



1
00:00:11,190 --> 00:00:09,350
good morning thank you for joining us

2
00:00:14,030 --> 00:00:11,200
here at nasa's kennedy space center in

3
00:00:16,630 --> 00:00:14,040
florida for space shuttle endeavors

4
00:00:19,429 --> 00:00:16,640
sts-134 pre-launch news conference

5
00:00:21,269 --> 00:00:19,439
joining us today is mike mores the chair

6
00:00:23,109 --> 00:00:21,279
of the mission management team and the

7
00:00:24,870 --> 00:00:23,119
space shuttle program launch integration

8
00:00:26,870 --> 00:00:24,880
manager good morning

9
00:00:28,630 --> 00:00:26,880
mike einbach shuttle launch director

10
00:00:30,150 --> 00:00:28,640
good morning

11
00:00:31,750 --> 00:00:30,160
and kathy winters shuttle weather

12
00:00:33,190 --> 00:00:31,760
officer good morning

13
00:00:36,310 --> 00:00:33,200

we'll hear from our panelists and we'll

14

00:00:37,910 --> 00:00:36,320

take questions mr moose thanks kendra

15

00:00:39,750 --> 00:00:37,920

well good morning everybody

16

00:00:41,190 --> 00:00:39,760

we had our mission management team

17

00:00:42,790 --> 00:00:41,200

meeting this morning

18

00:00:44,869 --> 00:00:42,800

standard standard meeting on launch

19

00:00:46,470 --> 00:00:44,879

minus two days just to review our status

20

00:00:48,549 --> 00:00:46,480

and see where we're at everything in

21

00:00:50,150 --> 00:00:48,559

great shape very short meeting

22

00:00:51,430 --> 00:00:50,160

teams all pulled ready to go and proceed

23

00:00:52,709 --> 00:00:51,440

with the countdown

24

00:00:53,830 --> 00:00:52,719

and we're actually in countdown mike

25

00:00:55,189 --> 00:00:53,840

will give you a status of that here in

26

00:00:57,510 --> 00:00:55,199

just a second

27

00:00:59,110 --> 00:00:57,520

we talked about the the weather

28

00:01:00,470 --> 00:00:59,120

talked a little bit about the the

29

00:01:01,910 --> 00:01:00,480

systems to make sure all the elements

30

00:01:04,869 --> 00:01:01,920

are ready to support

31

00:01:06,710 --> 00:01:04,879

over on the space station side uh the 42

32

00:01:07,910 --> 00:01:06,720

progress launch occurred this morning

33

00:01:09,350 --> 00:01:07,920

right about the same time we were having

34

00:01:11,190 --> 00:01:09,360

our meeting they're now successfully in

35

00:01:12,469 --> 00:01:11,200

orbit arrays are deployed and the

36

00:01:14,390 --> 00:01:12,479

checkouts are looking good so they had a

37

00:01:17,670 --> 00:01:14,400

good post insertion so that mission's

38

00:01:19,030 --> 00:01:17,680

underway um that is a

39

00:01:20,390 --> 00:01:19,040

kind of a soft constraint for us we want

40

00:01:22,149 --> 00:01:20,400

to make sure they got launched and get

41

00:01:23,830 --> 00:01:22,159

docked okay in two days

42

00:01:26,630 --> 00:01:23,840

they'll be docking about the same time

43

00:01:28,550 --> 00:01:26,640

we finish up tanking on friday

44

00:01:29,670 --> 00:01:28,560

and so if they run into some unexpected

45

00:01:30,950 --> 00:01:29,680

problem we'll have to talk about that on

46

00:01:32,630 --> 00:01:30,960

launch day but so that was a good

47

00:01:34,789 --> 00:01:32,640

milestone for the station program and

48

00:01:36,550 --> 00:01:34,799

for our russian colleagues to have that

49

00:01:38,710 --> 00:01:36,560

mission successfully in orbit

50

00:01:41,910 --> 00:01:38,720

um and other than that we didn't talk

51
00:01:43,590 --> 00:01:41,920
much at all a little bit about the the

52
00:01:45,350 --> 00:01:43,600
potential visit from the president to

53
00:01:47,510 --> 00:01:45,360
make sure we understand the logistics

54
00:01:48,550 --> 00:01:47,520
and any impacts to our teams we have

55
00:01:49,910 --> 00:01:48,560
folks

56
00:01:51,830 --> 00:01:49,920
both on the air force side and on our

57
00:01:53,510 --> 00:01:51,840
side working that pretty well

58
00:01:54,710 --> 00:01:53,520
and understand those impacts and it

59
00:01:57,590 --> 00:01:54,720
should be fairly

60
00:02:00,469 --> 00:01:57,600
fairly benign to us uh other than uh the

61
00:02:02,149 --> 00:02:00,479
amount of entourage that comes with a uh

62
00:02:03,670 --> 00:02:02,159
the president and aircraft arriving late

63
00:02:06,469 --> 00:02:03,680

to the to the launch center but i think

64

00:02:07,990 --> 00:02:06,479

we have good plans to handle that um

65

00:02:09,430 --> 00:02:08,000

we talked just a little bit uh with our

66

00:02:10,869 --> 00:02:09,440

propulsion elements you know to kind of

67

00:02:13,910 --> 00:02:10,879

go through some history uh for the

68

00:02:15,510 --> 00:02:13,920

external tank this is et122 which was

69

00:02:17,030 --> 00:02:15,520

actually we're kind of flying it out of

70

00:02:20,630 --> 00:02:17,040

order it was manufactured a long time

71

00:02:23,430 --> 00:02:20,640

ago back before the columbia accident um

72

00:02:25,830 --> 00:02:23,440

went through uh hurricane katrina got

73

00:02:27,270 --> 00:02:25,840

some damage had to be fixed um got the

74

00:02:30,229 --> 00:02:27,280

modifications that we put on all the

75

00:02:31,350 --> 00:02:30,239

tanks for return to flight um and and

76
00:02:33,110 --> 00:02:31,360
has come through and flying colors but

77
00:02:35,190 --> 00:02:33,120
if you take a look at it out the pad it

78
00:02:37,350 --> 00:02:35,200
looks a little more suntan than than

79
00:02:39,270 --> 00:02:37,360
other tanks because it the uv uh makes

80
00:02:40,949 --> 00:02:39,280
that orange foam insulation turn a

81
00:02:42,470 --> 00:02:40,959
little darker so it's a it's a darker

82
00:02:44,309 --> 00:02:42,480
tank and it's got some repair spots on

83
00:02:45,990 --> 00:02:44,319
it but it is in more than good shape to

84
00:02:47,509 --> 00:02:46,000
fly and we're more than ready to fly

85
00:02:49,430 --> 00:02:47,519
et-122

86
00:02:51,110 --> 00:02:49,440
in our solid rocket boosters

87
00:02:52,630 --> 00:02:51,120
a good testament to the reusability of

88
00:02:55,190 --> 00:02:52,640

the program we're flying elements on

89

00:02:57,350 --> 00:02:55,200

this stack as well as on the next stack

90

00:02:59,589 --> 00:02:57,360

that flew on sts-1 so some of these

91

00:03:01,270 --> 00:02:59,599

components are from original build

92

00:03:02,790 --> 00:03:01,280

hardware that we use the solid rocket

93

00:03:04,149 --> 00:03:02,800

booster so that's really a good

94

00:03:05,750 --> 00:03:04,159

testament to that team and the work they

95

00:03:07,830 --> 00:03:05,760

do to turn those those pieces of

96

00:03:09,270 --> 00:03:07,840

hardware around and refly them

97

00:03:11,509 --> 00:03:09,280

the main engines

98

00:03:12,630 --> 00:03:11,519

are as usual in fantastic shape and

99

00:03:13,750 --> 00:03:12,640

ready to go those things have been

100

00:03:15,910 --> 00:03:13,760

performing

101
00:03:17,589 --> 00:03:15,920
as the workhorses they truly are

102
00:03:19,350 --> 00:03:17,599
and fully expect everything to be on

103
00:03:22,149 --> 00:03:19,360
friday ready to go again and the orbiter

104
00:03:24,070 --> 00:03:22,159
itself endeavors in great shape um

105
00:03:25,270 --> 00:03:24,080
i i would say we're probably not working

106
00:03:26,470 --> 00:03:25,280
any issues at all there's a couple

107
00:03:28,070 --> 00:03:26,480
things that are keeping the team working

108
00:03:29,750 --> 00:03:28,080
but they're they're in the minor

109
00:03:31,430 --> 00:03:29,760
minor category nothing really that needs

110
00:03:32,710 --> 00:03:31,440
to be elevated to the management level

111
00:03:34,390 --> 00:03:32,720
so with that

112
00:03:35,990 --> 00:03:34,400
we had an easy pull to say we're ready

113
00:03:37,190 --> 00:03:36,000

to go we're looking forward to friday's

114

00:03:39,430 --> 00:03:37,200

launch

115

00:03:40,789 --> 00:03:39,440

okay well thanks well the countdown for

116

00:03:42,550 --> 00:03:40,799

endeavour's final mission is going

117

00:03:43,750 --> 00:03:42,560

extremely well the launch pad right now

118

00:03:45,509 --> 00:03:43,760

is cleared

119

00:03:47,509 --> 00:03:45,519

in preparation for loading the cryogenic

120

00:03:49,830 --> 00:03:47,519

fuels for the fuel cell system that'll

121

00:03:51,670 --> 00:03:49,840

begin at about 11 30 today and we'll get

122

00:03:53,910 --> 00:03:51,680

back into the pad shortly after dinner

123

00:03:55,429 --> 00:03:53,920

time tonight and continue preparations

124

00:03:56,949 --> 00:03:55,439

for friday's launch

125

00:03:59,270 --> 00:03:56,959

again we're not working any significant

126

00:04:00,470 --> 00:03:59,280

issues at all the team is upbeat talk to

127

00:04:02,309 --> 00:04:00,480

the fire room this morning and they're

128

00:04:04,149 --> 00:04:02,319

all excited about about the mission

129

00:04:06,309 --> 00:04:04,159

about the countdown the mission

130

00:04:07,910 --> 00:04:06,319

and uh the president showing up and and

131

00:04:10,149 --> 00:04:07,920

so we're we're dealing with that that's

132

00:04:12,070 --> 00:04:10,159

a little bit of a challenge for us but

133

00:04:13,509 --> 00:04:12,080

the team is not distracted by that we

134

00:04:15,750 --> 00:04:13,519

have a we have a few people working

135

00:04:16,949 --> 00:04:15,760

those details as mike said so no big

136

00:04:18,469 --> 00:04:16,959

deal from the from the team's

137

00:04:20,469 --> 00:04:18,479

perspective relative to the president's

138

00:04:21,909 --> 00:04:20,479

visit um we're in great shape we're

139

00:04:23,909 --> 00:04:21,919

ready to go and right now we're looking

140

00:04:27,270 --> 00:04:23,919

forward to an on time launch uh when

141

00:04:30,469 --> 00:04:29,110

okay and the weather is looking good for

142

00:04:31,909 --> 00:04:30,479

launch we're expecting some weather

143

00:04:33,350 --> 00:04:31,919

before launch today we expect some

144

00:04:34,870 --> 00:04:33,360

afternoon thunderstorms and also

145

00:04:36,550 --> 00:04:34,880

tomorrow a front is going to be moving

146

00:04:38,390 --> 00:04:36,560

into the area and that's going to give

147

00:04:40,469 --> 00:04:38,400

us some weather tomorrow late afternoon

148

00:04:41,749 --> 00:04:40,479

and into the evening hours by launch day

149

00:04:43,430 --> 00:04:41,759

the front's going to move through and

150

00:04:44,469 --> 00:04:43,440

the weather is looking very favorable

151
00:04:45,670 --> 00:04:44,479
for launch

152
00:04:47,510 --> 00:04:45,680
i'm going to go ahead and i'd like to

153
00:04:49,430 --> 00:04:47,520
show a satellite picture if i can you

154
00:04:51,110 --> 00:04:49,440
can see that there's a front that is

155
00:04:53,510 --> 00:04:51,120
moving into the southeastern u.s that's

156
00:04:54,950 --> 00:04:53,520
going to be moving into florida

157
00:04:56,469 --> 00:04:54,960
tomorrow and that's what's going to give

158
00:04:59,110 --> 00:04:56,479
us some concern for weather as we get

159
00:05:01,110 --> 00:04:59,120
into rss retract operations tomorrow

160
00:05:02,790 --> 00:05:01,120
evening but that weather will continue

161
00:05:03,749 --> 00:05:02,800
to move on it's not going to linger in

162
00:05:05,270 --> 00:05:03,759
the area we're just going to get some

163
00:05:07,590 --> 00:05:05,280

thunderstorms late in the afternoon and

164

00:05:09,350 --> 00:05:07,600

into the evening hours and some of the

