1
00:00:20,230 --> 00:00:17,830
good afternoon and welcome to nasa's

2
00:00:23,990 --> 00:00:20,240
kennedy space center in florida for the

3
00:00:25,509 --> 00:00:24,000
spacex crs 11 pre-launch news conference

4
00:00:28,070 --> 00:00:25,519
we're all excited and ready for the

5
00:00:29,830 --> 00:00:28,080
launch tomorrow of the 11th commercial

6
00:00:31,910 --> 00:00:29,840
resupply services mission to the

7
00:00:33,430 --> 00:00:31,920
international space station and here to

8
00:00:36,150 --> 00:00:33,440
tell us more about it today we are

9
00:00:38,310 --> 00:00:36,160
pleased to be joined by to my left

10
00:00:42,549 --> 00:00:38,320
kirk shireman manager of nasa's

11
00:00:49,830 --> 00:00:45,590
hans kunigsman spacex vice president of

12
00:00:54,310 --> 00:00:52,069
camille elaine international space

13
00:00:57,990 --> 00:00:54,320

station program science office at

14
00:01:00,630 --> 00:00:58,000
johnson space center in houston

15
00:01:03,029 --> 00:01:00,640
and mike mcelinen launch weather officer

16
00:01:05,509 --> 00:01:03,039
from the u.s air force 45th weather

17
00:01:07,590 --> 00:01:05,519
squadron thank you all for joining us

18
00:01:09,670 --> 00:01:07,600
and uh we'll be happy to take questions

19
00:01:11,590 --> 00:01:09,680
after we start off with opening

20
00:01:13,190 --> 00:01:11,600
statements and kirk i'll turn it over to

21
00:01:15,190 --> 00:01:13,200
you all right thanks great good

22
00:01:17,590 --> 00:01:15,200
afternoon it's great to be here with you

23
00:01:20,149 --> 00:01:17,600
um really excited about the the launch

24
00:01:21,590 --> 00:01:20,159
tomorrow evening and uh we're uh we're

25
00:01:22,630 --> 00:01:21,600
counting on the weather cooperating but

26
00:01:25,350 --> 00:01:22,640
we'll hear more about that in a little

27
00:01:26,469 --> 00:01:25,360
bit lots of uh great things associated

28
00:01:27,830 --> 00:01:26,479
with this flight i would like to tell

29
00:01:28,710 --> 00:01:27,840
you a few things that we're excited

30
00:01:30,310 --> 00:01:28,720
about

31
00:01:33,429 --> 00:01:30,320
is an iss program and then tell you a

32
00:01:35,590 --> 00:01:33,439
couple things about the iss vehicle

33
00:01:38,390 --> 00:01:35,600
uh first off uh this vehicle we're gonna

34
00:01:39,749 --> 00:01:38,400
carry over 1700 kilograms of pressurized

35
00:01:41,109 --> 00:01:39,759
cargo

36
00:01:43,190 --> 00:01:41,119
largely

37
00:01:45,030 --> 00:01:43,200
utilization cargo

38
00:01:48,149 --> 00:01:45,040

for this increment pair we're going to

39
00:01:50,550 --> 00:01:48,159
have 213 different investigations

40
00:01:53,270 --> 00:01:50,560
100 of them 130 of those are led by the

41
00:01:56,789 --> 00:01:53,280
u.s and in fact 65 are brand new

42
00:01:58,630 --> 00:01:56,799
investigations never conducted on iss

43
00:02:00,630 --> 00:01:58,640
this vehicle is going to carry up three

44
00:02:02,149 --> 00:02:00,640
very unique payloads in the trunk

45
00:02:03,350 --> 00:02:02,159
unpressurized

46
00:02:05,350 --> 00:02:03,360
nicer

47
00:02:06,550 --> 00:02:05,360
which is uh going to look at neutron

48
00:02:09,029 --> 00:02:06,560
stars

49
00:02:11,910 --> 00:02:09,039
rosa which is a a rollout solar array

50
00:02:13,990 --> 00:02:11,920
experiment um we're really excited about

51
00:02:15,990 --> 00:02:14,000
and uh and muses which is an external

52
00:02:19,750 --> 00:02:16,000
platform for various other payloads to

53
00:02:23,589 --> 00:02:19,760
use um and it's also commercial uh

54
00:02:26,630 --> 00:02:23,599
platform uh built by telodyne brown

55
00:02:28,309 --> 00:02:26,640
um lots of pressurized cargo too uh

56
00:02:29,750 --> 00:02:28,319
we're gonna fly fruit flies in fact it's

57
00:02:32,150 --> 00:02:29,760
fruit fly two so it'll be our second

58
00:02:34,630 --> 00:02:32,160
time to fly fruit flies uh russian or

59
00:02:36,470 --> 00:02:34,640
rodent research five so our fifth time

60
00:02:38,070 --> 00:02:36,480
and i think you heard some more about

61
00:02:39,990 --> 00:02:38,080
that earlier today

62
00:02:41,990 --> 00:02:40,000
protein crystal growth both cases and

63
00:02:44,710 --> 00:02:42,000

jacks that both have protein crystal

64
00:02:45,910 --> 00:02:44,720
growth experiments going on

65
00:02:48,710 --> 00:02:45,920
and

66
00:02:50,470 --> 00:02:48,720
so lots of utilization for this flight

67
00:02:52,070 --> 00:02:50,480
and we're very very excited about doing

68
00:02:54,150 --> 00:02:52,080
that it's going to keep our crews very

69
00:02:55,589 --> 00:02:54,160
busy on orbit and and we're looking

70
00:02:57,430 --> 00:02:55,599
forward to the results of those

71
00:02:59,350 --> 00:02:57,440
investigations

72
00:03:00,869 --> 00:02:59,360
um on orbit it's very been a very very

73
00:03:02,630 --> 00:03:00,879
busy time

74
00:03:04,949 --> 00:03:02,640
we've conducted here very very recently

75
00:03:07,670 --> 00:03:04,959
we've conducted two spacewalks one

76
00:03:09,830 --> 00:03:07,680
actually unplanned we had a failure just

77
00:03:11,509 --> 00:03:09,840
a little over a week ago and a failure

78
00:03:13,350 --> 00:03:11,519
occurred saturday morning and uh by

79
00:03:14,309 --> 00:03:13,360
tuesday morning we were out making a

80
00:03:15,589 --> 00:03:14,319
repair

81
00:03:17,589 --> 00:03:15,599
to uh

82
00:03:19,270 --> 00:03:17,599
to a a

83
00:03:21,270 --> 00:03:19,280
multiplexer demultiplexer basically a

84
00:03:22,710 --> 00:03:21,280
computer uh outside and that was

85
00:03:25,110 --> 00:03:22,720
successful so we're very pleased with

86
00:03:26,630 --> 00:03:25,120
that uh with that second unsp unplanned

87
00:03:29,910 --> 00:03:26,640
spacewalk

88
00:03:32,630 --> 00:03:29,920

um we're coming up on a very series of

89
00:03:34,869 --> 00:03:32,640
of events the first of which is

90
00:03:36,869 --> 00:03:34,879
a soyuz landing so we actually have a

91
00:03:39,509 --> 00:03:36,879
soyuz landing

92
00:03:41,270 --> 00:03:39,519
on friday it's going to land about 9 10

93
00:03:43,750 --> 00:03:41,280
a.m central time

94
00:03:45,910 --> 00:03:43,760
10 10 i guess eastern time

95
00:03:47,589 --> 00:03:45,920
bringing to ma pasquee and oleg

96
00:03:49,589 --> 00:03:47,599
novitskiy home

97
00:03:51,589 --> 00:03:49,599
as you may recall actually peggy whitson

98
00:03:52,949 --> 00:03:51,599
flew up on this soyuz and we reached an

99
00:03:56,070 --> 00:03:52,959
agreement with our russian partners to

100
00:03:58,309 --> 00:03:56,080
keep to keep peggy whitson on orbit an

101
00:03:59,750 --> 00:03:58,319
additional three months and so peggy

102
00:04:01,750 --> 00:03:59,760
will be helping us out in orbit with our

103
00:04:04,630 --> 00:04:01,760
complement of three crew between when

104
00:04:08,470 --> 00:04:04,640
the soyuz lands on friday until the next

105
00:04:09,270 --> 00:04:08,480
soyuz launches on july 27th

106
00:04:12,149 --> 00:04:09,280
um

107
00:04:13,350 --> 00:04:12,159
peggy has been peggy and tomah and oleg

108
00:04:14,710 --> 00:04:13,360
has actually been extraordinary crew

109
00:04:16,390 --> 00:04:14,720
members

110
00:04:17,830 --> 00:04:16,400
and we're very happy to while we can't

111
00:04:19,990 --> 00:04:17,840
keep all three on orbit we're very happy

112
00:04:21,990 --> 00:04:20,000
to be able to keep peggy on orbit as you

113
00:04:23,830 --> 00:04:22,000

probably remember peggy

114
00:04:25,030 --> 00:04:23,840
has the record for u.s crew members

115
00:04:27,909 --> 00:04:25,040
actually i would say the record for

116
00:04:30,790 --> 00:04:27,919
non-russian crew members peggy's uh

117
00:04:34,469 --> 00:04:30,800
surpass jeff williams on april 24th with

118
00:04:37,350 --> 00:04:34,479
uh 534 days by the time she lands

119
00:04:38,390 --> 00:04:37,360
in september she will have over 660 days

120
00:04:40,790 --> 00:04:38,400
on orbit

121
00:04:43,430 --> 00:04:40,800
peggy's conducted 10 spacewalks which is

122
00:04:47,590 --> 00:04:43,440
tied for the most

123
00:04:50,070 --> 00:04:47,600
in u.s history and she has over 60 hours

124
00:04:52,150 --> 00:04:50,080
in spacewalk time with her spacewalk

125
00:04:53,749 --> 00:04:52,160
that she had done last week so tomorrow

126
00:04:54,629 --> 00:04:53,759
morning she'll hand over commandership

127
00:04:57,030 --> 00:04:54,639
to

128
00:04:58,710 --> 00:04:57,040
fyodor your chicken and but she will

129
00:05:00,390 --> 00:04:58,720
continue her great work

130
00:05:01,590 --> 00:05:00,400
and like i said she'll be uh she'll

131
00:05:05,590 --> 00:05:01,600
she's supporting

132
00:05:07,990 --> 00:05:05,600
the this spacex 11 flight and an

133
00:05:09,749 --> 00:05:08,000
incredible amount of work just after the

134
00:05:12,070 --> 00:05:09,759
crew comes home

135
00:05:13,670 --> 00:05:12,080
on on friday

136
00:05:17,350 --> 00:05:13,680
spacex will be arriving shortly

137
00:05:18,790 --> 00:05:17,360
thereafter and their first week on orbit

138
00:05:21,430 --> 00:05:18,800

she she and jack fisher have a

139
00:05:23,430 --> 00:05:21,440
tremendously busy week that week just to

