



1
00:00:07,030 --> 00:00:05,390
welcome to this post landing news

2
00:00:09,110 --> 00:00:07,040
conference or space shuttle Atlantis is

3
00:00:11,480 --> 00:00:09,120
sts-132 mission to the International

4
00:00:12,890 --> 00:00:11,490
Space Station joining us here at NASA's

5
00:00:14,299 --> 00:00:12,900
Kennedy Space Center are three NASA

6
00:00:16,760 --> 00:00:14,309
managers who will give us the latest on

7
00:00:17,960 --> 00:00:16,770
Atlantis is 12-day mission and following

8
00:00:20,420 --> 00:00:17,970
this morning's landing here in Florida

9
00:00:22,550 --> 00:00:20,430
first we have NASA's associate

10
00:00:26,060 --> 00:00:22,560
administrator for Space Operations bill

11
00:00:28,070 --> 00:00:26,070
Gerstenmaier good morning tis left is

12
00:00:31,279 --> 00:00:28,080
space shuttle launch integration manager

13
00:00:32,569 --> 00:00:31,289

Mike Moses morning and finally we have

14

00:00:35,630 --> 00:00:32,579

the shuttle launch director mike

15

00:00:37,100 --> 00:00:35,640

leimbach good morning we'll start with

16

00:00:39,049 --> 00:00:37,110

comments and then opened up the

17

00:00:42,590 --> 00:00:39,059

questions for tomorrow thanks Howard

18

00:00:44,990 --> 00:00:42,600

it's great to be here again I can't say

19

00:00:46,490 --> 00:00:45,000

how great the overall shuttle station

20

00:00:49,610 --> 00:00:46,500

team really performed during this

21

00:00:51,260 --> 00:00:49,620

mission you know it looked easy on the

22

00:00:53,330 --> 00:00:51,270

outside but I can tell you the

23

00:00:56,090 --> 00:00:53,340

behind-the-scenes work was very intense

24

00:00:58,970 --> 00:00:56,100

the teams were focused they just did a

25

00:01:00,110 --> 00:00:58,980

super job they had a great attitude they

26

00:01:01,160 --> 00:01:00,120

even had a little sense of humor

27

00:01:03,799 --> 00:01:01,170

throughout the mission which was

28

00:01:05,299 --> 00:01:03,809

excellent and it worked out just really

29

00:01:07,550 --> 00:01:05,309

well the vehicle on the runway looked

30

00:01:09,980 --> 00:01:07,560

really really clean you know it's hard

31

00:01:11,480 --> 00:01:09,990

to tell when you look underneath exactly

32

00:01:13,460 --> 00:01:11,490

what you you know if you see any small

33

00:01:15,200 --> 00:01:13,470

nicks and things but it looked as

34

00:01:16,789 --> 00:01:15,210

probably as clean as I've seen any of

35

00:01:18,649 --> 00:01:16,799

the shuttle vehicles we've had and

36

00:01:21,020 --> 00:01:18,659

things look really good we had a little

37

00:01:22,340 --> 00:01:21,030

gap filler that popped out we got some

38

00:01:24,080 --> 00:01:22,350

images of that which will be good

39

00:01:25,609 --> 00:01:24,090

boundary layer transition data for us

40

00:01:28,010 --> 00:01:25,619

and that's that's very important so

41

00:01:30,050 --> 00:01:28,020

again I want to really take my hat off

42

00:01:31,640 --> 00:01:30,060

to the teams that have just done a

43

00:01:34,249 --> 00:01:31,650

tremendous job of getting the vehicle

44

00:01:35,810 --> 00:01:34,259

ready to go fly and then the execution

45

00:01:37,550 --> 00:01:35,820

on orbit was just phenomenal and it's

46

00:01:39,740 --> 00:01:37,560

not only the teams here but it's also

47

00:01:41,539 --> 00:01:39,750

the teams in Russia that built a pretty

48

00:01:43,160 --> 00:01:41,549

nice module the things I talked to you

49

00:01:45,020 --> 00:01:43,170

about it to pre launch conference where

50

00:01:46,789 --> 00:01:45,030

I was a little concerned about some of

51
00:01:49,789 --> 00:01:46,799
the arm activities and using and

52
00:01:51,380 --> 00:01:49,799
birthing the new mrm one module to the

53
00:01:53,569 --> 00:01:51,390
space station that all worked out

54
00:01:54,889 --> 00:01:53,579
tremendously smooth and that's really a

55
00:01:57,080 --> 00:01:54,899
tribute to those teams that did a

56
00:01:59,660 --> 00:01:57,090
tremendous amount of testing in Moscow

57
00:02:01,999 --> 00:01:59,670
in the u.s. so again my hat's off to the

58
00:02:03,859 --> 00:02:02,009
team they make it look easy I can tell

59
00:02:05,510 --> 00:02:03,869
you it wasn't easy and they deserve a

60
00:02:08,690 --> 00:02:05,520
lot of praise and congratulations for

61
00:02:10,339 --> 00:02:08,700
what they've done thanks Mike yeah I

62
00:02:12,890 --> 00:02:10,349
can't I can't echo much more than that

63
00:02:13,809 --> 00:02:12,900

it really was an amazing mission we were

64

00:02:16,000 --> 00:02:13,819

joking on the way over

65

00:02:17,589 --> 00:02:16,010

or that it's getting to be rhetoric now

66

00:02:19,179 --> 00:02:17,599

that we tell you that the vehicle that

67

00:02:21,039 --> 00:02:19,189

we just saw is one of the cleanest we've

68

00:02:22,539 --> 00:02:21,049

ever seen but that's actually the truth

69

00:02:25,780 --> 00:02:22,549

that each one is just getting better and

70

00:02:27,129 --> 00:02:25,790

better it's a real testament to the to

71

00:02:28,390 --> 00:02:27,139

the folks that went through and all the

72

00:02:31,059 --> 00:02:28,400

redesign work that happened after

73

00:02:32,699 --> 00:02:31,069

Columbia to really to really take care

74

00:02:34,869 --> 00:02:32,709

of the external tank and effectively

75

00:02:37,179 --> 00:02:34,879

eliminate foam shedding that can cause

76
00:02:38,770 --> 00:02:37,189
damage that we're concerned about and

77
00:02:40,119 --> 00:02:38,780
there's still a little bit of popcorn

78
00:02:41,920 --> 00:02:40,129
that happens that we know about you

79
00:02:43,780 --> 00:02:41,930
could see some of those marks on the

80
00:02:46,750 --> 00:02:43,790
vehicle but nothing at all in the realm

81
00:02:48,819 --> 00:02:46,760
of anything we are concerned with so

82
00:02:50,140 --> 00:02:48,829
again a real testament to the to the

83
00:02:51,550 --> 00:02:50,150
teams here at Kennedy who put the

84
00:02:53,349 --> 00:02:51,560
vehicle together the launch team who

85
00:02:54,580 --> 00:02:53,359
gets it into orbit the folks back at

86
00:02:56,979 --> 00:02:54,590
Johnson who planned out the mission

87
00:02:59,020 --> 00:02:56,989
executed train the crew the crews that

88
00:03:01,059 --> 00:02:59,030

executed and our Marshall propulsion

89

00:03:03,360 --> 00:03:01,069

elements really do rise to the occasion

90

00:03:05,770 --> 00:03:03,370

and they're kind of the unsung heroes of

91

00:03:08,500 --> 00:03:05,780

getting us into orbit and letting us

92

00:03:10,689 --> 00:03:08,510

again focus on the mission and get the

93

00:03:12,459 --> 00:03:10,699

get the job done at the station as bill

94

00:03:14,709 --> 00:03:12,469

said the Russians build a very nice

95

00:03:17,470 --> 00:03:14,719

payload with the mrm module looking

96

00:03:19,030 --> 00:03:17,480

forward to having that activated and and

97

00:03:20,710 --> 00:03:19,040

then we also talked a little bit about

98

00:03:22,030 --> 00:03:20,720

the gap filler that stuck out it

99

00:03:24,039 --> 00:03:22,040

protruded I forget the actual heights

100

00:03:26,009 --> 00:03:24,049

but it was pretty small but we had the

101
00:03:29,429 --> 00:03:26,019
folks from Langley Research Center

102
00:03:31,780 --> 00:03:29,439
supporting us with the high thermit

103
00:03:33,939 --> 00:03:31,790
basically has some thermal imaging

104
00:03:35,649 --> 00:03:33,949
cameras on it that kind of fly along the

105
00:03:37,059 --> 00:03:35,659
flight path and try to catch a shot of

106
00:03:39,729 --> 00:03:37,069
the shuttle as it as it comes through

107
00:03:40,869 --> 00:03:39,739
the atmosphere and up at about Mach 20

108
00:03:44,319 --> 00:03:40,879
or so when they got some good imagery

109
00:03:46,899 --> 00:03:44,329
you know we did that on ov 103 discovery

110
00:03:48,520 --> 00:03:46,909
has a tile that we intentionally have a

111
00:03:50,530 --> 00:03:48,530
bump on it to trip that boundary layer

112
00:03:51,909 --> 00:03:50,540
as a research project so this gap filler

113
00:03:54,249 --> 00:03:51,919

kind of sort of the same purpose as an

114

00:03:55,749 --> 00:03:54,259

unintentional chance to gather some more

115

00:03:58,240 --> 00:03:55,759

data we were fortunate to have that

116

00:03:59,439 --> 00:03:58,250

aircraft ready to go and image image the

117

00:04:01,059 --> 00:03:59,449

vehicle and they did capture good data

118

00:04:03,249 --> 00:04:01,069

so that's you know unique research

119

00:04:05,800 --> 00:04:03,259

environment not many aircraft flight

120

00:04:07,089 --> 00:04:05,810

Mach 20 through the atmosphere so so the

121

00:04:10,209 --> 00:04:07,099

shuttle provides a unique chance to

122

00:04:11,499 --> 00:04:10,219

gather that data and then you could

123

00:04:12,849 --> 00:04:11,509

stretch back just beyond this mission so

124

00:04:14,979 --> 00:04:12,859

not only is this mission fantastic but

125

00:04:16,629 --> 00:04:14,989

the entire life of Atlantis the folks

126

00:04:17,979 --> 00:04:16,639

have built it to all the missions it's

127

00:04:21,069 --> 00:04:17,989

flown over its career have been just

128

00:04:23,290 --> 00:04:21,079

amazing and so so I can't I can't even

129

00:04:25,269 --> 00:04:23,300

begin to talk about how proud I element

130

00:04:26,660 --> 00:04:25,279

of Atlantis and the whole team that put

131

00:04:28,190 --> 00:04:26,670

it together so

132

00:04:29,240 --> 00:04:28,200

from a program standpoint we didn't

133

00:04:31,040 --> 00:04:29,250

really have anything to talk about today

134

00:04:33,170 --> 00:04:31,050

and landing the weather was was just

135

00:04:34,580 --> 00:04:33,180

perfect you know we kind of talked it

136

00:04:35,810 --> 00:04:34,590

this storm out in the Atlantic was

137

00:04:37,310 --> 00:04:35,820

either going to give us a big band of

138

00:04:39,410 --> 00:04:37,320

clouds and showers that we talked about

139

00:04:40,400 --> 00:04:39,420

forever or there'd be a nice opening we

140

00:04:42,020 --> 00:04:40,410

didn't really need to worry about it

141

00:04:43,850 --> 00:04:42,030

that's what we got today it was a nice

142

00:04:45,950 --> 00:04:43,860

little opening to not worry about so we

143

00:04:47,120 --> 00:04:45,960

were really happy there to not only

144

00:04:49,280 --> 00:04:47,130

launched on time but laying on time

145

00:04:51,080 --> 00:04:49,290

that's that's a fun thing to do so with

146

00:04:53,390 --> 00:04:51,090

that I'll turn over one okay well thanks

147

00:04:54,620 --> 00:04:53,400

Mike as bill and Mike said the vehicle

148

00:04:56,780 --> 00:04:54,630

looks really really good really really

149

00:04:59,210 --> 00:04:56,790

good at on the runway saw just a couple

150

00:05:00,920 --> 00:04:59,220

little dings it will get a good close

151
00:05:03,200 --> 00:05:00,930
inspection of those areas this afternoon

152
00:05:04,700 --> 00:05:03,210
when we get back into the OPF we should

153
00:05:07,610 --> 00:05:04,710
get towing underway in the next three or

154
00:05:09,320 --> 00:05:07,620
four hours or so and get back into the

155
00:05:11,510 --> 00:05:09,330
OPF and start the processing for launch

156
00:05:12,800 --> 00:05:11,520
on need mission the team has got the

157
00:05:15,200 --> 00:05:12,810
plan i'll put together for that will

158
00:05:17,390 --> 00:05:15,210
start executing that tonight and that

159
00:05:18,740 --> 00:05:17,400
will go extremely well and we'll see

160
00:05:21,710 --> 00:05:18,750
where the where that takes us over the

161
00:05:23,180 --> 00:05:21,720
next couple of months i'm always amazed

162
00:05:24,920 --> 00:05:23,190
by the sight of the orbiter on the

163
00:05:26,090 --> 00:05:24,930

runway it's one of the best things we

164

00:05:28,520 --> 00:05:26,100

get to do here at the Kennedy Space

165

00:05:30,470 --> 00:05:28,530

Center is go walk around the orbiter

166

00:05:32,630 --> 00:05:30,480

talk to the crew when they get off talk

167

00:05:34,250 --> 00:05:32,640

to the ground crews the process and turn

168

00:05:36,800 --> 00:05:34,260

the vehicle around it's just an amazing

169

00:05:39,500 --> 00:05:36,810

machine it's it's a it's a testament to

170

00:05:41,660 --> 00:05:39,510

America's prowess and space that we're

171

00:05:43,190 --> 00:05:41,670

able to reuse the spacecraft over and

172

00:05:45,440 --> 00:05:43,200

over and it's just a beautiful machine

173

00:05:48,170 --> 00:05:45,450

to see on the runway and we got to see

174

00:05:50,300 --> 00:05:48,180

it up close and personal again today I'm

175

00:05:52,250 --> 00:05:50,310

going to hate to see that go away but

176
00:05:54,470 --> 00:05:52,260
today we got to see her up close and

177
00:05:56,270 --> 00:05:54,480
Atlantis is beautiful and we'll start

178
00:05:59,480 --> 00:05:56,280
the processing for LN this evening

179
00:06:01,310 --> 00:05:59,490
Thanks well now it up to questions

180
00:06:02,720 --> 00:06:01,320
please wait for the microphone please

181
00:06:04,400 --> 00:06:02,730
when you get it say your name news

182
00:06:05,780 --> 00:06:04,410
affiliation and to whom you like to ask

183
00:06:06,830 --> 00:06:05,790
if your question answer will start on

184
00:06:11,080 --> 00:06:06,840
this side over here in the work our way

185
00:06:14,230 --> 00:06:11,090
down so with 70 yes it's definitely

186
00:06:18,560 --> 00:06:14,240
Seneca Doane for right at least eight

187
00:06:24,200 --> 00:06:18,570
television I have a unlike my questions

188
00:06:29,930 --> 00:06:24,210

usually a long one this time for any for

189

00:06:31,730 --> 00:06:29,940

anyone mr. Gerstenmaier or I was I think

190

00:06:33,110 --> 00:06:31,740

today was you know looking at the past

191

00:06:35,840 --> 00:06:33,120

in the future for the space program

192

00:06:38,510 --> 00:06:35,850

because Atlantis is down possibly

193

00:06:40,320 --> 00:06:38,520

forever you make it sound almost like is

194

00:06:43,710 --> 00:06:40,330

going to fly again by

195

00:06:46,950 --> 00:06:43,720

you know how good it looks other ships

196

00:06:51,390 --> 00:06:46,960

will follow assume and the space station

197

00:06:53,399 --> 00:06:51,400

is built now I remember when the shuttle

198

00:06:56,100 --> 00:06:53,409

program started there were officials

199

00:06:58,050 --> 00:06:56,110

that were saying that the vehicle

200

00:07:00,689 --> 00:06:58,060

actually could be used to launch

201
00:07:02,730 --> 00:07:00,699
components to be assembled in orbit to

202
00:07:04,800 --> 00:07:02,740
build spacecraft that would leave Earth

203
00:07:10,080 --> 00:07:04,810
orbit to carry astronauts to other

204
00:07:13,830 --> 00:07:10,090
celestial bodies etc I realized that the

205
00:07:18,209 --> 00:07:13,840
ships are old and they don't have an

206
00:07:20,520 --> 00:07:18,219
escape system I was wondering if the

207
00:07:23,939 --> 00:07:20,530
shuttle had an escape system if you

208
00:07:27,089 --> 00:07:23,949
could turn that cabin into a cabin that

209
00:07:30,390 --> 00:07:27,099
can be expelled in case of a launch

210
00:07:33,980 --> 00:07:30,400
disaster or in other any other point in

211
00:07:36,839 --> 00:07:33,990
the flight wouldn't be this the

