> 00:10:27,639

reloading disposable cargo over the next

274

00:10:31,829 --> 00:10:29,889

three to four weeks and then after about

275

00:10:34,110 --> 00:10:31,839

30 days on orbit will detach from the

276

00:10:36,059 --> 00:10:34,120

station be released by the robotic arm

277

00:10:37,829 --> 00:10:36,069

and then do what we call a destructive

278

00:10:39,389 --> 00:10:37,839

re-entry where everything on board

279

00:10:41,299 --> 00:10:39,399

almost everything on board will burn up

280

00:10:44,519 --> 00:10:41,309

during the re-entry and be disposed of

281

00:10:45,900 --> 00:10:44,529

so it's going to be a exciting and

282

00:10:48,389 --> 00:10:45,910

fascinating an interesting time for

283

00:10:51,030 --> 00:10:48,399

everybody involved that will terminate

284

00:10:53,069 --> 00:10:51,040

in mid-october actually third week in

285

00:10:56,549 --> 00:10:53,079

October with that reentry in the

286

00:10:58,590 --> 00:10:56,559

meantime our team here at Wallops are on

287

00:11:00,210 --> 00:10:58,600

Terry's team and our Cygnus team

288

00:11:01,230 --> 00:11:00,220

actually we're going to give them a

289

00:11:02,759 --> 00:11:01,240

little bit of time off to celebrate

290

00:11:04,410 --> 00:11:02,769

today but then they're going to turn to

291

00:11:05,800 --> 00:11:04,420

and get ready for the next one which is

292

00:11:08,050 --> 00:11:05,810

coming up very soon

293

00:11:11,230 --> 00:11:08,060

so we've got all the hardware we need

294

00:11:12,430 --> 00:11:11,240

either here or in route for the next

295

00:11:14,620 --> 00:11:12,440

mission actually for the next two

296

00:11:16,510 --> 00:11:14,630

missions and so we're going to be

297

00:11:18,040 --> 00:11:16,520

pumping them out as fast as NASA needs

298

00:11:21,070 --> 00:11:18,050

them and as fast as we can get them

299

00:11:22,750 --> 00:11:21,080

turned around it looked like it was very

300

00:11:27,519 --> 00:11:22,760

clean from a pad standpoint today I

301

00:11:31,510 --> 00:11:27,529

didn't see a fire start anybody and but

302

00:11:33,340 --> 00:11:31,520

that's not our plan by the way but we'll

303

00:11:34,810 --> 00:11:33,350

we'll keep it going as long as fast as

304

00:11:38,500 --> 00:11:34,820

they need us in as fast as they can get

305

00:11:40,120 --> 00:11:38,510

us cargo to load so I think that's a

306

00:11:43,750 --> 00:11:40,130

pretty reasonable summary of where we

307

00:11:46,240 --> 00:11:43,760

are again I want to reiterate how happy

308

00:11:47,980 --> 00:11:46,250

the company is with how well the team

309

00:11:50,350 --> 00:11:47,990

has done with the partnership with a

310

00:11:52,570 --> 00:11:50,360

with all the other organizations

311

00:11:54,790 --> 00:11:52,580

involved and i want to send greetings

312

00:11:56,440 --> 00:11:54,800

from david thompson who said to let you

313

00:11:58,150 --> 00:11:56,450

know that this is just the beginning of

314

00:11:59,980 --> 00:11:58,160

what we're going to be able to do to

315

00:12:01,750 --> 00:11:59,990

support human spaceflight and we will

316

00:12:04,630 --> 00:12:01,760

continue for as long as the space

317

00:12:08,800 --> 00:12:04,640

station is there to do that i also want

318

00:12:11,920 --> 00:12:08,810

to mention that David Lowe's family was

319

00:12:15,070 --> 00:12:11,930

here today this was the voyage of the

320

00:12:16,720 --> 00:12:15,080

spaceship G David Lowe and it's Davis

321

00:12:19,990 --> 00:12:16,730

chance to get to the space station which

322

00:12:22,000 --> 00:12:20,000

we're all real happy about and he he was

323

00:12:23,770 --> 00:12:22,010

very much involved in the design of it

324

00:12:26,050 --> 00:12:23,780

and also in the design of this

325

00:12:27,340 --> 00:12:26,060

spacecraft that's going there so we're

326

00:12:29,350 --> 00:12:27,350

happy that his family and his children

327

00:12:31,900 --> 00:12:29,360

could be here today to do witness to

328

00:12:34,360 --> 00:12:31,910

liftoff so with that I'll look forward

329

00:12:36,070 --> 00:12:34,370

to your questions thank you very much ok

330

00:12:37,300 --> 00:12:36,080

we will start off here at Wallops we'll

331

00:12:38,650 --> 00:12:37,310

go to the phone lines after this we also

332

00:12:39,880 --> 00:12:38,660

want to make sure but it knows that

333

00:12:43,000 --> 00:12:39,890

we're taking questions on social media

334

00:12:44,170 --> 00:12:43,010

just use the hashtag ask NASA so for

335

00:12:45,220 --> 00:12:44,180

those of you here in the room tweeting

336

00:12:46,900 --> 00:12:45,230

make sure you advertise that to your

337

00:12:48,730 --> 00:12:46,910

followers and we'll see if we get the

338

00:12:49,960 --> 00:12:48,740

questions in here in just a few minutes

339

00:12:54,130 --> 00:12:49,970

so let's start off down here around with

340

00:12:56,770 --> 00:12:54,140

Phillip Phillips loss with NASA Space

341

00:12:58,840 --> 00:12:56,780

Flight calm for mr. Culberson do you

342

00:13:01,300 --> 00:12:58,850

have any preliminary numbers on the

343

00:13:03,100 --> 00:13:01,310

launch vehicle performance and how close

344

00:13:06,100 --> 00:13:03,110

she came to hitting your target data

345

00:13:09,100 --> 00:13:06,110

parameters it looked like the apogee at

346

00:13:10,900 --> 00:13:09,110

perigee were approximately 289 by 257

347

00:13:12,730 --> 00:13:10,910

our target was actually a couple of

348

00:13:15,880 --> 00:13:12,740

kilometers below that so we're in really

349

00:13:18,350 --> 00:13:15,890

good shape and then

350

00:13:20,120 --> 00:13:18,360

could you can you compare the two

351

00:13:22,360 --> 00:13:20,130

launched campaigns and perhaps the

352

00:13:24,860 --> 00:13:22,370

countdown today seemed very smooth and

353

00:13:26,510 --> 00:13:24,870

obviously a few more hiccups during the

354

00:13:30,110 --> 00:13:26,520

first launch campaign and this one

355

00:13:31,760 --> 00:13:30,120

seemed to go much smoother well you know

356

00:13:33,500 --> 00:13:31,770

I was impressed with the team the first

357

00:13:36,350 --> 00:13:33,510

time we launched with how professionally

358

00:13:37,340 --> 00:13:36,360

were how well-trained how polished they

359

00:13:41,240 --> 00:13:37,350

sounded like they done this a hundred

360

00:13:42,740 --> 00:13:41,250

times today was 101 times and and they

361

00:13:44,840 --> 00:13:42,750

sounded great to handle the problems

362

00:13:46,990 --> 00:13:44,850

that came up very smoothly they

363

00:13:49,490 --> 00:13:47,000

discussed options that came up with the

364

00:13:50,810 --> 00:13:49,500

suggestions and proposals through the

365

00:13:54,110 --> 00:13:50,820

launch director and the chief engineer

366

00:13:56,090 --> 00:13:54,120

and and I was very again very impressed

367

00:13:58,010 --> 00:13:56,100

with the professionalism and and how

368

00:13:59,150 --> 00:13:58,020

they kept their cool and what

369

00:14:00,230 --> 00:13:59,160

particularly we had a couple of things

370

00:14:02,930 --> 00:14:00,240

that look like they were going to go out

371

00:14:04,190 --> 00:14:02,940

of limits late in the count they talked

372

00:14:06,890 --> 00:14:04,200

about whether they really would or not

373

00:14:08,360 --> 00:14:06,900

assess the trends and then also looked

374

00:14:10,460 --> 00:14:08,370

at how the limits would change as we

375

00:14:12,650 --> 00:14:10,470

went forward and that that kept us going

376

00:14:18,740 --> 00:14:12,660

and the other thing we were working was

377

00:14:20,450 --> 00:14:18,750

the effects of the assessment of hazards

378

00:14:21,860 --> 00:14:20,460

to people on the ground and we had to

379

00:14:24,770 --> 00:14:21,870

work that pretty hard right up till the

380

00:14:27,170 --> 00:14:24,780

end as it turned out we were go and and

381

00:14:29,600 --> 00:14:27,180

we had a confirm go from from the range

382

00:14:30,800 --> 00:14:29,610

and from the FAA but it was it was tight

383

00:14:32,420 --> 00:14:30,810

and those are the kind of things you

384

00:14:34,070 --> 00:14:32,430

have to work very hard and and make sure

385

00:14:36,050 --> 00:14:34,080

you're looking at all possibilities so

386

00:14:37,580 --> 00:14:36,060

again I was very impressed with how the

387

00:14:40,460 --> 00:14:37,590

team worked together and for the same

388

00:14:41,450 --> 00:14:40,470

