
Center

1
00:00:08,040 --> 00:00:06,029
well good morning everybody welcome to

2
00:00:11,100 --> 00:00:08,050
NASA's Johnson Space Center for our

3
00:00:12,420 --> 00:00:11,110
series of briefings on the final flight

4
00:00:15,170 --> 00:00:12,430
of space shuttle endeavour to the

5
00:00:22,320 --> 00:00:15,180
International Space Station sts-134

6
00:00:24,029 --> 00:00:22,330
utilization illegitimate and then we'll

7
00:00:26,040 --> 00:00:24,039
have us another series of briefings to

8
00:00:28,560 --> 00:00:26,050
outline the mission leading up to the

9
00:00:29,850 --> 00:00:28,570
crew news conference this afternoon so

10
00:00:32,429 --> 00:00:29,860
we'll start with the program overview

11
00:00:35,490 --> 00:00:32,439
joining us as John Shannon he is the

12
00:00:37,800 --> 00:00:35,500
space shuttle program manager and also

13
00:00:39,420 --> 00:00:37,810

joining us as Kirk shireman he is the

14
00:00:41,610 --> 00:00:39,430
deputy manager for the International

15
00:00:43,590 --> 00:00:41,620
Space Station program of course we'll

16
00:00:46,650 --> 00:00:43,600
hear from both gentlemen and then we'll

17
00:00:48,270 --> 00:00:46,660
take questions here and at other NASA

18
00:00:50,340 --> 00:00:48,280
centers so with that we'll get started

19
00:00:52,080 --> 00:00:50,350
and I'll turn it over John okay thank

20
00:00:53,940 --> 00:00:52,090
you Cal it's it's good to be here again

21
00:00:57,720 --> 00:00:53,950
I haven't talked to to most of you since

22
00:01:00,900 --> 00:00:57,730
the the outstanding 133 mission earlier

23
00:01:05,399 --> 00:01:00,910
this month where where we completed the

24
00:01:06,990 --> 00:01:05,409
the ISS and and accomplished more than a

25
00:01:09,090 --> 00:01:07,000
hundred percent of our of our mission

26
00:01:11,760 --> 00:01:09,100
objectives so that was a that was an

27
00:01:15,270 --> 00:01:11,770
outstanding outstanding set of work by

28
00:01:17,070 --> 00:01:15,280
the entire team and we're just kind of

29
00:01:19,140 --> 00:01:17,080
rolling along here to finish out the

30
00:01:22,289 --> 00:01:19,150
program strong like like I asked the

31
00:01:25,200 --> 00:01:22,299
team to due process is processing is

32
00:01:26,850 --> 00:01:25,210
going very well for for sts-134 of

33
00:01:29,730 --> 00:01:26,860
course endeavour is out at the pad all

34
00:01:32,580 --> 00:01:29,740
stacked up we've had an extremely smooth

35
00:01:34,980 --> 00:01:32,590
flow with the vehicle the payload

36
00:01:37,649 --> 00:01:34,990
arrived at the pad on Monday we opened

37
00:01:39,210 --> 00:01:37,659
up the payload bay doors yesterday took

38
00:01:41,100 --> 00:01:39,220

all of our optical measurements that's

39
00:01:43,649 --> 00:01:41,110
going through the normal processing

40
00:01:46,350 --> 00:01:43,659
today and now we anticipate installing

41
00:01:47,850 --> 00:01:46,360
the payload tomorrow and everything is

42
00:01:50,780 --> 00:01:47,860
looking extremely good for an April

43
00:01:52,980 --> 00:01:50,790
nineteenth lunch it's all yeah right

44
00:01:54,539 --> 00:01:52,990
hard good morning it's a pleasure to be

45
00:01:56,999 --> 00:01:54,549
here talking to you about the

46
00:02:00,889 --> 00:01:57,009
International Space Station in and this

47
00:02:02,880 --> 00:02:00,899
upcoming shuttle flight Ulf six sts-134

48
00:02:07,109 --> 00:02:02,890
as you know we're going to launch the

49
00:02:09,299 --> 00:02:07,119
AMS alpha magnetic spectrometer it's a

50
00:02:10,409 --> 00:02:09,309
large external payload for the ISS and

51
00:02:13,679 --> 00:02:10,419
we're very much looking forward to

52
00:02:14,490 --> 00:02:13,689
having it on board weighs about 15,000

53
00:02:17,010 --> 00:02:14,500
300 pounds

54
00:02:19,440 --> 00:02:17,020
so a significant payload to add to the

55
00:02:22,680 --> 00:02:19,450
ISS we're also launching an external

56
00:02:25,770 --> 00:02:22,690
logistics carrier ELC number three which

57
00:02:26,910 --> 00:02:25,780
has a number of spares on it but I also

58
00:02:29,940 --> 00:02:26,920
wanted to mention that has two

59
00:02:32,810 --> 00:02:29,950
additional external payloads it has st

60
00:02:35,340 --> 00:02:32,820
ph 3 which is a set of experiments

61
00:02:38,850 --> 00:02:35,350
looking at plasma digital imaging of

62
00:02:42,540 --> 00:02:38,860
stars to support future attitude

63
00:02:44,100 --> 00:02:42,550

determination systems heat transfer it

64
00:02:46,800 --> 00:02:44,110
also has a missy peck which is a

65
00:02:48,690 --> 00:02:46,810
materials on ISS experiment looking

66
00:02:51,210 --> 00:02:48,700
exposure of materials to the space

67
00:02:53,520 --> 00:02:51,220
environment this is missy peck number 8

68
00:02:57,150 --> 00:02:53,530
and of course will return missy peck

69
00:02:58,590 --> 00:02:57,160
number 7 on on this flight as well the

70
00:03:00,870 --> 00:02:58,600
the last thing of course we're going to

71
00:03:04,830 --> 00:03:00,880
transfer the orbital bloom orbiter boom

72
00:03:09,240 --> 00:03:04,840
assembly to ISS if you remember we use

73
00:03:12,600 --> 00:03:09,250
that boom on in october of 2007 on sts-1

74
00:03:14,160 --> 00:03:12,610
20 flight 10a to repair one of our torn

75
00:03:16,110 --> 00:03:14,170
solar arrays so we're looking forward to

76
00:03:20,400 --> 00:03:16,120
having that contingency capability on

77
00:03:23,220 --> 00:03:20,410
board ISS all in all we're launching up

78
00:03:26,250 --> 00:03:23,230
internal pressurized we're launching up

79
00:03:29,340 --> 00:03:26,260
about 175 kilograms of payloads we're

80
00:03:31,740 --> 00:03:29,350
returning 271 kilograms of payload

81
00:03:35,490 --> 00:03:31,750
samples in the pressurized mid deck of

82
00:03:38,400 --> 00:03:35,500
the shuttle and we're launching 7400

83
00:03:40,530 --> 00:03:38,410
kilograms of external or unpressurized

84
00:03:43,009 --> 00:03:40,540
payloads that's about sixteen thousand

85
00:03:46,259 --> 00:03:43,019
three hundred pounds and we're returning

86
00:03:48,620 --> 00:03:46,269
153 kilograms of unpressurized payload

87
00:03:51,030 --> 00:03:48,630
so you can see there's a big flight for

88
00:03:54,390 --> 00:03:51,040

ISS in terms of having it spares on

89
00:03:58,710 --> 00:03:54,400
orbit and also primarily to launch some

90
00:04:01,620 --> 00:03:58,720
significant payload capability this

91
00:04:04,140 --> 00:04:01,630
spring this actually the whole year has

92
00:04:05,220 --> 00:04:04,150
been a very busy year on ISS so far and

93
00:04:07,830 --> 00:04:05,230
it will continue all the way through the

94
00:04:10,440 --> 00:04:07,840
spring first of all we're very pleased

95
00:04:12,900 --> 00:04:10,450
to have the safe return of scott kelly

96
00:04:15,509 --> 00:04:12,910
and cal airy and skripochka last

97
00:04:18,840 --> 00:04:15,519
wednesday on 24 so use that was a very a

98
00:04:20,310 --> 00:04:18,850
big important event for us and we're

99
00:04:24,060 --> 00:04:20,320
very glad to have Scott back here in

100
00:04:26,650 --> 00:04:24,070
Houston the HTV is going to undock on

101
00:04:29,470 --> 00:04:26,660
monday the twenty-eighth which is a big

102
00:04:31,810 --> 00:04:29,480
event for a number of reasons but but

103
00:04:35,590 --> 00:04:31,820
one of the biggest is of course it marks

104
00:04:39,190 --> 00:04:35,600
a first step anyway in recovering Japan

105
00:04:42,550 --> 00:04:39,200
and their space capability in fact their

106
00:04:44,590 --> 00:04:42,560
space center the Sipsey was was started

107
00:04:46,810 --> 00:04:44,600
its 24 hour operations resumed its

108
00:04:50,290 --> 00:04:46,820
24-hour a day operations this past

109
00:04:52,300 --> 00:04:50,300
Monday so they're they're stepping back

110
00:04:55,240 --> 00:04:52,310
up and we're looking forward to the

111
00:04:57,220 --> 00:04:55,250
undock of H TV or unbirth thing in fact

112
00:04:58,930 --> 00:04:57,230
our mission management team the IMT is

113
00:05:02,080 --> 00:04:58,940

going to talk about that tomorrow and

114
00:05:07,030 --> 00:05:02,090
and and finally confirm the date for for

115
00:05:09,100 --> 00:05:07,040
monday we have of course the 26 launch

116
00:05:13,360 --> 00:05:09,110
the 26 soyuz launch with borisenko

117
00:05:15,190 --> 00:05:13,370
Guerin and Semak OTF it set for April

118
00:05:18,220 --> 00:05:15,200
fourth he probably have heard april

119
00:05:21,160 --> 00:05:18,230
