



1
00:00:08,549 --> 00:00:06,389
good morning and welcome to our sts-135

2
00:00:10,790 --> 00:00:08,559
post landing news conference we're

3
00:00:12,470 --> 00:00:10,800
pleased today to be joined by nasa

4
00:00:14,870 --> 00:00:12,480
associate administrator for space

5
00:00:16,790 --> 00:00:14,880
operations mr bill gerstenmaier

6
00:00:20,150 --> 00:00:16,800
good morning kennedy space center

7
00:00:22,150 --> 00:00:20,160
director bob cabana hi

8
00:00:24,950 --> 00:00:22,160
space shuttle program launch integration

9
00:00:26,870 --> 00:00:24,960
manager mike mores good morning

10
00:00:29,029 --> 00:00:26,880
and shuttle launch director mike

11
00:00:31,029 --> 00:00:29,039
leinbach morning everybody

12
00:00:32,630 --> 00:00:31,039
we'll open up with some comments from

13
00:00:35,350 --> 00:00:32,640

the panel and then we'll be happy to

14

00:00:36,709 --> 00:00:35,360

take your questions mr gerstenmaier

15

00:00:38,950 --> 00:00:36,719

thanks mike

16

00:00:41,030 --> 00:00:38,960

um first of all i really want to thank

17

00:00:44,790 --> 00:00:41,040

the space shuttle team and the space

18

00:00:46,869 --> 00:00:44,800

shuttle program for just a tremendous

19

00:00:49,110 --> 00:00:46,879

effort today and throughout the entire

20

00:00:50,150 --> 00:00:49,120

history of the program

21

00:00:52,389 --> 00:00:50,160

you know we

22

00:00:54,470 --> 00:00:52,399

i can't say enough about the team and

23

00:00:57,110 --> 00:00:54,480

how great a job they've done and we gave

24

00:00:58,869 --> 00:00:57,120

them a tremendous challenge to fly and

25

00:01:01,349 --> 00:00:58,879

execute these missions and to finish

26
00:01:03,189 --> 00:01:01,359
strong and i can tell you today the team

27
00:01:04,710 --> 00:01:03,199
accomplished every one of those

28
00:01:06,230 --> 00:01:04,720
objectives and they just did a

29
00:01:07,830 --> 00:01:06,240
tremendous job

30
00:01:09,590 --> 00:01:07,840
when we walked out on the runway and we

31
00:01:13,109 --> 00:01:09,600
looked underneath the vehicle it was one

32
00:01:15,109 --> 00:01:13,119
of the cleaner vehicles i've seen the

33
00:01:17,429 --> 00:01:15,119
bottom of the vehicle looked excellent

34
00:01:19,030 --> 00:01:17,439
the entire mission was very smooth a

35
00:01:20,870 --> 00:01:19,040
tremendous amount of cargo was

36
00:01:23,350 --> 00:01:20,880
transferred back and forth between the

37
00:01:25,510 --> 00:01:23,360
station and the shuttle all that went

38
00:01:27,670 --> 00:01:25,520

tremendously smoothly

39

00:01:29,910 --> 00:01:27,680

everything worked just flawlessly just

40

00:01:31,910 --> 00:01:29,920

like it should on every mission so with

41

00:01:33,510 --> 00:01:31,920

all the distractions and the problems of

42

00:01:35,350 --> 00:01:33,520

uncertainty of where the future was

43

00:01:37,030 --> 00:01:35,360

going and things the team stayed focused

44

00:01:40,230 --> 00:01:37,040

they did exactly what they needed to go

45

00:01:42,389 --> 00:01:40,240

do and they really delivered a quality

46

00:01:44,950 --> 00:01:42,399

into the program so i want to again

47

00:01:46,710 --> 00:01:44,960

thank the team for for that i'd also

48

00:01:48,550 --> 00:01:46,720

like to thank the nation for allowing us

49

00:01:50,710 --> 00:01:48,560

to have these 30 years to go use this

50

00:01:51,990 --> 00:01:50,720

shuttle system this is a tremendous

51
00:01:53,910 --> 00:01:52,000
vehicle

52
00:01:55,830 --> 00:01:53,920
as i said stood out on the runway and

53
00:01:57,350 --> 00:01:55,840
stared at it i looked at this winged

54
00:01:59,190 --> 00:01:57,360
vehicle and i thought about all the

55
00:02:01,749 --> 00:01:59,200
systems and when they were designed back

56
00:02:03,350 --> 00:02:01,759
in the 70s and it was a true marvel

57
00:02:05,749 --> 00:02:03,360
looking at that machine sitting on the

58
00:02:07,670 --> 00:02:05,759
runway it really allowed us to do

59
00:02:09,190 --> 00:02:07,680
amazing things and it's going to

60
00:02:11,270 --> 00:02:09,200
continue to allow us to do amazing

61
00:02:13,030 --> 00:02:11,280
things in the future and and that's the

62
00:02:14,790 --> 00:02:13,040
the next steps the next steps are the

63
00:02:16,630 --> 00:02:14,800

space station it's we're going to

64

00:02:18,630 --> 00:02:16,640

continue to use the space station we've

65

00:02:20,710 --> 00:02:18,640

put it in as best of posture as we can

66

00:02:22,550 --> 00:02:20,720

for this next period of time we'll see

67

00:02:24,229 --> 00:02:22,560

the new commercial cargo providers come

68

00:02:26,630 --> 00:02:24,239

online late this year in the beginning

69

00:02:28,550 --> 00:02:26,640

of next year we get a chance to see if

70

00:02:30,390 --> 00:02:28,560

space can really be that research

71

00:02:32,309 --> 00:02:30,400

facility that we need we can learn new

72

00:02:33,750 --> 00:02:32,319

things from space that that are really

73

00:02:35,670 --> 00:02:33,760

unique and help us here so we'll

74

00:02:37,509 --> 00:02:35,680

continue on with that and the commercial

75

00:02:39,670 --> 00:02:37,519

activities and then we need to get on

76

00:02:42,070 --> 00:02:39,680

with our expiration plans i think we

77

00:02:44,070 --> 00:02:42,080

need to really get some some good ideas

78

00:02:46,630 --> 00:02:44,080

to go forward beyond low-earth orbit to

79

00:02:48,070 --> 00:02:46,640

keep moving forward so again

80

00:02:49,990 --> 00:02:48,080

you know i can't

81

00:02:52,470 --> 00:02:50,000

thank the shuttle team enough for what

82

00:02:55,990 --> 00:02:52,480

they've done you know i recognize that

83

00:02:58,630 --> 00:02:56,000

the change is very hard and

84

00:03:01,190 --> 00:02:58,640

but but huge growth or huge

85

00:03:03,190 --> 00:03:01,200

improvement really comes from change

86

00:03:05,430 --> 00:03:03,200

and so this team that can accomplish

87

00:03:06,630 --> 00:03:05,440

almost anything that they're asked to go

88

00:03:08,550 --> 00:03:06,640

do

89

00:03:10,070 --> 00:03:08,560

you know i know that they can accomplish

90

00:03:12,229 --> 00:03:10,080

great things in the future both

91

00:03:14,550 --> 00:03:12,239

individually and as a team

92

00:03:16,630 --> 00:03:14,560

i watch them i wish them the best as

93

00:03:18,550 --> 00:03:16,640

they go forward they should be very

94

00:03:20,229 --> 00:03:18,560

proud of what they have done they've

95

00:03:21,430 --> 00:03:20,239

accomplished everything we wanted them

96

00:03:23,350 --> 00:03:21,440

to go do

97

00:03:25,830 --> 00:03:23,360

they will be successful in the future

98

00:03:27,589 --> 00:03:25,840

and they will do great things thank you

99

00:03:28,949 --> 00:03:27,599

space shuttle team

100

00:03:31,830 --> 00:03:28,959

bob

101
00:03:34,710 --> 00:03:31,840
thanks bill bill pretty much captured it

102
00:03:36,550 --> 00:03:34,720
first off it is great to have atlanta

103
00:03:39,350 --> 00:03:36,560
safely home after a tremendously

104
00:03:41,270 --> 00:03:39,360
successful mission home to stay and

105
00:03:42,149 --> 00:03:41,280
that's really important too

106
00:03:49,350 --> 00:03:42,159
i

107
00:03:50,869 --> 00:03:49,360
and how they've performed

108
00:03:53,350 --> 00:03:50,879
these last

109
00:03:55,990 --> 00:03:53,360
few flights when you consider you know i

110
00:03:57,990 --> 00:03:56,000
mean it's been our number one goal

111
00:03:59,350 --> 00:03:58,000
the last couple years to safely fly out

112
00:04:01,429 --> 00:03:59,360
the shuttle program and we've

113
00:04:02,710 --> 00:04:01,439

accomplished that and when you consider

114

00:04:03,990 --> 00:04:02,720

the folks that

115

00:04:05,350 --> 00:04:04,000

know they're going to be out of work

116

00:04:06,949 --> 00:04:05,360

here in

117

00:04:09,110 --> 00:04:06,959

some

118

00:04:12,070 --> 00:04:09,120

tomorrow is their last day

119

00:04:13,990 --> 00:04:12,080

and they're they've performed flawlessly

120

00:04:15,830 --> 00:04:14,000

right up to the very end with high

121

00:04:18,229 --> 00:04:15,840

morale and

122

00:04:19,670 --> 00:04:18,239

dedicated to what they're doing and and

123

00:04:21,349 --> 00:04:19,680

that's kind of workers we've got here at

124

00:04:23,590 --> 00:04:21,359

ksc and it just

125

00:04:25,350 --> 00:04:23,600

i have extreme pride in each and every

126

00:04:27,430 --> 00:04:25,360

one of them and i'm just really

127

00:04:29,430 --> 00:04:27,440

pleased i'm proud to be part of the

128

00:04:31,030 --> 00:04:29,440

program at this point in history

129

00:04:32,070 --> 00:04:31,040

uh as bill said

130

00:04:33,670 --> 00:04:32,080

you know

131

00:04:35,189 --> 00:04:33,680

we've achieved that goal now we have

132

00:04:36,469 --> 00:04:35,199

safely flown out the shuttle and we're

133

00:04:37,670 --> 00:04:36,479

going to we're going to take pride in

134

00:04:39,990 --> 00:04:37,680

that today we're going to celebrate

135

00:04:42,469 --> 00:04:40,000

we've got a team event going on outside

136

00:04:44,310 --> 00:04:42,479

the opf as we tow atlantis back we're

137

00:04:46,469 --> 00:04:44,320

going to pause for a little bit allow

138

00:04:48,790 --> 00:04:46,479

folks to get pictures with the vehicle

139

00:04:50,629 --> 00:04:48,800

in the background and celebrate what we

140

00:04:52,310 --> 00:04:50,639

have accomplished these past 30 years

141

00:04:54,629 --> 00:04:52,320

with the space shuttle program and

142

00:04:55,749 --> 00:04:54,639

specifically with this last mission

143

00:04:58,230 --> 00:04:55,759

but

144

00:05:00,070 --> 00:04:58,240

when that's complete then it's time to

145

00:05:02,710 --> 00:05:00,080

to move on and focus to the future and

146

00:05:05,270 --> 00:05:02,720

as bill said you know you can't continue

147

00:05:06,950 --> 00:05:05,280

to do the same things and expect to do

148

00:05:09,430 --> 00:05:06,960

something else that's better you have to

149

00:05:11,189 --> 00:05:09,440

have change and in the uh steer budget

150

00:05:13,110 --> 00:05:11,199

times that we have we cannot afford to

151

00:05:15,990 --> 00:05:13,120

continue to fly the space shuttle and

152

00:05:17,990 --> 00:05:16,000

still work on those future programs so

153

00:05:20,070 --> 00:05:18,000

now we're going to take this extremely

154

00:05:22,390 --> 00:05:20,080

talented and dedicated team that we have

155

00:05:24,870 --> 00:05:22,400

across the agency that has been focused

156

00:05:27,189 --> 00:05:24,880

on the space shuttle program and and

157

00:05:30,790 --> 00:05:27,199

we're going to focus a lot of energy on

158

00:05:33,029 --> 00:05:30,800

enabling that future for ksc for nasa

159

00:05:34,950 --> 00:05:33,039

and our nation and we will enable

160

00:05:36,830 --> 00:05:34,960

commercial space

161

00:05:39,590 --> 00:05:36,840

to get our crews to and from the space

162

00:05:41,270 --> 00:05:39,600

station and we're going to work on that

163

00:05:42,870 --> 00:05:41,280

that heavy lift vehicle that's going to

164

00:05:44,150 --> 00:05:42,880

allow us to explore beyond our home

165

00:05:46,150 --> 00:05:44,160

planet and

166

00:05:47,110 --> 00:05:46,160

as you all know the multi-purpose crew

167

00:05:48,710 --> 00:05:47,120

vehicle

168

00:05:50,710 --> 00:05:48,720

was named orion

169

00:05:53,270 --> 00:05:50,720

the first hardware for the test vehicle

170

00:05:56,550 --> 00:05:53,280

arrives here at the cape later this year

171

00:05:59,029 --> 00:05:56,560

to be processed over in the onc high bay

172

00:06:00,870 --> 00:05:59,039

so we're going to focus on what we need

173

00:06:02,950 --> 00:06:00,880

to do to prepare the launch site the

174

00:06:06,070 --> 00:06:02,960

facilities here to make it a multi-user

175

00:06:08,550 --> 00:06:06,080

spaceport to enable commercial space and

176

00:06:11,189 --> 00:06:08,560

to get us that big rocket that allows us

177

00:06:13,510 --> 00:06:11,199

to go exploring as we move beyond our

178

00:06:15,830 --> 00:06:13,520

home planet so i think today is a great

179

00:06:17,110 --> 00:06:15,840

day to celebrate there's a a lot of

180