common goal okay let's keep working from

389

00:14:43,730 --> 00:14:41,460

left to right over here and then we'll

390

00:14:45,920 --> 00:14:43,740

come over Jason right with American

391

00:14:48,500 --> 00:14:45,930

space.com and I got one question for

392

00:14:49,700 --> 00:14:48,510

Frank and one for mr. Lightfoot Frank I

393

00:14:51,050 --> 00:14:49,710

want to touch him one he was saying for

394

00:14:52,580 --> 00:14:51,060

a second there's we were listening we

395

00:14:54,830 --> 00:14:52,590

heard that ok we're going to wave this

396

00:14:56,500 --> 00:14:54,840

and this is going out of limits here and

397

00:14:59,240 --> 00:14:56,510

maybe you could talk a bit about

398

00:15:01,670 --> 00:14:59,250

orbitals team and how you can work these

399

00:15:03,650 --> 00:15:01,680

issues in real time and also if there's

400

00:15:05,720 --> 00:15:03,660

something that's going off nominal you

401
00:15:07,100 --> 00:15:05,730
can just find a way to work around it

402
00:15:09,590 --> 00:15:07,110
and still conduct launch like you did

403
00:15:11,180 --> 00:15:09,600
today typically when you're when you're

404
00:15:13,100 --> 00:15:11,190
conducting an operation like this you're

405
00:15:15,830 --> 00:15:13,110
set your limits your constraint your

406
00:15:17,480 --> 00:15:15,840
flight rules up to handle all situations

407
00:15:20,060 --> 00:15:17,490
as if everything was going to happen at

408
00:15:21,470 --> 00:15:20,070
once and and and that you're not going

409
00:15:22,760 --> 00:15:21,480
to have any time to work it so you want

410
00:15:24,710 --> 00:15:22,770
to have a pre-planned limit to

411
00:15:26,870 --> 00:15:24,720
everything a threshold if you will if

412
00:15:28,900 --> 00:15:26,880
you have time to analyze what's going on

413
00:15:30,610 --> 00:15:28,910

you can say ok this limit was set for

414

00:15:32,950 --> 00:15:30,620

this particular reason but everything

415

00:15:36,700 --> 00:15:32,960

else is in such good shape and and the

416

00:15:37,870 --> 00:15:36,710

rationale for this is XYZ we know that

417

00:15:39,730 --> 00:15:37,880

we can go a little bit further because

418

00:15:41,710 --> 00:15:39,740

we have margin in the system so we're

419

00:15:44,020 --> 00:15:41,720

going to waive that official limit and

420

00:15:46,510 --> 00:15:44,030

reset it to a little bit more liberal

421

00:15:49,120 --> 00:15:46,520

and or whatever the case may be and so

422

00:15:50,290 --> 00:15:49,130

if the team has time to assess it and

423

00:15:52,540 --> 00:15:50,300

they have the ability to use the

424

00:15:54,070 --> 00:15:52,550

engineering judgment required as well as

425

00:15:56,290 --> 00:15:54,080

what's really important the background

426
00:15:58,360 --> 00:15:56,300
in understanding the system so they know

427
00:15:59,890 --> 00:15:58,370
how it really works then you can trust

428
00:16:03,100 --> 00:15:59,900
them to make those kind of calls and

429
00:16:04,810 --> 00:16:03,110
that's what we do on occasion and for

430
00:16:07,450 --> 00:16:04,820
mr. life we know that nASA has been

431
00:16:09,790 --> 00:16:07,460
directed to hand over a lot of Leo

432
00:16:11,860 --> 00:16:09,800
services to commercial firms while

433
00:16:13,900 --> 00:16:11,870
you're you know the agency focuses on

434
00:16:15,880 --> 00:16:13,910
deep space exploration form and efforts

435
00:16:17,830 --> 00:16:15,890
how do you view this morning's launch in

436
00:16:19,450 --> 00:16:17,840
terms of that that two parts step that

437
00:16:21,490 --> 00:16:19,460
you guys are working on right now well

438
00:16:23,440 --> 00:16:21,500

as I said in my opening remarks this is

439

00:16:25,510 --> 00:16:23,450

just a critical milestone for us it gets

440

00:16:27,730 --> 00:16:25,520

us it this is exactly what we've been

441

00:16:29,320 --> 00:16:27,740

planning on doing we need our commercial

442

00:16:32,080 --> 00:16:29,330

partners to take over that low Earth

443

00:16:33,520 --> 00:16:32,090

orbit servicing and cargo delivery so

444

00:16:36,010 --> 00:16:33,530

that we can move on with the beyond

445

00:16:38,350 --> 00:16:36,020

earth beyond low-earth orbit exploration

446

00:16:39,820 --> 00:16:38,360

pieces that we want to do so badly but

447

00:16:41,170 --> 00:16:39,830

don't forget that the station is a key

448

00:16:43,330 --> 00:16:41,180

piece of that to the International Space

449

00:16:44,710 --> 00:16:43,340

Station is where we're practicing

450

00:16:45,880 --> 00:16:44,720

techniques for practicing things that

451
00:16:47,650 --> 00:16:45,890
we're going to do to go beyond low-earth

452
00:16:50,200 --> 00:16:47,660
orbit as well so not only is it them

453
00:16:51,760 --> 00:16:50,210
taking over the the cargo delivery it's

454
00:16:53,470 --> 00:16:51,770
also them enabling us to do the

455
00:16:55,450 --> 00:16:53,480
experiments in the science that we need

456
00:16:56,860 --> 00:16:55,460
to even take us further so that's that's

457
00:16:58,900 --> 00:16:56,870
what's so exciting about to us and this

458
00:17:00,670 --> 00:16:58,910
gives us two providers it's just it's a

459
00:17:05,760 --> 00:17:00,680
big day for us with that strategy that's

460
00:17:11,680 --> 00:17:08,560
yeah thanks everybody this is one for

461
00:17:13,900 --> 00:17:11,690
Alan I guess lately NASA had double

462
00:17:16,510 --> 00:17:13,910
booked SpaceX and Orbital for a winter

463
00:17:17,800 --> 00:17:16,520

is escargot run and I thought I just

464

00:17:19,270 --> 00:17:17,810

heard Frank say that they're going to be

465

00:17:21,550 --> 00:17:19,280

ready to go on December the 8th or

466

00:17:23,770 --> 00:17:21,560

December the 20th or so does that mean

467

00:17:26,440 --> 00:17:23,780

that orbital is going to get the call

468

00:17:29,290 --> 00:17:26,450

and there there won't be a SpaceX run in

469

00:17:31,780 --> 00:17:29,300

either december or january or can you

470

00:17:32,890 --> 00:17:31,790

give us a peek ahead at the logistics

471

00:17:34,990 --> 00:17:32,900

can I come in

472

00:17:36,310 --> 00:17:35,000

we tailed NASA when we're going to be

473

00:17:37,780 --> 00:17:36,320

ready for the next mission then they

474

00:17:39,870 --> 00:17:37,790

tell us when they want us to come and

475

00:17:43,510 --> 00:17:39,880

that's what develop what did I tell you

476

00:17:48,790 --> 00:17:43,520

they have wells not go ahead well

477

00:17:50,830 --> 00:17:48,800

there's uh planning the traffic to the

478

00:17:52,570 --> 00:17:50,840

space station is quite a busy job there

479

00:17:55,150 --> 00:17:52,580

are a lot of vehicles coming and going

480

00:17:57,430 --> 00:17:55,160

to the space station nowadays so there

481

00:17:59,650 --> 00:17:57,440

are certain opportunities available the

482

00:18:02,050 --> 00:17:59,660

slots are there and the station of the

483

00:18:04,660 --> 00:18:02,060

decides it gets closer which vehicles

484

00:18:06,310 --> 00:18:04,670

are ready to go I don't believe the

485

00:18:08,680 --> 00:18:06,320

final decision has been made yet but

486

00:18:11,760 --> 00:18:08,690

there's certainly a window in in

487

00:18:14,890 --> 00:18:11,770

December and depending on how things go

488

00:18:17,020 --> 00:18:14,900

with both of our commercial providers

489

00:18:20,020 --> 00:18:17,030

will make a call soon and decide that

490

00:18:22,270 --> 00:18:20,030

which one will plan on sending for the

491

00:18:26,710 --> 00:18:22,280

next mission but definitely a traffic

492

00:18:28,990 --> 00:18:26,720

model concern and so when can we when

493

00:18:30,820 --> 00:18:29,000

can we expect an official all clear for

494

00:18:32,410 --> 00:18:30,830

orbital after now that this is the last

495

00:18:35,620 --> 00:18:32,420

cots mission and they'll be starting

496

00:18:38,220 --> 00:18:35,630

their routine delivery soon pending what

497

00:18:41,380 --> 00:18:38,230

what exactly when and who decides that

498

00:18:43,120 --> 00:18:41,390

well certainly we're waiting to see the

499

00:18:44,530 --> 00:18:43,130

finish of the mission and the

500

00:18:49,360 --> 00:18:44,540

demonstration of all the objectives that

501
00:18:52,930 --> 00:18:49,370
we talked about yesterday but as soon as

502
00:18:57,970 --> 00:18:52,940
that's done there are no more hurdles on

503
00:19:01,750 --> 00:18:57,980
our side we will get a final report from

504
