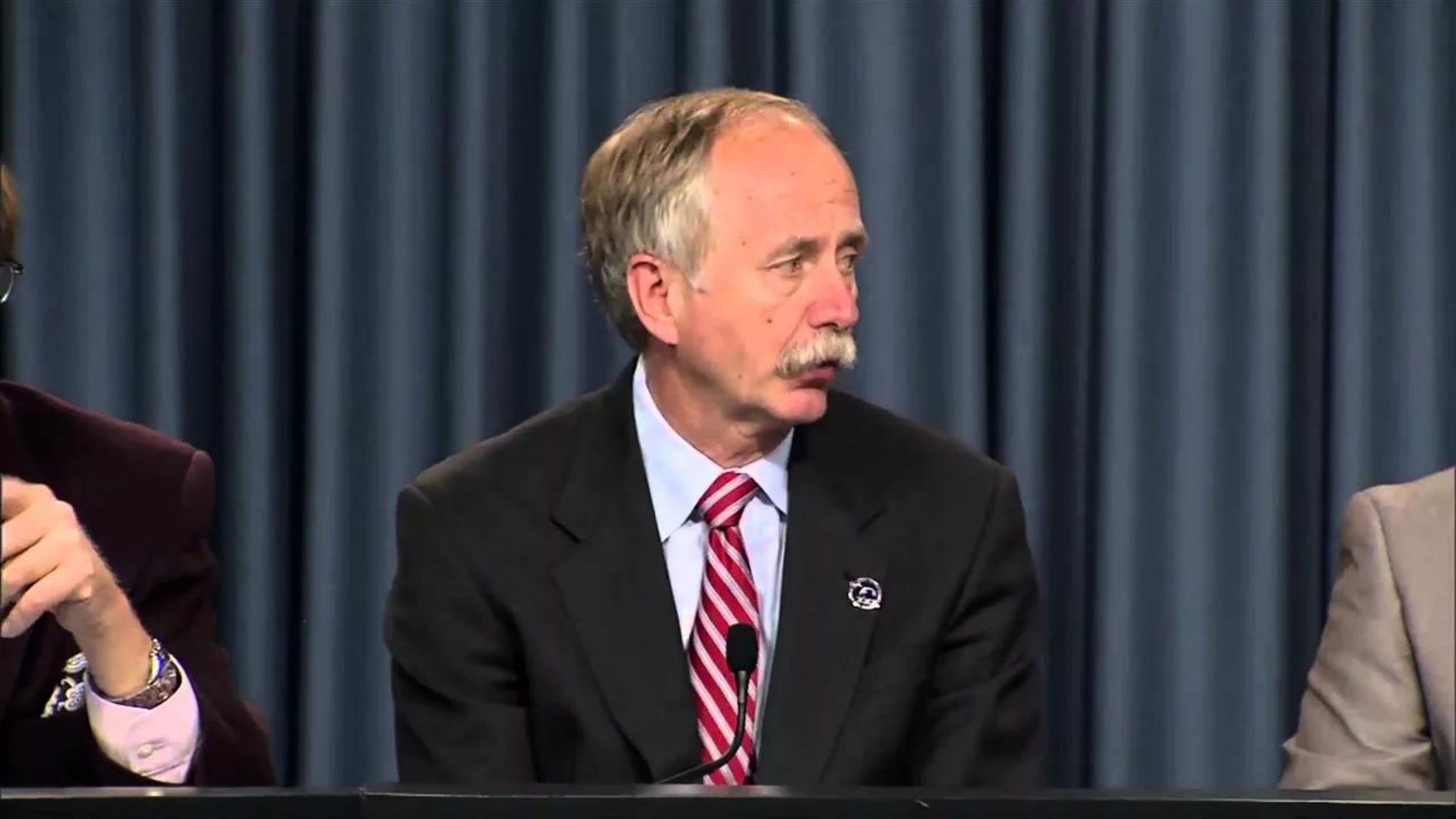

1
00:00:10,070 --> 00:00:07,190
good morning everyone this is our

2
00:00:12,789 --> 00:00:10,080
post-launch news conference for the

3
00:00:15,430 --> 00:00:12,799
spacex cots demonstration flight

4
00:00:19,109 --> 00:00:15,440
and here to discuss this morning's

5
00:00:21,349 --> 00:00:19,119
launch and activities on orbit right now

6
00:00:23,429 --> 00:00:21,359
are bill gerstenmaier the associate

7
00:00:25,509 --> 00:00:23,439
administrator for nasa's human

8
00:00:27,830 --> 00:00:25,519
exploration and operations mission

9
00:00:31,189 --> 00:00:27,840
directorate

10
00:00:35,590 --> 00:00:31,199
alan london moyer manager of nasa's

11
00:00:40,310 --> 00:00:35,600
commercial crew and cargo program

12
00:00:43,990 --> 00:00:40,320
gwen shotwell the president of spacex

13
00:00:46,069 --> 00:00:44,000

and joining us from california elon musk

14
00:00:50,709 --> 00:00:46,079
the chief executive officer and chief

15
00:00:52,389 --> 00:00:50,719
designer of spacex minor of spacex

16
00:00:53,830 --> 00:00:52,399
and we'll begin first with bill

17
00:00:55,430 --> 00:00:53,840
gerstenmaier bill

18
00:00:57,189 --> 00:00:55,440
thank you george

19
00:01:00,150 --> 00:00:57,199
i just want to really congratulate the

20
00:01:02,869 --> 00:01:00,160
spacex team for just an absolutely

21
00:01:04,390 --> 00:01:02,879
amazing countdown launch and orbit

22
00:01:05,189 --> 00:01:04,400
insertion today

23
00:01:06,950 --> 00:01:05,199
um

24
00:01:08,870 --> 00:01:06,960
you know i've had the pleasure of

25
00:01:10,870 --> 00:01:08,880
working down here at the cape with a lot

26
00:01:13,030 --> 00:01:10,880
of fantastic teams that have put

27
00:01:15,190 --> 00:01:13,040
together a lot of really quality rockets

28
00:01:17,350 --> 00:01:15,200
and launched a lot of amazing things and

29
00:01:19,030 --> 00:01:17,360
i tell you the spacex team there is none

30
00:01:21,270 --> 00:01:19,040
better than this team that has really

31
00:01:23,749 --> 00:01:21,280
done a phenomenal job today and really

32
00:01:25,990 --> 00:01:23,759
have done an amazing amazing amazing

33
00:01:27,429 --> 00:01:26,000
activity today and they did a great job

34
00:01:29,830 --> 00:01:27,439
recovering from the

35
00:01:31,990 --> 00:01:29,840
shutdown a couple days ago

36
00:01:33,990 --> 00:01:32,000
and they just stayed focused on task and

37
00:01:36,149 --> 00:01:34,000
just kept moving forward and just did a

38
00:01:37,830 --> 00:01:36,159

great job today with the launch there's

39
00:01:39,350 --> 00:01:37,840
still a lot of work in front of them

40
00:01:41,910 --> 00:01:39,360
there's still a lot of exciting

41
00:01:43,990 --> 00:01:41,920
activities coming up

42
00:01:45,990 --> 00:01:44,000
the solar ray activity was great today

43
00:01:47,350 --> 00:01:46,000
the first burn was done successfully

44
00:01:48,950 --> 00:01:47,360
things are moving in the right direction

45
00:01:51,270 --> 00:01:48,960
but there's still lots of activities

46
00:01:54,069 --> 00:01:51,280
that will occur over the next days that

47
00:01:55,830 --> 00:01:54,079
will really stretch the spacex team and

48
00:01:57,749 --> 00:01:55,840
also stretch a nasa team a little bit as

49
00:01:59,429 --> 00:01:57,759
we work together to get finally to space

50
00:02:01,830 --> 00:01:59,439
station and deliver

51
00:02:03,910 --> 00:02:01,840
some demonstration cargo to iss so again

52
00:02:05,670 --> 00:02:03,920
uh congratulations to the spacex team

53
00:02:07,590 --> 00:02:05,680
and what is just a great great launch

54
00:02:10,229 --> 00:02:07,600
today thanks bill

55
00:02:12,710 --> 00:02:10,239
and now to allen lindenmoyer and that's

56
00:02:14,070 --> 00:02:12,720
nasa cops program manager alan thank you

57
00:02:18,309 --> 00:02:14,080
georgia another

58
00:02:21,030 --> 00:02:18,319
super great day for spacex and nasa

59
00:02:23,430 --> 00:02:21,040
and the beginning of another historic

60
00:02:25,430 --> 00:02:23,440
mission for commercial space flight

61
00:02:27,830 --> 00:02:25,440
congratulations to spacex on on

62
00:02:29,910 --> 00:02:27,840
demonstrating such skill and and turning

63
00:02:31,589 --> 00:02:29,920

the vehicle around and leading to such a

64
00:02:34,550 --> 00:02:31,599
spectacular

65
00:02:36,470 --> 00:02:34,560
launch this morning it it truly was was

66
00:02:38,790 --> 00:02:36,480
really beautiful

67
00:02:39,990 --> 00:02:38,800
so let me just say thanks to all of our

68
00:02:43,350 --> 00:02:40,000
partners

69
00:02:45,750 --> 00:02:43,360
the air force the faa

70
00:02:48,790 --> 00:02:45,760
of course the iss team who's getting

71
00:02:52,390 --> 00:02:48,800
ready for their new visiting vehicle

72
00:02:54,309 --> 00:02:52,400
and especially uh my program team uh who

73
00:02:56,309 --> 00:02:54,319
who's been with the program since the

74
00:02:57,509 --> 00:02:56,319
beginning and and everybody working so

75
00:02:59,030 --> 00:02:57,519
hard

76
00:03:00,710 --> 00:02:59,040
for the beginning of this mission uh

77
00:03:02,790 --> 00:03:00,720
there's still a thousand things that

78
00:03:05,670 --> 00:03:02,800
have to go right

79
00:03:07,670 --> 00:03:05,680
but we are certainly looking forward to

80
00:03:09,030 --> 00:03:07,680
the rest of this amazing mission and

81
00:03:11,350 --> 00:03:09,040
thank you for making

82
00:03:14,309 --> 00:03:11,360
us such a proud partner

83
00:03:17,350 --> 00:03:14,319
thank you alan and now to quinn shotwell

84
00:03:20,070 --> 00:03:17,360
the spacex president gwen

85
00:03:22,229 --> 00:03:20,080
sorry to be redundant but uh i did want

86
00:03:24,550 --> 00:03:22,239
to thank the folks at spacex for all the

87
00:03:26,070 --> 00:03:24,560
hard work that they've uh put into this

88
00:03:28,630 --> 00:03:26,080

flight

89
00:03:30,869 --> 00:03:28,640
wanted to thank uh our customers

90
00:03:32,710 --> 00:03:30,879
especially nasa at this point for being

91
00:03:34,949 --> 00:03:32,720
a great partner

92
00:03:40,309 --> 00:03:34,959
thank our other mission partners the air

93
00:03:44,789 --> 00:03:42,070
and

94
00:03:46,149 --> 00:03:44,799
i said a few days ago that we really

95
00:03:47,830 --> 00:03:46,159
wanted to get a little bit further on

96
00:03:49,910 --> 00:03:47,840
this flight than we did on the last one

97
00:03:51,750 --> 00:03:49,920
and we've done that which is great we

98
00:03:53,509 --> 00:03:51,760
did deploy the solar rays

99
00:03:56,149 --> 00:03:53,519
we've got tdrs pointing operation

100
00:03:58,710 --> 00:03:56,159
anomaly

101
00:04:01,670 --> 00:03:58,720
we do have a lot of work left to do

102