00:06:19,590 --> 00:06:17,120

emotions

181

00:06:21,909 --> 00:06:19,600

highs and lows as we give hugs and say

182

00:06:23,830 --> 00:06:21,919

goodbyes but also take pride in what

183

00:06:25,909 --> 00:06:23,840

we've accomplished and it's it's it's

184

00:06:27,350 --> 00:06:25,919

pretty amazing when you look back on it

185

00:06:31,909 --> 00:06:27,360

thanks

186

00:06:34,309 --> 00:06:31,919

boy it's been a heck of a day um and a

187

00:06:36,550 --> 00:06:34,319

heck of a heck of a program i uh

188

00:06:38,790 --> 00:06:36,560

personally uh same kind of sentiments

189

00:06:40,150 --> 00:06:38,800

unbelievably proud to be uh here

190

00:06:41,749 --> 00:06:40,160

representing the space shuttle program

191

00:06:44,070 --> 00:06:41,759

and the thousands of people across the

192

00:06:46,629 --> 00:06:44,080

country uh that do the work uh the

193

00:06:48,390 --> 00:06:46,639

kennedy teams do an amazing job

194

00:06:50,790 --> 00:06:48,400

you saw this vehicle

195

00:06:52,309 --> 00:06:50,800

performed almost flawlessly hardly any

196

00:06:53,830 --> 00:06:52,319

issues to talk about at all really let

197

00:06:55,430 --> 00:06:53,840

us focus on the mission

198

00:06:56,710 --> 00:06:55,440

of stocking up the station for the

199

00:06:58,390 --> 00:06:56,720

future

200

00:07:01,110 --> 00:06:58,400

the teams back at johnson space center

201
00:07:02,550 --> 00:07:01,120
in houston the mission control team is

202
00:07:04,790 --> 00:07:02,560
is is world-class there is none better

203
00:07:06,870 --> 00:07:04,800
for executing a mission and flying the

204
00:07:08,950 --> 00:07:06,880
plan uh the lead flight directors and

205
00:07:11,189 --> 00:07:08,960
the asset entry flight directors really

206
00:07:12,870 --> 00:07:11,199
lead an amazing team of folks back there

207
00:07:14,550 --> 00:07:12,880
in addition to all the uh the station

208
00:07:15,749 --> 00:07:14,560
support controllers and the rest of the

209
00:07:16,469 --> 00:07:15,759
engineering staff at johnson space

210
00:07:17,510 --> 00:07:16,479
center

211
00:07:19,589 --> 00:07:17,520
and then our friends up in marshall

212
00:07:21,749 --> 00:07:19,599
space flight center uh put together

213
00:07:23,350 --> 00:07:21,759

a truly awesome set of propulsion uh

214

00:07:25,990 --> 00:07:23,360

hardware to get us into orbit every time

215

00:07:27,510 --> 00:07:26,000

that's worked flawlessly uh and uh and

216

00:07:29,029 --> 00:07:27,520

has been doing just fantastic here in

217

00:07:30,550 --> 00:07:29,039

the in the home stretch

218

00:07:32,150 --> 00:07:30,560

allowing us to really do exactly what

219

00:07:34,230 --> 00:07:32,160

we've all been talking about which is

220

00:07:35,589 --> 00:07:34,240

finishing strong and and keeping on the

221

00:07:37,510 --> 00:07:35,599

target

222

00:07:38,309 --> 00:07:37,520

when you look back the shuttle programs

223

00:07:40,150 --> 00:07:38,319

uh

224

00:07:42,710 --> 00:07:40,160

racked up quite a history i was just

225

00:07:44,550 --> 00:07:42,720

doing a little quick math we did 1300

226

00:07:45,990 --> 00:07:44,560

days in orbit

227

00:07:47,909 --> 00:07:46,000

if you think about that for all the

228

00:07:50,230 --> 00:07:47,919

vehicles in the fleet that's about 43

229

00:07:51,430 --> 00:07:50,240

months of time up in space it's nothing

230

00:07:53,189 --> 00:07:51,440

compared to the time that the space

231

00:07:55,110 --> 00:07:53,199

station's clocking up but for a vehicle

232

00:07:56,629 --> 00:07:55,120

built 30 years ago whose purpose was to

233

00:07:59,350 --> 00:07:56,639

build the space station it's uh it's

234

00:08:01,189 --> 00:07:59,360

quite a feat um and that station itself

235

00:08:02,710 --> 00:08:01,199

is is impressive you guys saw the

236

00:08:04,550 --> 00:08:02,720

station hopefully you got to see the

237

00:08:06,550 --> 00:08:04,560

station fly by about 10 minutes before

238

00:08:08,390 --> 00:08:06,560

uh before landing i don't i don't know

239

00:08:09,830 --> 00:08:08,400

how much we owe the station program for

240

00:08:10,869 --> 00:08:09,840

for doing that but man it was picture

241

00:08:12,869 --> 00:08:10,879

perfect i couldn't have thought of

242

00:08:15,670 --> 00:08:12,879

anything better to do than to have that

243

00:08:18,070 --> 00:08:15,680

go by just before we we had touchdown

244

00:08:19,990 --> 00:08:18,080

you know hearing the sonic booms

245

00:08:22,230 --> 00:08:20,000

as atlantis came home for the last time

246

00:08:22,950 --> 00:08:22,240

really made it drive home to me that

247

00:08:24,710 --> 00:08:22,960

that

248

00:08:27,029 --> 00:08:24,720

this has been a heck of a program and

249

00:08:28,950 --> 00:08:27,039

again i yeah i just can't i can't even

250

00:08:30,309 --> 00:08:28,960

begin to put into words uh my feelings

251

00:08:31,990 --> 00:08:30,319

you know they all kind of

252

00:08:33,029 --> 00:08:32,000

culminated there uh right now i don't

253

00:08:35,350 --> 00:08:33,039

feel too much other than just a little

254

00:08:38,389 --> 00:08:35,360

bit hungry a little bit tired but um but

255

00:08:39,430 --> 00:08:38,399

uh it's been it's been a nice ride

256

00:08:40,949 --> 00:08:39,440

and i don't think i can say anything

257

00:08:42,550 --> 00:08:40,959

else without blabbering on so i'm just

258

00:08:45,829 --> 00:08:42,560

going to pass it on to mike okay thanks

259

00:08:47,430 --> 00:08:45,839

mike um i have two uh two statements i'd

260

00:08:48,870 --> 00:08:47,440

like to make one is uh to thank the

261

00:08:50,630 --> 00:08:48,880

workforce here at the kennedy space

262

00:08:53,190 --> 00:08:50,640

center

263

00:08:55,590 --> 00:08:53,200

i've worked here all my my career 27

264

00:08:58,310 --> 00:08:55,600

years and you get to know the folks here

265

00:08:59,670 --> 00:08:58,320

and and you get to to love them all

266

00:09:00,949 --> 00:08:59,680

and those folks out on the runway today

267

00:09:02,550 --> 00:09:00,959

were doing the job today just like

268

00:09:04,630 --> 00:09:02,560

they've done every other landing and it

269

00:09:06,070 --> 00:09:04,640

was just a marvel to see

270

00:09:07,030 --> 00:09:06,080

i know i'm sounding like a broken record

271

00:09:09,110 --> 00:09:07,040

here

272

00:09:11,269 --> 00:09:09,120

but these feelings from from myself and

273

00:09:12,310 --> 00:09:11,279

and from the other guys up here are true

274

00:09:14,550 --> 00:09:12,320

feelings

275

00:09:15,750 --> 00:09:14,560

that uh the work the workers out here

276

00:09:17,430 --> 00:09:15,760

and across the country in the space

277

00:09:18,790 --> 00:09:17,440

shuttle program have dedicated their

278

00:09:20,630 --> 00:09:18,800

lives their hearts and their souls to

279

00:09:22,150 --> 00:09:20,640

this program and i couldn't be more

280

00:09:24,710 --> 00:09:22,160

proud of them and to call them my

281

00:09:26,389 --> 00:09:24,720

friends and and to wish them well

282

00:09:28,389 --> 00:09:26,399

second i'd like to thank you all members

283

00:09:30,230 --> 00:09:28,399

of the press for uh for the years of

284

00:09:33,350 --> 00:09:30,240

service uh you've become family members

285

00:09:34,870 --> 00:09:33,360

as well some of you have gone way back

286

00:09:36,949 --> 00:09:34,880

jay in particular

287

00:09:38,470 --> 00:09:36,959

and so you all have been good friends of

288

00:09:40,470 --> 00:09:38,480

the space program too so i'd like to

289

00:09:41,750 --> 00:09:40,480

thank you all

290

00:09:43,829 --> 00:09:41,760

good day

291

00:09:45,350 --> 00:09:43,839

program is over mission complete

292

00:09:47,750 --> 00:09:45,360

everybody feels good that we got the

293

00:09:50,630 --> 00:09:47,760

crew home safely and uh we're looking

294

00:09:52,550 --> 00:09:50,640

forward to our next challenges thank you

295

00:09:54,389 --> 00:09:52,560

okay we'll take questions here uh please

296

00:09:56,070 --> 00:09:54,399

wait for the microphone state your name

297

00:09:57,590 --> 00:09:56,080

and affiliation and to whom you're

298

00:09:59,590 --> 00:09:57,600

addressing your question and we'll start

299

00:10:01,750 --> 00:09:59,600

off with marcia dunn

300

00:10:02,870 --> 00:10:01,760

marshad an associated press for mike

301
00:10:05,030 --> 00:10:02,880
leinbach

302
00:10:07,509 --> 00:10:05,040
when did when was the most emotional

303
00:10:09,430 --> 00:10:07,519
point for you this morning um seeing the

304
00:10:12,230 --> 00:10:09,440
shuttle walking up to it hearing the

305
00:10:14,310 --> 00:10:12,240
booms could you just sort of share

306
00:10:16,870 --> 00:10:14,320
share your sentiments

307
00:10:18,790 --> 00:10:16,880
well there were several marcia

308
00:10:20,470 --> 00:10:18,800
deorbit burn to go for the burn knowing

309
00:10:24,150 --> 00:10:20,480
that the that this mission was coming to

310
00:10:26,069 --> 00:10:24,160
an end out on the runway i found myself

311
00:10:28,230 --> 00:10:26,079
as i did with discovery and endeavor

312
00:10:29,910 --> 00:10:28,240
just taking in the the beauty of the

313
00:10:31,190 --> 00:10:29,920

vehicle standing back and taking

314

00:10:32,389 --> 00:10:31,200

pictures and

315

00:10:34,550 --> 00:10:32,399

and uh

316

00:10:35,350 --> 00:10:34,560

taking pictures of the workers and and

317

00:10:37,590 --> 00:10:35,360

uh

318

00:10:40,389 --> 00:10:37,600

them asking for a picture with me and

319

00:10:42,389 --> 00:10:40,399

and it was just a it was it was a family

320

00:10:45,110 --> 00:10:42,399

event out there today

321

00:10:47,030 --> 00:10:45,120

uh hard to describe the emotions um they

322

00:10:48,230 --> 00:10:47,040

were they were good emotions that we

323

00:10:49,590 --> 00:10:48,240

brought the crew home safely and the

324

00:10:51,670 --> 00:10:49,600

mission is complete

325

00:10:53,990 --> 00:10:51,680

certainly sadness that it's over and

326

00:10:55,829 --> 00:10:54,000

people will be moving on and and uh

327

00:10:59,350 --> 00:10:55,839

hate to see them leave but that's that's

328

00:11:05,350 --> 00:11:02,790

i saw grown men and grown women crying

329

00:11:09,350 --> 00:11:06,790

tears of joy

330

00:11:10,470 --> 00:11:09,360

to be sure

331

00:11:12,389 --> 00:11:10,480

and that was

332

00:11:14,389 --> 00:11:12,399

just human emotions came out on the

333

00:11:18,150 --> 00:11:14,399

runway today and

334

00:11:23,829 --> 00:11:19,670

jay

335

00:11:25,750 --> 00:11:23,839

bill

336

00:11:27,910 --> 00:11:25,760

the question today really is we're

337

00:11:30,389 --> 00:11:27,920

celebrating but when will astronauts

338

00:11:33,910 --> 00:11:30,399

lift off again from cape canaveral we've

339

00:11:36,710 --> 00:11:33,920

had 166 flights with this one

340

00:11:38,949 --> 00:11:36,720

and i know that spacex

341

00:11:41,509 --> 00:11:38,959

is asking to deliver cargo before the

342

00:11:43,670 --> 00:11:41,519

year's end with their dragon spacecraft

343

00:11:45,990 --> 00:11:43,680

they haven't yet got approval from nasa

344

00:11:47,910 --> 00:11:46,000

maybe you can tell us where that is and

345

00:11:50,790 --> 00:11:47,920

if you really think that they have a

346

00:11:51,910 --> 00:11:50,800

shot or boeing has a shot with their cst

347

00:11:53,030 --> 00:11:51,920

100

348

00:11:55,350 --> 00:11:53,040

to put

349

00:11:58,790 --> 00:11:55,360

astronauts in space from here

350

00:12:02,550 --> 00:11:58,800

by 2014 or 2015. what's your thinking on

351

00:12:04,870 --> 00:12:02,560

that and also for mr cabana my friend

352

00:12:07,190 --> 00:12:04,880

i want to say that we old guys took a

353

00:12:09,910 --> 00:12:07,200

vote among ourselves here today and we

354

00:12:12,629 --> 00:12:09,920

decided that these two mics setting up

355

00:12:13,910 --> 00:12:12,639

there are the best that you can find and

356

00:12:15,590 --> 00:12:13,920

if you mess with them we're going to

357

00:12:17,910 --> 00:12:15,600

have to come talk to you

358

00:12:20,550 --> 00:12:17,920

okay

359

00:12:24,230 --> 00:12:20,560

all right 25.