00:19:04,600 --> 00:19:01,760
orbital within a few days after the end

505
00:19:08,410 --> 00:19:04,610
of the mission which would is going to

506
00:19:10,270 --> 00:19:08,420
be at the end of October now so it's yet

507
00:19:13,990 --> 00:19:10,280
to be seen there's still a lot to be

508
00:19:17,170 --> 00:19:14,000
done there's still a lot of pretty

509
00:19:19,720 --> 00:19:17,180
significant challenges ahead to prove

510
00:19:21,610 --> 00:19:19,730
out but we're hopeful everything's just

511
00:19:23,680 --> 00:19:21,620
going to go fine and they'll be ready to

512
00:19:27,880 --> 00:19:23,690
go with their first service mission very

513
00:19:30,880 --> 00:19:27,890

soon okay let's go down here to Ken and

514

00:19:33,130 --> 00:19:30,890

then to Tarkin and Irene I can't Kramer

515

00:19:34,850 --> 00:19:33,140

for universe today I have a question for

516

00:19:39,080 --> 00:19:34,860

Frank

517

00:19:41,090 --> 00:19:39,090

Alan let me ask you Alan first so now

518

00:19:43,520 --> 00:19:41,100

that now that they've been successful at

519

00:19:45,260 --> 00:19:43,530

least put the launch and the station is

520

00:19:46,850 --> 00:19:45,270

going to stay longer when are you going

521

00:19:49,220 --> 00:19:46,860

to what's what's your timetable for

522

00:19:50,660 --> 00:19:49,230

picking the next stage of commercial

523

00:19:59,870 --> 00:19:50,670

resupply missions because this one is

524

00:20:01,580 --> 00:19:59,880

going to end in round 2016 2017 yes

525

00:20:03,289 --> 00:20:01,590

today it's got to be done not at the

526

00:20:05,570 --> 00:20:03,299

last second yeah a little ahead of time

527

00:20:09,530 --> 00:20:05,580

right so with their initial contracts we

528

00:20:12,200 --> 00:20:09,540

awarded them through 2015 2016 time

529

00:20:17,090 --> 00:20:12,210

frame so we are right now getting ready

530

00:20:19,070 --> 00:20:17,100

to take our next steps toward awarding

531

00:20:21,110 --> 00:20:19,080

the following contracts to that and

532

00:20:23,659 --> 00:20:21,120

that's being run by the space station

533

00:20:25,880 --> 00:20:23,669

program so they're in charge of that and

534

00:20:27,740 --> 00:20:25,890

they're putting that together and I

535

00:20:30,380 --> 00:20:27,750

expect very soon we're going to be

536

00:20:32,299 --> 00:20:30,390

hearing the program and for their plans

537

00:20:35,630 --> 00:20:32,309

for the continuing the cargo resupply in

538

00:20:39,080 --> 00:20:35,640

the later years and how late in December

539

00:20:43,130 --> 00:20:39,090

does the does the window last for either

540

00:20:45,680 --> 00:20:43,140

SpaceX or orbital our understanding is

541

00:20:47,120 --> 00:20:45,690

it lasts into January technically and

542

00:20:50,390 --> 00:20:47,130

then there's a short break and then

543

00:20:51,770 --> 00:20:50,400

there's a window in January also I don't

544

00:20:52,940 --> 00:20:51,780

have the right the exact dates in front

545

00:20:54,770 --> 00:20:52,950

of me but I think there's there's two

546

00:20:58,370 --> 00:20:54,780

fairly lengthy windows they're all right

547

00:20:59,810 --> 00:20:58,380

and for Frank orbital is controlling the

548

00:21:02,049 --> 00:20:59,820

vehicle now can you talk a little bit

549

00:21:04,370 --> 00:21:02,059

about the work you're doing between

550

00:21:08,380 --> 00:21:04,380

controlling it and approval you need

551
00:21:10,970 --> 00:21:08,390
from NASA actually doc yes so we have a

552
00:21:13,340 --> 00:21:10,980
like a standard spacecraft we have a

553
00:21:15,860 --> 00:21:13,350
power generating system our solar arrays

554
00:21:17,150 --> 00:21:15,870
the solar rays have deployed and they

555
00:21:21,200 --> 00:21:17,160
are generating power we're showing

556
00:21:24,880 --> 00:21:21,210
current and voltage the propulsion

557
00:21:27,380 --> 00:21:24,890
system had to chart be charged by the

558
00:21:29,750 --> 00:21:27,390
pressurization system and that has

559
00:21:31,430 --> 00:21:29,760
happened the valves are all open so

560
00:21:34,159 --> 00:21:31,440
we're ready to make the burns that are

561
00:21:36,580 --> 00:21:34,169
necessary to raise the orbit so that we

562
00:21:39,470 --> 00:21:36,590
can start chasing the ISS and we will

563
00:21:43,159 --> 00:21:39,480

fly below the ISS until we catch up with

564

00:21:44,680 --> 00:21:43,169

it and then and then as we approach will

565

00:21:49,480 --> 00:21:44,690

get on the trajectory that's

566

00:21:51,460 --> 00:21:49,490

wired to to get in close proximity we

567

00:21:52,960 --> 00:21:51,470

have a guidance navigation control

568

00:21:54,580 --> 00:21:52,970

system that had to be activated

569

00:21:56,560 --> 00:21:54,590

basically turned your computers on and

570

00:22:00,070 --> 00:21:56,570

make sure that they activate and that

571

00:22:01,990 --> 00:22:00,080

the the ciggy and our star tracker and

572

00:22:04,090 --> 00:22:02,000

our other sensors are actually feeding

573

00:22:06,370 --> 00:22:04,100

data to that to show us where we are

574

00:22:08,290 --> 00:22:06,380

what attitude we're in and and and how

575

00:22:10,210 --> 00:22:08,300

we're we're controlling and that's all

576
00:22:12,010 --> 00:22:10,220
taking place now so we'll be checking

577
00:22:13,960 --> 00:22:12,020
out all those systems and their backups

578
00:22:14,890 --> 00:22:13,970
over the next few hours and then once

579
00:22:17,200 --> 00:22:14,900
we're comfortable with that will

580
00:22:19,180 --> 00:22:17,210
continue with the flight plan to start

581
00:22:20,530 --> 00:22:19,190
approaching the station and then as we

582
00:22:22,450 --> 00:22:20,540
get closer to the station will be

583
00:22:24,940 --> 00:22:22,460
waiting for NASA's approval to come

584
00:22:26,740 --> 00:22:24,950
within various distances as we as we

585
00:22:29,350 --> 00:22:26,750
show the demonstrations that are

586
00:22:31,480 --> 00:22:29,360
required to to meet the the goals of

587
00:22:32,710 --> 00:22:31,490
this mission which is a part of the

588
00:22:36,100 --> 00:22:32,720

demonstration part of the COTS

589

00:22:37,630 --> 00:22:36,110

demonstration and then as we get on the

590

00:22:40,360 --> 00:22:37,640

r bar as i said they have to give us the

591

00:22:42,550 --> 00:22:40,370

final go to go within the the keep out

592

00:22:45,040 --> 00:22:42,560

zone if you will so that we can make the

593

00:22:47,320 --> 00:22:45,050

final approach safely and they can let

594

00:22:51,100 --> 00:22:47,330

us a come aboard with with confidence in

595

00:22:57,880 --> 00:22:51,110

the crew can grab it okay tarka then

596

00:22:59,770 --> 00:22:57,890

Irene thank you tark Malik with space

597

00:23:04,410 --> 00:22:59,780

com might actually have a follow-up for

598

00:23:07,150 --> 00:23:04,420

Frank how large is your operations team

599

00:23:09,450 --> 00:23:07,160

controlling seenus at any given point

600

00:23:12,000 --> 00:23:09,460

around the clock believe the typical

601
00:23:15,700 --> 00:23:12,010
number in Mission Control front room

602
00:23:19,630 --> 00:23:15,710
during a normal operation such as this

603
00:23:21,040 --> 00:23:19,640
is approximately 25 at most we have some

604
00:23:23,380 --> 00:23:21,050
people in the back rooms supporting from

605
00:23:25,440 --> 00:23:23,390
an engineering standpoint and we have a

606
00:23:27,790 --> 00:23:25,450
handful of people in Houston in the

607
00:23:30,160 --> 00:23:27,800
customer support room there that are

608
00:23:33,310 --> 00:23:30,170
also supporting this and then primarily

609
00:23:35,920 --> 00:23:33,320
for cargo transfer and keeping track of

610
00:23:37,000 --> 00:23:35,930
that and and you mentioned the checks

611
00:23:39,580 --> 00:23:37,010
that you're going to be doing over the

612
00:23:41,020 --> 00:23:39,590
next three three four days to make sure

613
00:23:43,450 --> 00:23:41,030

that you're ready for for the arrival

614

00:23:44,950 --> 00:23:43,460

one on sunday and and i'm wondering if

615

00:23:47,560 --> 00:23:44,960

any one of those checks is out of

616

00:23:49,720 --> 00:23:47,570

balance can that delay the actual go

617

00:23:52,500 --> 00:23:49,730

ahead for docking in is there one that

618

00:23:54,499 --> 00:23:52,510

really kind of gives you the the willies

619

00:23:57,379 --> 00:23:54,509

you know that you have to get through

620

00:23:58,699 --> 00:23:57,389