212
00:07:38,640 --> 00:07:36,849
reasonable economical way to go instead

213
00:07:43,830 --> 00:07:38,650

of just retiring everything and waiting

214

00:07:45,300 --> 00:07:43,840

for we don't know what thank you well

215

00:07:48,180 --> 00:07:45,310

let's see i guess i can take a crack at

216

00:07:50,879 --> 00:07:48,190

it down and it really comes down to the

217

00:07:52,499 --> 00:07:50,889

the budget that you have and from a

218

00:07:54,779 --> 00:07:52,509

technical standpoint you could make any

219

00:07:57,450 --> 00:07:54,789

launch system work you could go retrofit

220

00:07:59,399 --> 00:07:57,460

the shuttle to give it an escape system

221

00:08:02,189 --> 00:07:59,409

doing so in the existing architecture

222

00:08:04,439 --> 00:08:02,199

would would take a significant chunk of

223

00:08:06,360 --> 00:08:04,449

its payload capability in terms of the

224

00:08:08,100 --> 00:08:06,370

mass it can lift to orbit the fact that

225

00:08:09,300 --> 00:08:08,110

it's a reusable spacecraft means we take

226

00:08:12,329 --> 00:08:09,310

a lot of mass up and then back down

227

00:08:14,610 --> 00:08:12,339

again and so so from that standpoint if

228

00:08:16,920 --> 00:08:14,620

your purpose is to just purely put mass

229

00:08:19,079 --> 00:08:16,930

into low-earth orbit the fact that you

230

00:08:20,820 --> 00:08:19,089

use a reusable craft for it you pay a

231

00:08:23,159 --> 00:08:20,830

cost you then hopefully gain that back

232

00:08:25,469 --> 00:08:23,169

in a life cycle cost that is a cheaper

233

00:08:26,879 --> 00:08:25,479

thing to operate so that really is the

234

00:08:29,399 --> 00:08:26,889

trade space you end up looking at it's

235

00:08:31,050 --> 00:08:29,409

it's not only the the design and initial

236

00:08:32,639 --> 00:08:31,060

setup costs that construct it's the life

237

00:08:34,469 --> 00:08:32,649

cycle cost to maintain and operate and

238

00:08:36,300 --> 00:08:34,479

then it really comes to the architecture

239

00:08:37,469 --> 00:08:36,310

for the purpose of the mission you want

240

00:08:39,959 --> 00:08:37,479

for the building of the space station

241

00:08:42,630 --> 00:08:39,969

the shuttle was the ideal truck to haul

242

00:08:44,219 --> 00:08:42,640

those components into orbit you could do

243

00:08:46,259 --> 00:08:44,229

the same thing and built an in

244

00:08:48,569 --> 00:08:46,269

spacecraft that then transfers itself

245

00:08:50,430 --> 00:08:48,579

over to the Moon or Mars certainly

246

00:08:52,079 --> 00:08:50,440

that's all doable it's just what

247

00:08:53,420 --> 00:08:52,089

architecture do you want and what's the

248

00:08:55,310 --> 00:08:53,430

best way to get there

249

00:08:57,470 --> 00:08:55,320

if you run all those trades and you do

250

00:08:59,780 --> 00:08:57,480

all the math and you do the science the

251

00:09:02,030 --> 00:08:59,790

shuttle as a carrier heavy lift

252

00:09:03,950 --> 00:09:02,040

capability doesn't necessarily lend

253

00:09:05,660 --> 00:09:03,960

itself to be the most economical or the

254

00:09:07,190 --> 00:09:05,670

most feasible there are other ways to go

255

00:09:08,810 --> 00:09:07,200

but then again you have to trade the the

256

00:09:10,280 --> 00:09:08,820

design costs and then there are the

257

00:09:12,769 --> 00:09:10,290

intangibles that we'd like to talk about

258

00:09:15,139 --> 00:09:12,779

too is just the the familiarity the

259

00:09:17,900 --> 00:09:15,149

system that known the node hardware you

260

00:09:19,970 --> 00:09:17,910

talked about the you said the vehicles

261

00:09:21,740 --> 00:09:19,980

are old yet true they are 30 years old

262

00:09:24,079 --> 00:09:21,750

but they're not old at all they they're

263

00:09:26,480 --> 00:09:24,089

in fantastic shape they fly perfectly

264

00:09:28,940 --> 00:09:26,490

and and they do exactly what we would

265

00:09:30,470 --> 00:09:28,950

mean them to we just don't have the

266

00:09:32,750 --> 00:09:30,480

budget to continue to keep doing that

267

00:09:34,430 --> 00:09:32,760

plus more Plus expand beyond low-earth

268

00:09:36,170 --> 00:09:34,440

orbit so at some point you just have to

269

00:09:39,410 --> 00:09:36,180

balance your book and decide what to do

270

00:09:41,540 --> 00:09:39,420

next ideally I think yeah we would have

271

00:09:43,130 --> 00:09:41,550

all loved to have kept flying shuttle

272

00:09:44,360 --> 00:09:43,140

while we set up the new system and we

273

00:09:46,190 --> 00:09:44,370

just transition from one right to the

274

00:09:47,630 --> 00:09:46,200

other and move on nice and and smoothly

275

00:09:49,970 --> 00:09:47,640

we just don't have the budget to do that

276

00:09:52,180 --> 00:09:49,980

and that's the reality of the world we

277

00:09:56,389 --> 00:09:52,190

live in I don't know if you guys want to

278

00:09:58,880 --> 00:09:56,399

chime in on that or not I saw an

279

00:10:01,340 --> 00:09:58,890

alternate escape system that was being

280

00:10:04,100 --> 00:10:01,350

either tested or they were preparing

281

00:10:06,920 --> 00:10:04,110

tests which instead of having it launch

282

00:10:08,960 --> 00:10:06,930

escape tower would have the Rockets

283

00:10:10,790 --> 00:10:08,970

underneath and would remove the capsule

284

00:10:13,490 --> 00:10:10,800

from the top of a rocket I was wondering

285

00:10:16,430 --> 00:10:13,500

if that could be applied to the shuttle

286

00:10:20,690 --> 00:10:16,440

cabin and without the head and you know

287

00:10:24,199 --> 00:10:20,700

a lot of i don't know i should say but

288

00:10:27,079 --> 00:10:24,209

without affecting too much the payload

289

00:10:29,240 --> 00:10:27,089

capability looked at it in the past we

290

00:10:30,680 --> 00:10:29,250

looked at adding remember in the 90s we

291

00:10:32,990 --> 00:10:30,690

looked pretty extensively at adding an

292

00:10:34,910 --> 00:10:33,000

escape capability to the orbiter and it

293

00:10:36,260 --> 00:10:34,920

was pretty invasive from an overall

294

00:10:38,390 --> 00:10:36,270

standpoint it required a lot of

295

00:10:40,400 --> 00:10:38,400

modifications to the crew compartment it

296

00:10:41,990 --> 00:10:40,410

required the extractor rockets or pusher

297

00:10:44,900 --> 00:10:42,000

rockets to be there it had some

298

00:10:47,329 --> 00:10:44,910

separation planes it was a tremendous

299

00:10:49,220 --> 00:10:47,339

amount of work to modify the vehicle and

300

00:10:51,290 --> 00:10:49,230

then it was going to do what Mike talked

301
00:10:53,569 --> 00:10:51,300
about it actually impacted dramatically

302
00:10:55,610 --> 00:10:53,579
that the car going care and capability

303
00:10:56,840 --> 00:10:55,620
which wouldn't allowed us at that point

304
00:10:58,880 --> 00:10:56,850
if we would have done it to build space

305
00:11:00,920 --> 00:10:58,890
station because we truly needed all the

306
00:11:02,480 --> 00:11:00,930
cargo capability to get station built

307
00:11:04,420 --> 00:11:02,490
with the large modules be carried so

308
00:11:06,769 --> 00:11:04,430
when we looked at it then it was

309
00:11:07,360 --> 00:11:06,779
extensive amount of cost a lot of

310
00:11:10,150 --> 00:11:07,370
redesign

311
00:11:12,519 --> 00:11:10,160
lots of analysis and then you ended up

312
00:11:15,250 --> 00:11:12,529
with a vehicle that really lost a lot of

313
00:11:18,579 --> 00:11:15,260

its payload care carrying capability and

314

00:11:21,579 --> 00:11:18,589

one final and quick question and what

315

00:11:23,050 --> 00:11:21,589

about building a rocket based on the

316

00:11:26,230 --> 00:11:23,060

current architecture instead of

317

00:11:27,790 --> 00:11:26,240

reinventing the wheel from scratch it's

318

00:11:29,530 --> 00:11:27,800

certainly possible and it like i said

319

00:11:31,930 --> 00:11:29,540

that's in the trade space of designs you

320

00:11:34,240 --> 00:11:31,940

could you could design a any system you

321

00:11:35,740 --> 00:11:34,250

wanted based on any architecture what

322

00:11:37,240 --> 00:11:35,750

propellant you use what size engine use

323

00:11:39,490 --> 00:11:37,250

how big the upper stages how big the

324

00:11:41,950 --> 00:11:39,500

main core stage is whether you solids or

325

00:11:43,540 --> 00:11:41,960

liquids all that can be traded it kind

326

00:11:45,100 --> 00:11:43,550

of it depends on what the variable you

327

00:11:48,610 --> 00:11:45,110

want to optimize for you try to optimize

328

00:11:51,220 --> 00:11:48,620

for design costs lifecycle costs are you

329

00:11:53,200 --> 00:11:51,230

trying to design for mass Tullio mass to

330

00:11:55,060 --> 00:11:53,210

the moon it picked the variable you want

331

00:11:57,490 --> 00:11:55,070

and you can you can crank out any answer

332

00:11:59,440 --> 00:11:57,500

you want and so you know the shuttle was

333

00:12:01,780 --> 00:11:59,450

built back when the equation was said

334

00:12:03,850 --> 00:12:01,790

build the the maximum cargo capability

335

00:12:05,800 --> 00:12:03,860

you can do a low-earth orbit if you're

336

00:12:07,990 --> 00:12:05,810

going to go back to the moon you saw

337

00:12:10,510 --> 00:12:08,000

with the Ares one Ares 5 type design

338

00:12:13,780 --> 00:12:10,520

that type of mission usually dictates

339

00:12:15,490 --> 00:12:13,790

that you need a higher mass 24 to throw

340

00:12:17,829 --> 00:12:15,500

at the moon so for translunar injection

341

00:12:19,240 --> 00:12:17,839

you design a different system but it's

342

00:12:21,070 --> 00:12:19,250

definitely certainly a possible design

343

00:12:22,660 --> 00:12:21,080

that you could use shuttle existing

344

00:12:24,550 --> 00:12:22,670

architecture to go build a heavy lift

345

00:12:26,140 --> 00:12:24,560

vehicle the shuttle itself is a heavy

346

00:12:28,510 --> 00:12:26,150

lift vehicle it's just carrying the

347

00:12:30,430 --> 00:12:28,520

orbiter as most of its payload in your

348

00:12:31,840 --> 00:12:30,440

several study teams and exploration that

349

00:12:33,699 --> 00:12:31,850

are looking at those various trades

350

00:12:35,230 --> 00:12:33,709

right now I think there's a request for

351
00:12:36,730 --> 00:12:35,240
information that got sent out to

352
00:12:39,310 --> 00:12:36,740
industry there's some meetings going on

353
00:12:41,380 --> 00:12:39,320
in Galveston I think even today and

354
00:12:42,850 --> 00:12:41,390
tomorrow maybe that are actually

355
00:12:45,519 --> 00:12:42,860
starting to look at those trades to

356
00:12:47,500 --> 00:12:45,529
figure out what the overall right next

357
00:12:49,180 --> 00:12:47,510
generation of vehicle we need is and

358
00:12:50,769 --> 00:12:49,190
clearly in that trade space is some

359
00:12:52,060 --> 00:12:50,779
stuff that would use capabilities from

360
00:12:54,460 --> 00:12:52,070
the shuttle things that we've done

361
00:12:55,900 --> 00:12:54,470
processing capability here and we'll try

362
00:12:57,400 --> 00:12:55,910
to figure out the right overall system

363
00:13:01,840 --> 00:12:57,410

and get that brought forward to the

364

00:13:03,730 --> 00:13:01,850

state through those trade studies Marcia

365

00:13:06,640 --> 00:13:03,740

Dunn Associated Press with two questions

366

00:13:08,110 --> 00:13:06,650

the first or any of the panel if you

367

00:13:09,699 --> 00:13:08,120

were listening to Mission Control as the

368

00:13:10,990 --> 00:13:09,709

shuttle was running down the runway

369

00:13:12,579 --> 00:13:11,000

which maybe you weren't but there was a

370

00:13:14,500 --> 00:13:12,589

real sense of finality with the

371

00:13:16,540 --> 00:13:14,510

commentator going through 25 years

372

00:13:19,780 --> 00:13:16,550

thirty two flights 120 million miles

373

00:13:20,540 --> 00:13:19,790

history books I'm wondering certainly

374

00:13:22,400 --> 00:13:20,550

some of you

375

00:13:26,120 --> 00:13:22,410

must have been struck with thoughts of

376

00:13:28,910 --> 00:13:26,130

that today as you saw atlantis come home

377

00:13:31,460 --> 00:13:28,920

and i'm just looking for some some words

378

00:13:32,660 --> 00:13:31,470

on that you know i was not listening to

379

00:13:34,310 --> 00:13:32,670

Mission Control as a matter of fact I

380

00:13:36,740 --> 00:13:34,320

was outside watching the landing itself

381

00:13:37,850 --> 00:13:36,750

but but yeah I think we were all struck

382

00:13:39,800 --> 00:13:37,860

by the fact that that might have been

383

00:13:41,210 --> 00:13:39,810

the last landing of Atlantis and that's

384

00:13:43,699 --> 00:13:41,220

probably why I mentioned what I did up

385

00:13:45,410 --> 00:13:43,709

front of my in my comments it it's a

386

00:13:48,199 --> 00:13:45,420

very very special thing to see a

387

00:13:50,000 --> 00:13:48,209

reusable spacecraft land get turn around

388

00:13:51,920 --> 00:13:50,010

launch again land turn around and launch

389

00:13:54,790 --> 00:13:51,930

again and we've been doing this for 30

390

00:13:56,990 --> 00:13:54,800

years and so there's not just a

391

00:13:58,880 --> 00:13:57,000

technical fascination with it an

392

00:14:02,750 --> 00:13:58,890

appreciation for it there is an

393

00:14:04,310 --> 00:14:02,760

emotional tie to it and we all have that

394

00:14:07,460 --> 00:14:04,320

and I think we'd be kidding ourselves if

395

00:14:09,319 --> 00:14:07,470

we deny that but Mike put it exactly

396

00:14:11,900 --> 00:14:09,329

right i mean the budget is what it is

397

00:14:13,550 --> 00:14:11,910

and the next mission will dictate the

398

00:14:16,569 --> 00:14:13,560

architecture of that vehicle whatever

399

00:14:20,720 --> 00:14:16,579

that may be i just hope it comes quickly

400

00:14:22,310 --> 00:14:20,730

probably for bill given that the shuttle

401
00:14:24,319 --> 00:14:22,320
program is going to be around a little

402
00:14:26,329 --> 00:14:24,329
bit longer at least toward the end of

403
00:14:28,550 --> 00:14:26,339
the year if not into next when do you

404
00:14:31,300 --> 00:14:28,560
expect to be making decisions on where

405
00:14:33,980 --> 00:14:31,310
the shuttles wind up regarding museums

406
00:14:35,389 --> 00:14:33,990
yeah I think again that decision is

407
00:14:38,810 --> 00:14:35,399
coming probably at the end of june

408
00:14:40,579 --> 00:14:38,820
sometime in july is what we're thinking

409
00:14:42,440 --> 00:14:40,589
about and it really hasn't changed too

410
00:14:43,579 --> 00:14:42,450
much well we'll see what happens i mean

411
00:14:45,019 --> 00:14:43,589
first of all the first thing we're doing

412
00:14:46,670 --> 00:14:45,029
is we're going again through the

413
00:14:48,650 --> 00:14:46,680

manifest with the remaining two flights

414

00:14:50,180 --> 00:14:48,660

to figure out how to optimize pick the

415

00:14:52,460 --> 00:14:50,190

right dates and some things there you

416

00:14:54,290 --> 00:14:52,470

know we've got September November plan

417

00:14:56,120 --> 00:14:54,300

but we'll go ahead and refine those as

418

00:14:57,800 --> 00:14:56,130

we go through look it over all how we

419

