



1
00:00:05,930 --> 00:00:04,039
good evening and welcome to the post

2
00:00:08,299 --> 00:00:05,940
launch news conference for spatial

3
00:00:10,430 --> 00:00:08,309
discoveries sts-133 mission to the

4
00:00:12,230 --> 00:00:10,440
National Space Station joining us here

5
00:00:15,020 --> 00:00:12,240
today to discuss discoveries historic

6
00:00:19,210 --> 00:00:15,030
final liftoff the social social ministry

7
00:00:24,470 --> 00:00:21,830
the spatial integration manager Mike

8
00:00:26,390 --> 00:00:24,480
Moses getting me and spatial launch

9
00:00:27,920 --> 00:00:26,400
director mike line block good evening

10
00:00:29,630 --> 00:00:27,930
we'll start with some opening remarks

11
00:00:32,990 --> 00:00:29,640
and then take a question since morrow

12
00:00:36,500 --> 00:00:33,000
thanks John this is a pretty tremendous

13
00:00:39,049 --> 00:00:36,510

day and space life for us you know this

14

00:00:41,150 --> 00:00:39,059

morning atv successfully docked a space

15

00:00:45,260 --> 00:00:41,160

station which was a great way to start

16

00:00:48,229 --> 00:00:45,270

the day i received a bunch of pages and

17

00:00:50,060 --> 00:00:48,239

emails from my European partners tell me

18

00:00:52,700 --> 00:00:50,070

we had a go to go launch discovery today

19

00:00:54,200 --> 00:00:52,710

as soon as the ATV docked and that was

20

00:00:56,389 --> 00:00:54,210

kind of a strange occurrence for me I

21

00:00:58,729 --> 00:00:56,399

don't usually get approval from them and

22

00:01:00,260 --> 00:00:58,739

then they whisked wish me best the best

23

00:01:02,479 --> 00:01:00,270

of luck with the shuttle launch later

24

00:01:03,650 --> 00:01:02,489

today and and for us to be sitting here

25

00:01:05,750 --> 00:01:03,660

today with both of those events

26

00:01:09,260 --> 00:01:05,760

occurring as successfully as they have

27

00:01:11,149 --> 00:01:09,270

done it was just an amazing event so I'd

28

00:01:12,950 --> 00:01:11,159

also like to thank the teams that got us

29

00:01:14,210 --> 00:01:12,960

here there was a lot of work that we

30

00:01:17,330 --> 00:01:14,220

talked about getting their vehicles

31

00:01:18,800 --> 00:01:17,340

ready to go fly the teams were very well

32

00:01:22,700 --> 00:01:18,810

prepared today as we went in an account

33

00:01:24,140 --> 00:01:22,710

went through activities Mike Moses and

34

00:01:25,370 --> 00:01:24,150

Mike Leinbach will talk to you more

35

00:01:27,649 --> 00:01:25,380

about those events but they went

36

00:01:29,450 --> 00:01:27,659

extremely well we saw a couple foam

37

00:01:32,560 --> 00:01:29,460

losses during a sent from the external

38

00:01:34,609 --> 00:01:32,570

tank we saw one they're all after the

39

00:01:36,679 --> 00:01:34,619

aerodynamic sensitive time so they're

40

00:01:38,510 --> 00:01:36,689

not a concern to us there's one that's

41

00:01:40,310 --> 00:01:38,520

pretty noticeable around three minutes

42

00:01:43,010 --> 00:01:40,320

and 51 seconds you'll see it in the

43

00:01:44,899 --> 00:01:43,020

video it's probably an air piece of foam

44

00:01:47,170 --> 00:01:44,909

about maybe eight by ten inches that

45

00:01:50,660 --> 00:01:47,180

comes off that's well after the area of

46

00:01:53,389 --> 00:01:50,670

concern from a an impact of the orbiter

47

00:01:55,760 --> 00:01:53,399

standpoint that's also consistent when

48

00:01:57,410 --> 00:01:55,770

we see cryo pumping in the foam law so

49

00:01:58,850 --> 00:01:57,420

it's a mechanism we understand and I

50

00:02:00,830 --> 00:01:58,860

would say all these events that we've

51
00:02:02,990 --> 00:02:00,840
seen and we saw one two three four of

52
00:02:04,370 --> 00:02:03,000
them they're all within family and their

53
00:02:05,990 --> 00:02:04,380
typical kind of performance from the

54
00:02:07,340 --> 00:02:06,000
tank so of everything we saw in the tank

55
00:02:09,139 --> 00:02:07,350
is performance just like we've seen

56
00:02:10,550 --> 00:02:09,149
before and looks very good but you will

57
00:02:11,070 --> 00:02:10,560
see this one event if you look through

58
00:02:13,410 --> 00:02:11,080
the video

59
00:02:15,140 --> 00:02:13,420
so again I can't say enough to the teams

60
00:02:17,340 --> 00:02:15,150
that really put us here and got the

61
00:02:18,660 --> 00:02:17,350
vehicle ready to go fly got the tank

62
00:02:21,500 --> 00:02:18,670
ready to go fly the vehicle performance

63
00:02:23,910 --> 00:02:21,510

was perfectly nominal during ascent I

64

00:02:26,280 --> 00:02:23,920

caution us all we have a huge mission in

65

00:02:28,860 --> 00:02:26,290

front of us the pmm activities in the to

66

00:02:30,750 --> 00:02:28,870

EVs all the activity on orbit is not

67

00:02:32,430 --> 00:02:30,760

trivial in any way shape or form and we

68

00:02:34,530 --> 00:02:32,440

need to stay focused on that get the

69

00:02:36,000 --> 00:02:34,540

orbit activities done and we get

70

00:02:38,280 --> 00:02:36,010

discovery back then we can talk about

71

00:02:40,110 --> 00:02:38,290

how things really went so it's up to the

72

00:02:41,070 --> 00:02:40,120

next team that to go do that next work

73

00:02:42,660 --> 00:02:41,080

and they're ready to go but

74

00:02:44,130 --> 00:02:42,670

congratulations to the launch team that

75

00:02:47,670 --> 00:02:44,140

got us here and did a great job getting

76

00:02:49,320 --> 00:02:47,680

us ready to go fly so Mike thanks go so

77

00:02:51,300 --> 00:02:49,330

let's see we talked to you in the

78

00:02:53,370 --> 00:02:51,310

pre-launch conference about how how

79

00:02:54,750 --> 00:02:53,380

probably were of the teams like bill

80

00:02:55,860 --> 00:02:54,760

said that got the external tank ready to

81

00:02:58,199 --> 00:02:55,870

go got our analysis and our

82

00:03:00,180 --> 00:02:58,209

understanding of that problem licked and

83

00:03:01,949 --> 00:03:00,190

I think pulmonary look today showed that

84

00:03:03,780 --> 00:03:01,959

we did we did have good performance out

85

00:03:05,730 --> 00:03:03,790

of the tank like like bill said with the

86

00:03:06,780 --> 00:03:05,740

foam loss it looks like that's in family

87

00:03:09,120 --> 00:03:06,790

we're going to go through all the normal

88

00:03:11,370 --> 00:03:09,130

rigor all the photo analysis all the

89

00:03:13,530 --> 00:03:11,380

debris analysis will get imagery back

90

00:03:15,570 --> 00:03:13,540

and we'll go sure make sure we truly do

91

00:03:16,920 --> 00:03:15,580

understand all that and before we fly

92

00:03:19,949 --> 00:03:16,930

then the next flight understand that

93

00:03:22,160 --> 00:03:19,959

that losses in family and expected the

94

00:03:24,509 --> 00:03:22,170

the other work on the GUP to keep the

95

00:03:26,699 --> 00:03:24,519

hydrogen vent from leaking when we hit

96

00:03:28,860 --> 00:03:26,709

topping flow on the hydrogen tank again

97

00:03:30,630 --> 00:03:28,870

worked perfect we hit that that that

98

00:03:31,620 --> 00:03:30,640

cycle and when the topping we had

99

00:03:32,759 --> 00:03:31,630

topping in the valve came open and

100

00:03:34,380 --> 00:03:32,769

stayed open for a while the leak

101
00:03:36,240 --> 00:03:34,390
detector stayed flat line no no

102
00:03:38,430 --> 00:03:36,250
indications of a leak whatsoever so a

103
00:03:40,199 --> 00:03:38,440
big congratulations to that team who

104
00:03:42,330 --> 00:03:40,209
really really poured their heart and

105
00:03:43,890 --> 00:03:42,340
soul and time into making sure we had

106
00:03:47,460 --> 00:03:43,900
that aligned and then realigned and then

107
00:03:50,250 --> 00:03:47,470
re realigned just just right and so they

108
00:03:51,479 --> 00:03:50,260
did they did a fantastic job I'll let

109
00:03:53,220 --> 00:03:51,489
Mike talk to you about a couple of the

110
00:03:54,690 --> 00:03:53,230
little hiccups we had during the count

111
00:03:57,360 --> 00:03:54,700
they were all pretty minor speed bumps

112
00:03:58,979 --> 00:03:57,370
in the in the systems the ice team came

113
00:04:00,180 --> 00:03:58,989

back and gave us a perfectly clean

114

00:04:02,670 --> 00:04:00,190

report on the vehicle everything

115

00:04:05,250 --> 00:04:02,680

everything looked great and so we knew

116

00:04:08,070 --> 00:04:05,260

we had a good good stack both in the

117

00:04:10,590 --> 00:04:08,080

orbiter the ssme is the SRBs and the

118

00:04:12,330 --> 00:04:10,600

external tank we talked a little bit

119

00:04:13,740 --> 00:04:12,340

about whether just because we always

120

00:04:15,420 --> 00:04:13,750

like to talk about the weather and we

121

00:04:17,759 --> 00:04:15,430

kept an eye on the clouds out there the

122

00:04:19,199 --> 00:04:17,769

the towel sites we had two goods towel

123

00:04:21,060 --> 00:04:19,209

sites all day long and we actually ended

124

00:04:22,320 --> 00:04:21,070

up getting a good district site as well

125

00:04:23,879 --> 00:04:22,330

so we had three towel sites more than

126

00:04:25,830 --> 00:04:23,889

more than we need

127

00:04:27,360 --> 00:04:25,840

the RTLS weather was never really a

128

00:04:29,129 --> 00:04:27,370

problem but like I said we did like to

129

00:04:31,020 --> 00:04:29,139

talk about it for a little bit and

130

00:04:32,459 --> 00:04:31,030

everything went good the biggest

131

00:04:33,839 --> 00:04:32,469

citement came in at the end when we were

132

00:04:36,089 --> 00:04:33,849

getting ready to pick up the count and

133

00:04:37,830 --> 00:04:36,099

the range went red and again this is a

134

00:04:38,909 --> 00:04:37,840

just to kind of help you understand the

135

00:04:41,700 --> 00:04:38,919

architecture you know we have our

136

00:04:43,350 --> 00:04:41,710

command and control center here there's

137

00:04:44,969 --> 00:04:43,360

the the launch team executing there's a

138

00:04:47,399 --> 00:04:44,979

kind of a launch decision Authority

139

00:04:48,659 --> 00:04:47,409

which is that that programmatic of you

140

00:04:50,459 --> 00:04:48,669

know are you ready to go that day or not

141

00:04:52,980 --> 00:04:50,469

and that's in the shuttle program the

142

00:04:54,809 --> 00:04:52,990

range has their own their own equivalent

143

00:04:56,820 --> 00:04:54,819

of that headed by the commander of the

144

00:04:58,320 --> 00:04:56,830

45th space wing as the launch decision

145

00:04:59,790 --> 00:04:58,330

authority over there in the the range

146

00:05:02,010 --> 00:04:59,800

operations control center is the Morrell

147

00:05:03,450 --> 00:05:02,020

operations control center and they have

148

00:05:04,679 --> 00:05:03,460

their own set of criteria things that

149

00:05:06,149 --> 00:05:04,689

they need systems they need to have up

150

00:05:07,860 --> 00:05:06,159

and running we've levied some

151
00:05:09,029 --> 00:05:07,870
requirements on them that for shuttle

152
00:05:10,890 --> 00:05:09,039
launches we need some extra stuff

153
00:05:12,809 --> 00:05:10,900
they've levied some requirements on us

154
00:05:14,550 --> 00:05:12,819
for shuttle launches so we share some

155
00:05:16,860 --> 00:05:14,560
commit criteria but in this case this

156
00:05:19,439 --> 00:05:16,870
was one of theirs their command systems

157
00:05:20,700 --> 00:05:19,449
they had a hiccup in some of their

158
00:05:23,100 --> 00:05:20,710
command systems that they didn't quite

159
00:05:24,450 --> 00:05:23,110
understand I can't really go into all

160
00:05:27,179 --> 00:05:24,460
the details again because it's not our

161
00:05:28,439 --> 00:05:27,189
requirement but but they basically had a

162
00:05:29,700 --> 00:05:28,449
funny that they didn't quite understand

163
00:05:31,350 --> 00:05:29,710

and they did exactly what we would do

164

00:05:32,879 --> 00:05:31,360

which was go read and be no go until

165

00:05:34,379 --> 00:05:32,889

they had a chance to talk about it they

166

00:05:35,490 --> 00:05:34,389

talked it over and decided that the

167

00:05:37,559 --> 00:05:35,500

configuration they were seeing was

168

00:05:40,110 --> 00:05:37,569

stable and they were happy with it and

169

00:05:41,399 --> 00:05:40,120