00:04:03,910 --> 00:04:01,680
upcoming here in the next 73 hours or so

103
00:04:07,830 --> 00:04:03,920
and we'll keep everybody informed as to

104
00:04:13,270 --> 00:04:10,470
to hawthorne california to the mission

105
00:04:16,150 --> 00:04:13,280
control center for spacex and elon musk

106
00:04:17,990 --> 00:04:16,160
the ceo and chief designer of spacex

107
00:04:20,629 --> 00:04:18,000
elon

108
00:04:23,670 --> 00:04:22,069
well thank you it's uh i mean i'd like

109
00:04:25,510 --> 00:04:23,680
to start off by saying what what a

110
00:04:28,950 --> 00:04:25,520
tremendous honor it's been to to work

111
00:04:31,830 --> 00:04:28,960
with nasa um and

112
00:04:33,670 --> 00:04:31,840
to just acknowledge the fact that

113
00:04:35,110 --> 00:04:33,680

we could not have started spacex nor

114
00:04:39,670 --> 00:04:35,120
have

115
00:04:42,310 --> 00:04:39,680
without uh the help of nasa so

116
00:04:43,590 --> 00:04:42,320
i'd like to thank thank nasa as an

117
00:04:47,110 --> 00:04:43,600
organization and

118
00:04:47,990 --> 00:04:47,120
um in particular uh alan's team and and

119
00:04:53,990 --> 00:04:48,000
the

120
00:04:55,189 --> 00:04:54,000
commercial space program um but um

121
00:04:56,950 --> 00:04:55,199
it's really been an honor to work with

122
00:05:00,070 --> 00:04:56,960
with such great people

123
00:05:02,550 --> 00:05:00,080
um and of course the i'd like to

124
00:05:05,110 --> 00:05:02,560
express appreciation as wounded for the

125
00:05:06,390 --> 00:05:05,120
the hard work of the people at spacex uh

126
00:05:08,710 --> 00:05:06,400
people are really

127
00:05:10,550 --> 00:05:08,720
uh giving it their all um and so it's

128
00:05:12,790 --> 00:05:10,560
it's great when you've given every ounce

129
00:05:15,189 --> 00:05:12,800
that you you have uh to see it come to

130
00:05:16,710 --> 00:05:15,199
fruition uh in this way

131
00:05:19,670 --> 00:05:16,720
um

132
00:05:21,590 --> 00:05:19,680
kind of like thank the air force nfa and

133
00:05:24,070 --> 00:05:21,600
all of our partners it's really been

134
00:05:26,469 --> 00:05:24,080
great um to have to

135
00:05:29,189 --> 00:05:26,479
to have three three launches of a falcon

136
00:05:31,350 --> 00:05:29,199
9 in a row that that are successful

137
00:05:32,230 --> 00:05:31,360
is just tremendous i think it shows that

138
00:05:35,749 --> 00:05:32,240

the

139
00:05:38,469 --> 00:05:35,759
rocket

140
00:05:40,230 --> 00:05:38,479
um and attempt to to fight the dragon

141
00:05:41,270 --> 00:05:40,240
that are successful we obviously still

142
00:05:44,390 --> 00:05:41,280
have to

143
00:05:46,710 --> 00:05:44,400
go through a number of steps uh to um

144
00:05:48,870 --> 00:05:46,720
uh dock and effectively both with the

145
00:05:50,629 --> 00:05:48,880
space station um but everything is

146
00:05:52,550 --> 00:05:50,639
looking really good

147
00:05:54,629 --> 00:05:52,560
and i think uh

148
00:05:56,629 --> 00:05:54,639
i i would really count today's as a

149
00:05:58,550 --> 00:05:56,639
success no matter what happens rest the

150
00:06:00,309 --> 00:05:58,560
mission

151
00:06:03,270 --> 00:06:00,319
thank you elon

152
00:06:05,670 --> 00:06:03,280
and we're ready to take questions now so

153
00:06:07,670 --> 00:06:05,680
we'll begin here at ksc and then take

154
00:06:08,870 --> 00:06:07,680
any questions on the phone we'll start

155
00:06:10,790 --> 00:06:08,880
here in the front please give your name

156
00:06:13,670 --> 00:06:10,800
an affiliation when you get the mic and

157
00:06:16,790 --> 00:06:13,680
we'll start here with marcia

158
00:06:18,309 --> 00:06:16,800
marsha done associated press for mr musk

159
00:06:19,909 --> 00:06:18,319
we've been reading your twitter updates

160
00:06:21,510 --> 00:06:19,919
this morning but i'd like to know how

161
00:06:23,510 --> 00:06:21,520
you were feeling

162
00:06:25,990 --> 00:06:23,520
and what you were thinking when the

163
00:06:28,469 --> 00:06:26,000

engine is lighted the rocket rose from

164
00:06:35,590 --> 00:06:28,479
the pad and the spacecraft ended up in

165
00:06:40,629 --> 00:06:37,270
uh

166
00:06:44,230 --> 00:06:40,639
every every bit of adrenaline in my body

167
00:06:46,710 --> 00:06:44,240
released at that point um

168
00:06:48,309 --> 00:06:46,720
the uh

169
00:06:49,270 --> 00:06:48,319
it's obviously an extremely intense

170
00:06:51,670 --> 00:06:49,280
moment

171
00:06:54,950 --> 00:06:52,950
the uh

172
00:06:57,430 --> 00:06:54,960
the main thing i was wondering was you

173
00:06:59,189 --> 00:06:57,440
know would we have a valve related issue

174
00:07:01,350 --> 00:06:59,199
um on on launch

175
00:07:03,749 --> 00:07:01,360
and uh would they be with the first

176
00:07:05,749 --> 00:07:03,759
stage perform normally because there was

177
00:07:06,469 --> 00:07:05,759
perhaps some question mark generated by

178
00:07:08,390 --> 00:07:06,479
the

179
00:07:10,230 --> 00:07:08,400
uh prior launcher board uh but it

180
00:07:12,150 --> 00:07:10,240
actually it worked perfectly so i was

181
00:07:14,710 --> 00:07:12,160
really glad to see that and then the

182
00:07:16,950 --> 00:07:14,720
second stage worked really well

183
00:07:19,189 --> 00:07:16,960
um dragon separation solar array

184
00:07:21,830 --> 00:07:19,199
deployments uh we've never actually had

185
00:07:23,510 --> 00:07:21,840
solar rays uh deploy in space before so

186
00:07:25,350 --> 00:07:23,520
this is the first time we've done done

187
00:07:26,629 --> 00:07:25,360
solar rays and anything could have gone

188
00:07:27,909 --> 00:07:26,639

wrong and everything went right

189
00:07:29,589 --> 00:07:27,919
fortunately

190
00:07:38,790 --> 00:07:29,599
so i i

191
00:07:42,550 --> 00:07:40,870
james dean with florida today for mr

192
00:07:45,270 --> 00:07:42,560
musk just following up on that question

193
00:07:47,189 --> 00:07:45,280
it sounded like uh over out there in

194
00:07:48,469 --> 00:07:47,199
hawthorne watching the video that people

195
00:07:50,469 --> 00:07:48,479
were watching a football game or

196
00:07:52,070 --> 00:07:50,479
something the way we heard the cheers uh

197
00:07:54,309 --> 00:07:52,080
after those events um could you just

198
00:07:56,150 --> 00:07:54,319
describe for us a little more who was

199
00:07:58,550 --> 00:07:56,160
there uh what was going on what was the

200
00:08:00,869 --> 00:07:58,560
mood amongst the entire team

201
00:08:02,950 --> 00:08:00,879
entire team

202
00:08:04,950 --> 00:08:02,960
sure we had uh most of the company

203
00:08:08,230 --> 00:08:04,960
gathered around mission control

204
00:08:10,070 --> 00:08:08,240
so um and really seeing that the fruit

205