fifth but it's really april fifth in

120
00:05:24,190 --> 00:05:21,170
kazakhstan it's April fourth gmt and so

121
00:05:26,050 --> 00:05:24,200
we tend to mark all our our information

122
00:05:27,310 --> 00:05:26,060
in GMT so that's why I'm talking to

123
00:05:29,380 --> 00:05:27,320
April fourth so we're looking forward to

124
00:05:32,410 --> 00:05:29,390
that and of course right followed right

125
00:05:35,380 --> 00:05:32,420
after that we have the this mission so

126
00:05:36,820 --> 00:05:35,390
lots of things going on and and we're

127
00:05:40,090 --> 00:05:36,830
very much looking forward to a busy

128
00:05:43,180 --> 00:05:40,100
spring on ISS two last things i'll

129
00:05:45,130 --> 00:05:43,190
mention that you certainly heard of that

130
00:05:47,409 --> 00:05:45,140
will celebrate we're going to celebrate

131
00:05:49,240 --> 00:05:47,419
the 50th anniversary of Gagarin so the

132
00:05:51,220 --> 00:05:49,250
50th anniversary of human spaceflight

133
00:05:54,310 --> 00:05:51,230
that's a big event here on the ground

134
00:05:56,470 --> 00:05:54,320
and we'll also a few activities on board

135
00:05:57,730 --> 00:05:56,480
and of course at the same time while

136
00:06:01,080 --> 00:05:57,740
we're going to celebrate the 30th

137
00:06:03,070 --> 00:06:01,090
anniversary of the space shuttle program

138
00:06:05,409 --> 00:06:03,080

first the first flight of the space

139
00:06:08,010 --> 00:06:05,419
shuttle and and John was probably in

140
00:06:10,120 --> 00:06:08,020
high school maybe one when it started so

141
00:06:17,540 --> 00:06:10,130
looking forward to that anniversary as

142
00:06:22,070 --> 00:06:19,340
I was wondering if we were going to

143
00:06:24,710 --> 00:06:22,080
answer that yeah we'll just start over

144
00:06:27,110 --> 00:06:24,720
here and work around the room and start

145
00:06:29,890 --> 00:06:27,120
with mark in the back aight thanks Kyle

146
00:06:33,280 --> 00:06:29,900
mark kuro for aviation week and a

147
00:06:36,350 --> 00:06:33,290
question for John Chanin can you sort of

148
00:06:39,080 --> 00:06:36,360
review or preview for us what happens

149
00:06:44,270 --> 00:06:39,090
with the workforce this going forward at

150
00:06:47,690 --> 00:06:44,280
this point sure as you know we have we

151
00:06:53,050 --> 00:06:47,700
have been stepping down our workforce

152
00:06:58,430 --> 00:06:53,060
over the last really three years back in

153
00:07:02,030 --> 00:06:58,440
late 2006 the shuttle program had 14,000

154
00:07:05,870 --> 00:07:02,040
contractors were currently down to just

155
00:07:08,180 --> 00:07:05,880
over 6,000 contractors we had 1,800

156
00:07:10,990 --> 00:07:08,190
civil servants that time were just over

157
00:07:13,610 --> 00:07:11,000
a thousand civil servants right now so

158
00:07:18,400 --> 00:07:13,620
when we were in the full production mode

159
00:07:21,560 --> 00:07:18,410
and in integration we had about 16,000

160
00:07:23,690 --> 00:07:21,570
teammates supporting shuttle operations

161
00:07:25,910 --> 00:07:23,700
and now we're down to about a total of

162
00:07:29,510 --> 00:07:25,920
about 7,000 if you count civil servants

163
00:07:32,240 --> 00:07:29,520

and contractors together that as we

164
00:07:33,680 --> 00:07:32,250
finished different manufacturing

165
00:07:39,020 --> 00:07:33,690
processes as different things were

166
00:07:41,840 --> 00:07:39,030
delivered to to KSC those personnel were

167
00:07:44,770 --> 00:07:41,850
let go so it's been this gradual phase

168
00:07:47,450 --> 00:07:44,780
down we're at a point now where it's

169
00:07:48,730 --> 00:07:47,460
primarily operations and sustaining

170
00:07:51,710 --> 00:07:48,740
engineering for the different elements

171
00:07:54,200 --> 00:07:51,720
that are left and we require those out

172
00:07:59,090 --> 00:07:54,210
to the to the end of the program there

173
00:08:00,350 --> 00:07:59,100
will be a layoff or layoff is not

174
00:08:02,750 --> 00:08:00,360
exactly the right term because a lot of

175
00:08:06,230 --> 00:08:02,760
the employees are being placed within

176
00:08:10,310 --> 00:08:06,240
their contractor companies in other

177
00:08:13,250 --> 00:08:10,320
areas that will occur on the first two

178
00:08:16,010 --> 00:08:13,260
weeks of April and will reduce the team

179
00:08:18,280 --> 00:08:16,020
by about about 700 and that's spread

180
00:08:21,320 --> 00:08:18,290
across several different contractors

181
00:08:24,970 --> 00:08:21,330
here in a couple weeks and then we'll

182
00:08:30,570 --> 00:08:24,980
retain the rest of the team it's about

183
00:08:32,899 --> 00:08:30,580
about 5,500 contractors until the end of

184
00:08:38,040 --> 00:08:32,909
end of the program and at that point

185
00:08:39,420 --> 00:08:38,050
it'll be a significant layoffs and the

186
00:08:41,940 --> 00:08:39,430
rest of the contractors will either go

187
00:08:46,250 --> 00:08:41,950
to other other jobs within their

188
00:08:48,960 --> 00:08:46,260

companies or the they'll be laid off and

189
00:08:51,110 --> 00:08:48,970
civil servants will be reassigned to two

190
00:08:55,380 --> 00:08:51,120
other tasks so that's coming up in

191
00:08:57,329 --> 00:08:55,390
probably the late July timeframe the

192
00:08:59,970 --> 00:08:57,339
shuttle program will transition at that

193
00:09:02,009 --> 00:08:59,980
time to what's called a space shuttle

194
00:09:04,259 --> 00:09:02,019
program transition retirement team

195
00:09:06,180 --> 00:09:04,269
that's will be headed by Dorothy rasko

196
00:09:09,329 --> 00:09:06,190
who is currently our business manager

197
00:09:11,490 --> 00:09:09,339
and she'll have about 300 employees it

198
00:09:13,790 --> 00:09:11,500
will continue the process of dis

199
00:09:16,940 --> 00:09:13,800
positioning the assets of the program

200
00:09:19,290 --> 00:09:16,950
thanks very much in for Kirk Charmin

201
00:09:22,440 --> 00:09:19,300
wonder if you might step back to the

202
00:09:25,050 --> 00:09:22,450
earthquake and tsunami and sort of step

203
00:09:28,590 --> 00:09:25,060
through what happened with the control

204
00:09:30,630 --> 00:09:28,600
center in Japan and how they recovered

205
00:09:32,460 --> 00:09:30,640
I'm sorry I'm not asking you for the

206
00:09:35,910 --> 00:09:32,470
Encyclopedia Britannica but you know

207
00:09:39,230 --> 00:09:35,920
just kind of how everybody came in to

208
00:09:42,540 --> 00:09:39,240
fill the gap and whether that experience

209
00:09:44,540 --> 00:09:42,550
is offering a lesson learned or

210
00:09:47,750 --> 00:09:44,550
something to look at how the other

211
00:09:50,269 --> 00:09:47,760
control centers are protected of

212
00:09:54,870 --> 00:09:50,279
something like this were to happen in

213
00:09:57,780 --> 00:09:54,880

Europe or here okay that's good question

214
00:09:59,579 --> 00:09:57,790
the so what happened of course they had

215
00:10:03,120 --> 00:09:59,589
the earthquake which was an unplanned

216
00:10:05,490 --> 00:10:03,130
event and right away they had difficulty

217
00:10:07,410 --> 00:10:05,500
with with power and their command

218
00:10:11,069 --> 00:10:07,420
servers and of course the people that

219
00:10:13,079 --> 00:10:11,079
themselves were were quite shaken up so

220
00:10:15,720 --> 00:10:13,089
it turns out that the the K there's

221
00:10:20,340 --> 00:10:15,730
capabilities in all the commands for the

222
00:10:22,199 --> 00:10:20,350
the Japanese segment and for the the HTV

223
00:10:24,120 --> 00:10:22,209
here in Houston through the Mission

224
00:10:25,860 --> 00:10:24,130
Control Center and it also turned out

225
00:10:28,889 --> 00:10:25,870
that we had a number of Japanese flight

226
00:10:30,870 --> 00:10:28,899
controllers here in town and so the plan

227
00:10:35,730 --> 00:10:30,880
immediately was to go utilize those

228
00:10:38,310 --> 00:10:35,740
folks to stop all all significant or

229
00:10:39,940 --> 00:10:38,320
major operations in those modules and

230
00:10:41,650 --> 00:10:39,950
with the HTV

231
00:10:44,260 --> 00:10:41,660
and use the Japanese controllers that

232
00:10:46,720 --> 00:10:44,270
we're here to a monitor and send

233
00:10:48,040 --> 00:10:46,730
commands to that that vehicle even

234
00:10:49,540 --> 00:10:48,050
without the Japanese controllers we'd

235
00:10:52,420 --> 00:10:49,550
have the capability to leave safe the

236
00:10:56,440 --> 00:10:52,430
vehicles here with with the the u.s.