so they gave a go to proceed the problem

170

00:05:43,379 --> 00:05:41,409

becomes one of communication when you

171

00:05:45,929 --> 00:05:43,389

get down that close when we hit the t

172

00:05:47,579 --> 00:05:45,939

minus nine point where we wanted to pick

173

00:05:49,139 --> 00:05:47,589

up the count they still hadn't yet

174

00:05:50,610 --> 00:05:49,149

figured out if they were going to be

175

00:05:52,589 --> 00:05:50,620

able to resolve this problem so we

176

00:05:53,550 --> 00:05:52,599

decided to count to five minutes Mike's

177

00:05:55,079 --> 00:05:53,560

launch team came to me with that

178

00:05:56,969 --> 00:05:55,089

recommendation it was an outstanding one

179

00:05:58,740 --> 00:05:56,979

to buy a little more time keep counting

180

00:06:00,149 --> 00:05:58,750

to five minutes we made sure the range

181

00:06:01,320 --> 00:06:00,159

was ok with us proceeding down to that

182

00:06:03,600 --> 00:06:01,330

point and we would have held at five

183

00:06:04,920 --> 00:06:03,610

which we ended up doing because they

184

00:06:06,600 --> 00:06:04,930

didn't quite get that problem resolved

185

00:06:10,800 --> 00:06:06,610

and from that point on we had three

186

00:06:12,089 --> 00:06:10,810

minutes of hold time to burn once we hit

187

00:06:14,159 --> 00:06:12,099

that five-minute window we pretty much

188

00:06:15,329 --> 00:06:14,169

verbally behind the scenes had the the

189

00:06:16,379 --> 00:06:15,339

nod that we were going to be okay to

190

00:06:18,149 --> 00:06:16,389

pick up we were going to get a green

191

00:06:19,409 --> 00:06:18,159

from the range it just takes a while for

192

00:06:21,300 --> 00:06:19,419

some of that communication path to

193

00:06:25,499 --> 00:06:21,310

happen and unfortunate this was a very

194

00:06:26,850 --> 00:06:25,509

visible communication this delay but

195

00:06:27,869 --> 00:06:26,860

it's kind of natural right yeah and you

196

00:06:29,850 --> 00:06:27,879

got to be careful when you got to do

197

00:06:31,740 --> 00:06:29,860

everything the right way on the range

198

00:06:33,420 --> 00:06:31,750

side they literally have a switch the

199

00:06:35,999 --> 00:06:33,430

hold fire switch that they throw to say

200

00:06:37,410 --> 00:06:36,009

it is a inhibit to the countdown it

201
00:06:38,730 --> 00:06:37,420
cannot proceed and

202
00:06:40,650 --> 00:06:38,740
we cannot pick up her account to that

203
00:06:42,510 --> 00:06:40,660
switch is thrown I verbally told Mike

204
00:06:44,610 --> 00:06:42,520
that we had the verbal approval from the

205
00:06:45,900 --> 00:06:44,620
range to go ahead and go that was not a

206
00:06:47,130 --> 00:06:45,910
commitment to say we're going to

207
00:06:48,900 --> 00:06:47,140
override the range and launch no matter

208
00:06:50,250 --> 00:06:48,910
what they say that was a get the teams

209
00:06:51,480 --> 00:06:50,260
moving to get ready to pick up the count

210
00:06:53,700 --> 00:06:51,490
get the clocks all ready to go in the

211
00:06:56,220 --> 00:06:53,710
books ready and then we did get that go

212
00:06:58,560 --> 00:06:56,230
to proceed from SRO the the Range Safety

213
00:07:00,540 --> 00:06:58,570

Officer to say and the whole fire switch

214

00:07:02,430 --> 00:07:00,550

was removed and we had a go to count we

215

00:07:03,960 --> 00:07:02,440

ended up having there was about four

216

00:07:05,370 --> 00:07:03,970

seconds on the countdown clock when you

217

00:07:06,540 --> 00:07:05,380

when you do the math of performance

218

00:07:09,090 --> 00:07:06,550

during back on the vehicle we had about

219

00:07:11,310 --> 00:07:09,100

two seconds of whole time remaining

220

00:07:12,540 --> 00:07:11,320

which is about one more second than Mike

221

00:07:16,170 --> 00:07:12,550

needed to get the job done so it's

222

00:07:17,790 --> 00:07:16,180

plenty of margin so it all worked out

223

00:07:19,530 --> 00:07:17,800

very well and I would say we scripted

224

00:07:21,780 --> 00:07:19,540

that way but you know I could use a

225

00:07:23,040 --> 00:07:21,790

little less heart palpitations in the

226

00:07:25,650 --> 00:07:23,050

final couple seconds of the countdown

227

00:07:27,030 --> 00:07:25,660

but but again a testament to the the

228

00:07:28,290 --> 00:07:27,040

processes in the inhibits that are in

229

00:07:29,640 --> 00:07:28,300

place and the reason why we have

230

00:07:32,070 --> 00:07:29,650

independent cross checks and

231

00:07:33,720 --> 00:07:32,080

communication paths to be able to work

232

00:07:35,700 --> 00:07:33,730

through problems and we don't just rush

233

00:07:37,230 --> 00:07:35,710

to commit we do wait for the right

234

00:07:39,150 --> 00:07:37,240

authorities to check and verify that

235

00:07:40,920 --> 00:07:39,160

they are ok so in this case we did that

236

00:07:41,940 --> 00:07:40,930

will debrief to make sure there's

237

00:07:43,440 --> 00:07:41,950

nothing we can do a little better in the

238

00:07:45,450 --> 00:07:43,450

future or any ways that we could

239

00:07:46,770 --> 00:07:45,460

communicate a little better what the

240

00:07:49,860 --> 00:07:46,780

actual constraints and the clocks are

241

00:07:51,450 --> 00:07:49,870

you know it's always that lots of too

242

00:07:53,280 --> 00:07:51,460

many cooks watching the pot watching the

243

00:07:54,390 --> 00:07:53,290

clock it's hard time flies when you're

244

00:07:56,100 --> 00:07:54,400

when you're trying to just make sure

245

00:07:57,090 --> 00:07:56,110

you're communicating and that that

246

00:07:58,650 --> 00:07:57,100

happened I looked up and all the sudden

247

00:08:01,200 --> 00:07:58,660

we were at about 35 seconds to go and

248

00:08:04,830 --> 00:08:01,210

and we hadn't yet quite got what we

249

00:08:06,120 --> 00:08:04,840

needed but we got there so the that was

250

00:08:07,950 --> 00:08:06,130

an exciting thing I talked to the team's

251

00:08:10,410 --> 00:08:07,960

back in Houston the crew is on orbit

252

00:08:12,600 --> 00:08:10,420

they're busy reconfiguring the shuttle

253

00:08:14,040 --> 00:08:12,610

from the orbiter from a from the rocket

254

00:08:16,470 --> 00:08:14,050

for a sent into the spacecraft for orbit

255

00:08:18,750 --> 00:08:16,480

operations ohms to went just fine there

256

00:08:20,700 --> 00:08:18,760

in a great orbit we had a nominal mico

257

00:08:23,310 --> 00:08:20,710

with no problems from the main engines

258

00:08:26,070 --> 00:08:23,320

you know i was joking with our main

259

00:08:27,870 --> 00:08:26,080

engine and our SRB compadres they kind

260

00:08:29,820 --> 00:08:27,880

of were not in the limelight for the

261

00:08:32,370 --> 00:08:29,830

last four months external tank had kind

262

00:08:34,140 --> 00:08:32,380

of stepped up to to shade them and and

263

00:08:35,610 --> 00:08:34,150

apparently four months of dwell time

264

00:08:37,260 --> 00:08:35,620

made them work even better because the

265

00:08:39,270 --> 00:08:37,270

main engines were picture-perfect right

266

00:08:42,090 --> 00:08:39,280

down the middle and the SRBs did the

267

00:08:44,820 --> 00:08:42,100

fantastic job they always do it is it is

268

00:08:46,170 --> 00:08:44,830

truly amazing you know i get i get the

269

00:08:47,670 --> 00:08:46,180

emotional choked up of seeing the

270

00:08:49,140 --> 00:08:47,680

vehicle launch and putting humans in

271

00:08:50,530 --> 00:08:49,150

space but from an engineering

272

00:08:52,449 --> 00:08:50,540

perspective it is

273

00:08:54,220 --> 00:08:52,459

technical marvel to see the main engines

274

00:08:56,139 --> 00:08:54,230

and the SRBs carry this vehicle into

275

00:08:57,340 --> 00:08:56,149

orbit the amount of energy that we're

276

00:08:59,290 --> 00:08:57,350

putting into that thing to get it up

277

00:09:01,720 --> 00:08:59,300

into orbit and then head into Mach 25 is

278

00:09:03,100 --> 00:09:01,730

is a truly outstanding event and the

279

00:09:05,949 --> 00:09:03,110

fact that it happens perfectly every

280

00:09:08,170 --> 00:09:05,959

time is also a testament to the to the

281

00:09:09,850 --> 00:09:08,180

teams and the commitment to get us to

282

00:09:11,379 --> 00:09:09,860

the pad in the first place so so it was

283

00:09:12,819 --> 00:09:11,389

really pleased to see that then and

284

00:09:15,370 --> 00:09:12,829

there were lots of smiles in the in the

285

00:09:16,480 --> 00:09:15,380

firing room all around but again like

286

00:09:17,920 --> 00:09:16,490

bill said it's time to focus on the

287

00:09:19,930 --> 00:09:17,930

mission the guys have a really busy

288

00:09:21,430 --> 00:09:19,940

flight ahead of them to e VA's

289

00:09:23,889 --> 00:09:21,440

delivering hardware to the station the

290

00:09:26,230 --> 00:09:23,899

permanent Logistics Module as a storage

291

00:09:27,999 --> 00:09:26,240

facility for station and I know now that

292

00:09:29,800 --> 00:09:28,009

ATVs there and now that we're on our way

293

00:09:31,720 --> 00:09:29,810

the the station program is very anxious

294

00:09:34,090 --> 00:09:31,730

to get to work in and help posture the

295

00:09:36,670 --> 00:09:34,100

station for the future and another 10 or

296

00:09:38,710 --> 00:09:36,680

20 years hopefully of science in space

297

00:09:41,499 --> 00:09:38,720

so I'll let Mike give you some more

298

00:09:43,420 --> 00:09:41,509

details okay thanks Mike let's say was a

299

00:09:45,430 --> 00:09:43,430

kind and exciting last few minutes of

300

00:09:47,800 --> 00:09:45,440

this countdown several of us have been

301
00:09:49,269 --> 00:09:47,810
around for many many countdowns and this

302
00:09:52,990 --> 00:09:49,279
this was this was one for the record

303
00:09:55,389 --> 00:09:53,000
books the way the way it works and Mike

304
00:09:57,730 --> 00:09:55,399
did a great job describing it we could

305
00:09:59,590 --> 00:09:57,740
not pick up the count until they undid

306
00:10:01,990 --> 00:09:59,600
their hold switch on the range side and

307
00:10:03,340 --> 00:10:02,000
they ultimately did that and and so it

308
00:10:05,019 --> 00:10:03,350
took a little bit of time to get that in

309
00:10:07,210 --> 00:10:05,029
the communications from there from their

310
00:10:09,009 --> 00:10:07,220
commander down to the superintendent of

311
00:10:11,439 --> 00:10:09,019
range operations that they were indeed

312
00:10:13,269 --> 00:10:11,449
go and to release that hold the hold

313
00:10:15,129 --> 00:10:13,279

switch that's a physical switch on the

314

00:10:16,360 --> 00:10:15,139

on their console over there once that

315

00:10:18,610 --> 00:10:16,370

was done then we were clear to proceed

316

00:10:21,040 --> 00:10:18,620

it takes us a few seconds to get the

317

00:10:23,800 --> 00:10:21,050

final go to the NASA test director from

318

00:10:24,759 --> 00:10:23,810

myself and pick up the clock and so you

319

00:10:26,710 --> 00:10:24,769

know it may have seemed a little bit

320

00:10:28,150 --> 00:10:26,720

rushed to some people and outside but to

321

00:10:29,829 --> 00:10:28,160

me on the inside and to the launch team

322

00:10:33,699 --> 00:10:29,839

we practice this we practice late

323

00:10:36,250 --> 00:10:33,709

picking up of the clock routinely and so

324

00:10:37,900 --> 00:10:36,260

you know it's a testament to the team

325

00:10:40,900 --> 00:10:37,910

that we prepare for things just like

326

00:10:42,639 --> 00:10:40,910

this and and and I'm very glad today

327

00:10:45,220 --> 00:10:42,649

that we have practice quite a few times

328

00:10:46,360 --> 00:10:45,230

because it really paid off we were yeah

329

00:10:48,370 --> 00:10:46,370

we were a couple seconds away from

330

00:10:49,600 --> 00:10:48,380

losing the window and then we would have

331

00:10:51,519 --> 00:10:49,610

stood down and come back tomorrow and

332

00:10:53,920 --> 00:10:51,529

try it again and that would have been

333

00:10:56,079 --> 00:10:53,930

okay too but we made it today and and

334

00:10:58,629 --> 00:10:56,089

you know the rest of the content really

335

00:11:00,189 --> 00:10:58,639