165

00:05:10,469 --> 00:05:09,360

storms could be strong but as after they

166

00:05:11,909 --> 00:05:10,479

move through

167

00:05:13,430 --> 00:05:11,919

we'll just have cloudy conditions by

168

00:05:14,790 --> 00:05:13,440

launch morning and by the afternoon the

169

00:05:16,230 --> 00:05:14,800

weather is going to be

170

00:05:17,830 --> 00:05:16,240

looking pretty nice

171

00:05:19,430 --> 00:05:17,840

so for now right now we're looking at

172

00:05:21,350 --> 00:05:19,440

the only concern being a crosswind as

173

00:05:23,430 --> 00:05:21,360

winds shift around to the northeast and

174

00:05:25,749 --> 00:05:23,440

with that we have a 20 chance of ksc

175

00:05:27,830 --> 00:05:25,759

weather prohibiting launch the tile site

176

00:05:30,950 --> 00:05:27,840

weather is looking good at estrus there

177

00:05:33,430 --> 00:05:30,960

is a chance for showers at both zaragoza

178

00:05:35,350 --> 00:05:33,440

and maroon but estrus is looking good if

179

00:05:36,790 --> 00:05:35,360

we happen to delay 24 hours we actually

180

00:05:38,390 --> 00:05:36,800

have more of a crosswind concern a high

181

00:05:40,150 --> 00:05:38,400

pressure area starts to build into our

182

00:05:42,150 --> 00:05:40,160

north and the winds shift around more

183

00:05:43,749 --> 00:05:42,160

easterly so with that we have a 30

184

00:05:45,270 --> 00:05:43,759

percent chance of ksc weather

185

00:05:48,390 --> 00:05:45,280

prohibiting launch if we happen to delay

186

00:05:49,749 --> 00:05:48,400

24 hours again istras on day 2 is still

187

00:05:51,189 --> 00:05:49,759

looking good although there is a front

188

00:05:52,870 --> 00:05:51,199

that's moving through

189

00:05:55,430 --> 00:05:52,880

both zaragoza and marone that's going to

190

00:05:57,110 --> 00:05:55,440

cause some showers in those areas again

191

00:05:59,270 --> 00:05:57,120

and then finally if we happen to delay

192

00:06:00,629 --> 00:05:59,280

to sunday the weather here actually

193

00:06:01,830 --> 00:06:00,639

improves a bit more when it comes to the

194

00:06:03,670 --> 00:06:01,840

winds they shift around more to the

195

00:06:05,430 --> 00:06:03,680

southeast and that's more up the runway

196

00:06:07,830 --> 00:06:05,440

and so with that back down to a 20

197

00:06:08,950 --> 00:06:07,840

chance of ksc weather prohibiting launch

198

00:06:10,309 --> 00:06:08,960

and the tile sites look a little bit

199

00:06:11,830 --> 00:06:10,319

better on day three although there's

200

00:06:14,150 --> 00:06:11,840

still a chance for showers in the area

201
00:06:15,749 --> 00:06:14,160
of zaragoza and maroon but again estrus

202
00:06:16,870 --> 00:06:15,759
is still a good towel site with a go

203
00:06:18,469 --> 00:06:16,880
forecast

204
00:06:20,309 --> 00:06:18,479
so overall there's a 20 percent chance

205
00:06:21,670 --> 00:06:20,319
of k2 weather proving launch on launch

206
00:06:24,150 --> 00:06:21,680
day and the only concern really is a

207
00:06:26,309 --> 00:06:24,160
crosswind

208
00:06:27,909 --> 00:06:26,319
thank you we'll now take questions when

209
00:06:29,830 --> 00:06:27,919
a microphone comes your way please state

210
00:06:31,270 --> 00:06:29,840
your name affiliation and to whom you're

211
00:06:32,950 --> 00:06:31,280
addressing your question we start over

212
00:06:34,790 --> 00:06:32,960
here with mark

213
00:06:36,390 --> 00:06:34,800

hi i'm mark kirkman interspace news a

214

00:06:38,550 --> 00:06:36,400

couple questions you might have said it

215

00:06:41,029 --> 00:06:38,560

uh kathy but tomorrow evening for rss

216

00:06:42,950 --> 00:06:41,039

rollback is whether going to be a player

217

00:06:44,150 --> 00:06:42,960

yes we are expecting thunderstorms in

218

00:06:45,830 --> 00:06:44,160

the area there's a front that's going to

219

00:06:48,230 --> 00:06:45,840

be moving through

220

00:06:50,469 --> 00:06:48,240

florida tomorrow and as it approaches

221

00:06:51,909 --> 00:06:50,479

our area we're expecting to not only

222

00:06:54,070 --> 00:06:51,919

have the front end area but we have this

223

00:06:55,670 --> 00:06:54,080

warm moist atmosphere ahead of the front

224

00:06:57,589 --> 00:06:55,680

and then we also expect to get a late

225

00:06:59,830 --> 00:06:57,599

afternoon sea breeze with some added

226

00:07:02,390 --> 00:06:59,840

convergence in the area we do expect to

227

00:07:04,469 --> 00:07:02,400

see thunderstorm activity um so we do

228

00:07:06,150 --> 00:07:04,479

have to have a 20 chance or less of

229

00:07:08,230 --> 00:07:06,160

lightning within five nautical miles to

230

00:07:09,510 --> 00:07:08,240

rotate the rss back so

231

00:07:11,589 --> 00:07:09,520

what we'll do is we'll just watch it

232

00:07:13,350 --> 00:07:11,599

real time and when we can get clear of

233

00:07:16,230 --> 00:07:13,360

the weather then we'll uh you know we'll

234

00:07:17,909 --> 00:07:16,240

give the forecast when we can all right

235

00:07:19,350 --> 00:07:17,919

and then i guess uh for either mike's

236

00:07:22,390 --> 00:07:19,360

i'm not sure who can take which question

237

00:07:24,790 --> 00:07:22,400

um if whether is a player for pr or for

238

00:07:26,390 --> 00:07:24,800

rss rollback uh is a constraint to

239

00:07:27,909 --> 00:07:26,400

coming out what's your main how long can

240

00:07:30,309 --> 00:07:27,919

you delay it before you have some

241

00:07:31,430 --> 00:07:30,319

constraint against that and then i hope

242

00:07:34,070 --> 00:07:31,440

you don't think this is a goofy question

243

00:07:36,070 --> 00:07:34,080

but for air force one um so as not to

244

00:07:37,990 --> 00:07:36,080

foul up the rtls runway does he have to

245

00:07:40,309 --> 00:07:38,000

go down to the skid strip or will it be

246

00:07:42,309 --> 00:07:40,319

landing at the slf

247

00:07:43,749 --> 00:07:42,319

let's see relative to the the rss

248

00:07:45,749 --> 00:07:43,759

retract we have a good four or five

249

00:07:47,189 --> 00:07:45,759

hours to play with tomorrow evening

250

00:07:49,670 --> 00:07:47,199

before we start getting into a time

251

00:07:51,350 --> 00:07:49,680

crunch after rss retract so really no

252

00:07:53,830 --> 00:07:51,360

big issue there i think kathy's weather

253

00:07:55,589 --> 00:07:53,840

will clear more quickly than that so the

254

00:07:58,150 --> 00:07:55,599

team will work with that

255

00:07:59,990 --> 00:07:58,160

and we've been we've delayed rss four

256

00:08:01,990 --> 00:08:00,000

hours and a half i believe in the past

257

00:08:03,350 --> 00:08:02,000

and and made tanking on time so that

258

00:08:04,869 --> 00:08:03,360

that really shouldn't be a problem for

259

00:08:06,790 --> 00:08:04,879

us

260

00:08:07,749 --> 00:08:06,800

and relative to the to the president you

261

00:08:09,270 --> 00:08:07,759

know there's a lot of point a lot of

262

00:08:13,670 --> 00:08:09,280

things you learn when you when you deal

263

00:08:19,029 --> 00:08:15,990

one is never quite sure what the final

264

00:08:20,230 --> 00:08:19,039

plan is until it's done

265

00:08:21,830 --> 00:08:20,240

so we're not quite sure what all the

266

00:08:24,070 --> 00:08:21,840

final plans are the times of that type

267

00:08:25,430 --> 00:08:24,080

of thing and uh we've deconflicted

268

00:08:27,749 --> 00:08:25,440

different options depending where he

269

00:08:29,670 --> 00:08:27,759

goes and and so we have good plans in

270

00:08:30,869 --> 00:08:29,680

place both ways and we'll see how it

271

00:08:32,550 --> 00:08:30,879

turns out

272

00:08:33,909 --> 00:08:32,560

yeah the the wrap up summary though

273

00:08:35,509 --> 00:08:33,919

mario's basically

274

00:08:37,750 --> 00:08:35,519

the teams are talking so we will not

275

00:08:39,909 --> 00:08:37,760

impact launch operations right so both

276

00:08:41,350 --> 00:08:39,919

in terms of rtls and any of the

277

00:08:42,870 --> 00:08:41,360

activities we need out on the range side

278

00:08:44,470 --> 00:08:42,880

or anything like that so we don't know

279

00:08:45,670 --> 00:08:44,480

what the final plans exactly are but

280

00:08:48,470 --> 00:08:45,680

they're going to deconflict themselves

281

00:08:49,509 --> 00:08:48,480

from our operations

282

00:08:51,670 --> 00:08:49,519

jane

283

00:08:54,230 --> 00:08:51,680

james dean with florida today um mike

284

00:08:56,550 --> 00:08:54,240

moses can you speak a little bit to the

285

00:08:58,070 --> 00:08:56,560

ups and downs that ams has gone through

286

00:09:00,070 --> 00:08:58,080

over the years and you know how has it

287

00:09:01,750 --> 00:09:00,080

gone from uh

288

00:09:04,310 --> 00:09:01,760

a payload that didn't have a flight a

289

00:09:05,910 --> 00:09:04,320

couple years ago to one with such high

290

00:09:07,269 --> 00:09:05,920

expectations now

291

00:09:08,790 --> 00:09:07,279

yeah no i talked to that team a while

292

00:09:10,470 --> 00:09:08,800

back uh last week when they were out in

293

00:09:11,829 --> 00:09:10,480

the payload bay doing some checks and

294

00:09:13,509 --> 00:09:11,839

and they're they're excited to be

295

00:09:15,190 --> 00:09:13,519

finally ready to go in orbit you know we

296

00:09:17,269 --> 00:09:15,200

flew them as a payload

297

00:09:19,110 --> 00:09:17,279

in the payload bay uh a while back but

298

00:09:20,790 --> 00:09:19,120

it's been about 17 years i think that

299

00:09:23,110 --> 00:09:20,800

these teams have kind of been together

300

00:09:25,509 --> 00:09:23,120

working on that on that payload so uh

301
00:09:27,269 --> 00:09:25,519
they're very excited to to get going you

302
00:09:28,790 --> 00:09:27,279
know we talked about it with the hubble

303
00:09:30,150 --> 00:09:28,800
team too i don't think anybody in that

304
00:09:32,070 --> 00:09:30,160
payload community ever really thought

305
00:09:34,230 --> 00:09:32,080
they were dead uh they these guys like

306
00:09:35,590 --> 00:09:34,240
to use the monty python skit that they

307
00:09:37,750 --> 00:09:35,600
weren't quite ready to go in the wagon

308
00:09:39,910 --> 00:09:37,760
and be hauled out of town um and so they

309
00:09:41,269 --> 00:09:39,920
hung on and and did make it back and we

310
00:09:43,269 --> 00:09:41,279
do have them manifested so they're

311
00:09:44,710 --> 00:09:43,279
they're excited to fly um

312
00:09:46,389 --> 00:09:44,720
you know we talk a lot about the science

313
00:09:47,670 --> 00:09:46,399

that they're planning to do to me

314

00:09:49,269 --> 00:09:47,680

personally uh one of the things that

315

00:09:51,190 --> 00:09:49,279

they mentioned to us

316

00:09:52,790 --> 00:09:51,200

at a briefing a couple months ago was if

317

00:09:53,990 --> 00:09:52,800

you think about what we do with all the

318

00:09:56,949 --> 00:09:54,000

super collider work that we're doing in

319

00:09:58,470 --> 00:09:56,959

high energy physics um which kind of i

320

00:10:00,870 --> 00:09:58,480

i had a little background in that in

321

00:10:02,389 --> 00:10:00,880

college doing physics

322

00:10:03,750 --> 00:10:02,399

it's what you don't expect to learn that

323

00:10:04,870 --> 00:10:03,760

usually surprises you so the fact that

324

00:10:06,550 --> 00:10:04,880

that instrument's gonna be able to stay

325

00:10:08,790 --> 00:10:06,560