no not really there are lots of checks

621

00:24:01,129 --> 00:23:58,709

that have to occur but we have backup

622

00:24:03,649 --> 00:24:01,139

systems if one of the systems is is not

623

00:24:04,879 --> 00:24:03,659

performing accurately we can switch to

624

00:24:08,119 --> 00:24:04,889

another computer we can switch to

625

00:24:10,639 --> 00:24:08,129

another sensor so we've got the normal

626
00:24:13,399 --> 00:24:10,649
amount of redundancy to satisfy human

627
00:24:16,189 --> 00:24:13,409
spaceflight requirements and so we

628
00:24:17,930 --> 00:24:16,199
actually have a pretty robust system for

629
00:24:20,089 --> 00:24:17,940
continuing the mission even if we have a

630
00:24:21,979 --> 00:24:20,099
couple of failures depending on where

631
00:24:24,169 --> 00:24:21,989
they are what they are long as we don't

632
00:24:26,449 --> 00:24:24,179
have more than a one or two failures in

633
00:24:31,399 --> 00:24:26,459
any one system we we actually can

634
00:24:34,309 --> 00:24:31,409
continue irene klotz with Reuters for

635
00:24:37,519 --> 00:24:34,319
Frank this orbital have a business case

636
00:24:41,149 --> 00:24:37,529
for Antares and Cygnus beyond the eight

637
00:24:43,039 --> 00:24:41,159
resupply missions for NASA we don't have

638
00:24:45,349 --> 00:24:43,049

any orders for any additional missions

639

00:24:47,059 --> 00:24:45,359

beyond the the eight CRS we're looking

640

00:24:49,069 --> 00:24:47,069

forward to additional CRS and we're

641

00:24:51,649 --> 00:24:49,079

looking for other customers to to use

642

00:24:55,099 --> 00:24:51,659

our spacecraft in hardware and has

643

00:25:01,369 --> 00:24:55,109

orbital bid on any satellite contracts

644

00:25:03,199 --> 00:25:01,379

yet with Antares with Antares yeah no I

645

00:25:05,599 --> 00:25:03,209

don't believe we actually bid on any

646

00:25:12,349 --> 00:25:05,609

other than we are selected for the OSP

647

00:25:15,889 --> 00:25:12,359

and for the nls contracts the IDIQ

648

00:25:18,229 --> 00:25:15,899

contracts so mollified for those and for

649

00:25:21,349 --> 00:25:18,239

Alan um I don't remember who mentioned

650

00:25:23,149 --> 00:25:21,359

earlier that NASA wants to see two or

651
00:25:26,449 --> 00:25:23,159
three flights and the upgraded Falcon

652
00:25:30,319 --> 00:25:26,459
before there is a crs three is flown is

653
00:25:32,479 --> 00:25:30,329
that still the case and do you since

654
00:25:34,789 --> 00:25:32,489
Frank made a comment about the cargo

655
00:25:37,009 --> 00:25:34,799
capacity do you know if the what the

656
00:25:41,919 --> 00:25:37,019
lift capacity is going to be for NASA on

657
00:25:46,339 --> 00:25:41,929
upgraded Falcon well the manifest had

658
00:25:49,129 --> 00:25:46,349
SpaceX flying a couple missions before

659
00:25:53,089 --> 00:25:49,139
our next scheduled flight to the space

660
00:25:55,339 --> 00:25:53,099
station under the CRS contract whether

661
00:25:57,289 --> 00:25:55,349
those were firm agreements or not or

662
00:26:01,129 --> 00:25:57,299
just generally the way it was laid out I

663
00:26:03,109 --> 00:26:01,139

am Not sure but that that that's

664

00:26:05,260 --> 00:26:03,119

certainly the way it was it ended up

665

00:26:09,940 --> 00:26:05,270

being planned out

666

00:26:12,880 --> 00:26:09,950

and the Falcon 9 had a substantial

667

00:26:16,720 --> 00:26:12,890

upgrade in the thrust capability of its

668

00:26:19,240 --> 00:26:16,730

new engines and increased tank size and

669

00:26:21,340 --> 00:26:19,250

I don't have the specifics with me

670

00:26:23,530 --> 00:26:21,350

because I'm not tracking that program as

671

00:26:26,890 --> 00:26:23,540

closely as I used to when they were one

672

00:26:29,710 --> 00:26:26,900

of our partners but they have

673

00:26:32,010 --> 00:26:29,720

substantial improved performance on the

674

00:26:34,630 --> 00:26:32,020

order i think it's about fifty percent

675

00:26:36,490 --> 00:26:34,640

are you saying it's not a requirement to

676

00:26:38,530 --> 00:26:36,500

have two or three flights of the upgrade

677

00:26:40,300 --> 00:26:38,540

yeah it's safe for sure because that's

678

00:26:43,630 --> 00:26:40,310

an arrangement between the space station

679

00:26:48,330 --> 00:26:43,640

and their their contractors SpaceX oh I

680

00:26:52,000 --> 00:26:48,340

just don't know for sure Frank Frank

681

00:26:54,880 --> 00:26:52,010

going with aviation week for first for

682

00:26:57,340 --> 00:26:54,890

Frank Culbertson yesterday you said that

683

00:26:59,350 --> 00:26:57,350

you have hardware at least in the looper

684

00:27:01,600 --> 00:26:59,360

and the in the supply chain for about 10

685

00:27:03,430 --> 00:27:01,610

missions I wonder if you could elaborate

686

00:27:05,080 --> 00:27:03,440

a little bit on that and particularly

687

00:27:07,360 --> 00:27:05,090

with regard to the engines i know that's

688

00:27:09,460 --> 00:27:07,370

a finite quantity and if you tell us how

689

00:27:11,320 --> 00:27:09,470

many you have how many are in shape to

690

00:27:14,350 --> 00:27:11,330

fly that sort of thing and I have a

691

00:27:16,390 --> 00:27:14,360

follow-up for the NASA guys well Aerojet

692

00:27:18,580 --> 00:27:16,400

is the engine supplier and they have

693

00:27:20,860 --> 00:27:18,590

identified 20 missions or 20 engines

694

00:27:23,530 --> 00:27:20,870

total for the 10 missions that we are

695

00:27:25,860 --> 00:27:23,540

under contract with them for and and

696

00:27:28,210 --> 00:27:25,870

they are on track to deliver those

697

00:27:31,110 --> 00:27:28,220

that's all we have a contract for right

698

00:27:35,380 --> 00:27:31,120

now they have an additional 16 mission

699

00:27:38,560 --> 00:27:35,390

engines in stock and if we are able to

700

00:27:39,910 --> 00:27:38,570

achieve additional orders then I'm sure

701
00:27:44,850 --> 00:27:39,920
they'll come up with additional engines

702
00:27:48,580 --> 00:27:44,860
to to outfit our rockets thank you and

703
00:27:50,080 --> 00:27:48,590
since i believe the launch pad is in

704
00:27:51,550 --> 00:27:50,090
sight of the top of the Washington

705
00:27:54,790 --> 00:27:51,560
Monument I've got to ask you I

706
00:27:57,570 --> 00:27:54,800
Washington questioned and that is for I

707
00:28:00,060 --> 00:27:57,580
guess for Robert um

708
00:28:01,980 --> 00:28:00,070
have you calculated the effect that a

709
00:28:04,890 --> 00:28:01,990
second round of sequestration would have

710
00:28:07,050 --> 00:28:04,900
on this commercial cargo program and if

711
00:28:08,670 --> 00:28:07,060
so what is it I don't know if we've

712
00:28:12,180 --> 00:28:08,680
calculated it completely a Frank work

713
00:28:13,980 --> 00:28:12,190

we're dependent on basically letting but

714

00:28:15,870 --> 00:28:13,990

in the process play out and we'll see

715

00:28:17,940 --> 00:28:15,880

we'll see where it goes we've clearly

716

00:28:21,210 --> 00:28:17,950

done scenario planning we do it every

717

00:28:22,590 --> 00:28:21,220

time every year but since we don't know

718

00:28:24,300 --> 00:28:22,600

exactly what the scenario is going to be

719

00:28:25,380 --> 00:28:24,310

we'll just see and right now we got

720

00:28:27,690 --> 00:28:25,390

faith that they're going to work out the

721

00:28:31,320 --> 00:28:27,700

process up and hip in DC and and we'll

722

00:28:32,670 --> 00:28:31,330

just accordingly like we always do ok

723

00:28:34,830 --> 00:28:32,680

let's go to the phone lines real quick

724

00:28:38,910 --> 00:28:34,840

in with James Dean with Florida today

725

00:28:42,210 --> 00:28:38,920

James you there yes thanks Josh a couple

726
00:28:44,210 --> 00:28:42,220
questions for mr. culbertson first could

727
00:28:47,190 --> 00:28:44,220
you just please confirm that a

728
00:28:51,390 --> 00:28:47,200
understand correctly some small number

729
00:28:53,580 --> 00:28:51,400
of homes had to be evacuated to to go

730
00:28:55,080 --> 00:28:53,590
ahead with the the countdown at some

731
00:28:56,520 --> 00:28:55,090
point could you just confirm you know

732
00:29:01,260 --> 00:28:56,530
how many that was and what the reason

733
00:29:03,210 --> 00:29:01,270
was this parameter called damaged

734
00:29:05,790 --> 00:29:03,220
focused overpressure concerns that we

735
00:29:07,200 --> 00:29:05,800
have to work with the range depending on

736
00:29:09,000 --> 00:29:07,210
weather conditions temperature