was pretty pretty easy a couple little

336

00:11:02,139 --> 00:11:00,199

issues you probably saw the issue with

337

00:11:02,830 --> 00:11:02,149

with the tile on the on the orbiter

338

00:11:04,660 --> 00:11:02,840

hatch

339

00:11:06,550 --> 00:11:04,670

no big deal there we talked about it and

340

00:11:08,170 --> 00:11:06,560

recognize the type of repair that was

341

00:11:09,670 --> 00:11:08,180

needed we performed that repair and

342

00:11:12,940 --> 00:11:09,680

that's good to go we don't have an issue

343

00:11:16,840 --> 00:11:12,950

with that at all so this was discoveries

344

00:11:19,660 --> 00:11:16,850

last great way to go out she she gave us

345

00:11:21,610 --> 00:11:19,670

a little bit of a fit today but it's a

346

00:11:24,280 --> 00:11:21,620

great it's a great way to get Steve

347

00:11:26,080 --> 00:11:24,290

Lindsey and his crew on orbit so very

348

00:11:27,310 --> 00:11:26,090

very proud of my launch team and all the

349

00:11:28,810 --> 00:11:27,320

rest of the people that work so hard on

350

00:11:32,020 --> 00:11:28,820

discovery and all the support systems

351

00:11:33,730 --> 00:11:32,030

around the country thanks thanks Mike

352

00:11:35,320 --> 00:11:33,740

will now take questions here Kenny Space

353

00:11:36,400 --> 00:11:35,330

Center remember to wait for the

354

00:11:38,380 --> 00:11:36,410

microphone state your full name

355

00:11:40,090 --> 00:11:38,390

affiliation please only initially asked

356

00:11:43,690 --> 00:11:40,100

one question will try to come back for

357

00:11:45,250 --> 00:11:43,700

follow-up good hi I'm mark Kirkman

358

00:11:46,990 --> 00:11:45,260

interspace news since I have one

359

00:11:48,670 --> 00:11:47,000

question I guess I'll start with going

360

00:11:50,560 --> 00:11:48,680

to get just a little more detail on what

361

00:11:52,930 --> 00:11:50,570

has to happen anytime you have a manual

362

00:11:54,820 --> 00:11:52,940

hold like this to pick up the count I'm

363

00:11:57,040 --> 00:11:54,830

kind of on the impression that even if

364

00:11:59,260 --> 00:11:57,050

you guys communicate properly and you

365

00:12:01,480 --> 00:11:59,270

give the go Mike why not give the go you

366

00:12:03,100 --> 00:12:01,490

still have to have the GLS operator

367

00:12:04,360 --> 00:12:03,110

mainly type it in and all that kind of

368

00:12:06,460 --> 00:12:04,370

thing to have the count resume how long

369

00:12:08,380 --> 00:12:06,470

does that normally take and I'll have a

370

00:12:09,970 --> 00:12:08,390

follow-up if you come back around yeah

371

00:12:13,660 --> 00:12:09,980

there were two things going on there now

372

00:12:15,820 --> 00:12:13,670

remember the eastern range enabled their

373

00:12:17,590 --> 00:12:15,830

hold fire switch and so they have to

374

00:12:19,630 --> 00:12:17,600

undo that once they once they put that

375

00:12:21,850 --> 00:12:19,640

in the preceding that's an instantaneous

376

00:12:24,220 --> 00:12:21,860

signal from them over to us be a hard

377

00:12:26,470 --> 00:12:24,230

wire and then since we put in a manual

378

00:12:28,270 --> 00:12:26,480

hold at five minutes intentionally

379

00:12:30,280 --> 00:12:28,280

because we wanted to go down to five and

380

00:12:31,720 --> 00:12:30,290

hold there then we had to instruct the

381

00:12:33,910 --> 00:12:31,730

GLS operator the ground launch sequencer

382

00:12:35,950 --> 00:12:33,920

operator which is which is really kind

383

00:12:39,820 --> 00:12:35,960

of the brains of the countdown you could

384

00:12:41,680 --> 00:12:39,830

say that to pick up the clock as well so

385

00:12:43,210 --> 00:12:41,690

so the inhibit that that would

386

00:12:44,530 --> 00:12:43,220

physically prevent us from picking up

387

00:12:46,870 --> 00:12:44,540

the countdown clock had to be removed

388

00:12:49,240 --> 00:12:46,880

first and then we had instruct our

389

00:12:51,250 --> 00:12:49,250

ground launch sequencer operator to

390

00:12:53,980 --> 00:12:51,260

casually pick up the clock and so that's

391

00:12:56,950 --> 00:12:53,990

what you heard Steve pain the NASA test

392

00:12:58,450 --> 00:12:56,960

director tell George Thomas the GLS

393

00:13:00,550 --> 00:12:58,460

operator Dan to pick up the clock on

394

00:13:11,319 --> 00:13:00,560

your mark and he counted down and we

395

00:13:18,559 --> 00:13:15,439

Randy avara enter space news this is for

396

00:13:21,559 --> 00:13:18,569

Gertz de meyer and moses the redesign of

397

00:13:24,350 --> 00:13:21,569

the stringers on the inner tank section

398

00:13:26,600 --> 00:13:24,360

of the et regarding the material

399

00:13:29,420 --> 00:13:26,610

properties was it lithium aluminum

400

00:13:32,030 --> 00:13:29,430

material or was it just aluminum like

401

00:13:34,280 --> 00:13:32,040

the previous tanks prior to the

402

00:13:37,160 --> 00:13:34,290

lightweight and super lightweight tanks

403

00:13:39,530 --> 00:13:37,170

I know you added the radius blocks but

404

00:13:42,769 --> 00:13:39,540

the basic stringer do you know the

405

00:13:44,540 --> 00:13:42,779

composition of that material yes the

406

00:13:46,280 --> 00:13:44,550

stringers are the aluminum lithium new

407

00:13:47,660 --> 00:13:46,290

lightweight tanks that's that this is

408

00:13:50,030 --> 00:13:47,670

one of the super lightweight tanks the

409

00:13:51,230 --> 00:13:50,040

radius block mod was just regular

410

00:13:58,269 --> 00:13:51,240

aluminum it was not aluminum lithium

411

00:14:02,480 --> 00:14:00,350

Marcia Dennis says he had pressed from

412

00:14:04,850 --> 00:14:02,490

my plane bug yesterday you told us you

413

00:14:07,040 --> 00:14:04,860

expected it to be tough seeing discovery

414

00:14:09,170 --> 00:14:07,050

take off this last time how tough was it

415

00:14:12,050 --> 00:14:09,180

for you and talk a little bit about the

416

00:14:15,889 --> 00:14:12,060

emotions that you sensed in the control

417

00:14:18,259 --> 00:14:15,899

room after after liftoff well counting

418

00:14:19,939 --> 00:14:18,269

down we were we were busy doing our jobs

419

00:14:22,579 --> 00:14:19,949

and so the emotion didn't didn't have

420

00:14:24,439 --> 00:14:22,589

time to kick in I'll tell you there are

421

00:14:27,350 --> 00:14:24,449

a lot of people a lot of Pat's on the

422

00:14:29,300 --> 00:14:27,360

back afterwards and the closeout crew

423

00:14:32,059 --> 00:14:29,310

gave me a surprise as a matter of fact

424

00:14:34,460 --> 00:14:32,069

that the for Discovery's last launch

425

00:14:37,730 --> 00:14:34,470

they gave me that this is from the hatch

426

00:14:40,629 --> 00:14:37,740

cover and it's signed by the astronaut

427

00:14:42,949 --> 00:14:40,639

crew and signed by the closeout crew and

428

00:14:45,800 --> 00:14:42,959

so that was a gift from them to me and

429

00:14:51,760 --> 00:14:45,810

that that's going to take a very special

430

00:14:58,970 --> 00:14:54,710

Jim silt Segal celebration independent

431

00:15:01,280 --> 00:14:58,980

newspaper did you have any sensors or

432

00:15:03,560 --> 00:15:01,290

other ways of monitoring the stringers

433

00:15:05,540 --> 00:15:03,570

around those radius blocks as this

434

00:15:07,160 --> 00:15:05,550

launch happened and do you know whether

435

00:15:09,740 --> 00:15:07,170

have any idea whether they were

436

00:15:12,620 --> 00:15:09,750

successful or unsuccessful I mean other

437

00:15:14,380 --> 00:15:12,630

than the launch was successful so there

438

00:15:17,600 --> 00:15:14,390

was no additional instrumentation we had

439

00:15:20,030 --> 00:15:17,610

all our normal inspection assets focused

440

00:15:22,070 --> 00:15:20,040

on that region when the cryo load went

441

00:15:24,440 --> 00:15:22,080

past that and the liquid level the tank

442

00:15:26,990 --> 00:15:24,450

rosin and shocked that that metal flange

443

00:15:28,340 --> 00:15:27,000

which is when it broke the first time so

444

00:15:30,260 --> 00:15:28,350

just our normal inspection assets to

445

00:15:32,180 --> 00:15:30,270

verify that it function properly and

446

00:15:34,400 --> 00:15:32,190

then we have our imagery going uphill

447

00:15:35,420 --> 00:15:34,410

and when we get on orbit the crew turns

448

00:15:36,590 --> 00:15:35,430

around and takes pictures of the

449

00:15:38,840 --> 00:15:36,600

external tank and so will be able to

450

00:15:40,790 --> 00:15:38,850

review those photos and see if there

451
00:15:42,260 --> 00:15:40,800
were any kind of foam defects around

452
00:15:44,330 --> 00:15:42,270
that flange that might lead us to

453
00:15:46,100 --> 00:15:44,340
suspect something with the stringers but

454
00:15:51,200 --> 00:15:46,110
so no no dedicated specialized

455
00:15:54,560 --> 00:15:51,210
instrumentation segal wst you radio for

456
00:15:56,930 --> 00:15:54,570
bill bill now that we're on orbit this

457
00:15:58,670 --> 00:15:56,940
fly around has been banded around for

458
00:16:00,470 --> 00:15:58,680
some time as being quite important and

459
00:16:02,540 --> 00:16:00,480
something that we want to do can you

460
00:16:03,860 --> 00:16:02,550
tell us when we may have a handle on

461
00:16:05,920 --> 00:16:03,870
when we're going to do it if we're going

462
00:16:08,360 --> 00:16:05,930
to do it and why is it that important

463
00:16:10,760 --> 00:16:08,370

we're going to the teams were taking a

464

00:16:12,020 --> 00:16:10,770

look at it they'll evaluate whether we

465

00:16:13,430 --> 00:16:12,030

can do it or not and we'll make a

466

00:16:15,380 --> 00:16:13,440

decision I think probably around flight

467

00:16:17,150 --> 00:16:15,390

day six of the mission so it'll be a

468

00:16:20,870 --> 00:16:17,160

ways into the mission before we actually

469

00:16:22,820 --> 00:16:20,880

make the decision we look at it it's

470

00:16:25,160 --> 00:16:22,830

important from a couple standpoints its

471

00:16:27,110 --> 00:16:25,170

first a good photo documentation of the

472

00:16:28,490 --> 00:16:27,120

configuration its unique in the fact we

473

00:16:30,890 --> 00:16:28,500

have all the vehicles from all the

474

00:16:32,960 --> 00:16:30,900

partners docked at station at one time

475

00:16:35,480 --> 00:16:32,970

which gives us a just a nice you know

476
00:16:37,460 --> 00:16:35,490
kind of public affairs international

477
00:16:39,410 --> 00:16:37,470
view but then it also gives us some data

478
00:16:42,010 --> 00:16:39,420
from an engineering standpoint of how

479
00:16:44,600 --> 00:16:42,020
well stations performing will look for

480
00:16:46,130 --> 00:16:44,610
micrometeoroid debris damage we fly

481
00:16:47,570 --> 00:16:46,140
around in this case with the soleus and

482
00:16:49,579 --> 00:16:47,580
a different angle than we typically do

483
00:16:51,560 --> 00:16:49,589
when we do this the shuttle fly around

484
00:16:52,970 --> 00:16:51,570
so we'll see some hardware and some

485
00:16:55,130 --> 00:16:52,980
other areas of station which we

486
00:16:57,500 --> 00:16:55,140
typically do not see and we can't see as

487
00:16:59,750 --> 00:16:57,510
easily with our assets on board station

488
00:17:01,160 --> 00:16:59,760

with the robotic arm and cameras and

489

00:17:02,540 --> 00:17:01,170

things so it'll give us some engineering

490

00:17:03,769 --> 00:17:02,550

data in some areas we haven't seen

491

00:17:05,779 --> 00:17:03,779

before

492

00:17:08,029 --> 00:17:05,789

also as we retire the shuttle from

493

00:17:09,980 --> 00:17:08,039

flying we're going to use the Soyuz for

494

00:17:11,809 --> 00:17:09,990

this fly around so this also gives us a

495

00:17:13,610 --> 00:17:11,819

chance to practice a Soyuz fly around

496

00:17:15,710 --> 00:17:13,620

like we're going to do in the future so

497

00:17:17,720 --> 00:17:15,720

it's a it's another way to gain some

498

00:17:19,490 --> 00:17:17,730

experience in a test configuration to go

499

00:17:21,770 --> 00:17:19,500

do that for an activity we're going to

500

00:17:23,079 --> 00:17:21,780

do pretty routinely once we get there so

501
00:17:25,159 --> 00:17:23,089