360

00:12:25,829 --> 00:12:24,240

well i agree okay

361

00:12:27,350 --> 00:12:25,839

i guess uh

362

00:12:30,629 --> 00:12:27,360

first of all uh

363

00:12:33,030 --> 00:12:30,639

in terms of the combination of the

364

00:12:34,230 --> 00:12:33,040

c2 which is the the demonstration flight

365

00:12:35,990 --> 00:12:34,240

where we were just kind of close to the

366

00:12:37,910 --> 00:12:36,000

space station with the dragon capsule

367

00:12:39,430 --> 00:12:37,920

and then we were going to do c3 which

368

00:12:41,110 --> 00:12:39,440

was actually go up and stop and then be

369

00:12:42,069 --> 00:12:41,120

picked up by the arm and then birth to

370

00:12:43,829 --> 00:12:42,079

station

371

00:12:45,910 --> 00:12:43,839

we technically technically have agreed

372

00:12:47,590 --> 00:12:45,920

with spacex that we want to combine

373

00:12:49,430 --> 00:12:47,600

those flights but we haven't given them

374

00:12:50,629 --> 00:12:49,440

formal approval yet we still want to go

375

00:12:52,949 --> 00:12:50,639

through some more

376

00:12:54,710 --> 00:12:52,959

analysis to go take a look and define

377

00:12:56,310 --> 00:12:54,720

exactly what criteria makes up that

378

00:12:58,710 --> 00:12:56,320

combined mission what objectives are

379

00:13:00,230 --> 00:12:58,720

there what the go no-go criteria is and

380

00:13:01,829 --> 00:13:00,240

there's also some details of the flight

381

00:13:03,509 --> 00:13:01,839

design we need to we would like to get

382

00:13:05,430 --> 00:13:03,519

through and then there's also some

383

00:13:07,110 --> 00:13:05,440

analysis we'd like to work with spacex

384

00:13:08,870 --> 00:13:07,120

in terms of their software systems do

385

00:13:10,870 --> 00:13:08,880

some monte carlo runs to go look at the

386

00:13:12,389 --> 00:13:10,880

robustness because overall what we want

387

00:13:14,870 --> 00:13:12,399

to do is we want to get to cargo

388

00:13:16,629 --> 00:13:14,880

delivery as fast as we can and if the

389

00:13:18,310 --> 00:13:16,639

systems are mature enough and the design

390

00:13:20,710 --> 00:13:18,320

is mature enough combining those two

391

00:13:23,910 --> 00:13:20,720

flights is that best way to get cargo to

392

00:13:25,269 --> 00:13:23,920

iss in in the fastest manner possible if

393

00:13:26,790 --> 00:13:25,279

there's still a little bit of work to do

394

00:13:28,310 --> 00:13:26,800

and there's a lot of work to do you may

395

00:13:30,710 --> 00:13:28,320

gain something by splitting them back

396

00:13:32,230 --> 00:13:30,720

into two missions where you do one you

397

00:13:33,590 --> 00:13:32,240

do a little bit less demanding but then

398

00:13:35,190 --> 00:13:33,600

that gives you a lot of knowledge then

399

00:13:37,110 --> 00:13:35,200

helps you apply that knowledge to that

400

00:13:39,189 --> 00:13:37,120

next mission that follows so we're

401
00:13:40,790 --> 00:13:39,199
trying to decide what the right exact

402
00:13:42,389 --> 00:13:40,800
step is but we are doing all the

403
00:13:43,910 --> 00:13:42,399
planning to go ahead and those missions

404
00:13:45,509 --> 00:13:43,920
combined the capsule's being designed

405
00:13:47,269 --> 00:13:45,519
that way the software is being built

406
00:13:49,269 --> 00:13:47,279
that way and we're just kind of waiting

407
00:13:50,790 --> 00:13:49,279
for the right formal time that we we

408
00:13:52,629 --> 00:13:50,800
collectively agree that this is the

409
00:13:54,389 --> 00:13:52,639
right thing to go forward so we're very

410
00:13:57,030 --> 00:13:54,399
aggressively working that with the

411
00:13:59,430 --> 00:13:57,040
spacex corporation through a series of

412
00:14:01,430 --> 00:13:59,440
reviews and also some internal reviews

413
00:14:03,430 --> 00:14:01,440

within nasa to get that activity done

414

00:14:05,750 --> 00:14:03,440

and there may not be a chris day we kind

415

00:14:07,590 --> 00:14:05,760

of talked about deciding that in july it

416

00:14:09,030 --> 00:14:07,600

may be in august september we'll find

417

00:14:10,629 --> 00:14:09,040

the right time when we get enough runs

418

00:14:12,389 --> 00:14:10,639

and data behind us so we can formally

419

00:14:14,150 --> 00:14:12,399

say we're heading that way but we are

420

00:14:15,750 --> 00:14:14,160

technically definitely looking at those

421

00:14:18,230 --> 00:14:15,760

missions being combined

422

00:14:19,430 --> 00:14:18,240

the next question is a little bit about

423

00:14:20,790 --> 00:14:19,440

commercial

424

00:14:21,990 --> 00:14:20,800

crew

425

00:14:23,509 --> 00:14:22,000

again i think

426

00:14:25,430 --> 00:14:23,519

there's a lot of work to be done there

427

00:14:26,710 --> 00:14:25,440

there was some meeting held yesterday

428

00:14:28,710 --> 00:14:26,720

where we're starting to talk to all the

429

00:14:30,069 --> 00:14:28,720

commercial providers of all the folks

430

00:14:32,230 --> 00:14:30,079

that could be interested in doing

431

00:14:33,910 --> 00:14:32,240

commercial crew activities

432

00:14:35,750 --> 00:14:33,920

we are in the middle of commercial crew

433

00:14:37,670 --> 00:14:35,760

development too which is a series of

434

00:14:38,949 --> 00:14:37,680

tests and and you know the contractors

435

00:14:40,550 --> 00:14:38,959

that are involved that the four that

436

00:14:41,750 --> 00:14:40,560

we've got and then we'll go ahead and

437

00:14:43,670 --> 00:14:41,760

continue to work through that we'll

438

00:14:45,829 --> 00:14:43,680

potentially look at some contracts to

439

00:14:47,829 --> 00:14:45,839

our contracts or spacex to go ahead and

440

00:14:49,670 --> 00:14:47,839

continue that activity we think that

441

00:14:53,030 --> 00:14:49,680

culminates sometime around in a flight

442

00:14:54,790 --> 00:14:53,040

in maybe 2015 2016 time frame

443

00:14:56,949 --> 00:14:54,800

it's a lot of work to really get ready

444

00:14:58,710 --> 00:14:56,959

to go carry crew and we'll let the

445

00:15:00,389 --> 00:14:58,720

technical work kind of drive us and see

446

00:15:02,150 --> 00:15:00,399

where we are but i think from a planning

447

00:15:05,910 --> 00:15:02,160

standpoint we'll look to that kind of

448

00:15:07,829 --> 00:15:05,920

time frame so say mid 2015 2016 we could

449

00:15:09,269 --> 00:15:07,839

potentially see americans again

450

00:15:11,189 --> 00:15:09,279

launching here from the kennedy space

451

00:15:13,269 --> 00:15:11,199

center but the first things immediately

452

00:15:14,870 --> 00:15:13,279

are to see how well cargo works to see

453

00:15:16,550 --> 00:15:14,880

what we can do from a cargo standpoint

454

00:15:18,470 --> 00:15:16,560

that's absolutely critical station and

455

00:15:20,949 --> 00:15:18,480

we'll get those first easier easier

456

00:15:25,110 --> 00:15:20,959

steps first and then then step up to the

457

00:15:29,590 --> 00:15:27,030

heavy lift announcement yeah heavy lift

458

00:15:31,590 --> 00:15:29,600

announcement um again we've worked kind

459

00:15:34,069 --> 00:15:31,600

of a technical recommendation we have

460

00:15:36,150 --> 00:15:34,079

we're still working through the

461

00:15:37,990 --> 00:15:36,160

the budgeting estimates associated with

462

00:15:40,550 --> 00:15:38,000

that we've got to show folks that we

463

00:15:42,389 --> 00:15:40,560

have a very viable credible plan to go

464

00:15:44,710 --> 00:15:42,399

do that so we're spending

465

00:15:46,629 --> 00:15:44,720

a lot of time in washington explaining

466

00:15:48,310 --> 00:15:46,639

to folks what the plan is what our

467

00:15:50,470 --> 00:15:48,320

technical recommendation is plan is

468

00:15:51,910 --> 00:15:50,480

probably too strong a term but it's our

469

00:15:54,310 --> 00:15:51,920

recommendation of the way we would like

470

00:15:56,470 --> 00:15:54,320

to proceed so as soon as we can get them

471

00:15:57,829 --> 00:15:56,480

to understand the way we've put together

472

00:15:59,749 --> 00:15:57,839

our budget assumptions there's an

473

00:16:01,990 --> 00:15:59,759

independent cost assessment that's going

474

00:16:03,590 --> 00:16:02,000

on by a corporation it'll take a look

475

00:16:05,350 --> 00:16:03,600

at what we've done they'll also go look

476

00:16:06,790 --> 00:16:05,360

at the way we've put together the pieces

477

00:16:09,670 --> 00:16:06,800

to see if that's the right way to move

478

00:16:11,829 --> 00:16:09,680

forward and and maybe in the august time

479

00:16:13,829 --> 00:16:11,839

frame that activity is complete and then

480

00:16:15,749 --> 00:16:13,839

we're ready to go talk about

481

00:16:17,670 --> 00:16:15,759

more formally what what's going to be

482

00:16:19,350 --> 00:16:17,680

there for heavy lift but we've got a

483

00:16:21,269 --> 00:16:19,360

pretty strong technical recommendation

484

00:16:23,509 --> 00:16:21,279

we know what we want to go do we think

485

00:16:25,430 --> 00:16:23,519

we've got features in there that are

486

00:16:27,430 --> 00:16:25,440