00:08:11,029 --> 00:08:10,080
of they're seeing the fruit of their

206
00:08:12,869 --> 00:08:11,039
labors

207
00:08:14,070 --> 00:08:12,879
and uh wondering whether it's going to

208
00:08:16,469 --> 00:08:14,080
work

209
00:08:20,230 --> 00:08:16,479
and and if this there's so much

210
00:08:21,670 --> 00:08:20,240
um hope riding on on that rocket so when

211
00:08:22,710 --> 00:08:21,680
it when it worked

212
00:08:24,950 --> 00:08:22,720
uh

213
00:08:27,189 --> 00:08:24,960

and and then dragon worked the solar

214
00:08:28,950 --> 00:08:27,199
rays deployed people saw their their

215
00:08:31,589 --> 00:08:28,960
handiwork um

216
00:08:32,469 --> 00:08:31,599
in in space and and operating as it

217
00:08:34,149 --> 00:08:32,479
should

218
00:08:35,670 --> 00:08:34,159
um i mean it was a

219
00:08:36,709 --> 00:08:35,680
tremendous tremendous elation i mean

220
00:08:43,350 --> 00:08:36,719
it's like

221
00:08:48,550 --> 00:08:46,949
uh hi evan brown from fox news radio um

222
00:08:50,470 --> 00:08:48,560
uh mr musk if i can get you to put on

223
00:08:51,829 --> 00:08:50,480
your uh entrepreneur's hat for just a

224
00:08:54,389 --> 00:08:51,839
second and

225
00:08:56,230 --> 00:08:54,399
talk about the economic impact of what

226
00:08:59,590 --> 00:08:56,240
you've done today not necessarily in

227
00:09:02,070 --> 00:08:59,600
terms of nasa's pocketbook but

228
00:09:04,230 --> 00:09:02,080
in terms of really issuing a different

229
00:09:09,269 --> 00:09:04,240
part of the private industry in this

230
00:09:13,670 --> 00:09:11,750
sure um well i think

231
00:09:15,829 --> 00:09:13,680
we're really at the dawn of a new era of

232
00:09:18,470 --> 00:09:15,839
space exploration and one where there's

233
00:09:20,630 --> 00:09:18,480
a much bigger role for uh commercial

234
00:09:22,870 --> 00:09:20,640
space companies still of course a very

235
00:09:24,550 --> 00:09:22,880
important role for for for government

236
00:09:26,630 --> 00:09:24,560
activities but but where there's an

237
00:09:28,710 --> 00:09:26,640
increasingly significant role for

238
00:09:30,230 --> 00:09:28,720

uh for commercial

239
00:09:32,790 --> 00:09:30,240
i think there's perhaps some parallels

240
00:09:35,350 --> 00:09:32,800
to to the internet in the mid-90s where

241
00:09:37,750 --> 00:09:35,360
the internet was created as a government

242
00:09:39,430 --> 00:09:37,760
endeavor but then the the

243
00:09:40,710 --> 00:09:39,440
the introduction of commercial companies

244
00:09:43,590 --> 00:09:40,720
really accelerated the growth of the

245
00:09:46,470 --> 00:09:43,600
internet um and made it accessible to

246
00:09:48,389 --> 00:09:46,480
the mainstream and i think we're

247
00:09:50,790 --> 00:09:48,399
i think i think we're actually at that

248
00:09:52,790 --> 00:09:50,800
stage and the success of this mission

249
00:09:54,230 --> 00:09:52,800
even what we've seen thus far i think

250
00:09:55,430 --> 00:09:54,240
bodes well for

251
00:09:59,030 --> 00:09:55,440
for that

252
00:10:04,150 --> 00:09:59,990
ken

253
00:10:06,230 --> 00:10:04,160
magazine for mr musk

254
00:10:08,550 --> 00:10:06,240
i'd like to know do you have a message

255
00:10:11,190 --> 00:10:08,560
today for those in congress who seem to

256
00:10:13,590 --> 00:10:11,200
want to single out the commercial crew

257
00:10:16,310 --> 00:10:13,600
program for cuts

258
00:10:18,230 --> 00:10:16,320
and delay the introduction of

259
00:10:20,949 --> 00:10:18,240
manned spacecraft again to the united

260
00:10:23,910 --> 00:10:20,959
states specifically the dragon

261
00:10:30,230 --> 00:10:27,990
well i i hope um that the if the success

262
00:10:32,389 --> 00:10:30,240
this mission thus far at least and

263
00:10:33,509 --> 00:10:32,399

hopefully it's 100 successful

264
00:10:35,509 --> 00:10:33,519
uh will

265
00:10:38,069 --> 00:10:35,519
uh dispel some of the doubts that that

266
00:10:40,230 --> 00:10:38,079
people have i do think that um

267
00:10:43,110 --> 00:10:40,240
you know in some cases people had

268
00:10:43,910 --> 00:10:43,120
uh legitimate concerns because there is

269
00:10:46,710 --> 00:10:43,920
no

270
00:10:48,550 --> 00:10:46,720
doing here

271
00:10:50,870 --> 00:10:48,560
uh you know if they would ask well when

272
00:10:52,310 --> 00:10:50,880
when when is a a private company been

273
00:10:54,310 --> 00:10:52,320
successful in this regard and obviously

274
00:10:56,389 --> 00:10:54,320
the answer is well that that hasn't

275
00:10:58,949 --> 00:10:56,399
happened yet but now now it has we've

276
00:11:00,470 --> 00:10:58,959
had three successes of falcon 9 the two

277
00:11:01,910 --> 00:11:00,480
successful

278
00:11:04,230 --> 00:11:01,920
flights of dragon

279
00:11:04,949 --> 00:11:04,240
um and hopefully we'll have a successful

280
00:11:06,949 --> 00:11:04,959
uh

281
00:11:08,470 --> 00:11:06,959
birthing with the space station

282
00:11:11,030 --> 00:11:08,480
so i think um

283
00:11:12,630 --> 00:11:11,040
i think i think

284
00:11:15,590 --> 00:11:12,640
i think this should

285
00:11:16,550 --> 00:11:15,600
dispel the doubts of of anyone

286
00:11:21,110 --> 00:11:16,560
um

287
00:11:24,870 --> 00:11:22,470
okay right here

288
00:11:27,350 --> 00:11:24,880

john coles with cnn uh this is for mr

289
00:11:30,870 --> 00:11:27,360
musk is there any human remains on board

290
00:11:31,990 --> 00:11:30,880
the on spacex and along with uh scotty

291
00:11:33,829 --> 00:11:32,000
from uh

292
00:11:37,750 --> 00:11:33,839
from star trek

293
00:11:39,990 --> 00:11:38,550
uh

294
00:11:44,710 --> 00:11:40,000
there are no human remains that i'm

295
00:11:49,750 --> 00:11:47,750
jay jay barbary with nbc uh ms shotwell

296
00:11:51,670 --> 00:11:49,760
excuse me i was off playing television

297
00:11:53,509 --> 00:11:51,680
didn't get your opening statement

298
00:11:55,430 --> 00:11:53,519
has the hatches open do you have the

299
00:11:57,110 --> 00:11:55,440
star trekkers out that was the next big

300
00:11:59,269 --> 00:11:57,120
thing

301
00:12:00,870 --> 00:11:59,279
wasn't scheduled to occur yet it looks

302
00:12:02,870 --> 00:12:00,880
like we're attempting to do that early

303
00:12:04,550 --> 00:12:02,880
i've got my email up i'll report as soon

304
00:12:06,790 --> 00:12:04,560
as it happens

305
00:12:08,870 --> 00:12:06,800
looking now or

306
00:12:10,230 --> 00:12:08,880
it was to occur at

307
00:12:11,269 --> 00:12:10,240
6 15

308
00:12:14,870 --> 00:12:11,279
local

309
00:12:16,389 --> 00:12:14,880
but they are initiating early

310
00:12:20,310 --> 00:12:16,399
you didn't miss it yet

311
00:12:20,320 --> 00:12:22,710
here

312
00:12:27,910 --> 00:12:25,030