140
00:05:24,710 --> 00:05:23,440
get all these experiments started so

141
00:05:26,150 --> 00:05:24,720
looking forward to all the great work

142
00:05:28,070 --> 00:05:26,160
going on on the international space

143
00:05:31,350 --> 00:05:28,080
station and certainly to the cargo

144
00:05:33,350 --> 00:05:31,360
arriving here later this week

145
00:05:35,749 --> 00:05:33,360
hans yep thank you

146
00:05:39,110 --> 00:05:35,759
so um i have a couple items to report on

147
00:05:43,670 --> 00:05:39,120
on our mission too i first of all the

148
00:05:45,590 --> 00:05:43,680
the targeted launch window is 5 55 pm

149
00:05:47,830 --> 00:05:45,600
the uh the ascent typically takes three

150
00:05:49,909 --> 00:05:47,840
minutes for the first stage and this

151
00:05:52,390 --> 00:05:49,919
particular first stage will uh

152
00:05:54,150 --> 00:05:52,400
then separate and come back to lg-1

153
00:05:55,270 --> 00:05:54,160
which is the landing zone down here at

154
00:05:57,350 --> 00:05:55,280
the cape

155
00:05:59,510 --> 00:05:57,360
for a land landing

156
00:06:01,749 --> 00:05:59,520
um second stage will continue to fly for

157
00:06:04,230 --> 00:06:01,759
another uh seven minutes about and then

158
00:06:07,029 --> 00:06:04,240
deploy a dragon in a

159
00:06:08,230 --> 00:06:07,039
in its nominal orbit um

160
00:06:10,150 --> 00:06:08,240
the

161
00:06:12,230 --> 00:06:10,160
dragon itself will

162
00:06:14,309 --> 00:06:12,240
fly about a little less than three days

163
00:06:15,189 --> 00:06:14,319

before it docks to the station

164
00:06:17,189 --> 00:06:15,199
um

165
00:06:19,270 --> 00:06:17,199
and then it will remain on the station

166
00:06:21,270 --> 00:06:19,280
for about a month

167
00:06:22,790 --> 00:06:21,280
after launch

168
00:06:32,469 --> 00:06:22,800
the

169
00:06:35,270 --> 00:06:32,479
lc39a launchpad if we

170
00:06:36,790 --> 00:06:35,280
count it correctly

171
00:06:38,469 --> 00:06:36,800
i hope he did

172
00:06:42,790 --> 00:06:38,479
and

173
00:06:45,430 --> 00:06:42,800
refurbished dragon it has flown

174
00:06:47,430 --> 00:06:45,440
previously on crs4

175
00:06:49,589 --> 00:06:47,440
which is about two and a half little a

176
00:06:52,950 --> 00:06:49,599
little over two and a half years ago i

177
00:06:56,230 --> 00:06:52,960
think it was september october in 2014

178
00:06:58,870 --> 00:06:56,240
um and we uh once the this capsule

179
00:06:59,589 --> 00:06:58,880
landed we uh we refurbished it inspected

180
00:07:01,749 --> 00:06:59,599
it

181
00:07:04,710 --> 00:07:01,759
made sure everything is qualified for

182
00:07:07,430 --> 00:07:04,720
you know a in the next flight and this

183
00:07:10,390 --> 00:07:07,440
is where we are now for ready to go

184
00:07:11,749 --> 00:07:10,400
on 39a

185
00:07:13,909 --> 00:07:11,759
um

186
00:07:16,070 --> 00:07:13,919
for us it's the seventh launch this year

187
00:07:17,670 --> 00:07:16,080
um you can tell that we picked up the

188
00:07:20,629 --> 00:07:17,680

rate significantly

189
00:07:23,029 --> 00:07:20,639
um we are hoping to stay at this rate

190
00:07:27,589 --> 00:07:23,039
through the rest of the year and uh and

191
00:07:31,990 --> 00:07:29,589
we're hoping to also

192
00:07:34,150 --> 00:07:32,000
fly more and more dragon refurbished and

193
00:07:35,270 --> 00:07:34,160
the same is true for the first stages as

194
00:07:37,029 --> 00:07:35,280
you know

195
00:07:39,990 --> 00:07:37,039
the next launch after this is also

196
00:07:41,589 --> 00:07:40,000
refurbished first stage for example

197
00:07:43,670 --> 00:07:41,599
and

198
00:07:46,070 --> 00:07:43,680
with that i do want to thank the falcon

199
00:07:47,830 --> 00:07:46,080
9 team for getting this falcon 9 ready

200
00:07:49,510 --> 00:07:47,840
dragon team for getting the dragon ready

201
00:07:51,990 --> 00:07:49,520
and the launch team for

202
00:07:54,070 --> 00:07:52,000
uh working really really hard to get

203
00:07:55,029 --> 00:07:54,080
these launchers scheduled within two

204
00:07:56,869 --> 00:07:55,039
weeks

205
00:07:59,029 --> 00:07:56,879
from each other

206
00:08:01,029 --> 00:07:59,039
not last last but at least 45th space

207
00:08:03,749 --> 00:08:01,039
spring in faa for their support and then

208
00:08:07,430 --> 00:08:03,759
of course nasa for the opportunity to uh

209
00:08:10,230 --> 00:08:07,440
to deliver cargo to the space station

210
00:08:12,070 --> 00:08:10,240
thank you thanks hans camille

211
00:08:13,909 --> 00:08:12,080
thank you mike good afternoon it's

212
00:08:15,749 --> 00:08:13,919
really a pleasure to be here to share

213
00:08:18,790 --> 00:08:15,759

some of the science that's going up

214
00:08:22,070 --> 00:08:18,800
tomorrow on the crs 11. we're excited to

215
00:08:23,990 --> 00:08:22,080
have about 4 500 pounds as kurt said

216
00:08:26,230 --> 00:08:24,000
of research supplies and science

217
00:08:28,070 --> 00:08:26,240
investigations including about two

218
00:08:29,909 --> 00:08:28,080
thousand pounds of the unpressurized

219
00:08:31,670 --> 00:08:29,919
cargoed three instruments that are

220
00:08:34,230 --> 00:08:31,680
flying in the trunk of the dragon

221
00:08:35,430 --> 00:08:34,240
capsule we are also excited because the

222
00:08:38,230 --> 00:08:35,440
dragon

223
00:08:40,550 --> 00:08:38,240
has the capability of returning samples

224
00:08:44,470 --> 00:08:40,560
back down to earth and so it will return

225
00:08:46,550 --> 00:08:44,480
about 1500 pounds um in about 30 days on

226
00:08:48,990 --> 00:08:46,560
its return

227
00:08:52,310 --> 00:08:49,000
these experiments are supporting about

228
00:08:55,430 --> 00:08:52,320
220 investigations currently going on

229
00:08:58,070 --> 00:08:55,440
during increment 5152 on board the space

230
00:08:59,910 --> 00:08:58,080
station and they span a multitude of

231
00:09:02,550 --> 00:08:59,920
scientific disciplines including

232
00:09:05,190 --> 00:09:02,560
biological research the physical

233
00:09:07,509 --> 00:09:05,200
sciences the human research that we're

234
00:09:09,670 --> 00:09:07,519
doing with the astronauts uh the

235
00:09:12,630 --> 00:09:09,680
technology demonstration

236
00:09:14,790 --> 00:09:12,640
studying earth and space from the iss

237
00:09:17,030 --> 00:09:14,800
and then last but not least the

238
00:09:20,070 --> 00:09:17,040

educational activities that students

239
00:09:21,910 --> 00:09:20,080
have an opportunity to participate in

240
00:09:24,150 --> 00:09:21,920
so earlier today we had the what's on

241
00:09:27,110 --> 00:09:24,160
board briefing and there was a sampling

242
00:09:29,190 --> 00:09:27,120
of uh some highlights from some of our

243
00:09:32,470 --> 00:09:29,200
principal investigators that will be

244
00:09:34,949 --> 00:09:32,480
flying their payloads uh tomorrow that

245
00:09:37,509 --> 00:09:34,959
includes uh some of the mouse models

246
00:09:40,949 --> 00:09:37,519
that will be treated with this novel

247
00:09:43,350 --> 00:09:40,959
therapeutic drug called nel-1 that is

248
00:09:45,990 --> 00:09:43,360
known to have the ability to not only

249
00:09:47,590 --> 00:09:46,000
prevent bone loss but also to promote

250
00:09:50,710 --> 00:09:47,600
bone formation

251
00:09:53,030 --> 00:09:50,720
we're also flying thousands of fruit

252
00:09:55,910 --> 00:09:53,040
flies that will be used as models to

253
00:09:56,870 --> 00:09:55,920
study the cardiovascular changes that

254
00:09:59,670 --> 00:09:56,880
happen

255
00:10:02,069 --> 00:09:59,680
in a long duration space flight so these

256
00:10:05,269 --> 00:10:02,079
scientists will be looking at how the

257
00:10:07,590 --> 00:10:05,279
heart the cardia function the cardiac

258
00:10:10,870 --> 00:10:07,600
structure and the cardiac gene

259
00:10:13,829 --> 00:10:10,880
expression of these flies adapt to space

260
00:10:16,310 --> 00:10:13,839
flight and that will be an analog for

261
00:10:20,150 --> 00:10:16,320
how human heart

262
00:10:22,550 --> 00:10:20,160
operates in in space flight environment

263
00:10:24,949 --> 00:10:22,560

we also have the three external payloads

264
00:10:27,509 --> 00:10:24,959
i mentioned earlier an earth viewing

265
00:10:30,550 --> 00:10:27,519
platform developed by teledyne brown

266
00:10:33,670 --> 00:10:30,560
called muses and that has the ability to

267
00:10:36,310 --> 00:10:33,680
house up to four in uh earth sensing

268
00:10:39,430 --> 00:10:36,320
instruments including hyperspectral

269
00:10:42,230 --> 00:10:39,440
images and high resolution digital

270
00:10:44,069 --> 00:10:42,240
cameras it has the ability also to

271
00:10:46,470 --> 00:10:44,079
provide instruments with point in

272
00:10:49,190 --> 00:10:46,480
accuracy and other accommodations such

273
00:10:51,590 --> 00:10:49,200
as data and power we have the nicer

274
00:10:53,829 --> 00:10:51,600
astrophysics experiment which is the

275
00:10:55,990 --> 00:10:53,839
neutron star interior composition

276
00:10:58,310 --> 00:10:56,000
explorer that's going to be measuring

277
00:11:00,790 --> 00:10:58,320
the dynamics the structure and the