up there and have an operational life of

326

00:10:10,230 --> 00:10:08,800

of many years um i think they're gonna

327

00:10:11,509 --> 00:10:10,240

learn a lot that they plan to but it's

328

00:10:12,710 --> 00:10:11,519

the it's the chance that they're gonna

329

00:10:14,150 --> 00:10:12,720

find something they never even expected

330

00:10:15,509 --> 00:10:14,160

that that has them the most excited

331

00:10:18,069 --> 00:10:15,519

about finally getting on orbit and

332

00:10:19,590 --> 00:10:18,079

getting the business on station

333

00:10:21,110 --> 00:10:19,600

but um just

334

00:10:23,030 --> 00:10:21,120

recapping the history there i mean it it

335

00:10:24,710 --> 00:10:23,040

did require an addition of a couple of

336

00:10:26,710 --> 00:10:24,720

couple of missions to your manifest to

337

00:10:28,389 --> 00:10:26,720

uh or or wouldn't have

338

00:10:30,150 --> 00:10:28,399

ever made other shuttles out that right

339

00:10:32,230 --> 00:10:30,160

yeah it was hard to say looking back in

340

00:10:34,389 --> 00:10:32,240

hindsight did we specifically add a

341

00:10:36,069 --> 00:10:34,399

special mission just for ams or did we

342

00:10:37,350 --> 00:10:36,079

accommodate the payloads around it when

343

00:10:38,790 --> 00:10:37,360

you when you look at the purpose of

344

00:10:40,630 --> 00:10:38,800

making sure station was outfitted

345

00:10:41,910 --> 00:10:40,640

properly um

346

00:10:44,069 --> 00:10:41,920

you know we

347

00:10:46,310 --> 00:10:44,079

went back down seven eight years ago

348

00:10:48,310 --> 00:10:46,320

when we decided the number of flights

349

00:10:50,230 --> 00:10:48,320

yeah we had to add one more to put ams

350

00:10:51,670 --> 00:10:50,240

but but it's not to say that by the time

351
00:10:54,630 --> 00:10:51,680
we got closer we wouldn't have needed to

352
00:10:56,389 --> 00:10:54,640
add more anyway for logistics supply so

353
00:10:57,910 --> 00:10:56,399
so it's hard to say i'd hate to i'd hate

354
00:10:59,670 --> 00:10:57,920
to make it sound like yeah we definitely

355
00:11:01,829 --> 00:10:59,680
had to bring them back from death and

356
00:11:04,069 --> 00:11:01,839
add a new flight just for them

357
00:11:05,269 --> 00:11:04,079
that's what happened historically but

358
00:11:06,790 --> 00:11:05,279
but you know looking back on it it's

359
00:11:09,590 --> 00:11:06,800
kind of hard to tell that we did it

360
00:11:10,710 --> 00:11:09,600
exactly for that reason

361
00:11:15,590 --> 00:11:10,720
jay

362
00:11:17,590 --> 00:11:15,600
if the president if they wanted to bring

363
00:11:19,829 --> 00:11:17,600

air force one in during a countdown

364

00:11:21,990 --> 00:11:19,839

landed on the shuttle landing strip i

365

00:11:23,590 --> 00:11:22,000

assume you can take it out of the way so

366

00:11:25,030 --> 00:11:23,600

that it'll be parked

367

00:11:28,870 --> 00:11:25,040

clear of any

368

00:11:31,350 --> 00:11:28,880

rtls if that would be necessary and that

369

00:11:34,310 --> 00:11:31,360

he can take off uh you know after the

370

00:11:36,069 --> 00:11:34,320

launch after the rtls is cleared

371

00:11:38,870 --> 00:11:36,079

uh and also

372

00:11:40,710 --> 00:11:38,880

if during the year the first year six

373

00:11:41,509 --> 00:11:40,720

months following uh

374

00:11:44,870 --> 00:11:41,519

the

375

00:11:49,190 --> 00:11:44,880

flights

376

00:11:51,590 --> 00:11:49,200

is there any way if the uh need arose

377

00:11:53,030 --> 00:11:51,600

that you guys could put together another

378

00:11:56,230 --> 00:11:53,040

shuttle flight

379

00:11:58,310 --> 00:11:56,240

do you have another tank is anyway once

380

00:12:01,430 --> 00:11:58,320

it's done you're going to start is is

381

00:12:03,430 --> 00:12:01,440

that going to be final

382

00:12:05,030 --> 00:12:03,440

okay let's see relative to the to the

383

00:12:06,389 --> 00:12:05,040

president's visit again

384

00:12:08,629 --> 00:12:06,399

you know we've

385

00:12:11,829 --> 00:12:08,639

deconflicted both options

386

00:12:13,269 --> 00:12:11,839

so the rtls is not not an option not not

387

00:12:15,509 --> 00:12:13,279

an issue for us we've told them we

388

00:12:16,629 --> 00:12:15,519

prefer that that air force one is not on

389

00:12:18,790 --> 00:12:16,639

the slf

390

00:12:21,269 --> 00:12:18,800

um but again the final decision comes

391

00:12:22,389 --> 00:12:21,279

from them um and and we've worked very

392

00:12:24,710 --> 00:12:22,399

very hard to make sure that we can

393

00:12:27,110 --> 00:12:24,720

execute our full mission

394

00:12:28,790 --> 00:12:27,120

completely as safely as we always do so

395

00:12:29,990 --> 00:12:28,800

not a problem jay

396

00:12:32,310 --> 00:12:30,000

yeah they've been very understanding

397

00:12:33,509 --> 00:12:32,320

that this is an operational visit and

398

00:12:34,629 --> 00:12:33,519

they don't want to impact the operation

399

00:12:36,389 --> 00:12:34,639

that they're coming to visit in the

400

00:12:39,269 --> 00:12:36,399

first place

401
00:12:40,389 --> 00:12:39,279
the uh on your second question jay yeah

402
00:12:41,829 --> 00:12:40,399
we don't have any more hardware the

403
00:12:45,350 --> 00:12:41,839
atlantic's flight will be the last that

404
00:12:49,190 --> 00:12:47,670
um marcia done associated press if both

405
00:12:50,829 --> 00:12:49,200
mikes could answer there's another

406
00:12:53,750 --> 00:12:50,839
important guest coming congresswoman

407
00:12:56,310 --> 00:12:53,760
giffords um

408
00:12:58,710 --> 00:12:56,320
what's your thoughts on that are you are

409
00:13:02,230 --> 00:12:58,720
you pleased she's making it and is your

410
00:13:04,230 --> 00:13:02,240
lunch team in on in at risk of being

411
00:13:05,350 --> 00:13:04,240
distracted by all that surrounds that as

412
00:13:07,590 --> 00:13:05,360
well

413
00:13:09,269 --> 00:13:07,600

no you know again she's coming uh we

414

00:13:10,710 --> 00:13:09,279

treat that just like a crew family visit

415

00:13:12,470 --> 00:13:10,720

with the rest of the crew families she

416

00:13:14,629 --> 00:13:12,480

needs a little extra extra care and

417

00:13:16,310 --> 00:13:14,639

attention um and then there's going to

418

00:13:18,230 --> 00:13:16,320

be a lot of extra outside attention

419

00:13:19,829 --> 00:13:18,240

placed on it but from uh from what we're

420

00:13:21,030 --> 00:13:19,839

doing she's nasa family and we're

421

00:13:23,110 --> 00:13:21,040

treating her just like we do all the

422

00:13:24,470 --> 00:13:23,120

rest of the crew families um

423

00:13:25,910 --> 00:13:24,480

from the from the impact of the launch

424

00:13:28,310 --> 00:13:25,920

team if you if you'd actually talk to

425

00:13:29,829 --> 00:13:28,320

the launch team in the firing room um

426

00:13:31,350 --> 00:13:29,839

i don't know how many of them other than

427

00:13:33,430 --> 00:13:31,360

the fact that they know the families are

428

00:13:35,110 --> 00:13:33,440

around we don't ever see them we're on

429

00:13:36,150 --> 00:13:35,120

our consoles and and doing our jobs

430

00:13:38,230 --> 00:13:36,160

we're not wandering around the halls of

431

00:13:39,189 --> 00:13:38,240

the building um seeing people wandering

432

00:13:40,310 --> 00:13:39,199

through the building so from that

433

00:13:42,230 --> 00:13:40,320

standpoint it's not going to be a

434

00:13:43,990 --> 00:13:42,240

distraction to us um

435

00:13:45,590 --> 00:13:44,000

the only real impact is going to be the

436

00:13:48,470 --> 00:13:45,600

the extra traffic coming in and out of

437

00:13:50,550 --> 00:13:48,480

work um and uh and and so

438

00:13:51,910 --> 00:13:50,560

that's not a big deal so we're obviously

439

00:13:54,389 --> 00:13:51,920

very pleased he's coming to lunch and

440

00:13:55,829 --> 00:13:54,399

and and supporting mark and his flight

441

00:13:57,030 --> 00:13:55,839

um just like we're pleased that every

442

00:13:59,110 --> 00:13:57,040

every member of the family gets to come

443

00:14:00,949 --> 00:13:59,120

down here and witness uh witness that

444

00:14:02,949 --> 00:14:00,959

really the the majesty for lack of a

445

00:14:04,310 --> 00:14:02,959

better word of the liftoff of the

446

00:14:07,189 --> 00:14:04,320

shuttle it's a pretty impressive thing

447

00:14:11,110 --> 00:14:09,110

irene klopp's with reuters um i have two

448

00:14:12,710 --> 00:14:11,120

questions first concerning the obama's

449

00:14:15,350 --> 00:14:12,720

visit is there

450

00:14:17,269 --> 00:14:15,360

any chance that the that the president

451

00:14:20,150 --> 00:14:17,279

his family will actually be in the

452

00:14:22,310 --> 00:14:20,160

launch control center for launch

453

00:14:24,230 --> 00:14:22,320

well again we were taking all options

454

00:14:26,310 --> 00:14:24,240

under consideration and deconflicting

455

00:14:28,310 --> 00:14:26,320

every one of them and and uh different

456

00:14:30,069 --> 00:14:28,320

locations at the kennedy space center up

457

00:14:31,030 --> 00:14:30,079

up for grabs and we've worked every one

458

00:14:33,030 --> 00:14:31,040

of them so

459

00:14:34,389 --> 00:14:33,040

again until the plan is final we we

460

00:14:36,790 --> 00:14:34,399

don't even know where he's going to be

461

00:14:40,069 --> 00:14:36,800

exactly

462

00:14:46,310 --> 00:14:40,079

in my chair yeah fire him no

463

00:14:50,470 --> 00:14:47,670

i don't want to do his job and i'm sure

464

00:14:53,030 --> 00:14:50,480

he wouldn't want to do mine

465

00:14:55,189 --> 00:14:53,040

and also for uh for you mike um

466

00:14:58,710 --> 00:14:55,199

over the past few months you know we've

467

00:15:00,069 --> 00:14:58,720

all talked a lot about the uh

468

00:15:02,470 --> 00:15:00,079

you know just what it's like to kind of

469

00:15:04,310 --> 00:15:02,480

experience this end of this 30-year

470

00:15:05,509 --> 00:15:04,320

program and um

471

00:15:07,189 --> 00:15:05,519

uh

472

00:15:09,269 --> 00:15:07,199

i know there's been a kind of wide range

473

00:15:10,870 --> 00:15:09,279

of emotions well in the past two months

474

00:15:12,710 --> 00:15:10,880

since the last shuttle launch the

475

00:15:14,150 --> 00:15:12,720

shuttles have now been

476

00:15:17,030 --> 00:15:14,160

uh named you know where they're going to

477

00:15:19,269 --> 00:15:17,040

end up and is on display and the last

478

00:15:21,269 --> 00:15:19,279

layoff notices are out and i just was

479

00:15:22,949 --> 00:15:21,279

wondering if you can maybe just give us

480

00:15:25,509 --> 00:15:22,959

a little sense of

481

00:15:27,670 --> 00:15:25,519

where you and and your your friends and

482

00:15:29,509 --> 00:15:27,680

your work uh your colleagues out here

483

00:15:33,189 --> 00:15:29,519

are in terms of um

484

00:15:35,030 --> 00:15:33,199

accepting and and moving on to what what

485

00:15:36,389 --> 00:15:35,040

looks like still a kind of uncertain

486

00:15:38,150 --> 00:15:36,399

future

487

00:15:39,670 --> 00:15:38,160

well see just just one

488

00:15:41,509 --> 00:15:39,680

quick correction the final layoff

489

00:15:42,230 --> 00:15:41,519

notices are not out yet they don't go

490

00:15:45,269 --> 00:15:42,240

out

491

00:15:46,629 --> 00:15:45,279

this early but uh uh you know and