yes chris haber with uh terrace hank

313
00:12:30,230 --> 00:12:27,920

depressed for mr musk i was wondering if

314
00:12:32,710 --> 00:12:30,240
you care to

315
00:12:35,350 --> 00:12:32,720
give any insight to a possible

316
00:12:38,310 --> 00:12:35,360
technology or research interchange

317
00:12:41,430 --> 00:12:38,320
between spacex and tesla

318
00:12:44,550 --> 00:12:43,509
i'm sure well there's this

319
00:12:46,470 --> 00:12:44,560
um

320
00:12:50,829 --> 00:12:46,480
you know in the case of

321
00:12:53,190 --> 00:12:50,839
tesla i think tesla benefits from

322
00:12:55,430 --> 00:12:53,200
spacex's uh

323
00:12:58,069 --> 00:12:55,440
ability to design really

324
00:12:59,910 --> 00:12:58,079
um advanced structures very lightweight

325
00:13:01,829 --> 00:12:59,920
uh structures with advanced materials

326
00:13:04,069 --> 00:13:01,839
for example the tesla

327
00:13:05,190 --> 00:13:04,079
model s is an all-aluminum body and

328
00:13:07,030 --> 00:13:05,200
chassis

329
00:13:08,550 --> 00:13:07,040
in fact it's the only aluminum car made

330
00:13:09,509 --> 00:13:08,560
in north america

331
00:13:11,829 --> 00:13:09,519
um

332
00:13:14,069 --> 00:13:11,839
and then on the spacex side spacex

333
00:13:16,550 --> 00:13:14,079
benefits from the most advanced battery

334
00:13:18,790 --> 00:13:16,560
pack in the world that tesla has so to

335
00:13:21,509 --> 00:13:18,800
tesla's the spacex is able to leverage

336
00:13:22,389 --> 00:13:21,519
the tesla technology there

337
00:13:25,430 --> 00:13:22,399
and

338
00:13:27,030 --> 00:13:25,440

then occasionally we use

339
00:13:29,750 --> 00:13:27,040
test facilities of

340
00:13:31,030 --> 00:13:29,760
between the companies

341
00:13:33,509 --> 00:13:31,040
also

342
00:13:36,790 --> 00:13:33,519
the automotive industry is very good at

343
00:13:38,470 --> 00:13:36,800
manufacturing um and um and and doing

344
00:13:41,110 --> 00:13:38,480
creating very reliable vehicles and you

345
00:13:43,829 --> 00:13:41,120
think about a car is a human rated

346
00:13:46,389 --> 00:13:43,839
vehicle that has to last for 15 years

347
00:13:48,310 --> 00:13:46,399
and 200 000 miles and at the end of that

348
00:13:50,389 --> 00:13:48,320
if you're in a crash the airbags have to

349
00:13:53,110 --> 00:13:50,399
deploy and work perfectly

350
00:13:54,230 --> 00:13:53,120
and and yet a car costs only a few tens

351
00:13:55,269 --> 00:13:54,240
of thousands

352
00:13:57,670 --> 00:13:55,279
so

353
00:13:59,110 --> 00:13:57,680
um that that's pretty incredible

354
00:14:00,870 --> 00:13:59,120
what what the water industry has done

355
00:14:02,790 --> 00:14:00,880
from a manufacturing standpoint so being

356
00:14:05,269 --> 00:14:02,800
able to leverage some of that

357
00:14:07,670 --> 00:14:05,279
uh experience to to the rocket business

358
00:14:10,230 --> 00:14:07,680
is actually very helpful

359
00:14:14,150 --> 00:14:12,790
irene klotz with reuters um i wanted to

360
00:14:15,670 --> 00:14:14,160
ask you a different question alan but

361
00:14:16,870 --> 00:14:15,680
i'm going to have to ask you to clarify

362
00:14:19,269 --> 00:14:16,880
about the

363
00:14:20,870 --> 00:14:19,279

celestis payload on the falcon second

364
00:14:21,910 --> 00:14:20,880
stage if you could just talk a little

365
00:14:26,710 --> 00:14:21,920
bit about

366
00:14:30,389 --> 00:14:28,230
uh you know i i hate to say that i

367
00:14:32,710 --> 00:14:30,399
actually if if they were on board i

368
00:14:36,310 --> 00:14:32,720
didn't actually know that um i was

369
00:14:39,430 --> 00:14:37,590
next question

370
00:14:41,269 --> 00:14:39,440
thanks elon um the other question i

371
00:14:42,870 --> 00:14:41,279
wanted to ask you about is um nasa's

372
00:14:45,350 --> 00:14:42,880
spending about three billion dollars a

373
00:14:46,069 --> 00:14:45,360
year now on the sls orion as you know

374
00:14:47,990 --> 00:14:46,079
and

375
00:14:48,710 --> 00:14:48,000
um i just was wondering if you think

376
00:14:50,870 --> 00:14:48,720
that

377
00:14:52,069 --> 00:14:50,880
at some point uh companies such as

378
00:14:54,870 --> 00:14:52,079
spacex

379
00:14:57,590 --> 00:14:54,880
can do something about those

380
00:14:59,750 --> 00:14:57,600
those very high costs for a

381
00:15:04,230 --> 00:14:59,760
space for a system that goes beyond low

382
00:15:08,389 --> 00:15:06,870
well i think right now our focus is very

383
00:15:10,629 --> 00:15:08,399
much on

384
00:15:12,230 --> 00:15:10,639
serving the international space station

385
00:15:14,389 --> 00:15:12,240
with cargo and then and then

386
00:15:15,670 --> 00:15:14,399
transitioning to to crew

387
00:15:18,389 --> 00:15:15,680
and um

388
00:15:21,509 --> 00:15:20,310

advancing the state of our rocket

389
00:15:23,590 --> 00:15:21,519
technology

390
00:15:25,590 --> 00:15:23,600
uh as

391
00:15:28,470 --> 00:15:25,600
we mentioned before i think the critical

392
00:15:31,430 --> 00:15:28,480
breakthrough in rocket technology is to

393
00:15:34,790 --> 00:15:31,440
create a full and rapidly reusable

394
00:15:36,710 --> 00:15:34,800
rocket um so in order to make the the

395
00:15:39,509 --> 00:15:36,720
cost of space transport start to

396
00:15:41,670 --> 00:15:39,519
approximate that of the the fuel and and

397
00:15:43,670 --> 00:15:41,680
oxygen which only constitutes about

398
00:15:44,790 --> 00:15:43,680
point three percent of the cost of the

399
00:15:45,590 --> 00:15:44,800
vehicle

400
00:15:46,790 --> 00:15:45,600
um

401
00:15:49,749 --> 00:15:46,800
so that that

402
00:15:51,509 --> 00:15:49,759
that's our focus right now and um

403
00:15:52,949 --> 00:15:51,519
you know in the in the future who knows

404
00:15:55,110 --> 00:15:52,959
but but that's what we're working on

405
00:15:58,790 --> 00:15:55,120
right now

406
00:15:59,590 --> 00:15:58,800
kevin quinn with ktrk tv from houston um

407
00:16:01,269 --> 00:15:59,600
maybe

408
00:16:03,509 --> 00:16:01,279
the question should be uh pointed to

409
00:16:06,470 --> 00:16:03,519
miss shotwell uh about the celestis

410
00:16:09,189 --> 00:16:06,480
payload um can you confirm that in fact

411
00:16:11,269 --> 00:16:09,199
this this was on board falcon or can

412
00:16:12,310 --> 00:16:11,279
anyone else on this panel

413
00:16:13,430 --> 00:16:12,320

yeah we

414
00:16:16,389 --> 00:16:13,440
we had a

415
00:16:20,550 --> 00:16:16,399
a celestis canister on the second stage

416
00:16:23,590 --> 00:16:22,069
the thought process about having them as

417
00:16:26,470 --> 00:16:23,600
a customer

418
00:16:29,829 --> 00:16:26,480
since uh

419
00:16:31,590 --> 00:16:29,839
i think 2005 or 2006.