237
00:10:58,930 --> 00:10:56,450
controllers so we actually have plans

238
00:11:01,180 --> 00:10:58,940

for Houston of course hurricanes is a

239
00:11:02,740 --> 00:11:01,190
major issue we actually have capability

240
00:11:04,900 --> 00:11:02,750
significant capability which we've used

241
00:11:07,390 --> 00:11:04,910
on a number of occasions to to be able

242
00:11:10,390 --> 00:11:07,400
to monitor in command the ISS if you

243
00:11:13,320 --> 00:11:10,400
remember during Hurricane Ike while we

244
00:11:15,460 --> 00:11:13,330
were still the population here was still

245
00:11:17,590 --> 00:11:15,470
fighting to recover from that we

246
00:11:19,450 --> 00:11:17,600
actually docked a progress vehicle so

247
00:11:22,150 --> 00:11:19,460
there's capability we built the

248
00:11:23,800 --> 00:11:22,160
capability around the types of natural

249
00:11:26,170 --> 00:11:23,810
disasters I guess you would expect in

250
00:11:29,740 --> 00:11:26,180
the various places so we have capability

251
00:11:32,410 --> 00:11:29,750
here to handle a capability actually

252
00:11:34,270 --> 00:11:32,420
through Marshall tank to handle ISS from

253
00:11:39,070 --> 00:11:34,280
the USS stand point for a u.s. OS

254
00:11:42,580 --> 00:11:39,080
standpoint the capability here to handle

255
00:11:44,860 --> 00:11:42,590
events here both in Europe and and in

256
00:11:47,410 --> 00:11:44,870
Japan so there's some capability

257
00:11:49,990 --> 00:11:47,420
obviously it's not operations as normal

258
00:11:53,220 --> 00:11:50,000
so we can't we won't do complex

259
00:11:55,300 --> 00:11:53,230
operations a lot of things require

260
00:11:57,010 --> 00:11:55,310
engineering analysis behind those

261
00:11:59,170 --> 00:11:57,020
operations and of course the engineering

262
00:12:01,770 --> 00:11:59,180
work forces is disrupted as well so

263
00:12:04,240 --> 00:12:01,780

we'll try to minimize significant

264
00:12:06,760 --> 00:12:04,250
complex operations on those segments

265
00:12:10,390 --> 00:12:06,770
while we're down but but Japanese were

266
00:12:13,870 --> 00:12:10,400
fantastic they you know not only in the

267
00:12:16,420 --> 00:12:13,880
midst of course recovering personally

268
00:12:18,160 --> 00:12:16,430
and their families in the environment

269
00:12:20,710 --> 00:12:18,170
around them they were very concerned

270
00:12:24,250 --> 00:12:20,720
about getting their center control

271
00:12:26,980 --> 00:12:24,260
center back and operating in and that

272
00:12:29,680 --> 00:12:26,990
they did that so I'm very very impressed

273
00:12:33,940 --> 00:12:29,690
with their ability to to do that so

274
00:12:37,900 --> 00:12:33,950
quickly Philips lost with NASA Space

275
00:12:40,060 --> 00:12:37,910
Flight calm I believe you had the 41

276
00:12:42,610 --> 00:12:40,070
Pete undock and the 42 be doc had been

277
00:12:44,710 --> 00:12:42,620
on the calendar during the during the

278
00:12:46,330 --> 00:12:44,720
doc mission for you left six are you

279
00:12:49,750 --> 00:12:46,340
planning on d conflicting that with the

280
00:12:51,700 --> 00:12:49,760
mission so we're still in discussions

281
00:12:53,590 --> 00:12:51,710
with our Russian partners about that we

282
00:12:55,300 --> 00:12:53,600
have a couple plans

283
00:12:57,730 --> 00:12:55,310
some of the difficulties are there's a

284
00:13:02,559 --> 00:12:57,740
there's a payload in in the progress

285
00:13:04,990 --> 00:13:02,569
that has a short time frame and so the

286
00:13:06,879 --> 00:13:05,000
Russians are very interested in in a

287
00:13:08,740 --> 00:13:06,889
time from when they I'll say initiate

288
00:13:10,930 --> 00:13:08,750

that payload loaded onto the progress

289
00:13:12,579 --> 00:13:10,940
and then get it on board ISS so we're

290
00:13:15,400 --> 00:13:12,589
still working through the details about

291
00:13:17,290 --> 00:13:15,410
that we have a plan to have the first

292
00:13:18,910 --> 00:13:17,300
part of the shuttle window where the

293
00:13:20,740 --> 00:13:18,920
shuttle would it would have priority

294
00:13:22,990 --> 00:13:20,750
then we'd stand down and let the

295
00:13:24,400 --> 00:13:23,000
progress go and then of course would

296
00:13:25,870 --> 00:13:24,410
have some some of that window

297
00:13:28,180 --> 00:13:25,880
availability at the end of that for

298
00:13:29,410 --> 00:13:28,190
shuttle but but all that still not

299
00:13:31,930 --> 00:13:29,420
finalized yet we're still in

300
00:13:33,939 --> 00:13:31,940
negotiations with with with John and the

301
00:13:35,650 --> 00:13:33,949
shuttle program and with with our

302
00:13:39,249 --> 00:13:35,660
Russians I have no doubt that we'll work

303
00:13:40,990 --> 00:13:39,259
this out it's just with all the traffic

304
00:13:44,110 --> 00:13:41,000
coming and going die assess these days

305
00:13:46,809 --> 00:13:44,120
and all the constraints we all need to

306
00:13:49,030 --> 00:13:46,819
sit down and work through this and we're

307
00:13:50,319 --> 00:13:49,040
doing that and it's really and Jonna

308
00:13:52,480 --> 00:13:50,329
tell you the same thing that this is

309
00:13:55,180 --> 00:13:52,490
normal business now pretty much every

310
00:13:56,620 --> 00:13:55,190
time we we get ready we have various

311
00:13:59,740 --> 00:13:56,630
conflicts and we all just sit down and

312
00:14:02,350 --> 00:13:59,750
work to them so not a final answer yet

313
00:14:04,990 --> 00:14:02,360

but we'll have it shortly do you have

314
00:14:06,610 --> 00:14:05,000
any any idea about the timeframe for

315
00:14:08,860 --> 00:14:06,620
that I mean would that be towards the

316
00:14:11,139 --> 00:14:08,870
end of the the shuttle flight readiness

317
00:14:13,090 --> 00:14:11,149
reviews like the agency level far would

318
00:14:15,160 --> 00:14:13,100
it be in that time frame I would expect

319
00:14:19,720 --> 00:14:15,170
certainly by the FR we'd have all that

320
00:14:21,249 --> 00:14:19,730
finalized yes bill Hartwick CBS with two

321
00:14:24,129 --> 00:14:21,259
one for each of you but just to follow

322
00:14:25,449 --> 00:14:24,139
that up Kirk if the Russians can't be

323
00:14:27,370 --> 00:14:25,459
conflicted the way you're looking at I

324
00:14:28,960 --> 00:14:27,380
mean what are their the range of launch

325
00:14:30,610 --> 00:14:28,970
dates for the shuttle I know the 19th is

326
00:14:33,639 --> 00:14:30,620
where you want to go I know if there's

327
00:14:34,870 --> 00:14:33,649
no D conflict it's the 29th we're in

328
00:14:36,129 --> 00:14:34,880
that realm do you think you're going to

329
00:14:38,139 --> 00:14:36,139
end up when you say you're confident

330
00:14:40,030 --> 00:14:38,149
that it's going to get resolved so I'll

331
00:14:44,350 --> 00:14:40,040
let John talk about the shuttle window

332
00:14:49,210 --> 00:14:44,360
if you want we're targeting for the 19th

333
00:14:50,530 --> 00:14:49,220
and and we haven't done anything to say

334
00:14:54,759 --> 00:14:50,540
that we're not going to fly on the 19th

335
00:14:59,800 --> 00:14:54,769
so you know there's a beta cut out in

336
00:15:01,090 --> 00:14:59,810
May and there's a Soyuz on so it's a

337
00:15:03,519 --> 00:15:01,100
significant window that we have a

338
00:15:05,500 --> 00:15:03,529

significant window and like I said I'm

339
00:15:07,570 --> 00:15:05,510
confident we'll work work through that

340
00:15:09,640 --> 00:15:07,580
okay and one for John it was it's a

341
00:15:11,710 --> 00:15:09,650
follow-up on marks work first question

342
00:15:13,450 --> 00:15:11,720
you guys recently had a fatality at the

343
00:15:15,310 --> 00:15:13,460
pad I know you can't talk about that

344
00:15:16,810 --> 00:15:15,320
obviously with an investigation still

345
00:15:19,330 --> 00:15:16,820
underway but can you talk to us in

346
00:15:20,710 --> 00:15:19,340
general terms about what you're doing or

347
00:15:22,300 --> 00:15:20,720
with programs doing nothing you've told

348
00:15:23,860 --> 00:15:22,310
us this before but just remind us of

349
00:15:26,560 --> 00:15:23,870
what you guys are doing to keep the

350
00:15:28,210 --> 00:15:26,570
focus on what you guys are up too is you

351
00:15:31,210 --> 00:15:28,220
ramp down and layoffs and all the

352
00:15:37,030 --> 00:15:31,220
original trauma 2 yeah I know it was

353
00:15:39,160 --> 00:15:37,040
very tragic event early last week you're

354
00:15:42,730 --> 00:15:39,170
right you know this is the investigation

355
00:15:44,790 --> 00:15:42,740
is underway NASA security NASA safety

356
00:15:48,760 --> 00:15:44,800
mission assurance the inspector general

357
00:15:51,130 --> 00:15:48,770
OSHA the Brevard County Sheriff's

358
00:15:53,880 --> 00:15:51,140
Department and the medical examiner have

359
00:15:56,500 --> 00:15:53,890
all been involved in the investigation

360
00:15:57,970 --> 00:15:56,510
all I can tell you is from an

361
00:16:00,870 --> 00:15:57,980
investigation standpoint there's no

362
00:16:02,770 --> 00:16:00,880
evidence of any foul play and OSHA

363
00:16:05,310 --> 00:16:02,780

concluded there was no fall protection

364
00:16:08,230 --> 00:16:05,320
safety issues involved in the incident

365
00:16:10,150 --> 00:16:08,240
so but until the medical examiner

366
00:16:13,240 --> 00:16:10,160
releases their findings which we expect

367
00:16:16,890 --> 00:16:13,250
in a couple weeks I can't talk any more

368
00:16:19,840 --> 00:16:16,900
about the details of it as far as the is

369
00:16:23,740 --> 00:16:19,850
the team on the pad obviously it's a

370
00:16:29,620 --> 00:16:23,750
it's a teammate that is as has died and

371
00:16:30,940 --> 00:16:29,630
and we stood down for that day talk to

372
00:16:34,150 --> 00:16:30,950
them brought to our Employee Assistance

373
00:16:37,780 --> 00:16:34,160
Program counselors in to meet with the

374
00:16:39,790 --> 00:16:37,790
with the team and the managers there was

375
00:16:42,700 --> 00:16:39,800
a strong desire to resume work on

376
00:16:44,410 --> 00:16:42,710
Tuesday by the team we kept the

377
00:16:46,600 --> 00:16:44,420
counselors out there for the entire week

378
00:16:50,410 --> 00:16:46,610
just in case you know anybody wanted to

379
00:16:53,940 --> 00:16:50,420
talk or any issues came up and in that I

380
00:16:56,590 --> 00:16:53,950
think was very effective the the senior

381
00:16:58,240 --> 00:16:56,600
United Space Alliance and NASA managers

382
00:17:00,940 --> 00:16:58,250
out there met with the team all

383
00:17:02,260 --> 00:17:00,950
throughout the week and and reported

384
00:17:05,890 --> 00:17:02,270
back to me that you know they were very

385
00:17:08,439 --> 00:17:05,900
focused and very dedicated to completing

386
00:17:12,220 --> 00:17:08,449
the the missions as as we've laid out

387
00:17:14,620 --> 00:17:12,230
and and I agreed with that and we

388
00:17:18,310 --> 00:17:14,630

resumed working we still have about six

389
00:17:19,699 --> 00:17:18,320
contingency days so it didn't impact the

390
00:17:22,130 --> 00:17:19,709
the ability to support

391
00:17:24,019 --> 00:17:22,140
April nineteenth date and when we know

392
00:17:26,149 --> 00:17:24,029
more about the the investigation will

393
00:17:27,319 --> 00:17:26,159
pass that on to you I'm trying to get

394
00:17:28,309 --> 00:17:27,329
you to talk about that I really was

395
00:17:29,899 --> 00:17:28,319