that are really beneficial to us overall

487

00:16:29,110 --> 00:16:27,440

to keep us moving forward but we want

488

00:16:30,550 --> 00:16:29,120

others to review that to make sure that

489

00:16:34,389 --> 00:16:30,560

it is right before we officially

490

00:16:38,230 --> 00:16:36,949

i don't know

491

00:16:39,749 --> 00:16:38,240

clara

492

00:16:41,990 --> 00:16:39,759

over here

493

00:16:43,430 --> 00:16:42,000

hi clara moskowitz with space.com and

494

00:16:44,389 --> 00:16:43,440

it's a question for anybody who'd like

495

00:16:46,310 --> 00:16:44,399

to answer

496

00:16:48,470 --> 00:16:46,320

i know that up until wheelstop you've

497

00:16:50,230 --> 00:16:48,480

all been primarily focused on completing

498

00:16:51,749 --> 00:16:50,240

the mission and completing the program

499

00:16:54,310 --> 00:16:51,759

and i wonder just how much have you had

500

00:16:56,470 --> 00:16:54,320

to push aside some of the emotions and

501
00:16:59,990 --> 00:16:56,480
and how much have they maybe come to hit

502
00:17:03,910 --> 00:17:02,069
well for me uh you know

503
00:17:06,069 --> 00:17:03,920
it was kind of like that after launch a

504
00:17:07,429 --> 00:17:06,079
big wave of emotion went past and then

505
00:17:09,270 --> 00:17:07,439
it was in in little places it would

506
00:17:10,630 --> 00:17:09,280
bubble up during the mission you know

507
00:17:12,710 --> 00:17:10,640
fergie did a fantastic job of

508
00:17:14,470 --> 00:17:12,720
recognizing uh verbally all the folks

509
00:17:15,429 --> 00:17:14,480
around the country that have contributed

510
00:17:17,110 --> 00:17:15,439
and every once in a while you'd catch

511
00:17:18,390 --> 00:17:17,120
one of his speeches on the on the tv or

512
00:17:20,710 --> 00:17:18,400
i'd read an article that one of you had

513
00:17:22,710 --> 00:17:20,720

written that that particularly uh pulled

514

00:17:24,069 --> 00:17:22,720

it a string and and uh you know it just

515

00:17:25,990 --> 00:17:24,079

kind of occasionally happened almost

516

00:17:28,069 --> 00:17:26,000

every day there was a an instance where

517

00:17:29,669 --> 00:17:28,079

something happened um you know yesterday

518

00:17:30,870 --> 00:17:29,679

we got the the word that the empire

519

00:17:32,870 --> 00:17:30,880

state building was going to light up in

520

00:17:34,150 --> 00:17:32,880

red white and blue overnight for us and

521

00:17:36,390 --> 00:17:34,160

and you know that kind of just you sat

522

00:17:38,390 --> 00:17:36,400

there and you went you know you know wow

523

00:17:39,990 --> 00:17:38,400

so uh so it's kind of just been going on

524

00:17:42,470 --> 00:17:40,000

constantly and

525

00:17:44,310 --> 00:17:42,480

and today having the mission focus part

526

00:17:45,590 --> 00:17:44,320

of today pushed it back down again i

527

00:17:47,350 --> 00:17:45,600

suspect by the time i get back home

528

00:17:49,029 --> 00:17:47,360

it'll probably come back up again but uh

529

00:17:50,230 --> 00:17:49,039

for now it's it's still that mission

530

00:17:52,150 --> 00:17:50,240

focus getting the crew home today and

531

00:17:53,669 --> 00:17:52,160

that that went really well i'm looking

532

00:17:55,669 --> 00:17:53,679

forward to being able to go out to the

533

00:17:57,270 --> 00:17:55,679

opf and and hang out with

534

00:17:58,390 --> 00:17:57,280

all my friends down here uh that i've

535

00:17:59,990 --> 00:17:58,400

made at the kennedy space center and

536

00:18:01,830 --> 00:18:00,000

just kind of wish them well you know

537

00:18:03,110 --> 00:18:01,840

they're a big number heading out the

538

00:18:05,190 --> 00:18:03,120

door tomorrow and

539

00:18:06,710 --> 00:18:05,200

and uh and so you know

540

00:18:09,029 --> 00:18:06,720

it's just gonna i think it's gonna keep

541

00:18:10,630 --> 00:18:09,039

going for a while the emotions

542

00:18:12,710 --> 00:18:10,640

we'll do uh one more question on this

543

00:18:13,909 --> 00:18:12,720

side of the room and uh then we'll come

544

00:18:16,230 --> 00:18:13,919

over here and then we'll catch the next

545

00:18:18,230 --> 00:18:16,240

row here did anyone else uh want to

546

00:18:20,950 --> 00:18:18,240

respond to that

547

00:18:22,789 --> 00:18:20,960

okay sorry go ahead hi good afternoon uh

548

00:18:24,950 --> 00:18:22,799

francisco villalobos from noticias la

549

00:18:26,390 --> 00:18:24,960

visa mexico and the question is for mr

550

00:18:27,750 --> 00:18:26,400

kavanaugh's a two-part question but

551
00:18:29,270 --> 00:18:27,760
first of all thank you for your

552
00:18:31,270 --> 00:18:29,280
hospitality and behalf to all the

553
00:18:32,390 --> 00:18:31,280
spanish-speaking hispanic reporters that

554
00:18:34,070 --> 00:18:32,400
we were here

555
00:18:35,590 --> 00:18:34,080
your staff and your crew and everybody

556
00:18:36,950 --> 00:18:35,600
here in the center has treated us

557
00:18:39,350 --> 00:18:36,960
tremendously and we appreciate for your

558
00:18:40,950 --> 00:18:39,360
hospitality sir um

559
00:18:42,470 --> 00:18:40,960
the um

560
00:18:44,070 --> 00:18:42,480
mexico's

561
00:18:45,990 --> 00:18:44,080
and a lot of countries in latin america

562
00:18:48,070 --> 00:18:46,000
are starting to have space agencies of

563
00:18:49,510 --> 00:18:48,080

their own mexico in the yucatan

564

00:18:51,270 --> 00:18:49,520

peninsula has a very privileged spot

565

00:18:53,750 --> 00:18:51,280

similar to cape canaveral where perhaps

566

00:18:56,470 --> 00:18:53,760

nasa could exploit the possible

567

00:18:58,950 --> 00:18:56,480

launching site and as the future changes

568

00:19:00,789 --> 00:18:58,960

as nasa center in this new era of uh

569

00:19:03,190 --> 00:19:00,799

more international cooperation perhaps

570

00:19:05,750 --> 00:19:03,200

commercial uh launching i was wondering

571

00:19:08,150 --> 00:19:05,760

if mexico was one of your perhaps target

572

00:19:10,630 --> 00:19:08,160

areas and when perhaps uh if it's so

573

00:19:12,950 --> 00:19:10,640

when would you see a launch insight that

574

00:19:14,710 --> 00:19:12,960

you guys may see may use in the future

575

00:19:16,390 --> 00:19:14,720

that's one part and the second part of

576
00:19:17,270 --> 00:19:16,400
the question is that

577
00:19:18,390 --> 00:19:17,280
um

578
00:19:22,789 --> 00:19:18,400
the

579
00:19:25,190 --> 00:19:22,799
between launch vehicles

580
00:19:26,870 --> 00:19:25,200
space vehicles i'm sorry that we have

581
00:19:29,029 --> 00:19:26,880
that we didn't have when the apollo

582
00:19:31,510 --> 00:19:29,039
ended in 72 and the at the same time the

583
00:19:33,669 --> 00:19:31,520
shuttle was approved and

584
00:19:34,950 --> 00:19:33,679
do you believe or do you is do you think

585
00:19:35,750 --> 00:19:34,960
sir that

586
00:19:37,270 --> 00:19:35,760
the

587
00:19:39,430 --> 00:19:37,280
nasa could have been a little bit more

588
00:19:41,990 --> 00:19:39,440

assertive perhaps with congress when it

589

00:19:43,750 --> 00:19:42,000

comes to negotiating the budget or

590

00:19:45,590 --> 00:19:43,760

a little bit more assertive or

591

00:19:48,630 --> 00:19:45,600

aggressive with them to show the

592

00:19:51,590 --> 00:19:48,640

importance of funding uh the world's

593

00:19:54,230 --> 00:19:51,600

most most important space agency sir

594

00:19:56,150 --> 00:19:54,240

well let's see first off uh the kennedy

595

00:19:58,630 --> 00:19:56,160

space center doesn't uh make

596

00:20:00,549 --> 00:19:58,640

international agreements and any work

597

00:20:03,270 --> 00:20:00,559

that would be done with other partner

598

00:20:05,990 --> 00:20:03,280

nations or international

599

00:20:07,350 --> 00:20:06,000

operations comes out of the headquarters

600

00:20:09,029 --> 00:20:07,360

with so

601
00:20:11,909 --> 00:20:09,039
i wouldn't be involved

602
00:20:14,070 --> 00:20:11,919
uh from a point of view of you know gaps

603
00:20:16,390 --> 00:20:14,080
if you look back you know yes we had

604
00:20:18,549 --> 00:20:16,400
that we were gonna build shuttle uh

605
00:20:20,470 --> 00:20:18,559
originally we flew the uh

606
00:20:22,149 --> 00:20:20,480
we ended up flying in 1981 we were

607
00:20:23,909 --> 00:20:22,159
scheduled to fly in 78 there was a

608
00:20:25,190 --> 00:20:23,919
three-year slip there we flew the last

609
00:20:28,310 --> 00:20:25,200
uh

610
00:20:30,070 --> 00:20:28,320
apollo soyuz test flight in 75 so you

611
00:20:32,470 --> 00:20:30,080
know there was a six-year

612
00:20:33,350 --> 00:20:32,480
gap between when we last flew

613
00:20:36,310 --> 00:20:33,360

and

614

00:20:39,590 --> 00:20:36,320

we flew on the shuttle uh when you say

615

00:20:41,750 --> 00:20:39,600

we don't have a a vehicle to go fly on

616

00:20:43,510 --> 00:20:41,760

i know of four vehicles that are

617

00:20:45,029 --> 00:20:43,520

competing right now trying to be

618

00:20:48,149 --> 00:20:45,039

designed to fly

619

00:20:50,149 --> 00:20:48,159

americans in space and some are further

620

00:20:53,029 --> 00:20:50,159