00:14:59,720 --> 00:14:57,810

can best put station in the absolute

420

00:15:01,040 --> 00:14:59,730

best configuration see some tweaks if we

421

00:15:02,420 --> 00:15:01,050

got to move some things and try to move

422

00:15:04,730 --> 00:15:02,430

some things around so we'll do that

423

00:15:06,680 --> 00:15:04,740

activity first and then the other piece

424

00:15:08,870 --> 00:15:06,690

is the museum kind of piece probably

425

00:15:10,340 --> 00:15:08,880

comes sometime in the middle that after

426

00:15:12,850 --> 00:15:10,350

we've really finalized how we want to

427

00:15:14,750 --> 00:15:12,860

really effectively use these vehicles

428

00:15:17,600 --> 00:15:14,760

date for when you're going to look at

429

00:15:19,670 --> 00:15:17,610

the manifest as it remains we don't have

430

00:15:21,290 --> 00:15:19,680

a specific meeting day we'll work

431

00:15:23,240 --> 00:15:21,300

through our normal processes through our

432

00:15:24,920 --> 00:15:23,250

normal boards and panels what we've told

433

00:15:26,870 --> 00:15:24,930

the team's is if they come we're

434

00:15:28,670 --> 00:15:26,880

processing for September 16th for the

435

00:15:30,260 --> 00:15:28,680

next flight and what we told the team's

436

00:15:31,460 --> 00:15:30,270

if there's any negative work or you're

437

00:15:33,380 --> 00:15:31,470

starting to do things that don't make

438

00:15:34,000 --> 00:15:33,390

sense if you know if you're getting a

439

00:15:35,440 --> 00:15:34,010

cargo

440

00:15:36,880 --> 00:15:35,450

that doesn't really make sense for that

441

00:15:39,190 --> 00:15:36,890

fight and you needed a couple more days

442

00:15:40,750 --> 00:15:39,200

or we ought to go redo the manifest we

443

00:15:42,520 --> 00:15:40,760

told those teams to come forward to both

444

00:15:44,020 --> 00:15:42,530

the station and the shuttle program let

445

00:15:45,670 --> 00:15:44,030

them know and at that point we would

446

00:15:47,350 --> 00:15:45,680

convene the right folks together and do

447

00:15:49,180 --> 00:15:47,360

the right thing so so we're kind of

448

00:15:50,860 --> 00:15:49,190

aiming for September 16th but we're

449

00:15:52,150 --> 00:15:50,870

being open to suggestions to see how we

450

00:15:53,830 --> 00:15:52,160

want to optimize things and we're

451

00:15:55,120 --> 00:15:53,840

telling folks to be mature and tell us

452

00:15:57,340 --> 00:15:55,130

if they see anything that they want

453

00:15:58,660 --> 00:15:57,350

optimized they want changed and they can

454

00:16:00,340 --> 00:15:58,670

tell us and then we'll go ahead and see

455

00:16:01,840 --> 00:16:00,350

what we can do from an overall manifest

456

00:16:03,880 --> 00:16:01,850

standpoint to leave station and the

457

00:16:05,530 --> 00:16:03,890

absolute best configuration and take the

458

00:16:07,300 --> 00:16:05,540

absolute best advantage of these

459

00:16:09,190 --> 00:16:07,310

precious resources we have in the

460

00:16:11,710 --> 00:16:09,200

remaining flights I can give you an

461

00:16:13,230 --> 00:16:11,720

example that we just had a meeting last

462

00:16:15,760 --> 00:16:13,240

week or this week beginning this week

463

00:16:17,440 --> 00:16:15,770

for discovery that just came back from

464

00:16:18,970 --> 00:16:17,450

its last mission you remember one of the

465

00:16:21,130 --> 00:16:18,980

tiles on the rudder speed brake had

466

00:16:23,140 --> 00:16:21,140

cracked and fallen off and they looked

467

00:16:24,610 --> 00:16:23,150

at it and looked at it and it turns out

468

00:16:26,410 --> 00:16:24,620

we have a few of those that crack every

469

00:16:28,090 --> 00:16:26,420

mission and it's the acoustics in the

470

00:16:29,530 --> 00:16:28,100

rotor speed work itself vibrates a

471

00:16:31,240 --> 00:16:29,540

little bit sometimes those tile bang

472

00:16:32,710 --> 00:16:31,250

into each other so we sent the teams off

473

00:16:33,820 --> 00:16:32,720

together a whole bunch of data did a

474

00:16:35,170 --> 00:16:33,830

whole bunch of measurements both in the

475

00:16:37,420 --> 00:16:35,180

open in the closed position measured

476
00:16:39,010 --> 00:16:37,430
tolerances do a whole bunch of micro

477
00:16:41,320 --> 00:16:39,020
inspections and they came back with a

478
00:16:42,730 --> 00:16:41,330
plan to to do even further detailed

479
00:16:44,530 --> 00:16:42,740
inspections and to shave those tiles

480
00:16:46,930 --> 00:16:44,540
back to the gap that they're supposed to

481
00:16:49,120 --> 00:16:46,940
be just to help improve the chances of

482
00:16:51,250 --> 00:16:49,130
cracking tiles or i should say lessen

483
00:16:53,290 --> 00:16:51,260
the chances of cracking a tile we don't

484
00:16:54,640 --> 00:16:53,300
want to improve the chances and so they

485
00:16:55,990 --> 00:16:54,650
brought a series of working it was about

486
00:16:57,610 --> 00:16:56,000
forty four tiles and it was going to

487
00:16:59,080 --> 00:16:57,620
take about 45 days and if you look at

488
00:17:02,080 --> 00:16:59,090

the flow remaining to get out the door

489

00:17:03,640 --> 00:17:02,090

for a 916 launch that was making them a

490

00:17:05,770 --> 00:17:03,650

little nervous for that amount of tile

491

00:17:07,900 --> 00:17:05,780

work and so we asked the towel team to

492

00:17:09,910 --> 00:17:07,910

go back and prioritize that list in a if

493

00:17:11,020 --> 00:17:09,920

you're going to do it in chunks which is

494

00:17:12,460 --> 00:17:11,030

your high priority what's your second

495

00:17:13,630 --> 00:17:12,470

priority and they did that so we're

496

00:17:15,760 --> 00:17:13,640

going to go bite off that first chunk

497

00:17:17,230 --> 00:17:15,770

right now and if we find in June or July

498

00:17:18,640 --> 00:17:17,240

that we really do want to move the

499

00:17:19,930 --> 00:17:18,650

manifests we can go grab some more work

500

00:17:21,400 --> 00:17:19,940

so that's the kind of thing we've been

501
00:17:22,750 --> 00:17:21,410
setting the teams up to do is kind of as

502
00:17:24,010 --> 00:17:22,760
you're doing some of this work if you

503
00:17:26,050 --> 00:17:24,020
can put it in a priority order that'd be

504
00:17:27,340 --> 00:17:26,060
great and if you do find things that

505
00:17:28,390 --> 00:17:27,350
just make it sound like that's the wrong

506
00:17:32,430 --> 00:17:28,400
thing to do bring that forward to

507
00:17:37,570 --> 00:17:35,920
James Dean from Florida today mr. smarty

508
00:17:40,420 --> 00:17:37,580
talked about wanting to make a decision

509
00:17:42,730 --> 00:17:40,430
by next month on whether or not Atlantis

510
00:17:45,370 --> 00:17:42,740
may in fact fly again can you explain

511
00:17:48,580 --> 00:17:45,380
what is going to change between now and

512
00:17:50,380 --> 00:17:48,590
then to justify adding a flight and and

513
00:17:51,670 --> 00:17:50,390

that cost and specifically I'm wondering

514

00:17:55,290 --> 00:17:51,680

if it's going to take a determination

515

00:17:58,690 --> 00:17:55,300

from you or your program managers that

516

00:18:00,240 --> 00:17:58,700

the station or at least its ability to

517

00:18:02,800 --> 00:18:00,250

maintain six crew would be at risk

518

00:18:04,990 --> 00:18:02,810

without getting additional additional

519

00:18:08,110 --> 00:18:05,000

logistics stuff up there because of cots

520

00:18:11,920 --> 00:18:08,120

ers turret delays or or what would be

521

00:18:14,830 --> 00:18:11,930

the needed to make that decision and say

522

00:18:16,450 --> 00:18:14,840

we have to do this yeah I think in

523

00:18:18,760 --> 00:18:16,460

reality we have probably most of that

524

00:18:20,410 --> 00:18:18,770

data really in front of us now and and

525

00:18:22,330 --> 00:18:20,420

what we're doing is we're presenting

526
00:18:24,310 --> 00:18:22,340
that data to the decision makers and the

527
00:18:26,410 --> 00:18:24,320
managers above us to let them take a

528
00:18:28,450 --> 00:18:26,420
look at that data and weigh it you know

529
00:18:30,400 --> 00:18:28,460
there's a cost associated with extending

530
00:18:31,990 --> 00:18:30,410
the shuttle into next year in terms of

531
00:18:34,240 --> 00:18:32,000
dollars that have to come from some

532
00:18:36,220 --> 00:18:34,250
programs on place we can show the

533
00:18:38,170 --> 00:18:36,230
benefits that we provide from a you know

534
00:18:39,820 --> 00:18:38,180
workforce transition standpoint that are

535
00:18:41,650 --> 00:18:39,830
real that help us would keep some

536
00:18:44,380 --> 00:18:41,660
critical skills around let us make some

537
00:18:46,420 --> 00:18:44,390
decisions smartly we can show what cargo

538
00:18:48,130 --> 00:18:46,430

we can specifically carry I can show you

539

00:18:50,500 --> 00:18:48,140
exactly how that will benefit the

540

00:18:53,050 --> 00:18:50,510
station in the future it makes things

541

00:18:54,550 --> 00:18:53,060
better but does it make it it's there's

542

00:18:56,740 --> 00:18:54,560
nothing there that says it's mandatory

543

00:18:58,810 --> 00:18:56,750
to go do that if there was we would

544

00:19:00,190 --> 00:18:58,820
bring that forward but it clearly can

545

00:19:01,840 --> 00:19:00,200
improve things and put us in a much

546

00:19:03,910 --> 00:19:01,850
better posture so we're kind of putting

547

00:19:06,730 --> 00:19:03,920
all those logical arguments together as

548

00:19:08,140 --> 00:19:06,740
much as we can showing the downsides to

549

00:19:09,640 --> 00:19:08,150
folks and in providing it to the

550

00:19:11,950 --> 00:19:09,650
decision makers with the intent that

551
00:19:13,750 --> 00:19:11,960
we'll get some kind of decision and and

552
00:19:15,880 --> 00:19:13,760
what's really kind of forcing the

553
00:19:17,740 --> 00:19:15,890
decision for me is it's difficult for is

554
00:19:19,510 --> 00:19:17,750
if we just keep kind of staying in limbo

555
00:19:21,340 --> 00:19:19,520
you know we need to really get some

556
00:19:22,840 --> 00:19:21,350
plans in place so people can make some

557
00:19:25,120 --> 00:19:22,850
real decisions with what they've got to

558
00:19:27,880 --> 00:19:25,130
go do with careers and other things also

559
00:19:29,800 --> 00:19:27,890
hardware plans so we can't stay in limbo

560
00:19:31,810 --> 00:19:29,810
forever so we really want to try to get

561
00:19:33,430 --> 00:19:31,820
that decision if we can if we can get it

562
00:19:35,380 --> 00:19:33,440
arrived to in the June timeframe and

563
00:19:36,820 --> 00:19:35,390

that's what we're trying to go do so

564

00:19:39,250 --> 00:19:36,830

there's not going to be it there's not a

565

00:19:41,860 --> 00:19:39,260

big Eureka or a big thing coming forward

566

00:19:43,390 --> 00:19:41,870

that's going to say this is it the data

567

00:19:45,220 --> 00:19:43,400

is there it's pretty it's pretty

568

00:19:47,080 --> 00:19:45,230

compelling it needs to be looked at it

569

00:19:50,400 --> 00:19:47,090

evaluated but there is the cost and

570

00:19:53,409 --> 00:19:50,410

again it comes down to the funding issue

571

00:19:55,750 --> 00:19:53,419

it is it just a follow up in your

572

00:19:57,970 --> 00:19:55,760

opinion obviously will be better for the

573

00:20:01,020 --> 00:19:57,980

station to get whatever can in your

574

00:20:05,830 --> 00:20:01,030

opinion or anyone else's opinion it is

575

00:20:08,320 --> 00:20:05,840

is it necessary to make that flight you

576

00:20:09,760 --> 00:20:08,330

know for unless it's just absolutely

577

00:20:13,299 --> 00:20:09,770

impossible there's no chance because in

578

00:20:16,570 --> 00:20:13,309

money is it can you convey kind of on

579

00:20:18,250 --> 00:20:16,580

the scale of you know how important how

580

00:20:20,530 --> 00:20:18,260

much you think is needed there you know

581

00:20:22,210 --> 00:20:20,540

it's a little bit or a lot you know how

582

00:20:27,310 --> 00:20:22,220

much you would like to have that flight

583

00:20:29,080 --> 00:20:27,320

if you can get the money yes you know

584

00:20:31,419 --> 00:20:29,090

that's a tough one because like like

585

00:20:32,470 --> 00:20:31,429

curse laid out that you know there's

586

00:20:36,310 --> 00:20:32,480

nothing in there that says it's a

587

00:20:37,600 --> 00:20:36,320

mandatory and it's hard to at a certain

588

00:20:40,000 --> 00:20:37,610

level you have to look at the downsides

589

00:20:43,510 --> 00:20:40,010

of the cost and the budget and the the

590

00:20:45,039 --> 00:20:43,520

other work and so given the shuttle

591

00:20:46,720 --> 00:20:45,049

background that's sitting up here we're

592

00:20:49,299 --> 00:20:46,730

going to say yeah you would like to fly

593

00:20:51,400 --> 00:20:49,309

that mission but it does cost the agency

594

00:20:53,140 --> 00:20:51,410

something and that's the hard trade to

595

00:20:55,270 --> 00:20:53,150

make so I don't think we can really go

596

00:20:56,409 --> 00:20:55,280

there because that's not our decision to

597

00:20:58,240 --> 00:20:56,419

make that's like I said we're going to

598

00:20:59,680 --> 00:20:58,250

take that data forward and let the folks

599

00:21:03,310 --> 00:20:59,690

who make those decisions decide if

600

00:21:06,270 --> 00:21:03,320

that's worthy or not I so it's a

601
00:21:08,440 --> 00:21:06,280
would-be answer for you James sorry

602
00:21:11,110 --> 00:21:08,450
chris gebhardt with NASA Space Flight

603
00:21:13,840 --> 00:21:11,120
com start with an easy one the aircraft

604
00:21:15,700 --> 00:21:13,850
that photographed Atlantis today during

605
00:21:17,700 --> 00:21:15,710
hurry entry were you originally planning

606
00:21:20,140 --> 00:21:17,710
to use that aircraft to photograph her

607
00:21:21,850 --> 00:21:20,150
like his baseline for boundary layer

608
00:21:22,960 --> 00:21:21,860
stuff or was it just something that came

609
00:21:24,669 --> 00:21:22,970
up with a gap filler and you had the

610
00:21:26,440 --> 00:21:24,679
plane available no we actually had

611
00:21:28,930 --> 00:21:26,450
planned this ahead of time the the cast

612
00:21:31,480 --> 00:21:28,940
glance aircraft from from Langley and

613
00:21:34,240 --> 00:21:31,490

the high Thornton team was was scheduled

614

00:21:35,919 --> 00:21:34,250

we had we had had some money in the

615

00:21:37,210 --> 00:21:35,929

budget we wanted to definitely keep them

616

00:21:40,390 --> 00:21:37,220

online when we do this boundary layer

617

00:21:42,880 --> 00:21:40,400

transition dto and we ended up because

618

00:21:44,770 --> 00:21:42,890

we landed on the first day with

619

00:21:46,480 --> 00:21:44,780

discovery on its last mission we had a

620

00:21:48,190 --> 00:21:46,490

little extra money that we had budgeted

621

00:21:49,960 --> 00:21:48,200

for that aircraft team that we didn't

622

00:21:51,880 --> 00:21:49,970

end up needing when we switched to an

623

00:21:53,649 --> 00:21:51,890

ascending node on our descending notes

624

00:21:55,780 --> 00:21:53,659

rather on the last mission we were able

625

00:21:58,090 --> 00:21:55,790

to deploy ground-based assets in and

626
00:21:58,780 --> 00:21:58,100
which saved us some money and so we