420
00:16:34,629 --> 00:16:31,600
they flew on

421
00:16:36,069 --> 00:16:34,639
flight two and three of falcon one

422
00:16:40,470 --> 00:16:36,079
and now they're flying on flight three

423
00:16:44,870 --> 00:16:43,670
jason parr with wired uh

424
00:16:47,110 --> 00:16:44,880
you've mentioned that there's still many

425
00:16:48,790 --> 00:16:47,120
many challenges to come mr musk

426
00:16:52,069 --> 00:16:48,800
in this mission can you perhaps

427
00:16:54,069 --> 00:16:52,079
highlight where the next big uh worry

428
00:16:56,230 --> 00:16:54,079
for you is next big challenge and maybe

429
00:16:59,189 --> 00:16:56,240
explain some of the technical

430
00:17:05,029 --> 00:16:59,199
challenges and details behind that next

431
00:17:08,630 --> 00:17:06,230
well

432
00:17:11,189 --> 00:17:08,640
the next thing is for us to open

433
00:17:12,470 --> 00:17:11,199
the guidance navigation control

434
00:17:14,710 --> 00:17:12,480
uh door

435
00:17:17,110 --> 00:17:14,720
there's kind of a instrument bay

436
00:17:19,909 --> 00:17:17,120
sort of like a tiny version of

437
00:17:22,390 --> 00:17:19,919
you know open the pod bay doors on

438
00:17:23,909 --> 00:17:22,400

uh in in

439
00:17:26,230 --> 00:17:23,919
the 2001

440
00:17:27,110 --> 00:17:26,240
space odyssey um we have a tiny partial

441
00:17:28,870 --> 00:17:27,120
door

442
00:17:31,190 --> 00:17:28,880
and inside is

443
00:17:33,909 --> 00:17:31,200
are the navigation sensors which will be

444
00:17:36,390 --> 00:17:33,919
used to lock onto the space station

445
00:17:38,150 --> 00:17:36,400
and plot an approach vector a series of

446
00:17:39,110 --> 00:17:38,160
approach vectors

447
00:17:41,110 --> 00:17:39,120
and

448
00:17:43,430 --> 00:17:41,120
so we need to see does that door open

449
00:17:46,789 --> 00:17:43,440
properly does it lock into position that

450
00:17:49,029 --> 00:17:46,799
that also exposes the uh the grapple

451
00:17:50,470 --> 00:17:49,039
fixture that that station will use to

452
00:17:52,230 --> 00:17:50,480
grab dragon

453
00:17:53,510 --> 00:17:52,240
and uh

454
00:17:55,270 --> 00:17:53,520
so that's that's that should be

455
00:17:58,150 --> 00:17:55,280
happening relatively soon

456
00:18:00,789 --> 00:17:58,160
um and then we're um we're gonna see how

457
00:18:03,909 --> 00:18:00,799
how well those sensors are performing

458
00:18:07,350 --> 00:18:03,919
then in a few days we will

459
00:18:09,909 --> 00:18:07,360
do a fly by the space station and

460
00:18:11,669 --> 00:18:09,919
attempt to do the lock-on and

461
00:18:13,430 --> 00:18:11,679
with the sensors and

462
00:18:14,870 --> 00:18:13,440
do precision maneuvers relative to the

463
00:18:16,070 --> 00:18:14,880

space station

464
00:18:17,750 --> 00:18:16,080
and then

465
00:18:19,029 --> 00:18:17,760
the day after that is when we'll attempt

466
00:18:22,150 --> 00:18:19,039
to actually

467
00:18:23,190 --> 00:18:22,160
connect to the space station

468
00:18:27,909 --> 00:18:23,200
bill

469
00:18:29,350 --> 00:18:27,919
could you give us a little sense of what

470
00:18:31,270 --> 00:18:29,360
has to happen

471
00:18:34,150 --> 00:18:31,280
after this flight before the spacex

472
00:18:35,190 --> 00:18:34,160
would be cleared to start routine cargo

473
00:18:36,870 --> 00:18:35,200
deliveries in other words i guess what

474
00:18:38,950 --> 00:18:36,880
i'm wondering is

475
00:18:40,789 --> 00:18:38,960
could they have some failures and

476
00:18:42,230 --> 00:18:40,799
what would it require for another test

477
00:18:44,070 --> 00:18:42,240
flight i guess is what i'm wondering

478
00:18:46,230 --> 00:18:44,080
what do you have to get done now to

479
00:18:48,070 --> 00:18:46,240
clear the way for routine delivery

480
00:18:49,190 --> 00:18:48,080
again i think the way we've talked about

481
00:18:50,549 --> 00:18:49,200
that is

482
00:18:53,430 --> 00:18:50,559
we'll take a look at how the mission

483
00:18:55,750 --> 00:18:53,440
goes and then we'll analyze what occurs

484
00:18:57,590 --> 00:18:55,760
and and if we think the failure is small

485
00:18:59,190 --> 00:18:57,600
enough it can be easily corrected and

486
00:19:01,029 --> 00:18:59,200
then we could go right into commercial

487
00:19:03,190 --> 00:19:01,039
resupply services and we would need to

488
00:19:05,190 --> 00:19:03,200

do another demonstration flight if it's

489
00:19:07,190 --> 00:19:05,200
something that we collectively think

490
00:19:08,710 --> 00:19:07,200
requires a lot of extra work and would

491
00:19:10,549 --> 00:19:08,720
actually benefit from another test

492
00:19:12,630 --> 00:19:10,559
flight then we would go propose the test

493
00:19:14,230 --> 00:19:12,640
flight so it's we tried to talk about it

494
00:19:15,430 --> 00:19:14,240
alan and i and the teams looked at a

495
00:19:17,909 --> 00:19:15,440
little bit ahead of time could we

496
00:19:19,350 --> 00:19:17,919
actually define crisp criteria yes or no

497
00:19:21,190 --> 00:19:19,360
one way or the other and we really

498
00:19:22,950 --> 00:19:21,200
couldn't so we'll just kind of see how

499
00:19:24,470 --> 00:19:22,960
the mission goes see how it plays out

500
00:19:27,830 --> 00:19:24,480
and then make a decision based on what

501
00:19:29,750 --> 00:19:27,840
we get but again i think you know we're

502
00:19:31,510 --> 00:19:29,760
ready to go to commercial resupply as

503
00:19:32,950 --> 00:19:31,520
services as soon as we can get there in

504
00:19:34,310 --> 00:19:32,960
the right amount of time and we'll be

505
00:19:40,630 --> 00:19:34,320
kind of leaning that way as we go

506
00:19:43,669 --> 00:19:41,830
from where you are the benefit of

507
00:19:45,590 --> 00:19:43,679
perspective that you have given that

508
00:19:48,150 --> 00:19:45,600
you've been here for decades with the

509
00:19:50,310 --> 00:19:48,160
agency the significance of this moment

510
00:19:51,669 --> 00:19:50,320
and moving forward uh the weight of the

511
00:19:54,150 --> 00:19:51,679
responsibility that the commercial

512
00:19:56,150 --> 00:19:54,160
sector is taking on

513
00:19:58,310 --> 00:19:56,160

you know again i think the

514
00:20:00,470 --> 00:19:58,320