along than others getting to critical

621

00:20:53,909 --> 00:20:53,039

design reviews so i believe we do have a

622

00:20:56,230 --> 00:20:53,919

plan

623

00:20:58,549 --> 00:20:56,240

to get folks to low earth orbit we just

624

00:21:00,710 --> 00:20:58,559

got to make sure that we enable it and

625

00:21:03,510 --> 00:21:00,720

and make it happen from a heavy lift

626

00:21:05,510 --> 00:21:03,520

point of view we've defined the orion

627

00:21:07,510 --> 00:21:05,520

spacecraft as our multi-purpose crew

628

00:21:10,789 --> 00:21:07,520

vehicle and we are building that and

629

00:21:13,110 --> 00:21:10,799

it's very far along in its uh testing so

630

00:21:14,950 --> 00:21:13,120

i think we have the vehicles uh

631

00:21:17,669 --> 00:21:14,960

more or less defined what we now have to

632

00:21:21,270 --> 00:21:17,679

do is follow through on our plan and uh

633

00:21:26,149 --> 00:21:23,350

here in the front row

634

00:21:28,710 --> 00:21:26,159

hi evan brown fox news radio for anyone

635

00:21:31,190 --> 00:21:28,720

who would like to take it if

636

00:21:32,470 --> 00:21:31,200

someone came to you in in april of 81

637

00:21:35,510 --> 00:21:32,480

and said you're going to fly these

638

00:21:36,950 --> 00:21:35,520

things for 30 years and in the process

639

00:21:39,430 --> 00:21:36,960

you were going to

640

00:21:41,110 --> 00:21:39,440

uh go hang out at the mir space station

641

00:21:42,710 --> 00:21:41,120

you were going to launch a an amazing

642

00:21:43,830 --> 00:21:42,720

space telescope and then you were going

643

00:21:45,669 --> 00:21:43,840

to build

644

00:21:47,990 --> 00:21:45,679

this this

645

00:21:50,070 --> 00:21:48,000

behemoth of a space station uh would you

646

00:21:51,510 --> 00:21:50,080

tell them that they were crazy or or did

647

00:21:53,990 --> 00:21:51,520

you think that oh yeah yeah yeah no

648

00:21:56,310 --> 00:21:54,000

that's what we're going to do

649

00:21:58,630 --> 00:21:56,320

well i'll answer that part way i i don't

650

00:22:01,350 --> 00:21:58,640

think i think back then that folks had

651

00:22:03,270 --> 00:22:01,360

great visions uh for the space shuttle

652

00:22:04,390 --> 00:22:03,280

and uh i think a space station was part

653

00:22:06,070 --> 00:22:04,400

of those visions that was the main

654

00:22:07,990 --> 00:22:06,080

reason for having a space shuttle was to

655

00:22:09,669 --> 00:22:08,000

go to a space station

656

00:22:11,430 --> 00:22:09,679

it just took us a while i mean if you

657

00:22:12,470 --> 00:22:11,440

look back on you know space station

658

00:22:15,029 --> 00:22:12,480

freedom where we were i mean they were

659

00:22:16,549 --> 00:22:15,039

looking at a space station in 1984. it

660

00:22:19,029 --> 00:22:16,559

just took us a while to get the final

661

00:22:20,710 --> 00:22:19,039

design and get where we needed to go

662

00:22:23,669 --> 00:22:20,720

the russian cooperation part that might

663

00:22:26,950 --> 00:22:23,679

have been a little bit different in 1981

664

00:22:27,909 --> 00:22:26,960

but again it shows how how things change

665

00:22:28,789 --> 00:22:27,919

and

666

00:22:31,190 --> 00:22:28,799

in the

667

00:22:32,549 --> 00:22:31,200

how valuable the space shuttle is i mean

668

00:22:34,149 --> 00:22:32,559

when you consider

669

00:22:35,750 --> 00:22:34,159

look at the american

670

00:22:38,710 --> 00:22:35,760

united states astronaut corps

671

00:22:40,310 --> 00:22:38,720

pre-shuttle and look at it post shuttle

672

00:22:42,149 --> 00:22:40,320

look at the diversity that we have the

673

00:22:44,310 --> 00:22:42,159

shuttle did that uh the international

674

00:22:47,029 --> 00:22:44,320

partners that we've flown that happened

675

00:22:49,110 --> 00:22:47,039

because of the shuttle so

676
00:22:51,190 --> 00:22:49,120
you know it's pretty amazing so i think

677
00:22:52,870 --> 00:22:51,200
folks had great vision for this shuttle

678
00:22:54,870 --> 00:22:52,880
it's what it was designed to do and i

679
00:22:56,470 --> 00:22:54,880
think it it performed its mission

680
00:22:58,870 --> 00:22:56,480
extremely well when you look at that

681
00:23:01,029 --> 00:22:58,880
international space station on orbit

682
00:23:02,710 --> 00:23:01,039
and even bob said it exactly right but

683
00:23:04,149 --> 00:23:02,720
uh but there were those moments those

684
00:23:05,830 --> 00:23:04,159
are some of my most cherished ones back

685
00:23:07,029 --> 00:23:05,840
in in mission control where you'd you'd

686
00:23:08,390 --> 00:23:07,039
sit there and you'd be handed a mission

687
00:23:09,350 --> 00:23:08,400
and a bunch of payloads and you look and

688
00:23:11,350 --> 00:23:09,360

you go

689

00:23:13,029 --> 00:23:11,360

we're going to do what and uh and you

690

00:23:14,789 --> 00:23:13,039

know we're going to put this 100 foot

691

00:23:16,710 --> 00:23:14,799

boom over the side of the orbiter with a

692

00:23:18,470 --> 00:23:16,720

radar antenna on the end of it and then

693

00:23:19,830 --> 00:23:18,480

we have to do

694

00:23:21,669 --> 00:23:19,840

rsc burns in the middle of it it's going

695

00:23:22,950 --> 00:23:21,679

to wing around like a fishing rod but

696

00:23:24,230 --> 00:23:22,960

just like a fishing rod will time it

697

00:23:26,470 --> 00:23:24,240

just right so that we don't snap it in

698

00:23:27,990 --> 00:23:26,480

half and you see we're going to do what

699

00:23:29,669 --> 00:23:28,000

and it went perfect and we got one of

700

00:23:31,270 --> 00:23:29,679

the highest resolution radar maps of the

701
00:23:32,630 --> 00:23:31,280
earth on that space radar mapping

702
00:23:34,149 --> 00:23:32,640
mission and but you know that was the

703
00:23:35,909 --> 00:23:34,159
challenges and that was the the fun and

704
00:23:37,190 --> 00:23:35,919
excitement of this program is around the

705
00:23:39,110 --> 00:23:37,200
corner there's always something new and

706
00:23:41,190 --> 00:23:39,120
different a new challenge and and you'd

707
00:23:43,110 --> 00:23:41,200
incorporate some new activity some new

708
00:23:44,950 --> 00:23:43,120
payload the station when we first

709
00:23:46,549 --> 00:23:44,960
started it was going to be

710
00:23:47,990 --> 00:23:46,559
not not as

711
00:23:49,669 --> 00:23:48,000
as big or as intense it was going to be

712
00:23:50,390 --> 00:23:49,679
a lot of self-assembly with robotics we

713
00:23:51,669 --> 00:23:50,400

realized

714

00:23:53,990 --> 00:23:51,679

we weren't quite ready to do that we

715

00:23:55,269 --> 00:23:54,000

threw the eva team into the mix you know

716

00:23:56,630 --> 00:23:55,279

just everything we've learned every day

717

00:23:58,310 --> 00:23:56,640

that this program has been in existence

718

00:23:59,830 --> 00:23:58,320

has been has been amazing i think the

719

00:24:00,950 --> 00:23:59,840

vision was there at the beginning but i

720

00:24:03,510 --> 00:24:00,960

think those folks would look at what we

721

00:24:05,830 --> 00:24:03,520

did now and and be really proud of just

722

00:24:08,390 --> 00:24:05,840

how mature that vision became and

723

00:24:10,470 --> 00:24:08,400

a lot of it real quick you know it it's

724

00:24:12,230 --> 00:24:10,480

not the hardware in in a lot of times

725

00:24:14,230 --> 00:24:12,240

things don't get used for what they were

726

00:24:16,549 --> 00:24:14,240

designed to do but it's the ingenuity of

727

00:24:17,350 --> 00:24:16,559

the people in the team that are able to

728

00:24:19,830 --> 00:24:17,360

take

729

00:24:21,590 --> 00:24:19,840

you know something and make it happen it

730

00:24:23,190 --> 00:24:21,600

may be different from what was intended

731

00:24:25,190 --> 00:24:23,200

or when we ran into problems look at all

732

00:24:27,430 --> 00:24:25,200

the problems we ran into with the space

733

00:24:29,269 --> 00:24:27,440

shuttle and

734

00:24:31,430 --> 00:24:29,279

how we solved them you know on orbit

735

00:24:33,029 --> 00:24:31,440

rescuing satellites and so on and it's

736

00:24:35,590 --> 00:24:33,039

that it's a team

737

00:24:37,269 --> 00:24:35,600

as great as the hardware is it's a team

738

00:24:39,430 --> 00:24:37,279

that makes it what it is and that's why

739

00:24:41,269 --> 00:24:39,440

i'm so confident about our future

740

00:24:43,430 --> 00:24:41,279

because you know we still got this

741

00:24:44,870 --> 00:24:43,440

outstanding amazing team that's going to

742

00:24:46,470 --> 00:24:44,880

make it happen

743

00:24:49,430 --> 00:24:46,480

and and i would say the same kind of

744

00:24:51,190 --> 00:24:49,440

thing is as we reflect today right we

745

00:24:53,029 --> 00:24:51,200

kind of want to have a perfect plan for

746

00:24:55,510 --> 00:24:53,039

the future right we're going to go do x

747

00:24:57,590 --> 00:24:55,520

y z and all these things that's not so

748

00:24:59,190 --> 00:24:57,600

important in my mind because you're not

749

00:25:01,029 --> 00:24:59,200

necessarily going to achieve all those

750

00:25:03,430 --> 00:25:01,039