627
00:22:00,580 --> 00:21:58,790
looked at the

628
00:22:01,870 --> 00:22:00,590
the team said hey we can give you

629
00:22:03,670 --> 00:22:01,880
another flight for the money you've

630
00:22:05,500 --> 00:22:03,680
already paid us and so they came online

631
00:22:07,060 --> 00:22:05,510
and we're ready to go today it was just

632
00:22:12,490 --> 00:22:07,070
a coincidence that we had the gap filler

633
00:22:14,170 --> 00:22:12,500
giving them something look at and I

634
00:22:17,980 --> 00:22:14,180
guess not to beat a dead horse here but

635
00:22:19,870 --> 00:22:17,990
a with the 335 potential 135 flight

636
00:22:22,990 --> 00:22:19,880
coming I guess next year I'm just

637
00:22:24,970 --> 00:22:23,000
wondering what the realistic chances are

638
00:22:26,770 --> 00:22:24,980

of Atlantis actually retaining that over

639

00:22:30,670 --> 00:22:26,780

the 135 flight if it becomes a reality

640

00:22:32,470 --> 00:22:30,680

in June of next year given you know some

641

00:22:34,030 --> 00:22:32,480

of the like wing leading edge spar

642

00:22:36,070 --> 00:22:34,040

inspections and stuff that you have to

643

00:22:37,870 --> 00:22:36,080

do on her or that you're planning to do

644

00:22:39,790 --> 00:22:37,880

on her to make sure she's ready to go on

645

00:22:41,950 --> 00:22:39,800

this and just wondering from a technical

646

00:22:43,630 --> 00:22:41,960

standpoint if there are ideas of

647

00:22:46,780 --> 00:22:43,640

proposals out there that say you know if

648

00:22:49,300 --> 00:22:46,790

the 335 and 135 schedule slip a little

649

00:22:51,690 --> 00:22:49,310

further if it makes more sense to switch

650

00:22:54,220 --> 00:22:51,700

that to discovery instead of Atlantis

651
00:22:55,510 --> 00:22:54,230
yeah the teams are balancing all those

652
00:22:57,700 --> 00:22:55,520
trades and looking at all the options

653
00:22:58,930 --> 00:22:57,710
there's in addition to the processing

654
00:23:00,820 --> 00:22:58,940
that has to happen you have to look at

655
00:23:04,450 --> 00:23:00,830
its where it stands in its certification

656
00:23:05,950 --> 00:23:04,460
for time & life cycle where all that

657
00:23:08,860 --> 00:23:05,960
where that falls in the teams here at

658
00:23:10,420 --> 00:23:08,870
Kennedy and basically there's about as

659
00:23:12,640 --> 00:23:10,430
many options as you even though there's

660
00:23:14,620 --> 00:23:12,650
only two flights left and one launch on

661
00:23:16,270 --> 00:23:14,630
me there's there's about 15 options as

662
00:23:17,830 --> 00:23:16,280
to how you could lay all that out and

663
00:23:18,790 --> 00:23:17,840

again you count it just like we were

664

00:23:20,530 --> 00:23:18,800

talking about with the how you pick a

665

00:23:21,580 --> 00:23:20,540

launch vehicle architecture you kind of

666

00:23:24,010 --> 00:23:21,590

have to pick the variable you want to

667

00:23:25,810 --> 00:23:24,020

optimize on you know if folks have been

668

00:23:27,460 --> 00:23:25,820

thrown out that well if you're going to

669

00:23:30,040 --> 00:23:27,470

go back you want to spits vehicle so you

670

00:23:31,660 --> 00:23:30,050

get a long life time on station well we

671

00:23:32,950 --> 00:23:31,670

just flew a mission here with Atlantis

672

00:23:34,510 --> 00:23:32,960

without that capability it was a

673

00:23:36,190 --> 00:23:34,520

perfectly acceptable mission of three VA

674

00:23:37,060 --> 00:23:36,200

he's got everything done it needed to so

675

00:23:38,950 --> 00:23:37,070

it kind of all depends on what the

676

00:23:39,940 --> 00:23:38,960

content of that mission is so once we

677

00:23:42,130 --> 00:23:39,950

kind of get a little more definition

678

00:23:43,390 --> 00:23:42,140

will be able to then lock in some of

679

00:23:45,250 --> 00:23:43,400

those variables and start making

680

00:23:46,540 --> 00:23:45,260

decisions it's kind of exactly what Bill

681

00:23:48,370 --> 00:23:46,550

was talking about week we don't want to

682

00:23:49,660 --> 00:23:48,380

let it go too much longer because at

683

00:23:52,690 --> 00:23:49,670

some point we do have to tie some of

684

00:23:54,760 --> 00:23:52,700

those down and start deciding you know I

685

00:23:56,650 --> 00:23:54,770

think I'd add that it's really important

686

00:23:58,300 --> 00:23:56,660

we focus on the two flights we've got

687

00:24:00,400 --> 00:23:58,310

remaining right and make sure that those

688

00:24:02,470 --> 00:24:00,410

are really well thought out and really

689

00:24:04,090 --> 00:24:02,480

well-executed this other thing is we

690

00:24:05,980 --> 00:24:04,100

don't want to get distracted take our

691

00:24:08,050 --> 00:24:05,990

eye off the ball right and then end up

692

00:24:10,270 --> 00:24:08,060

not doing something or if we get too

693

00:24:11,380 --> 00:24:10,280

clever trying to move work around move

694

00:24:12,340 --> 00:24:11,390

things around from vehicle to vehicle

695

00:24:14,230 --> 00:24:12,350

I've

696

00:24:16,659 --> 00:24:14,240

Cena's get in trouble many many times so

697

00:24:18,370 --> 00:24:16,669

we've got a pretty stable plan we're

698

00:24:19,990 --> 00:24:18,380

going to make small modifications to

699

00:24:21,370 --> 00:24:20,000

that plan where it makes sense but we're

700

00:24:22,840 --> 00:24:21,380

kind of really focused on the two

701
00:24:24,490 --> 00:24:22,850
remaining flights that are for sure and

702
00:24:26,650 --> 00:24:24,500
make sure we really have got those

703
00:24:28,480 --> 00:24:26,660
executed the best we can and then we'll

704
00:24:31,210 --> 00:24:28,490
see what happens on this on this last

705
00:24:32,650 --> 00:24:31,220
yes I you guys are beating a dead horse

706
00:24:34,539 --> 00:24:32,660
off I'll steal something from Mike from

707
00:24:35,500 --> 00:24:34,549
a press conference ago that said you

708
00:24:36,610 --> 00:24:35,510
guys are the ones talking about the

709
00:24:38,470 --> 00:24:36,620
launch on the flight way more than we

710
00:24:39,310 --> 00:24:38,480
are we've got it bookend we know what

711
00:24:42,760 --> 00:24:39,320
we're doing it we're just waiting for

712
00:24:44,830 --> 00:24:42,770
directions and on that exact note that a

713
00:24:46,690 --> 00:24:44,840

mr. garrison Meyer was mentioning it's

714

00:24:48,520 --> 00:24:46,700

been a while since orbiters have been in

715

00:24:50,440 --> 00:24:48,530

sort of an extended flow between

716

00:24:52,720 --> 00:24:50,450

missions and with endeavours last light

717

00:24:54,399 --> 00:24:52,730

coming in February and the 134 flight

718

00:24:56,850 --> 00:24:54,409

currently in the novemberish timeframe

719

00:24:59,350 --> 00:24:56,860

I'm just wondering with endeavour

720

00:25:01,299 --> 00:24:59,360

endeavors original schedule for this had

721

00:25:03,789 --> 00:25:01,309

her being done with processing for 134

722

00:25:06,730 --> 00:25:03,799

around mid-june and then mating it out

723

00:25:09,250 --> 00:25:06,740

to the pad so what what type of work

724

00:25:11,620 --> 00:25:09,260

gets done on endeavour now if she's

725

00:25:14,169 --> 00:25:11,630

basically done with processing for 134

726

00:25:16,060 --> 00:25:14,179

if the original timeline held well see

727

00:25:18,490 --> 00:25:16,070

she's not she's not done processing to

728

00:25:19,960 --> 00:25:18,500

begin with the launch date that we're

729

00:25:22,419 --> 00:25:19,970

looking at for endeavour sometime in

730

00:25:25,930 --> 00:25:22,429

November probably late November so we're

731

00:25:28,570 --> 00:25:25,940

nowhere near done processing if it does

732

00:25:30,159 --> 00:25:28,580

move out a little bit we'll take the

733

00:25:31,960 --> 00:25:30,169

processing flow and extend it out maybe

734

00:25:34,149 --> 00:25:31,970

we go to one shift power on testing a

735

00:25:35,770 --> 00:25:34,159

day instead of two might take saturdays

736

00:25:37,270 --> 00:25:35,780

and sundays off instead of working most

737

00:25:39,820 --> 00:25:37,280

saturdays that type of thing we would

738

00:25:42,310 --> 00:25:39,830

just take the existing flow milestones

739

00:25:44,950 --> 00:25:42,320

existing work and basically spread that

740

00:25:47,260 --> 00:25:44,960

out we have to we have to be careful

741

00:25:49,240 --> 00:25:47,270

about adding too much work i think you

742

00:25:50,590 --> 00:25:49,250

heard from both Mike and bill that can

743

00:25:52,510 --> 00:25:50,600

get us in trouble if we have more time

744

00:25:54,880 --> 00:25:52,520

we're all engineers we like to change

745

00:25:56,799 --> 00:25:54,890

things right but we have to be careful

746

00:25:58,180 --> 00:25:56,809

if we start adding stuff to fill in that

747

00:26:00,310 --> 00:25:58,190

time we might be doing more harm than

748

00:26:02,500 --> 00:26:00,320

good so typically what we do is just

749

00:26:06,960 --> 00:26:02,510

just take the existing work and simply

750

00:26:12,029 --> 00:26:10,200

hi clara moskowitz with space com um l

751

00:26:14,669 --> 00:26:12,039

think this is for Mike Moses but maybe

752

00:26:17,970 --> 00:26:14,679

anybody um this mission seemed to go

753

00:26:20,430 --> 00:26:17,980

very cleanly very few problems and most

754

00:26:22,649 --> 00:26:20,440

of the objectives were met as far as I

755

00:26:24,299 --> 00:26:22,659

understand just wondering if this does

756

00:26:25,830 --> 00:26:24,309

turn out to be Atlantis his last flight

757

00:26:28,140 --> 00:26:25,840

does that feel like an especially nice

758

00:26:30,510 --> 00:26:28,150

note to go out on oh yeah definitely

759

00:26:32,460 --> 00:26:30,520

yeah I mean we talk about that all the

760

00:26:35,700 --> 00:26:32,470

time that the best thing that can happen

761

00:26:38,250 --> 00:26:35,710

is the the propulsion elements the the

762

00:26:40,649 --> 00:26:38,260

Boosters the tank the main engines the

763

00:26:42,180 --> 00:26:40,659

orbiter all of that performs as it

764

00:26:43,980 --> 00:26:42,190

should and and it'd be case basically

765

00:26:45,270 --> 00:26:43,990

come becomes out of the way and it's

766

00:26:47,130 --> 00:26:45,280

nothing that we need to worry about when

767

00:26:49,020 --> 00:26:47,140

we're in orbit and the team can do the

768

00:26:51,390 --> 00:26:49,030

mission execute the VA's pull off the

769

00:26:53,399 --> 00:26:51,400

transfers and this is we had a little

770

00:26:55,500 --> 00:26:53,409

bit of a hiccup here with that the cable

771

00:26:57,539 --> 00:26:55,510

on the boom the sensor system that got

772

00:26:59,669 --> 00:26:57,549

stuck which kind of inhibitor but

773

00:27:01,950 --> 00:26:59,679

inhibited our ability to to do some of

774

00:27:03,029 --> 00:27:01,960

our inspections on flight they too but

775

00:27:05,010 --> 00:27:03,039

we were able to kind of work that back

776

00:27:06,570 --> 00:27:05,020

in on a pretty low interference basis

777

00:27:08,970 --> 00:27:06,580

but to be able to stay out of the way

778

00:27:10,350 --> 00:27:08,980

and let the mission be executed is the

779

00:27:13,460 --> 00:27:10,360

best thing and having Atlantis be able

780

00:27:16,289 --> 00:27:13,470

to do that was it's a good way to go

781

00:27:19,440 --> 00:27:16,299

also just quickly I'm wondering with the

782

00:27:21,240 --> 00:27:19,450

addition of the new mrm one does anybody

783

00:27:25,740 --> 00:27:21,250

have a percentage figure on how complete

784

00:27:28,529 --> 00:27:25,750

the space station is at this point we

785

00:27:30,810 --> 00:27:28,539

can get it for you if I just quoted it

786

00:27:32,880 --> 00:27:30,820

to you would be wrong so we'll get it

787

00:27:35,100 --> 00:27:32,890

for you and we can provide to you we do

788

00:27:38,340 --> 00:27:35,110

both by mass and volume now and we can

789

00:27:40,260 --> 00:27:38,350

give you both of those thanks i'm irene

790

00:27:41,970 --> 00:27:40,270

klotz with Reuters I'm for bill

791

00:27:47,130 --> 00:27:41,980

Gerstenmaier I just had a clarification

792

00:27:50,130 --> 00:27:47,140

about this the funding for this sts-135

793

00:27:52,830 --> 00:27:50,140

issue if you've got enough money in the

794

00:27:56,430 --> 00:27:52,840

budget to go through februari i think is

795

00:27:59,789 --> 00:27:56,440

the last time period we were told and if

796

00:28:03,480 --> 00:27:59,799

you're able to fly the 133 and 134

797

00:28:06,090 --> 00:28:03,490

flights on on schedule do you need

798

00:28:09,360 --> 00:28:06,100

something else some other approval I

799

00:28:13,260 --> 00:28:09,370

guess from my soy as rescue or something

800

00:28:16,380 --> 00:28:13,270

else that would give this decision about

801
00:28:20,060 --> 00:28:16,390
flying an extra flight somewhere beyond

802
00:28:22,640 --> 00:28:20,070
your your level well right now

803
00:28:25,610 --> 00:28:22,650
we we have in the President's budget

804
00:28:27,020 --> 00:28:25,620
that he's recommended an additional six

805
00:28:29,270 --> 00:28:27,030
hundred million dollars that allows us

806
00:28:31,130 --> 00:28:29,280
to fly through December through the end

807
00:28:33,290 --> 00:28:31,140
of the calendar year that's been

808
00:28:35,360 --> 00:28:33,300
proposed us in the budget that still

809
00:28:37,130 --> 00:28:35,370
needs to be approved by the authorizers

810
00:28:39,020 --> 00:28:37,140
and the appropriators and within

811
00:28:41,030 --> 00:28:39,030
Congress to actually make sure that

812
00:28:43,550 --> 00:28:41,040
money gets transitioned to us on october

813
00:28:46,150 --> 00:28:43,560

first so that needs to occur and then

814

00:28:49,040 --> 00:28:46,160

the problem is between december and and

815

00:28:51,440 --> 00:28:49,050

june or whenever we decide to fly this

816

00:28:53,240 --> 00:28:51,450

other flight we need to keep the work

817

00:28:54,800 --> 00:28:53,250

force around we need to keep contractors

818

00:28:57,140 --> 00:28:54,810

in place we need to be ready to do

819

00:28:59,600 --> 00:28:57,150

failure analysis we need to have all the

820

00:29:01,280 --> 00:28:59,610

shuttle test equipment and folks around

821

00:29:05,210 --> 00:29:01,290

to go support all that activity and we

822

00:29:07,520 --> 00:29:05,220

do not have funding for that period so

823

00:29:09,350 --> 00:29:07,530

you're saying that under nose under any

824

00:29:12,740 --> 00:29:09,360

your you don't have any scenario where

825

00:29:15,440 --> 00:29:12,750

if 133 and 134 fly on time you'd be able

826

00:29:17,780 --> 00:29:15,450

to do a 135 flight by february when you

827

00:29:22,280 --> 00:29:17,790

still have funding available according

828

00:29:24,110 --> 00:29:22,290

to what John Shannon said recently again

829

00:29:26,150 --> 00:29:24,120

if we get the 600 million we could

830

00:29:28,580 --> 00:29:26,160

potentially go look at all that but then

831

00:29:30,290 --> 00:29:28,590

again we now have to step back a little

832

00:29:31,850 --> 00:29:30,300

bit and look at what we've done from an

833

00:29:34,100 --> 00:29:31,860

overall manifest standpoint right have

834