278
00:11:03,110 --> 00:11:00,800
energetics of neutron stars and it's

279
00:11:05,910 --> 00:11:03,120
also going to demonstrate a technology

280
00:11:08,550 --> 00:11:05,920
that would be we're using pulsars as a

281
00:11:11,190 --> 00:11:08,560
navigation beacon for interplanetary

282
00:11:13,430 --> 00:11:11,200
spacecraft and then we have the roll out

283
00:11:16,230 --> 00:11:13,440
solar array or rosa

284
00:11:18,870 --> 00:11:16,240
which demonstrates actually tests the

285
00:11:22,069 --> 00:11:18,880
deployment and retraction of this new

286
00:11:23,670 --> 00:11:22,079
type of lightweight solar array system

287
00:11:26,150 --> 00:11:23,680
they will be looking at some of the

288
00:11:28,470 --> 00:11:26,160

energetics the dynamics of this solar

289
00:11:29,990 --> 00:11:28,480
array once it's deployed in orbit and

290
00:11:33,590 --> 00:11:30,000
how the thermal

291
00:11:35,910 --> 00:11:33,600
differentials in in space the space

292
00:11:37,670 --> 00:11:35,920
environment affects this solar ray

293
00:11:40,389 --> 00:11:37,680
system

294
00:11:43,350 --> 00:11:40,399
then we have um some physical sciences

295
00:11:46,069 --> 00:11:43,360
experiments specifically one by procter

296
00:11:48,150 --> 00:11:46,079
gamble which is studying some colloidal

297
00:11:50,870 --> 00:11:48,160
gels and uh

298
00:11:52,710 --> 00:11:50,880
creams which are consumer products and

299
00:11:55,750 --> 00:11:52,720
they are looking at how

300
00:11:58,230 --> 00:11:55,760
the environment of space microgravity

301
00:11:59,190 --> 00:11:58,240
impacts these colloids how they behave

302
00:12:01,910 --> 00:11:59,200
and

303
00:12:05,269 --> 00:12:01,920
ultimately wanting to increase the shelf

304
00:12:07,750 --> 00:12:05,279
life of these gels and creams

305
00:12:10,470 --> 00:12:07,760
and lastly we have we are flying some

306
00:12:13,350 --> 00:12:10,480
cube satellites five a constellation of

307
00:12:15,110 --> 00:12:13,360
five cube satellites which is a part of

308
00:12:17,430 --> 00:12:15,120
a multi-nation

309
00:12:19,509 --> 00:12:17,440
project called the birds project and

310
00:12:22,870 --> 00:12:19,519
these cube satellites were developed by

311
00:12:26,230 --> 00:12:22,880
students from japan nigeria ghana

312
00:12:28,470 --> 00:12:26,240
indonesia thailand and bangladesh and so

313
00:12:31,269 --> 00:12:28,480

they will be using these cube satellites

314
00:12:34,629 --> 00:12:31,279
to not only measure atmospheric density

315
00:12:37,350 --> 00:12:34,639
but also to measure the exact location

316
00:12:39,590 --> 00:12:37,360
precise location of satellites and also

317
00:12:42,470 --> 00:12:39,600
to demonstrate a network of ground

318
00:12:45,910 --> 00:12:42,480
control system operators

319
00:12:48,790 --> 00:12:45,920
and then we have a suite of education

320
00:12:50,870 --> 00:12:48,800
experiments by the valley christian high

321
00:12:53,350 --> 00:12:50,880
school in california in partnership with

322
00:12:55,829 --> 00:12:53,360
nanoracks and they will be looking at

323
00:12:58,790 --> 00:12:55,839
the effects of microgravity on various

324
00:13:01,990 --> 00:12:58,800
things from brine shrimp to magneto

325
00:13:04,310 --> 00:13:02,000
magneto rheological fluids they'll also

326
00:13:08,310 --> 00:13:04,320
be looking at the growth of

327
00:13:14,069 --> 00:13:12,069
probiotics uh in space versus how those

328
00:13:16,230 --> 00:13:14,079
are grown on the ground they'll be

329
00:13:18,949 --> 00:13:16,240
looking at how water crystallizes in

330
00:13:20,550 --> 00:13:18,959
space versus how it's crystallizes on

331
00:13:23,509 --> 00:13:20,560
the ground and the effects of

332
00:13:26,949 --> 00:13:23,519
microgravity on this nutrient solution

333
00:13:28,629 --> 00:13:26,959
called bam fx so that's just a sampling

334
00:13:32,629 --> 00:13:28,639
of some of the science that will be

335
00:13:34,150 --> 00:13:32,639
enabled by by tomorrow's spacex launch

336
00:13:36,870 --> 00:13:34,160
that contribute to not only the

337
00:13:38,949 --> 00:13:36,880
advancement of human space exploration

338
00:13:41,110 --> 00:13:38,959

but also improving the quality of all

339
00:13:42,389 --> 00:13:41,120
lives here on earth thank you

340
00:13:43,590 --> 00:13:42,399
thanks camille

341
00:13:45,670 --> 00:13:43,600
mike

342
00:13:47,269 --> 00:13:45,680
all right well welcome to central

343
00:13:49,350 --> 00:13:47,279
florida's convective season which

344
00:13:51,350 --> 00:13:49,360
started yesterday

345
00:13:53,269 --> 00:13:51,360
it might help out the fires a little bit

346
00:13:55,670 --> 00:13:53,279
but it makes afternoon launch windows

347
00:13:57,670 --> 00:13:55,680
very sporty for the next three months

348
00:13:59,509 --> 00:13:57,680
um this the

349
00:14:01,110 --> 00:13:59,519
space coast's daily barrage of

350
00:14:03,350 --> 00:14:01,120
thunderstorms is triggered largely by

351
00:14:04,470 --> 00:14:03,360
the sea breeze which wants to move

352
00:14:05,990 --> 00:14:04,480
inland

353
00:14:07,430 --> 00:14:06,000
but can be helped or hindered by the

354
00:14:09,189 --> 00:14:07,440
low-level flow

355
00:14:11,350 --> 00:14:09,199
the last two days we've had a little of

356
00:14:13,430 --> 00:14:11,360
a flow out of the southwest

357
00:14:15,110 --> 00:14:13,440
which pins the sea breeze very close to

358
00:14:17,350 --> 00:14:15,120
the spaceport hence we have the

359
00:14:19,509 --> 00:14:17,360
afternoon thunderstorms here

360
00:14:21,110 --> 00:14:19,519
guidance is suggesting that this flow

361
00:14:22,949 --> 00:14:21,120
switches a little bit tomorrow and more

362
00:14:24,629 --> 00:14:22,959
southerly which will allow the sea

363
00:14:25,509 --> 00:14:24,639

breeze to move inland a little bit

364
00:14:26,389 --> 00:14:25,519
quicker

365
00:14:27,829 --> 00:14:26,399
i still think we're gonna get

366
00:14:30,310 --> 00:14:27,839
thunderstorms i still think we might

367
00:14:31,670 --> 00:14:30,320
even see a couple during the countdown

368
00:14:33,269 --> 00:14:31,680
but there's a

369
00:14:35,590 --> 00:14:33,279
decent chance we're going to have that

370
00:14:36,790 --> 00:14:35,600
thunderstorm and the sea breeze far

371
00:14:39,350 --> 00:14:36,800
enough inland

372
00:14:41,269 --> 00:14:39,360
between 4 and 6 p.m that we have a good

373
00:14:44,949 --> 00:14:41,279
shot of getting the launch out here so

374
00:14:48,389 --> 00:14:44,959
let's look at the forecast

375
00:14:51,990 --> 00:14:48,399
for uh tomorrow we got winds basically

376
00:14:53,350 --> 00:14:52,000
110 degrees 12 to 17 miles an hour and

377
00:14:55,189 --> 00:14:53,360
they're gonna switch around easterly

378
00:14:57,189 --> 00:14:55,199
every single day but it's that before

379
00:14:59,189 --> 00:14:57,199
the sea breeze kicks in is really what

380
00:15:01,430 --> 00:14:59,199
drives how far it'll move temperature's

381
00:15:04,230 --> 00:15:01,440
going to be warm again 84 degrees and

382
00:15:06,389 --> 00:15:04,240
our main concern is the anvil cloud rule

383
00:15:07,509 --> 00:15:06,399
even if the thunderstorms move inland

384
00:15:09,030 --> 00:15:07,519
our upper level winds are out of the

385
00:15:11,750 --> 00:15:09,040
northwest that could bring the anvil

386
00:15:13,030 --> 00:15:11,760
clouds back towards the space coast

387
00:15:14,949 --> 00:15:13,040
we have uh

388
00:15:16,470 --> 00:15:14,959

the rules are very good at giving us

389
00:15:19,269 --> 00:15:16,480
some opportunities that are safe to

390
00:15:20,870 --> 00:15:19,279
launch so i think the anvils that'll be

391
00:15:22,470 --> 00:15:20,880
overhead will be thin enough and high

392
00:15:24,550 --> 00:15:22,480
enough that we can get through those

393
00:15:25,990 --> 00:15:24,560
it'll be lingering cumulus clouds that

394
00:15:28,310 --> 00:15:26,000
the sea breeze doesn't quite move in far

395
00:15:29,990 --> 00:15:28,320
enough that would also be a threat so 30

396
00:15:32,389 --> 00:15:30,000
percent chance right now

397
00:15:34,629 --> 00:15:32,399
violation if we were to move to the

398
00:15:36,550 --> 00:15:34,639
backup day which is saturday

399
00:15:38,870 --> 00:15:36,560
weather

400
00:15:40,949 --> 00:15:38,880
degrades a bit we have the low-level

401
00:15:42,710 --> 00:15:40,959
flow back to the southwest as the

402
00:15:44,629 --> 00:15:42,720
bermuda ridge axis slides back to the

403
00:15:46,710 --> 00:15:44,639
south that will should pin the sea

404
00:15:48,949 --> 00:15:46,720
breeze a bit closer to us

405
00:15:51,509 --> 00:15:48,959
and also the thunderstorm activity so

406
00:15:53,910 --> 00:15:51,519
a little bit worse case still fighting

407
00:15:55,509 --> 00:15:53,920
the anvil clouds even moves inland but i

408
00:15:56,710 --> 00:15:55,519
think we're adding the flight to

409
00:15:58,870 --> 00:15:56,720
precipitation rule for the dragon

410
00:16:01,110 --> 00:15:58,880
capsule we may have our own activity

411
00:16:03,430 --> 00:16:01,120
very close to the doorstep so 40 chance

412