it's a combination of all those things

502
00:17:27,439 --> 00:17:25,169
right now the Russian partners are

503
00:17:28,940 --> 00:17:27,449
taking a look at it I can't say whether

504
00:17:30,620 --> 00:17:28,950
we'll do it or not we're going to we're

505
00:17:31,580 --> 00:17:30,630
going to let them you know determine

506
00:17:33,409 --> 00:17:31,590
whether they think this is the right

507
00:17:35,180 --> 00:17:33,419
thing to do what the risks are what the

508
00:17:37,340 --> 00:17:35,190
safety aspects are the teams trained are

509
00:17:38,990 --> 00:17:37,350
we ready to go do it and we may or may

510
00:17:40,460 --> 00:17:39,000
not do this so we'll just wait as we get

511
00:17:42,320 --> 00:17:40,470
through the mission let the team decide

512
00:17:44,690 --> 00:17:42,330
and work it and see what happens if you

513
00:17:46,490 --> 00:17:44,700

focus inspection or we have EVs running

514

00:17:48,350 --> 00:17:46,500

long and this is clearly lower priority

515

00:17:50,000 --> 00:17:48,360

and it won't occur so we'll let the

516

00:17:54,529 --> 00:17:50,010

mission play out and see if we need to

517

00:17:57,740 --> 00:17:54,539

do it or not hi it's a Craig gevalt with

518

00:17:59,740 --> 00:17:57,750

aerospace America for Gerst looking

519

00:18:02,840 --> 00:17:59,750

ahead at least a few days here if

520

00:18:05,390 --> 00:18:02,850

there's a federal shutdown how would

521

00:18:08,840 --> 00:18:05,400

that affect toward the end of the flight

522

00:18:10,010 --> 00:18:08,850

ground staffing and so forth and taking

523

00:18:15,320 --> 00:18:10,020

that a little broader how would that

524

00:18:17,120 --> 00:18:15,330

affect sts-134 processing again we'll

525

00:18:19,909 --> 00:18:17,130

kind of see what happens you know we

526

00:18:22,490 --> 00:18:19,919

haven't really done any in detailed the

527

00:18:23,960 --> 00:18:22,500

contingency planning yet you know for

528

00:18:25,010 --> 00:18:23,970

the mission that's flying we'd probably

529

00:18:26,690 --> 00:18:25,020

consider most of the folks

530

00:18:28,789 --> 00:18:26,700

mission-critical personnel and that's

531

00:18:29,930 --> 00:18:28,799

pretty much transparent to us and then

532

00:18:31,669 --> 00:18:29,940

we would go ahead and see where it fits

533

00:18:33,470 --> 00:18:31,679

in the overall manifest we'd work it

534

00:18:34,850 --> 00:18:33,480

with the right folks but but we'll see

535

00:18:37,010 --> 00:18:34,860

what happens on a congressional side

536

00:18:38,630 --> 00:18:37,020

it's up to them to go work to budget

537

00:18:40,850 --> 00:18:38,640

things but I think from a top level

538

00:18:42,289 --> 00:18:40,860

standpoint we'll be able to just press

539

00:18:43,820 --> 00:18:42,299

on and continue kind of the way we're

540

00:18:45,350 --> 00:18:43,830

heading and we'll see what happens and

541

00:18:49,220 --> 00:18:45,360

what what goes forward as we move

542

00:18:49,230 --> 00:18:57,660

it's more information about the

543

00:19:01,750 --> 00:19:00,460

let's see again it's their system and

544

00:19:04,090 --> 00:19:01,760

it's their internal hardware so the

545

00:19:05,770 --> 00:19:04,100

details of what happened we need to talk

546

00:19:08,680 --> 00:19:05,780

to them for or I should say you guys

547

00:19:10,990 --> 00:19:08,690

need to talk to them and but from a from

548

00:19:13,030 --> 00:19:11,000

a what was conveyed to me from a purpose

549

00:19:14,860 --> 00:19:13,040

of the thing it was there it was their

550

00:19:17,980 --> 00:19:14,870

their command system so it's the system

551

00:19:20,380 --> 00:19:17,990

they use to command the things they need

552

00:19:22,180 --> 00:19:20,390

for telemetry and range safety systems

553

00:19:23,980 --> 00:19:22,190

and there was a hiccup in that system

554

00:19:37,450 --> 00:19:23,990

they did not quite understand and they

555

00:19:46,060 --> 00:19:37,460

needed time to evaluate the questions

556

00:19:48,730 --> 00:19:46,070

were a second round fool um Chris

557

00:19:50,440 --> 00:19:48,740

Gebhart with NASA Space Flight com first

558

00:19:52,450 --> 00:19:50,450

off just a huge congratulations to you

559

00:19:55,450 --> 00:19:52,460

and all the teams a tremendous effort

560

00:19:57,970 --> 00:19:55,460

from everyone know for a lot of us

561

00:19:59,140 --> 00:19:57,980

wondering I'm for the end of the window

562

00:20:03,670 --> 00:19:59,150

that you know the publicized of the

563

00:20:05,860 --> 00:20:03,680

window earlier was a 455 p.m. and just

564

00:20:10,300 --> 00:20:05,870

what curious as to why the window was

565

00:20:12,400 --> 00:20:10,310

closing at 453 today yeah that's so we

566

00:20:14,170 --> 00:20:12,410

do a real-time day of launch we call a

567

00:20:16,840 --> 00:20:14,180

dolly Lou a day of launch I load update

568

00:20:18,550 --> 00:20:16,850

where we assess actual winds actual

569

00:20:21,370 --> 00:20:18,560

temperatures actual propellant loads and

570

00:20:23,140 --> 00:20:21,380

et so the the pre flight plan was

571

00:20:25,150 --> 00:20:23,150

assuming for the predicted temperatures

572

00:20:27,820 --> 00:20:25,160

wind profile and expected loading in the

573

00:20:29,410 --> 00:20:27,830

tank you'd have a performance to have

574

00:20:31,030 --> 00:20:29,420

about a five-minute window we knew we'd

575

00:20:32,350 --> 00:20:31,040

be pretty tight on that and we didn't

576
00:20:34,150 --> 00:20:32,360
have very much ass and performance

577
00:20:36,490 --> 00:20:34,160
margin above that and that we could

578
00:20:37,960 --> 00:20:36,500
expect the window to shrink it was same

579
00:20:39,490 --> 00:20:37,970
situation we were back in November where

580
00:20:40,960 --> 00:20:39,500
we actually I think we only had a three

581
00:20:44,170 --> 00:20:40,970
minute window on that first count we did

582
00:20:45,400 --> 00:20:44,180
in November fifth and so when we got

583
00:20:47,800 --> 00:20:45,410
there day launched today they ran the

584
00:20:49,420 --> 00:20:47,810
numbers the asset performance margin was

585
00:20:50,710 --> 00:20:49,430
up a little bit but not quite enough to

586
00:20:51,970 --> 00:20:50,720
give us the full five minute window so

587
00:20:56,050 --> 00:20:51,980
we had a three minute window for the day

588
00:20:57,700 --> 00:20:56,060

today bill Harwood CBS News for Mike

589

00:21:00,220 --> 00:20:57,710

Moses I guess or maybe bill I'm not sure

590

00:21:02,530 --> 00:21:00,230

to foam related questions you mentioned

591

00:21:04,210 --> 00:21:02,540

cryo pumping so could you tell where

592

00:21:05,049 --> 00:21:04,220

this stuff came from it I couldn't tell

593

00:21:07,149 --> 00:21:05,059

whether it was from a

594

00:21:09,639 --> 00:21:07,159

above or below on number one and number

595

00:21:11,739 --> 00:21:09,649

two does does the amount that you saw

596

00:21:12,970 --> 00:21:11,749

during this essay and obviously it was

597

00:21:14,980 --> 00:21:12,980

outside of your window of vulnerability

598

00:21:16,659 --> 00:21:14,990

but the amount was a little higher than

599

00:21:19,119 --> 00:21:16,669

usual will that play any role in your

600

00:21:20,830 --> 00:21:19,129

decision to go ahead and stack 134 and

601
00:21:21,879 --> 00:21:20,840
go up to the patters that's something

602
00:21:24,340 --> 00:21:21,889
you guys are going to want to talk about

603
00:21:26,110 --> 00:21:24,350
you know again we'll take a look at the

604
00:21:28,600 --> 00:21:26,120
data and see what it you know what it

605
00:21:31,180 --> 00:21:28,610
means to us by crowd pumping what we

606
00:21:33,879 --> 00:21:31,190
knows by the release time you know what

607
00:21:36,369 --> 00:21:33,889
happens is the air essentially gets

608
00:21:39,340 --> 00:21:36,379
behind the foam and liquefies and then

609
00:21:40,810 --> 00:21:39,350
when the the propellant level drops in

610
00:21:42,970 --> 00:21:40,820
the hydrogen tank eventually then it

611
00:21:44,739 --> 00:21:42,980
warms up enough where that liquid air

612
00:21:46,960 --> 00:21:44,749
then warms up to the flashpoint and

613
00:21:49,389 --> 00:21:46,970

boils and then forces and pops off the

614

00:21:51,100 --> 00:21:49,399

phone so this looks to us to be pretty

615

00:21:53,019 --> 00:21:51,110

consistent with that with the timing we

616

00:21:55,090 --> 00:21:53,029

saw in the location and a location is

617

00:21:56,799 --> 00:21:55,100

right around the hydrogen flange and you

618

00:21:58,359 --> 00:21:56,809

remember we talked to you about we were

619

00:21:59,830 --> 00:21:58,369

concerned in that region we didn't want

620

00:22:01,419 --> 00:21:59,840

to do a lot of repairs in that region

621

00:22:03,549 --> 00:22:01,429

because we thought we could create a

622

00:22:05,560 --> 00:22:03,559

path where air could then get into that

623

00:22:07,690 --> 00:22:05,570

super cold region of the tank and do

624

00:22:09,489 --> 00:22:07,700

exactly what we potentially saw here so

625

00:22:11,560 --> 00:22:09,499

we've this is a kind of a known

626
00:22:13,210 --> 00:22:11,570
phenomena for us we'll go take the time

627
00:22:15,159 --> 00:22:13,220
we'll analyze will make sure that this

628
00:22:17,109 --> 00:22:15,169
is really the same phenomena we saw but

629
00:22:18,609 --> 00:22:17,119
that's our meijer indication today and

630
00:22:19,869 --> 00:22:18,619
then we'll see if it's right and then

631
00:22:21,159 --> 00:22:19,879
we'll determine if it means we need to

632
00:22:23,619 --> 00:22:21,169
do something different in this region

633
00:22:25,509 --> 00:22:23,629
but from the cursory look at what we saw

634
00:22:26,590 --> 00:22:25,519
today and what we saw in the asset video

635
00:22:29,169 --> 00:22:26,600
I think it's consistent with our

636
00:22:31,239 --> 00:22:29,179
experience base the loss although the

637
00:22:33,909 --> 00:22:31,249
size is fairly large the mass is not

638
00:22:35,649 --> 00:22:33,919

very much of a concern to us from a mass

639

00:22:37,359 --> 00:22:35,659

standpoint and in fact that it's late

640

00:22:39,190 --> 00:22:37,369

and it's kind of an understood timing

641

00:22:40,690 --> 00:22:39,200

consideration it doesn't cause us a lot

642

00:22:42,519 --> 00:22:40,700

of concern but that doesn't mean we

643

00:22:43,810 --> 00:22:42,529

won't still keep digging and looking and

644

00:22:45,489 --> 00:22:43,820

trying to understand over the next

645

00:22:46,989 --> 00:22:45,499

couple of weeks but but it's not

646

00:22:48,820 --> 00:22:46,999

inconsistent with what we've seen and

647

00:22:51,399 --> 00:22:48,830

what we would have expected before in

648

00:22:52,840 --> 00:22:51,409

Mike would you a yes so from a from a

649

00:22:54,070 --> 00:22:52,850

whole effect to the next mission we

650

00:22:55,539 --> 00:22:54,080

always kind of have that we want to make

651
00:22:57,999 --> 00:22:55,549
sure we understand that the in-flight

652
00:23:00,580 --> 00:22:58,009
anomalies and so right now I think we're

653
00:23:02,289 --> 00:23:00,590
rolling over on the twenty-eighth will

654
00:23:04,060 --> 00:23:02,299
let the team see what they chew through

655
00:23:04,960 --> 00:23:04,070
by then and we'll decide if we really do

656
00:23:06,909 --> 00:23:04,970
want to give a little more time before

657
00:23:08,560 --> 00:23:06,919
we roll over or not so that's kind of

658
00:23:12,519 --> 00:23:08,570
always the real time call that we make

659
00:23:14,680 --> 00:23:12,529
every time we fly are you thanks Irene

660
00:23:16,930 --> 00:23:14,690
Klotz with Reuters for them either Mike

661
00:23:18,980 --> 00:23:16,940
Moses or Mike Leinbach the UM when the

662
00:23:20,570 --> 00:23:18,990
range called out this problem they

663
00:23:22,730 --> 00:23:20,580

it's pretty much sounded like they were

664

00:23:25,940 --> 00:23:22,740

done and Mike you know you kind of said

665

00:23:28,010 --> 00:23:25,950

told your team to calm down and take it

666

00:23:31,220 --> 00:23:28,020

a step at a time and it sounded like

667

00:23:33,080 --> 00:23:31,230