00:29:35,660 --> 00:29:34,110

we have we push things so far forward

835

00:29:37,760 --> 00:29:35,670

that we really haven't helped station

836

00:29:41,240 --> 00:29:37,770

and and a piece of the problem is we're

837

00:29:43,040 --> 00:29:41,250

going to have a TV flying in December

838

00:29:45,530 --> 00:29:43,050

and then we're going to have HTV flying

839

00:29:48,710 --> 00:29:45,540

in January those are both heavy cargo

840

00:29:51,110 --> 00:29:48,720

missions so if I if I did what you

841

00:29:53,300 --> 00:29:51,120

described then I've got almost too much

842

00:29:55,010 --> 00:29:53,310

cargo at station from the wrong kind of

843

00:29:57,860 --> 00:29:55,020

vehicles at the wrong time that I can't

844

00:30:00,320 --> 00:29:57,870

fully effectively utilize the cargo that

845

00:30:02,390 --> 00:30:00,330

I'm delivering the station so we want to

846

00:30:05,360 --> 00:30:02,400

move that other flight in February

847

00:30:07,310 --> 00:30:05,370

somewhere later in the year later in the

848

00:30:09,710 --> 00:30:07,320

spring in the summer away from those to

849

00:30:11,780 --> 00:30:09,720

progress from the ATV and the HTV cargo

850

00:30:14,330 --> 00:30:11,790

flights such we can get the right

851
00:30:15,890 --> 00:30:14,340
balance of spares to station see what's

852
00:30:18,050 --> 00:30:15,900
failed on station bring the last

853
00:30:19,700 --> 00:30:18,060
components up bring the last research up

854
00:30:22,250 --> 00:30:19,710
and return research at the most

855
00:30:24,170 --> 00:30:22,260
opportune time for station so it's it's

856
00:30:27,290 --> 00:30:24,180
kind of a finessing thing but at some

857
00:30:28,910 --> 00:30:27,300
point it it needs to be finessed if we

858
00:30:31,040 --> 00:30:28,920
want to really take advantage of what

859
00:30:31,620 --> 00:30:31,050
we're asking folks to go do in flying

860
00:30:33,240 --> 00:30:31,630
vehicles

861
00:30:35,310 --> 00:30:33,250
and hopefully that helps a little bit in

862
00:30:37,290 --> 00:30:35,320
and where John was with with the

863
00:30:39,330 --> 00:30:37,300

februari flight is we think we can do

864

00:30:41,010 --> 00:30:39,340

that if we can continue to under run and

865

00:30:42,750 --> 00:30:41,020

continue to save some money within the

866

00:30:45,240 --> 00:30:42,760

program there's not a guarantee that we

867

00:30:46,950 --> 00:30:45,250

can get there we're working a bunch of

868

00:30:49,920 --> 00:30:46,960

options to try to be prepared to keep

869

00:30:51,420 --> 00:30:49,930

options open and then we but again is

870

00:30:52,980 --> 00:30:51,430

I've been stressing this at some point

871

00:30:54,150 --> 00:30:52,990

we've got to quit working options we've

872

00:30:56,580 --> 00:30:54,160

got to kind of then write them all down

873

00:31:01,320 --> 00:30:56,590

on a piece of paper get serious and get

874

00:31:04,110 --> 00:31:01,330

ready and go execute and for the 133 and

875

00:31:07,860 --> 00:31:04,120

134 flights I guess for my line back

876

00:31:10,140 --> 00:31:07,870

there the Boosters the last set of

877

00:31:11,520 --> 00:31:10,150

visitors are coming in tomorrow and if

878

00:31:13,590 --> 00:31:11,530

you could just kind of go through other

879

00:31:16,890 --> 00:31:13,600

milestones maybe coming up over the next

880

00:31:18,510 --> 00:31:16,900

dumb I guess through the summer as to

881

00:31:21,540 --> 00:31:18,520

where you are with processing thank you

882

00:31:23,220 --> 00:31:21,550

well some of it depends on you know the

883

00:31:26,490 --> 00:31:23,230

exact launch dates were shooting for

884

00:31:28,200 --> 00:31:26,500

September 16th we still have oh gosh

885

00:31:29,910 --> 00:31:28,210

another couple of months and they will

886

00:31:31,200 --> 00:31:29,920

PF something like that I don't have

887

00:31:33,540 --> 00:31:31,210

those exact dates in front of me I'm

888

00:31:34,830 --> 00:31:33,550

sorry but yeah the last set of boosters

889

00:31:35,580 --> 00:31:34,840

for the last flight are coming in

890

00:31:37,470 --> 00:31:35,590

tomorrow so that would be another

891

00:31:39,930 --> 00:31:37,480

milestone and the remainder of the

892

00:31:43,320 --> 00:31:39,940

program we can get you all those dates

893

00:31:45,690 --> 00:31:43,330

Iran I'm sorry I just don't happen and

894

00:31:46,920 --> 00:31:45,700

then quickly I done the percentages that

895

00:31:48,600 --> 00:31:46,930

they gave me a note here its

896

00:31:53,220 --> 00:31:48,610

ninety-eight percent volume and

897

00:31:57,300 --> 00:31:53,230

ninety-four percent by mass sounds like

898

00:31:59,070 --> 00:31:57,310

an engineering answer hi Robert Pearlman

899

00:32:01,440 --> 00:31:59,080

with collectspace.com with a question I

900

00:32:03,270 --> 00:32:01,450

think from my climb buck you mentioned

901
00:32:07,110 --> 00:32:03,280
that processing for Atlantis for the

902
00:32:09,720 --> 00:32:07,120
launch on need starts tonight but given

903
00:32:11,490 --> 00:32:09,730
that there is a extension on on when

904
00:32:14,580 --> 00:32:11,500
those the last two well the last flight

905
00:32:16,560 --> 00:32:14,590
may fly what's going to be the pace for

906
00:32:19,290 --> 00:32:16,570
the turnaround of Atlantis are you going

907
00:32:21,510 --> 00:32:19,300
to run a normal pace and just have it

908
00:32:24,420 --> 00:32:21,520
ready to sit in the in the OPF when

909
00:32:26,190 --> 00:32:24,430
needed or are you putting out over time

910
00:32:28,770 --> 00:32:26,200
think that's a good question that the

911
00:32:30,750 --> 00:32:28,780
pace to begin with processing flow is

912
00:32:33,240 --> 00:32:30,760
always the same it's D servicing the

913
00:32:35,070 --> 00:32:33,250

vehicle from its you know from its

914

00:32:36,810 --> 00:32:35,080

previous mission so we'll start that

915

00:32:38,730 --> 00:32:36,820

tonight there are some commodities we

916

00:32:40,890 --> 00:32:38,740

have to get off before before too long

917

00:32:42,630 --> 00:32:40,900

we have a certain time and cycle time

918

00:32:43,980 --> 00:32:42,640

requirements to get those those

919

00:32:45,450 --> 00:32:43,990

commodities off we have to purge the

920

00:32:46,710 --> 00:32:45,460

engines got to get them dry

921

00:32:48,360 --> 00:32:46,720

those are those types of things always

922

00:32:50,460 --> 00:32:48,370

occur at the same time in the processing

923

00:32:53,519 --> 00:32:50,470

flow and all that kind of stuff is done

924

00:32:55,470 --> 00:32:53,529

in first week essentially and then we go

925

00:32:59,340 --> 00:32:55,480

into the turnaround we get the payload

926

00:33:01,260 --> 00:32:59,350

download going on I get to the cargo

927

00:33:02,970 --> 00:33:01,270

bay payload Bay emptied out whatever may

928

00:33:04,769 --> 00:33:02,980

be in there those types of things are

929

00:33:07,139 --> 00:33:04,779

factored in different systems testing

930

00:33:09,419 --> 00:33:07,149

and then hopefully we'll know by the end

931

00:33:11,460 --> 00:33:09,429

of June or so whether what launch date

932

00:33:12,810 --> 00:33:11,470

we're looking for whether it's the

933

00:33:14,880 --> 00:33:12,820

launch on need or whether it's a mission

934

00:33:16,620 --> 00:33:14,890

and what those dates may be and then we

935

00:33:18,690 --> 00:33:16,630

would set the remainder the of the OPF

936

00:33:19,919 --> 00:33:18,700

flow and pad flow for that but the first

937

00:33:21,419 --> 00:33:19,929

the first couple of weeks of a

938

00:33:25,080 --> 00:33:21,429

turnaround are always the same and we'll

939

00:33:28,039 --> 00:33:25,090

don't start that tonight okay thank you

940

00:33:31,019 --> 00:33:28,049

and I think for for bill Gerstenmaier

941

00:33:34,019 --> 00:33:31,029

with regards to the launch on need is

942

00:33:35,669 --> 00:33:34,029

the current crew the sts-132 crew that

943

00:33:39,180 --> 00:33:35,679

came back is its flight deck crew that

944

00:33:41,760 --> 00:33:39,190

that crew for Atlantis as well or has

945

00:33:44,430 --> 00:33:41,770

another crew been set for launch on need

946

00:33:48,600 --> 00:33:44,440

thanks we haven't made a decision at all

947

00:33:50,159 --> 00:33:48,610

about crew selection well the hardwood

948

00:33:52,860 --> 00:33:50,169

cbso just a couple of quick ones for

949

00:33:54,810 --> 00:33:52,870

bill just to follow up earlier questions

950

00:33:56,580 --> 00:33:54,820

who is it who is the higher authority

951
00:33:58,710 --> 00:33:56,590
that has to approve it is this is it

952
00:34:00,389 --> 00:33:58,720
ostp or is it the president that

953
00:34:01,590 --> 00:34:00,399
ultimately has to say let's do this and

954
00:34:04,169 --> 00:34:01,600
then Congress has to give you the money

955
00:34:06,450 --> 00:34:04,179
how does that work it's really all of

956
00:34:08,010 --> 00:34:06,460
those folks that you described it this

957
00:34:10,560 --> 00:34:08,020
is the same kind of answer I gave last

958
00:34:12,359 --> 00:34:10,570
time right but it's it they all have to

959
00:34:13,889 --> 00:34:12,369
agree kinda on the plan and they all

960
00:34:15,450 --> 00:34:13,899
have certain aspects of the plan they

961
00:34:17,790 --> 00:34:15,460
have to approve and I need all those

962
00:34:19,740 --> 00:34:17,800
approvals to to be ready to go move

963
00:34:21,480 --> 00:34:19,750

forward you guys are presenting the

964

00:34:23,639 --> 00:34:21,490

information you're actively presenting

965

00:34:27,030 --> 00:34:23,649

that I'm assuming right now to ostp you

966

00:34:28,470 --> 00:34:27,040

know in OMB whoever the responsible

967

00:34:30,629 --> 00:34:28,480

parties are that's in work is what

968

00:34:32,280 --> 00:34:30,639

you're saying we've prepared some

969

00:34:35,339 --> 00:34:32,290

concepts and we've got some data

970

00:34:37,770 --> 00:34:35,349

available that folks can go look at and

971

00:34:39,659 --> 00:34:37,780

one more on money and what it would cost

972

00:34:41,070 --> 00:34:39,669

I mean John it said it's 200 million

973

00:34:44,070 --> 00:34:41,080

bucks a month you know to run the

974

00:34:46,349 --> 00:34:44,080

shuttle program normally if you ended up

975

00:34:49,020 --> 00:34:46,359

having to launch 134 in February for

976
00:34:50,250 --> 00:34:49,030
example and you well even take that out

977
00:34:51,930 --> 00:34:50,260
of the equation if you were looking at

978
00:34:54,990 --> 00:34:51,940
launching another mission in June or is

979
00:34:57,390 --> 00:34:55,000
it really for my ballpark purposes it's

980
00:34:58,860 --> 00:34:57,400
just 200 million a month between the end

981
00:35:01,260 --> 00:34:58,870
of the year and whenever

982
00:35:04,410 --> 00:35:01,270
that flight would fly we think it's

983
00:35:05,880 --> 00:35:04,420
possibly a little bit less than that and

984
00:35:08,730 --> 00:35:05,890
we're still kind of working at and

985
00:35:10,880 --> 00:35:08,740
refining it to get a precise number it

986
00:35:13,860 --> 00:35:10,890
depends a little bit on what we actually

987
00:35:15,420 --> 00:35:13,870
how this thing transpires over the next

988
00:35:17,310 --> 00:35:15,430

couple months whether manifests are but

989

00:35:19,380 --> 00:35:17,320

but we think we can probably be a little

990

00:35:22,500 --> 00:35:19,390

bit less expensive than 200 million a

991

00:35:23,850 --> 00:35:22,510

month and for Mike you mentioned

992

00:35:25,590 --> 00:35:23,860

standing out on the runway looking at

993

00:35:27,210 --> 00:35:25,600

the vehicle I mean you guys down here at

994

00:35:29,550 --> 00:35:27,220

the Cape who work on these things I mean

995

00:35:31,770 --> 00:35:29,560

what were your thoughts on up I don't

996

00:35:33,690 --> 00:35:31,780

know a personal level as you saw this

997

00:35:35,250 --> 00:35:33,700

vehicle that as clean as it is knowing

998

00:35:36,990 --> 00:35:35,260

that its next step as a museum what

999

00:35:39,810 --> 00:35:37,000

would it what do you think about when

1000

00:35:41,070 --> 00:35:39,820

you look at that thing well first and

1001
00:35:44,300 --> 00:35:41,080
foremost proud to be a member of the

1002
00:35:48,480 --> 00:35:44,310
space shuttle team employee of NASA

1003
00:35:51,900 --> 00:35:48,490
comes to mind the thing that strikes me

1004
00:35:53,910 --> 00:35:51,910
most probably lately is that at the end

1005
00:35:56,430 --> 00:35:53,920
of the shuttle program and before the

1006
00:35:57,630 --> 00:35:56,440
next program is up and running there's

1007
00:35:59,970 --> 00:35:57,640
going to be a gap in American

1008
00:36:02,190 --> 00:35:59,980
spaceflight on American vehicles that's

1009
00:36:05,520 --> 00:36:02,200
the fact and we just don't know how long

1010
00:36:07,200 --> 00:36:05,530
that's going to be and I'm not I'm not

1011
00:36:09,720 --> 00:36:07,210
opposed to a new program at all don't

1012
00:36:12,000 --> 00:36:09,730
get me wrong I just as a taxpayer and as

1013
00:36:15,300 --> 00:36:12,010

a space-efficient out of both space

1014

00:36:17,400 --> 00:36:15,310

travel and space adventure the gap that

1015

00:36:22,020 --> 00:36:17,410

gap in American spaceflight on American

1016

00:36:25,020 --> 00:36:22,030

rocket on American rockets it bothers me

1017

00:36:27,810 --> 00:36:25,030

a little bit but it is what it is and

1018

00:36:29,910 --> 00:36:27,820

we'll deal with that and will wish all

1019

00:36:31,440 --> 00:36:29,920

the commercial providers the best and

1020

00:36:33,630 --> 00:36:31,450

help them in any way we can to get them

1021

00:36:35,790 --> 00:36:33,640

up and running as soon as possible but

1022

00:36:37,950 --> 00:36:35,800

that gap is unavoidable and I just hope

1023

00:36:40,740 --> 00:36:37,960

we do what we can as soon as we can to

1024

00:36:41,970 --> 00:36:40,750

narrow that gap as much as possible but

1025

00:36:43,890 --> 00:36:41,980

to see that vehicle out on the runway

1026
00:36:46,920 --> 00:36:43,900
and knowing it may have been her last

1027
00:36:48,630 --> 00:36:46,930
mission kind of emotional I think you

1028
00:36:50,640 --> 00:36:48,640
saw you saw some people out there that

1029
00:36:51,960 --> 00:36:50,650
looked up at her and kind of had some

1030
00:36:57,560 --> 00:36:51,970
second thoughts about was this really

1031
00:37:02,720 --> 00:37:00,290
hi ken kremer for the Planetary Society

1032
00:37:07,010 --> 00:37:02,730
for bill Gerstenmaier like to follow up

1033
00:37:08,840 --> 00:37:07,020
on when the shuttle retires and can you

1034
00:37:10,760 --> 00:37:08,850
talk a little bit about how you're going

1035
00:37:13,310 --> 00:37:10,770
to resupply the space station do you

1036
00:37:16,640 --> 00:37:13,320
have enough capacity without the shuttle

1037
00:37:19,310 --> 00:37:16,650
you've got hdv and you got a TV but

1038
00:37:20,900 --> 00:37:19,320

without if the cots program doesn't

1039

00:37:24,110 --> 00:37:20,910

doesn't happen what what is the

1040

00:37:25,850 --> 00:37:24,120

consequence of that again we've done

1041

00:37:29,270 --> 00:37:25,860

quite a bit of looking at the manifests