things and precisely the order or the

751
00:25:06,390 --> 00:25:03,440
precise the timing but if you take that

752
00:25:08,870 --> 00:25:06,400
step and you go with the right

753
00:25:10,789 --> 00:25:08,880
bigger vision and the right agility and

754
00:25:12,789 --> 00:25:10,799
you challenge this team to go do things

755
00:25:14,870 --> 00:25:12,799
you can accomplish amazing things that

756
00:25:16,710 --> 00:25:14,880
actually exceed what you've really

757
00:25:18,710 --> 00:25:16,720
intended to begin with you know in the

758
00:25:20,549 --> 00:25:18,720
research field the big breakthroughs

759
00:25:22,230 --> 00:25:20,559
don't come from incremental steps they

760
00:25:24,470 --> 00:25:22,240
come from somebody observing something

761
00:25:26,149 --> 00:25:24,480
that they didn't really intend to see

762
00:25:28,789 --> 00:25:26,159
and then that human is smart enough to

763
00:25:31,350 --> 00:25:28,799

pull off of that that that data and then

764

00:25:32,870 --> 00:25:31,360

that really advances the next steps and

765

00:25:34,870 --> 00:25:32,880

and so as you look back on the shuttle

766

00:25:37,029 --> 00:25:34,880

did it achieve exactly what we planned

767

00:25:39,669 --> 00:25:37,039

no but look at all the other things that

768

00:25:41,510 --> 00:25:39,679

it's enabled now the next program don't

769

00:25:42,950 --> 00:25:41,520

worry so much being about being precise

770

00:25:45,510 --> 00:25:42,960

of what it's got to go do and try to

771

00:25:47,350 --> 00:25:45,520

justify every penny that goes into it

772

00:25:48,950 --> 00:25:47,360

get that ingenuity out there to

773

00:25:51,590 --> 00:25:48,960

challenge the workforce to challenge

774

00:25:53,669 --> 00:25:51,600

human ingenuity to really push and you

775

00:25:55,830 --> 00:25:53,679

don't know where this this country and

776

00:25:57,430 --> 00:25:55,840

this this people pulling together can

777

00:25:59,510 --> 00:25:57,440

actually accomplish and what they can go

778

00:26:01,669 --> 00:25:59,520

do

779

00:26:05,510 --> 00:26:01,679

craig

780

00:26:07,029 --> 00:26:05,520

aerospace america for

781

00:26:10,310 --> 00:26:07,039

bill

782

00:26:13,510 --> 00:26:10,320

comment there about technical

783

00:26:17,430 --> 00:26:13,520

recommendations for the heavy lift

784

00:26:20,230 --> 00:26:18,950

lock's

785

00:26:21,510 --> 00:26:20,240

rp1

786

00:26:22,710 --> 00:26:21,520

engine

787

00:26:25,990 --> 00:26:22,720

development

788

00:26:26,710 --> 00:26:26,000

falls in the overall picture possibly as

789

00:26:28,549 --> 00:26:26,720

a

790

00:26:30,710 --> 00:26:28,559

follow-on to

791

00:26:33,909 --> 00:26:30,720

an ssme

792

00:26:36,870 --> 00:26:33,919

power plant for the heavy lift

793

00:26:39,669 --> 00:26:36,880

yeah again it's you know until the uh

794

00:26:41,350 --> 00:26:39,679

the the plan is really approved it's

795

00:26:43,830 --> 00:26:41,360

probably premature for me to talk about

796

00:26:46,070 --> 00:26:43,840

the specifics and details but we've

797

00:26:48,549 --> 00:26:46,080

we've got an approach that that tries to

798

00:26:51,269 --> 00:26:48,559

leverage off of what we've got today but

799

00:26:53,190 --> 00:26:51,279

then it also allows for new technology

800

00:26:55,430 --> 00:26:53,200

to get entered in at the right time and

801
00:26:56,230 --> 00:26:55,440
move forward so so we've got to so we're

802
00:27:01,350 --> 00:26:56,240
not

803
00:27:03,029 --> 00:27:01,360
lox rp for some aspect of this thing we

804
00:27:04,870 --> 00:27:03,039
think there's some potential there we

805
00:27:07,029 --> 00:27:04,880
think solids also can have a potential

806
00:27:09,510 --> 00:27:07,039
but the idea is then how do you you let

807
00:27:11,510 --> 00:27:09,520
competition or let ingenuity drive some

808
00:27:13,350 --> 00:27:11,520
of those those pieces so we've kind of

809
00:27:15,830 --> 00:27:13,360
laid out a framework to go do that from

810
00:27:17,350 --> 00:27:15,840
a decision process i can't say too much

811
00:27:19,430 --> 00:27:17,360
more until it gets a little bit more

812
00:27:21,430 --> 00:27:19,440
approval but but that's the basic kind

813
00:27:23,269 --> 00:27:21,440

of concept that we've laid out to try to

814

00:27:25,110 --> 00:27:23,279

to not totally discount what we've got

815

00:27:27,190 --> 00:27:25,120

in the past but to use it where it makes

816

00:27:29,350 --> 00:27:27,200

sense but then also gives a growth path

817

00:27:30,789 --> 00:27:29,360

to interject some new technology if it's

818

00:27:32,830 --> 00:27:30,799

really there and it's really mature and

819

00:27:35,750 --> 00:27:32,840

ready to go

820

00:27:37,350 --> 00:27:35,760

forward um robert

821

00:27:39,269 --> 00:27:37,360

hi uh robert perlman with

822

00:27:41,190 --> 00:27:39,279

collectspace.com uh with i guess a

823

00:27:42,310 --> 00:27:41,200

question for anyone who wants to take it

824

00:27:43,830 --> 00:27:42,320

um

825

00:27:46,149 --> 00:27:43,840

i realize the shuttle program or at

826

00:27:48,470 --> 00:27:46,159

least the shuttle flights uh are only

827

00:27:50,549 --> 00:27:48,480

hours uh over but

828

00:27:52,789 --> 00:27:50,559

trying to put the program into a

829

00:27:54,470 --> 00:27:52,799

perspective of the human space flight

830

00:27:55,750 --> 00:27:54,480

legacy

831

00:27:57,430 --> 00:27:55,760

i wonder

832

00:27:59,669 --> 00:27:57,440

if you feel that

833

00:28:02,310 --> 00:27:59,679

the shuttle will be appreciated for what

834

00:28:04,950 --> 00:28:02,320

it what it has done what it did do or

835

00:28:06,789 --> 00:28:04,960

whether like gemini has in in between

836

00:28:08,070 --> 00:28:06,799

mercury and apollo it'll become the

837

00:28:10,310 --> 00:28:08,080

unsung

838

00:28:11,269 --> 00:28:10,320

workhorse of getting us to that next

839

00:28:14,310 --> 00:28:11,279

step

840

00:28:17,029 --> 00:28:14,320

um which in now is exploration beyond

841

00:28:18,470 --> 00:28:17,039

low earth orbit

842

00:28:21,269 --> 00:28:18,480

i'll go first

843

00:28:23,510 --> 00:28:21,279

i don't see how the shuttle cannot help

844

00:28:24,870 --> 00:28:23,520

but be recognized for the outstanding

845

00:28:26,310 --> 00:28:24,880

vehicle

846

00:28:29,110 --> 00:28:26,320

that it is

847

00:28:31,510 --> 00:28:29,120

it allowed us to learn how to actually

848

00:28:33,190 --> 00:28:31,520

live and work in space

849

00:28:35,909 --> 00:28:33,200

look at the evas that we did out of the

850

00:28:37,510 --> 00:28:35,919

shuttle i mean we've done so many things

851
00:28:39,269 --> 00:28:37,520
with the shuttle that just could not

852
00:28:42,389 --> 00:28:39,279
have been done otherwise

853
00:28:45,350 --> 00:28:42,399
uh i think it's it's what has enabled us

854
00:28:47,909 --> 00:28:45,360
to say all right uh you know

855
00:28:49,909 --> 00:28:47,919
we got to focus on on going beyond earth

856
00:28:52,070 --> 00:28:49,919
now we we've learned how to work in low

857
00:28:54,789 --> 00:28:52,080
earth orbit we've got a lot more to

858
00:28:56,630 --> 00:28:54,799
learn about deep space and about long

859
00:28:59,510 --> 00:28:56,640
duration space flight we got a space

860
00:29:00,870 --> 00:28:59,520
station uh there as a result of this

861
00:29:03,029 --> 00:29:00,880
shuttle i think that's got to be one of

862
00:29:04,710 --> 00:29:03,039
the shuttle's crowning achievements that

863
00:29:07,669 --> 00:29:04,720

world-class laboratory that we have up

864

00:29:09,350 --> 00:29:07,679

there now we got to utilize it and

865

00:29:11,669 --> 00:29:09,360

i think the space shuttle will be

866

00:29:13,430 --> 00:29:11,679

recognized for that

867

00:29:15,909 --> 00:29:13,440

you know and robert i've addressed this

868

00:29:17,750 --> 00:29:15,919

a little bit in the past too that that i

869

00:29:18,789 --> 00:29:17,760

was asked once was the shuttle worth the

870

00:29:20,549 --> 00:29:18,799

cost

871

00:29:22,789 --> 00:29:20,559

and um

872

00:29:24,789 --> 00:29:22,799

my response was it was it was absolutely

873

00:29:26,549 --> 00:29:24,799

worth the cost but not from a monetary

874

00:29:27,830 --> 00:29:26,559

perspective but from an evolutionary

875

00:29:30,470 --> 00:29:27,840

perspective

876

00:29:32,710 --> 00:29:30,480

of the space program and and and what we

877

00:29:35,909 --> 00:29:32,720

what i believe we need to do as humans

878

00:29:38,389 --> 00:29:35,919

is go colonize elsewhere eventually and

879

00:29:40,070 --> 00:29:38,399

so as bob said we've learned to work and

880

00:29:42,630 --> 00:29:40,080

and live in low earth orbit it was it

881

00:29:44,549 --> 00:29:42,640

was a natural step in that process and

882

00:29:46,470 --> 00:29:44,559

the shuttle was was the right vehicle

883

00:29:48,870 --> 00:29:46,480

for that and it performed extreme

884

00:29:50,389 --> 00:29:48,880

extremely well and so it it's it's an

885

00:29:51,830 --> 00:29:50,399

evolutionary step we're about to take