00:16:05,350 --> 00:16:03,440
of violation if we're to go saturday

413
00:16:07,110 --> 00:16:05,360

so overall we got a shot

414
00:16:09,110 --> 00:16:07,120
it's not a slam dunk but there's an

415
00:16:10,949 --> 00:16:09,120
opportunity that we'll get between the

416
00:16:13,590 --> 00:16:10,959
two rounds of thunderstorms if we were

417
00:16:16,230 --> 00:16:13,600
able to get enter tomorrow thanks

418
00:16:19,030 --> 00:16:16,240
okay thank you mike and uh we're now

419
00:16:20,470 --> 00:16:19,040
happy to take questions before

420
00:16:21,910 --> 00:16:20,480
we take any in the room i just wanted to

421
00:16:24,150 --> 00:16:21,920
announce though that if you are not

422
00:16:26,470 --> 00:16:24,160
lucky enough to be in the room today you

423
00:16:29,430 --> 00:16:26,480
can ask questions via social media using

424
00:16:31,509 --> 00:16:29,440
the hashtag asknasa emily from

425
00:16:33,509 --> 00:16:31,519
nasasocial is here and she'll be happy

426
00:16:36,389 --> 00:16:33,519
to field the questions and pass them on

427
00:16:37,829 --> 00:16:36,399
to our presenters if you are in the room

428
00:16:39,350 --> 00:16:37,839
please raise your hand let us know you

429
00:16:41,189 --> 00:16:39,360
have a question

430
00:16:43,430 --> 00:16:41,199
please wait for the microphone state

431
00:16:45,269 --> 00:16:43,440
your name and affiliation and to whom

432
00:16:47,829 --> 00:16:45,279
you're addressing your question and

433
00:16:48,790 --> 00:16:47,839
we'll start off over here with irene

434
00:16:51,350 --> 00:16:48,800
thanks

435
00:16:53,350 --> 00:16:51,360
hi i'm irene klotz with reuters i have a

436
00:16:56,069 --> 00:16:53,360
couple questions for kirk

437
00:16:57,990 --> 00:16:56,079
um the uh the mdn failure do you have

438
00:16:59,990 --> 00:16:58,000

any insights into

439
00:17:01,749 --> 00:17:00,000
what happened with such a new piece of

440
00:17:02,790 --> 00:17:01,759
equipment and um

441
00:17:04,309 --> 00:17:02,800
do you

442
00:17:06,710 --> 00:17:04,319
want to are you planning on returning

443
00:17:08,949 --> 00:17:06,720
that on the uh on the dragon

444
00:17:11,029 --> 00:17:08,959
yeah uh so the the the computer that

445
00:17:13,110 --> 00:17:11,039
failed is actually not new uh as you

446
00:17:15,590 --> 00:17:13,120
probably have heard we we put it outside

447
00:17:16,630 --> 00:17:15,600
again uh with the new

448
00:17:19,350 --> 00:17:16,640
with a

449
00:17:21,110 --> 00:17:19,360
an up-to-date processor card but the box

450
00:17:23,590 --> 00:17:21,120
itself actually had been outside since

451
00:17:27,990 --> 00:17:23,600
2014. if we brought it in we put the

452
00:17:29,590 --> 00:17:28,000
card in we took it back out um and so

453
00:17:31,350 --> 00:17:29,600
which is still relatively new by the way

454
00:17:32,950 --> 00:17:31,360
the computer should still function we

455
00:17:34,789 --> 00:17:32,960
don't know the signature was it wasn't

456
00:17:37,190 --> 00:17:34,799
communicating we did see some current

457
00:17:38,470 --> 00:17:37,200
draw we have a fault tree so we we have

458
00:17:39,669 --> 00:17:38,480
ideas of what it might be but we

459
00:17:41,350 --> 00:17:39,679
probably won't be able to tell until we

460
00:17:42,630 --> 00:17:41,360
bring it home we're going to take off

461
00:17:44,630 --> 00:17:42,640
the cover do an inspection and then

462
00:17:46,630 --> 00:17:44,640
we'll bring it home most likely on on

463
00:17:48,710 --> 00:17:46,640

dragon when it comes back and then we'll

464
00:17:50,150 --> 00:17:48,720
we'll find out we've had about four

465
00:17:52,470 --> 00:17:50,160
computer failures over the life of the

466
00:17:53,430 --> 00:17:52,480
program and they've been different

467
00:17:55,190 --> 00:17:53,440
things

468
00:17:56,870 --> 00:17:55,200
the most common is a power supply which

469
00:17:58,390 --> 00:17:56,880
is one of the items but but we won't

470
00:18:00,390 --> 00:17:58,400
know for sure

471
00:18:01,909 --> 00:18:00,400
the real point is all these cards that

472
00:18:03,669 --> 00:18:01,919
are on that computer

473
00:18:05,830 --> 00:18:03,679
actually identical copies of those are

474
00:18:08,870 --> 00:18:05,840
in other places and had a good have had

475
00:18:11,270 --> 00:18:08,880
good um life on orbit so we don't think

476
00:18:12,950 --> 00:18:11,280
this is a a generic problem we think

477
00:18:14,230 --> 00:18:12,960
there's something unusual about this one

478
00:18:16,310 --> 00:18:14,240
and it may have been a component that

479
00:18:18,630 --> 00:18:16,320
was four or five years old

480
00:18:21,270 --> 00:18:18,640
okay thank you and uh the other question

481
00:18:22,070 --> 00:18:21,280
is about the uh previously flown dragon

482
00:18:24,549 --> 00:18:22,080
um

483
00:18:28,230 --> 00:18:24,559
did nasa ask for or

484
00:18:31,750 --> 00:18:28,240
did you receive any kind of financial

485
00:18:34,150 --> 00:18:31,760
discount or any other trade for um

486
00:18:36,630 --> 00:18:34,160
for using that or was it just a savings

487
00:18:38,150 --> 00:18:36,640
for spacex to not have to manufacture

488
00:18:39,430 --> 00:18:38,160

another capsule

489
00:18:41,190 --> 00:18:39,440
well the

490
00:18:42,710 --> 00:18:41,200
first of all this whole notion of reuse

491
00:18:45,430 --> 00:18:42,720
is is something that's very very

492
00:18:46,150 --> 00:18:45,440
important to the entire space industry

493
00:18:48,230 --> 00:18:46,160
uh

494
00:18:50,070 --> 00:18:48,240
nasa as well as spacex and others and

495
00:18:52,310 --> 00:18:50,080
it's not actually a new issue we've

496
00:18:54,870 --> 00:18:52,320
we've flown things shuttles flew flew

497
00:18:58,549 --> 00:18:54,880
many times so that the idea of reuse is

498
00:19:00,870 --> 00:18:58,559
important for uh for economic um uh

499
00:19:02,630 --> 00:19:00,880
reasons as well as technical reasons the

500
00:19:04,150 --> 00:19:02,640
the our contract with spacex there's

501
00:19:05,909 --> 00:19:04,160
lots there are a lot of it's a fixed

502
00:19:07,029 --> 00:19:05,919
price contract but there are things that

503
00:19:09,430 --> 00:19:07,039
change on our side there's things that

504
00:19:12,230 --> 00:19:09,440
change on spacex and we we

505
00:19:14,789 --> 00:19:12,240
we have uh equitable adjustments on both

506
00:19:17,029 --> 00:19:14,799
sides so yes if you asked me what it was

507
00:19:19,350 --> 00:19:17,039
and specifically i'd be hard-pressed to

508
00:19:22,310 --> 00:19:19,360
quote that to you now but but in general

509
00:19:25,029 --> 00:19:22,320
when we do these things like this um we

510
00:19:27,110 --> 00:19:25,039
we make we make trades supporting the

511
00:19:29,669 --> 00:19:27,120
dragon reflight

512
00:19:31,590 --> 00:19:29,679
is a really really important step um we

513
00:19:33,029 --> 00:19:31,600

went through spacex did a very thorough

514
00:19:35,990 --> 00:19:33,039
job in terms of certification of the

515
00:19:38,230 --> 00:19:36,000
dragon and refurbing it and nasa did a a

516
00:19:40,230 --> 00:19:38,240
very thorough job of of understanding

517
00:19:42,390 --> 00:19:40,240
that certification and making sure that

518
00:19:43,990 --> 00:19:42,400
it was it was safe to fly and and the

519
00:19:46,070 --> 00:19:44,000
risk was uh was actually not

520
00:19:47,990 --> 00:19:46,080
substantially more than a brand new uh

521
00:19:50,070 --> 00:19:48,000
dragon capsule so we're very happy with

522
00:19:51,590 --> 00:19:50,080
this capsule flying again we've actually

523
00:19:54,150 --> 00:19:51,600
been flying hardware not not whole

524
00:19:55,830 --> 00:19:54,160
capsules but caps other hardware before

525
00:19:58,710 --> 00:19:55,840
and we expect to increase the amount of

526
00:20:01,510 --> 00:19:58,720
reflight as as crs-1 and then ultimately

527
00:20:02,470 --> 00:20:01,520
crs-2 proceed

528
00:20:03,909 --> 00:20:02,480
marcia

529
00:20:08,950 --> 00:20:03,919
of course you're done associated press

530
00:20:11,270 --> 00:20:08,960
for hans along the re used dragon

531
00:20:13,029 --> 00:20:11,280
what what did you do in particular what

532
00:20:14,149 --> 00:20:13,039
did you swap out how much of this is

533
00:20:15,430 --> 00:20:14,159
original

534
00:20:16,549 --> 00:20:15,440
so to speak

535
00:20:18,230 --> 00:20:16,559
and

536
00:20:21,669 --> 00:20:18,240
will the next dragon going to space

537
00:20:23,190 --> 00:20:21,679
station also be a reused version

538
00:20:24,470 --> 00:20:23,200

yeah thank you thanks for the question

539
00:20:25,830 --> 00:20:24,480
it's um

540
00:20:27,909 --> 00:20:25,840
it's uh

541
00:20:29,909 --> 00:20:27,919
the majority of the components on dragon

542
00:20:32,470 --> 00:20:29,919
and in particular the the most important

543
00:20:35,350 --> 00:20:32,480
part is actually the hull the uh the

544
00:20:38,630 --> 00:20:35,360
structure itself itself is the uh

545
00:20:39,190 --> 00:20:38,640
is the same as as uh flu the first time

546
00:20:40,549 --> 00:20:39,200
so um

547
00:20:42,390 --> 00:20:40,559
[Music]