1042

00:37:31,610 --> 00:37:29,280

we have a TV HTV in progress to supply

1043

00:37:34,250 --> 00:37:31,620

the station we're looking at both SpaceX

1044

00:37:37,160 --> 00:37:34,260

and Orbital to be other cargo providers

1045

00:37:40,100 --> 00:37:37,170

we're looking for them to come into 2011

1046

00:37:42,380 --> 00:37:40,110

2012 12 time frame from supplies we've

1047

00:37:46,400 --> 00:37:42,390

used these remaining shuttle flights to

1048

00:37:48,350 --> 00:37:46,410

essentially outfit or provision the

1049

00:37:50,690 --> 00:37:48,360

station with as many components as we

1050

00:37:52,640 --> 00:37:50,700

possibly can so for example our large

1051
00:37:53,750 --> 00:37:52,650
control moment gyros they're already on

1052
00:37:55,940 --> 00:37:53,760
space station they're already

1053
00:37:57,620 --> 00:37:55,950
pre-positioned we just did the battery

1054
00:37:59,510 --> 00:37:57,630
change out on this flight which was a

1055
00:38:00,950 --> 00:37:59,520
unique set of batteries that we got up

1056
00:38:03,380 --> 00:38:00,960
and replace those so they're going to

1057
00:38:05,960 --> 00:38:03,390
last all the way through 2020 2025

1058
00:38:08,030 --> 00:38:05,970
potentially so that's a good thing we've

1059
00:38:09,860 --> 00:38:08,040
done we also show the large K you band

1060
00:38:11,720 --> 00:38:09,870
antenna that went up the SKF that got

1061
00:38:13,400 --> 00:38:11,730
attached that provides a backup

1062
00:38:15,860 --> 00:38:13,410
communication system for the K you

1063
00:38:17,390 --> 00:38:15,870

system so we have redundancy we've added

1064

00:38:18,410 --> 00:38:17,400

there so what we've done over this

1065

00:38:21,800 --> 00:38:18,420

period is we've essentially

1066

00:38:24,530 --> 00:38:21,810

pre-positioned station to fly for an

1067

00:38:26,450 --> 00:38:24,540

extended period of time to the 2011-2012

1068

00:38:27,950 --> 00:38:26,460

time frame until the cots providers come

1069

00:38:30,290 --> 00:38:27,960

online and then we'll be ready to go

1070

00:38:32,780 --> 00:38:30,300

ahead and move forward with with them

1071

00:38:35,390 --> 00:38:32,790

supplying station along with a TV HTV

1072

00:38:38,810 --> 00:38:35,400

and continuing then operating station

1073

00:38:40,910 --> 00:38:38,820

we've also seen luckily so far fairly

1074

00:38:43,970 --> 00:38:40,920

low failure rates on station in terms of

1075

00:38:45,380 --> 00:38:43,980

components so that's very promising to

1076
00:38:47,360 --> 00:38:45,390
us because that's as we maybe need less

1077
00:38:49,130 --> 00:38:47,370
logistics and we had budgeted so that

1078
00:38:50,840 --> 00:38:49,140
also gives us some margin it may allow

1079
00:38:52,220 --> 00:38:50,850
us to even take a little bit later date

1080
00:38:54,290 --> 00:38:52,230
for some of those commercial vehicles

1081
00:38:56,360 --> 00:38:54,300
coming online so so we've looked at that

1082
00:38:57,710 --> 00:38:56,370
we can you know we have a period of time

1083
00:39:00,140 --> 00:38:57,720
when we can wait for them to gain

1084
00:39:02,450 --> 00:39:00,150
experience to learn to deliver cargo to

1085
00:39:05,210 --> 00:39:02,460
station but but we're going to need them

1086
00:39:07,870 --> 00:39:05,220
into 2011-2012 timeframe to keep station

1087
00:39:09,759 --> 00:39:07,880
is productive as it needs to be too

1088
00:39:11,829 --> 00:39:09,769

do the utilization we want to go do so

1089

00:39:14,410 --> 00:39:11,839

so they really are critical to us we're

1090

00:39:16,480 --> 00:39:14,420

looking forward to their success as they

1091

00:39:17,740 --> 00:39:16,490

move forward but we've got a little bit

1092

00:39:19,539 --> 00:39:17,750

of margin if they're a little bit

1093

00:39:23,019 --> 00:39:19,549

delayed but but not a tremendous amount

1094

00:39:24,849 --> 00:39:23,029

of margin is what you have yes okay

1095

00:39:27,450 --> 00:39:24,859

could I follow up one other question too

1096

00:39:30,059 --> 00:39:27,460

there's been some discussion of

1097

00:39:32,200 --> 00:39:30,069

continuing and Ares flight test program

1098

00:39:34,120 --> 00:39:32,210

can you talk a little bit about that

1099

00:39:36,190 --> 00:39:34,130

what what you're doing or is that all

1100

00:39:38,470 --> 00:39:36,200

just rational suggestions well that's

1101

00:39:40,089 --> 00:39:38,480

really more in the exploration systems

1102

00:39:42,039 --> 00:39:40,099

Mission Directorate you know they kind

1103

00:39:44,410 --> 00:39:42,049

of do the new development activities and

1104

00:39:45,759 --> 00:39:44,420

I do the operational programs the

1105

00:39:47,289 --> 00:39:45,769

programs are flying so I don't really

1106

00:39:48,999 --> 00:39:47,299

have much insight into where that

1107

00:39:50,620 --> 00:39:49,009

planning is but I I do know there's

1108

00:39:52,690 --> 00:39:50,630

several teams out there looking at

1109

00:39:54,789 --> 00:39:52,700

various options that we're trying to put

1110

00:39:57,039 --> 00:39:54,799

together an for what that next plan is

1111

00:39:58,480 --> 00:39:57,049

with some concrete milestones and

1112

00:40:02,559 --> 00:39:58,490

concrete vehicles and missions but I

1113

00:40:04,269 --> 00:40:02,569

don't have specifics of that Peter I

1114

00:40:06,700 --> 00:40:04,279

would suddenly theme in Australia for

1115

00:40:09,009 --> 00:40:06,710

mr. Gerstenmaier um when this space

1116

00:40:10,420 --> 00:40:09,019

shuttle program eventually finishes

1117

00:40:13,690 --> 00:40:10,430

whether it's two or three missions from

1118

00:40:16,450 --> 00:40:13,700

now could you tell me what the astronaut

1119

00:40:19,990 --> 00:40:16,460

corps will actually be doing other than

1120

00:40:21,460 --> 00:40:20,000

those assigned to ISS duties or planning

1121

00:40:24,160 --> 00:40:21,470

to will they be involved in the next

1122

00:40:26,109 --> 00:40:24,170

generation development all yeah the

1123

00:40:27,880 --> 00:40:26,119

astronaut office will do it's a kind of

1124

00:40:29,499 --> 00:40:27,890

traditional role they'll be definitely

1125

00:40:31,210 --> 00:40:29,509

supporting space station will be very

1126
00:40:33,069 --> 00:40:31,220
active with with the space station

1127
00:40:35,710 --> 00:40:33,079
activities doing research understanding

1128
00:40:37,870 --> 00:40:35,720
what we're doing there the I astronaut

1129
00:40:39,519 --> 00:40:37,880
office is also typically very involved

1130
00:40:44,140 --> 00:40:39,529
in designing the new vehicles so they

1131
00:40:45,670 --> 00:40:44,150
are involved in training analysis human

1132
00:40:47,589 --> 00:40:45,680
factors kind of interaction with the

1133
00:40:50,230 --> 00:40:47,599
vehicle they're also involved in systems

1134
00:40:52,660 --> 00:40:50,240
design looking at things you know I came

1135
00:40:54,309 --> 00:40:52,670
to the shuttle program you know a little

1136
00:40:55,690 --> 00:40:54,319
bit before the first shuttle flight so

1137
00:40:58,269 --> 00:40:55,700
the astronauts were involved at that

1138
00:41:00,759 --> 00:40:58,279

point designing and helping to work with

1139

00:41:02,230 --> 00:41:00,769

the engineers to go operate the shuttle

1140

00:41:04,269 --> 00:41:02,240

they also spent a lot of time in the

1141

00:41:06,009 --> 00:41:04,279

simulators doing early things and the

1142

00:41:07,720 --> 00:41:06,019

avionics facility understanding how the

1143

00:41:09,789 --> 00:41:07,730

software worked how the vehicle operates

1144

00:41:11,380 --> 00:41:09,799

same with Space Station they spent a lot

1145

00:41:13,059 --> 00:41:11,390

of time into design reviews and the

1146

00:41:15,460 --> 00:41:13,069

activities associated with that so there

1147

00:41:17,049 --> 00:41:15,470

will be a portion of the astronaut

1148

00:41:18,700 --> 00:41:17,059

office where we take their flight

1149

00:41:20,400 --> 00:41:18,710

experience what they really learned in

1150

00:41:23,040 --> 00:41:20,410

space what they

1151
00:41:25,290 --> 00:41:23,050
understand to how to operate systems

1152
00:41:26,970 --> 00:41:25,300
what good form fit and function is from

1153
00:41:28,890 --> 00:41:26,980
a human interface standpoint and will

1154
00:41:30,180 --> 00:41:28,900
capture all that knowledge so we can use

1155
00:41:31,560 --> 00:41:30,190
that in the next vehicle so the

1156
00:41:33,840 --> 00:41:31,570
astronaut office will be involved both

1157
00:41:35,310 --> 00:41:33,850
in supporting station and also designing

1158
00:41:38,400 --> 00:41:35,320
and developing and new systems that

1159
00:41:41,060 --> 00:41:38,410
we're going to go fly and once again

1160
00:41:43,410 --> 00:41:41,070
post shuttle could you describe what the

1161
00:41:45,000 --> 00:41:43,420
activities at Kennedy Space Center are

1162
00:41:46,800 --> 00:41:45,010
going to be here is the whole place

1163
00:41:50,460 --> 00:41:46,810

going to be mothballed until they know

1164

00:41:52,320 --> 00:41:50,470

what's happening and also are there

1165

00:41:54,390 --> 00:41:52,330

going to be mass layoffs and retirements

1166

00:41:57,810 --> 00:41:54,400

and can you give me a numbers on those

1167

00:41:59,580 --> 00:41:57,820

perhaps I again we've got some workforce

1168

00:42:01,380 --> 00:41:59,590

projections which we've shown for what

1169

00:42:02,730 --> 00:42:01,390

the shuttle ramp down is one of the

1170

00:42:04,950 --> 00:42:02,740

things that's in the president's new

1171

00:42:07,170 --> 00:42:04,960

budget is an activity called 21st

1172

00:42:09,540 --> 00:42:07,180

century range or launch architecture

1173

00:42:11,400 --> 00:42:09,550

we're looking at here at Kennedy is

1174

00:42:13,830 --> 00:42:11,410

could we build some things that are not

1175

00:42:15,600 --> 00:42:13,840

single purpose kind of facilities so for

1176

00:42:18,140 --> 00:42:15,610

example in the vertical Assembly

1177

00:42:20,790 --> 00:42:18,150

Building today you know we can process

1178

00:42:22,800 --> 00:42:20,800

shuttles in there and then we processed

1179

00:42:24,810 --> 00:42:22,810

areas 1x in there but that we had to

1180

00:42:27,600 --> 00:42:24,820

essentially modify the high bay 3

1181

00:42:30,000 --> 00:42:27,610

temporarily to support areas 1x the idea

1182

00:42:34,680 --> 00:42:30,010

is could we could we more generically

1183

00:42:36,210 --> 00:42:34,690

make the VA B's assembly facilities

1184

00:42:37,680 --> 00:42:36,220

where you can have platforms and move up

1185

00:42:39,060 --> 00:42:37,690

and down so if a different rocket is in

1186

00:42:40,410 --> 00:42:39,070

there you could process a different

1187

00:42:41,670 --> 00:42:40,420

rocket so potentially you could even

1188

00:42:43,500 --> 00:42:41,680

pick up some of the expendable launch

1189

00:42:45,270 --> 00:42:43,510

vehicles that are currently launched

1190

00:42:48,090 --> 00:42:45,280

over on the Capeside you could process

1191

00:42:49,830 --> 00:42:48,100

those there go ahead and launch them in

1192

00:42:52,230 --> 00:42:49,840

the high bay they're also looking at a

1193

00:42:53,820 --> 00:42:52,240

new launch mount and maybe Mike can talk

1194

00:42:55,890 --> 00:42:53,830

about that but to launch mount it

1195

00:42:58,650 --> 00:42:55,900

accepts different Rockets on top of it

1196

00:43:00,060 --> 00:42:58,660

so again it's a generic kind of launcher

1197

00:43:01,260 --> 00:43:00,070

base that could be used with different

1198

00:43:03,600 --> 00:43:01,270

rockets so they're going to be

1199

00:43:04,920 --> 00:43:03,610

positioning themselves to to make the

1200

00:43:06,840 --> 00:43:04,930

Kennedy Space Center more of a

1201

00:43:09,060 --> 00:43:06,850

multi-purpose facility that's not

1202

00:43:11,130 --> 00:43:09,070

specific to one program but can support

1203

00:43:13,440 --> 00:43:11,140

multiple programs same thing with the

1204

00:43:15,150 --> 00:43:13,450

range it takes us 48 hours or so to turn

1205

00:43:16,560 --> 00:43:15,160

around the range that's because a lot of

1206

00:43:18,330 --> 00:43:16,570

the data that gets passed over to the

1207

00:43:19,800 --> 00:43:18,340

range is unique it's in shuttle format

1208

00:43:22,170 --> 00:43:19,810

then when they want to go fly a delta

1209

00:43:23,640 --> 00:43:22,180

they got to switch to Delta format so we

1210

00:43:25,260 --> 00:43:23,650

need to figure out a way we can get some

1211

00:43:27,060 --> 00:43:25,270

of that software fixed so we can make

1212

00:43:29,100 --> 00:43:27,070

that transition from one rocket to

1213

00:43:30,630 --> 00:43:29,110

another much faster the software that

1214

00:43:32,640 --> 00:43:30,640

controls the shuttles unique to the

1215

00:43:33,760 --> 00:43:32,650

shuttle all the PC Gulf stuff is unique

1216

00:43:35,500 --> 00:43:33,770

software we

1217

00:43:37,180 --> 00:43:35,510

built new unique software for Ares 1x

1218

00:43:39,580 --> 00:43:37,190

could we build some software that could

1219

00:43:41,890 --> 00:43:39,590

actually monitor a variety of different

1220

00:43:43,750 --> 00:43:41,900

Rockets to try to make the launch

1221

00:43:45,280 --> 00:43:43,760

complex more efficient so there's going

1222

00:43:47,080 --> 00:43:45,290

to be quite a bit of effort looking at

1223

00:43:49,230 --> 00:43:47,090

how we posture ourselves for the next

1224

00:43:51,760 --> 00:43:49,240

generation to be kind of a multi-purpose

1225

00:43:54,190 --> 00:43:51,770

ability to support multiple rocket time

1226
00:43:56,680 --> 00:43:54,200
frame I think one of those tangible

1227
00:43:59,620 --> 00:43:56,690
things you'll see in the near term is a

1228
00:44:01,150 --> 00:43:59,630
change to pad be we're going to take all

1229
00:44:03,220 --> 00:44:01,160
the structure off a pad be and make it

1230
00:44:04,720 --> 00:44:03,230
essentially a clean pad and make it

1231
00:44:07,420 --> 00:44:04,730
available as bill said for different

1232
00:44:08,620 --> 00:44:07,430
vehicle configurations obviously leave

1233
00:44:10,300 --> 00:44:08,630
pate alone we're going to launch the

1234
00:44:12,760 --> 00:44:10,310
shuttle off pate and probably leave it

1235
00:44:14,440 --> 00:44:12,770
alone for some time after that in case

1236
00:44:16,120 --> 00:44:14,450
the next architecture is a shuttle drive

1237
00:44:18,370 --> 00:44:16,130
type architecture which which I don't

1238
00:44:20,320 --> 00:44:18,380

know right now but that's the next thing

1239

00:44:23,500 --> 00:44:20,330

you'll see is pad be starting to come

1240

00:44:25,030 --> 00:44:23,510

down because you know like the mobile

1241

00:44:27,370 --> 00:44:25,040

launcher that we have for the Ares test

1242

00:44:30,010 --> 00:44:27,380

program with with the with the tower on

1243

00:44:31,570 --> 00:44:30,020

that mobile launcher that's their

1244

00:44:33,070 --> 00:44:31,580

configuration some other vehicle may

1245

00:44:34,480 --> 00:44:33,080

have a different configuration but most

1246

00:44:36,700 --> 00:44:34,490

of what we're hearing is they would

1247

00:44:38,650 --> 00:44:36,710