looking more toward how you're

396
00:17:31,250 --> 00:17:29,909
maintaining focus all the way through

397
00:17:32,600 --> 00:17:31,260
the end here as you come into the home

398
00:17:34,039 --> 00:17:32,610
stretch all right with all the

399
00:17:36,470 --> 00:17:34,049
distractions on the workforce is not a

400
00:17:37,760 --> 00:17:36,480
minute more in general terms in the

401
00:17:40,519 --> 00:17:37,770
second part of that is what happens to

402
00:17:44,240 --> 00:17:40,529
you after the program is yeah well you

403
00:17:47,200 --> 00:17:44,250
know we are this is a unique team in my

404
00:17:51,110 --> 00:17:47,210
opinion you know I've gotten every

405
00:17:54,230 --> 00:17:51,120
probably every independent look there is

406
00:17:56,120 --> 00:17:54,240
out there from ASAP panels and necks and

407
00:17:57,200 --> 00:17:56,130
standing review boards and things about

408
00:18:00,470 --> 00:17:57,210
how the world are you going to keep this

409
00:18:01,909 --> 00:18:00,480
team together and I tell you this you

410
00:18:03,649 --> 00:18:01,919
know line box says it really well

411
00:18:07,220 --> 00:18:03,659
because he's out there with the ground

412
00:18:09,320 --> 00:18:07,230
processing team daily but they're just a

413
00:18:11,840 --> 00:18:09,330

unique team that is so this is more than

414
00:18:14,960 --> 00:18:11,850
a job to them they are extremely

415
00:18:20,120 --> 00:18:14,970
passionate about what they do they are

416
00:18:22,639 --> 00:18:20,130
totally dedicated to supporting the

417
00:18:25,190 --> 00:18:22,649
legacy of the shuttle program and

418
00:18:28,159 --> 00:18:25,200
finishing it right and you see that

419
00:18:32,210 --> 00:18:28,169
every day they just had a team-building

420
00:18:33,560 --> 00:18:32,220
event out of KSC and even the folks that

421
00:18:35,930 --> 00:18:33,570
are going to be leaving us in a couple

422
00:18:37,279 --> 00:18:35,940
weeks you know they're very sad and

423
00:18:39,049 --> 00:18:37,289
upset that they're not able to see the

424
00:18:42,440 --> 00:18:39,059
program to the very end you know it's

425
00:18:44,899 --> 00:18:42,450
it's much more it's less about anxiety

426
00:18:47,240 --> 00:18:44,909
that you know there's an uncertain

427
00:18:48,590 --> 00:18:47,250
future head they're more concerned about

428
00:18:50,110 --> 00:18:48,600
hey we want to make sure that the

429
00:18:53,960 --> 00:18:50,120
program is supported to the end

430
00:18:56,440 --> 00:18:53,970
correctly and I just I can't say enough

431
00:18:58,850 --> 00:18:56,450
about the entire team about how they've

432
00:19:02,000 --> 00:18:58,860
they've maintained their focus you know

433
00:19:03,320 --> 00:19:02,010
we had some difficult issues preparing

434
00:19:06,169 --> 00:19:03,330
for the last launch with the external

435
00:19:08,450 --> 00:19:06,179
tank the team came together we actually

436
00:19:10,549 --> 00:19:08,460
even brought back team members that we

437
00:19:13,669 --> 00:19:10,559
had laid off previously had a Massoud

438
00:19:15,769 --> 00:19:13,679

and they they returned happily and got

439
00:19:17,779 --> 00:19:15,779
us over the over the hump and and we

440
00:19:22,220 --> 00:19:17,789
were able to successfully fly that

441
00:19:23,810 --> 00:19:22,230
mission it's just it's it's it's so much

442
00:19:26,120 --> 00:19:23,820
fun to be a part of a group like this

443
00:19:27,919 --> 00:19:26,130
that is so passionate about what they do

444
00:19:32,269 --> 00:19:27,929
and really wants to preserve the legacy

445
00:19:33,590 --> 00:19:32,279
and do it right and I just you know

446
00:19:35,210 --> 00:19:33,600
every time we do

447
00:19:38,120 --> 00:19:35,220
these team building events people end up

448
00:19:39,830 --> 00:19:38,130
you know consoling me and telling me hey

449
00:19:41,600 --> 00:19:39,840
it's going to be okay you know and when

450
00:19:47,419 --> 00:19:41,610
I'm sad about them then leaving the

451
00:19:49,400 --> 00:19:47,429
program and I just I just can't say

452
00:19:51,970 --> 00:19:49,410
enough about this team as for me

453
00:19:54,650 --> 00:19:51,980
personally I don't I have no idea the

454
00:19:57,100 --> 00:19:54,660
that is not a focus of mine at all just

455
00:20:00,350 --> 00:19:57,110
like it's not of the senior managers

456
00:20:02,630 --> 00:20:00,360
that I work with daily we're just we

457
00:20:03,680 --> 00:20:02,640
have the laser focus on these last two

458
00:20:06,140 --> 00:20:03,690
missions we need to make sure we're

459
00:20:08,960 --> 00:20:06,150
really paying attention we have done a

460
00:20:10,970 --> 00:20:08,970
lot of work on the the contractor side

461
00:20:15,169 --> 00:20:10,980
and on the civil service side making

462
00:20:17,000 --> 00:20:15,179
sure that we have on the contractor side

463
00:20:20,630 --> 00:20:17,010

the retention plans in place and that

464
00:20:22,970 --> 00:20:20,640
there are workforce centers that are

465
00:20:24,350 --> 00:20:22,980
able to to help them with resumes with

466
00:20:26,539 --> 00:20:24,360
job placements we've been doing a lot of

467
00:20:27,919 --> 00:20:26,549
job fairs things like that on the civil

468
00:20:31,850 --> 00:20:27,929
service side we're going to retain all

469
00:20:33,529 --> 00:20:31,860
of the NASA employees and just about a

470
00:20:35,659 --> 00:20:33,539
hundred percent of the NASA employees

471
00:20:36,890 --> 00:20:35,669
are working dual roles where they're

472
00:20:39,260 --> 00:20:36,900
spending time and engineering

473
00:20:41,529 --> 00:20:39,270
organizations doing other jobs in

474
00:20:43,730 --> 00:20:41,539
operations and space and life sciences

475
00:20:45,380 --> 00:20:43,740
where they have started to do some

476
00:20:46,760 --> 00:20:45,390
part-time work to build that

477
00:20:47,870 --> 00:20:46,770
relationship so that when the program

478
00:20:51,020 --> 00:20:47,880
means they can make a seamless

479
00:20:52,100 --> 00:20:51,030
transition to their new job but that's

480
00:20:53,810 --> 00:20:52,110
not really true for the senior

481
00:20:56,029 --> 00:20:53,820
leadership I want us to just just stay

482
00:20:57,230 --> 00:20:56,039
focused on on our main task and that's

483
00:21:01,100 --> 00:20:57,240
to fly these last two flights out

484
00:21:03,230 --> 00:21:01,110
successfully hi Robert Pearlman with

485
00:21:06,440 --> 00:21:03,240
collectspace.com with two questions for

486
00:21:11,000 --> 00:21:06,450
Kirk John mentioned that discoveries

487
00:21:13,159 --> 00:21:11,010
flight completed the ISS so when am well

488
00:21:16,460 --> 00:21:13,169

other than AMS but if additional Russian

489
00:21:20,149 --> 00:21:16,470
modules are added if commercial modules

490
00:21:22,010 --> 00:21:20,159
are sometimes added or if you are if you

491
00:21:24,200 --> 00:21:22,020
are looking at any additional US modules

492
00:21:26,180 --> 00:21:24,210
like an additional node are those bonus

493
00:21:28,669 --> 00:21:26,190
buy those viewed as bonus pieces at this

494
00:21:31,880 --> 00:21:28,679
point and are you looking at any

495
00:21:36,919 --> 00:21:31,890
additional future US seditions to the

496
00:21:38,450 --> 00:21:36,929
station and we completed my keys yeah so

497
00:21:41,289 --> 00:21:38,460
if I come up with a few more pieces then

498
00:21:43,130 --> 00:21:41,299
we can have the shuttle hang around and

499
00:21:45,649 --> 00:21:43,140
actually that one of the beauties of

500
00:21:47,330 --> 00:21:45,659
having a space station and certainly the

501
00:21:51,140 --> 00:21:47,340
space station that we've we've built is

502
00:21:54,289 --> 00:21:51,150
that it has the ability to expand and

503
00:21:56,899 --> 00:21:54,299
and change you've seen already the

504
00:21:58,909 --> 00:21:56,909
capability to move modules and even

505
00:22:00,950 --> 00:21:58,919
trust elements right we launched the p6

506
00:22:03,320 --> 00:22:00,960
truss and had it on the top of the space

507
00:22:05,390 --> 00:22:03,330
station then we relocated it we've had

508
00:22:11,029 --> 00:22:05,400
no to was initially installed in one

509
00:22:13,159 --> 00:22:11,039
place and we relocated it so we launched

510
00:22:14,450 --> 00:22:13,169
MPL m's to the nadir of node one port

511
00:22:15,919 --> 00:22:14,460
and now we launch them to the nadir of

512
00:22:18,769 --> 00:22:15,929
no to port in fact we put one

513
00:22:20,510 --> 00:22:18,779

permanently on note on the nadir of node

514
00:22:24,019 --> 00:22:20,520
one so yeah there's certainly the

515
00:22:25,970 --> 00:22:24,029
capability to add add more modules it

516
00:22:28,669 --> 00:22:25,980
really depends on on what what's

517
00:22:31,370 --> 00:22:28,679
required what what is NASA and what does

518
00:22:34,549 --> 00:22:31,380
the country need to support its future

519
00:22:37,029 --> 00:22:34,559
endeavours in in space and so I think

520
00:22:39,980 --> 00:22:37,039
there is the potential for additional

521
00:22:41,630 --> 00:22:39,990
vehicles we've talked we're talking

522
00:22:44,299 --> 00:22:41,640
about commercial crew transportation

523
00:22:46,190 --> 00:22:44,309
vehicles perhaps there's a chance for

524
00:22:48,230 --> 00:22:46,200
additional modules or at least testing

525
00:22:51,260 --> 00:22:48,240
out of additional technologies to

526
00:22:53,240 --> 00:22:51,270
support human exploration beyond beyond

527
00:22:55,100 --> 00:22:53,250
low-earth orbit onboard the ISS so

528
00:22:57,230 --> 00:22:55,110
there's nothing definitive now from a

529
00:22:59,630 --> 00:22:57,240
u.s. standpoint but certainly we have

530
00:23:01,159 --> 00:22:59,640
the capability to support that and and

531
00:23:04,039 --> 00:23:01,169
it wouldn't surprise me at all in the

532
00:23:06,200 --> 00:23:04,049
future if it if it's a piece of a

533
00:23:09,169 --> 00:23:06,210
strategy to support exploration we would

534
00:23:11,659 --> 00:23:09,179
do something additional onboard ISS as

535
00:23:13,580 --> 00:23:11,669
for the Russian segment they are

536
00:23:16,430 --> 00:23:13,590
planning on launch an additional module

537
00:23:18,320 --> 00:23:16,440
next year they're still working on the

538
00:23:20,360 --> 00:23:18,330

official launch date so they'll have an

539
00:23:22,490 --> 00:23:20,370
additional module going up and it's the

540
00:23:24,889 --> 00:23:22,500
same on their side as it is on ours they

541
00:23:26,539 --> 00:23:24,899
have capability to to launch additional

542
00:23:29,539 --> 00:23:26,549
modules have docking ports which they

543
00:23:32,419 --> 00:23:29,549
can extend so we have the ability to

544
00:23:35,570 --> 00:23:32,429
evolve over time and adapt and and I

545
00:23:39,200 --> 00:23:35,580
hope that's what we'll do thanks and

546
00:23:41,779 --> 00:23:39,210
with regards to this upcoming flight is

547
00:23:44,299 --> 00:23:41,789
the five so you fly about on the table

548
00:23:46,070 --> 00:23:44,309
at all is there any discussions amongst

549
00:23:48,169 --> 00:23:46,080
the international partners to even

550
00:23:50,990 --> 00:23:48,179
though you won't have all five visiting

551
00:23:52,520 --> 00:23:51,000
vehicles there to at least get a family

552
00:23:54,200 --> 00:23:52,530
portrait of the vehicles that are there

553
00:23:55,670 --> 00:23:54,210