737
00:29:11,100 --> 00:29:09,010
inversions things like that where they

738
00:29:13,260 --> 00:29:11,110

predict that there's a certain chance

739

00:29:16,350 --> 00:29:13,270

such as one in a million that if we were

740

00:29:19,410 --> 00:29:16,360

to have an unfortunate event on liftoff

741

00:29:20,700 --> 00:29:19,420

that the effects of that would reach a

742

00:29:22,620 --> 00:29:20,710

certain distance away from the launch

743

00:29:25,650 --> 00:29:22,630

pad or from the from the trajectory of

744

00:29:27,570 --> 00:29:25,660

the rocket and so they calculate where

745

00:29:30,420 --> 00:29:27,580

the boundary of that one-in-a-million

746

00:29:32,220 --> 00:29:30,430

chance of over significant overpressure

747

00:29:34,260 --> 00:29:32,230

is the overpressure means that it would

748

00:29:38,490 --> 00:29:34,270

be enough to shatter windows in a

749

00:29:41,160 --> 00:29:38,500

structure in a typical house and so what

750

00:29:42,840 --> 00:29:41,170

they actually want people to do if

751
00:29:45,390 --> 00:29:42,850
they're inside that zone is to just go

752
00:29:47,490 --> 00:29:45,400
outside I know it seems a little bit

753
00:29:49,200 --> 00:29:47,500
counterintuitive but they don't want

754
00:29:51,450 --> 00:29:49,210
them inside looking out the windows if

755
00:29:53,670 --> 00:29:51,460
they had an overpressure like that if

756
00:29:57,350 --> 00:29:53,680
you remember the meteor that came in

757
00:30:00,150 --> 00:29:57,360
over Russia last year earlier this year

758
00:30:00,989 --> 00:30:00,160
it was the overpressure from the sonic

759
00:30:04,049 --> 00:30:00,999
booms that

760
00:30:06,059 --> 00:30:04,059
caused the injuries breaking the windows

761
00:30:09,149 --> 00:30:06,069
and injuring people inside so it's the

762
00:30:11,549 --> 00:30:09,159
same type of concern it's a very low

763
00:30:13,559 --> 00:30:11,559

likelihood of course but it is something

764

00:30:15,839 --> 00:30:13,569

that the FAA and the range do calculate

765

00:30:18,209 --> 00:30:15,849

and then we have to set us or that

766

00:30:20,969 --> 00:30:18,219

condition has to be satisfied it's not

767

00:30:22,739 --> 00:30:20,979

something we can actually control they

768

00:30:25,019 --> 00:30:22,749

were from some structures that were

769

00:30:26,789 --> 00:30:25,029

periodically during the analysis of the

770

00:30:29,219 --> 00:30:26,799

conditions based on the weather balloons

771

00:30:32,879 --> 00:30:29,229

that were in and out of that that zone

772

00:30:34,499 --> 00:30:32,889

and and what they do is they go and if

773

00:30:36,929 --> 00:30:34,509

we end up in that condition they go and

774

00:30:38,849 --> 00:30:36,939

check those houses to see if anybody's

775

00:30:40,979 --> 00:30:38,859

home so I don't know if they have ever

776

00:30:42,779 --> 00:30:40,989

actually asked anybody to go outside or

777

00:30:44,459 --> 00:30:42,789

not or if they just verify that

778

00:30:47,879 --> 00:30:44,469

everybody was at work or school and

779

00:30:50,459 --> 00:30:47,889

there was no concern so but we did have

780

00:30:52,649 --> 00:30:50,469

that mitigation going on just in case at

781

00:30:54,719 --> 00:30:52,659

the last minute we were still read as it

782

00:30:56,759 --> 00:30:54,729

turned out we ended up being green on

783

00:30:58,019 --> 00:30:56,769

the last balloon and everything would

784

00:30:59,849 --> 00:30:58,029

have been okay whether people were in

785

00:31:01,799 --> 00:30:59,859

the structures are not but it's not like

786

00:31:03,809 --> 00:31:01,809

they had to evacuate the area or run to

787

00:31:06,959 --> 00:31:03,819

some cover or something they just had to

788

00:31:10,709 --> 00:31:06,969

go outside if they were home okay thank

789

00:31:13,139 --> 00:31:10,719

you and you've been referencing in the

790

00:31:16,079 --> 00:31:13,149

briefings all the launch activity going

791

00:31:19,499 --> 00:31:16,089

on around the world and of course that

792

00:31:21,479 --> 00:31:19,509

included one earlier just earlier this

793

00:31:23,099 --> 00:31:21,489

morning by the air force from down here

794

00:31:27,329 --> 00:31:23,109

at the Cape I was just curious if you

795

00:31:30,089 --> 00:31:27,339

ever remembered or know of to these

796

00:31:32,519 --> 00:31:30,099

Coast launches going off like this in

797

00:31:35,309 --> 00:31:32,529

the same day as orbital launchers of

798

00:31:36,839 --> 00:31:35,319

this magnitude I'm not aware of two on

799

00:31:39,949 --> 00:31:36,849

the same day because you can't launch

800

00:31:41,969 --> 00:31:39,959

two out of the cape range in one day and

801
00:31:43,199 --> 00:31:41,979
there may have been sounding Rockets

802
00:31:45,089 --> 00:31:43,209
going on the same day in fact they've

803
00:31:47,249 --> 00:31:45,099
launched five sounding rockets in one

804
00:31:50,189 --> 00:31:47,259
day from here they're much smaller of

805
00:31:52,979 --> 00:31:50,199
course but but I think things are going

806
00:31:56,900 --> 00:31:52,989
to continue to be busy as long as the

807
00:32:02,280 --> 00:32:01,020
all right is it a James yeah thank you

808
00:32:05,100 --> 00:32:02,290
all right let's come back here in the

809
00:32:12,260 --> 00:32:05,110
room what else we have let's go all the

810
00:32:14,100 --> 00:32:12,270
way back there in the back Doug Moni TMC

811
00:32:15,750 --> 00:32:14,110
Frank can you talk a little bit about

812
00:32:17,220 --> 00:32:15,760
international participation I heard that

813
00:32:18,510 --> 00:32:17,230

there were at least two ambassadors from

814

00:32:20,160 --> 00:32:18,520

different countries that witness the

815

00:32:21,990 --> 00:32:20,170

launch today and and various other

816

00:32:25,800 --> 00:32:22,000

dignitaries I guess within the room

817

00:32:27,270 --> 00:32:25,810

perhaps actually Barry may be able to

818

00:32:28,890 --> 00:32:27,280

help that a little more on that I wasn't

819

00:32:31,950 --> 00:32:28,900

involved in the guest operation as I was

820

00:32:33,540 --> 00:32:31,960

busy but but we did have a lot of

821

00:32:36,770 --> 00:32:33,550

international participation a lot of

822

00:32:40,110 --> 00:32:36,780

international visitors as you know our

823

00:32:41,370 --> 00:32:40,120

spacecraft is multinational and we

824

00:32:44,130 --> 00:32:41,380

actually pride ourselves and be able to

825

00:32:45,510 --> 00:32:44,140

work with the all types of organizations

826

00:32:49,440 --> 00:32:45,520

and people from around the world that

827

00:32:51,810 --> 00:32:49,450

provide products for spaceflight and we

828

00:32:55,590 --> 00:32:51,820

try to integrate whoever has the best of

829

00:32:57,630 --> 00:32:55,600

what we need our partners from Tala

830

00:33:00,360 --> 00:32:57,640

selenia who built our pressurized cargo

831

00:33:03,240 --> 00:33:00,370

module are here our partners from the

832

00:33:05,490 --> 00:33:03,250

Ukraine who designed and built the the

833

00:33:07,230 --> 00:33:05,500

core for the first stage we're here and

834

00:33:08,490 --> 00:33:07,240

I understand their ambassador finally

835

00:33:11,940 --> 00:33:08,500

made it through the traffic last night

836

00:33:14,670 --> 00:33:11,950

and got here we had some representatives

837

00:33:16,620 --> 00:33:14,680

from Russia from Kuznetsov who built the

838

00:33:18,270 --> 00:33:16,630

engines originally and I don't know if

839

00:33:20,430 --> 00:33:18,280

their ambassador came or not did he

840

00:33:23,880 --> 00:33:20,440

Barry okay at one time he was planning

841

00:33:27,990 --> 00:33:23,890

to we had the Netherland space office

842

00:33:29,760 --> 00:33:28,000

and Dutch space here and and we had

843

00:33:32,130 --> 00:33:29,770

representatives from Japan of course who

844

00:33:33,950 --> 00:33:32,140

provided the proximity system I'm not

845

00:33:37,470 --> 00:33:33,960

aware of any other ambassadors beside

846

00:33:39,660 --> 00:33:37,480

the Ukrainian but but we did have a good

847

00:33:44,190 --> 00:33:39,670

good representation a lot of Americans

848

00:33:45,750 --> 00:33:44,200

here too by the way okay again we're

849

00:33:47,550 --> 00:33:45,760

taking questions on social media just

850

00:33:48,750 --> 00:33:47,560

use the hashtag ask NASA will try to

851

00:33:50,730 --> 00:33:48,760

come in to the briefing let's go to mr.