548
00:20:44,310 --> 00:20:42,400
we uh

549
00:20:46,470 --> 00:20:44,320
we when when dragon came in the first

550
00:20:48,870 --> 00:20:46,480
time basically we uh we inspect the

551
00:20:51,350 --> 00:20:48,880
components we uh

552
00:20:52,789 --> 00:20:51,360
we then compare the loads that they saw

553
00:20:54,870 --> 00:20:52,799
compare this to the uh to the

554
00:20:56,870 --> 00:20:54,880
qualification and that tells us how much

555
00:20:59,029 --> 00:20:56,880
life a component has and we make sure

556
00:21:01,909 --> 00:20:59,039
that the component has the uh

557
00:21:03,990 --> 00:21:01,919
enough life for the next round and then

558
00:21:06,310 --> 00:21:04,000
the statistical variation so you have to

559
00:21:07,909 --> 00:21:06,320
make a verse case assumption basically

560
00:21:10,310 --> 00:21:07,919
to be on the safe side

561
00:21:12,789 --> 00:21:10,320
and um and that is very similar to what

562
00:21:14,230 --> 00:21:12,799
we actually do on the booster it's not

563
00:21:15,750 --> 00:21:14,240

not that different it's uh it's a

564
00:21:17,190 --> 00:21:15,760
similar situation

565
00:21:19,029 --> 00:21:17,200
when we just we go through all the

566
00:21:19,830 --> 00:21:19,039
components basically we make sure that

567
00:21:21,909 --> 00:21:19,840
um

568
00:21:23,590 --> 00:21:21,919
it has enough life we share the results

569
00:21:25,430 --> 00:21:23,600
with nasa and uh

570
00:21:27,350 --> 00:21:25,440
and and review them basically together

571
00:21:29,909 --> 00:21:27,360
and then we conclude that we can either

572
00:21:32,470 --> 00:21:29,919
fly a component or in some cases we have

573
00:21:34,390 --> 00:21:32,480
to make a a

574
00:21:36,149 --> 00:21:34,400
swap with a new component in some very

575
00:21:38,070 --> 00:21:36,159
few cases but i can tell you the

576
00:21:40,149 --> 00:21:38,080
majority of this dragon has been in

577
00:21:44,149 --> 00:21:40,159
space before and has been docked to the

578
00:21:46,549 --> 00:21:44,159
station for a couple weeks

579
00:21:49,029 --> 00:21:46,559
is the next dragon going to be brand new

580
00:21:52,870 --> 00:21:49,039
or reused and also what did you replace

581
00:21:54,549 --> 00:21:52,880
on this one the the next dragon um from

582
00:21:56,149 --> 00:21:54,559
what i remember right now off the top of

583
00:21:58,230 --> 00:21:56,159
my head is a

584
00:22:02,390 --> 00:21:58,240
a new one

585
00:22:04,549 --> 00:22:02,400
past that we refer that we replaced

586
00:22:05,990 --> 00:22:04,559
i believe i believe some of the parts

587
00:22:08,710 --> 00:22:06,000
that were on the outside um the

588
00:22:11,190 --> 00:22:08,720

batteries for example um let's see see

589
00:22:12,950 --> 00:22:11,200
uh sea water and and things like that

590
00:22:13,909 --> 00:22:12,960
although they are protected against it

591
00:22:15,830 --> 00:22:13,919
um

592
00:22:17,669 --> 00:22:15,840
uh you know there's still

593
00:22:20,070 --> 00:22:17,679
uh there's several reasons why we might

594
00:22:21,430 --> 00:22:20,080
exchange certain things but again

595
00:22:22,870 --> 00:22:21,440
thruster

596
00:22:24,950 --> 00:22:22,880
um

597
00:22:28,230 --> 00:22:24,960
harnessing a lot of that stuff is from

598
00:22:31,029 --> 00:22:28,240
the original dragon

599
00:22:33,990 --> 00:22:32,470
you really covered my thanks james dean

600
00:22:36,230 --> 00:22:34,000
florida today uh kind of covered my

601
00:22:38,230 --> 00:22:36,240
dragon questions i think but uh i mean

602
00:22:40,710 --> 00:22:38,240
yeah the thrusters you say are

603
00:22:42,149 --> 00:22:40,720
reused as well um

604
00:22:43,990 --> 00:22:42,159
heat shield of course would be uh

605
00:22:45,110 --> 00:22:44,000
something you have to fully replace or

606
00:22:47,990 --> 00:22:45,120
the e shield is a new one you're right

607
00:22:49,270 --> 00:22:48,000
there yeah okay so the hull thrusters

608
00:22:51,909 --> 00:22:49,280
are that are the main components that

609
00:22:52,830 --> 00:22:51,919
you would um be interested about and

610
00:22:55,350 --> 00:22:52,840
interested

611
00:22:56,789 --> 00:22:55,360
in as far as

612
00:22:58,470 --> 00:22:56,799
major components that haven't been

613
00:22:58,760 --> 00:22:58,480

reused before

614
00:23:00,230 --> 00:22:58,770
um

615
00:23:02,310 --> 00:23:00,240
[Music]