yeah we're a value

554
00:23:58,730 --> 00:23:55,680
joining it right now no decision has

555
00:24:00,140 --> 00:23:58,740
been made so it's it's just under

556
00:24:04,220 --> 00:24:00,150
discussion and under engineering

557
00:24:06,350 --> 00:24:04,230
evaluation at this time genus and Sara

558
00:24:07,970 --> 00:24:06,360
ABC News for Kirk you ever going to name

559
00:24:10,010 --> 00:24:07,980
the space station or will be nameless

560
00:24:11,810 --> 00:24:10,020
for the next nine years and if you are

561
00:24:22,850 --> 00:24:11,820
going to name it how will that process

562
00:24:24,950 --> 00:24:22,860
work so yeah yeah so years ago that when

563
00:24:26,390 --> 00:24:24,960

it came to the end my end of

564
00:24:28,400 --> 00:24:26,400
construction that he thought it would

565
00:24:30,680 --> 00:24:28,410
finally get a name and I'm just curious

566
00:24:33,350 --> 00:24:30,690
with that process how's that process

567
00:24:35,480 --> 00:24:33,360
would yeah that's yeah that's something

568
00:24:37,880 --> 00:24:35,490
we haven't worked through at this point

569
00:24:39,650 --> 00:24:37,890
in time so I don't know I'll tell you

570
00:24:44,360 --> 00:24:39,660
our last experience with naming

571
00:24:48,050 --> 00:24:44,370
something in a public forum and ended in

572
00:24:51,140 --> 00:24:48,060
an unexpected fashion so I don't know

573
00:24:56,120 --> 00:24:51,150
that we'll we'll let go bear named named

574
00:24:58,520 --> 00:24:56,130
the ISS but but so we will we'll talk

575
00:24:59,750 --> 00:24:58,530
about that I don't know how we would do

576
00:25:01,130 --> 00:24:59,760
that and we don't have any concrete

577
00:25:03,650 --> 00:25:01,140
plans to do that at this time but

578
00:25:08,990 --> 00:25:03,660
clearly some vehicle that lasts as long

579
00:25:12,020 --> 00:25:09,000
as I SS last it deserves a name so will

580
00:25:13,760 --> 00:25:12,030
certainly talk about that and if you

581
00:25:20,120 --> 00:25:13,770
want to name it we'll we'll talk with

582
00:25:22,730 --> 00:25:20,130
you when we get ready okay hi I'm Eric

583
00:25:25,820 --> 00:25:22,740
burger with Houston Chronicle a question

584
00:25:30,140 --> 00:25:25,830
for John can you talk a little bit about

585
00:25:33,350 --> 00:25:30,150
the confidence you have that the 135 is

586
00:25:37,240 --> 00:25:33,360
going to fly it seems like it's all but

587
00:25:40,820 --> 00:25:37,250
official now yeah our direction from

588
00:25:42,200 --> 00:25:40,830

from NASA headquarters was to not take

589
00:25:46,040 --> 00:25:42,210
any personnel actions that would

590
00:25:47,510 --> 00:25:46,050
preclude the ability to go fly 135 which

591
00:25:50,090 --> 00:25:47,520
essentially says that you're going to go

592
00:25:53,390 --> 00:25:50,100
fly it because you know we would be

593
00:25:56,840 --> 00:25:53,400
taking workforce actions to issue Warren

594
00:25:58,760 --> 00:25:56,850
notices and things like that you know a

595
00:26:00,830 --> 00:25:58,770
few weeks ago actually if we were not

596
00:26:03,620 --> 00:26:00,840
going to go fly it it looks like the

597
00:26:07,340 --> 00:26:03,630
budget is is lined up to support that

598
00:26:10,760 --> 00:26:07,350
mission Atlantis's as being

599
00:26:14,180 --> 00:26:10,770
processed we're stacking solid rocket

600
00:26:15,680 --> 00:26:14,190
boosters and from from a program

601
00:26:17,390 --> 00:26:15,690
standpoint it looks like you know we're

602
00:26:19,940 --> 00:26:17,400
we're going to go fly that mission and

603
00:26:27,590 --> 00:26:19,950
that's certainly the the attitude of the

604
00:26:30,669 --> 00:26:27,600
team I'm hi Irene Klotz with with

605
00:26:33,830 --> 00:26:30,679
Reuters I have a couple of questions um

606
00:26:36,220 --> 00:26:33,840
for Kirk could you give us just a little

607
00:26:41,419 --> 00:26:36,230
status on where things stand with the

608
00:26:44,149 --> 00:26:41,429
process to hire a non-profit to become a

609
00:26:45,590 --> 00:26:44,159
partner in the station program and also

610
00:26:47,720 --> 00:26:45,600
why you're thinking about that or

611
00:26:49,520 --> 00:26:47,730
answering that on a on a bigger picture

612
00:26:51,950 --> 00:26:49,530
perspective with the shuttle program

613
00:26:53,539 --> 00:26:51,960

ending and I know you've been operating

614
00:26:57,140 --> 00:26:53,549
station for quite some time now but

615
00:27:00,620 --> 00:26:57,150
there's a very big transition to kind of

616
00:27:02,779 --> 00:27:00,630
move into space operations on the

617
00:27:05,779 --> 00:27:02,789
station without having this shuttle

618
00:27:07,100 --> 00:27:05,789
launch component being a big part of you

619
00:27:09,529 --> 00:27:07,110
know what NASA does on a day-to-day

620
00:27:13,520 --> 00:27:09,539
basis just what do you see are the

621
00:27:15,320 --> 00:27:13,530
biggest challenges coming up as you move

622
00:27:17,419 --> 00:27:15,330
out into kind of full-time operations

623
00:27:25,490 --> 00:27:17,429
without this without thee without the

624
00:27:28,159 --> 00:27:25,500
shuttle okay first on the the Institute

625
00:27:29,990 --> 00:27:28,169
to to run the national lab portion of

626
00:27:31,580 --> 00:27:30,000
the ISS we have a procurement out for

627
00:27:36,799 --> 00:27:31,590
the what I call a non-governmental

628
00:27:40,029 --> 00:27:36,809
organization to go organize the payloads

629
00:27:43,250 --> 00:27:40,039
to to fly under our national laboratory

630
00:27:48,049 --> 00:27:43,260
capability and that's ongoing so we're

631
00:27:50,360 --> 00:27:48,059
just out trying to to procure or get an

632
00:27:52,070 --> 00:27:50,370
organization started to go support that

633
00:27:53,659 --> 00:27:52,080
so I don't really have much more than

634
00:27:56,360 --> 00:27:53,669
that at this point in time that is

635
00:27:58,220 --> 00:27:56,370
definitely our plan and we're actively

636
00:28:01,899 --> 00:27:58,230
off doing that to have this organization

637
00:28:03,890 --> 00:28:01,909
out there to support prioritizing the

638
00:28:07,700 --> 00:28:03,900

payloads that would fly under the

639
00:28:11,270 --> 00:28:07,710
National Lab capability on board ISS as

640
00:28:13,610 --> 00:28:11,280
far as transition to of ISS to to

641
00:28:15,830 --> 00:28:13,620
operate without shuttle it's going to be

642
00:28:18,770 --> 00:28:15,840
very difficult you know ISS was was

643
00:28:21,049 --> 00:28:18,780
designed certainly built with the

644
00:28:22,759 --> 00:28:21,059
shuttle and and we really

645
00:28:24,680 --> 00:28:22,769
it wouldn't be possible to build

646
00:28:27,440 --> 00:28:24,690
something of this magnitude without it

647
00:28:30,169 --> 00:28:27,450
without a great vehicle like like the

648
00:28:32,539 --> 00:28:30,179
space shuttles to go assemble it carry

649
00:28:34,940 --> 00:28:32,549
it up and also it's it's not only

650
00:28:36,980 --> 00:28:34,950
carrying cargo both pressurized and

651
00:28:40,549 --> 00:28:36,990
unpressurized cargo it's really all the

652
00:28:42,560 --> 00:28:40,559
people involved so that when a shuttle

653
00:28:44,960 --> 00:28:42,570
flies you get you get the cargo which is

654
00:28:47,299 --> 00:28:44,970
great which is required but you also get

655
00:28:49,610 --> 00:28:47,309
a whole bunch of extra hands to go help

656
00:28:51,350 --> 00:28:49,620
assemble it people who are trained

657
00:28:54,409 --> 00:28:51,360
specifically for those tasks to go

658
00:28:57,560 --> 00:28:54,419
execute them and to handle any

659
00:29:00,379 --> 00:28:57,570
contingencies and very very efficiently

660
00:29:03,230 --> 00:29:00,389
and then once all the planned work is

661
00:29:04,629 --> 00:29:03,240
done even to do I'll say some unplanned

662
00:29:08,539 --> 00:29:04,639
work if you saw on the last flight

663
00:29:10,190 --> 00:29:08,549

sts-133 we finished all the planned

664
00:29:11,509 --> 00:29:10,200
objectives of the mission and yet

665
00:29:13,700 --> 00:29:11,519
there's still lots of work to be done on

666
00:29:15,590 --> 00:29:13,710
the shuttle on the ISS and so we said

667
00:29:19,220 --> 00:29:15,600
hey let's let's stay for an extra couple

668
00:29:22,879 --> 00:29:19,230
days and put those those people too to

669
00:29:24,799 --> 00:29:22,889
work in and helping us organize the ISS

670
00:29:26,810 --> 00:29:24,809
to be more efficient allow more crew

671
00:29:31,580 --> 00:29:26,820
time to be available to support research

672
00:29:32,869 --> 00:29:31,590
so huge benefits we get from the the

673
00:29:35,029 --> 00:29:32,879
space shuttle program and of course

674
00:29:37,519 --> 00:29:35,039
we've been great partners for many many

675
00:29:40,149 --> 00:29:37,529
years so it's going to be difficult as

676
00:29:42,889 --> 00:29:40,159
you know we have commercial capabilities

677
00:29:45,230 --> 00:29:42,899
under contract now to support the

678
00:29:48,680 --> 00:29:45,240
logistics in terms of flying cargo to

679
00:29:50,960 --> 00:29:48,690
ISS those guys are progressing towards

680
00:29:53,840 --> 00:29:50,970
being able to flap in and deliver cargo

681
00:29:58,399 --> 00:29:53,850
to the ISS they're not they're not ready

682
00:29:59,720 --> 00:29:58,409
yet and that's why one sts-135 is really

683
00:30:01,940 --> 00:29:59,730
important to us it's going to put us in

684
00:30:03,499 --> 00:30:01,950
a really good position to allow us some

685
00:30:06,830 --> 00:30:03,509
flexibility and those commercial

686
00:30:09,769 --> 00:30:06,840
providers slip into the right if that's

687
00:30:11,389 --> 00:30:09,779
what what eventually happens that will

688
00:30:13,399 --> 00:30:11,399

help us from a cargo standpoint that

689
00:30:17,419 --> 00:30:13,409
will be a big transition certainly we

690
00:30:19,460 --> 00:30:17,429
need some margin or flexibility to allow

691
00:30:21,649 --> 00:30:19,470
those guys to to fly when they're ready

692
00:30:23,810 --> 00:30:21,659
to fly and again shuttle is going to

693
00:30:26,960 --> 00:30:23,820
help us do that and there really is no

694
00:30:29,890 --> 00:30:26,970
replacement for all the extra hands

695
00:30:33,220 --> 00:30:29,900
that'll that that we get and the

696
00:30:36,310 --> 00:30:33,230
and the highly trained spacewalks that

697
00:30:38,560 --> 00:30:36,320
we've had the benefit of having with

698
00:30:40,450 --> 00:30:38,570
with the space shuttle so we're going to

699
00:30:41,710 --> 00:30:40,460
be a little less efficient on our space

700
00:30:44,260 --> 00:30:41,720
walks and things are going to take a

701
00:30:46,330 --> 00:30:44,270
little longer onboard ISS without shot

702
00:30:48,610 --> 00:30:46,340
without shuttle that has been our plan

703
00:30:51,820 --> 00:30:48,620
for a number of years and so we'll deal

704
00:30:53,920 --> 00:30:51,830
with that but but it's you know it's a

705
00:30:55,630 --> 00:30:53,930
sad day for for us as well shuttle has

706
00:30:58,000 --> 00:30:55,640
been an outstanding part of the

707
00:30:59,110 --> 00:30:58,010
International Space Station and and we

708
00:31:00,910 --> 00:30:59,120
wouldn't have it International Space

709
00:31:04,930 --> 00:31:00,920
Station when that shuttle so it'll be a

710
00:31:06,430 --> 00:31:04,940
big step for us and for John you uh you

711
00:31:08,080 --> 00:31:06,440