something actually shut down and now in

668

00:23:36,140 --> 00:23:33,090

talking to us you described it as a

669

00:23:38,570 --> 00:23:36,150

hiccup can you clarify at all exactly

670

00:23:41,210 --> 00:23:38,580

what happened and why the range seemed

671

00:23:44,299 --> 00:23:41,220

to be like okay we're done and you all

672

00:23:46,760 --> 00:23:44,309

were like no notnot quite the Calton

673

00:23:48,260 --> 00:23:46,770

came to Mike's team and the NTDs from

674

00:23:49,700 --> 00:23:48,270

the from the superintendent arranged

675

00:23:51,830 --> 00:23:49,710

operations was that the range was no go

676
00:23:53,390 --> 00:23:51,840
and so that was their way of saying we

677
00:23:54,440 --> 00:23:53,400
just had a hiccup the same thing would

678
00:23:56,000 --> 00:23:54,450
happen if we have been sitting there in

679
00:23:58,430 --> 00:23:56,010
a cloud would have blown in all of a

680
00:23:59,390 --> 00:23:58,440
sudden range weather or-or launch

681
00:24:01,190 --> 00:23:59,400
weather out in houston would have

682
00:24:02,900 --> 00:24:01,200
suddenly came in and been no go that

683
00:24:03,890 --> 00:24:02,910
doesn't mean that that you're done for

684
00:24:05,330 --> 00:24:03,900
the day and you're never going to start

685
00:24:06,830 --> 00:24:05,340
the count again it means I currently

686
00:24:09,860 --> 00:24:06,840
have a condition I cannot proceed under

687
00:24:11,000 --> 00:24:09,870
and so the range had a hiccup in their

688
00:24:12,680 --> 00:24:11,010

system that they needed time to talk

689

00:24:14,299 --> 00:24:12,690

about they weren't go to proceed before

690

00:24:15,950 --> 00:24:14,309

they understood it so they they threw

691

00:24:17,270 --> 00:24:15,960

their home switch and said we're no go

692

00:24:19,040 --> 00:24:17,280

right now because we were very close to

693

00:24:21,290 --> 00:24:19,050

picking up the count at that time frame

694

00:24:23,330 --> 00:24:21,300

and and it's more important to make sure

695

00:24:24,650 --> 00:24:23,340

we've over communicated the we are not

696

00:24:26,390 --> 00:24:24,660

going to proceed until we understand the

697

00:24:27,560 --> 00:24:26,400

problem so they threw their whole fire

698

00:24:29,450 --> 00:24:27,570

switch and said there are no go for

699

00:24:30,470 --> 00:24:29,460

operations while they proceeded to talk

700

00:24:32,180 --> 00:24:30,480

about the problem to see if they could

701

00:24:34,970 --> 00:24:32,190

resolve it we do it all the time

702

00:24:36,470 --> 00:24:34,980

internally on our side we do it both

703

00:24:38,660 --> 00:24:36,480

ways right you allow the if this is a

704

00:24:40,040 --> 00:24:38,670

problem like this hatch tile problem we

705

00:24:42,020 --> 00:24:40,050

could have suddenly stopped counting

706

00:24:43,400 --> 00:24:42,030

while we had the guys fix the tile but

707

00:24:45,830 --> 00:24:43,410

we knew we were going to fix that so we

708

00:24:47,780 --> 00:24:45,840

proceeded on this was one that we were

709

00:24:48,950 --> 00:24:47,790

too close to be able to proceed we could

710

00:24:50,270 --> 00:24:48,960

buy a little more time by counting down

711

00:24:52,490 --> 00:24:50,280

to five minutes but not much time to

712

00:24:54,110 --> 00:24:52,500

talk so it wasn't ever that they had a

713

00:24:55,490 --> 00:24:54,120

problem they were no go for and then all

714

00:24:57,049 --> 00:24:55,500

of a sudden they fixed it it was that

715

00:24:58,790 --> 00:24:57,059

they had an ongoing problem they were

716

00:25:00,590 --> 00:24:58,800

trying to resolve and the meantime they

717

00:25:02,180 --> 00:25:00,600

were alerting us that they were no go

718

00:25:04,340 --> 00:25:02,190

until they could fix that problem it

719

00:25:05,600 --> 00:25:04,350

happens fairly often actually yeah it

720

00:25:08,350 --> 00:25:05,610

just doesn't usually happen within

721

00:25:10,490 --> 00:25:08,360

minute of launch and from the launch oh

722

00:25:13,160 --> 00:25:10,500

I'm glad it doesn't always happen that

723

00:25:15,590 --> 00:25:13,170

way you know from a launch team

724

00:25:17,030 --> 00:25:15,600

perspective the natural reaction when

725

00:25:18,770 --> 00:25:17,040

when everybody's ready to go and you

726

00:25:21,200 --> 00:25:18,780

hear that one system is no go there's

727

00:25:22,610 --> 00:25:21,210

there's a natural you know and that

728

00:25:25,280 --> 00:25:22,620

happened and I want to make sure that it

729

00:25:27,110 --> 00:25:25,290

got the team back into the game and we

730

00:25:28,970 --> 00:25:27,120

were we were technically no go at that

731

00:25:30,260 --> 00:25:28,980

point but we had window remaining and so

732

00:25:32,090 --> 00:25:30,270

we're going to talk about problems until

733

00:25:32,770 --> 00:25:32,100

we run out of time and so that that was

734

00:25:34,000 --> 00:25:32,780

the first time

735

00:25:36,730 --> 00:25:34,010

I said something at the team you know to

736

00:25:38,680 --> 00:25:36,740

kind of get back into the game and then

737

00:25:40,630 --> 00:25:38,690

when we picked up the clock at five

738

00:25:42,670 --> 00:25:40,640

minutes then there was a there was the

739

00:25:44,770 --> 00:25:42,680

other natural reaction they'll write you

740

00:25:46,180 --> 00:25:44,780

know we're ready to go and so I calmed

741

00:25:47,410 --> 00:25:46,190

the team back down at that time too

742

00:25:49,300 --> 00:25:47,420

because then we were five minutes and

743

00:25:50,860 --> 00:25:49,310

Counting and that's when that's when the

744

00:25:52,450 --> 00:25:50,870

systems really start getting active on

745

00:25:54,670 --> 00:25:52,460

the on the shuttle and the Boosters and

746

00:25:58,060 --> 00:25:54,680

so we needed to get back into the game

747

00:25:59,980 --> 00:25:58,070

and trust me they calm down and

748

00:26:01,210 --> 00:25:59,990

concentrate very very quickly mike mike

749

00:26:03,490 --> 00:26:01,220

has team did an amazing job that's

750

00:26:05,080 --> 00:26:03,500

exactly why we train you know the mantra

751
00:26:06,310 --> 00:26:05,090
is under stress you fall back to the

752
00:26:08,020 --> 00:26:06,320
level training you had that's exactly

753
00:26:09,400 --> 00:26:08,030
what happened today everybody fell back

754
00:26:11,320 --> 00:26:09,410
to the training which told them to just

755
00:26:12,970 --> 00:26:11,330
stick to their guns and wait for the

756
00:26:14,770 --> 00:26:12,980
problem you know in the in the firing

757
00:26:16,840 --> 00:26:14,780
room I have a phone Mike does too that's

758
00:26:19,270 --> 00:26:16,850
a direct line to the 45th Wing Commander

759
00:26:21,160 --> 00:26:19,280
and the purpose of that is their systems

760
00:26:23,020 --> 00:26:21,170
no go we can then find out is this one

761
00:26:24,100 --> 00:26:23,030
we're going to fix or not and what

762
00:26:25,090 --> 00:26:24,110
should we proceed or not and that's what

763
00:26:26,260 --> 00:26:25,100

happened today we got the

764

00:26:28,840 --> 00:26:26,270

behind-the-scenes communication that

765

00:26:30,190 --> 00:26:28,850

we're not sure don't stop this is not a

766

00:26:32,140 --> 00:26:30,200

scrub condition just yet we're not sure

767

00:26:35,400 --> 00:26:32,150

and so we decide to press on and then

768

00:26:38,290 --> 00:26:35,410

they eventually did clear their problem

769

00:26:40,930 --> 00:26:38,300

todd halverson of Florida today I may

770

00:26:44,740 --> 00:26:40,940

have missed this but just to clarify did

771

00:26:47,770 --> 00:26:44,750

the foam liberation that you saw come

772

00:26:51,490 --> 00:26:47,780

from areas of the tank that had been

773

00:26:54,100 --> 00:26:51,500

patched up repaired or modified and

774

00:26:57,510 --> 00:26:54,110

secondly could could you remind me of

775

00:26:59,890 --> 00:26:57,520

the bracketing for the aerodynamic sense

776

00:27:02,620 --> 00:26:59,900

aerodynamically sensitive period I think

777

00:27:05,530 --> 00:27:02,630

it's up to like 135 seconds but could

778

00:27:07,840 --> 00:27:05,540

you fresh me on that yeah the phone came

779

00:27:11,350 --> 00:27:07,850

off from an area that we did not work on

780

00:27:13,750 --> 00:27:11,360

a repair it was in the inner tank region

781

00:27:16,030 --> 00:27:13,760

somewhere either in the inner tank or on

782

00:27:18,100 --> 00:27:16,040

the hydrogen tank side right in that

783

00:27:19,570 --> 00:27:18,110

that interface it was between the two

784

00:27:23,380 --> 00:27:19,580

big struts that come up and attach to

785

00:27:25,840 --> 00:27:23,390

the orbiter the foam losses at 351 and I

786

00:27:29,380 --> 00:27:25,850

think Ras TT is around the time that you

787

00:27:31,840 --> 00:27:29,390

said around 130 135 seconds so it was

788

00:27:34,030 --> 00:27:31,850

well after that point and and you can

789

00:27:36,190 --> 00:27:34,040

actually see it move forward it impacts

790

00:27:37,810 --> 00:27:36,200

the strut and it doesn't come apart even

791

00:27:39,910 --> 00:27:37,820

when it hits the strut so this is pretty

792

00:27:41,560 --> 00:27:39,920

thin foam and that's evidence that when

793

00:27:44,110 --> 00:27:41,570

it hits the strut that it didn't break

794

00:27:45,500 --> 00:27:44,120

into pieces that its velocity was very

795

00:27:47,600 --> 00:27:45,510

small so then that's

796

00:27:49,340 --> 00:27:47,610

that's evidence that there was no air to

797

00:27:56,060 --> 00:27:49,350

really push it or accelerated to cause

798

00:27:58,400 --> 00:27:56,070

potential damage to it hi Evan brown fox

799

00:28:00,140 --> 00:27:58,410

news radio because of the extra little

800

00:28:02,830 --> 00:28:00,150

hold in there while the range issue is

801

00:28:05,570 --> 00:28:02,840

being worked on what type of if any

802

00:28:07,340 --> 00:28:05,580

course correction or any type of engine

803

00:28:08,750 --> 00:28:07,350

burn or something once they're in orbit

804

00:28:09,980 --> 00:28:08,760

and on their way to this to the station

805

00:28:11,990 --> 00:28:09,990

to make sure they actually get to

806

00:28:14,630 --> 00:28:12,000

station of the the right time frame does

807

00:28:18,530 --> 00:28:14,640

this change anything of how that works

808

00:28:20,300 --> 00:28:18,540

or no yes so the the rendezvous profile

809

00:28:22,820 --> 00:28:20,310

that's built has the flexibility to

810

00:28:25,310 --> 00:28:22,830

accommodate the entire launch window so

811

00:28:27,320 --> 00:28:25,320

none of the burns will move I think the

812

00:28:28,730 --> 00:28:27,330

ohms to which is the first orbit

813

00:28:31,610 --> 00:28:28,740

insertion burn we do I think that

814

00:28:33,200 --> 00:28:31,620

ignition time moved a couple seconds I

815

00:28:35,060 --> 00:28:33,210

don't know that the magnitude changed it

816

00:28:37,190 --> 00:28:35,070

all but basically the rendezvous profile

817

00:28:39,620 --> 00:28:37,200

is built to have the ability to adjust

818

00:28:41,090 --> 00:28:39,630

to make up for either changes in the

819

00:28:42,710 --> 00:28:41,100

station's orbit or in the shuttles orbit

820

00:28:44,570 --> 00:28:42,720

if there's a collision avoidance burn

821

00:28:45,620 --> 00:28:44,580

that has to be done all that stuff you

822

00:28:46,970 --> 00:28:45,630

know we give ourselves built-in

823

00:28:48,350 --> 00:28:46,980

flexibility to be able to accommodate

824

00:28:51,200 --> 00:28:48,360

within a given plan for the rendezvous

825

00:28:53,360 --> 00:28:51,210

so the the technical answer is yes it

826
00:28:56,990 --> 00:28:53,370
did affect us the operational answers no

827
00:29:00,380 --> 00:28:57,000
it didn't have any impact to us nancy

828
00:29:03,650 --> 00:29:00,390
atkinson from universe today.com could

829
00:29:05,810 --> 00:29:03,660
you describe the black slurry that was

830
00:29:07,520 --> 00:29:05,820
put on where the tile came off it was

831
00:29:09,820 --> 00:29:07,530
described as a black slurry but what

832
00:29:12,620 --> 00:29:09,830
kind of material is that yeah it's a

833
00:29:15,950 --> 00:29:12,630