616
00:23:04,789 --> 00:23:02,320
let's see there was there was

617
00:23:07,669 --> 00:23:04,799
the entire plumbing tanks

618
00:23:09,110 --> 00:23:07,679
mostly avionics there's some avionics i

619
00:23:10,470 --> 00:23:09,120
don't think it's most of it depends on

620
00:23:11,430 --> 00:23:10,480
where it was

621
00:23:13,750 --> 00:23:11,440
um

622
00:23:15,669 --> 00:23:13,760
yeah so some of the avionics is from

623
00:23:17,510 --> 00:23:15,679
from from previous slides

624
00:23:19,110 --> 00:23:17,520
um

625
00:23:20,950 --> 00:23:19,120
i don't have the entire list in my head

626
00:23:22,710 --> 00:23:20,960
unfortunately

627
00:23:23,909 --> 00:23:22,720
spitting we're using dragons for crew

628
00:23:25,750 --> 00:23:23,919
flight as well is this sort of a

629
00:23:28,470 --> 00:23:25,760
precursor to that or are they totally

630
00:23:31,430 --> 00:23:28,480
unrelated uh that is something we need

631
00:23:35,190 --> 00:23:31,440
to discuss once we get a crew dragon

632
00:23:40,149 --> 00:23:37,909
um no the no current no update currently

633
00:23:41,669 --> 00:23:40,159
it's still the end of this year for demo

634
00:23:42,870 --> 00:23:41,679
one

635
00:23:44,310 --> 00:23:42,880
okay we're going to come over here and

636
00:23:46,950 --> 00:23:44,320
take a couple of questions and then

637
00:23:48,950 --> 00:23:46,960
stephen we'll come back to you and ken

638
00:23:51,029 --> 00:23:48,960

jason jason ryan with space flight

639
00:23:52,549 --> 00:23:51,039
insider this one's for hans um

640
00:23:54,630 --> 00:23:52,559
first question is hans

641
00:23:57,269 --> 00:23:54,640
will we see the payload fairing come

642
00:23:58,870 --> 00:23:57,279
back under parachutes for this mission

643
00:24:01,830 --> 00:23:58,880
and the second question i guess would be

644
00:24:03,909 --> 00:24:01,840
is you guys are flying a lot of

645
00:24:06,549 --> 00:24:03,919
falcon 9s can we expect to start seeing

646
00:24:07,990 --> 00:24:06,559
a lot more of those being reused falcon

647
00:24:09,350 --> 00:24:08,000
9's and if so what does that mean for

648
00:24:11,510 --> 00:24:09,360
your production facilities will you kind

649
00:24:13,269 --> 00:24:11,520
of slow down the the amount of falcon

650
00:24:15,029 --> 00:24:13,279
9's you're producing and start using the

651
00:24:17,350 --> 00:24:15,039
flown ones more and more can you tell us

652
00:24:18,870 --> 00:24:17,360
a little bit about that thank you sure

653
00:24:20,230 --> 00:24:18,880
so um first on the fairing i mean this

654
00:24:22,630 --> 00:24:20,240
is not a fueling mission this is dragon

655
00:24:25,029 --> 00:24:22,640
mission so you won't see a um

656
00:24:26,950 --> 00:24:25,039
a uh fearing recovery on on this mission

657
00:24:28,549 --> 00:24:26,960
of course but as you pointed out on the

658
00:24:31,269 --> 00:24:28,559
last two

659
00:24:34,310 --> 00:24:31,279
missions i believe we had

660
00:24:35,909 --> 00:24:34,320
sorry the last mission and the one

661
00:24:38,710 --> 00:24:35,919
three earlier

662
00:24:41,350 --> 00:24:38,720
we had fairings that had the ability to

663
00:24:42,310 --> 00:24:41,360

stabilize and orbit and keep attitude

664
00:24:49,669 --> 00:24:42,320
and

665
00:24:53,350 --> 00:24:49,679
as far as uh to deploy the the powerful

666
00:24:55,350 --> 00:24:53,360
and to land um in in basically in one

667
00:24:58,830 --> 00:24:55,360
piece although the feeling did suffer

668
00:25:01,029 --> 00:24:58,840
some damage by uh by the landing itself

669
00:25:02,870 --> 00:25:01,039
um there's still work that needs to be

670
00:25:05,029 --> 00:25:02,880
done in order to to get the fairings

671
00:25:07,430 --> 00:25:05,039
back in the state that we can reuse them

672
00:25:09,990 --> 00:25:07,440
again but i would say um we made the

673
00:25:12,070 --> 00:25:10,000
first steps and we had uh we have been

674
00:25:14,789 --> 00:25:12,080
on those first two attempts

675
00:25:16,310 --> 00:25:14,799
pretty pretty successful well i can tell

676
00:25:19,029 --> 00:25:16,320
i'm not sure how long it will take until

677
00:25:21,510 --> 00:25:19,039
we um we fly fairings but um i would

678
00:25:23,830 --> 00:25:21,520
expect this to take some time uh similar

679
00:25:26,310 --> 00:25:23,840
to the first stage then your question

680
00:25:27,350 --> 00:25:26,320
regarding the first stage production

681
00:25:29,510 --> 00:25:27,360
um

682
00:25:31,110 --> 00:25:29,520
we we still have to produce the the

683
00:25:32,789 --> 00:25:31,120
second stage of course but we see a

684
00:25:35,669 --> 00:25:32,799
shift that we need more second stages

685
00:25:38,549 --> 00:25:35,679
and first stages um we

686
00:25:39,669 --> 00:25:38,559
we've learned one booster so far we have

687
00:25:42,310 --> 00:25:39,679
the uh

688
00:25:44,390 --> 00:25:42,320

second pre-flown booster coming up here

689
00:25:45,590 --> 00:25:44,400
after this mission

690
00:25:47,029 --> 00:25:45,600
very shortly

691
00:25:48,870 --> 00:25:47,039
and so

692
00:25:50,630 --> 00:25:48,880
my gut feeling is we will have a couple

693
00:25:53,269 --> 00:25:50,640
more this year

694
00:25:55,590 --> 00:25:53,279
that will demonstrate on on

695
00:26:01,350 --> 00:25:55,600
the the capability of re-flying a

696
00:26:04,310 --> 00:26:02,789
when do you see that we could actually

697
00:26:06,230 --> 00:26:04,320
be at a point where we will see more

698
00:26:09,110 --> 00:26:06,240
reflown boosters as opposed to new

699
00:26:11,640 --> 00:26:09,120
boosters flying if you had a guess

700
00:26:13,110 --> 00:26:11,650
that is an excellent problem to have

701
00:26:13,909 --> 00:26:13,120
[Laughter]

702
00:26:31,190 --> 00:26:13,919
i

703
00:26:32,789 --> 00:26:31,200
one's from gary walters and he wants to

704
00:26:34,390 --> 00:26:32,799
know if weather does scrub the first two

705
00:26:36,070 --> 00:26:34,400
launch windows does the range allow

706
00:26:42,950 --> 00:26:36,080
additional openings in the coming week

707
00:26:47,830 --> 00:26:44,710
two

708
00:26:50,390 --> 00:26:47,840
no ranged people here yes typically we i

709
00:26:52,630 --> 00:26:50,400
mean typically you're allowed to get two

710
00:26:55,190 --> 00:26:52,640
days on the range so there has to be

711
00:26:57,590 --> 00:26:55,200
cooperation a conversation between

712
00:26:58,950 --> 00:26:57,600
faa spacex and the range to make it

713
00:27:00,149 --> 00:26:58,960

happen so

714
00:27:02,230 --> 00:27:00,159
there's no question we're going to fly

715
00:27:04,230 --> 00:27:02,240
again if you're asking what day that

716
00:27:05,590 --> 00:27:04,240
might be in question so without the

717
00:27:07,190 --> 00:27:05,600
right people here it's hard to answer

718
00:27:09,830 --> 00:27:07,200
the range works very hard to make this

719
00:27:11,269 --> 00:27:09,840
possible i always did

720
00:27:13,110 --> 00:27:11,279
all right the second one um it's a

721
00:27:14,310 --> 00:27:13,120
science question from rome stratch and

722
00:27:15,750 --> 00:27:14,320
he wants to know what ambient

723
00:27:18,389 --> 00:27:15,760
temperature is the pressurized portion

724
00:27:20,070 --> 00:27:18,399
of dragon kept for the rodents and fruit

725
00:27:23,590 --> 00:27:20,080
flies or are the temperatures maintained

726
00:27:26,630 --> 00:27:23,600
locally so they are in the cold bags and

727
00:27:29,590 --> 00:27:26,640
they are at minus 37 degrees

728
00:27:31,269 --> 00:27:29,600
celsius i believe

729
00:27:33,190 --> 00:27:31,279
the rodents on the way are you asking

730
00:27:35,540 --> 00:27:33,200
for the question on the way up

731
00:27:41,029 --> 00:27:35,550
so they're probably not at minus 30.

732
00:27:45,990 --> 00:27:43,350
okay so the rodents are in their habitat

733
00:27:49,269 --> 00:27:46,000
at room temperature really and um the

734
00:27:51,269 --> 00:27:49,279
fruit flies are also in in packed in the

735
00:27:53,029 --> 00:27:51,279
cool bags to keep them

736
00:27:54,950 --> 00:27:53,039
safe

737
00:27:57,590 --> 00:27:54,960
okay stephen

738
00:28:00,549 --> 00:27:57,600

stephen young with spaceflightnow.com

739
00:28:02,950 --> 00:28:00,559
for kirk um could you uh say where

740
00:28:06,070 --> 00:28:02,960
nasser is as far as getting comfortable

741
00:28:07,909 --> 00:28:06,080
with possibly flying cargo on a reused

742
00:28:10,389 --> 00:28:07,919
falcon 9.

743
00:28:12,470 --> 00:28:10,399
sure we're working on it now we you know

744
00:28:16,149 --> 00:28:12,480
uh we want to be very methodical about

745
00:28:18,310 --> 00:28:16,159
it as you know spacex is certifying the

746
00:28:20,149 --> 00:28:18,320
falcon 9 for multiple flights we want to

747
00:28:22,389 --> 00:28:20,159
take our time and and review all those

748
00:28:24,950 --> 00:28:22,399
certification results the other critical

749
00:28:27,350 --> 00:28:24,960
thing that that hans touched on is it

750
00:28:29,830 --> 00:28:27,360
that's all done pre-flight um and then

751
00:28:31,590 --> 00:28:29,840
it's it it uh consumes a life when it

752
00:28:33,590 --> 00:28:31,600
flies and you want to make sure that the

753
00:28:35,909 --> 00:28:33,600
life it consumed is actually within

754
00:28:37,510 --> 00:28:35,919
within the certification limits and if

755
00:28:39,669 --> 00:28:37,520
it's not then you either replace those

756
00:28:40,549 --> 00:28:39,679
parts that are sensitive to that or or

757
00:28:47,750 --> 00:28:40,559
you

758
00:28:49,590 --> 00:28:47,760
with spacex right now uh working on all

759
00:28:52,310 --> 00:28:49,600
those things that we'd like to see and

760
00:28:53,909 --> 00:28:52,320
actually seeing those results so uh i

761
00:28:56,310 --> 00:28:53,919
can't tell you exactly when we will see

762
00:28:59,590 --> 00:28:56,320
a reflight but but we're working on with

763
00:29:05,990 --> 00:28:59,600

spacex on on the potential of of reusing

764
00:29:10,230 --> 00:29:08,149
okay uh in the front row here

765
00:29:13,110 --> 00:29:10,240
sawyer rosenstein with talking space for

766
00:29:15,590 --> 00:29:13,120
hans a few questions one uh with the

767
00:29:17,350 --> 00:29:15,600
crs1 contract nearing its end are there

768
00:29:18,950 --> 00:29:17,360
plans to keep building more dragon

769
00:29:21,669 --> 00:29:18,960
capsules for that or is there a

770
00:29:23,110 --> 00:29:21,679
possibility of reusing all of those and

771
00:29:24,470 --> 00:29:23,120
the other thing you mentioned was that

772
00:29:26,630 --> 00:29:24,480
it was kind of like the first stage

773
00:29:28,389 --> 00:29:26,640
booster returning uh do you know about

774
00:29:31,510 --> 00:29:28,399
how much this saves you by re-flying it

775
00:29:32,870 --> 00:29:31,520
as opposed to building from new

776
00:29:34,149 --> 00:29:32,880
okay so um

777
00:29:35,430 --> 00:29:34,159
on the first question i'm not sure i

778
00:29:37,669 --> 00:29:35,440
have a really good answer for you

779
00:29:39,590 --> 00:29:37,679
because i know that um

780
00:29:41,750 --> 00:29:39,600
so you said cs1 and there's the second

781
00:29:43,029 --> 00:29:41,760
contract it's called cs2 and in total

782
00:29:45,590 --> 00:29:43,039
it's um

783
00:29:48,389 --> 00:29:45,600
20 flights i believe and we are just

784
00:29:49,510 --> 00:29:48,399
over the halfway point here with 11.