you know my my primary thoughts today

515
00:20:02,549 --> 00:20:00,480
was how impressed i was with this team

516
00:20:04,310 --> 00:20:02,559
and what they accomplished today the

517
00:20:05,830 --> 00:20:04,320
professionalism that they brought into

518
00:20:07,510 --> 00:20:05,840
this activity is the same

519
00:20:10,390 --> 00:20:07,520
professionalism that we've exhibited

520
00:20:12,230 --> 00:20:10,400
over the past many years and to see this

521
00:20:14,549 --> 00:20:12,240
team just as focused just as hard

522
00:20:16,549 --> 00:20:14,559
working just as dedicated as the teams

523
00:20:18,390 --> 00:20:16,559
that have done this before is real a

524
00:20:20,470 --> 00:20:18,400
tribute to our business and

525
00:20:22,310 --> 00:20:20,480
and then culminating in a rocket launch

526
00:20:23,510 --> 00:20:22,320
there's something special about a rocket

527
00:20:25,669 --> 00:20:23,520
launch

528
00:20:27,430 --> 00:20:25,679
i mean i think everybody smiles

529
00:20:29,669 --> 00:20:27,440
everybody high-fives each other

530
00:20:31,590 --> 00:20:29,679
everybody hugs each other and that's

531
00:20:34,230 --> 00:20:31,600
universal and i and i think the reason

532
00:20:35,909 --> 00:20:34,240
that occurs is because it took so much

533
00:20:38,070 --> 00:20:35,919
work ahead of time

534
00:20:39,909 --> 00:20:38,080
you know it took years of preparation

535
00:20:42,390 --> 00:20:39,919
from from when the engine test began

536
00:20:44,310 --> 00:20:42,400
with these guys way back in mcgregor and

537
00:20:46,070 --> 00:20:44,320
and working through all these activities

538
00:20:47,669 --> 00:20:46,080

and the manufacturing and all the

539
00:20:50,710 --> 00:20:47,679
problems that that come about that are

540
00:20:53,990 --> 00:20:50,720
kind of routine things then in one small

541
00:20:57,110 --> 00:20:54,000
instant within milliseconds you see all

542
00:20:58,070 --> 00:20:57,120
those past years worth of labor work and

543
00:20:59,909 --> 00:20:58,080
effort

544
00:21:02,070 --> 00:20:59,919
result in this phenomenal launch and

545
00:21:04,470 --> 00:21:02,080
when that occurs i think the teams get

546
00:21:07,590 --> 00:21:04,480
really excited and it's it's good seeing

547
00:21:09,190 --> 00:21:07,600
this next next version come on online i

548
00:21:11,430 --> 00:21:09,200
think it's also good because this frees

549
00:21:13,510 --> 00:21:11,440
us up to really focus on below beyond

550
00:21:16,149 --> 00:21:13,520
low earth orbit and we've got the sls

551
00:21:18,230 --> 00:21:16,159
and mpcv we're looking for those those

552
00:21:20,950 --> 00:21:18,240
bigger targets to push beyond and this

553
00:21:22,710 --> 00:21:20,960
lets nasa focus on those those little

554
00:21:24,390 --> 00:21:22,720
bit harder destinations those little

555
00:21:26,070 --> 00:21:24,400
things are a little more demanding from

556
00:21:27,190 --> 00:21:26,080
an overall standpoint and move in that

557
00:21:28,870 --> 00:21:27,200
direction

558
00:21:31,110 --> 00:21:28,880
this is also absolutely critical to

559
00:21:33,430 --> 00:21:31,120
space station this this cargo resupply

560
00:21:35,029 --> 00:21:33,440
is absolutely needed for station to to

561
00:21:37,029 --> 00:21:35,039
reach its research potential and move

562
00:21:38,710 --> 00:21:37,039
forward so i'm very proud for what the

563
00:21:40,789 --> 00:21:38,720

team has done and i'm very glad that

564
00:21:42,950 --> 00:21:40,799
they had the wonderful start to this

565
00:21:46,950 --> 00:21:42,960
mission but again the caution for all of

566
00:21:48,149 --> 00:21:46,960
us is there's still a lot to go

567
00:21:50,149 --> 00:21:48,159
we're going to take a question on the

568
00:21:52,870 --> 00:21:50,159
phone right now brendan mcgarry from

569
00:21:54,870 --> 00:21:52,880
bloomberg news brendan are you there

570
00:21:57,029 --> 00:21:54,880
i am thanks for taking a call from the

571
00:21:59,350 --> 00:21:57,039
line uh congratulations everyone seems

572
00:22:01,510 --> 00:21:59,360
pretty exciting

573
00:22:02,630 --> 00:22:01,520
question is related to sort of uh i

574
00:22:05,029 --> 00:22:02,640
guess

575
00:22:08,549 --> 00:22:05,039
what happens next especially with with

576
00:22:11,510 --> 00:22:08,559
docking uh in in the event of a

577
00:22:14,070 --> 00:22:11,520
a failure or or some kind of

578
00:22:15,190 --> 00:22:14,080
no-go on that particular portion of the

579
00:22:17,750 --> 00:22:15,200
mission

580
00:22:20,070 --> 00:22:17,760
what happens would would the capsule

581
00:22:22,549 --> 00:22:20,080
simply be steered to a re-entry

582
00:22:27,270 --> 00:22:22,559
and and would that in and of itself

583
00:22:29,110 --> 00:22:27,280
necessitate another demonstration flight

584
00:22:31,750 --> 00:22:29,120
i'll take that this initially if you

585
00:22:33,750 --> 00:22:31,760
don't mind uh this particular dragon

586
00:22:35,590 --> 00:22:33,760
well actually and and going forward we

587
00:22:37,909 --> 00:22:35,600
have the ability to uh

588
00:22:39,190 --> 00:22:37,919

um back away depending on what the issue

589
00:22:41,990 --> 00:22:39,200
is from the space station it's called a

590
00:22:44,070 --> 00:22:42,000
retreat or actually abort and

591
00:22:45,909 --> 00:22:44,080
re-rendezvous and try again

592
00:22:47,909 --> 00:22:45,919
on missions going forward because we

593
00:22:50,230 --> 00:22:47,919
don't have to do that c2 portion if you

594
00:22:55,029 --> 00:22:50,240
recall from the from two days ago we'll

595
00:22:55,039 --> 00:22:57,990
all right right here

596
00:23:01,750 --> 00:22:59,510
thank you very much scott powers from

597
00:23:03,909 --> 00:23:01,760
the orlando sentinel question for bill

598
00:23:06,230 --> 00:23:03,919
uh follow up on the commercial resupply

599
00:23:09,430 --> 00:23:06,240
uh statement you made a moment ago

600
00:23:11,990 --> 00:23:09,440
how much of your your near future medium

601
00:23:13,669 --> 00:23:12,000
future resupply is already committed

602
00:23:15,029 --> 00:23:13,679
through manifests and contracts how much

603
00:23:16,070 --> 00:23:15,039