person there are many different types of

834
00:29:17,930 --> 00:29:15,960
repair techniques to tiles you heard us

835
00:29:20,330 --> 00:29:17,940
talking about was a topcoat damage was

836
00:29:23,270 --> 00:29:20,340
that it was in an old repair turned out

837
00:29:25,430 --> 00:29:23,280
it was it was it was a shaved tile that

838
00:29:28,340 --> 00:29:25,440

had this black slurry put on the top of

839

00:29:31,190 --> 00:29:28,350

it it's a it's kind of a thick it's a

840

00:29:33,800 --> 00:29:31,200

it's like a black paint but very very

841

00:29:35,600 --> 00:29:33,810

viscous and they just kind of DAB it on

842

00:29:36,980 --> 00:29:35,610

smooth it out a little bit and you're

843

00:29:39,920 --> 00:29:36,990

good to go and really that's just to

844

00:29:42,470 --> 00:29:39,930

protect the underlying silica substrate

845

00:29:43,880 --> 00:29:42,480

from any kind of exposure at all it's a

846

00:29:56,270 --> 00:29:43,890

very very standard repair you see them

847

00:30:00,270 --> 00:29:58,770

Randy avere with inner space news for

848

00:30:02,790 --> 00:30:00,280

Gertz demeyer have there been any

849

00:30:07,200 --> 00:30:02,800

proposals for from the commercial space

850

00:30:09,270 --> 00:30:07,210

industry to develop plans or to operate

851
00:30:12,570 --> 00:30:09,280
the eastern missile test range for

852
00:30:16,140 --> 00:30:12,580
commercial flights out of Kennedy Space

853
00:30:22,770 --> 00:30:16,150
Center the cape canaveral air force

854
00:30:26,580 --> 00:30:22,780
station in general for the future i l'm

855
00:30:29,370 --> 00:30:26,590
not aware of any but I don't know it's

856
00:30:31,650 --> 00:30:29,380
probably the easiest answer I I would I

857
00:30:33,150 --> 00:30:31,660
wouldn't be informed of them directly if

858
00:30:35,580 --> 00:30:33,160
there were some but I don't know of any

859
00:30:36,900 --> 00:30:35,590
so I think the answer is really we'd

860
00:30:40,260 --> 00:30:36,910
have to get you a more detailed answer

861
00:30:42,120 --> 00:30:40,270
but I don't know of any and you know

862
00:30:44,130 --> 00:30:42,130
that some are already flying right the

863
00:30:46,950 --> 00:30:44,140

SpaceX already flies off a launch pad

864

00:30:48,570 --> 00:30:46,960

for tea etc right and and orbital is

865

00:30:50,550 --> 00:30:48,580

planning to go out of Wallops in the

866

00:30:52,890 --> 00:30:50,560

future but then beyond that I don't have

867

00:30:55,550 --> 00:30:52,900

any knowledge I gentleman phila Keating

868

00:30:58,770 --> 00:30:55,560

Fox News so we have the entire day of

869

00:31:00,450 --> 00:30:58,780

fantastic weather no technical issues at

870

00:31:02,670 --> 00:31:00,460

all that NASA is following all day and

871

00:31:04,410 --> 00:31:02,680

then 15 minutes before the window opens

872

00:31:07,710 --> 00:31:04,420

you've got what's described as this

873

00:31:10,980 --> 00:31:07,720

computer glitch me the implication was

874

00:31:12,600 --> 00:31:10,990

that all of the humans involved here no

875

00:31:16,620 --> 00:31:12,610

it's just a computer glitch that it's

876
00:31:19,070 --> 00:31:16,630
not reflecting a serious real concern so

877
00:31:22,020 --> 00:31:19,080
could there have been a point where even

878
00:31:24,620 --> 00:31:22,030
though the range is saying read no-go

879
00:31:28,080 --> 00:31:24,630
that they could have been overruled and

880
00:31:29,790 --> 00:31:28,090
the launch commences that's an easy one

881
00:31:31,230 --> 00:31:29,800
answer that that's no absolute and they

882
00:31:33,300 --> 00:31:31,240
are the launch decision Authority for

883
00:31:34,920 --> 00:31:33,310
Range Safety we are the launch decision

884
00:31:36,450 --> 00:31:34,930
authority for our vehicle and if they

885
00:31:38,250 --> 00:31:36,460
are no go to launch for Range Safety we

886
00:31:39,210 --> 00:31:38,260
will not launch that day and just like i

887
00:31:41,400 --> 00:31:39,220
said was trying to make clear at the

888
00:31:43,650 --> 00:31:41,410

beginning the process of hearing me on

889

00:31:45,600 --> 00:31:43,660

the loop telling like the range has

890

00:31:46,920 --> 00:31:45,610

given me a go pick up the count that

891

00:31:48,510 --> 00:31:46,930

doesn't mean proceed without them that

892

00:31:50,100 --> 00:31:48,520

is that is get our team ready to go so

893

00:31:52,020 --> 00:31:50,110

when the switch is thrown we're not

894

00:31:53,610 --> 00:31:52,030

delaying any further than we have to and

895

00:31:55,230 --> 00:31:53,620

we were still waiting for their go to

896

00:32:03,250 --> 00:31:55,240

proceed and that's exactly what we did

897

00:32:09,590 --> 00:32:06,620

sure Mark Simpson for WM Fe public radio

898

00:32:12,919 --> 00:32:09,600

just wondering since there was more foam

899

00:32:14,990 --> 00:32:12,929

than normal coming down from the shuttle

900

00:32:16,880 --> 00:32:15,000

when it reached that that point in its

901
00:32:18,830 --> 00:32:16,890
liftoff how does that impact the

902
00:32:20,720 --> 00:32:18,840
inspections that you'll do when the

903
00:32:22,970 --> 00:32:20,730
shuttle flips over and you take pictures

904
00:32:27,080 --> 00:32:22,980
will you be focusing in a more detailed

905
00:32:28,640 --> 00:32:27,090
way because of that extra foam it'll we

906
00:32:30,950 --> 00:32:28,650
know we have the standard plan that will

907
00:32:32,270 --> 00:32:30,960
go do the standard inspection will also

908
00:32:34,280 --> 00:32:32,280
get a good chance when we get the

909
00:32:35,390 --> 00:32:34,290
umbilical well cameras down will

910
00:32:36,919 --> 00:32:35,400
actually be able to get some good

911
00:32:38,900 --> 00:32:36,929
pictures of the tank the lighting was

912
00:32:40,580 --> 00:32:38,910
excellent obviously on orbit so we'll

913
00:32:42,169 --> 00:32:40,590

get a good chance to see exactly where

914

00:32:43,909 --> 00:32:42,179

we had foam loss from the tank there may

915

00:32:45,770 --> 00:32:43,919

be more than what I saw in the ass end

916

00:32:47,480 --> 00:32:45,780

video like we get surprised when we

917

00:32:49,130 --> 00:32:47,490

actually see some areas but then the

918

00:32:51,020 --> 00:32:49,140

standard inspection is pretty much our

919

00:32:52,520 --> 00:32:51,030

routine inspection there's nothing that

920

00:32:55,060 --> 00:32:52,530

would cause us to do anything different

921

00:32:57,230 --> 00:32:55,070

than we are we have a very thorough very

922

00:32:58,549 --> 00:32:57,240

methodical plan to go take a look at the

923

00:33:02,240 --> 00:32:58,559

bottom of the orbit and will discontinue

924

00:33:05,620 --> 00:33:02,250

with that same plan okay any additional

925

00:33:11,540 --> 00:33:08,870

James Dean from Florida today just

926
00:33:14,870 --> 00:33:11,550
wondered how unusual it is to actually

927
00:33:18,680 --> 00:33:14,880
launch late later in a window than

928
00:33:20,840 --> 00:33:18,690
planned and for for Mike Leinbach I

929
00:33:23,150 --> 00:33:20,850
unless I missed it I don't think you got

930
00:33:25,100 --> 00:33:23,160
to deliver your usual send off to the

931
00:33:28,190 --> 00:33:25,110
shuttle commander if you'd like to

932
00:33:32,810 --> 00:33:28,200
deliver it now be curious yeah yeah and

933
00:33:38,030 --> 00:33:32,820
it was going to be so good too I'll save

934
00:33:39,530 --> 00:33:38,040
it for the next commander the we've

935
00:33:41,840 --> 00:33:39,540
launched late before there was another

936
00:33:44,960 --> 00:33:41,850
mission I recall we lost with 11 seconds

937
00:33:46,280 --> 00:33:44,970
left in the window but you know that we

938
00:33:49,100 --> 00:33:46,290

have launched windows on purpose we

939

00:33:50,660 --> 00:33:49,110

again we train we trained for them it

940

00:33:52,010 --> 00:33:50,670

probably makes it feel even better when

941

00:33:54,799 --> 00:33:52,020

we launched late in the window because

942

00:33:56,090 --> 00:33:54,809

you're working hard and and you know

943

00:33:58,820 --> 00:33:56,100

you've accomplished something really

944

00:34:01,310 --> 00:33:58,830

great and the fact you've done it with

945

00:34:02,960 --> 00:34:01,320

just a few seconds left to go probably

946

00:34:04,460 --> 00:34:02,970

makes it a little bit more sweet and to

947

00:34:06,919 --> 00:34:04,470

fall back on what Mike said you know we

948

00:34:08,600 --> 00:34:06,929

practiced so much when you first asked

949

00:34:10,220 --> 00:34:08,610

you a question my response was I can't

950

00:34:12,500 --> 00:34:10,230

remember ever launching on time but

951
00:34:13,609 --> 00:34:12,510
that's because we sim all the time going

952
00:34:15,260 --> 00:34:13,619
late in that window because we're

953
00:34:17,030 --> 00:34:15,270
working issue so it's almost second

954
00:34:20,149 --> 00:34:17,040
nature to us to not be so worried about

955
00:34:21,680 --> 00:34:20,159
that the end of the window like that I'm

956
00:34:23,180 --> 00:34:21,690
mark Kirkman with inner space news again

957
00:34:25,580 --> 00:34:23,190
I'd like to stop talking about hold

958
00:34:27,020 --> 00:34:25,590
fires for a second and to me this is a

959
00:34:28,340 --> 00:34:27,030
big deal that discovery is never going

960
00:34:29,659 --> 00:34:28,350
to leave the pad again I was just

961
00:34:31,580 --> 00:34:29,669
wondering if the three of you could tell

962
00:34:33,530 --> 00:34:31,590
me where you were the first time

963
00:34:35,030 --> 00:34:33,540

discovery did some of you were working

964

00:34:36,530 --> 00:34:35,040

with the program some of you may be too

965

00:34:38,540 --> 00:34:36,540

young to have been with the program but

966

00:34:40,010 --> 00:34:38,550

was it on your radar at all what's your

967

00:34:43,849 --> 00:34:40,020

recollection is the first time discovery

968

00:34:46,580 --> 00:34:43,859

flew compared to today I was in console

969

00:34:49,700 --> 00:34:46,590

in Houston Texas as a propulsion officer

970

00:34:52,919 --> 00:34:49,710

on discoveries first flight I was in

971

00:34:56,470 --> 00:34:52,929

college dreaming of being like Bill

972

00:34:58,000 --> 00:34:56,480

and my wife and I were down here on a

973

00:35:00,160 --> 00:34:58,010

house hunting trip I just gotten the

974

00:35:02,950 --> 00:35:00,170

notification that NASA was going to hire

975

00:35:04,690 --> 00:35:02,960

me we came down on a trip and we got the

976

00:35:07,510 --> 00:35:04,700

first launch i ever saw was a discovery

977

00:35:21,849 --> 00:35:07,520

launch and so yeah it brings back good

978

00:35:24,940 --> 00:35:21,859

memories stephannie Culloden for at

979

00:35:27,280 --> 00:35:24,950

least news24 for my claim work this is

980

00:35:29,140 --> 00:35:27,290

going to sing sound kind of funny

981

00:35:31,120 --> 00:35:29,150

question but the speed dial in your

982

00:35:35,980 --> 00:35:31,130

phone too when you talk to the commander

983

00:35:39,970 --> 00:35:35,990

of the space wing it that's really not

984

00:35:42,339 --> 00:35:39,980

that that bad a question stuff now we

985

00:35:44,140 --> 00:35:42,349

have point-to-point phones and and they

986

00:35:47,020 --> 00:35:44,150

are there there are hard lines when you

987

00:35:48,790 --> 00:35:47,030

pick up the handset it automatically

988

00:35:51,550 --> 00:35:48,800

rings on the other person's console Mike

989

00:35:53,050 --> 00:35:51,560

and I have one as he said we both have

990

00:35:55,300 --> 00:35:53,060

one to the commander and it sits for

991

00:35:58,290 --> 00:35:55,310

that very purpose i mean it's to get in

992

00:36:01,180 --> 00:35:58,300

as quick as communication as you can and

993

00:36:02,349 --> 00:36:01,190

we use them every now and then Mike and

994

00:36:04,120 --> 00:36:02,359

I we use our it's quite a bit and

995

00:36:07,329 --> 00:36:04,130

probably in every countdown just to talk

996

00:36:18,490 --> 00:36:07,339

about different things and so ya know we

997

00:36:22,360 --> 00:36:20,960

Jim Siegel celebration independent

998

00:36:24,890 --> 00:36:22,370

newspaper again I wondered if Mike

999