785
00:29:51,269 --> 00:29:49,520
um

786
00:29:53,590 --> 00:29:51,279
and there's one more one more capsule

787
00:29:55,590 --> 00:29:53,600
right now that's been built um

788
00:29:57,350 --> 00:29:55,600

so it depends a little bit i think we

789
00:29:59,669 --> 00:29:57,360
can do the rest with the the reused

790
00:30:01,909 --> 00:29:59,679
capsule uh but i'm actually not sure if

791
00:30:03,909 --> 00:30:01,919
that is the exact plan or not so i have

792
00:30:06,070 --> 00:30:03,919
to you know pass on that a little bit

793
00:30:07,990 --> 00:30:06,080
and regarding regarding the booster and

794
00:30:08,789 --> 00:30:08,000
the money money you save and these

795
00:30:10,710 --> 00:30:08,799
things

796
00:30:12,070 --> 00:30:10,720
um

797
00:30:14,789 --> 00:30:12,080
this is a little bit more complicated

798
00:30:17,510 --> 00:30:14,799
because we did invest in the technology

799
00:30:20,230 --> 00:30:17,520
and we paid um we invested basically a

800
00:30:23,590 --> 00:30:20,240
lot of money on our side to perform

801
00:30:25,669 --> 00:30:23,600
tests um we um you know we

802
00:30:28,070 --> 00:30:25,679
if you recall the first the first

803
00:30:31,190 --> 00:30:28,080
missions were pretty uh traumatic and uh

804
00:30:33,269 --> 00:30:31,200
spectacular but um largely unsuccessful

805
00:30:36,070 --> 00:30:33,279
before we turned it around and and then

806
00:30:38,470 --> 00:30:36,080
of course these things cost money and

807
00:30:39,909 --> 00:30:38,480
damage needs to be repaired and so i i

808
00:30:41,669 --> 00:30:39,919
want to say basically say we invested a

809
00:30:43,990 --> 00:30:41,679
significant amount of money that we need

810
00:30:47,110 --> 00:30:44,000
to recover over the next couple missions

811
00:30:49,510 --> 00:30:47,120
before in my opinion we can we can uh

812
00:30:51,669 --> 00:30:49,520
reach out and and and you know make that

813
00:30:54,310 --> 00:30:51,679

assessment and then actually uh pass

814
00:30:55,909 --> 00:30:54,320
this on uh really yeah there's this is a

815
00:30:58,230 --> 00:30:55,919
long this is a long-term goal this is

816
00:31:00,310 --> 00:30:58,240
not something that um you know works the

817
00:31:02,149 --> 00:31:00,320
second time uh or the third time i think

818
00:31:05,029 --> 00:31:02,159
this is something that you need to look

819
00:31:06,710 --> 00:31:05,039
a couple years in advance uh you know

820
00:31:09,269 --> 00:31:06,720
maybe the 10th flight maybe the 20th

821
00:31:12,870 --> 00:31:09,279
flight that's when you finally uh could

822
00:31:14,389 --> 00:31:12,880
see some some uh money saved

823
00:31:15,830 --> 00:31:14,399
okay we have uh three questions in the

824
00:31:18,230 --> 00:31:15,840
front row over here and we'll start off

825
00:31:21,029 --> 00:31:18,240
with phil hi hans good nobody phil

826
00:31:23,110 --> 00:31:21,039
keating with fox news um going back to

827
00:31:24,870 --> 00:31:23,120
the demo so end of year on a demo that

828
00:31:26,710 --> 00:31:24,880
would be an unmanned

829
00:31:29,830 --> 00:31:26,720
crew dragon going up to the space

830
00:31:32,389 --> 00:31:29,840
station and then followed by when

831
00:31:33,430 --> 00:31:32,399
would there be actually uh

832
00:31:35,350 --> 00:31:33,440
two

833
00:31:38,470 --> 00:31:35,360
astronauts on board going up on the on

834
00:31:39,909 --> 00:31:38,480
the first post demo mission correct demo

835
00:31:41,350 --> 00:31:39,919
two what you're referring to is

836
00:31:44,549 --> 00:31:41,360
currently planned at the end of the

837
00:31:47,269 --> 00:31:44,559
first quarter in uh 2018. that would be

838
00:31:49,269 --> 00:31:47,279

two people on board i believe that is

839
00:31:51,269 --> 00:31:49,279
two astronauts on board yes and then

840
00:31:53,830 --> 00:31:51,279
possibly if everything goes as well as

841
00:31:57,509 --> 00:31:53,840
expected then next summer you get a full

842
00:32:00,470 --> 00:31:57,519
full load uh that is uh to be seen then

843
00:32:02,630 --> 00:32:00,480
uh what the schedule says further on i

844
00:32:05,590 --> 00:32:02,640
my specialty is honestly this particular

845
00:32:06,870 --> 00:32:05,600
dragon we have uh here the cargo dragon

846
00:32:09,190 --> 00:32:06,880
and the um

847
00:32:10,549 --> 00:32:09,200
and and in particular falcon 9 so i'm

848
00:32:11,830 --> 00:32:10,559
not that

849
00:32:12,830 --> 00:32:11,840
and you know i don't look that far in

850
00:32:14,310 --> 00:32:12,840
the future

851
00:32:15,909 --> 00:32:14,320
anyways i'm sorry

852
00:32:17,269 --> 00:32:15,919
well you're the only spacex person sure

853
00:32:19,509 --> 00:32:17,279
so i've got to ask this additional

854
00:32:22,470 --> 00:32:19,519
question which is on the recently

855
00:32:24,230 --> 00:32:22,480
discussed spacex plan to take two space

856
00:32:26,789 --> 00:32:24,240
tourists around the moon and back by the

857
00:32:29,190 --> 00:32:26,799
end of next year do you can you expand

858
00:32:30,230 --> 00:32:29,200
on any of that is that still on schedule

859
00:32:32,710 --> 00:32:30,240
you know if there's a long list of

860
00:32:35,110 --> 00:32:32,720
people applying i can only refer you to

861
00:32:38,870 --> 00:32:35,120
our media team in the back on on those

862
00:32:44,310 --> 00:32:40,470
will this be the third time it lands on

863
00:32:45,269 --> 00:32:44,320

land here uh no it's the

864
00:33:02,230 --> 00:32:45,279
i

865
00:33:04,789 --> 00:33:02,240
that uh that's the case and then we had

866
00:33:07,110 --> 00:33:04,799
six um launches on

867
00:33:09,110 --> 00:33:07,120
six landings on the uh on the drone ship

868
00:33:10,470 --> 00:33:09,120
here so in total

869
00:33:13,350 --> 00:33:10,480
uh

870
00:33:15,350 --> 00:33:13,360
today with four land landings and six

871
00:33:16,710 --> 00:33:15,360
uh drone ship landings we recovered 10

872
00:33:19,909 --> 00:33:16,720
booster

873
00:33:23,509 --> 00:33:21,750
uh chris gebhardt with nasa space flight

874
00:33:24,389 --> 00:33:23,519
for a couple of questions for tomorrow

875
00:33:26,389 --> 00:33:24,399
um

876
00:33:28,389 --> 00:33:26,399
within marset there was an abbreviated

877
00:33:29,909 --> 00:33:28,399
fueling for with the liquid oxygen are

878
00:33:34,070 --> 00:33:29,919
we going to see that abbreviated fueling

879
00:33:37,269 --> 00:33:34,080
again tomorrow or normal fueling

880
00:33:39,590 --> 00:33:37,279
and with launch weather is that is

881
00:33:41,110 --> 00:33:39,600
launch weather the same as landing

882
00:33:42,470 --> 00:33:41,120
weather um

883
00:33:45,029 --> 00:33:42,480
and the root of my question there is if

884
00:33:46,789 --> 00:33:45,039
you're good to go on launch weather but

885
00:33:49,029 --> 00:33:46,799
if landing weather isn't okay would you

886
00:33:50,470 --> 00:33:49,039
launch and expend the booster instead of

887
00:33:51,750 --> 00:33:50,480
delaying

888
00:33:53,909 --> 00:33:51,760

so um

889
00:33:56,070 --> 00:33:53,919
so to your first question

890
00:33:59,029 --> 00:33:56,080
um

891
00:34:01,350 --> 00:33:59,039
the the the difference in loading is is

892
00:34:03,509 --> 00:34:01,360
a a beer 10 minutes it's not it's not a

893
00:34:05,269 --> 00:34:03,519
lot and this in order to do that you

894
00:34:07,669 --> 00:34:05,279
need to have a hardware change on the

895
00:34:10,869 --> 00:34:07,679
vehicle inmarsat had that hardware

896
00:34:13,430 --> 00:34:10,879
change on the second stage

897
00:34:15,349 --> 00:34:13,440
this vehicle and the next vehicle do not

898
00:34:17,030 --> 00:34:15,359
have that hardware change but the

899
00:34:19,589 --> 00:34:17,040
vehicle after that will have that

900
00:34:21,829 --> 00:34:19,599
hardware change and all vehicles after

901
00:34:24,550 --> 00:34:21,839
that have that so it's like um and it

902
00:34:26,710 --> 00:34:24,560
has it has to do more with um

903
00:34:28,230 --> 00:34:26,720
the timing when the stages were produced

904
00:34:30,629 --> 00:34:28,240
than anything else that happened just

905
00:34:33,510 --> 00:34:30,639
happened to be that the inmarsat stage

906
00:34:35,829 --> 00:34:33,520
was produced after the other two stages

907
00:34:37,190 --> 00:34:35,839
and um and so that's why this seems out

908
00:34:38,950 --> 00:34:37,200
of order but it actually makes sense

909
00:34:42,310 --> 00:34:38,960
when you know the production schedule

910
00:34:43,430 --> 00:34:42,320
regarding your second question um

911
00:34:46,550 --> 00:34:43,440
sorry what was that again oh yeah

912
00:34:48,950 --> 00:34:46,560
landing better so um we

913
00:34:50,710 --> 00:34:48,960

um

914
00:34:53,990 --> 00:34:50,720
i want to say the the the launch weather

915
00:34:56,550 --> 00:34:54,000
is largely also a safety risk uh

916
00:34:58,950 --> 00:34:56,560
thing and um i do think it covers

917
00:35:00,790 --> 00:34:58,960
essentially the landing zone too from a

918
00:35:01,589 --> 00:35:00,800
public risk perspective

919
00:35:05,109 --> 00:35:01,599
um

920
00:35:07,349 --> 00:35:05,119
where

921
00:35:08,870 --> 00:35:07,359
we can more more

922
00:35:10,870 --> 00:35:08,880
higher loads like on wind for example

923
00:35:13,349 --> 00:35:10,880
you could take more risk on the landing

924
00:35:15,030 --> 00:35:13,359
than on launch for example and uh

925
00:35:17,190 --> 00:35:15,040
frequently uh on

926
00:35:19,109 --> 00:35:17,200
for for some of these landings we had