852

00:33:52,290 --> 00:33:50,740

towns and see what God sure we've got a

853

00:33:54,330 --> 00:33:52,300

two questions that are pretty much

854

00:33:57,510 --> 00:33:54,340

interrelated here the first comes from

855

00:33:59,880 --> 00:33:57,520

user minor 17 what is the most important

856

00:34:02,850 --> 00:33:59,890

cargo aboard the spacecraft and as a

857

00:34:04,500 --> 00:34:02,860

secondary question from T Balsamo do

858

00:34:04,810 --> 00:34:04,510

astronaut family members get to send any

859

00:34:09,309 --> 00:34:04,820

I

860

00:34:12,220 --> 00:34:09,319

cygnus that NASA controls the manifest

861

00:34:13,930 --> 00:34:12,230

for that and I suspect based on my own

862

00:34:15,520 --> 00:34:13,940

experience that the family members were

863

00:34:16,690 --> 00:34:15,530

allowed the opportunity to load some

864

00:34:18,760 --> 00:34:16,700

personal things for the crew members

865

00:34:21,329 --> 00:34:18,770

that are up there you get a couple of

866

00:34:25,629 --> 00:34:21,339

pounds worth that you can put on

867

00:34:27,790 --> 00:34:25,639

it's usually books or DVDs or letters

868

00:34:30,149 --> 00:34:27,800

that sort of thing and usually some

869

00:34:33,250 --> 00:34:30,159

snacks if they know you need something

870

00:34:34,359 --> 00:34:33,260

and yeah that probably was some of that

871

00:34:38,379 --> 00:34:34,369

on there we don't know all the details

872

00:34:41,379 --> 00:34:38,389

of what nasa loaded in the bags you know

873

00:34:42,609 --> 00:34:41,389

we're just the carrier but but yeah i'm

874

00:34:44,230 --> 00:34:42,619

sure that there were some special things

875

00:34:46,419 --> 00:34:44,240

i don't i don't know how to characterize

876

00:34:50,530 --> 00:34:46,429

what the most important cargo was on

877

00:34:52,540 --> 00:34:50,540

there all the cargo actually in my

878

00:34:54,460 --> 00:34:52,550

opinion the the most important thing was

879

00:34:56,859 --> 00:34:54,470

David Lowe's name that was on the hatch

880

00:34:58,690 --> 00:34:56,869

and we're happy that was able to go

881

00:35:02,050 --> 00:34:58,700

toward it look forward to the station

882

00:35:06,339 --> 00:35:02,060

crew seeing it wonderful from twitter

883

00:35:07,930 --> 00:35:06,349

user paul robinson 59 for NASA will

884

00:35:09,609 --> 00:35:07,940

orbital in SpaceX be performing

885

00:35:15,910 --> 00:35:09,619

different mission types to the ISS or

886

00:35:20,200 --> 00:35:15,920

are they interchangeable well let's see

887

00:35:23,859 --> 00:35:20,210

the the cargo carrier spacecraft are

888

00:35:26,099 --> 00:35:23,869

different in capabilities so SpaceX has

889

00:35:28,660 --> 00:35:26,109

the ability to carry up NASCAR go and

890

00:35:31,900 --> 00:35:28,670

return cargo from the International

891

00:35:34,359 --> 00:35:31,910

Space Station orbital has actually a

892

00:35:37,390 --> 00:35:34,369

larger pressurized volume so they're

893

00:35:41,800 --> 00:35:37,400

able to carry a larger quantity of less

894

00:35:44,079 --> 00:35:41,810

dense a cargo if needed so the missions

895

00:35:47,740 --> 00:35:44,089

are optimized based on the capabilities

896

00:35:49,930 --> 00:35:47,750

that the carriers have and another

897

00:35:52,030 --> 00:35:49,940

capability SpaceX has is the ability to

898

00:35:55,420 --> 00:35:52,040

bring up external cargo that is

899

00:35:58,000 --> 00:35:55,430

equipment that is used outside of the

900

00:35:59,650 --> 00:35:58,010

living spaces and the modules equipment

901
00:36:02,680 --> 00:35:59,660
that can be used outside on the truss

902
00:36:04,270 --> 00:36:02,690
for replacement equipment if needed and

903
00:36:07,300 --> 00:36:04,280
things like that so yeah they're

904
00:36:09,520 --> 00:36:07,310
different in overall capabilities and

905
00:36:11,940 --> 00:36:09,530
depending on our needs will will

906
00:36:13,980 --> 00:36:11,950
manifest that accordingly

907
00:36:16,950 --> 00:36:13,990
wonderful last question here from

908
00:36:18,600 --> 00:36:16,960
Twitter user space com the launch anchor

909
00:36:21,330 --> 00:36:18,610
said something about a mixture being

910
00:36:27,990 --> 00:36:21,340
nearly nominal was that fuel and is that

911
00:36:30,480 --> 00:36:28,000
a serious variation from nominal I don't

912
00:36:33,180 --> 00:36:30,490
remember that exact comment but the

913
00:36:41,550 --> 00:36:33,190

mixture was what nearly nominal merely

914

00:36:43,290 --> 00:36:41,560

nominal that means it was pretty good no

915

00:36:46,080 --> 00:36:43,300

everything looked really good it's

916

00:36:48,060 --> 00:36:46,090

seriously not to be facetious the the

917

00:36:49,980 --> 00:36:48,070

mixture ratio and the engines was was as

918

00:36:52,470 --> 00:36:49,990

it should be it always varies a little

919

00:36:54,330 --> 00:36:52,480

bit you know you want to try to be as

920

00:36:56,300 --> 00:36:54,340

close to guidance as you can but again

921

00:36:58,950 --> 00:36:56,310

it varies and you're correcting back and

922

00:37:01,170 --> 00:36:58,960

you know Mike Mike was right we were

923

00:37:03,840 --> 00:37:01,180

just about nominal that's like almost

924

00:37:08,460 --> 00:37:03,850

perfect all right back here in the

925

00:37:11,340 --> 00:37:08,470

middle matthew balan NASA NASA social

926

00:37:13,830 --> 00:37:11,350

participant Karen Nyberg had treated at

927

00:37:15,330 --> 00:37:13,840

the orbital Twitter account saying that

928

00:37:17,820 --> 00:37:15,340

she was looking forward to the arrival

929

00:37:22,770 --> 00:37:17,830

of Cygnus was she positioned to view the

930

00:37:24,270 --> 00:37:22,780

launch today I doubted your emotions

931

00:37:27,600 --> 00:37:24,280

they were pretty far around because we

932

00:37:28,740 --> 00:37:27,610

have four days of rendezvous activities

933

00:37:30,390 --> 00:37:28,750

that means you're going to be chasing

934

00:37:32,130 --> 00:37:30,400

for quite a while so you typically start

935

00:37:33,720 --> 00:37:32,140

well behind if it was going to be the

936

00:37:35,430 --> 00:37:33,730

same day rendezvous you would probably

937

00:37:37,680 --> 00:37:35,440

launch pretty close to underneath them

938

00:37:39,540 --> 00:37:37,690

and in fact I was fortunate enough to

939

00:37:41,880 --> 00:37:39,550

see a progress launch that was coming to

940

00:37:45,270 --> 00:37:41,890

us one time and watched it as it

941

00:37:47,430 --> 00:37:45,280

ascended into the into orbit so

942

00:37:50,580 --> 00:37:47,440

sometimes it's by coincidence you get to

943

00:37:51,810 --> 00:37:50,590

see that and in fact one time I was

944

00:37:54,300 --> 00:37:51,820

sitting on the launch pad and I saw the

945

00:37:57,780 --> 00:37:54,310

station go over us as we were getting

946

00:37:59,370 --> 00:37:57,790

ready to do to rendezvous so these kind

947

00:38:02,900 --> 00:37:59,380

of things happen and

948

00:38:07,019 --> 00:38:02,910

but it's not not a given necessarily

949

00:38:09,180 --> 00:38:07,029

back here I thank you Bob Kovacs with

950

00:38:11,130 --> 00:38:09,190

government video magazine first of all I

951
00:38:13,140 --> 00:38:11,140
want to congratulate orbital sciences in

952
00:38:15,089 --> 00:38:13,150
NASA on the just it was a fabulous

953
00:38:16,499 --> 00:38:15,099
launch was just wonderful to watch and

954
00:38:18,779 --> 00:38:16,509
I'm glad you paid extra for the

955
00:38:21,210 --> 00:38:18,789
fantastic weather yes sir that was

956
00:38:23,309 --> 00:38:21,220
really a joy now I was at the la dee

957
00:38:25,259 --> 00:38:23,319
launch a couple of weeks a 10 11 days

958
00:38:27,120 --> 00:38:25,269
ago very nice lunch as well and a

959
00:38:30,210 --> 00:38:27,130
picture of photograph came out of that a

960
00:38:33,180 --> 00:38:30,220
few days later of a frog being caught in

961
00:38:34,559 --> 00:38:33,190
the blast of the the launch and that got

962
00:38:37,430 --> 00:38:34,569
me thinking about there's a lot of

963
00:38:39,630 --> 00:38:37,440

wildlife out here does NASA into our

964

00:38:42,680 --> 00:38:39,640

orbital science since it's your mission

965

00:38:45,809 --> 00:38:42,690

do you do anything to try to mitigate

966

00:38:48,539 --> 00:38:45,819

you know damage to wildlife prior to a

967

00:38:51,950 --> 00:38:48,549

lunch like this we feel really badly if

968

00:38:55,650 --> 00:38:51,960

any wildlife is damaged by our launch

969

00:38:57,240 --> 00:38:55,660