00:36:26,840 --> 00:36:24,900

Leinbach could hold up that banner again

1000

00:36:30,590 --> 00:36:26,850

so some of us who work quick on the

1001
00:36:48,160 --> 00:36:30,600
trigger could get a photo of it now yes

1002
00:36:51,740 --> 00:36:50,660
or shouldn't Associated Press I'm

1003
00:36:54,410 --> 00:36:51,750
wondering if any of you have

1004
00:36:56,420 --> 00:36:54,420
communicated with tim kopra and do you

1005
00:37:00,740 --> 00:36:56,430
know where he might have been fur for

1006
00:37:03,020 --> 00:37:00,750
the lift off I've not communicated with

1007
00:37:04,880 --> 00:37:03,030
him I think he's in houston when i asked

1008
00:37:07,430 --> 00:37:04,890
and he's going to participate in the EV

1009
00:37:09,530 --> 00:37:07,440
a so you'll see him on console helping

1010
00:37:11,150 --> 00:37:09,540
out with the EVs to make sure things go

1011
00:37:12,560 --> 00:37:11,160
well but I've not talked to him directly

1012
00:37:20,690 --> 00:37:12,570
but I'm pretty sure he was in Houston

1013
00:37:21,920 --> 00:37:20,700

for the line James Dean floor today all

1014

00:37:23,510 --> 00:37:21,930

the reports we were hearing were that

1015

00:37:26,120 --> 00:37:23,520

there were just massive crowds out there

1016

00:37:27,950 --> 00:37:26,130

and I'm just wondering if you're

1017

00:37:31,880 --> 00:37:27,960

surprised that we're seeing this this

1018

00:37:35,780 --> 00:37:31,890

huge show of people and interest in a

1019

00:37:37,700 --> 00:37:35,790

motion for 4 launches now yeah not

1020

00:37:39,590 --> 00:37:37,710

surprised it's funny everybody calls and

1021

00:37:41,150 --> 00:37:39,600

asked me for advice on when to leave to

1022

00:37:43,460 --> 00:37:41,160

get here and what the best road to go is

1023

00:37:45,230 --> 00:37:43,470

we're all here for launch 16 hours

1024

00:37:46,730 --> 00:37:45,240

before launch week we have no idea

1025

00:37:49,070 --> 00:37:46,740

what's going on outside this Center and

1026
00:37:51,140 --> 00:37:49,080
we don't leave until after you guys stop

1027
00:37:52,370 --> 00:37:51,150
asking us questions so hopefully we miss

1028
00:37:54,230 --> 00:37:52,380
a fair bit of the traffic on the way

1029
00:37:56,270 --> 00:37:54,240
home so but no it's i mean that's it's

1030
00:37:57,950 --> 00:37:56,280
it's natural that the final flight ought

1031
00:37:59,690 --> 00:37:57,960
to deserve that type of attention from

1032
00:38:02,480 --> 00:37:59,700
the public and and it certainly is

1033
00:38:03,710 --> 00:38:02,490
within the NASA family we've as Mike

1034
00:38:04,970 --> 00:38:03,720
talked about it in one of the pretty

1035
00:38:07,070 --> 00:38:04,980
much conferences there's a whole team

1036
00:38:08,450 --> 00:38:07,080
set up to kind of look after the morale

1037
00:38:10,430 --> 00:38:08,460
of the workforce what we can do not only

1038
00:38:11,780 --> 00:38:10,440

to to help us make it through this time

1039

00:38:13,310 --> 00:38:11,790

at the end of the program but to

1040

00:38:16,130 --> 00:38:13,320

commemorate the work and the dedication

1041

00:38:18,260 --> 00:38:16,140

and the lifetime energy that these folks

1042

00:38:19,970 --> 00:38:18,270

have put into this program and so we

1043

00:38:21,650 --> 00:38:19,980

have extra car passes for families we

1044

00:38:23,690 --> 00:38:21,660

had arrangements that were able to bring

1045

00:38:25,340 --> 00:38:23,700

folks that normally need an escort

1046

00:38:26,990 --> 00:38:25,350

because but their spouse works the

1047

00:38:28,880 --> 00:38:27,000

council and they can't do that we had

1048

00:38:30,650 --> 00:38:28,890

ways to get them on site this time and

1049

00:38:33,050 --> 00:38:30,660

so we really took some extra steps and

1050

00:38:34,400 --> 00:38:33,060

it's deservedly so to allow folks to

1051
00:38:41,720 --> 00:38:34,410
share the experience of seeing discovery

1052
00:38:43,790 --> 00:38:41,730
go for the last time Chris gebhardt with

1053
00:38:46,970 --> 00:38:43,800
NASA Space Flight calm again hi I got

1054
00:38:49,460 --> 00:38:46,980
asked a technical question the the the

1055
00:38:50,750 --> 00:38:49,470
minor bus issue that you that you worked

1056
00:38:52,070 --> 00:38:50,760
earlier in the count can you just give

1057
00:38:56,870 --> 00:38:52,080
us a little bit of information about

1058
00:38:58,910 --> 00:38:56,880
that yeah it had to do with our actually

1059
00:39:00,620 --> 00:38:58,920
it's a range safety system we had a

1060
00:39:05,030 --> 00:39:00,630
little bit of a spike on one of the

1061
00:39:08,510 --> 00:39:05,040
ground buses and it was a 6 amps pike it

1062
00:39:10,760 --> 00:39:08,520
affected it took out our ground ird or

1063
00:39:12,440 --> 00:39:10,770

integrated receiver decoder which is a

1064

00:39:14,600 --> 00:39:12,450

piece of equipment we used to test out

1065

00:39:17,090 --> 00:39:14,610

the range safety system so so so a piece

1066

00:39:19,400 --> 00:39:17,100

of ground support equipment failed that

1067

00:39:20,720 --> 00:39:19,410

caused the spike in the bus that's not a

1068

00:39:23,330 --> 00:39:20,730

requirement for launch that's a ground

1069

00:39:26,870 --> 00:39:23,340

check out requirement so all the tests

1070

00:39:28,670 --> 00:39:26,880

that we did after that failure checked

1071

00:39:30,620 --> 00:39:28,680

out perfectly fine I mean that the range

1072

00:39:39,390 --> 00:39:30,630

safety system from our side was was

1073

00:39:43,810 --> 00:39:41,920

so one more bill Gerstenmaier you

1074

00:39:45,630 --> 00:39:43,820

discuss this a little bit before but

1075

00:39:48,280 --> 00:39:45,640

until now there's no guarantee that

1076

00:39:51,490 --> 00:39:48,290

shuttle would make it up there to join

1077

00:39:52,570 --> 00:39:51,500

all these other vehicles at once and so

1078

00:39:54,690 --> 00:39:52,580

you can keep talking about this fly

1079

00:39:57,940 --> 00:39:54,700

around and stuff so just one or two

1080

00:40:00,010 --> 00:39:57,950

again after your emails from the east of

1081

00:40:02,740 --> 00:40:00,020

folks and all that just your feelings on

1082

00:40:04,810 --> 00:40:02,750

I guess what you think you'll feel when

1083

00:40:08,080 --> 00:40:04,820

you see shuttle docking and joining all

1084

00:40:10,300 --> 00:40:08,090

those vehicles up there you know I think

1085

00:40:11,980 --> 00:40:10,310

it's a pretty unique time in the history

1086

00:40:14,200 --> 00:40:11,990

of spaceflight if you look at what we're

1087

00:40:16,270 --> 00:40:14,210

doing with Space Station right you know

1088

00:40:20,200 --> 00:40:16,280

the HTV launch first there was a

1089

00:40:23,350 --> 00:40:20,210

progress undocking and launch in there

1090

00:40:24,730 --> 00:40:23,360

then there's the ATV launch and in the

1091

00:40:26,710 --> 00:40:24,740

shuttle launch so this is a pretty

1092

00:40:29,110 --> 00:40:26,720

amazing time on board space station the

1093

00:40:31,240 --> 00:40:29,120

crew is tremendously busy getting

1094

00:40:33,220 --> 00:40:31,250

activities done and getting the station

1095

00:40:34,780 --> 00:40:33,230

really outfitted for the kind of the

1096

00:40:36,540 --> 00:40:34,790

final time with the final things and

1097

00:40:39,070 --> 00:40:36,550

adding this new module is a big deal so

1098

00:40:40,810 --> 00:40:39,080

I don't know I think we just need to

1099

00:40:44,320 --> 00:40:40,820

step back and reflect on these times

1100

00:40:46,060 --> 00:40:44,330

because this is a very very intriguing

1101
00:40:48,190 --> 00:40:46,070
time in terms of the number of vehicles

1102
00:40:49,660 --> 00:40:48,200
go into space station and the activities

1103
00:40:51,730 --> 00:40:49,670
that are occurring on station this is a

1104
00:40:53,650 --> 00:40:51,740
probably unprecedented in history of

1105
00:40:56,770 --> 00:40:53,660
human spaceflight the amount of activity

1106
00:40:58,570 --> 00:40:56,780
to one single destination all focused

1107
00:40:59,920 --> 00:40:58,580
around the same thing and all the

1108
00:41:01,390 --> 00:40:59,930
partners around the world that

1109
00:41:03,310 --> 00:41:01,400
essentially they're working together in

1110
00:41:05,410 --> 00:41:03,320
these activities so that the tie between

1111
00:41:07,510 --> 00:41:05,420
us is much stronger than I've ever seen

1112
00:41:10,570 --> 00:41:07,520
it before I get congratulations from

1113
00:41:12,220 --> 00:41:10,580

Japan and ISA in all hours of the day

1114

00:41:14,230 --> 00:41:12,230

and night because you know its many

1115

00:41:16,270 --> 00:41:14,240

hours different from there and they're

1116

00:41:18,160 --> 00:41:16,280

staying up watching launches from Japan

1117

00:41:20,410 --> 00:41:18,170

and ISA and I'm getting texts from them

1118

00:41:23,250 --> 00:41:20,420

just like it's day time so they they are

1119

00:41:25,840 --> 00:41:23,260

following our activities with the same I

1120

00:41:27,790 --> 00:41:25,850

guess the same enthusiasm that we are

1121

00:41:29,710 --> 00:41:27,800

here and what it what a neat thing to

1122

00:41:31,360 --> 00:41:29,720

see this entire international team

1123

00:41:33,700 --> 00:41:31,370

pulling together to go do this activity

1124

00:41:35,380 --> 00:41:33,710

so I think spend a little time even

1125

00:41:37,150 --> 00:41:35,390

during the mission to watch the EVs

1126

00:41:38,860 --> 00:41:37,160

watch the interactions between the

1127

00:41:41,020 --> 00:41:38,870

Canadians that are working to robotics

1128

00:41:42,100 --> 00:41:41,030

watch what's happening with a TV at the

1129

00:41:43,780 --> 00:41:42,110

same time we're going to do a little

1130

00:41:45,760 --> 00:41:43,790

reboost with it here in a couple days

1131

00:41:48,100 --> 00:41:45,770

actually prior probably prior to docking

1132

00:41:49,930 --> 00:41:48,110

of the shuttle so this is a really neat

1133

00:41:51,250 --> 00:41:49,940

time for you to step back and watch and

1134

00:41:53,650 --> 00:41:51,260

see how this international

1135

00:41:55,300 --> 00:41:53,660

ballet and dance comes together in space

1136

00:41:56,620 --> 00:41:55,310

and it's pretty special if you if you

1137

00:42:00,430 --> 00:41:56,630

spend a little time to look and see how

1138

00:42:03,100 --> 00:42:00,440

it all fits together mark fowler from

1139

00:42:05,080 --> 00:42:03,110

the Arizona Republic following up the

1140

00:42:06,880 --> 00:42:05,090

question a minute ago about these the

1141

00:42:09,400 --> 00:42:06,890

crowds and the enthusiasm in the surge

1142

00:42:10,840 --> 00:42:09,410

of interest and I may be jumping a gun

1143

00:42:12,580 --> 00:42:10,850

just a little bit but if you given any

1144

00:42:16,240 --> 00:42:12,590

thought and now it's a little premature

1145

00:42:20,110 --> 00:42:16,250

to what is likely to be an awful lot of

1146

00:42:22,180 --> 00:42:20,120

attention on 134 with Mark Kelly and his

1147

00:42:27,850 --> 00:42:22,190

wife and what the ramifications that

1148

00:42:30,160 --> 00:42:27,860

might be well you know from a from a

1149

00:42:32,250 --> 00:42:30,170

planning standpoint we'll go through the

1150

00:42:34,000 --> 00:42:32,260

normal process to see what type of

1151
00:42:35,380 --> 00:42:34,010
attendees were going to have in launch

1152
00:42:36,880 --> 00:42:35,390
guess but no we haven't done anything

1153
00:42:38,980 --> 00:42:36,890
extra special we'd go through the normal

1154
00:42:41,380 --> 00:42:38,990
rigor from from a safety and security

1155
00:42:44,110 --> 00:42:41,390
evaluation the number of people we allow

1156
00:42:46,570 --> 00:42:44,120
on site is limited by our range safety

1157
00:42:49,090 --> 00:42:46,580
rules that that allow for public safety

1158
00:42:50,890 --> 00:42:49,100
then the crowds outside that fencer are

1159
00:42:52,570 --> 00:42:50,900
just kind of what's to be expected but

1160
00:42:54,550 --> 00:42:52,580
no I don't think we put a lot of serious

1161
00:42:55,720 --> 00:42:54,560
thought into that one we're still a

1162
00:43:00,070 --> 00:42:55,730
little bit away from that in a planning