of that can be turned over and how

604
00:23:18,630 --> 00:23:16,080
quickly to

605
00:23:20,070 --> 00:23:18,640
either spacex or other commercial

606
00:23:22,789 --> 00:23:20,080
companies

607
00:23:25,270 --> 00:23:22,799
um we've already initiated the contract

608
00:23:27,029 --> 00:23:25,280
for 12 flights with spacex going forward

609
00:23:29,510 --> 00:23:27,039
under commercial resupply services and

610
00:23:31,590 --> 00:23:29,520
those are already in place

611
00:23:33,990 --> 00:23:31,600
we effectively have booked from both the

612
00:23:36,710 --> 00:23:34,000
orbital and from spacex 20 metric tons

613
00:23:38,710 --> 00:23:36,720

each of cargo resupply to iss how much

614
00:23:40,070 --> 00:23:38,720
do you have this is my question that

615
00:23:42,149 --> 00:23:40,080
might be committed to the russians or

616
00:23:44,630 --> 00:23:42,159
elsewhere right now we've committed

617
00:23:46,789 --> 00:23:44,640
everything we are no longer purchasing

618
00:23:48,870 --> 00:23:46,799
any cargo resupply from the russians it

619
00:23:50,390 --> 00:23:48,880
is we are solely dependent upon the

620
00:23:51,909 --> 00:23:50,400
commercial providers

621
00:23:53,909 --> 00:23:51,919
with a little bit coming from our

622
00:23:56,870 --> 00:23:53,919
automated transfer vehicle

623
00:23:58,950 --> 00:23:56,880
from the europeans and the japanese htv

624
00:24:01,029 --> 00:23:58,960
vehicle but those are small amounts of

625
00:24:02,789 --> 00:24:01,039
unique payloads that are kind of geared

626
00:24:05,750 --> 00:24:02,799
to those unique spacecraft for example

627
00:24:07,350 --> 00:24:05,760
htv can carry large racks that can be

628
00:24:09,350 --> 00:24:07,360
transferred through the hatch that we

629
00:24:11,430 --> 00:24:09,360
can in those other areas but all the

630
00:24:13,350 --> 00:24:11,440
commercial cargo that we could we could

631
00:24:16,470 --> 00:24:13,360
put we put it on the commercial side to

632
00:24:17,190 --> 00:24:16,480
to be on these new companies

633
00:24:18,470 --> 00:24:17,200
uh

634
00:24:19,990 --> 00:24:18,480
with the valencia voice i have a

635
00:24:21,909 --> 00:24:20,000
question for mr musk or anyone that may

636
00:24:23,590 --> 00:24:21,919
know uh with thousands of satellites

637
00:24:25,350 --> 00:24:23,600
already in orbit more getting launched

638
00:24:27,190 --> 00:24:25,360

every year by spacex governments and

639
00:24:29,590 --> 00:24:27,200
other companies uh are there any plans

640
00:24:31,990 --> 00:24:29,600
to like deal with space debris or like

641
00:24:33,269 --> 00:24:32,000
uh down satellites like disposal of them

642
00:24:34,549 --> 00:24:33,279
just like in the future as like space

643
00:24:36,789 --> 00:24:34,559
debris because i know it's been an issue

644
00:24:38,710 --> 00:24:36,799
for the iss like possibly getting hit by

645
00:24:39,830 --> 00:24:38,720
space debris and we're kind of adding to

646
00:24:41,190 --> 00:24:39,840
that in a way

647
00:24:46,070 --> 00:24:41,200
so are there any plans for like dealing

648
00:24:53,430 --> 00:24:49,350
i don't know of any specific plants

649
00:24:55,669 --> 00:24:53,440
actually deorbit other satellites or

650
00:24:58,070 --> 00:24:55,679
debris or other pieces we do have

651
00:24:59,669 --> 00:24:58,080
requirements on what second stages can

652
00:25:01,590 --> 00:24:59,679
do and other things to try to get those

653
00:25:03,590 --> 00:25:01,600
re-entered so they don't become

654
00:25:05,430 --> 00:25:03,600
a portion of the

655
00:25:07,750 --> 00:25:05,440
of the debris hazard we also have a

656
00:25:09,430 --> 00:25:07,760
requirement for spacecraft to

657
00:25:11,430 --> 00:25:09,440
essentially inert the propellant system

658
00:25:13,430 --> 00:25:11,440
so they don't fragment into space and

659
00:25:15,510 --> 00:25:13,440
create more debris but we don't really

660
00:25:17,990 --> 00:25:15,520
have on the books yet any kind of

661
00:25:20,950 --> 00:25:18,000
planned return of a

662
00:25:22,870 --> 00:25:20,960
failed spacecraft or debris from space

663
00:25:25,669 --> 00:25:22,880

there is quite a bit of interest on the

664
00:25:27,590 --> 00:25:25,679
commercial side to clear the geo belt

665
00:25:28,870 --> 00:25:27,600
either to grapple satellites and push

666
00:25:32,149 --> 00:25:28,880
them out of the way or actually try to

667
00:25:35,110 --> 00:25:33,909
i suppose if you push it out of the way

668
00:25:37,669 --> 00:25:35,120
it's a little bit like a janitor

669
00:25:42,630 --> 00:25:37,679
satellite if you're refueling it it's

670
00:25:46,870 --> 00:25:45,029
hi clara moskowitz with space.com a

671
00:25:49,190 --> 00:25:46,880
question for mr musk

672
00:25:51,750 --> 00:25:49,200
can you talk about how uh spacex is

673
00:25:53,350 --> 00:25:51,760
doing on its plan to outfit dragon for

674
00:25:55,590 --> 00:25:53,360
crew and what are some of the big

675
00:26:00,149 --> 00:25:55,600
challenges coming up for you guys in

676
00:26:05,669 --> 00:26:03,029
sure uh the the the work on on upgrading

677
00:26:08,789 --> 00:26:05,679
dragon for crew is going quite well um

678
00:26:13,430 --> 00:26:11,350
we're sorting out uh

679
00:26:15,269 --> 00:26:13,440
in particular the the launch escape

680
00:26:17,430 --> 00:26:15,279
system there's a the launch escape

681
00:26:19,350 --> 00:26:17,440
thruster is called super draco and we've

682
00:26:21,909 --> 00:26:19,360
had a number of successful test firings

683
00:26:24,390 --> 00:26:21,919
of that uh that that thruster

684
00:26:26,149 --> 00:26:24,400
and we'll be integrating that into

685
00:26:28,470 --> 00:26:26,159
the a

686
00:26:29,830 --> 00:26:28,480
a full propulsion module uh hopefully

687
00:26:31,669 --> 00:26:29,840
later this year

688
00:26:34,070 --> 00:26:31,679

um so so the launch escape system which

689
00:26:35,350 --> 00:26:34,080
is the critical path item for

690
00:26:37,510 --> 00:26:35,360
carrying crew

691
00:26:38,789 --> 00:26:37,520
is progressing really well and i'm very

692
00:26:40,549 --> 00:26:38,799
excited about that because i think it's

693
00:26:43,990 --> 00:26:40,559
going to represent