492

00:15:48,389 --> 00:15:46,639

talking to the various guys that i've

493

00:15:50,389 --> 00:15:48,399

worked with for many many years they're

494

00:15:52,629 --> 00:15:50,399

all getting their plans together

495

00:15:54,710 --> 00:15:52,639

i play golf with a lot of them and we

496

00:15:56,389 --> 00:15:54,720

always talk over over round of golf what

497

00:15:58,470 --> 00:15:56,399

their future plans are and and it seems

498

00:15:59,670 --> 00:15:58,480

like everybody's is first of all we're

499

00:16:01,590 --> 00:15:59,680

accepting of the fact you know we've

500

00:16:03,030 --> 00:16:01,600

said that before and and people are

501
00:16:04,230 --> 00:16:03,040
starting to get their their acts

502
00:16:05,590 --> 00:16:04,240
together where they're going to go after

503
00:16:07,189 --> 00:16:05,600
the shuttle program

504
00:16:08,790 --> 00:16:07,199
i'm on the contractor side if you're in

505
00:16:10,150 --> 00:16:08,800
one of the key positions there's there's

506
00:16:11,990 --> 00:16:10,160
quite a nice

507
00:16:14,150 --> 00:16:12,000
severance package

508
00:16:15,910 --> 00:16:14,160
and so it gives people a fair amount of

509
00:16:17,430 --> 00:16:15,920
time to make up their minds where they

510
00:16:19,670 --> 00:16:17,440
would end up after the shuttle program

511
00:16:21,829 --> 00:16:19,680
that's that's very good

512
00:16:23,509 --> 00:16:21,839
on the civil service side we've been

513
00:16:25,030 --> 00:16:23,519

we've been told that we will all still

514

00:16:26,949 --> 00:16:25,040

have jobs at the kennedy space center

515

00:16:28,550 --> 00:16:26,959

we're in the process of reorganizing the

516

00:16:30,870 --> 00:16:28,560

space center to certainly to a certain

517

00:16:33,509 --> 00:16:30,880

extent to deal with future customers and

518

00:16:34,870 --> 00:16:33,519

and the desire for future customers so

519

00:16:36,389 --> 00:16:34,880

we'll all end up

520

00:16:38,310 --> 00:16:36,399

having good jobs at the kennedy space

521

00:16:40,389 --> 00:16:38,320

center and

522

00:16:41,829 --> 00:16:40,399

the end of the program itself it you

523

00:16:43,269 --> 00:16:41,839

know they're coming one at a time

524

00:16:46,629 --> 00:16:43,279

discovery is now

525

00:16:48,550 --> 00:16:46,639

being taken apart uh and being safe

526
00:16:50,790 --> 00:16:48,560
for final display and that'll start on

527
00:16:53,030 --> 00:16:50,800
endeavor when she gets home so

528
00:16:54,389 --> 00:16:53,040
it's kind of it's kind of sad to see it

529
00:16:56,550 --> 00:16:54,399
end of course

530
00:16:58,230 --> 00:16:56,560
but again we're dealing with it and and

531
00:16:59,749 --> 00:16:58,240
i just hope the next program comes more

532
00:17:02,829 --> 00:16:59,759
quickly than a lot of people are

533
00:17:06,630 --> 00:17:05,189
okay uh jim siegel celebration

534
00:17:08,630 --> 00:17:06,640
independent newspaper i have two

535
00:17:10,949 --> 00:17:08,640
questions first uh have any

536
00:17:14,470 --> 00:17:10,959
modifications been made to the endeavor

537
00:17:16,470 --> 00:17:14,480
endeavor orbiter since its last mission

538
00:17:18,630 --> 00:17:16,480

um let's see uh

539

00:17:21,909 --> 00:17:18,640

it's had we've added the boundary layer

540

00:17:23,350 --> 00:17:21,919

dtos a test objective um discovery had

541

00:17:25,429 --> 00:17:23,360

uh the same thing we added it to

542

00:17:26,870 --> 00:17:25,439

endeavor it's a little uh bump tile we

543

00:17:28,789 --> 00:17:26,880

call it basically an intentional

544

00:17:30,630 --> 00:17:28,799

protrusion that sticks out into the

545

00:17:33,510 --> 00:17:30,640

airstream we put down on the bottom of

546

00:17:34,789 --> 00:17:33,520

the uh starboard wing

547

00:17:36,310 --> 00:17:34,799

and uh

548

00:17:38,870 --> 00:17:36,320

and this one's a half inch high just

549

00:17:40,950 --> 00:17:38,880

like we flew on on discovery with the

550

00:17:42,710 --> 00:17:40,960

intention to it as we're re-entering it

551
00:17:45,190 --> 00:17:42,720
at high mach numbers to trip that

552
00:17:46,789 --> 00:17:45,200
boundary layer up at about mach 18 or so

553
00:17:48,390 --> 00:17:46,799
to an asymmetric flow condition which

554
00:17:50,950 --> 00:17:48,400
has a little higher heating with the

555
00:17:53,270 --> 00:17:50,960
turbulent flow behind it um just to try

556
00:17:55,430 --> 00:17:53,280
to characterize how that how that flies

557
00:17:56,710 --> 00:17:55,440
in that regime you know the shuttle's

558
00:17:57,990 --> 00:17:56,720
pretty much the only vehicle flying at

559
00:17:59,590 --> 00:17:58,000
that speed

560
00:18:01,830 --> 00:17:59,600
we've had really great success with that

561
00:18:04,630 --> 00:18:01,840
for i think now four flights in a row on

562
00:18:06,710 --> 00:18:04,640
discovery um but more data is better so

563
00:18:08,950 --> 00:18:06,720

we would have only had one flight with

564

00:18:10,549 --> 00:18:08,960

this this big bump at a half inch from

565

00:18:12,310 --> 00:18:10,559

discovery so we decided we could add it

566

00:18:14,150 --> 00:18:12,320

to endeavor quickly that would double

567

00:18:16,150 --> 00:18:14,160

our data set we've also had some

568

00:18:17,990 --> 00:18:16,160

problems with some of the thermocouples

569

00:18:19,830 --> 00:18:18,000

dropping out through the plasma

570

00:18:21,350 --> 00:18:19,840

on re-entry so we've modified a few of

571

00:18:23,110 --> 00:18:21,360

those thermocouples on this one so

572

00:18:24,390 --> 00:18:23,120

that's really the only modification that

573

00:18:26,549 --> 00:18:24,400

we made

574

00:18:28,390 --> 00:18:26,559

per se to endeavor

575

00:18:29,830 --> 00:18:28,400

some of the the the crew kit and the

576

00:18:31,990 --> 00:18:29,840

manifest stuff that normal things that

577

00:18:33,350 --> 00:18:32,000

we change out um have been changed but

578

00:18:37,190 --> 00:18:33,360

nothing in the major vehicle

579

00:18:41,190 --> 00:18:38,789

uh do you have any idea where

580

00:18:44,870 --> 00:18:41,200

congressman giffords is going to be

581

00:18:46,470 --> 00:18:44,880

watching this uh the flight from

582

00:18:47,270 --> 00:18:46,480

let's see i would say kind of similar

583

00:18:48,630 --> 00:18:47,280

it's going to sound like we're talking

584

00:18:50,630 --> 00:18:48,640

about the president's visit she goes

585

00:18:52,230 --> 00:18:50,640

with the crew families and that location

586

00:18:53,270 --> 00:18:52,240

there's there's several options that

587

00:18:54,870 --> 00:18:53,280

they could go

588

00:18:56,950 --> 00:18:54,880

and i i don't know exactly what their

589

00:18:58,230 --> 00:18:56,960

final pick was but uh but there's a

590

00:19:00,070 --> 00:18:58,240

couple of different viewing locations

591

00:19:02,150 --> 00:19:00,080

that the families typically go to should

592

00:19:04,310 --> 00:19:02,160

be with them

593

00:19:06,630 --> 00:19:04,320

um if it if it has i'm not privy to

594

00:19:09,190 --> 00:19:06,640

those details sorry thank you

595

00:19:11,430 --> 00:19:09,200

no bill harley cbs was two quick ones if

596

00:19:13,190 --> 00:19:11,440

i could um is discovery got to the point

597

00:19:14,549 --> 00:19:13,200

of no return yet mike i mean have you

598

00:19:16,230 --> 00:19:14,559

done invasive enough stuff that you

599

00:19:17,590 --> 00:19:16,240

couldn't put it back together

600

00:19:18,710 --> 00:19:17,600

just just to know where that line in the

601
00:19:20,310 --> 00:19:18,720
sand is

602
00:19:22,310 --> 00:19:20,320
uh i wouldn't say it's to the point of

603
00:19:25,590 --> 00:19:22,320
no return yet we haven't cut a wing off

604
00:19:26,950 --> 00:19:25,600
or anything like that but uh

605
00:19:28,710 --> 00:19:26,960
we are we are taking it apart we've

606
00:19:30,870 --> 00:19:28,720
taken off uh all all three of the

607
00:19:32,230 --> 00:19:30,880
orbital uh maneuvering system pods the

608
00:19:33,430 --> 00:19:32,240
two the two aft and afford and we're

609
00:19:35,510 --> 00:19:33,440
sending them down to the hypergal

610
00:19:37,430 --> 00:19:35,520
maintenance facility to be uh to be

611
00:19:39,350 --> 00:19:37,440
completely clean things like that so i

612
00:19:40,710 --> 00:19:39,360
wouldn't floatliners actuators that

613
00:19:42,470 --> 00:19:40,720

shannon talks about pulling out of the

614

00:19:43,750 --> 00:19:42,480

vehicle that would be the end when you

615

00:19:45,990 --> 00:19:43,760

do that i'm just trying to understand

616

00:19:47,270 --> 00:19:46,000

when that happens the flow is basically

617

00:19:48,710 --> 00:19:47,280

we're about to finish up down mission

618

00:19:50,150 --> 00:19:48,720

processing and they need to come back

619

00:19:51,430 --> 00:19:50,160

they're going to actually once we get

620

00:19:53,110 --> 00:19:51,440

this vehicle launched they're ready to

621

00:19:55,110 --> 00:19:53,120

come tell the program officially that

622

00:19:56,470 --> 00:19:55,120

down mission processing is now finished

623

00:19:58,230 --> 00:19:56,480

and they're ready to move into the

624

00:20:00,549 --> 00:19:58,240

transition retirement phase which will

625

00:20:01,990 --> 00:20:00,559

start those activities so we haven't yet

626

00:20:03,590 --> 00:20:02,000

started but we are

627

00:20:04,870 --> 00:20:03,600

we are more than ready to and then we

628

00:20:06,870 --> 00:20:04,880

will get that started probably in a week

629

00:20:07,990 --> 00:20:06,880

or two and one for mike one more mike

630

00:20:09,750 --> 00:20:08,000

linebacker you know mike you've said

631

00:20:10,950 --> 00:20:09,760

that you know you're so focused on

632

00:20:12,710 --> 00:20:10,960

getting these things off the ground in

633

00:20:14,070 --> 00:20:12,720

each flow but you really haven't

634

00:20:15,510 --> 00:20:14,080

reflected on the end of the program the

635

00:20:17,750 --> 00:20:15,520

way you probably will on the last flow

636

00:20:19,190 --> 00:20:17,760

obviously but when you drive out here

637

00:20:20,870 --> 00:20:19,200

you know and you see things does it

638

00:20:22,549 --> 00:20:20,880

occur i mean i know you must be trying

639

00:20:23,990 --> 00:20:22,559

to record this in your mind because it's

640

00:20:25,669 --> 00:20:24,000

it's it really is the end of an error

641

00:20:27,350 --> 00:20:25,679

for the shuttle and for a lot of you

642

00:20:29,110 --> 00:20:27,360

guys have been doing this for so long

643

00:20:31,590 --> 00:20:29,120

i'm just i'm just curious when you when

644

00:20:33,750 --> 00:20:31,600

you have a moment to reflect

645

00:20:35,430 --> 00:20:33,760

um what

646

00:20:36,630 --> 00:20:35,440

what goes through your mind i mean stuff

647

00:20:37,830 --> 00:20:36,640

goes through my mind for sure but i'm

648

00:20:39,110 --> 00:20:37,840

just wondering about yours yeah i think

649

00:20:40,710 --> 00:20:39,120

it goes through everybody's mind this

650

00:20:42,470 --> 00:20:40,720

room has covered this program for some

651
00:20:44,070 --> 00:20:42,480
time it uh

652
00:20:45,669 --> 00:20:44,080
i went out to the launch pad a couple of

653
00:20:47,430 --> 00:20:45,679
weeks ago and saw endeavor for the last

654
00:20:48,549 --> 00:20:47,440
time in the vertical and uh you know

655