what you don't do anything you don't

970

00:38:59,999 --> 00:38:57,250

take anyone's you don't take any

971

00:39:01,769 --> 00:39:00,009

measures to try to scare birds or

972

00:39:03,509 --> 00:39:01,779

animals away or anything like well we

973

00:39:07,349 --> 00:39:03,519

make a really loud noise right before

974

00:39:08,579 --> 00:39:07,359

liftoff to try to scare them away no

975

00:39:10,680 --> 00:39:08,589

there's really not much you can do in

976
00:39:13,650 --> 00:39:10,690
most of them are small critters and it's

977
00:39:14,970 --> 00:39:13,660
really hard to hurt them and you know if

978
00:39:16,950 --> 00:39:14,980
you've ever been to a shuttle launch

979
00:39:19,140 --> 00:39:16,960
shortly after liftoff it's a real mess

980
00:39:22,140 --> 00:39:19,150
around there so it's not nearly as bad

981
00:39:25,890 --> 00:39:22,150
here but it's just it's a fact of life

982
00:39:27,269 --> 00:39:25,900
that there are wildlife but it the site

983
00:39:29,759 --> 00:39:27,279
has been evaluated from an environmental

984
00:39:31,140 --> 00:39:29,769
impact standpoint and and actually I

985
00:39:32,700 --> 00:39:31,150
don't think there is that much damage

986
00:39:35,039 --> 00:39:32,710
because of the way our flame trench is

987
00:39:36,749 --> 00:39:35,049
pointed and the amount of water

988
00:39:39,180 --> 00:39:36,759

suppression we have I doubt that there

989

00:39:41,609 --> 00:39:39,190

is a whole lot of peripheral damage or

990

00:39:43,349 --> 00:39:41,619

collateral damage in the vicinity the

991

00:39:46,289 --> 00:39:43,359

Minotaur had a different pattern

992

00:39:47,339 --> 00:39:46,299

rangement and so it's blast pattern

993

00:39:50,130 --> 00:39:47,349

would have been different than what we

994

00:39:51,450 --> 00:39:50,140

have was the flame trench I did try to

995

00:39:52,620 --> 00:39:51,460

arrange for a couple of things to be

996

00:39:55,010 --> 00:39:52,630

caught in it but I don't think it worked

997

00:39:56,700 --> 00:39:55,020

out rubber

998

00:39:59,640 --> 00:39:56,710

right right in here in the middle

999

00:40:03,329 --> 00:39:59,650

Barbara Buckner NASA social media with

1000

00:40:05,130 --> 00:40:03,339

previous launches co TS with SpaceX they

1001
00:40:07,170 --> 00:40:05,140
send up some additional cargo of their

1002
00:40:09,150 --> 00:40:07,180
own that wasn't NASA did orbital science

1003
00:40:11,789 --> 00:40:09,160
have scientists happen to have anything

1004
00:40:13,829 --> 00:40:11,799
additional to NASA's payload actually we

1005
00:40:15,480 --> 00:40:13,839
were given an allotment of things that

1006
00:40:17,730 --> 00:40:15,490
we could send up on behalf of the

1007
00:40:23,339 --> 00:40:17,740
company if we wanted to be able to to

1008
00:40:25,109 --> 00:40:23,349
share things such as pictures or or

1009
00:40:27,390 --> 00:40:25,119
orbital specific things with our

1010
00:40:30,349 --> 00:40:27,400
employees that worked on this mission so

1011
00:40:32,789 --> 00:40:30,359
we have a very small container of some

1012
00:40:34,319 --> 00:40:32,799
patches or rather stickers that are

1013
00:40:36,390 --> 00:40:34,329

associated with the mission that will be

1014

00:40:38,220 --> 00:40:36,400

hopefully we'll be able to get back if

1015

00:40:42,359 --> 00:40:38,230

SpaceX will agree to bring them back for

1016

00:40:43,559 --> 00:40:42,369

us okay a couple more back you'll see

1017

00:40:49,440 --> 00:40:43,569

all the way back there at the back right

1018

00:40:51,120 --> 00:40:49,450

there Jeff Goldstein Nash Center

1019

00:40:52,980 --> 00:40:51,130

Director National Center first and space

1020

00:40:54,390 --> 00:40:52,990

science education thought I might point

1021

00:40:57,029 --> 00:40:54,400

out based on the last question that

1022

00:40:59,690 --> 00:40:57,039

there were seven experiments designed by

1023

00:41:02,609 --> 00:40:59,700

student research teams on the vehicle

1024

00:41:04,620 --> 00:41:02,619

culmination of 7,000 students working on

1025

00:41:07,019 --> 00:41:04,630

microgravity research across the country

1026
00:41:08,519 --> 00:41:07,029
thought you might speak to the fact that

1027
00:41:11,339 --> 00:41:08,529
the aspirations of the next generation

1028
00:41:16,079 --> 00:41:11,349
of scientists and engineers were on this

1029
00:41:18,359 --> 00:41:16,089
historic launch well I mean for us at

1030
00:41:21,420 --> 00:41:18,369
NASA I mean the inspiration factor for

1031
00:41:25,500 --> 00:41:21,430
what we do is is is a key piece of our

1032
00:41:28,200 --> 00:41:25,510
mission we we encourage that we try to

1033
00:41:30,809 --> 00:41:28,210
do that as much as we can I i personally

1034
00:41:33,390 --> 00:41:30,819
know that i have universities calling me

1035
00:41:35,940 --> 00:41:33,400
constantly now small SATs the things

1036
00:41:38,069 --> 00:41:35,950
that you think about having even smaller

1037
00:41:39,900 --> 00:41:38,079
ones I'll call them tiny size I've seen

1038
00:41:41,430 --> 00:41:39,910

them they're tiny these are what these

1039

00:41:42,660 --> 00:41:41,440

are what people are working on at

1040

00:41:44,370 --> 00:41:42,670

universities in there and they're

1041

00:41:45,779 --> 00:41:44,380

inspired because we're actually starting

1042

00:41:50,010 --> 00:41:45,789

to work on those kind of things it's no

1043

00:41:51,420 --> 00:41:50,020

longer and we're giving them the avenue

1044

00:41:52,829 --> 00:41:51,430

to do that you know you got folks like

1045

00:41:54,569 --> 00:41:52,839

orbital to have a tremendous outreach

1046

00:41:56,339 --> 00:41:54,579

program you got SpaceX has the same

1047

00:41:59,519 --> 00:41:56,349

thing and it does bring a different

1048

00:42:00,839 --> 00:41:59,529

different group of people to the to be

1049

00:42:02,220 --> 00:42:00,849

inspired to be in this business and

1050

00:42:04,680 --> 00:42:02,230

bring them along that's what we want to

1051
00:42:05,799 --> 00:42:04,690
do I personally you know I got involved

1052
00:42:07,479 --> 00:42:05,809
in that

1053
00:42:08,890 --> 00:42:07,489
you know when I when I was a younger

1054
00:42:10,089 --> 00:42:08,900
engineer but back then it was more of

1055
00:42:11,349 --> 00:42:10,099
the bigger stuff two engines and the

1056
00:42:13,299 --> 00:42:11,359
launch vehicles now we're getting into

1057
00:42:15,549 --> 00:42:13,309
payloads we're getting into the whole

1058
00:42:16,989 --> 00:42:15,559
research part of this microgravity it's

1059
00:42:18,519 --> 00:42:16,999
another key thing about the space

1060
00:42:19,929 --> 00:42:18,529
station we're using the station do that

1061
00:42:22,630 --> 00:42:19,939
we're bringing up student experiments

1062
00:42:24,549 --> 00:42:22,640
all the time so it's a great point and I

1063
00:42:25,779 --> 00:42:24,559

think to me this is this is what we do

1064

00:42:27,699 --> 00:42:25,789

we're building that next generation of

1065

00:42:29,859 --> 00:42:27,709

explorers we need them you know we need

1066

00:42:31,989 --> 00:42:29,869

them to be sitting up here in 20 years

1067

00:42:33,429 --> 00:42:31,999

and talking about their experiments and

1068

00:42:34,989 --> 00:42:33,439

their missions that they took on all

1069

00:42:36,429 --> 00:42:34,999

because they were inspired by something

1070

00:42:37,689 --> 00:42:36,439

like this or a small experiment that

1071

00:42:39,579 --> 00:42:37,699

they were able to get on to the space

1072

00:42:41,140 --> 00:42:39,589

station that's what that's part of it

1073

00:42:43,870 --> 00:42:41,150

was so exciting about all this that we

1074

00:42:45,670 --> 00:42:43,880

do if I could add to that just a little

1075

00:42:46,749 --> 00:42:45,680

bit I knew there was two student

1076

00:42:48,339 --> 00:42:46,759

experiments on board I didn't know it

1077

00:42:50,140 --> 00:42:48,349

was that many I'm glad to hear that and

1078

00:42:53,400 --> 00:42:50,150

particularly there's that many students

1079

00:42:56,170 --> 00:42:53,410

involved I feel very strongly that that

1080

00:42:57,910 --> 00:42:56,180

students will follow the example of the

1081

00:43:00,789 --> 00:42:57,920

generation this goes ahead of them

1082

00:43:06,740 --> 00:43:00,799

especially if we do things successfully

1083

00:43:18,830 --> 00:43:10,580

yeah Tony I said put it on that screen

1084

00:43:24,050 --> 00:43:18,840

on it that's weird but yeah not making

1085

00:43:26,690 --> 00:43:24,060

that big a statement but but but science