mentioned and you've mentioned many

712
00:31:10,480 --> 00:31:08,090
times over the past few years about the

713
00:31:12,910 --> 00:31:10,490

this shuttle team and how unique it is

714
00:31:15,130 --> 00:31:12,920
to be able to pull this off and I know

715
00:31:17,500 --> 00:31:15,140
you've been in government side of the

716
00:31:19,090 --> 00:31:17,510
house for quite some time but is there

717
00:31:22,120 --> 00:31:19,100
anything that you can identify a

718
00:31:25,390 --> 00:31:22,130
specific to being in a government agency

719
00:31:27,910 --> 00:31:25,400
that that precludes this sort of

720
00:31:29,860 --> 00:31:27,920
teamwork in in a private sector realm

721
00:31:32,230 --> 00:31:29,870
such as what NASA hopes to be

722
00:31:35,320 --> 00:31:32,240
transitioning to with you know new

723
00:31:40,690 --> 00:31:35,330
launch providers yeah that's a great

724
00:31:43,270 --> 00:31:40,700
question the you know it's interesting I

725
00:31:45,250 --> 00:31:43,280
read the what I expect is after the

726
00:31:46,600 --> 00:31:45,260
space shuttle program ends that these

727
00:31:50,500 --> 00:31:46,610
people with the passion for spaceflight

728
00:31:52,300 --> 00:31:50,510
will will seed out into into other

729
00:31:53,980 --> 00:31:52,310
companies that are doing the commercial

730
00:31:55,120 --> 00:31:53,990
cargo activities the commercial career

731
00:31:57,160 --> 00:31:55,130
activities and we'll take that

732
00:31:58,750 --> 00:31:57,170
experience and corporate knowledge that

733
00:32:01,960 --> 00:31:58,760
they gained in how to do space flight

734
00:32:03,880 --> 00:32:01,970
operations with the shuttle program and

735
00:32:05,080 --> 00:32:03,890
transition that to the to the commercial

736
00:32:08,980 --> 00:32:05,090
sector so I think that's going to be a

737
00:32:11,140 --> 00:32:08,990
big benefit to the to those companies

738
00:32:13,360 --> 00:32:11,150

that are that are doing that and I you

739
00:32:15,730 --> 00:32:13,370
know just kind of stepping back and

740
00:32:18,040 --> 00:32:15,740
looking at it there's a lot of overhead

741
00:32:20,800 --> 00:32:18,050
associated with with government space

742
00:32:22,810 --> 00:32:20,810
operations that you know you could be

743
00:32:25,390 --> 00:32:22,820
leaner in looking at some of the

744
00:32:27,580 --> 00:32:25,400
Commercial Crew and cargo organizations

745
00:32:30,200 --> 00:32:27,590
they're extremely lean and they'll

746
00:32:32,360 --> 00:32:30,210
probably need to to to

747
00:32:36,500 --> 00:32:32,370
to beef up a little more as they as they

748
00:32:37,850 --> 00:32:36,510
start to do crude operations and they'll

749
00:32:43,630 --> 00:32:37,860
go through that learning curve so I

750
00:32:46,760 --> 00:32:43,640
think there's probably a very very happy

751
00:32:48,200 --> 00:32:46,770
medium between these the the two ways we

752
00:32:50,360 --> 00:32:48,210
do operations where the government is

753
00:32:53,390 --> 00:32:50,370
probably a little more burdensome than

754
00:32:54,590 --> 00:32:53,400
we need to be in in the commercial

755
00:32:55,970 --> 00:32:54,600
companies as they get into crude

756
00:32:57,500 --> 00:32:55,980
operations are going to have to staff up

757
00:32:59,240 --> 00:32:57,510
a little bit more and so that's going to

758
00:33:02,120 --> 00:32:59,250
be a very interesting interesting

759
00:33:03,710 --> 00:33:02,130
transition and I think that a lot of the

760
00:33:06,020 --> 00:33:03,720
the people i work with on a day-to-day

761
00:33:08,240 --> 00:33:06,030
basis are going to be an integral part

762
00:33:10,300 --> 00:33:08,250
of making that happen so i'm looking

763
00:33:12,380 --> 00:33:10,310

forward to seeing that that occur

764
00:33:14,090 --> 00:33:12,390
Christina Backman deutsche welle German

765
00:33:16,820 --> 00:33:14,100
international broadcasting of a question

766
00:33:19,490 --> 00:33:16,830
for both of you have an sas turnout on

767
00:33:21,590 --> 00:33:19,500
board this time so how does the the end

768
00:33:24,590 --> 00:33:21,600
of the shuttle program impact the

769
00:33:28,310 --> 00:33:24,600
cooperation between NASA and Issa thank

770
00:33:30,380 --> 00:33:28,320
you actually I don't think the the end

771
00:33:32,660 --> 00:33:30,390
of the space shuttle program will impact

772
00:33:34,700 --> 00:33:32,670
the cooperation of NASA knee so we've

773
00:33:38,390 --> 00:33:34,710
been great partners in a number of

774
00:33:40,760 --> 00:33:38,400
endeavors prior to the space station and

775
00:33:44,090 --> 00:33:40,770
and certainly we're cooperating very

776
00:33:47,210 --> 00:33:44,100
closely on on the space station we know

777
00:33:49,460 --> 00:33:47,220
that ISA here just I think a week two

778
00:33:52,850 --> 00:33:49,470
ago had a finally had their their

779
00:33:54,890 --> 00:33:52,860
approval to support ISS through 2020 so

780
00:33:56,780 --> 00:33:54,900
I expect that cooperation to go through

781
00:33:58,190 --> 00:33:56,790
2020 onboard ISS I know we're

782
00:34:01,640 --> 00:33:58,200
cooperating on a number of other

783
00:34:04,550 --> 00:34:01,650
endeavors outside of ISS and I really

784
00:34:06,890 --> 00:34:04,560
expect that that will cooperate for for

785
00:34:08,510 --> 00:34:06,900
human exploration beyond beyond those

786
00:34:10,160 --> 00:34:08,520
endeavors so I I think we'll continue

787
00:34:11,570 --> 00:34:10,170
the thing that's going to happen is

788
00:34:13,310 --> 00:34:11,580

we'll have we're going to fly less

789
00:34:15,050 --> 00:34:13,320
humans to space without shuttle we're

790
00:34:17,150 --> 00:34:15,060
going to fly less humans to space so in

791
00:34:18,500 --> 00:34:17,160
the future they're going to be less ISA

792
00:34:20,780 --> 00:34:18,510
astronauts they're going to be less US

793
00:34:22,370 --> 00:34:20,790
astronauts will be less astronauts

794
00:34:24,680 --> 00:34:22,380
people in general who will be flying to

795
00:34:29,660 --> 00:34:24,690
space so I think that'll be the only

796
00:34:31,820 --> 00:34:29,670
change John tree global competition of

797
00:34:34,010 --> 00:34:31,830
going into space what's your.what are

798
00:34:36,890 --> 00:34:34,020
your feelings towards that other

799
00:34:41,720 --> 00:34:36,900
countries starting a race to space so to

800
00:34:43,280 --> 00:34:41,730
say yeah you know other countries have

801
00:34:43,880 --> 00:34:43,290
their own national interests certainly

802
00:34:47,390 --> 00:34:43,890
we respect

803
00:34:49,160 --> 00:34:47,400
that you know there's been discussions I

804
00:34:51,590 --> 00:34:49,170
know an ISA about flying and potentially

805
00:34:55,280 --> 00:34:51,600
flying having a capability to fly humans

806
00:34:58,580 --> 00:34:55,290
into space certainly China's is doing

807
00:35:03,020 --> 00:34:58,590
that you know I would like to see us

808
00:35:05,300 --> 00:35:03,030
cooperate on endeavors to go beyond

809
00:35:06,680 --> 00:35:05,310
low-earth orbit and really the only way

810
00:35:09,830 --> 00:35:06,690
we'll ever be able to afford that I

811
00:35:12,350 --> 00:35:09,840
think globally is to have people build

812
00:35:14,360 --> 00:35:12,360
separate pieces and not everybody build

813
00:35:17,150 --> 00:35:14,370

the same piece that's my personal

814
00:35:19,370 --> 00:35:17,160
opinion but so it's Tuvia to be

815
00:35:21,560 --> 00:35:19,380
discussed in the future certainly if

816
00:35:22,940 --> 00:35:21,570
Issa or Germany would like to do that on

817
00:35:25,850 --> 00:35:22,950
their own we would certainly respect

818
00:35:28,250 --> 00:35:25,860
that and understand that come over here

819
00:35:30,830 --> 00:35:28,260
Marcia Marcia Dunn Associated Press for

820
00:35:32,810 --> 00:35:30,840
Kirk is there still any desire or

821
00:35:35,840 --> 00:35:32,820
movement in the space station team to

822
00:35:37,280 --> 00:35:35,850
try to push 135 to the right so that you

823
00:35:42,590 --> 00:35:37,290
would have a little bit more gap between

824
00:35:45,680 --> 00:35:42,600
the last two flights we're ready to

825
00:35:49,580 --> 00:35:45,690
support sts-135 when when when the

826
00:35:51,440 --> 00:35:49,590
shuttle is ready to go so the the

827
00:35:54,530 --> 00:35:51,450
concern on our part has been having a

828
00:35:56,390 --> 00:35:54,540
enough cargo both you know food and

829
00:35:59,650 --> 00:35:56,400
those kinds of supplies as well as spare

830
00:36:01,430 --> 00:35:59,660
hardware that we need to support

831
00:36:03,590 --> 00:36:01,440
flexibility for these commercial

832
00:36:06,110 --> 00:36:03,600
providers to come up later we'll have

833
00:36:08,270 --> 00:36:06,120
that if it flies in late June and will

834
00:36:10,610 --> 00:36:08,280
be ready to go if it flies later that

835
00:36:12,530 --> 00:36:10,620
would that would be okay as well but but

836
00:36:14,810 --> 00:36:12,540
we'll be ready in in in late June and

837
00:36:17,060 --> 00:36:14,820
and it will be an issue at all so

838
00:36:19,010 --> 00:36:17,070

there's no great push like I said we're

839
00:36:20,660 --> 00:36:19,020
ready to go when when it's the right

840
00:36:22,010 --> 00:36:20,670
time for the shuttle program and what's

841
00:36:24,260 --> 00:36:22,020
the right time for the agency we're

842
00:36:26,420 --> 00:36:24,270
ready to support that I would ahead

843
00:36:27,650 --> 00:36:26,430
Marshall on that the from a shuttle

844
00:36:29,770 --> 00:36:27,660
program steam point we're pushing pretty

845
00:36:32,510 --> 00:36:29,780
hard to make that that end of June date

846
00:36:35,540 --> 00:36:32,520
and that's actually something of a

847
00:36:38,300 --> 00:36:35,550
challenge to us since we've added the

848
00:36:42,050 --> 00:36:38,310
requirement for the tanking test for the

849
00:36:43,820 --> 00:36:42,060
for that external tank and to do some

850
00:36:47,060 --> 00:36:43,830
x-rays on the pad after that that added

851
00:36:49,029 --> 00:36:47,070
a lot of time in the flow and so we've

852
00:36:51,069 --> 00:36:49,039
actually ramped up and

853
00:36:53,709 --> 00:36:51,079
they're contemplating moving Atlantis to

854
00:36:55,779 --> 00:36:53,719
the to the VA be about a week early to

855
00:36:58,089 --> 00:36:55,789
let us get out to the pad so that we can

856
00:36:59,409 --> 00:36:58,099
accomplish all that work so we're we're

857
00:37:01,529 --> 00:36:59,419
actually working some overtime to

858
00:37:03,699 --> 00:37:01,539
support the June twenty-eighth

859
00:37:10,089 --> 00:37:03,709
opportunity and I would expect it after

860
00:37:12,699 --> 00:37:10,099
we after we launch endeavor in mid-april

861
00:37:15,009 --> 00:37:12,709
then we'll look at the at the launch

862
00:37:16,569 --> 00:37:15,019
date and as if we need to add a couple

863
00:37:19,120 --> 00:37:16,579

days to the flow of if we're still good

864
00:37:21,849 --> 00:37:19,130
for the 28th but we're we have a big

865
00:37:23,469 --> 00:37:21,859
push on to make that date you mentioned

866
00:37:25,689 --> 00:37:23,479
the tanking tests x-rays on the pad

867
00:37:28,089 --> 00:37:25,699
what's all that about it's just the same

868
00:37:31,239 --> 00:37:28,099
thing that that we did on on the last

869
00:37:32,999 --> 00:37:31,249
flight we've done the modification to

870
00:37:37,900 --> 00:37:33,009