00:20:49,830 --> 00:20:48,559
there were some times where i was

656
00:20:51,270 --> 00:20:49,840
standing on the deck of the launcher

657
00:20:52,549 --> 00:20:51,280
looking up at her and just thinking this

658
00:20:55,909 --> 00:20:52,559
is the last time i'm going to see that

659
00:20:58,149 --> 00:20:55,919
vehicle at this launch pad

660
00:21:00,149 --> 00:20:58,159
ever and and that that begins to sink

661
00:21:01,270 --> 00:21:00,159
home the other thing that sinks home is

662
00:21:04,070 --> 00:21:01,280
and i've talked about a little bit

663
00:21:05,909 --> 00:21:04,080

before bill is is the workforce and the

664

00:21:07,430 --> 00:21:05,919

effects to the workforce effects on the

665

00:21:09,110 --> 00:21:07,440

workforce from the from the end of the

666

00:21:10,470 --> 00:21:09,120

program principally on the contractor

667

00:21:12,390 --> 00:21:10,480

side

668

00:21:14,149 --> 00:21:12,400

a lot of my close friends are united

669

00:21:15,190 --> 00:21:14,159

space alliance employees

670

00:21:23,990 --> 00:21:15,200

and

671

00:21:26,149 --> 00:21:24,000

said

672

00:21:27,830 --> 00:21:26,159

and and by and large most of them are

673

00:21:29,590 --> 00:21:27,840

going to be gone in another three or

674

00:21:31,990 --> 00:21:29,600

four months this summer sometime this

675

00:21:33,350 --> 00:21:32,000

summer whenever that final layoff really

676

00:21:34,710 --> 00:21:33,360

hits

677

00:21:36,470 --> 00:21:34,720

and so i see that i see the launch

678

00:21:38,710 --> 00:21:36,480

control center which has been such a

679

00:21:40,310 --> 00:21:38,720

such a beehive of activity

680

00:21:42,950 --> 00:21:40,320

since it was built back in the apollo

681

00:21:44,470 --> 00:21:42,960

days actually that's going to be

682

00:21:45,669 --> 00:21:44,480

i won't say empty but it's gonna be a

683

00:21:47,510 --> 00:21:45,679

heck of a lot more empty than it is

684

00:21:49,110 --> 00:21:47,520

today and it'll be a lot less fun to be

685

00:21:50,870 --> 00:21:49,120

working in because there won't just be

686

00:21:53,430 --> 00:21:50,880

that that excitement of working on the

687

00:21:54,789 --> 00:21:53,440

shuttle program anymore

688

00:21:55,909 --> 00:21:54,799

we will be looking forward to the next

689

00:21:57,430 --> 00:21:55,919

program the launch control center

690

00:21:59,590 --> 00:21:57,440

hopefully will be used in the future and

691

00:22:02,310 --> 00:21:59,600

not too far from now

692

00:22:03,830 --> 00:22:02,320

but it's a it's a stark reality when you

693

00:22:07,190 --> 00:22:03,840

realize that your friends that you've

694

00:22:09,029 --> 00:22:07,200

worked with or are moving on

695

00:22:10,070 --> 00:22:09,039

they're all getting good jobs that type

696

00:22:12,310 --> 00:22:10,080

of thing

697

00:22:14,950 --> 00:22:12,320

but still it's it's it's like breaking

698

00:22:16,310 --> 00:22:14,960

up a family it's it's it's tough to deal

699

00:22:18,630 --> 00:22:16,320

with um

700

00:22:19,909 --> 00:22:18,640

but we're moving on and and um we're

701
00:22:22,230 --> 00:22:19,919
going to fly these last two missions

702
00:22:24,630 --> 00:22:22,240
safely and bring the crews home and and

703
00:22:25,669 --> 00:22:24,640
then that'll be it

704
00:22:30,149 --> 00:22:25,679
clara

705
00:22:33,029 --> 00:22:30,159
this is a question for both mr leinbach

706
00:22:34,230 --> 00:22:33,039
and mr moses um it sounds like there's

707
00:22:36,630 --> 00:22:34,240
going to be

708
00:22:38,230 --> 00:22:36,640
really unusually huge uh crowd levels

709
00:22:39,750 --> 00:22:38,240
coming out to see this launch on friday

710
00:22:41,110 --> 00:22:39,760
and i wonder just what it means to both

711
00:22:43,830 --> 00:22:41,120
of you that so many people are going to

712
00:22:46,149 --> 00:22:43,840
come see endeavors last launch

713
00:22:48,390 --> 00:22:46,159

well i think from a from a

714

00:22:51,350 --> 00:22:48,400

from a human perspective trying to get

715

00:22:53,669 --> 00:22:51,360

home after launch or scrub

716

00:22:55,750 --> 00:22:53,679

it's going to it's going to be tough

717

00:22:58,149 --> 00:22:55,760

what local law enforcement has told us

718

00:22:59,830 --> 00:22:58,159

is that whatever whatever drive delay we

719

00:23:01,669 --> 00:22:59,840

experience for the 133 launch it's going

720

00:23:02,630 --> 00:23:01,679

to be about 50 percent longer this time

721

00:23:04,710 --> 00:23:02,640

going home

722

00:23:06,310 --> 00:23:04,720

and so it it's going to be and we're

723

00:23:07,909 --> 00:23:06,320

telling people to bring a little cooler

724

00:23:09,909 --> 00:23:07,919

with them right and put some snacks and

725

00:23:11,510 --> 00:23:09,919

a coke in there or something

726

00:23:13,750 --> 00:23:11,520

but it's going to be

727

00:23:15,430 --> 00:23:13,760

it's going to be tough to get home

728

00:23:16,710 --> 00:23:15,440

but when you think about why the people

729

00:23:18,390 --> 00:23:16,720

are coming to experience something

730

00:23:19,990 --> 00:23:18,400

that's uniquely american

731

00:23:21,430 --> 00:23:20,000

and be able to see one of the last two

732

00:23:24,390 --> 00:23:21,440

flights

733

00:23:25,909 --> 00:23:24,400

that gives me a lot of pride

734

00:23:26,870 --> 00:23:25,919

yeah i don't have i don't have much data

735

00:23:29,110 --> 00:23:26,880

other than what mike said he said it

736

00:23:30,630 --> 00:23:29,120

perfectly um but that's what i feel when

737

00:23:32,549 --> 00:23:30,640

i see all these people and and even when

738

00:23:34,549 --> 00:23:32,559

i'm stuck in traffic it doesn't bug me

739

00:23:36,390 --> 00:23:34,559

because they're here to watch us do

740

00:23:38,470 --> 00:23:36,400

something pretty cool

741

00:23:40,070 --> 00:23:38,480

and and it's a real honor to be able to

742

00:23:41,269 --> 00:23:40,080

launch the shuttle and

743

00:23:45,350 --> 00:23:41,279

i'm really glad everybody does get to

744

00:23:49,110 --> 00:23:46,950

mark ratterman with talking space i'm

745

00:23:51,029 --> 00:23:49,120

not sure who to ask this question of but

746

00:23:53,110 --> 00:23:51,039

regarding range safety how do you feel

747

00:23:54,870 --> 00:23:53,120

what's your confidence level and

748

00:23:56,710 --> 00:23:54,880

and good operation the range safety

749

00:23:58,070 --> 00:23:56,720

process for this launch

750

00:23:59,669 --> 00:23:58,080

i think you'll hear both mike and i say

751
00:24:01,350 --> 00:23:59,679
the same thing we have 100 confidence in

752
00:24:02,310 --> 00:24:01,360
that team they did everything right last

753
00:24:04,870 --> 00:24:02,320
time they're going to do it all this

754
00:24:07,190 --> 00:24:04,880
time we had good debriefs on both sides

755
00:24:09,029 --> 00:24:07,200
of the house the air force and nasa side

756
00:24:10,870 --> 00:24:09,039
we've improved some communication lines

757
00:24:13,430 --> 00:24:10,880
just to make sure we really are

758
00:24:15,110 --> 00:24:13,440
staying in sync and latched up and

759
00:24:18,070 --> 00:24:15,120
no issues at all on the marine safety

760
00:24:20,149 --> 00:24:18,080
side

761
00:24:22,390 --> 00:24:20,159
ken kramer from space flight magazine uh

762
00:24:24,870 --> 00:24:22,400
one question for each of the mics um

763
00:24:27,190 --> 00:24:24,880

mike uh lineback can you tell us some

764

00:24:28,470 --> 00:24:27,200

special memory you have you have um of

765

00:24:30,789 --> 00:24:28,480

all the orbiters tell us something

766

00:24:32,630 --> 00:24:30,799

special about endeavor and for mike

767

00:24:35,830 --> 00:24:32,640

moses um you mentioned

768

00:24:38,710 --> 00:24:35,840

srbs from sts-1 i wonder if that's by

769

00:24:39,590 --> 00:24:38,720

design or or did you plan to have srbs

770

00:24:42,470 --> 00:24:39,600

from

771

00:24:43,830 --> 00:24:42,480

sts-1 on this mission thank you

772

00:24:45,110 --> 00:24:43,840

let's see that

773

00:24:47,110 --> 00:24:45,120

maybe one of the highlights of endeavor

774

00:24:49,190 --> 00:24:47,120

for me was the first flow

775

00:24:50,789 --> 00:24:49,200

when she first arrived and and to see a

776

00:24:52,870 --> 00:24:50,799

brand new orbiter

777

00:24:54,630 --> 00:24:52,880

in the uh orbiter processing facility

778

00:24:56,789 --> 00:24:54,640

and the va be out the launch pad just a

779

00:24:58,149 --> 00:24:56,799

beautiful beautiful machine

780

00:24:59,909 --> 00:24:58,159

and then i had the privilege of being

781

00:25:01,190 --> 00:24:59,919

the nasa test director for that flow and

782

00:25:03,110 --> 00:25:01,200

and that was the last time we did a

783

00:25:04,710 --> 00:25:03,120

flight readiness firing and preparing

784

00:25:06,230 --> 00:25:04,720

for that test and seeing the main

785

00:25:08,789 --> 00:25:06,240

engines light and then shut down 20

786

00:25:10,549 --> 00:25:08,799

seconds later intentionally it was a

787

00:25:12,470 --> 00:25:10,559

that was a big big test it proved the

788

00:25:13,990 --> 00:25:12,480

system's ready to fly and and then we

789

00:25:15,269 --> 00:25:14,000

launched i don't know about three or

790

00:25:18,070 --> 00:25:15,279

four weeks later or something like that

791

00:25:21,029 --> 00:25:18,080

as i recall i think the first flow um

792

00:25:22,549 --> 00:25:21,039

will be remembered quite a bit and uh

793

00:25:25,830 --> 00:25:22,559

and then and then the last time i went

794

00:25:29,350 --> 00:25:27,990

and on the uh on the srb hardware i i

795

00:25:31,510 --> 00:25:29,360

actually don't know the specifics of the

796

00:25:32,950 --> 00:25:31,520

plan there there are people in the in

797

00:25:34,789 --> 00:25:32,960

the solid rocket booster project who

798

00:25:36,310 --> 00:25:34,799

manage those logistics and and i can't

799

00:25:37,669 --> 00:25:36,320

say whether they they plan it this way

800

00:25:39,029 --> 00:25:37,679

or not but uh

801
00:25:41,110 --> 00:25:39,039
you know we have a lot of a lot of

802
00:25:43,669 --> 00:25:41,120
hardware both in terms of forward skirts

803
00:25:45,430 --> 00:25:43,679
outskirts and and casings um and they

804
00:25:47,269 --> 00:25:45,440
get reused on a plan

805
00:25:49,510 --> 00:25:47,279
um and it's there was probably some

806
00:25:51,990 --> 00:25:49,520
technical driver uh to why we did it

807
00:25:53,590 --> 00:25:52,000
usually we we more on logic than emotion

808
00:25:54,630 --> 00:25:53,600
around here so so i'm sure there was

809
00:25:56,149 --> 00:25:54,640
some reason why we picked that set of

810
00:25:57,510 --> 00:25:56,159
hardware and it was the ready ready to

811
00:25:59,750 --> 00:25:57,520
go hardware but i can't tell you

812
00:26:00,870 --> 00:25:59,760
specifically

813
00:26:02,390 --> 00:26:00,880

okay

814

00:26:04,870 --> 00:26:02,400

gene mcculloch with talking space for

815

00:26:06,310 --> 00:26:04,880

either mike weinbach or uh mike mores um

816

00:26:08,070 --> 00:26:06,320

are there any plans to put that

817

00:26:10,230 --> 00:26:08,080

protruding tile that we spoke about

818

00:26:12,470 --> 00:26:10,240

earlier on atlantis

819

00:26:14,710 --> 00:26:12,480

uh no so atlantis is staying the way it

820

00:26:16,149 --> 00:26:14,720

is um we did we didn't need to to modify