prefer just to have services out the pad

1248

00:44:40,390 --> 00:44:38,660

but no structure of the pad so they

1249

00:44:42,250 --> 00:44:40,400

could design their own mobile launcher

1250

00:44:44,110 --> 00:44:42,260

and their own tower to fit their

1251
00:44:45,850 --> 00:44:44,120
configuration so we're going to get pad

1252
00:44:48,460 --> 00:44:45,860
be down to essentially a clean pad

1253
00:44:53,340 --> 00:44:48,470
concept and you'll start seeing that

1254
00:44:55,840 --> 00:44:53,350
pretty soon eben brown fox news radio

1255
00:44:57,370 --> 00:44:55,850
since the return to flight after

1256
00:45:02,320 --> 00:44:57,380
Columbia we've always had a launch on

1257
00:45:04,630 --> 00:45:02,330
need ship ready to go in case if there

1258
00:45:06,820 --> 00:45:04,640
is a 135 flight there would not be in

1259
00:45:09,190 --> 00:45:06,830
ello in fly time understanding why is

1260
00:45:11,410 --> 00:45:09,200
that an acceptable option is that

1261
00:45:13,480 --> 00:45:11,420
something that's being say is there a

1262
00:45:15,250 --> 00:45:13,490
decision or a conversation going on

1263
00:45:17,650 --> 00:45:15,260

saying well we could forego the yellow n

1264

00:45:20,650 --> 00:45:17,660

just to get one more just to get one

1265

00:45:22,420 --> 00:45:20,660

more flight going well we're looking at

1266

00:45:25,090 --> 00:45:22,430

is we're looking at provide wheel if we

1267

00:45:27,070 --> 00:45:25,100

can make the crew size of four crew size

1268

00:45:28,750 --> 00:45:27,080

keep the crew size small you can

1269

00:45:30,580 --> 00:45:28,760

potentially use a Soyuz vehicle to

1270

00:45:33,220 --> 00:45:30,590

return the crew in a period of time so

1271

00:45:35,410 --> 00:45:33,230

you can achieve the same launch I need

1272

00:45:38,080 --> 00:45:35,420

backup capability with a Soyuz vehicle

1273

00:45:40,060 --> 00:45:38,090

it may require a fair amount of time on

1274

00:45:41,830 --> 00:45:40,070

orbit then the other piece of data that

1275

00:45:43,060 --> 00:45:41,840

goes into this is we're also taking a

1276

00:45:45,070 --> 00:45:43,070

look at the performance we've been

1277

00:45:46,840 --> 00:45:45,080

seeing on the external tanks right what

1278

00:45:47,450 --> 00:45:46,850

are we really gaining what protection do

1279

00:45:49,280 --> 00:45:47,460

we gain

1280

00:45:50,900 --> 00:45:49,290

having another orbiter available for us

1281

00:45:52,820 --> 00:45:50,910

to go do that so we're looking at it

1282

00:45:54,680 --> 00:45:52,830

logically you know have our tank

1283

00:45:56,030 --> 00:45:54,690

performance improved you know we now

1284

00:45:57,740 --> 00:45:56,040

have repair techniques that we've

1285

00:45:59,990 --> 00:45:57,750

certified or not certified but we've

1286

00:46:02,510 --> 00:46:00,000

validated and arc jet to make sure that

1287

00:46:04,340 --> 00:46:02,520

we can repair damage on the shuttle so

1288

00:46:07,100 --> 00:46:04,350

are those things mature enough now that

1289

00:46:09,470 --> 00:46:07,110

we would be willing to not totally forgo

1290

00:46:10,910 --> 00:46:09,480

the launch I need capability but relax

1291

00:46:13,310 --> 00:46:10,920

it and provided in a slightly different

1292

00:46:15,590 --> 00:46:13,320

manner using Soyuz and the robustness of

1293

00:46:17,990 --> 00:46:15,600

a repair procedures and are in our tank

1294

00:46:19,520 --> 00:46:18,000

performance so it's and that's a piece

1295

00:46:21,530 --> 00:46:19,530

of the discussion that we have to have

1296

00:46:23,390 --> 00:46:21,540

we need to get again to community to go

1297

00:46:25,250 --> 00:46:23,400

agree that that's an acceptable approach

1298

00:46:26,660 --> 00:46:25,260

but we've laid out the parameters and

1299

00:46:28,490 --> 00:46:26,670

we're starting to evaluate those things

1300

00:46:29,870 --> 00:46:28,500

now the other big piece of that just the

1301
00:46:31,310 --> 00:46:29,880
station robustness you know when we

1302
00:46:33,320 --> 00:46:31,320
first started this a return to flight we

1303
00:46:35,390 --> 00:46:33,330
were looking at a 30-day lifeboat

1304
00:46:36,860 --> 00:46:35,400
capability on station those systems are

1305
00:46:38,570 --> 00:46:36,870
now up and fully running and we're

1306
00:46:40,340 --> 00:46:38,580
looking now at 120 days and by the time

1307
00:46:42,770 --> 00:46:40,350
we get to the end we're probably be up

1308
00:46:43,910 --> 00:46:42,780
in 150 days that that a crew could stay

1309
00:46:45,200 --> 00:46:43,920
up there before they need to be rescued

1310
00:46:47,480 --> 00:46:45,210
so that really brings a lot of other

1311
00:46:51,830 --> 00:46:47,490
options to the table besides a launch on

1312
00:46:54,290 --> 00:46:51,840
each shuttle in a situation like that

1313
00:46:57,260 --> 00:46:54,300

would a lifeboat need to be standing by

1314

00:46:59,830 --> 00:46:57,270

at station in that case or would you

1315

00:47:03,350 --> 00:46:59,840

send a lifeboat up should you need one

1316

00:47:08,690 --> 00:47:03,360

we would probably send one up should we

1317

00:47:11,660 --> 00:47:08,700

need one so user yes that a few fault

1318

00:47:13,970 --> 00:47:11,670

before we wrap up here just work your

1319

00:47:20,720 --> 00:47:13,980

way down the same or I'll be likely help

1320

00:47:23,390 --> 00:47:20,730

oh sure marcia marcia dunn AP again for

1321

00:47:26,960 --> 00:47:23,400

bill I'm with the Falcon test coming up

1322

00:47:29,930 --> 00:47:26,970

within a week or so how crucial do you

1323

00:47:32,210 --> 00:47:29,940

think it is to the whole current plan as

1324

00:47:36,950 --> 00:47:32,220

it stands for that flight to be

1325

00:47:42,559 --> 00:47:36,960

successful again I think it's it's in

1326

00:47:46,380 --> 00:47:44,880

this is stuff right bill t intimate it's

1327

00:47:48,269 --> 00:47:46,390

a maiden flight of a new rocket right so

1328

00:47:49,739 --> 00:47:48,279

yes it's important but you don't want to

1329

00:47:52,229 --> 00:47:49,749

that make that mean it must be

1330

00:47:54,150 --> 00:47:52,239

successful a test flight by definition

1331

00:47:55,769 --> 00:47:54,160

doesn't have to go to orbit to be

1332

00:47:57,390 --> 00:47:55,779

successful it just ask that you have to

1333

00:47:59,219 --> 00:47:57,400

learn what it's doing and understand it

1334

00:48:01,319 --> 00:47:59,229

so you can successfully repeat your

1335

00:48:03,479 --> 00:48:01,329

capability and so I think he once said

1336

00:48:04,439 --> 00:48:03,489

it best he doesn't have any expectation

1337

00:48:06,779 --> 00:48:04,449

that they'll on their first launch

1338

00:48:08,069 --> 00:48:06,789

countdown push the button I mean they're

1339

00:48:09,870 --> 00:48:08,079

going to learn something as they go it

1340

00:48:11,489 --> 00:48:09,880

doesn't mean they they weren't but you

1341

00:48:13,439 --> 00:48:11,499

saw that in their wet dress rehearsals

1342

00:48:16,199 --> 00:48:13,449

that you've learned incrementally and so

1343

00:48:18,529 --> 00:48:16,209

as you go you kind of learn so we saw

1344

00:48:20,759 --> 00:48:18,539

that what everyone acts too we got this

1345

00:48:22,859 --> 00:48:20,769

extra pressure put on that program to

1346

00:48:24,660 --> 00:48:22,869

say well it now has to work perfect well

1347

00:48:26,579 --> 00:48:24,670

it's a test flight it's not supposed to

1348

00:48:27,900 --> 00:48:26,589

work perfect or it wouldn't be a test

1349

00:48:30,029 --> 00:48:27,910

flight there's a reason this first lady

1350

00:48:31,589 --> 00:48:30,039

isn't carrying up a dragon capsule taken

1351

00:48:33,989 --> 00:48:31,599

car go to the station it's the internal

1352

00:48:35,489 --> 00:48:33,999

space X and that's where we try to not

1353

00:48:37,140 --> 00:48:35,499

want to put that pressure on them to say

1354

00:48:39,150 --> 00:48:37,150

hey you better get that right because

1355

00:48:40,319 --> 00:48:39,160

the next one's carrying our stuff it's

1356

00:48:41,880 --> 00:48:40,329

their test program they can do what they

1357

00:48:44,099 --> 00:48:41,890

need to and they ought to meet their own

1358

00:48:45,390 --> 00:48:44,109

objectives so and I think that's that's

1359

00:48:47,099 --> 00:48:45,400

really important what I was trying to

1360

00:48:49,199 --> 00:48:47,109

say and probably won't say it right but

1361

00:48:51,420 --> 00:48:49,209

but even if it appears that it's

1362

00:48:53,069 --> 00:48:51,430

successful it's not necessarily that

1363

00:48:55,049 --> 00:48:53,079

ensures that you're there it's really

1364

00:48:56,729 --> 00:48:55,059

the data behind it right how how well

1365

00:48:58,680 --> 00:48:56,739

did the vehicle perform against its

1366

00:49:00,269 --> 00:48:58,690

margin right and how well did other

1367

00:49:02,640 --> 00:49:00,279

things go so it may give the appearance

1368

00:49:04,680 --> 00:49:02,650

that it was successful but then it's

1369

00:49:06,930 --> 00:49:04,690

really deeper than that but then on the

1370

00:49:09,029 --> 00:49:06,940

counter or the other side is also if you

1371

00:49:10,799 --> 00:49:09,039

have a failure and it's a very clean

1372

00:49:13,920 --> 00:49:10,809

failure and you understand what it was

1373

00:49:15,599 --> 00:49:13,930

and it's it was very obvious to you you

1374

00:49:17,459 --> 00:49:15,609

can repair that and then build a much

1375

00:49:19,589 --> 00:49:17,469

better robust design so it actually

1376

00:49:21,719 --> 00:49:19,599

could benefit you so there's there's a

1377

00:49:23,789 --> 00:49:21,729

so the problem with test flight is as

1378

00:49:25,259 --> 00:49:23,799

engineers we want to test at the right

1379

00:49:26,579 --> 00:49:25,269

time in the sequence if you wait until

1380

00:49:28,229 --> 00:49:26,589

everything's perfect then you're not

1381

00:49:29,579 --> 00:49:28,239

really doing a whole act like by doing a

1382

00:49:31,259 --> 00:49:29,589

test flight you know you kind of knew it

1383

00:49:32,579 --> 00:49:31,269

was going to be okay in the end and you

1384

00:49:34,559 --> 00:49:32,589

really didn't learn what you wanted to

1385

00:49:36,029 --> 00:49:34,569

go do if you go too early and you pick

1386

00:49:37,680 --> 00:49:36,039

up some failure then you get all this

1387

00:49:39,359 --> 00:49:37,690

help and redesign and your rocket right

1388

00:49:41,189 --> 00:49:39,369

so then you've got to pick the right

1389

00:49:43,289 --> 00:49:41,199

time between when it's too early in the

1390

00:49:45,539 --> 00:49:43,299

test sequence and when it's so late that

1391

00:49:47,309 --> 00:49:45,549

you gain the maximum out of that test

1392

00:49:49,170 --> 00:49:47,319

flight and that's that that's the

1393

00:49:50,880 --> 00:49:49,180

dilemma it's the same philosophy that

1394

00:49:53,009 --> 00:49:50,890

goes into aircraft testing it goes into

1395

00:49:54,810 --> 00:49:53,019

other testing as well so it's not an

1396

00:49:56,460 --> 00:49:54,820

easy answer to me

1397

00:49:58,230 --> 00:49:56,470

it's what does the performance of the

1398

00:49:59,850 --> 00:49:58,240

rocket actually tell us about the design

1399

00:50:01,710 --> 00:49:59,860

and then that moves forward and then

1400

00:50:03,030 --> 00:50:01,720

it's best to talk to the designer or the

1401
00:50:05,570 --> 00:50:03,040
builder of the rocket about what this

1402
00:50:07,980 --> 00:50:05,580
test flight really means to that

1403
00:50:10,080 --> 00:50:07,990
oversight over whatsoever you can have

1404
00:50:11,940 --> 00:50:10,090
people stationed in Mission Control to

1405
00:50:14,550 --> 00:50:11,950
make sure things are just this first

1406
00:50:16,170 --> 00:50:14,560
flight is is not sponsored by NASA it's

1407
00:50:18,000 --> 00:50:16,180
for another customer so this is pretty

1408
00:50:20,310 --> 00:50:18,010
much space X doing their thing they've

1409
00:50:22,110 --> 00:50:20,320
asked us to help so we have we're going

1410
00:50:24,210 --> 00:50:22,120
to help pick up the first stage so we're

1411
00:50:26,130 --> 00:50:24,220
going to use one of our recovery booster

1412
00:50:28,950 --> 00:50:26,140
recovery ships to help them with the

1413
00:50:31,020 --> 00:50:28,960

recovery of this stage again and then

1414

00:50:33,270 --> 00:50:31,030

we've also think they've asked for some

1415

00:50:34,620 --> 00:50:33,280

camera assets and some radar assets so

1416

00:50:36,660 --> 00:50:34,630

we're going to make those available to

1417

00:50:38,550 --> 00:50:36,670

them too but it's kind of what what

1418

00:50:40,050 --> 00:50:38,560

services they wanted from us they went

1419

00:50:41,760 --> 00:50:40,060

out and asked us for help in these

1420

00:50:43,620 --> 00:50:41,770

certain areas to help with their overall

1421

00:50:45,210 --> 00:50:43,630

processing and the test flight and we'll

1422

00:50:50,970 --> 00:50:45,220

gladly provide that help to them where

1423

00:50:53,280 --> 00:50:50,980

it makes sense yes Michael and I just

1424

00:50:56,700 --> 00:50:53,290

following up on that generic launch

1425

00:50:58,680 --> 00:50:56,710

mount is your expectation that crews are

1426
00:51:03,330 --> 00:50:58,690
going to launched from kennedy space

1427
00:51:05,970 --> 00:51:03,340
center post shuttle and if so when when

1428
00:51:08,880 --> 00:51:05,980
do you think that that might happen next

1429
00:51:11,400 --> 00:51:08,890
after the last shell thing that's a

1430
00:51:14,040 --> 00:51:11,410
that's a real real real good question

1431
00:51:17,430 --> 00:51:14,050
and I don't know that anybody has that

1432
00:51:18,600 --> 00:51:17,440
answer I certainly don't we're cruising

1433
00:51:21,500 --> 00:51:18,610
on a girlfriend will be will be

1434
00:51:23,760 --> 00:51:21,510
dependent on their vehicle architecture

1435
00:51:26,670 --> 00:51:23,770
whether they could launch from art from

1436
00:51:29,460 --> 00:51:26,680
our pad is possibility whether they will

1437
00:51:30,390 --> 00:51:29,470
I just don't know we'll just have to

1438
00:51:32,040 --> 00:51:30,400

wait and see I mean they're they're

1439

00:51:34,530 --> 00:51:32,050

different competitors out there that

1440

00:51:36,720 --> 00:51:34,540

that want to do that business for

1441

00:51:39,030 --> 00:51:36,730

America and we'll pick between them and

1442

00:51:41,550 --> 00:51:39,040

it'll be there it will be there their

1443

00:51:43,710 --> 00:51:41,560

entire system will be designed based on

1444

00:51:45,660 --> 00:51:43,720

on their requirements and does that fit

1445

00:51:48,300 --> 00:51:45,670

our clean pad or does it fit their

1446

00:51:52,290 --> 00:51:48,310

existing Pat I don't know yet I just

1447

00:51:56,370 --> 00:51:52,300

don't know I'm sorry Krista part with

1448

00:51:58,820 --> 00:51:56,380

NASA space fight com in terms of the RCC

1449

00:52:01,890 --> 00:51:58,830

imagery from the OBS s on this flight

1450

00:52:04,980 --> 00:52:01,900

when exactly did you have all the imager

1451
00:52:07,170 --> 00:52:04,990
you needed to clear the RCC it was it

1452
00:52:08,849 --> 00:52:07,180