the external tank to add the additional

871
00:37:39,370 --> 00:37:37,910
brackets will tank it out on the pad go

872
00:37:42,669 --> 00:37:39,380
and do the x-rays just verify that

873
00:37:45,249 --> 00:37:42,679
everything's in good shape and lastly

874
00:37:47,969 --> 00:37:45,259
John you mentioned in response to Bill's

875
00:37:50,829 --> 00:37:47,979
question you were regarding the the

876
00:37:52,329 --> 00:37:50,839
worker tragedy at the pad I know you

877
00:37:53,229 --> 00:37:52,339
said no foul play what was the second

878
00:37:55,120 --> 00:37:53,239
thing you said that there were no

879
00:37:56,469 --> 00:37:55,130
protective devices failed i'm not quite

880
00:38:00,489 --> 00:37:56,479
sure i call what you well sure anytime

881
00:38:03,880 --> 00:38:00,499
you have a workplace issue like that you

882
00:38:05,380 --> 00:38:03,890
have OSHA comes out and and make sure

883
00:38:09,819 --> 00:38:05,390
that your ok before your resume

884
00:38:11,409 --> 00:38:09,829
operations and they I think the the

885
00:38:13,630 --> 00:38:11,419
right terminology is that there was no

886
00:38:18,759 --> 00:38:13,640
fall protection safety issues there were

887
00:38:21,309 --> 00:38:18,769
no tether issues or yeah Jim Oberg with

888
00:38:22,779 --> 00:38:21,319

NBC a first question for Kirk can you

889
00:38:25,209 --> 00:38:22,789
review for us the current status of the

890
00:38:27,370 --> 00:38:25,219
ISS life-support systems and work going

891
00:38:29,049 --> 00:38:27,380
on with them and then comment and in

892
00:38:30,789 --> 00:38:29,059
general on what this is teaching us

893
00:38:32,769 --> 00:38:30,799
about building the next generation life

894
00:38:36,009 --> 00:38:32,779
support systems for missions beyond

895
00:38:37,199 --> 00:38:36,019
low-earth orbit sure that's a long

896
00:38:40,269 --> 00:38:37,209
status but I'll just say in general

897
00:38:41,349 --> 00:38:40,279
everything's working right now we have a

898
00:38:43,989 --> 00:38:41,359
number of issues that we're working

899
00:38:46,630 --> 00:38:43,999
through but but all of the the

900
00:38:47,919 --> 00:38:46,640
life-support systems are operational we

901
00:38:49,959 --> 00:38:47,929
just did a maintenance activity earlier

902
00:38:54,130 --> 00:38:49,969
this week on our water processing

903
00:38:56,309 --> 00:38:54,140
assembly which is the basically the rack

904
00:38:58,479 --> 00:38:56,319
that takes condensate water basically

905
00:39:00,789 --> 00:38:58,489
water that we collect from our air

906
00:39:02,020 --> 00:39:00,799
conditioning system and actually it

907
00:39:04,210 --> 00:39:02,030
takes the

908
00:39:06,850 --> 00:39:04,220
the processed urine from our urine

909
00:39:08,950 --> 00:39:06,860
processor assembly purifies it and makes

910
00:39:13,810 --> 00:39:08,960
it available for four crew consumption

911
00:39:15,790 --> 00:39:13,820
and or used by our oxygen generation

912
00:39:17,770 --> 00:39:15,800
system on the US side so it's all all

913
00:39:19,900 --> 00:39:17,780

functioning we have a number of issues

914
00:39:21,550 --> 00:39:19,910
though things that we learned while

915
00:39:24,760 --> 00:39:21,560
we're up on Space Station one of the

916
00:39:28,290 --> 00:39:24,770
ones you know the pH becoming more

917
00:39:31,660 --> 00:39:28,300
acidic in our oxygen generation system

918
00:39:34,960 --> 00:39:31,670
the the growth in the way it grows of

919
00:39:37,420 --> 00:39:34,970
biofilms and some of our racks water

920
00:39:40,600 --> 00:39:37,430
processing racks all those kinds of

921
00:39:42,670 --> 00:39:40,610
things we're learning as we go there's a

922
00:39:46,810 --> 00:39:42,680
significant supply chain that's required

923
00:39:52,810 --> 00:39:46,820
on ISS to support our urine processor

924
00:39:54,520 --> 00:39:52,820
and other region racks and those kinds

925
00:39:58,330 --> 00:39:54,530
of things we won't be able to live with

926
00:40:00,820 --> 00:39:58,340
for a flight beyond low-earth orbit we

927
00:40:02,320 --> 00:40:00,830
won't have a long resupply chain and we

928
00:40:04,390 --> 00:40:02,330
won't have the ability to go fly up

929
00:40:05,440 --> 00:40:04,400
something new because we've discovered

930
00:40:06,790 --> 00:40:05,450
something about the way the system

931
00:40:08,910 --> 00:40:06,800
operates and that's what we're really

932
00:40:11,290 --> 00:40:08,920
learning on ISS so we are actively

933
00:40:13,930 --> 00:40:11,300
modifying our systems as we learn more

934
00:40:15,700 --> 00:40:13,940
not only to deal with issues that come

935
00:40:18,910 --> 00:40:15,710
up that you learn when a system operates

936
00:40:21,760 --> 00:40:18,920
four years on board a space station as

937
00:40:24,670 --> 00:40:21,770
it would perhaps on a vehicle going to

938
00:40:27,310 --> 00:40:24,680

Mars but also finding out new and clever

939
00:40:29,380 --> 00:40:27,320
ways to reduce the the supply chain is

940
00:40:31,060 --> 00:40:29,390
required what figuring out ways to do

941
00:40:33,970 --> 00:40:31,070
all that on orbit as opposed to having

942
00:40:36,520 --> 00:40:33,980
to fly new filters or new new equipment

943
00:40:38,860 --> 00:40:36,530
and that's invaluable I think that's

944
00:40:41,110 --> 00:40:38,870
really something that the space station

945
00:40:42,550 --> 00:40:41,120
offers a great opportunity for both in

946
00:40:45,610 --> 00:40:42,560
terms of eclipse but really in terms of

947
00:40:48,520 --> 00:40:45,620
all space systems and required to keep a

948
00:40:51,060 --> 00:40:48,530
spacecraft and and humans alive for a

949
00:40:55,180 --> 00:40:51,070
long time out in out in that environment

950
00:40:58,180 --> 00:40:55,190
Thank You excellent another I'd ask a

951
00:40:59,980 --> 00:40:58,190
what if question for John nu because we

952
00:41:02,380 --> 00:40:59,990
live in a world of uncertainty and if

953
00:41:04,780 --> 00:41:02,390
the time came and if the Congress got

954
00:41:07,660 --> 00:41:04,790
its mind to it that all of a sudden 135

955
00:41:09,880 --> 00:41:07,670
was not there you'd be facing some

956
00:41:12,730 --> 00:41:09,890
significant issues in terms of deciding

957
00:41:15,370 --> 00:41:12,740
what to do with 134 including major

958
00:41:18,160 --> 00:41:15,380
changes or affect going to 135

959
00:41:19,450 --> 00:41:18,170
glad you if you had a choice as to which

960
00:41:20,740 --> 00:41:19,460
of the two payloads you'd have to law

961
00:41:23,559 --> 00:41:20,750
which of the two children you have to

962
00:41:27,009 --> 00:41:23,569
have to kill in order if you only had

963
00:41:29,019 --> 00:41:27,019

one one launch I'll give you my

964
00:41:31,539 --> 00:41:29,029
perspective and I think kirkwood agrees

965
00:41:36,609 --> 00:41:31,549
that we would not make any significant

966
00:41:37,839 --> 00:41:36,619
changes to 21 34 its its cargo has been

967
00:41:40,680 --> 00:41:37,849
thought out very well matter of fact it

968
00:41:44,769 --> 00:41:40,690
was going to be the next to last mission

969
00:41:48,329 --> 00:41:44,779
in 133 was going to be the last mission

970
00:41:53,680 --> 00:41:48,339
for a while you know it's been said many

971
00:41:56,470 --> 00:41:53,690
times what 135 provides you is margin to

972
00:42:00,279 --> 00:41:56,480
keep six crew on ISS to have them doing

973
00:42:02,400 --> 00:42:00,289
useful work we fully expect that the

974
00:42:06,759 --> 00:42:02,410
commercial cargo companies are going to

975
00:42:08,980 --> 00:42:06,769
to be able to to fill some of the

976
00:42:12,400 --> 00:42:08,990
logistics supply requirements of the ISS

977
00:42:15,640 --> 00:42:12,410
that the shuttle currently does but you

978
00:42:19,660 --> 00:42:15,650
know it's flying 135 almost gives you an

979
00:42:21,249 --> 00:42:19,670
extra year of logistics that that you

980
00:42:23,829 --> 00:42:21,259
can use to keep six crew up there until

981
00:42:25,930 --> 00:42:23,839
the commercial cargo guys are able to

982
00:42:28,390 --> 00:42:25,940
stand up their operations on a regular

983
00:42:30,249 --> 00:42:28,400
basis so that's that's what you're

984
00:42:32,140 --> 00:42:30,259
you're providing a 135 so I don't know

985
00:42:34,089 --> 00:42:32,150
Kirk if you have any changes to

986
00:42:36,460 --> 00:42:34,099
absolutely agree John said it right

987
00:42:40,089 --> 00:42:36,470
we've organized the flights the sequence

988
00:42:43,240 --> 00:42:40,099

in in our priority and and so we would

989
00:42:45,880 --> 00:42:43,250
we just stopped we wouldn't be any

990
00:42:47,440 --> 00:42:45,890
significant changes there might be a one

991
00:42:49,390 --> 00:42:47,450
or two things we'd want to swap out on

992
00:42:51,880 --> 00:42:49,400
the mid deck and I don't even know what

993
00:42:54,400 --> 00:42:51,890
those are we want to talk about that

994
00:42:57,009 --> 00:42:54,410
certainly and ask our workforce about

995
00:43:01,420 --> 00:42:57,019
that but I would expect very very few

996
00:43:03,759 --> 00:43:01,430
changes but but we'd have significantly

997
00:43:07,180 --> 00:43:03,769
less margin on board ISS we would be

998
00:43:09,490 --> 00:43:07,190
really requiring these commercial cargo

999
00:43:13,049 --> 00:43:09,500
providers to step up and meet their

1000
00:43:15,579 --> 00:43:13,059
dates and and and if we didn't we'd be

1001
00:43:19,300 --> 00:43:15,589
reducing crew size and taking risk with

1002
00:43:22,120 --> 00:43:19,310
with a multi-billion dollar asset so

1003
00:43:23,590 --> 00:43:22,130
sleep over this I lose sleep over a lot

1004
00:43:28,990 --> 00:43:23,600
of things but this is not one of them

1005
00:43:30,790 --> 00:43:29,000
know I clara moskowitz with space calm

1006
00:43:33,100 --> 00:43:30,800
and a question for both of you if you

1007
00:43:34,450 --> 00:43:33,110
wouldn't mind you mentioned we're coming

1008
00:43:36,220 --> 00:43:34,460
up on the anniversary of both the

1009
00:43:38,230 --> 00:43:36,230
shuttle program and the 50th anniversary

1010
00:43:40,210 --> 00:43:38,240
of human space flight and I was just

1011
00:43:42,550 --> 00:43:40,220
hoping you could both comment on how far

1012
00:43:44,410 --> 00:43:42,560
we've come in the 50 years since humans

1013
00:43:48,310 --> 00:43:44,420

have been flying in space and how far we

1014
00:43:51,040 --> 00:43:48,320
might get in the next 50 years but I was

1015
00:43:55,360 --> 00:43:51,050
talking to to a co-worker yesterday you

1016
00:43:59,650 --> 00:43:55,370
know and if you just look at sts-134 it

1017
00:44:01,000 --> 00:43:59,660
is an extremely complex mission it's a

1018
00:44:05,110 --> 00:44:01,010
long period of time up docked to the

1019
00:44:08,740 --> 00:44:05,120
station for EV a's a tremendous amount

1020
00:44:14,230 --> 00:44:08,750
of activity internal to the ISS we're

1021
00:44:18,040 --> 00:44:14,240
going to put a world-class experiment on

1022
00:44:21,250 --> 00:44:18,050
the ISS and get it all hooked up even

1023
00:44:23,440 --> 00:44:21,260
when we depart the space station we're

1024
00:44:27,070 --> 00:44:23,450
going to to back off and then do a

1025
00:44:29,920 --> 00:44:27,080
rendezvous with all the sensor systems

1026
00:44:31,660 --> 00:44:29,930
that we would use on an Orion capsule to

1027
00:44:33,100 --> 00:44:31,670