821

00:26:18,390 --> 00:26:16,159

that vehicle we uh we'll have enough

822

00:26:23,110 --> 00:26:18,400

data from these two so we did not modify

823

00:26:28,070 --> 00:26:25,909

todd uh todd halberon of florida today

824

00:26:30,549 --> 00:26:28,080

for mike lineback i was i was just

825

00:26:31,990 --> 00:26:30,559

wondering what your thoughts are about

826

00:26:34,390 --> 00:26:32,000

um

827

00:26:36,390 --> 00:26:34,400

about getting atlantis uh

828

00:26:38,710 --> 00:26:36,400

to roost here in retirement and for mike

829

00:26:40,310 --> 00:26:38,720

moses i was wondering what your thoughts

830

00:26:42,470 --> 00:26:40,320

are about

831

00:26:50,470 --> 00:26:42,480

johnson space center not getting one of

832

00:26:56,149 --> 00:26:53,750

well let's say i'm the happy one um

833

00:26:58,230 --> 00:26:56,159

let's see it it uh i told you before i

834

00:27:00,230 --> 00:26:58,240

had to i had the privilege of seeing the

835

00:27:01,830 --> 00:27:00,240

uh the plans for the display of an

836

00:27:04,549 --> 00:27:01,840

orbiter over to our visitor center and

837

00:27:06,310 --> 00:27:04,559

it is just a fabulous design

838

00:27:07,110 --> 00:27:06,320

it will take several years to complete

839

00:27:08,950 --> 00:27:07,120

but

840

00:27:10,470 --> 00:27:08,960

once it's complete and you're going to

841

00:27:12,070 --> 00:27:10,480

be able to see atlantis up close and

842

00:27:13,750 --> 00:27:12,080

personal

843

00:27:16,149 --> 00:27:13,760

that'll that'll be like having having

844

00:27:18,230 --> 00:27:16,159

her back again to a certain extent so

845

00:27:19,510 --> 00:27:18,240

extremely happy that kennedy space

846

00:27:21,190 --> 00:27:19,520

center visitor center gets one of the

847

00:27:23,510 --> 00:27:21,200

orbiters

848

00:27:24,870 --> 00:27:23,520

and let's see for me you know i i'm i'm

849

00:27:25,750 --> 00:27:24,880

while still badged at johnson space

850

00:27:27,269 --> 00:27:25,760

center i've been living here for the

851

00:27:28,549 --> 00:27:27,279

last three years so i'm also very

852

00:27:30,149 --> 00:27:28,559

pleased that kennedy gets to keep an

853

00:27:31,909 --> 00:27:30,159

orbiter um

854

00:27:33,510 --> 00:27:31,919

as a houston resident former houston

855

00:27:35,830 --> 00:27:33,520

resident i wish one would be going there

856

00:27:37,590 --> 00:27:35,840

too uh but i'll i'll say something here

857

00:27:40,470 --> 00:27:37,600

that that does not mean i'm trying to

858

00:27:42,470 --> 00:27:40,480

run for politics after this but to be to

859

00:27:44,149 --> 00:27:42,480

be fair right the the the nation the

860

00:27:45,830 --> 00:27:44,159

people who work on the space program

861

00:27:49,110 --> 00:27:45,840

know and love these orbiters both both

862

00:27:51,430 --> 00:27:49,120

here in in huntsville and in houston out

863

00:27:54,310 --> 00:27:51,440

in california at the palmdale plant in

864

00:27:55,510 --> 00:27:54,320

boeing and the old rockwell folks

865

00:27:56,950 --> 00:27:55,520

i could go to stennis space center you

866

00:27:58,870 --> 00:27:56,960

know distributed around the country

867

00:28:00,230 --> 00:27:58,880

those folks really do know and love the

868

00:28:02,789 --> 00:28:00,240

shuttle

869

00:28:04,230 --> 00:28:02,799

the chance to send this same

870

00:28:07,110 --> 00:28:04,240

thing somewhere else in the country to

871

00:28:08,950 --> 00:28:07,120

try to garner the same enthusiasm to me

872

00:28:10,950 --> 00:28:08,960

is it actually a very noble purpose and

873

00:28:12,149 --> 00:28:10,960

a really good idea so so i'm personally

874

00:28:13,110 --> 00:28:12,159

pleased to see them going around the

875

00:28:14,710 --> 00:28:13,120

country

876

00:28:16,149 --> 00:28:14,720

you know we could have probably had 15

877

00:28:18,389 --> 00:28:16,159

orbiters which would have been really

878

00:28:19,909 --> 00:28:18,399

cool to been flying them but

879

00:28:21,110 --> 00:28:19,919

but i don't think our budget gets set by

880

00:28:22,549 --> 00:28:21,120

where they need to go to the museums

881

00:28:24,070 --> 00:28:22,559

afterwards so you know i wish we could

882

00:28:25,350 --> 00:28:24,080

do more obviously you always wish you

883

00:28:26,389 --> 00:28:25,360

could do more but i know as a kid

884

00:28:28,310 --> 00:28:26,399

growing up

885

00:28:30,070 --> 00:28:28,320

being able to visit certain areas you

886

00:28:31,830 --> 00:28:30,080

know are you a tourist going to a space

887

00:28:33,190 --> 00:28:31,840

destination then yeah you're probably

888

00:28:35,350 --> 00:28:33,200

going to visit houston but are you just

889

00:28:36,950 --> 00:28:35,360

a tourist in america then going to

890

00:28:38,789 --> 00:28:36,960

california or new york you're definitely

891

00:28:40,149 --> 00:28:38,799

going to get to see some space hardware

892

00:28:41,510 --> 00:28:40,159

i know i've been on the intrepid a whole

893

00:28:43,110 --> 00:28:41,520

lot growing up with my grandparents

894

00:28:45,990 --> 00:28:43,120

living in new york city and it helped

895

00:28:46,950 --> 00:28:46,000

inspire me uh and so you know personally

896

00:28:48,070 --> 00:28:46,960

um

897

00:28:49,029 --> 00:28:48,080

everybody's gonna be disappointed

898

00:28:51,190 --> 00:28:49,039

everybody's gonna be excited and you're

899

00:28:53,190 --> 00:28:51,200

never gonna please anybody so uh it's a

900

00:28:54,549 --> 00:28:53,200

decent mix and and you know

901
00:28:56,549 --> 00:28:54,559
if i was picking i'd probably pick a

902
00:28:59,269 --> 00:28:56,559
little different but i'm thank god i'm

903
00:29:02,070 --> 00:28:59,279
not picking and uh and we'll be fine

904
00:29:03,909 --> 00:29:02,080
with what we got so

905
00:29:05,269 --> 00:29:03,919
uh what a question for either mike but

906
00:29:06,310 --> 00:29:05,279
you're talking about how the drive time

907
00:29:07,750 --> 00:29:06,320
home is gonna be long is there any

908
00:29:09,269 --> 00:29:07,760
what's the latest thinking on scrub

909
00:29:10,549 --> 00:29:09,279
turnaround if you get down close and

910
00:29:12,149 --> 00:29:10,559
don't make it and

911
00:29:13,990 --> 00:29:12,159
the ability of the team to get back for

912
00:29:15,669 --> 00:29:14,000
a 24-hour recycle

913
00:29:18,230 --> 00:29:15,679

yeah so what mike and i mike and i

914

00:29:19,830 --> 00:29:18,240

agreed to is that we'll the conditions

915

00:29:22,710 --> 00:29:19,840

of the day will dictate what the 24

916

00:29:24,950 --> 00:29:22,720

48-hour script turnaround posture is

917

00:29:29,029 --> 00:29:24,960

all things being equal if we scrub late

918

00:29:30,789 --> 00:29:29,039

for unexpected weather kathy or

919

00:29:32,470 --> 00:29:30,799

or some or some technical issue that

920

00:29:34,870 --> 00:29:32,480

comes up late that could be solved in a

921

00:29:36,950 --> 00:29:34,880

24 or 48 we just need to talk on launch

922

00:29:39,110 --> 00:29:36,960

day what what what the best plan for the

923

00:29:40,470 --> 00:29:39,120

orbiter is what the best plan for the

924

00:29:42,310 --> 00:29:40,480

weather is and the best plan for the

925

00:29:45,110 --> 00:29:42,320

team and we'll weigh those three those

926

00:29:46,789 --> 00:29:45,120

three components and then pick um

927

00:29:48,149 --> 00:29:46,799

i can tell you driving home is going to

928

00:29:49,750 --> 00:29:48,159

be is going to be a challenge and then

929

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

that's going to factor into our decision

930

00:29:56,630 --> 00:29:54,080

this time more so than ever in the past

931

00:29:58,549 --> 00:29:56,640

press um two quick questions you have

932

00:30:01,590 --> 00:29:58,559

what's the latest law enforcement crowd

933

00:30:03,590 --> 00:30:01,600

count expected uh in brevard county and

934

00:30:06,149 --> 00:30:03,600

if there is a scrub have you had it been

935

00:30:07,190 --> 00:30:06,159

informed whether the president would

936

00:30:09,430 --> 00:30:07,200

come back

937

00:30:11,789 --> 00:30:09,440

for another try

938

00:30:15,190 --> 00:30:11,799

the uh the estimate from

939

00:30:16,870 --> 00:30:15,200

sts-133's launch was 400 000

940

00:30:19,510 --> 00:30:16,880

in the surrounding communities not that

941

00:30:21,830 --> 00:30:19,520

doesn't include the people out here

942

00:30:23,430 --> 00:30:21,840

and and the best estimate right now is

943

00:30:26,630 --> 00:30:23,440

somewhere between five hundred thousand

944

00:30:28,389 --> 00:30:26,640

and seven hundred and fifty thousand

945

00:30:30,470 --> 00:30:28,399

and our numbers on base out here only

946

00:30:32,310 --> 00:30:30,480

went up fifteen hundred or so so it's

947

00:30:34,710 --> 00:30:32,320

not the people out here that we're

948

00:30:39,909 --> 00:30:34,720

worried about it's the clog of the roads

949

00:30:44,070 --> 00:30:42,070

i haven't heard that yeah i haven't even

950

00:30:46,149 --> 00:30:44,080

asked that question frankly okay just

951
00:30:47,510 --> 00:30:46,159
wondering

952
00:30:51,029 --> 00:30:47,520
james

953
00:30:52,470 --> 00:30:51,039
leinbach as we're kind of trying to

954
00:30:56,549 --> 00:30:52,480
differentiate between these vehicles as

955
00:30:58,789 --> 00:30:56,559
they're coming up to final flights um

956
00:31:01,110 --> 00:30:58,799
do you characterize endeavor uh in in

957
00:31:02,310 --> 00:31:01,120
any way uh apart from from the other

958
00:31:04,149 --> 00:31:02,320
orbiters uh

959
00:31:05,110 --> 00:31:04,159
the fact that it's the youngest or any

960
00:31:07,990 --> 00:31:05,120
any other

961
00:31:08,950 --> 00:31:08,000
aspects of how it's flown and processed

962
00:31:10,789 --> 00:31:08,960
well

963
00:31:12,310 --> 00:31:10,799

the orbiters themselves are pretty much

964

00:31:13,909 --> 00:31:12,320

alike as as you know there are some

965

00:31:15,909 --> 00:31:13,919

idiosyncrasies that are different but

966

00:31:18,070 --> 00:31:15,919

the thing that sets them apart are the

967

00:31:19,909 --> 00:31:18,080

different processing teams and the

968

00:31:21,990 --> 00:31:19,919

leadership of those teams and i can tell

969

00:31:24,470 --> 00:31:22,000

you the endeavor team has a very dynamic

970

00:31:25,990 --> 00:31:24,480

leadership team in place and and uh it's

971

00:31:28,549 --> 00:31:26,000

fun to go over their scheduling meetings

972

00:31:30,950 --> 00:31:28,559

and and play with them a little bit

973

00:31:34,630 --> 00:31:30,960

so it's it's the team's difference in

974

00:31:36,789 --> 00:31:34,640

style i think is is the main difference

975

00:31:38,950 --> 00:31:36,799

okay second row please steve kessinger

976
00:31:41,190 --> 00:31:38,960
with maple gate media from the mics with

977
00:31:42,789 --> 00:31:41,200
the final flight of sts-135 is it

978
00:31:44,950 --> 00:31:42,799
possible that all three orbiters will be

979
00:31:46,470 --> 00:31:44,960
brought up for a photo opportunity or is

980
00:31:47,909 --> 00:31:46,480
that just not going to be logistically

981
00:31:49,669 --> 00:31:47,919
possible

982
00:31:50,310 --> 00:31:49,679
we don't have any plans to do that you

983
00:31:52,230 --> 00:31:50,320
know

984
00:31:53,029 --> 00:31:52,240
our transition retirement budget you