927
00:35:22,790 --> 00:35:19,119
cases where the landing wind was higher

928
00:35:25,030 --> 00:35:22,800
than the launch went um but uh we would

929
00:35:30,790 --> 00:35:25,040
so far the launch the launch weather

930
00:35:35,589 --> 00:35:32,630
hi thank you for doing this and good

931
00:35:38,150 --> 00:35:35,599
luck tomorrow first of all um so uh ken

932
00:35:38,950 --> 00:35:38,160
cramer universe today my question is for

933
00:35:39,829 --> 00:35:38,960
um

934
00:35:41,670 --> 00:35:39,839
hunts

935
00:35:44,950 --> 00:35:41,680
uh two questions one can you give us a

936
00:35:47,589 --> 00:35:44,960
an update on the pad 40 uh

937
00:35:49,430 --> 00:35:47,599
repairs and when do you expect to resume

938
00:35:50,950 --> 00:35:49,440

when do you hope to resume launches and

939
00:35:52,550 --> 00:35:50,960
the other one is about one of the

940
00:35:55,190 --> 00:35:52,560
science experiments

941
00:35:56,470 --> 00:35:55,200
you are bringing up the rosa solar array

942
00:35:58,390 --> 00:35:56,480
and then at the end of the mission

943
00:35:59,990 --> 00:35:58,400
you're going to be bringing it back

944
00:36:01,990 --> 00:36:00,000
my understanding from speaking to the

945
00:36:04,150 --> 00:36:02,000
team is that you're going to deploy this

946
00:36:06,390 --> 00:36:04,160
somehow in space and i wonder if you

947
00:36:08,550 --> 00:36:06,400
could talk about this i think this might

948
00:36:11,190 --> 00:36:08,560
be the first time you dispose of an

949
00:36:12,390 --> 00:36:11,200
unpressurized cargo but anyway review

950
00:36:14,150 --> 00:36:12,400
the procedure how you're going to do

951
00:36:15,510 --> 00:36:14,160
that thanks

952
00:36:18,390 --> 00:36:15,520
you want to go ahead

953
00:36:19,910 --> 00:36:18,400
okay so on pad 40 um

954
00:36:23,190 --> 00:36:19,920
we actually drove by on the way up here

955
00:36:24,710 --> 00:36:23,200
and took a look so um it's it's a it's

956
00:36:27,030 --> 00:36:24,720
very active right now there's lots of

957
00:36:29,190 --> 00:36:27,040
construction going on and

958
00:36:31,589 --> 00:36:29,200
and i can i can see the progress from

959
00:36:34,470 --> 00:36:31,599
last time when i was here definitely

960
00:36:36,470 --> 00:36:34,480
lots of tubing being being welded and uh

961
00:36:37,349 --> 00:36:36,480
and big construction machinery moving

962
00:36:38,550 --> 00:36:37,359
around

963
00:36:44,069 --> 00:36:38,560

um

964
00:36:45,030 --> 00:36:44,079
you know return to operation there

965
00:36:46,950 --> 00:36:45,040
um

966
00:36:49,430 --> 00:36:46,960
and we we haven't we haven't really

967
00:36:51,589 --> 00:36:49,440
settled on on what particular flight um

968
00:36:53,910 --> 00:36:51,599
it's going to go from there first but uh

969
00:36:56,550 --> 00:36:53,920
the uh the current schedules yes this is

970
00:36:59,349 --> 00:36:56,560
late summer early fall as the uh

971
00:37:01,829 --> 00:36:59,359
is uh we're gonna we're gonna reopen lc

972
00:37:03,109 --> 00:37:01,839
40 again

973
00:37:04,390 --> 00:37:03,119
and then we're going to be able to

974
00:37:07,430 --> 00:37:04,400
launch from

975
00:37:11,829 --> 00:37:07,440
both 39 and 40.

976
00:37:16,630 --> 00:37:12,630
so

977
00:37:18,870 --> 00:37:16,640
be deployed in space and they will it

978
00:37:21,190 --> 00:37:18,880
will stay there for the length of the

979
00:37:24,150 --> 00:37:21,200
dragon it will be put back in the trunk

980
00:37:26,230 --> 00:37:24,160
and then disposed of uh and

981
00:37:29,589 --> 00:37:26,240
when the trunk is

982
00:37:32,150 --> 00:37:29,599
re-entering earth's atmosphere so

983
00:37:34,870 --> 00:37:32,160
can you describe how that will be done

984
00:37:36,870 --> 00:37:34,880
how will that deployment be done

985
00:37:38,470 --> 00:37:36,880
you

986
00:37:40,310 --> 00:37:38,480
it actually we pull it out of the trunk

987
00:37:42,150 --> 00:37:40,320
with a robotic arm we'll hold it in a

988
00:37:44,230 --> 00:37:42,160

specific location and we'll actually

989
00:37:46,550 --> 00:37:44,240
deploy it the array will be deployed

990
00:37:49,030 --> 00:37:46,560
it'll stay deployed for about seven days

991
00:37:50,150 --> 00:37:49,040
and during that seven days um

992
00:37:51,670 --> 00:37:50,160
a large part of the experiment is

993
00:37:53,829 --> 00:37:51,680
actually

994
00:37:56,150 --> 00:37:53,839
shaking vibrating putting inputs into

995
00:37:58,310 --> 00:37:56,160
the array watching the dynamics and

996
00:37:59,829 --> 00:37:58,320
observing it with sensors and and and

997
00:38:02,310 --> 00:37:59,839
cameras and then at the end of that

998
00:38:04,470 --> 00:38:02,320
seven days it'll be retracted and then

999
00:38:05,510 --> 00:38:04,480
restowed in the same place that it

1000
00:38:07,510 --> 00:38:05,520
actually i shouldn't say the same place

1001
00:38:09,670 --> 00:38:07,520
but in a in the trunk and then of course

1002
00:38:11,270 --> 00:38:09,680
the trunk comes in and burns up this

1003
00:38:12,390 --> 00:38:11,280
will be actually not the first time we

1004
00:38:14,710 --> 00:38:12,400
brought something home this will be the

1005
00:38:16,790 --> 00:38:14,720
second time the last flight spacex 10 we

1006
00:38:18,390 --> 00:38:16,800
brought three things home uh inside the

1007
00:38:19,910 --> 00:38:18,400
trunk and and of course when we say

1008
00:38:21,670 --> 00:38:19,920
bring them home

1009
00:38:24,470 --> 00:38:21,680
they don't actually survive the re-entry

1010
00:38:25,829 --> 00:38:24,480
environment so rosa will no longer it

1011
00:38:27,589 --> 00:38:25,839
will not survive the re-entry

1012
00:38:29,109 --> 00:38:27,599
environment when it comes back just sits

1013
00:38:31,270 --> 00:38:29,119

in the trunk

1014
00:38:32,790 --> 00:38:31,280
uh it says separated and sits in the

1015
00:38:33,910 --> 00:38:32,800
trunk and that's how it's destroyed yeah

1016
00:38:36,550 --> 00:38:33,920
i think it is

1017
00:38:37,510 --> 00:38:36,560
unfolds and then it's retracted and so

1018
00:38:40,630 --> 00:38:37,520
it's in a

1019
00:38:42,470 --> 00:38:40,640
i say compact but it's big it's the size

1020
00:38:44,310 --> 00:38:42,480
of this table and and then it's

1021
00:38:46,310 --> 00:38:44,320
installed back into the trunk into it's

1022
00:38:48,470 --> 00:38:46,320
we call it a frame but a mechanism

1023
00:38:50,630 --> 00:38:48,480
basically it's attached secured there

1024
00:38:53,030 --> 00:38:50,640
when dragon undocks it undocks performs

1025
00:38:53,910 --> 00:38:53,040
a deorbit burn and then separates and

1026
00:38:56,550 --> 00:38:53,920
and

1027
00:38:58,310 --> 00:38:56,560
the the trunk burns up on reentry

1028
00:39:00,310 --> 00:38:58,320
when it's fully retracted when it's

1029
00:39:02,710 --> 00:39:00,320
fully unveiled it's about twelve and a

1030
00:39:05,349 --> 00:39:02,720
half by five and a half feet so that's

1031
00:39:07,030 --> 00:39:05,359
how long it is

1032
00:39:09,270 --> 00:39:07,040
hi it's thaddya cesari with the youth

1033
00:39:11,670 --> 00:39:09,280
buick of phoenix and for hans

1034
00:39:13,030 --> 00:39:11,680
we've seen the reuse of boosters

1035
00:39:15,510 --> 00:39:13,040
capsules

1036
00:39:17,030 --> 00:39:15,520
should see fairing soon is there any uh

1037
00:39:19,430 --> 00:39:17,040
hints or

1038
00:39:21,430 --> 00:39:19,440

uh uh anything else coming down the line

1039
00:39:23,670 --> 00:39:21,440
from spacex that we should know in terms

1040
00:39:25,190 --> 00:39:23,680
of reusability so

1041
00:39:27,589 --> 00:39:25,200
again is there any additional plans for

1042
00:39:29,829 --> 00:39:27,599
reusability outside of the payloads the

1043
00:39:31,270 --> 00:39:29,839
rocket and the capsule

1044
00:39:33,270 --> 00:39:31,280
i want to say we look at all the aspects

1045
00:39:35,430 --> 00:39:33,280
of the rocket and as you may find out

1046
00:39:39,829 --> 00:39:35,440
there's the second stage missing in the

1047
00:39:40,630 --> 00:39:39,839
scheme so far um that's a that's a

1048
00:39:43,670 --> 00:39:40,640
a

1049
00:39:45,910 --> 00:39:43,680
um

1050
00:39:49,030 --> 00:39:45,920
but it is something that we we should

1051
00:39:50,630 --> 00:39:49,040
look at at the same time too

1052
00:39:52,150 --> 00:39:50,640
so i have to be a little bit fuzzy

1053
00:39:54,150 --> 00:39:52,160
because this is

1054
00:39:55,270 --> 00:39:54,160
literally a goal i would i would call

1055
00:39:56,710 --> 00:39:55,280
this

1056
00:39:59,030 --> 00:39:56,720
okay and we'll close with a question

1057
00:40:01,190 --> 00:39:59,040
from chris uh chris governor with nasa

1058
00:40:05,109 --> 00:40:01,200
space flight again um exact launch time

1059
00:40:07,349 --> 00:40:05,119
tomorrow 5 55 and how many seconds

1060
00:40:08,710 --> 00:40:07,359
51 thank you

1061
00:40:09,990 --> 00:40:08,720
okay

1062
00:40:12,470 --> 00:40:10,000
that's going to do it for today thank

1063
00:40:14,069 --> 00:40:12,480

you all very much for coming we look

1064
00:40:16,630 --> 00:40:14,079
forward to the launch tomorrow and the

1065
00:40:18,870 --> 00:40:16,640
weather cooperating with us mike uh our

1066
00:40:22,390 --> 00:40:18,880
nasa television coverage will begin at 5

1067
00:40:25,270 --> 00:40:22,400
15 p.m eastern time for a lift off at 5

1068
00:40:26,870 --> 00:40:25,280
55 and until then please keep up with

1069
00:40:29,829 --> 00:40:26,880
all that's happening by going to