1086

00:43:28,850 --> 00:43:26,700

technology engineering math I think are

1087

00:43:30,550 --> 00:43:28,860

the keys to the future success of United

1088

00:43:33,620 --> 00:43:30,560

States and our ability to motivate

1089

00:43:35,780 --> 00:43:33,630

students today young and older students

1090

00:43:38,930 --> 00:43:35,790

to be interested in that and to and to

1091

00:43:41,780 --> 00:43:38,940

take that challenge of staying with math

1092

00:43:44,720 --> 00:43:41,790

when it gets hard of reading about

1093

00:43:46,460 --> 00:43:44,730

science as you learn to read and and and

1094

00:43:48,320 --> 00:43:46,470

then being curious about the rest of the

1095

00:43:49,520 --> 00:43:48,330

world makes a big difference in how

1096

00:43:51,380 --> 00:43:49,530

successful we're going to be as a

1097

00:43:53,120 --> 00:43:51,390

country and how successful that

1098

00:43:55,820 --> 00:43:53,130

generation is going to be and they won't

1099

00:43:59,240 --> 00:43:55,830

learn that until they're our age we in

1100

00:44:00,740 --> 00:43:59,250

an industry and in NASA work really hard

1101
00:44:02,570 --> 00:44:00,750
to try to get the word out of what we're

1102
00:44:03,860 --> 00:44:02,580
doing and we do press conferences like

1103
00:44:05,540 --> 00:44:03,870
this so that that's part of the

1104
00:44:07,940 --> 00:44:05,550
education process and then there's I

1105
00:44:09,380 --> 00:44:07,950
mean Leland Melvin and the guys are

1106
00:44:11,600 --> 00:44:09,390
working really hard to get the word out

1107
00:44:13,340 --> 00:44:11,610
as our bear even esky and the people in

1108
00:44:15,200 --> 00:44:13,350
our company to to make sure if people

1109
00:44:17,930 --> 00:44:15,210
know what we're doing and why and how

1110
00:44:20,060 --> 00:44:17,940
they can be involved in it but you all

1111
00:44:22,070 --> 00:44:20,070
are a key part of that too and we depend

1112
00:44:24,980 --> 00:44:22,080
on you to report it accurately and

1113
00:44:27,140 --> 00:44:24,990

enthusiastically and in a way that

1114

00:44:29,150 --> 00:44:27,150

inspires people to read more about it

1115

00:44:31,100 --> 00:44:29,160

and learn more about it so I really

1116

00:44:32,570 --> 00:44:31,110

appreciate so many of you being here

1117

00:44:35,060 --> 00:44:32,580

today and listening to what we have to

1118

00:44:36,260 --> 00:44:35,070

say and I am confident that the message

1119

00:44:38,540 --> 00:44:36,270

you're going to pass on is going to

1120

00:44:41,390 --> 00:44:38,550

reflect exactly what we've said and and

1121

00:44:43,880 --> 00:44:41,400

is going to be positive motivational and

1122

00:44:46,130 --> 00:44:43,890

and supportive of what we're doing as a

1123

00:44:47,840 --> 00:44:46,140

country in spaceflight human space

1124

00:44:50,780 --> 00:44:47,850

flight itself depends on humans being

1125

00:44:53,330 --> 00:44:50,790

involved and and we need your support in

1126

00:44:56,390 --> 00:44:53,340

that also when it's hard you've got to

1127

00:44:58,520 --> 00:44:56,400

stick with us when when the budget comes

1128

00:44:59,720 --> 00:44:58,530

down you got to stick with us and when

1129

00:45:01,490 --> 00:44:59,730

there's a lot of other things going on

1130

00:45:02,780 --> 00:45:01,500

you need to put us in perspective

1131

00:45:04,700 --> 00:45:02,790

because we're not always the most

1132

00:45:08,060 --> 00:45:04,710

important thing that's going on but come

1133

00:45:10,310 --> 00:45:08,070

back to us when things calm down this is

1134

00:45:11,810 --> 00:45:10,320

the future of the country and continuing

1135

00:45:14,420 --> 00:45:11,820

our presence on the International Space

1136

00:45:16,970 --> 00:45:14,430

Station is critical to the United States

1137

00:45:18,830 --> 00:45:16,980

maintaining its leadership in space if

1138

00:45:20,090 --> 00:45:18,840

we give up on the space station and we

1139

00:45:21,920 --> 00:45:20,100

quit sending cargo in

1140

00:45:25,490 --> 00:45:21,930

and we don't support people going up

1141

00:45:27,500 --> 00:45:25,500

there and we unman it it'll be two

1142

00:45:30,170 --> 00:45:27,510

generations before we get America's into

1143

00:45:31,970 --> 00:45:30,180

space again on a regular basis so we

1144

00:45:33,710 --> 00:45:31,980

have to keep it going it's that

1145

00:45:35,720 --> 00:45:33,720

important if we want to go beyond

1146

00:45:38,210 --> 00:45:35,730

low-earth orbit go back to the moon go

1147

00:45:39,680 --> 00:45:38,220

to Mars go to asteroids whatever we have

1148

00:45:42,020 --> 00:45:39,690

to keep the space station going because

1149

00:45:44,450 --> 00:45:42,030

that's where we're learning how to live

1150

00:45:46,360 --> 00:45:44,460

in space how to survive a difficult

1151

00:45:48,890 --> 00:45:46,370

environment and how to manage it

1152

00:45:51,110 --> 00:45:48,900

managing it the operations is one of the

1153

00:45:53,270 --> 00:45:51,120

hardest things it's exciting to go do it

1154

00:45:54,560 --> 00:45:53,280

but we as a country now have to know how

1155

00:45:57,590 --> 00:45:54,570

to manage it cost effectively

1156

00:45:59,030 --> 00:45:57,600

efficiently and safely and so we really

1157

00:46:03,590 --> 00:45:59,040

appreciate you all getting that message

1158

00:46:05,960 --> 00:46:03,600

out there sorry I didn't mean to get on

1159

00:46:06,980 --> 00:46:05,970

that biggest of bucks a second couple

1160

00:46:10,640 --> 00:46:06,990

more than will wrap up and let's see if

1161

00:46:15,530 --> 00:46:10,650

there was one back here no anybody else

1162

00:46:18,080 --> 00:46:15,540

down here tart thank you at arc Malik

1163

00:46:20,360 --> 00:46:18,090

again from space com I just had a one

1164

00:46:21,590 --> 00:46:20,370

more for Frank you mentioned that the

1165

00:46:23,630 --> 00:46:21,600

team's going to take some time off to

1166

00:46:27,110 --> 00:46:23,640

kind of get their bearings and then turn

1167

00:46:29,900 --> 00:46:27,120

around and get ready for the next one is

1168

00:46:32,090 --> 00:46:29,910

there a party tonight champagne well I

1169

00:46:35,690 --> 00:46:32,100

hope so yeah there's actually be

1170

00:46:39,830 --> 00:46:35,700

probably be a couple you know Ron

1171

00:46:41,090 --> 00:46:39,840

gravy's is leading the group that then

1172

00:46:43,190 --> 00:46:41,100

the program that's managed by Mike

1173

00:46:45,560 --> 00:46:43,200

Pinkston that has done a fantastic job

1174

00:46:47,000 --> 00:46:45,570

of juggling a lot of things juggling a

1175

00:46:49,490 --> 00:46:47,010

lot of resources and getting us to this

1176

00:46:52,130 --> 00:46:49,500

point we had key people like Mike lately

1177

00:46:54,620 --> 00:46:52,140

as the launch director and Mike door

1178

00:46:56,540 --> 00:46:54,630

says the chief engineer during the

1179

00:46:59,390 --> 00:46:56,550

countdown as well as all the other team

1180

00:47:02,090 --> 00:46:59,400

that had come in at oh dark thirty this

1181

00:47:03,380 --> 00:47:02,100

morning to make it happen they've worked

1182

00:47:05,270 --> 00:47:03,390

really hard and they deserve some time

1183

00:47:07,280 --> 00:47:05,280

off and they deserve some celebration so

1184

00:47:07,970 --> 00:47:07,290

I hope they have a chance to do that in

1185

00:47:09,320 --> 00:47:07,980

fact I think there's a little

1186

00:47:10,790 --> 00:47:09,330

celebration going on right now that I'm

1187

00:47:13,800 --> 00:47:10,800

missing so

1188

00:47:16,020 --> 00:47:13,810

when we wrap up I'm out of here okay a

1189

00:47:17,520 --> 00:47:16,030

woman that I think we will wrap up our

1190

00:47:19,020 --> 00:47:17,530

next time we see will be from Mission

1191

00:47:21,960 --> 00:47:19,030

Control Houston our live coverage will

1192

00:47:23,910 --> 00:47:21,970

begin at three-thirty a.m. central time

1193

00:47:26,400 --> 00:47:23,920

for 30 a.m. eastern time on sunday

1194

00:47:28,260 --> 00:47:26,410

morning and of course between now and

1195

00:47:33,840 --> 00:47:28,270

then you can follow along online by

1196

00:47:36,480 --> 00:47:33,850

going to ww na sa java / orbital or w WN

1197

00:47:38,400 --> 00:47:36,490

haces gov / station so again we'll see

1198

00:47:40,620 --> 00:47:38,410

you on the twenty-second at three-thirty

1199

00:47:42,420 --> 00:47:40,630

a.m. central time for 30 a.m. eastern

1200

00:47:44,820 --> 00:47:42,430

time live here on nasa television