985
00:31:54,070 --> 00:31:53,039
know

986
00:31:55,430 --> 00:31:54,080
folks

987
00:31:56,710 --> 00:31:55,440
there's a lot of things we'd love to do

988
00:31:58,870 --> 00:31:56,720

people asking us to fly around the

989

00:32:00,549 --> 00:31:58,880

country take tours and all that stuff

990

00:32:02,230 --> 00:32:00,559

and we'd love to do it but we have no

991

00:32:03,830 --> 00:32:02,240

money for it and we're given a budget to

992

00:32:05,750 --> 00:32:03,840

fly the shuttle and we're using that

993

00:32:08,230 --> 00:32:05,760

money to finish flying the shuttle we

994

00:32:10,389 --> 00:32:08,240

have a very very very small budget to

995

00:32:12,389 --> 00:32:10,399

then decommission and safe them for

996

00:32:13,430 --> 00:32:12,399

display so

997

00:32:15,750 --> 00:32:13,440

you know they're not going to have any

998

00:32:17,430 --> 00:32:15,760

ohms pods or or ford rcs modules they

999

00:32:19,269 --> 00:32:17,440

wouldn't look too pretty in a in a shot

1000

00:32:21,750 --> 00:32:19,279

anyway but no we don't have any plans to

1001
00:32:23,269 --> 00:32:21,760
set up a photo op

1002
00:32:29,350 --> 00:32:23,279
okay um

1003
00:32:35,990 --> 00:32:33,029
okay uh in the back please

1004
00:32:38,630 --> 00:32:36,000
uh todd halverson of florida today again

1005
00:32:41,509 --> 00:32:38,640
uh is there any truth to the rumor that

1006
00:32:42,710 --> 00:32:41,519
you plan to launch atlantis on the 4th

1007
00:32:43,830 --> 00:32:42,720
of july

1008
00:32:46,630 --> 00:32:43,840
and

1009
00:32:50,070 --> 00:32:46,640
also i was wondering if there is any

1010
00:32:52,230 --> 00:32:50,080
possibility that you would target a last

1011
00:32:55,110 --> 00:32:52,240
landing at edwards air force base so

1012
00:32:57,269 --> 00:32:55,120
that you could tour the orbiter on the

1013
00:32:58,549 --> 00:32:57,279

way back home

1014

00:33:00,789 --> 00:32:58,559

so uh

1015

00:33:02,549 --> 00:33:00,799

no no i don't know there's a thousand

1016

00:33:04,950 --> 00:33:02,559

rumors about the launch date of atlantis

1017

00:33:06,870 --> 00:33:04,960

so i don't know which ones are true um

1018

00:33:09,029 --> 00:33:06,880

we uh we are currently planning for the

1019

00:33:10,630 --> 00:33:09,039

28th of june and that is still the plan

1020

00:33:12,310 --> 00:33:10,640

we know we're a little tight on the

1021

00:33:14,149 --> 00:33:12,320

processing schedules in terms of the

1022

00:33:15,509 --> 00:33:14,159

contingency days we have

1023

00:33:16,870 --> 00:33:15,519

because of the workforce reductions

1024

00:33:18,549 --> 00:33:16,880

we've taken

1025

00:33:20,149 --> 00:33:18,559

we've we've limited the amount of crews

1026

00:33:21,590 --> 00:33:20,159

we have and basically

1027

00:33:23,590 --> 00:33:21,600

as one example in the payloads world

1028

00:33:25,029 --> 00:33:23,600

we're down to one single team that that

1029

00:33:27,590 --> 00:33:25,039

installs the payload into the payload

1030

00:33:28,549 --> 00:33:27,600

bay and so if they ran long uh they'd

1031

00:33:29,750 --> 00:33:28,559

have to go home at the end of their

1032

00:33:31,110 --> 00:33:29,760

workday and then come in the next day as

1033

00:33:33,190 --> 00:33:31,120

opposed to having a second shift team

1034

00:33:34,310 --> 00:33:33,200

that could keep up the operations so

1035

00:33:36,470 --> 00:33:34,320

because of that we like to have a

1036

00:33:38,389 --> 00:33:36,480

contingency day or two after we put the

1037

00:33:39,909 --> 00:33:38,399

payload in the bay just in case

1038

00:33:41,750 --> 00:33:39,919

and again i'm not picking on the payload

1039

00:33:43,269 --> 00:33:41,760

just saying that's one example so we

1040

00:33:44,789 --> 00:33:43,279

don't quite have enough contingency days

1041

00:33:47,430 --> 00:33:44,799

for me to be a hundred percent

1042

00:33:48,789 --> 00:33:47,440

comfortable um so the team uh the

1043

00:33:51,909 --> 00:33:48,799

atlantis team has been working some

1044

00:33:53,990 --> 00:33:51,919

options uh we we've been redoing the

1045

00:33:55,990 --> 00:33:54,000

schedule so the 628 schedule looks

1046

00:33:57,350 --> 00:33:56,000

supportable uh the crew training has

1047

00:33:58,710 --> 00:33:57,360

also been a little bit of an issue

1048

00:34:00,230 --> 00:33:58,720

they've had some extra russian training

1049

00:34:01,750 --> 00:34:00,240

that they've had to take uh and we're

1050

00:34:03,590 --> 00:34:01,760

working in the schedule to see what we

1051

00:34:04,630 --> 00:34:03,600

have to keep what we can what we can do

1052

00:34:05,909 --> 00:34:04,640

in parallel

1053

00:34:07,269 --> 00:34:05,919

once we get this mission launched

1054

00:34:09,430 --> 00:34:07,279

because truly one of the big drivers to

1055

00:34:10,790 --> 00:34:09,440

that schedule is this one um then we're

1056

00:34:12,550 --> 00:34:10,800

going to sit down and look at where we

1057

00:34:15,109 --> 00:34:12,560

currently stand and decide if the 28th

1058

00:34:16,629 --> 00:34:15,119

is good maybe we need a day or two maybe

1059

00:34:18,950 --> 00:34:16,639

we need a little more than that so no

1060

00:34:21,270 --> 00:34:18,960

there's no official target to move us to

1061

00:34:22,629 --> 00:34:21,280

4th of july or any other date in july

1062

00:34:24,710 --> 00:34:22,639

we're still trying to do our best to

1063

00:34:25,909 --> 00:34:24,720

keep 628

1064

00:34:28,149 --> 00:34:25,919

but just like we do with every mission

1065

00:34:29,510 --> 00:34:28,159

we'll once we get it in the in the prime

1066

00:34:31,109 --> 00:34:29,520

ready to go slot we'll take a look at

1067

00:34:32,710 --> 00:34:31,119

what it really needs to do

1068

00:34:33,909 --> 00:34:32,720

as far as targeting the landing at

1069

00:34:35,030 --> 00:34:33,919

edwards

1070

00:34:36,550 --> 00:34:35,040

you know it's one of those things we've

1071

00:34:38,470 --> 00:34:36,560

been asked to do a lot

1072

00:34:39,829 --> 00:34:38,480

but the same reasons why we don't do it

1073

00:34:41,349 --> 00:34:39,839

with any other orbiters is why we're not

1074

00:34:43,349 --> 00:34:41,359

doing it with this one is it's full of

1075

00:34:44,869 --> 00:34:43,359

hazardous commodities uh we don't want

1076

00:34:46,550 --> 00:34:44,879

to tour it across the country with all

1077

00:34:47,270 --> 00:34:46,560

the engines loaded up the hypergals in

1078

00:34:48,950 --> 00:34:47,280

it

1079

00:34:50,950 --> 00:34:48,960

all the all the pressurized systems

1080

00:34:52,149 --> 00:34:50,960

that's just not a safe thing to do

1081

00:34:53,589 --> 00:34:52,159

so

1082

00:34:55,589 --> 00:34:53,599

like i said the headquarters is working

1083

00:34:57,510 --> 00:34:55,599

a plan when we ferry the orbiters for

1084

00:34:59,349 --> 00:34:57,520

final display maybe that would be the

1085

00:35:01,109 --> 00:34:59,359

time to do a little bit of a pr tour

1086

00:35:02,390 --> 00:35:01,119

with them but but while they're still in

1087

00:35:03,589 --> 00:35:02,400

an operational state we're not going to

1088

00:35:04,710 --> 00:35:03,599

do that

1089

00:35:06,310 --> 00:35:04,720

okay we had another follow-up in the

1090

00:35:07,910 --> 00:35:06,320

back

1091

00:35:09,589 --> 00:35:07,920

uh gene mcculloch with talking space

1092

00:35:11,670 --> 00:35:09,599

again for either mike mores or mike

1093

00:35:13,270 --> 00:35:11,680

weinbach um this is a question with

1094

00:35:15,190 --> 00:35:13,280

reference to the final disposition of

1095

00:35:17,349 --> 00:35:15,200

the orbiters uh new york is getting

1096

00:35:19,670 --> 00:35:17,359

enterprise and folks over in the new

1097

00:35:21,109 --> 00:35:19,680

york areas or at least some anyhow are

1098

00:35:23,910 --> 00:35:21,119

characterizing enterprise that they

1099

00:35:25,670 --> 00:35:23,920

quote fake orbiter or a hand-me-down or

1100

00:35:28,069 --> 00:35:25,680

something like that what would you go

1101

00:35:29,349 --> 00:35:28,079

ahead and say to folks like that

1102

00:35:31,430 --> 00:35:29,359

well i guess the first thing i'd say is

1103

00:35:32,470 --> 00:35:31,440

i i certainly don't take uh one or two

1104

00:35:33,829 --> 00:35:32,480

people writing an opinion in the

1105

00:35:36,150 --> 00:35:33,839

newspapers representing the entire

1106

00:35:38,470 --> 00:35:36,160

region so i i'm not going to put much

1107

00:35:40,470 --> 00:35:38,480

weight in any of those comments um not

1108

00:35:41,990 --> 00:35:40,480

slamming you guys in your jobs but um

1109

00:35:44,790 --> 00:35:42,000

but you know it's it's the media and

1110

00:35:47,030 --> 00:35:44,800

what chooses to become news and and so

1111

00:35:49,670 --> 00:35:47,040

you know enterprise was a it was a

1112

00:35:51,670 --> 00:35:49,680

landmark uh vehicle a test bed for us

1113

00:35:53,829 --> 00:35:51,680

did all the approach and land tests uh

1114

00:35:55,349 --> 00:35:53,839

it uh it is not a space orbiter and it

1115

00:35:57,030 --> 00:35:55,359

was never designed to be but it

1116

00:35:59,190 --> 00:35:57,040

certainly did exactly what it was was

1117

00:36:01,349 --> 00:35:59,200

intended to be i've actually visited it

1118

00:36:03,910 --> 00:36:01,359

up at the air and space museum in dc and

1119

00:36:05,430 --> 00:36:03,920

it's a pretty cool ship to see um as

1120

00:36:07,030 --> 00:36:05,440

somebody who works with the the space

1121

00:36:09,190 --> 00:36:07,040

orbiters you do look right away and go

1122

00:36:11,190 --> 00:36:09,200

go that doesn't look the same and and it

1123

00:36:13,510 --> 00:36:11,200

doesn't it was built a long time ago and

1124

00:36:15,430 --> 00:36:13,520

we've changed the design a little bit

1125

00:36:17,190 --> 00:36:15,440

but but it is every bit as important to

1126

00:36:19,750 --> 00:36:17,200

this shuttle program as as atlantis

1127

00:36:20,710 --> 00:36:19,760

discovery and endeavor are

1128

00:36:24,630 --> 00:36:20,720

robert

1129

00:36:26,710 --> 00:36:24,640

for mike mores

1130

00:36:29,589 --> 00:36:26,720

i think uh in the run-up to the last

1131

00:36:31,349 --> 00:36:29,599

mission uh you said that um you hadn't

1132

00:36:32,550 --> 00:36:31,359

had a chance to

1133

00:36:33,910 --> 00:36:32,560

talk to the museums because they hadn't

1134

00:36:35,910 --> 00:36:33,920

been selected yet and now they've been

1135

00:36:38,230 --> 00:36:35,920

selected i think museum representatives

1136

00:36:39,990 --> 00:36:38,240

came here earlier this month

1137

00:36:41,510 --> 00:36:40,000

can you describe how that meeting went

1138

00:36:44,230 --> 00:36:41,520

and if there were any particular

1139

00:36:45,990 --> 00:36:44,240

requests on the behalf of the eventual

1140

00:36:48,069 --> 00:36:46,000

shuttle recipients on

1141

00:36:50,390 --> 00:36:48,079

what they wanted with their orbiters

1142

00:36:51,990 --> 00:36:50,400

yes roberts they were here um i think

1143

00:36:53,750 --> 00:36:52,000

it's now been two weeks maybe it was a

1144

00:36:56,310 --> 00:36:53,760

week ago i can't quite remember

1145

00:36:57,750 --> 00:36:56,320

we basically showed them uh we took them

1146

00:36:59,430 --> 00:36:57,760

on a tour got to see what we have talked