886

00:29:54,149 --> 00:29:51,840

the next steps

887

00:29:57,029 --> 00:29:54,159

but i believe we need to to uh to have a

888

00:29:58,789 --> 00:29:57,039

vision as a as a being

889

00:30:00,389 --> 00:29:58,799

that eventually we need to go colonize

890

00:30:01,350 --> 00:30:00,399

elsewhere and that ought to be our

891

00:30:03,830 --> 00:30:01,360

vision

892

00:30:06,710 --> 00:30:03,840

and and and enable that somehow over the

893

00:30:08,789 --> 00:30:06,720

next many many decades obviously

894

00:30:10,549 --> 00:30:08,799

centuries but

895

00:30:13,190 --> 00:30:10,559

the shuttle will always be looked back

896

00:30:15,110 --> 00:30:13,200

upon as the next logical step after

897

00:30:20,870 --> 00:30:15,120

apollo and then we need to go to the

898

00:30:24,549 --> 00:30:22,630

mark ratterman with talking space a

899

00:30:26,470 --> 00:30:24,559

question from mike weinbach we've been

900

00:30:28,630 --> 00:30:26,480

talking about change

901
00:30:30,630 --> 00:30:28,640
and i've got kind of a look think back

902
00:30:33,430 --> 00:30:30,640
to look forward question

903
00:30:35,590 --> 00:30:33,440
what advice 20 years ago would have been

904
00:30:37,750 --> 00:30:35,600
nice to have to help you prepare for the

905
00:30:40,149 --> 00:30:37,760
changes of today

906
00:30:41,510 --> 00:30:40,159
uh gosh well

907
00:30:43,669 --> 00:30:41,520
change it

908
00:30:44,710 --> 00:30:43,679
as managers we've all been through a lot

909
00:30:46,549 --> 00:30:44,720
of

910
00:30:49,269 --> 00:30:46,559
management courses and and one thing

911
00:30:51,510 --> 00:30:49,279
that that comes across is the is the

912
00:30:53,669 --> 00:30:51,520
process of change and there are four

913
00:30:55,669 --> 00:30:53,679

phases of change right and it doesn't

914

00:30:57,509 --> 00:30:55,679

matter what the change is any major

915

00:30:59,590 --> 00:30:57,519

change in one's life you go through

916

00:31:01,190 --> 00:30:59,600

these four changes these four stages and

917

00:31:04,389 --> 00:31:01,200

it's it's denial

918

00:31:06,389 --> 00:31:04,399

anger exploration and acceptance

919

00:31:08,470 --> 00:31:06,399

and so we've all been through that now

920

00:31:10,789 --> 00:31:08,480

in the shuttle program and and and we've

921

00:31:12,630 --> 00:31:10,799

accepted the fact that it's over i think

922

00:31:14,070 --> 00:31:12,640

if we look back you know a number of

923

00:31:15,590 --> 00:31:14,080

years maybe four or five years we knew

924

00:31:17,430 --> 00:31:15,600

the end was coming

925

00:31:19,509 --> 00:31:17,440

i believe i believe the workforce has

926
00:31:21,830 --> 00:31:19,519
has handled that change well um because

927
00:31:22,710 --> 00:31:21,840
we were given that time to accept that

928
00:31:25,029 --> 00:31:22,720
change

929
00:31:27,029 --> 00:31:25,039
uh the finality of it is there's no

930
00:31:28,549 --> 00:31:27,039
doubt it's over now and and that affects

931
00:31:30,070 --> 00:31:28,559
a lot of people

932
00:31:32,549 --> 00:31:30,080
but given the fact that we had three or

933
00:31:35,669 --> 00:31:32,559
four years to prepare for this really

934
00:31:37,430 --> 00:31:35,679
very very focused way

935
00:31:39,669 --> 00:31:37,440
i think helped the people

936
00:31:41,350 --> 00:31:39,679
deal with that and and

937
00:31:43,590 --> 00:31:41,360
i heard nothing but pride out on the

938
00:31:45,430 --> 00:31:43,600

runway today when i talked to the people

939

00:31:48,310 --> 00:31:45,440

in between the hugs and the pats on the

940

00:31:50,630 --> 00:31:48,320

back uh the pride that they have

941

00:31:52,470 --> 00:31:50,640

of having been part of this amazing this

942

00:31:53,909 --> 00:31:52,480

amazing program this amazing bit of

943

00:31:55,430 --> 00:31:53,919

history

944

00:31:57,509 --> 00:31:55,440

no one can ever take that away from us

945

00:31:59,430 --> 00:31:57,519

and so i think over the last three four

946

00:32:01,509 --> 00:31:59,440

years we've been concentrating on

947

00:32:03,909 --> 00:32:01,519

completing the job that we're given to

948

00:32:05,750 --> 00:32:03,919

do we've done that now successfully we

949

00:32:09,350 --> 00:32:05,760

have a lot of pride in that and no one

950

00:32:13,830 --> 00:32:10,789

james

951
00:32:15,909 --> 00:32:13,840
leinbach he kind of just touched on this

952
00:32:17,509 --> 00:32:15,919
but i was going to ask um

953
00:32:18,710 --> 00:32:17,519
one of fergie's comments during an

954
00:32:20,710 --> 00:32:18,720
interview

955
00:32:22,230 --> 00:32:20,720
with respect to the um sort of

956
00:32:23,669 --> 00:32:22,240
despondent mood among the worst

957
00:32:24,870 --> 00:32:23,679
workforce was that we needed to go

958
00:32:26,789 --> 00:32:24,880
through kind of a

959
00:32:28,310 --> 00:32:26,799
moment like being out awake

960
00:32:30,070 --> 00:32:28,320
to

961
00:32:31,430 --> 00:32:30,080
get through that grief and and get

962
00:32:33,430 --> 00:32:31,440
through the acceptance and all that i

963
00:32:34,470 --> 00:32:33,440

wondered if you felt like uh

964

00:32:36,310 --> 00:32:34,480

we're

965

00:32:38,149 --> 00:32:36,320

that might be what's going on today as

966

00:32:39,990 --> 00:32:38,159

as we're seeing the toe back and

967

00:32:42,070 --> 00:32:40,000

and the celebration that'll happen and

968

00:32:43,509 --> 00:32:42,080

and um you know if that'll you'll have

969

00:32:44,789 --> 00:32:43,519

more of a sense after today being able

970

00:32:47,110 --> 00:32:44,799

to move on

971

00:32:49,029 --> 00:32:47,120

well certainly there's that again those

972

00:32:50,630 --> 00:32:49,039

processes those phases of change are

973

00:32:54,070 --> 00:32:50,640

coming into play today

974

00:32:55,990 --> 00:32:54,080

um but this is this is a this is a

975

00:32:57,830 --> 00:32:56,000

a machine that we have to retire it's a

976

00:33:00,549 --> 00:32:57,840

program that's that's over

977

00:33:01,669 --> 00:33:00,559

it uh it's not as traumatic as people

978

00:33:03,750 --> 00:33:01,679

think it is

979

00:33:05,110 --> 00:33:03,760

it's uh i've been through a lot more

980

00:33:06,070 --> 00:33:05,120

traumatic things in my life and these

981

00:33:07,509 --> 00:33:06,080

guys have been through a lot more

982

00:33:08,630 --> 00:33:07,519

traumatic things in their lives and you

983

00:33:10,070 --> 00:33:08,640

have too

984

00:33:14,230 --> 00:33:10,080

this is the end of the program people

985

00:33:17,190 --> 00:33:16,070

it's the loss of something that means

986

00:33:21,190 --> 00:33:17,200

important

987

00:33:24,389 --> 00:33:21,200

certainly nothing like

988

00:33:25,909 --> 00:33:24,399

the loss of a family member it it's

989

00:33:27,269 --> 00:33:25,919

important but it's not the end of the

990

00:33:31,909 --> 00:33:27,279

world

991

00:33:36,789 --> 00:33:34,310

back over here uh donna linewood from

992

00:33:40,310 --> 00:33:36,799

usa today this is for anyone who wants

993

00:33:43,350 --> 00:33:40,320

to answer it looking at a non-shuttle

994

00:33:46,710 --> 00:33:43,360

program right now what that's going on

995

00:33:49,190 --> 00:33:46,720

in nasa makes you excited

996

00:33:50,549 --> 00:33:49,200

what do you think that the general

997

00:33:52,389 --> 00:33:50,559

public should be

998

00:33:54,149 --> 00:33:52,399

interested in when they look at nasa

999

00:33:55,990 --> 00:33:54,159

programs

1000

00:33:57,750 --> 00:33:56,000

until you start going

1001
00:33:59,830 --> 00:33:57,760
real quick and somebody else can add

1002
00:34:02,230 --> 00:33:59,840
more and uh

1003
00:34:04,389 --> 00:34:02,240
we got three awesome science missions

1004
00:34:07,830 --> 00:34:04,399
coming up here june august 5th grail to

1005
00:34:08,869 --> 00:34:07,840
the moon and i was over in the phsf

1006
00:34:11,270 --> 00:34:08,879
yesterday

1007
00:34:12,869 --> 00:34:11,280
looking at the mars science lab

1008
00:34:14,710 --> 00:34:12,879
you know the rover

1009
00:34:17,270 --> 00:34:14,720
going through its final testing before

1010
00:34:18,710 --> 00:34:17,280
it all gets packed up to send something

1011
00:34:19,909 --> 00:34:18,720
the size of a

1012
00:34:22,550 --> 00:34:19,919
car

1013
00:34:24,389 --> 00:34:22,560

to the surface of mars to explore for at

1014

00:34:27,109 --> 00:34:24,399

least two years

1015

00:34:29,829 --> 00:34:27,119

that's exciting having a rover that big

1016

00:34:31,430 --> 00:34:29,839

with the capability that it has

1017

00:34:33,589 --> 00:34:31,440

not to mention the unique way that it's

1018

00:34:35,270 --> 00:34:33,599

getting delivered to mars i mean this is

1019

00:34:36,950 --> 00:34:35,280

great stuff

1020

00:34:38,710 --> 00:34:36,960

people ought to be excited about it it's

1021

00:34:41,109 --> 00:34:38,720

neat it's a precursor to sending humans

1022

00:34:43,909 --> 00:34:41,119

here having these robots go explore and

1023

00:34:45,510 --> 00:34:43,919

learn to prepare us for the future

1024