694
00:26:46,710 --> 00:26:44,000
a a big advancement in launch escape

695
00:26:48,390 --> 00:26:46,720
technology for for spacecraft

696
00:26:49,830 --> 00:26:48,400
and then we've also

697
00:26:53,190 --> 00:26:49,840
done a lot of work with nasa on the

698
00:26:54,950 --> 00:26:53,200
ergonomics and figuring out how to fit

699
00:26:56,070 --> 00:26:54,960
up to seven astronauts in the dragon

700
00:26:56,950 --> 00:26:56,080
spacecraft

701
00:26:58,310 --> 00:26:56,960
and

702
00:27:00,630 --> 00:26:58,320
what the instrumentation should look

703
00:27:02,310 --> 00:27:00,640
like and the control systems

704
00:27:05,990 --> 00:27:02,320
and i think that's that's going really

705
00:27:06,000 --> 00:27:18,549
let's have a question over here

706
00:27:24,070 --> 00:27:22,230
hi i'm simone syed for black star and

707
00:27:25,269 --> 00:27:24,080
discovery communications

708
00:27:28,070 --> 00:27:25,279
um

709
00:27:31,190 --> 00:27:28,080
now as you we've seen on twitter tonight

710
00:27:33,830 --> 00:27:31,200
uh spacex became a trending feature

711
00:27:35,350 --> 00:27:33,840
which was fantastic but

712
00:27:38,230 --> 00:27:35,360
why is

713
00:27:40,230 --> 00:27:38,240

spacex significant for all of humanity

714
00:27:49,110 --> 00:27:40,240
why should every person on the planet

715
00:27:52,870 --> 00:27:51,430
sure um i could answer that

716
00:27:54,149 --> 00:27:52,880
i suppose so

717
00:27:56,310 --> 00:27:54,159
i i think

718
00:27:57,990 --> 00:27:56,320
as i was mentioning earlier

719
00:27:58,950 --> 00:27:58,000
what what this mission

720
00:28:01,430 --> 00:27:58,960
really

721
00:28:04,070 --> 00:28:01,440
does is it i think it heralds the dawn

722
00:28:06,230 --> 00:28:04,080
of a new era of space exploration uh one

723
00:28:08,710 --> 00:28:06,240
where there's a significant uh

724
00:28:11,029 --> 00:28:08,720
commercial space uh elemental press sort

725
00:28:13,350 --> 00:28:11,039
of private space element and uh just

726
00:28:14,710 --> 00:28:13,360
like the the uh advent of the internet

727
00:28:16,310 --> 00:28:14,720
or the

728
00:28:17,830 --> 00:28:16,320
in the 90s when commercial companies

729
00:28:19,510 --> 00:28:17,840
entered the internet which was a

730
00:28:21,430 --> 00:28:19,520
originally governed endeavor and that

731
00:28:23,029 --> 00:28:21,440
dramatically accelerated the pace of

732
00:28:25,990 --> 00:28:23,039
advancement in the internet and made it

733
00:28:27,830 --> 00:28:26,000
accessible to the mass market i think i

734
00:28:29,350 --> 00:28:27,840
think we're at a similar inflection

735
00:28:32,470 --> 00:28:29,360
point for space

736
00:28:34,230 --> 00:28:32,480
so i think this this is um

737
00:28:36,070 --> 00:28:34,240
i i i

738
00:28:38,230 --> 00:28:36,080

i hope and i i believe

739
00:28:39,269 --> 00:28:38,240
this this mission will be

740
00:28:41,990 --> 00:28:39,279
uh

741
00:28:44,310 --> 00:28:42,000
historic in in marking that turning

742
00:28:47,269 --> 00:28:44,320
point towards

743
00:28:49,830 --> 00:28:47,279
a a a rapid advancement in space

744
00:28:51,510 --> 00:28:49,840
transportation technology

745
00:28:53,990 --> 00:28:51,520
okay we'll take one last question here

746
00:28:55,909 --> 00:28:54,000
and that'll wrap it up right here

747
00:28:57,590 --> 00:28:55,919
from new york times as a question from

748
00:28:59,430 --> 00:28:57,600
mr kirsten meyer

749
00:29:01,110 --> 00:28:59,440
i understand that commercial cargos is

750
00:29:02,630 --> 00:29:01,120
critical for station but it's not urgent

751
00:29:03,870 --> 00:29:02,640
because you had gotten a lot of supplies

752
00:29:06,149 --> 00:29:03,880
up with

753
00:29:07,669 --> 00:29:06,159
sts-135 i was just wondering where would

754
00:29:11,190 --> 00:29:07,679
the station be at right now if you

755
00:29:17,909 --> 00:29:14,149
again i think what what 135 did was it

756
00:29:19,350 --> 00:29:17,919
added about a year of margin to to allow

757
00:29:20,870 --> 00:29:19,360
the essentially the commercial cargo

758
00:29:23,190 --> 00:29:20,880
providers to get established in

759
00:29:25,830 --> 00:29:23,200
delivering routine cargo to iss so it

760
00:29:27,350 --> 00:29:25,840
gave us about a year's worth of margin

761
00:29:29,750 --> 00:29:27,360
we have lots of scientific

762
00:29:31,510 --> 00:29:29,760
investigations going on right now we're

763
00:29:32,870 --> 00:29:31,520

working pretty heavily with spacex on a

764
00:29:35,269 --> 00:29:32,880
couple of the flights in the future

765
00:29:37,430 --> 00:29:35,279
where a bunch of our payloads are

766
00:29:39,430 --> 00:29:37,440
looking at getting added to spacex

767
00:29:41,190 --> 00:29:39,440
there's also the dragon trunk where we

768
00:29:42,870 --> 00:29:41,200
can carry some external cargo that's

769
00:29:44,789 --> 00:29:42,880
another feature we're going to add on a

770
00:29:46,389 --> 00:29:44,799
later commercial resupply services

771
00:29:48,870 --> 00:29:46,399
flight we're working those activities

772
00:29:51,110 --> 00:29:48,880
right now with spacex so

773
00:29:52,870 --> 00:29:51,120
again like i described earlier in our

774
00:29:55,190 --> 00:29:52,880
business we're really working things

775
00:29:56,710 --> 00:29:55,200
that are three or four flights down the

776
00:29:58,789 --> 00:29:56,720
road to get prepared for those

777
00:30:01,430 --> 00:29:58,799
activities so we're really gearing up

778
00:30:03,269 --> 00:30:01,440
for a large amount of payload activity

779
00:30:04,950 --> 00:30:03,279
to be carried on spacex and we're

780
00:30:07,190 --> 00:30:04,960
working that that right now so it's

781
00:30:09,830 --> 00:30:07,200
really critical but 135 gave us about a

782
00:30:11,350 --> 00:30:09,840
year of margin to essentially let the

783
00:30:13,350 --> 00:30:11,360
let the new commercial providers let

784
00:30:16,149 --> 00:30:13,360
spacex and orbital get established and

785
00:30:18,470 --> 00:30:16,159
delivering cargo to us

786
00:30:21,590 --> 00:30:18,480
all right that's going to conclude our

787
00:30:23,830 --> 00:30:21,600
briefing and our coverage for the spacex