1163
00:43:02,860 --> 00:43:00,080

process standpoint Randy avera in a

1164

00:43:06,340 --> 00:43:02,870

space news all the investments that have

1165

00:43:09,100 --> 00:43:06,350

been put forth by taxpayers and other

1166

00:43:11,950 --> 00:43:09,110

investors to build the International

1167

00:43:13,620 --> 00:43:11,960

Space Station once we get it completed

1168

00:43:18,040 --> 00:43:13,630

in you know and its most mature

1169

00:43:21,070 --> 00:43:18,050

configuration what what is the mechanism

1170

00:43:23,350 --> 00:43:21,080

by which the taxpayer will understand

1171

00:43:25,510 --> 00:43:23,360

what they got for their investment is I

1172

00:43:28,990 --> 00:43:25,520

mean we we've had spin-offs and

1173

00:43:30,790 --> 00:43:29,000

outreaches by NASA for decades but we

1174

00:43:33,490 --> 00:43:30,800

still have a societal problem where

1175

00:43:35,650 --> 00:43:33,500

people don't seem to understand the

1176

00:43:38,050 --> 00:43:35,660

tremendous return on their investment in

1177

00:43:41,560 --> 00:43:38,060

space hardware and space operations is

1178

00:43:43,060 --> 00:43:41,570

there some new vision for relating the

1179

00:43:46,120 --> 00:43:43,070

science that's coming off of this

1180

00:43:48,340 --> 00:43:46,130

international space station we're trying

1181

00:43:49,990 --> 00:43:48,350

to work with the science community to

1182

00:43:52,210 --> 00:43:50,000

try to get that information out to you

1183

00:43:53,740 --> 00:43:52,220

in a better format and you'll see some

1184

00:43:55,990 --> 00:43:53,750

information we're going to be providing

1185

00:43:57,730 --> 00:43:56,000

to you that I think you can use and

1186

00:44:00,490 --> 00:43:57,740

understand the problem is some of our

1187

00:44:02,050 --> 00:44:00,500

researchers don't want to really share

1188

00:44:04,480 --> 00:44:02,060

that information until they've really

1189

00:44:04,780 --> 00:44:04,490

confirmed that the findings are they're

1190

00:44:07,000 --> 00:44:04,790

fine

1191

00:44:09,220 --> 00:44:07,010

ending are really a hundred percent peer

1192

00:44:10,720 --> 00:44:09,230

reviewed and analyzed and all those

1193

00:44:12,580 --> 00:44:10,730

things but we're trying to put together

1194

00:44:13,780 --> 00:44:12,590

a series of products where you can look

1195

00:44:15,310 --> 00:44:13,790

at just some of the numbers of the

1196

00:44:17,440 --> 00:44:15,320

amount of investigations that are going

1197

00:44:18,730 --> 00:44:17,450

on in space station they've dramatically

1198

00:44:20,770 --> 00:44:18,740

increased the number of hours that we're

1199

00:44:22,750 --> 00:44:20,780

doing research onboard station we're

1200

00:44:24,640 --> 00:44:22,760

looking at unique things like combustion

1201
00:44:26,170 --> 00:44:24,650
and zero gravity which is some pretty

1202
00:44:27,880 --> 00:44:26,180
unique experiments that are occurring

1203
00:44:30,520 --> 00:44:27,890
that are going up we've been working

1204
00:44:32,680 --> 00:44:30,530
with vaccines vaccine potential

1205
00:44:34,180 --> 00:44:32,690
development for Salmonella etc there's

1206
00:44:36,310 --> 00:44:34,190
even some on this shuttle flight that

1207
00:44:37,390 --> 00:44:36,320
went up for that doing lots of robotic

1208
00:44:39,310 --> 00:44:37,400
activities so we're going to put

1209
00:44:40,660 --> 00:44:39,320
together some publications and some

1210
00:44:43,600 --> 00:44:40,670
things which we think will be helpful

1211
00:44:45,190 --> 00:44:43,610
for you to use that you can help us get

1212
00:44:47,230 --> 00:44:45,200
the message out of what's going on with

1213
00:44:48,730 --> 00:44:47,240

station but i think our public affairs

1214

00:44:50,080 --> 00:44:48,740

folks would be glad to hear from you if

1215

00:44:51,820 --> 00:44:50,090

there's a better way we can communicate

1216

00:44:53,590 --> 00:44:51,830

with you you could get with our public

1217

00:44:55,390 --> 00:44:53,600

affairs folks maybe we can generate some

1218

00:44:56,950 --> 00:44:55,400

products that are easier for you to use

1219

00:45:00,220 --> 00:44:56,960

and distribute distribute out to the

1220

00:45:01,960 --> 00:45:00,230

population in general and it would be

1221

00:45:06,010 --> 00:45:01,970

it's an international product that we're

1222

00:45:07,780 --> 00:45:06,020

trying to put together yes my name is

1223

00:45:10,740 --> 00:45:07,790

Chuck Lauer it's a while satellite

1224

00:45:14,190 --> 00:45:10,750

television from Japan in the military

1225

00:45:16,060 --> 00:45:14,200

when a unit stands down there is a

1226

00:45:19,240 --> 00:45:16,070

retirement of the colour ceremony

1227

00:45:22,180 --> 00:45:19,250

typically do you have anything special

1228

00:45:28,330 --> 00:45:22,190

planned for discovery when she comes

1229

00:45:31,270 --> 00:45:28,340

back and goes to wheel stop yeah I mean

1230

00:45:33,820 --> 00:45:31,280

you know we have some ideas there's

1231

00:45:37,450 --> 00:45:33,830

nothing concrete again we've talked

1232

00:45:38,890 --> 00:45:37,460

about this before that really the job

1233

00:45:40,720 --> 00:45:38,900

has been focused on getting it in orbit

1234

00:45:42,400 --> 00:45:40,730

getting the mission done successful once

1235

00:45:44,830 --> 00:45:42,410

we hit will stop then we'll start

1236

00:45:46,480 --> 00:45:44,840

talking about a commemoration but for us

1237

00:45:48,670 --> 00:45:46,490

the program still continues even though

1238

00:45:50,860 --> 00:45:48,680

from a team perspective we do want to

1239

00:45:52,840 --> 00:45:50,870

recognize the commitment of the team and

1240

00:45:54,490 --> 00:45:52,850

the effort spent you know here at

1241

00:45:56,080 --> 00:45:54,500

Kennedy especially by people have

1242

00:45:57,970 --> 00:45:56,090

dedicated their particular career to

1243

00:45:59,170 --> 00:45:57,980

that vehicle but but as a program in

1244

00:46:00,580 --> 00:45:59,180

general you know the shuttle program

1245

00:46:01,570 --> 00:46:00,590

still has a couple more months in two

1246

00:46:03,850 --> 00:46:01,580

more flights that we need to make sure

1247

00:46:05,830 --> 00:46:03,860

we stay focused on in state state target

1248

00:46:06,940 --> 00:46:05,840

on so we've talked about some interim

1249

00:46:08,530 --> 00:46:06,950

type things that will do but we're

1250

00:46:09,910 --> 00:46:08,540

probably saving this the celebration

1251
00:46:11,950 --> 00:46:09,920
type stuff until wheel stop at the last

1252
00:46:14,470 --> 00:46:11,960
mission I would just tell you too that

1253
00:46:16,840 --> 00:46:14,480
that after will stop of any mission you

1254
00:46:18,309 --> 00:46:16,850
know the orbiter is still hot they're

1255
00:46:20,529 --> 00:46:18,319
still hazards on board

1256
00:46:22,809 --> 00:46:20,539
fuels and commodities and pyrotechnics

1257
00:46:25,089 --> 00:46:22,819
that type of things so any type of any

1258
00:46:26,829 --> 00:46:25,099
type of widespread celebration here at

1259
00:46:28,809 --> 00:46:26,839
the Kennedy Space Center would follow

1260
00:46:30,670 --> 00:46:28,819
all that safing and that takes a good

1261
00:46:32,259 --> 00:46:30,680
three four weeks something like that

1262
00:46:34,390 --> 00:46:32,269
typically to get all that done and so

1263
00:46:35,949 --> 00:46:34,400

you know we were wait for all that to be

1264

00:46:38,319 --> 00:46:35,959

done before we'd open it up to two

1265

00:46:39,939 --> 00:46:38,329

masses to go do something with the

1266

00:46:42,130 --> 00:46:39,949

orbiter if that's indeed in the plan on

1267

00:46:44,199 --> 00:46:42,140

my question we've done some things for

1268

00:46:46,420 --> 00:46:44,209

employees and families you know as we do

1269

00:46:47,709 --> 00:46:46,430

the rollover to the vab we stopped for

1270

00:46:49,239 --> 00:46:47,719

some pictures for some of the employees

1271

00:46:51,249 --> 00:46:49,249

that have dedicated their lives working

1272

00:46:53,199 --> 00:46:51,259

on these vehicles when we roll out to

1273

00:46:54,969 --> 00:46:53,209

the pad now we let the employees come

1274

00:46:57,099 --> 00:46:54,979

down for the roll out to the pad which

1275

00:46:58,180 --> 00:46:57,109

is also a chance for them to reflect a

1276

00:47:00,069 --> 00:46:58,190

little bit on what they've dedicated

1277

00:47:01,959 --> 00:47:00,079

their careers to and dedicate a large

1278

00:47:03,670 --> 00:47:01,969

portion of their life as far as the end

1279

00:47:05,469 --> 00:47:03,680

of mission things will think of all that

1280

00:47:08,469 --> 00:47:05,479

later a little bit we're still pretty

1281

00:47:10,479 --> 00:47:08,479

focused on making sure we utilize this

1282

00:47:11,859 --> 00:47:10,489

asset in the best way we can and stay

1283

00:47:13,509 --> 00:47:11,869

focused on the mission we've got in

1284

00:47:14,589 --> 00:47:13,519

front of us and then we'll talk more

1285

00:47:18,579 --> 00:47:14,599

about what we think the appropriate

1286

00:47:21,400 --> 00:47:18,589

thing is to do at the end the additional

1287

00:47:30,609 --> 00:47:21,410

questions here I will take one more and

1288

00:47:32,620 --> 00:47:30,619

then we'll wrap James Dean James Dean

1289

00:47:34,059 --> 00:47:32,630

from Florida today for Mike Leinbach I

1290

00:47:37,479 --> 00:47:34,069

gathered from the commentary that there

1291

00:47:38,829 --> 00:47:37,489

was among the closeout crew and maybe 15

1292

00:47:41,370 --> 00:47:38,839

various positions that we get to see on

1293

00:47:43,930 --> 00:47:41,380

TV there were some folks who were

1294

00:47:46,930 --> 00:47:43,940

working their last mission and I was

1295

00:47:48,759 --> 00:47:46,940

wondering if if that was true of any

1296

00:47:50,289 --> 00:47:48,769

folks on your consoles in the firing

1297

00:47:52,989 --> 00:47:50,299

room if there's anything special done

1298

00:47:54,160 --> 00:47:52,999

for them or just about you know just how

1299

00:47:56,949 --> 00:47:54,170

many folks were kind of working their

1300

00:47:57,849 --> 00:47:56,959

last mission do you think or is this the

1301

00:48:00,009 --> 00:47:57,859

team that's going to take you all the

1302

00:48:02,319 --> 00:48:00,019

way to the end well there were a couple

1303

00:48:05,140 --> 00:48:02,329

people in the firing room whose whose

1304

00:48:07,509 --> 00:48:05,150

whose day was their last day on the last

1305

00:48:09,489 --> 00:48:07,519

mission today those are voluntary folks

1306

00:48:11,589 --> 00:48:09,499

George Thomas I mentioned one he's the

1307

00:48:13,150 --> 00:48:11,599

ground launch sequencer operator he took

1308

00:48:15,309 --> 00:48:13,160

a voluntary layoff today was his last

1309

00:48:17,799 --> 00:48:15,319

launch our safety council operator

1310

00:48:19,299 --> 00:48:17,809

Dwayne Thompson this was his last launch

1311

00:48:21,039 --> 00:48:19,309

he took a voluntary layoff so yeah there

1312

00:48:24,609 --> 00:48:21,049

were a couple people there who chose to

1313

00:48:25,989 --> 00:48:24,619

leave after after this launch but as I

1314

00:48:28,449 --> 00:48:25,999

described before you know we have a very

1315

00:48:30,130 --> 00:48:28,459

rigorous process in place where we look

1316

00:48:30,950 --> 00:48:30,140

at all critical skills across the Space

1317

00:48:33,290 --> 00:48:30,960

Center

1318

00:48:35,240 --> 00:48:33,300

and determine whether we're go or no-go

1319

00:48:37,580 --> 00:48:35,250

based on the on the headcount and the

1320

00:48:39,740 --> 00:48:37,590

experience level of those people and so

1321

00:48:41,240 --> 00:48:39,750

right now we're perfectly fine for the

1322

00:48:44,240 --> 00:48:41,250

next two missions and I don't expect

1323

00:48:47,120 --> 00:48:44,250

that to change will be good will be good

1324

00:48:49,310 --> 00:48:47,130

till the end okay that concludes today's

1325

00:48:51,680 --> 00:48:49,320

news conference for more information on

1326

00:48:55,730 --> 00:48:51,690

spatial discoveries sts-133 mission