1147

00:37:01,510 --> 00:36:59,440

about what our plans are

1148

00:37:03,990 --> 00:37:01,520

defined again specifically what the end

1149

00:37:05,510 --> 00:37:04,000

state that that we plan on leaving the

1150

00:37:07,430 --> 00:37:05,520

orbiter in and then we need their

1151
00:37:09,670 --> 00:37:07,440
requirements to to what display state

1152
00:37:10,710 --> 00:37:09,680
they would like the orbiter to be in

1153
00:37:11,910 --> 00:37:10,720
they should kind of showed us some

1154
00:37:14,950 --> 00:37:11,920
preliminary ideas with what they're

1155
00:37:17,270 --> 00:37:14,960
thinking for display ideas we we got a

1156
00:37:19,190 --> 00:37:17,280
handle on transportation impacts

1157
00:37:21,510 --> 00:37:19,200
both in terms of air transport to their

1158
00:37:23,510 --> 00:37:21,520
site and then local ground transport or

1159
00:37:25,109 --> 00:37:23,520
or see transport

1160
00:37:27,910 --> 00:37:25,119
from that landing site down to their

1161
00:37:29,910 --> 00:37:27,920
final display site um i if i had to sum

1162
00:37:31,430 --> 00:37:29,920
it up in one word it was a little bit of

1163
00:37:32,950 --> 00:37:31,440

um

1164

00:37:35,030 --> 00:37:32,960

it was definitely a learning experience

1165

00:37:37,030 --> 00:37:35,040

to see just exactly the magnitude of

1166

00:37:38,870 --> 00:37:37,040

what they're actually getting now and

1167

00:37:41,349 --> 00:37:38,880

what it takes to to to handle one of

1168

00:37:43,430 --> 00:37:41,359

those things um an example being a lot

1169

00:37:45,910 --> 00:37:43,440

of the display ideas show the orbiter

1170

00:37:47,589 --> 00:37:45,920

kind of suspended or up in at an angle

1171

00:37:49,510 --> 00:37:47,599

and and the recognition that the payload

1172

00:37:50,550 --> 00:37:49,520

doors can't hold their own weight open

1173

00:37:52,870 --> 00:37:50,560

and so you're going to need handling

1174

00:37:54,870 --> 00:37:52,880

equipment to hold the doors open the rms

1175

00:37:56,710 --> 00:37:54,880

the robot arm if it's out and displayed

1176

00:37:58,310 --> 00:37:56,720

it also can't hold its own weight and

1177

00:38:00,150 --> 00:37:58,320

needs to be somehow modified so there's

1178

00:38:01,670 --> 00:38:00,160

a lot of work that will have to be done

1179

00:38:03,349 --> 00:38:01,680

to aesthetically make it look the way

1180

00:38:05,349 --> 00:38:03,359

they want to work that we are not

1181

00:38:07,589 --> 00:38:05,359

planning on doing as part of the the end

1182

00:38:09,589 --> 00:38:07,599

state safing requirements so so a lot of

1183

00:38:10,790 --> 00:38:09,599

learning going on on both sides um and

1184

00:38:11,990 --> 00:38:10,800

it was a very good kickoff meeting but

1185

00:38:13,910 --> 00:38:12,000

we still have a lot of work to do the

1186

00:38:15,750 --> 00:38:13,920

plan is in the next month or two

1187

00:38:17,670 --> 00:38:15,760

to have that finalized to the point

1188

00:38:19,670 --> 00:38:17,680

where we now know what to go start

1189

00:38:21,589 --> 00:38:19,680

discoveries is one of the easier ones

1190

00:38:23,750 --> 00:38:21,599

the aerospace museum has a pretty good

1191

00:38:25,750 --> 00:38:23,760

idea how they want to display

1192

00:38:27,750 --> 00:38:25,760

discovery and so what we do to that

1193

00:38:29,349 --> 00:38:27,760

vehicle is pretty well worked out the

1194

00:38:30,870 --> 00:38:29,359

transportation plan is already pretty

1195

00:38:32,150 --> 00:38:30,880

well worked out as well

1196

00:38:33,910 --> 00:38:32,160

it really helps that they sit on the end

1197

00:38:35,109 --> 00:38:33,920

of a very long runway and so we don't

1198

00:38:37,910 --> 00:38:35,119

have to do too much there other than get

1199

00:38:38,870 --> 00:38:37,920

some cranes uh to work and on that note

1200

00:38:41,190 --> 00:38:38,880

you know one of the things we're doing

1201

00:38:42,710 --> 00:38:41,200

on our side the last time we used cranes

1202

00:38:46,230 --> 00:38:42,720

to move an orbiter off the back of the

1203

00:38:47,750 --> 00:38:46,240

747 was about 20 25 years ago and so

1204

00:38:48,950 --> 00:38:47,760

we've brought those procedures back out

1205

00:38:50,470 --> 00:38:48,960

we've got that hardware back out of

1206

00:38:53,190 --> 00:38:50,480

storage we're actually going to set it

1207

00:38:54,710 --> 00:38:53,200

up next month out at the slf and we're

1208

00:38:55,829 --> 00:38:54,720

not going to bring an sca in or lift an

1209

00:38:57,270 --> 00:38:55,839

actual orbiter but we're going to put

1210

00:38:58,790 --> 00:38:57,280

the sling together and we're going to

1211

00:38:59,990 --> 00:38:58,800

use smaller cranes than what we normally

1212

00:39:01,589 --> 00:39:00,000

use there's only a couple of the big

1213

00:39:03,109 --> 00:39:01,599

cranes we need in the country we don't

1214

00:39:04,470 --> 00:39:03,119

want to tie those up but we're going to

1215

00:39:06,069 --> 00:39:04,480

basically go drive around that to make

1216

00:39:07,510 --> 00:39:06,079

sure we understand

1217

00:39:09,829 --> 00:39:07,520

two or three years from now how we need

1218

00:39:11,430 --> 00:39:09,839

to go execute those crane lifts to be

1219

00:39:13,829 --> 00:39:11,440

able to get the gorge to the display

1220

00:39:15,349 --> 00:39:13,839

side so it was basically it was the

1221

00:39:17,030 --> 00:39:15,359

linchpin that that kind of kick-started

1222

00:39:18,950 --> 00:39:17,040

the engine and let us now start actually

1223

00:39:20,390 --> 00:39:18,960

working what we're good at which is

1224

00:39:21,829 --> 00:39:20,400

building plans and executing them as

1225

00:39:23,030 --> 00:39:21,839

opposed to this this kind of

1226

00:39:24,630 --> 00:39:23,040

hypothetical one which we couldn't

1227

00:39:27,589 --> 00:39:24,640

really do until we named sites and so

1228

00:39:28,710 --> 00:39:27,599

now that teams off and running

1229

00:39:33,510 --> 00:39:28,720

jay

1230

00:39:35,829 --> 00:39:33,520

mike i don't really think i have to ask

1231

00:39:36,630 --> 00:39:35,839

you this question but

1232

00:39:39,270 --> 00:39:36,640

uh

1233

00:39:41,510 --> 00:39:39,280

the president's going to be here

1234

00:39:43,670 --> 00:39:41,520

will you even consider pushing the

1235

00:39:45,589 --> 00:39:43,680

envelope or taking any chance that you

1236

00:39:47,109 --> 00:39:45,599

normally wouldn't take

1237

00:39:48,710 --> 00:39:47,119

just to get

1238

00:39:50,790 --> 00:39:48,720

endeavour off the pad while the

1239

00:39:57,109 --> 00:39:50,800

president's here

1240

00:40:01,349 --> 00:39:59,670

ken did you have a follow-up

1241

00:40:03,990 --> 00:40:01,359

thank you ken kramer for space flight

1242

00:40:05,589 --> 00:40:04,000

magazine uh for either mike um just

1243

00:40:07,829 --> 00:40:05,599

wondering if you know the status of this

1244

00:40:10,069 --> 00:40:07,839

usa proposal to fly one or two of the

1245

00:40:12,309 --> 00:40:10,079

orbiters one or two missions a year if

1246

00:40:13,589 --> 00:40:12,319

that's still alive or is that dead

1247

00:40:15,910 --> 00:40:13,599

because i'm wondering about the

1248

00:40:18,069 --> 00:40:15,920

decommissioning of of the next two

1249

00:40:20,230 --> 00:40:18,079

orbiters would they is there any chance

1250

00:40:22,150 --> 00:40:20,240

you might delay that to consider this

1251
00:40:23,910 --> 00:40:22,160
usa proposal or

1252
00:40:25,829 --> 00:40:23,920
are you going to fully uh decommission

1253
00:40:27,190 --> 00:40:25,839
the orbiters thanks um so let's see i've

1254
00:40:28,790 --> 00:40:27,200
said it a couple times that that

1255
00:40:30,150 --> 00:40:28,800
proposal is being run by the united

1256
00:40:31,910 --> 00:40:30,160
space alliance and a contractor

1257
00:40:33,430 --> 00:40:31,920
consortium not nasa has nothing to do

1258
00:40:35,190 --> 00:40:33,440
with it so they're whether they're going

1259
00:40:37,750 --> 00:40:35,200
to continue that proposal or not i i do

1260
00:40:38,870 --> 00:40:37,760
not know you'd have to ask them um they

1261
00:40:40,230 --> 00:40:38,880
understand the timelines and the

1262
00:40:41,670 --> 00:40:40,240
schedules that we're on and and their

1263
00:40:43,589 --> 00:40:41,680

proposals would take those into

1264

00:40:45,589 --> 00:40:43,599

consideration so again this is this is

1265

00:40:47,349 --> 00:40:45,599

not a nasa study to do this this is a

1266

00:40:49,589 --> 00:40:47,359

contractor proposal just like we've

1267

00:40:52,390 --> 00:40:49,599

asked for uh it's in response to a nasa

1268

00:40:53,990 --> 00:40:52,400

request for commercial crew options and

1269

00:40:56,710 --> 00:40:54,000

ways to fly you just saw we awarded our

1270

00:40:58,950 --> 00:40:56,720

cc dev two contracts to four companies

1271

00:41:00,870 --> 00:40:58,960

um there's a ccdev3 that's going to come

1272

00:41:02,390 --> 00:41:00,880

out in a little bit so if they want to

1273

00:41:03,430 --> 00:41:02,400

compete in that world they can they

1274

00:41:04,710 --> 00:41:03,440

understand the timelines and the

1275

00:41:07,670 --> 00:41:04,720

restrictions

1276

00:41:10,309 --> 00:41:07,680

but nasa's not involved in any of that

1277

00:41:11,349 --> 00:41:10,319

okay time for one last follow-up with

1278

00:41:15,589 --> 00:41:11,359

jim

1279

00:41:18,069 --> 00:41:15,599

newspaper are there any particular

1280

00:41:19,670 --> 00:41:18,079

commemorative payloads or other

1281

00:41:22,230 --> 00:41:19,680

materials that have been put on this

1282

00:41:25,030 --> 00:41:22,240

flight since it's its last flight

1283

00:41:27,990 --> 00:41:25,040

let's see i i uh i know on discovery we

1284

00:41:29,589 --> 00:41:28,000

flew a a mission kit of some end of

1285

00:41:31,829 --> 00:41:29,599

program patches to be able to give to

1286

00:41:33,670 --> 00:41:31,839

all the employees at the end i don't i

1287

00:41:34,870 --> 00:41:33,680

think we're flying a couple we're not

1288

00:41:36,550 --> 00:41:34,880

nearly as many as we've flown discovery

1289

00:41:38,309 --> 00:41:36,560

i think endeavors carrying a few as well

1290

00:41:40,309 --> 00:41:38,319

but uh but other than that nothing

1291

00:41:41,990 --> 00:41:40,319

that's a particular dedicated uh

1292

00:41:43,910 --> 00:41:42,000

commemorative event uh you know we fly

1293

00:41:45,750 --> 00:41:43,920

an official mission kit all the time so

1294

00:41:48,870 --> 00:41:45,760

there's flags and patches and other

1295

00:41:51,030 --> 00:41:48,880

things um probably a couple extra to to

1296

00:41:52,470 --> 00:41:51,040

commemorate into program stuff but but

1297

00:41:58,150 --> 00:41:52,480

nothing that i can recall top my head

1298

00:42:02,630 --> 00:42:00,150

that will conclude today's pre-launch

1299

00:42:03,510 --> 00:42:02,640

news conference for the sts-134

1300

00:42:05,030 --> 00:42:03,520

mission

1301

00:42:07,589 --> 00:42:05,040

please join us tomorrow on nasa

1302

00:42:09,990 --> 00:42:07,599

television for at 10 a.m eastern time

1303

00:42:11,950 --> 00:42:10,000

for the I minus one countdown status

1304

00:42:17,510 --> 00:42:11,960

briefing for more information on the

1305

00:42:17,520 --> 00:42:25,190

shuttle thank you