after the images were taken of Atlanta

1453
00:52:11,670 --> 00:52:08,859
star in the first dva

1454
00:52:15,539 --> 00:52:11,680
or was it really not until the the final

1455
00:52:18,029 --> 00:52:15,549
inspection let's see it I'll try to

1456
00:52:20,039 --> 00:52:18,039
slice that into into the big picture

1457
00:52:21,930 --> 00:52:20,049
draw with a crayon box says it was after

1458
00:52:23,880 --> 00:52:21,940
the late inspection they got all the

1459
00:52:27,690 --> 00:52:23,890
imagery that they are used to having in

1460
00:52:31,680 --> 00:52:27,700
order to clear the RCC but even with

1461
00:52:33,210 --> 00:52:31,690
that the ldr eye with a laser dynamic

1462
00:52:35,279 --> 00:52:33,220
ranging instrument that's on the end of

1463
00:52:37,829 --> 00:52:35,289

the boom that gives us that 3d map of

1464

00:52:39,839 --> 00:52:37,839

the of the the sensor or the the RCC

1465

00:52:42,450 --> 00:52:39,849

surface has some limitations and there

1466

00:52:43,890 --> 00:52:42,460

are areas where we are at the edge of

1467

00:52:45,359 --> 00:52:43,900

our detection criteria to say that

1468

00:52:47,039 --> 00:52:45,369

that's a critical damage size that we

1469

00:52:49,319 --> 00:52:47,049

need to pick up and so that systems

1470

00:52:51,450 --> 00:52:49,329

working at the maximum extent of its

1471

00:52:53,819 --> 00:52:51,460

capability so even on a perfect mission

1472

00:52:55,319 --> 00:52:53,829

where everything worked fine when we say

1473

00:52:56,940 --> 00:52:55,329

the RCC is clear there's still a little

1474

00:53:00,450 --> 00:52:56,950

risk there that some things that we

1475

00:53:03,239 --> 00:53:00,460

don't have imaged 100% perfectly and we

1476

00:53:05,099 --> 00:53:03,249

never really could so so it's kind of a

1477

00:53:06,390 --> 00:53:05,109

sliding scale to say when did we have it

1478

00:53:07,859 --> 00:53:06,400

because then the other thing you could

1479

00:53:10,049 --> 00:53:07,869

do is at what point was the risk now

1480

00:53:12,029 --> 00:53:10,059

acceptable to say based on all the other

1481

00:53:14,549 --> 00:53:12,039

assets besides just taking a picture of

1482

00:53:16,410 --> 00:53:14,559

the wing we have all the accelerometers

1483

00:53:19,620 --> 00:53:16,420

in the wing we call it the wing leading

1484

00:53:20,910 --> 00:53:19,630

edge detection system that would ring if

1485

00:53:22,680 --> 00:53:20,920

it got hit by something on essent we

1486

00:53:24,900 --> 00:53:22,690

have all the imagery both ground-based

1487

00:53:27,180 --> 00:53:24,910

and on board with the SRB cameras the et

1488

00:53:28,319 --> 00:53:27,190

feed line cameras we have the radar now

1489

00:53:29,910 --> 00:53:28,329

with the debris radar to see if

1490

00:53:32,190 --> 00:53:29,920

something fella so you pull that whole

1491

00:53:33,900 --> 00:53:32,200

suite together and you say did I get hit

1492

00:53:36,509 --> 00:53:33,910

by anything and all of that was telling

1493

00:53:37,890 --> 00:53:36,519

us know so so while after flight day to

1494

00:53:40,829 --> 00:53:37,900

when we didn't quite get perfect

1495

00:53:42,989 --> 00:53:40,839

coverage was the RCC cleared for entry

1496

00:53:44,579 --> 00:53:42,999

as a team no they weren't ready to say

1497

00:53:46,650 --> 00:53:44,589

we've seen enough to say there are no

1498

00:53:48,599 --> 00:53:46,660

damages but as a management team we were

1499

00:53:50,549 --> 00:53:48,609

comfortable to say yep but we are good

1500

00:53:52,289 --> 00:53:50,559

enough to wait and not need to go any

1501
00:53:53,579 --> 00:53:52,299
further with that so it's kind of you

1502
00:53:55,170 --> 00:53:53,589
buy off a little bit as you go you're

1503
00:53:57,479 --> 00:53:55,180
never perfect it's where you know at an

1504
00:53:59,849 --> 00:53:57,489
acceptable level to say I am comfortable

1505
00:54:02,069 --> 00:53:59,859
with what I have the team was probably

1506
00:54:03,930 --> 00:54:02,079
split about 5050 whether we needed more

1507
00:54:06,269 --> 00:54:03,940
imagery or not the more we talked about

1508
00:54:08,400 --> 00:54:06,279
it the longer you wait that other stuff

1509
00:54:09,839 --> 00:54:08,410
comes in the SRB film was delayed a day

1510
00:54:11,400 --> 00:54:09,849
due to bad weather we finally got that

1511
00:54:13,380 --> 00:54:11,410
the wing leading edge sensors guys came

1512
00:54:15,029 --> 00:54:13,390
in and showed us some of the testing

1513
00:54:17,130 --> 00:54:15,039

they've been doing recently to help

1514

00:54:18,420 --> 00:54:17,140

validate the the chance of a false

1515

00:54:20,910 --> 00:54:18,430

negative signature you didn't want to

1516

00:54:22,530 --> 00:54:20,920

ever see would it ever not tell you you

1517

00:54:24,030 --> 00:54:22,540

got hit and they did some great testing

1518

00:54:26,400 --> 00:54:24,040

show that it the chances of having a

1519

00:54:27,450 --> 00:54:26,410

false negative were almost nil so so we

1520

00:54:29,010 --> 00:54:27,460

knew we could put a lot of confidence in

1521

00:54:30,510 --> 00:54:29,020

that system is that all came together

1522

00:54:32,370 --> 00:54:30,520

the confidence of the team went higher

1523

00:54:34,200 --> 00:54:32,380

and higher and so so I'd say we didn't

1524

00:54:35,790 --> 00:54:34,210

official clear RCC until late inspection

1525

00:54:37,770 --> 00:54:35,800

but as a team we were probably mentally

1526
00:54:38,880 --> 00:54:37,780
there about about halfway through the

1527
00:54:43,260 --> 00:54:38,890
mission when we looked at all the rest

1528
00:54:46,890 --> 00:54:43,270
of the data Irene Klotz with Reuters

1529
00:54:49,140 --> 00:54:46,900
these are probably both for bill if if

1530
00:54:51,480 --> 00:54:49,150
NASA is operating on the continuing

1531
00:54:54,690 --> 00:54:51,490
resolution without a budget passed for

1532
00:54:57,420 --> 00:54:54,700
the year beginning october one at what

1533
00:54:59,670 --> 00:54:57,430
point if any does would that start

1534
00:55:05,940 --> 00:54:59,680
impacting what you do with shuttle and

1535
00:55:07,710 --> 00:55:05,950
kind of station completion it depends we

1536
00:55:09,960 --> 00:55:07,720
need the specifics of what the

1537
00:55:12,720 --> 00:55:09,970
continuing resolution means right are we

1538
00:55:16,050 --> 00:55:12,730

held at ten budget levels are we given

1539

00:55:18,000 --> 00:55:16,060

the president's proposed budget levels

1540

00:55:20,030 --> 00:55:18,010

or we given something in between so it

1541

00:55:22,470 --> 00:55:20,040

depends what budget levels were given

1542

00:55:25,020 --> 00:55:22,480

where it starts impact meanest from a

1543

00:55:27,330 --> 00:55:25,030

overall manifest standpoint so again our

1544

00:55:30,420 --> 00:55:27,340

job is to kind of analyze those cases

1545

00:55:32,130 --> 00:55:30,430

and then let the budget folks know where

1546

00:55:34,140 --> 00:55:32,140

those cases are so then hopefully they

1547

00:55:35,850 --> 00:55:34,150

can craft a budget that lets us keep

1548

00:55:38,910 --> 00:55:35,860

doing what we need to keep doing but

1549

00:55:41,470 --> 00:55:38,920

it's pretty this is pretty typical

1550

00:55:45,370 --> 00:55:41,480

budget cycle as we go through the fiscal

1551
00:55:48,160 --> 00:55:45,380
year change and another money question

1552
00:55:50,620 --> 00:55:48,170
on the it's you sound like really good

1553
00:55:52,630 --> 00:55:50,630
neighbors with SpaceX but are they going

1554
00:55:54,910 --> 00:55:52,640
to be reimbursing the government for the

1555
00:55:57,190 --> 00:55:54,920
use of these assets that you're making

1556
00:56:00,099 --> 00:55:57,200
available yeah we have a SpaceX

1557
00:56:01,780 --> 00:56:00,109
agreement signed with them and theirs so

1558
00:56:03,550 --> 00:56:01,790
it's a marginal cost we provide you

1559
00:56:05,410 --> 00:56:03,560
they're not building the ship we did

1560
00:56:08,920 --> 00:56:05,420
that but the fuel and the food and all

1561
00:56:15,760 --> 00:56:08,930
the stuff they do pay for that ok thnks

1562
00:56:18,670 --> 00:56:15,770
ever get last question yes one final

1563
00:56:21,910 --> 00:56:18,680

question for me which I should probably

1564

00:56:25,089 --> 00:56:21,920

ask your buses to better not here but

1565

00:56:29,970 --> 00:56:25,099

anyway and I'm not trying to get into

1566

00:56:34,270 --> 00:56:29,980

demagoguery here but talking of a gap ok

1567

00:56:38,290 --> 00:56:34,280

The Wall Street crooks got the trillions

1568

00:56:44,589 --> 00:56:38,300

and NASA's budget is one-tenth of what

1569

00:56:48,880 --> 00:56:44,599

it was in the mid-60s I mean spaceflight

1570

00:56:50,890 --> 00:56:48,890

is a status symbol and and also ameri

1571

00:56:55,900 --> 00:56:50,900

obviously that makes America stand out

1572

00:57:00,370 --> 00:56:55,910

so without it or by outsourcing launches

1573

00:57:05,099 --> 00:57:00,380

or not having a u.s. spacecraft with

1574

00:57:11,020 --> 00:57:05,109

people aboard is going to make the

1575

00:57:13,950 --> 00:57:11,030

United States looked like it's not as as

1576

00:57:17,589 --> 00:57:13,960

powerful as it was in the sixties and

1577

00:57:20,980 --> 00:57:17,599

I'm wondering if I mean obviously just

1578

00:57:23,290 --> 00:57:20,990

your thought as I said in you I said I

1579

00:57:26,559 --> 00:57:23,300

said it should have been your bosses or

1580

00:57:28,720 --> 00:57:26,569

the boss of your bosses should be

1581

00:57:33,160 --> 00:57:28,730

talking to but I was wondering if you

1582

00:57:33,940 --> 00:57:33,170

have any opinions that's how sacred I'm

1583

00:57:36,780 --> 00:57:33,950

not sure who's going to want to

1584

00:57:39,620 --> 00:57:36,790

volunteer to jump under the bus

1585

00:57:42,480 --> 00:57:39,630

but you personally apparently me

1586

00:57:44,280 --> 00:57:42,490

personally I'd love to see us spend more

1587

00:57:45,570 --> 00:57:44,290

you know half a percent of the budget is

1588

00:57:48,030 --> 00:57:45,580

what we spent now I'd love to see that

1589

00:57:49,410 --> 00:57:48,040

double to triple door heck I'd love to

1590

00:57:50,880 --> 00:57:49,420

just be able to spend what they what

1591

00:57:52,710 --> 00:57:50,890

they make in box office earnings off of

1592

00:57:55,680 --> 00:57:52,720

some of the major motion pictures but

1593

00:57:57,810 --> 00:57:55,690

the reality is that's not happening you

1594

00:57:59,190 --> 00:57:57,820

know everybody sitting up here everybody

1595

00:58:01,140 --> 00:57:59,200

you'll talk to as you walk around the

1596

00:58:02,820 --> 00:58:01,150

center not only pays their taxes and

1597

00:58:04,500 --> 00:58:02,830

dedicates that to the space program but

1598

00:58:06,450 --> 00:58:04,510

they they dedicate their lives to that

1599

00:58:08,070 --> 00:58:06,460

the space program as well so you're

1600

00:58:09,690 --> 00:58:08,080

talking to an audience who could give

1601
00:58:12,390 --> 00:58:09,700
you probably know answer other than yes

1602
00:58:14,460 --> 00:58:12,400
please let us do more we will show you a

1603
00:58:17,280 --> 00:58:14,470
whole bunch of a really cool stuff and

1604
00:58:19,170 --> 00:58:17,290
and inspired the generations to come to

1605
00:58:21,180 --> 00:58:19,180
go into into science and technology in

1606
00:58:23,850 --> 00:58:21,190
math you know everybody talks about

1607
00:58:26,250 --> 00:58:23,860
spin-offs from NASA you did the Apollo

1608
00:58:27,660 --> 00:58:26,260
program invent Tang doesn't really

1609
00:58:30,000 --> 00:58:27,670
matter whether that answer is yes or no

1610
00:58:32,340 --> 00:58:30,010
what it did was spur a culture of of

1611
00:58:34,140 --> 00:58:32,350
science and learning and education it's

1612
00:58:36,060 --> 00:58:34,150
it's an inspiration thing to have a goal

1613
00:58:37,380 --> 00:58:36,070

so from that standpoint I'd love to see

1614

00:58:39,960 --> 00:58:37,390

us continue because when I look at my

1615

00:58:42,000 --> 00:58:39,970

kids I wonder what to inspire them this

1616

00:58:45,000 --> 00:58:42,010

is what brought me along that's not to

1617

00:58:46,650 --> 00:58:45,010

say that redesigning a better tractor is

1618

00:58:47,850 --> 00:58:46,660

what's going to inspire my kids and so

1619

00:58:50,730 --> 00:58:47,860

that's a great thing when I spend more

1620

00:58:51,930 --> 00:58:50,740

money on agriculture so it I can give

1621

00:58:53,280 --> 00:58:51,940

you an answer it but from a space

1622

00:58:54,630 --> 00:58:53,290

program you're not going to find any of

1623

00:58:56,280 --> 00:58:54,640

us that work here who aren't die hard

1624

00:58:57,810 --> 00:58:56,290

and space enthusiasts so yeah I'd say

1625

00:58:59,730 --> 00:58:57,820

we'd all love to see more budget but

1626

00:59:04,980 --> 00:58:59,740

then again I could say that about my

1627

00:59:07,140 --> 00:59:04,990

personal life too so I think the only

1628

00:59:09,270 --> 00:59:07,150

thing I'd add is it that you know we're

1629

00:59:12,530 --> 00:59:09,280

tremendously blessed to get to do what

1630

00:59:15,810 --> 00:59:12,540

we get to go do I mean all this up here

1631

00:59:21,660 --> 00:59:15,820

this is as much of a passion for us as

1632

00:59:24,480 --> 00:59:21,670

it is a profession and I we may we all

1633

00:59:26,760 --> 00:59:24,490

want more as Mike said right but I look

1634

00:59:29,370 --> 00:59:26,770

at what we've got and I am very thankful

1635

00:59:31,740 --> 00:59:29,380

for what we have I'm thankful to work

1636

00:59:33,930 --> 00:59:31,750

with this team I can't think of any

1637

00:59:36,480 --> 00:59:33,940

individuals I would rather spend my

1638

00:59:39,210 --> 00:59:36,490

hours with than the folks I work with in

1639

00:59:41,190 --> 00:59:39,220

this business there are no more sounder

1640

00:59:42,990 --> 00:59:41,200

professionals in the world will take

1641

00:59:44,850 --> 00:59:43,000

what we're given and we will implement

1642

00:59:45,029 --> 00:59:44,860

the absolute best program that we can

1643

00:59:50,039 --> 00:59:45,039

have

1644

00:59:51,779 --> 00:59:50,049

remember with what we're given okay and

1645

00:59:54,419 --> 00:59:51,789

I guess just fall on the tank question

1646

00:59:57,870 --> 00:59:54,429

the answer's no I'm just clarification

1647

00:59:59,189 --> 00:59:57,880

say thank you that's a last question and

1648

01:00:01,319 --> 00:59:59,199

our next briefing will be with the

1649

01:00:03,569 --> 01:00:01,329

astronauts from Atlantis is sts-132

1650

01:00:06,809 --> 01:00:03,579

mission that crew news conference will

1651

01:00:08,489 --> 01:00:06,819

start approximately 2 30 or 2 45 p.m.

1652

01:00:10,199 --> 01:00:08,499

eastern time before the exact start time

1653

01:00:11,729 --> 01:00:10,209

please stay with NASA television will

1654

01:00:13,679 --> 01:00:11,739

put up a graphic as soon as we find out

1655

01:00:15,269 --> 01:00:13,689

and we know the crew is available in the

1656

01:00:19,620 --> 01:00:15,279

meantime for more information about the