00:34:46,950 --> 00:34:45,520

and you know i would just say we got to

1025

00:34:49,109 --> 00:34:46,960

see it today

1026
00:34:50,230 --> 00:34:49,119
nine minutes before landing this little

1027
00:34:52,310 --> 00:34:50,240
white dot

1028
00:34:55,109 --> 00:34:52,320
went over the horizon and it was a

1029
00:34:57,190 --> 00:34:55,119
that's a 900 000 pound research facility

1030
00:34:59,670 --> 00:34:57,200
in space with six

1031
00:35:03,030 --> 00:34:59,680
people international folks

1032
00:35:05,030 --> 00:35:03,040
living every day in space doing research

1033
00:35:07,190 --> 00:35:05,040
now that's not easy because that little

1034
00:35:08,870 --> 00:35:07,200
white dot it's hard to see the solar

1035
00:35:10,630 --> 00:35:08,880
rays it's hard to see it's as big as a

1036
00:35:12,310 --> 00:35:10,640
football field it's hard to understand

1037
00:35:13,589 --> 00:35:12,320
the research

1038
00:35:15,190 --> 00:35:13,599

and so we're going to have to

1039

00:35:17,270 --> 00:35:15,200

collectively all figure out a way we

1040

00:35:19,109 --> 00:35:17,280

talk about it differently you know it's

1041

00:35:20,790 --> 00:35:19,119

easy to come and see a launch you can

1042

00:35:23,109 --> 00:35:20,800

feel the launch you can see the launch

1043

00:35:23,910 --> 00:35:23,119

you can internalize it yourself

1044

00:35:25,750 --> 00:35:23,920

but

1045

00:35:27,589 --> 00:35:25,760

that research activity of what we're

1046

00:35:30,630 --> 00:35:27,599

doing those are really the first steps

1047

00:35:33,109 --> 00:35:30,640

we're getting to go beyond beyond low

1048

00:35:35,910 --> 00:35:33,119

earth orbit or to actually go colonize

1049

00:35:38,310 --> 00:35:35,920

beyond the earth as mike describes so

1050

00:35:40,630 --> 00:35:38,320

these that is the next phase so how do

1051
00:35:42,630 --> 00:35:40,640
we as a people talk about that in a way

1052
00:35:44,470 --> 00:35:42,640
that relates to to everyday folks that

1053
00:35:46,310 --> 00:35:44,480
they can understand what the potential

1054
00:35:48,390 --> 00:35:46,320
is of that research facility and that's

1055
00:35:50,069 --> 00:35:48,400
our collective challenges how we make

1056
00:35:52,230 --> 00:35:50,079
that connection how do you make that

1057
00:35:54,630 --> 00:35:52,240
little white dot real that's as exciting

1058
00:35:58,069 --> 00:35:54,640
as a launch that you see or is a landing

1059
00:35:59,510 --> 00:35:58,079
that you saw nine minutes later

1060
00:36:06,630 --> 00:35:59,520
jay

1061
00:36:07,670 --> 00:36:06,640
if i wrote tonight

1062
00:36:10,150 --> 00:36:07,680
that

1063
00:36:11,510 --> 00:36:10,160

your heavy lift coming up now i realize

1064

00:36:13,990 --> 00:36:11,520

you cannot

1065

00:36:15,589 --> 00:36:14,000

answer this and i respect that

1066

00:36:18,550 --> 00:36:15,599

but if i wrote tonight that your heavy

1067

00:36:21,109 --> 00:36:18,560

lift coming up would use

1068

00:36:23,109 --> 00:36:21,119

the current shuttle boosters

1069

00:36:26,550 --> 00:36:23,119

current uh tank

1070

00:36:30,150 --> 00:36:26,560

ssme engines and the j2

1071

00:36:32,310 --> 00:36:30,160

to go into space and it would be

1072

00:36:34,710 --> 00:36:32,320

built in a fashion

1073

00:36:37,190 --> 00:36:34,720

that could be updated

1074

00:36:40,150 --> 00:36:37,200

throughout the coming years with better

1075

00:36:41,349 --> 00:36:40,160

propulsion systems or newer more better

1076

00:36:44,550 --> 00:36:41,359

technology

1077

00:36:50,310 --> 00:36:44,560

rather than fixed into that position

1078

00:36:54,310 --> 00:36:52,790

the answer is yes because it's got

1079

00:36:57,430 --> 00:36:54,320

pieces of those but it doesn't have it

1080

00:36:59,430 --> 00:36:57,440

the way you described it so so you

1081

00:37:00,230 --> 00:36:59,440

we got to be careful right so

1082

00:37:02,390 --> 00:37:00,240

so

1083

00:37:03,829 --> 00:37:02,400

let us get to the process let us have

1084

00:37:06,150 --> 00:37:03,839

some folks review it and see where they

1085

00:37:07,670 --> 00:37:06,160

are but but that's that's a little too

1086

00:37:09,270 --> 00:37:07,680

clean a little too crisp and it's a

1087

00:37:11,190 --> 00:37:09,280

little more complex than what you

1088

00:37:12,069 --> 00:37:11,200

described so the ant the simple answer

1089

00:37:14,470 --> 00:37:12,079

is no

1090

00:37:16,069 --> 00:37:14,480

okay well i've got a lot more than i had

1091

00:37:19,910 --> 00:37:16,079

all right

1092

00:37:24,310 --> 00:37:21,750

hi curtis krueger with st petersburg

1093

00:37:27,109 --> 00:37:24,320

times you all mentioned a lot of pride

1094

00:37:29,430 --> 00:37:27,119

and national pride in the workforce from

1095

00:37:31,109 --> 00:37:29,440

the workforce in this space shuttle

1096

00:37:33,030 --> 00:37:31,119

that's got the american flag and the

1097

00:37:34,550 --> 00:37:33,040

nasa meatball on it

1098

00:37:37,109 --> 00:37:34,560

how will

1099

00:37:38,390 --> 00:37:37,119

your view change and how should the

1100

00:37:40,310 --> 00:37:38,400

nation

1101
00:37:42,069 --> 00:37:40,320
make of it when the next astronauts who

1102
00:37:47,750 --> 00:37:42,079
fly are on commercial

1103
00:37:50,550 --> 00:37:49,030
well i'm assuming those commercial

1104
00:37:51,750 --> 00:37:50,560
vehicles are built here in the united

1105
00:37:53,670 --> 00:37:51,760
states they're still going to have an

1106
00:37:55,510 --> 00:37:53,680
american flag and

1107
00:37:56,870 --> 00:37:55,520
they'll be supporting nasa missions i

1108
00:37:57,910 --> 00:37:56,880
think they ought to take great pride

1109
00:37:59,589 --> 00:37:57,920
that

1110
00:38:02,150 --> 00:37:59,599
we're expanding the

1111
00:38:04,470 --> 00:38:02,160
envelope and trying to open up space to

1112
00:38:05,829 --> 00:38:04,480
to everyone uh it's going to take a lot

1113
00:38:07,589 --> 00:38:05,839

of work and it's not going to happen

1114

00:38:08,550 --> 00:38:07,599

overnight but

1115

00:38:10,870 --> 00:38:08,560

they're

1116

00:38:12,870 --> 00:38:10,880

american rockets and american spacecraft

1117

00:38:16,950 --> 00:38:12,880

taking american crews to space so they

1118

00:38:20,390 --> 00:38:18,230

we'll wrap it up with a question from

1119

00:38:21,990 --> 00:38:20,400

robert perlman hi robert problem with

1120

00:38:24,550 --> 00:38:22,000

clexspace.com with a question for mike

1121

00:38:26,230 --> 00:38:24,560

leinbach um i asked some of uh the other

1122

00:38:28,870 --> 00:38:26,240

shuttle team members this question back

1123

00:38:30,950 --> 00:38:28,880

in houston um there is one more shuttle

1124

00:38:32,470 --> 00:38:30,960

still flying i'll be albeit it's quite

1125

00:38:33,750 --> 00:38:32,480

small the

1126

00:38:35,510 --> 00:38:33,760

shuttle model that was left on the

1127

00:38:36,710 --> 00:38:35,520

international space station that you and

1128

00:38:39,030 --> 00:38:36,720

others signed

1129

00:38:41,109 --> 00:38:39,040

um can you share what it means uh what

1130

00:38:44,150 --> 00:38:41,119

that what the crew call the monument

1131

00:38:46,710 --> 00:38:44,160

means to you and and your role of having

1132

00:38:48,950 --> 00:38:46,720

uh the signature on it

1133

00:38:50,470 --> 00:38:48,960

well i was i was uh completely honored

1134

00:38:52,950 --> 00:38:50,480

to be asked to sign that and and i

1135

00:38:54,470 --> 00:38:52,960

remember when i signed it i told john

1136

00:38:55,990 --> 00:38:54,480

shannon i'm signing on behalf of the

1137

00:38:57,990 --> 00:38:56,000

launch team and the processing teams

1138

00:38:59,510 --> 00:38:58,000

here at the kennedy space center so a

1139

00:39:01,510 --> 00:38:59,520

little bit of everyone is on that

1140

00:39:03,510 --> 00:39:01,520

signature up there and and

1141

00:39:06,150 --> 00:39:03,520

that means a lot you know it it's a it's

1142

00:39:07,589 --> 00:39:06,160

a tangible thing that we can go retrieve

1143

00:39:10,230 --> 00:39:07,599

one day and and

1144

00:39:11,750 --> 00:39:10,240

look back on on the shuttle program

1145

00:39:13,510 --> 00:39:11,760

there's a little bit of everybody on the

1146

00:39:16,550 --> 00:39:13,520

space station right now

1147

00:39:20,150 --> 00:39:18,310

all right well uh we are going to close

1148

00:39:22,310 --> 00:39:20,160

things atlantis is uh being towed back

1149

00:39:24,390 --> 00:39:22,320

to the orbiter processing facility as we

1150

00:39:26,550 --> 00:39:24,400

speak in in about an hour there will be

1151

00:39:27,990 --> 00:39:26,560

an employee appreciation event the

1152

00:39:30,390 --> 00:39:28,000

beginning of which you'll get to watch

1153

00:39:31,109 --> 00:39:30,400

live on nasa television with mr cabana

1154

00:39:33,510 --> 00:39:31,119

and

1155

00:39:35,910 --> 00:39:33,520

nasa administrator charles bolden uh

1156

00:39:37,829 --> 00:39:35,920

that'll be the next kennedy activity on

1157

00:39:39,670 --> 00:39:37,839

nasa television so once again thank you