replicate that make sure their sensor

1028
00:44:36,070 --> 00:44:33,110
system so we'll use the shuttle as a

1029
00:44:42,210 --> 00:44:36,080
testbed for that it's a tremendously

1030
00:44:44,170 --> 00:44:42,220
complex mission and when I look at our

1031
00:44:46,900 --> 00:44:44,180
ability to pull these missions off

1032
00:44:48,850 --> 00:44:46,910
flawlessly our ability to to assemble

1033
00:44:53,920 --> 00:44:48,860
large structures like the the station

1034
00:44:55,870 --> 00:44:53,930
with really no significant issues to get

1035
00:44:57,820 --> 00:44:55,880
over the the tremendous number of vvas

1036
00:45:00,210 --> 00:44:57,830
that was required to do the station I

1037
00:45:05,850 --> 00:45:00,220
think that the missions that we are

1038
00:45:09,490 --> 00:45:05,860

executing now in complexity are the most

1039
00:45:11,470 --> 00:45:09,500
difficult missions that not just NASA

1040
00:45:13,540 --> 00:45:11,480
but any nation has ever flown in space

1041
00:45:14,950 --> 00:45:13,550
and I would include Apollo in that

1042
00:45:17,590 --> 00:45:14,960
discussion I think the missions we do

1043
00:45:18,940 --> 00:45:17,600
right now are more complicated than what

1044
00:45:21,520 --> 00:45:18,950
we were doing back even when we were

1045
00:45:25,930 --> 00:45:21,530
doing the moon landings and that is just

1046
00:45:27,640 --> 00:45:25,940
the it's the slow progression of you'll

1047
00:45:29,200 --> 00:45:27,650
learn how to operate in space you'll

1048
00:45:30,820 --> 00:45:29,210
learn how to do things you learn how to

1049
00:45:32,410 --> 00:45:30,830
do spacewalks you you'll learn how

1050
00:45:36,040 --> 00:45:32,420
systems work

1051
00:45:39,430 --> 00:45:36,050
we brought discovery back earlier this

1052
00:45:41,200 --> 00:45:39,440
month and it was the cleanest vehicle

1053
00:45:43,180 --> 00:45:41,210
not just from a thermal protection

1054
00:45:46,240 --> 00:45:43,190
system standpoint but from a from a

1055
00:45:48,040 --> 00:45:46,250
vehicle system standpoint from an

1056
00:45:50,920 --> 00:45:48,050
operation standpoint of what we did on

1057
00:45:54,160 --> 00:45:50,930
orbit it was it was absolutely clean and

1058
00:45:55,960 --> 00:45:54,170
there was zero wrong with it that that

1059
00:45:57,610 --> 00:45:55,970
vehicle and that's exactly the point we

1060
00:45:58,720 --> 00:45:57,620
want to be too as were as we're ending

1061
00:46:01,870 --> 00:45:58,730
the program we want to have the cleanest

1062
00:46:03,880 --> 00:46:01,880
missions we've ever flown and it is just

1063
00:46:05,680 --> 00:46:03,890

it just you just have to do it right

1064
00:46:07,810 --> 00:46:05,690
it's just it takes time it takes

1065
00:46:10,240 --> 00:46:07,820
repeated missions you'll learn from that

1066
00:46:13,390 --> 00:46:10,250
experience and you move on and I think

1067
00:46:16,870 --> 00:46:13,400
we're poised right now to take this

1068
00:46:18,490 --> 00:46:16,880
experience and enroll it into whatever

1069
00:46:21,340 --> 00:46:18,500
the next program is and it may not be a

1070
00:46:23,200 --> 00:46:21,350
NASA program it may be a Commercial Crew

1071
00:46:27,970 --> 00:46:23,210
program may be a commercial cargo

1072
00:46:30,210 --> 00:46:27,980
program I think that that again shutting

1073
00:46:32,980 --> 00:46:30,220
the shuttle down while it is painful

1074
00:46:36,400 --> 00:46:32,990
we're going out exactly like we wanted

1075
00:46:37,960 --> 00:46:36,410
to on a very high note successfully

1076
00:46:40,720 --> 00:46:37,970
performing the most complex missions

1077
00:46:41,920 --> 00:46:40,730
leaving ISS in great shape and then

1078
00:46:44,590 --> 00:46:41,930
we're going to take all this experience

1079
00:46:46,000 --> 00:46:44,600
out and go do new things with it and as

1080
00:46:47,500 --> 00:46:46,010
you know as Jim said there's a lot of

1081
00:46:49,000 --> 00:46:47,510
uncertainty out there right now there

1082
00:46:51,490 --> 00:46:49,010
won't always be uncertainty will have

1083
00:46:53,740 --> 00:46:51,500
very clear direction and I expect that

1084
00:46:56,080 --> 00:46:53,750
we will free up this this magnificent

1085
00:46:58,270 --> 00:46:56,090
team to to go and execute those those

1086
00:47:01,690 --> 00:46:58,280
new programs and projects and be very

1087
00:47:03,130 --> 00:47:01,700
successful at it so I you know you got

1088
00:47:05,740 --> 00:47:03,140

to kind of take a take a look at the

1089
00:47:07,870 --> 00:47:05,750
long the long view here's is that we've

1090
00:47:09,850 --> 00:47:07,880
learned a lot we're at a great point

1091
00:47:11,350 --> 00:47:09,860
we're going to stop doing what we're

1092
00:47:13,420 --> 00:47:11,360
doing right now from a shuttle

1093
00:47:15,010 --> 00:47:13,430
standpoint and and we're going to Reeve

1094
00:47:18,280 --> 00:47:15,020
Ector that team into into other

1095
00:47:19,870 --> 00:47:18,290
activities and I just I couldn't be more

1096
00:47:23,110 --> 00:47:19,880
confident in this team's ability to go

1097
00:47:26,440 --> 00:47:23,120
and execute amazing things yeah yeah it

1098
00:47:29,500 --> 00:47:26,450
was 50 years ago youryour Garin got in a

1099
00:47:31,900 --> 00:47:29,510
rocket and to go into space and and

1100
00:47:33,610 --> 00:47:31,910
didn't know if he would survive I didn't

1101
00:47:37,210 --> 00:47:33,620
know if humans could survive we had

1102
00:47:39,910 --> 00:47:37,220
flown some other other mammals but but

1103
00:47:43,540 --> 00:47:39,920
no humans and then you look at where we

1104
00:47:45,070 --> 00:47:43,550
are today so today we fly fly up to

1105
00:47:45,970 --> 00:47:45,080
space there's certainly a risk involved

1106
00:47:48,160 --> 00:47:45,980
it's very complicated

1107
00:47:49,480 --> 00:47:48,170
business but almost 300 people have

1108
00:47:55,180 --> 00:47:49,490
flown up to the International Space

1109
00:47:56,380 --> 00:47:55,190
Station so you know the world of

1110
00:47:58,000 --> 00:47:56,390
spaceflight has really changed

1111
00:48:01,120 --> 00:47:58,010
dramatically we have people who've lived

1112
00:48:04,060 --> 00:48:01,130
on board ISS for 10 years so kids who

1113
00:48:06,940 --> 00:48:04,070

were who were getting almost finished

1114
00:48:08,470 --> 00:48:06,950
with elementary school have never known

1115
00:48:11,200 --> 00:48:08,480
a time in their life when humans weren't

1116
00:48:14,260 --> 00:48:11,210
living in space so the worlds of

1117
00:48:17,920 --> 00:48:14,270
significantly different place 50 years

1118
00:48:19,210 --> 00:48:17,930
ago you didn't turn on the TV and look

1119
00:48:21,400 --> 00:48:19,220
at weather satellites and figure out

1120
00:48:25,990 --> 00:48:21,410
when a hurricane is going to hit Florida

1121
00:48:29,020 --> 00:48:26,000
or North Carolina or or Texas and today

1122
00:48:30,370 --> 00:48:29,030
you you get on your laptop sitting in a

1123
00:48:32,349 --> 00:48:30,380
press conference and look at what the

1124
00:48:35,349 --> 00:48:32,359
weather's going to be like anywhere in

1125
00:48:39,040 --> 00:48:35,359
the world and so tremendous changes

1126
00:48:41,290 --> 00:48:39,050
since greg aaron has flown in the space

1127
00:48:43,950 --> 00:48:41,300
shuttle really if you look at how far

1128
00:48:46,210 --> 00:48:43,960
humans have progressed in spaceflight

1129
00:48:47,500 --> 00:48:46,220
the student the shuttle was probably the

1130
00:48:50,800 --> 00:48:47,510
single biggest thing that's ever

1131
00:48:52,990 --> 00:48:50,810
occurred in terms of bringing us forward

1132
00:48:56,650 --> 00:48:53,000
and so the shuttle is a huge part of

1133
00:48:59,140 --> 00:48:56,660
that and and continues to be so I think

1134
00:49:02,230 --> 00:48:59,150
both events it's great that they're on

1135
00:49:05,220 --> 00:49:02,240
the same day and very very momentous

1136
00:49:08,410 --> 00:49:05,230
occasions in in the progression of

1137
00:49:11,770 --> 00:49:08,420
humankind so looking forward to

1138
00:49:15,580 --> 00:49:11,780

celebrating those events and and in

1139
00:49:17,230 --> 00:49:15,590
looking back not only as as the Russians

1140
00:49:19,630 --> 00:49:17,240
and the US but really is a world

1141
00:49:22,570 --> 00:49:19,640
community on on those those both

1142
00:49:24,250 --> 00:49:22,580
vehicles and people and and how they've

1143
00:49:25,870 --> 00:49:24,260
meant such things not only to our

1144
00:49:31,150 --> 00:49:25,880
respective countries but really to the

1145
00:49:34,690 --> 00:49:31,160
world hi I'm Mike Cronin from the daily

1146
00:49:37,840 --> 00:49:34,700
and this is a question for mr. chairman

1147
00:49:40,599 --> 00:49:37,850
I'm interested in how the transition is

1148
00:49:43,270 --> 00:49:40,609
going to take place now that the shuttle

1149
00:49:47,050 --> 00:49:43,280
won't be going to the ISS so the

1150
00:49:48,640 --> 00:49:47,060
public's perspective will change it

1151
00:49:50,530 --> 00:49:48,650
won't be the news of the shuttle

1152
00:49:53,349 --> 00:49:50,540
launching or landing instead it will be

1153
00:49:56,530 --> 00:49:53,359
whatever science perhaps comes out of

1154
00:49:58,460 --> 00:49:56,540
the ISS and what our asses plan

1155
00:50:02,000 --> 00:49:58,470
specifically to

1156
00:50:04,280 --> 00:50:02,010
better publicize that science and do you

1157
00:50:07,849 --> 00:50:04,290
have some experiments that you could

1158
00:50:09,530 --> 00:50:07,859
specify now that would give the public

1159
00:50:11,570 --> 00:50:09,540
some examples whether there are human

1160
00:50:14,839 --> 00:50:11,580
effects our space effects on humans

1161
00:50:17,060 --> 00:50:14,849
living in space or materials that the

1162
00:50:18,500 --> 00:50:17,070
person on the street could say okay that

1163
00:50:20,330 --> 00:50:18,510

makes sense that we're going to have the

1164
00:50:23,990 --> 00:50:20,340
space station continue for the next

1165
00:50:26,630 --> 00:50:24,000
eight years well let's see certainly

1166
00:50:29,420 --> 00:50:26,640
when you when you launch and land people

1167
00:50:31,400 --> 00:50:29,430
it's very exciting right to this there's

1168
00:50:32,990 --> 00:50:31,410
smoke and fire and lots of noise and

1169
00:50:33,980 --> 00:50:33,000
it's it's really an inspirational thing

1170
00:50:36,650 --> 00:50:33,990
I don't know if you ever seen the

1171
00:50:38,540 --> 00:50:36,660
shuttle flight for instance but but it's

1172
00:50:42,230 --> 00:50:38,550
not only a physical thing it's really an

1173
00:50:44,810 --> 00:50:42,240
emotional thing and so it's a tremendous

1174
00:50:48,410 --> 00:50:44,820
exciting thing and that's why it shows

1175
00:50:50,510 --> 00:50:48,420
up on on the on the news when we when we

1176
00:50:52,609 --> 00:50:50,520
launch when you're on board the space

1177
00:50:55,180 --> 00:50:52,619
station every day you're working on

1178
00:50:57,410 --> 00:50:55,190
experiments which are very important to

1179
00:50:59,510 --> 00:50:57,420
certainly to the research community but

1180
00:51:02,870 --> 00:50:59,520
but but really could be very important

1181
00:51:05,390 --> 00:51:02,880
to to a large population but the

1182
00:51:07,370 --> 00:51:05,400
experiment itself takes time and in fact

1183
00:51:09,050 --> 00:51:07,380
a lot of times it's it's a year or two

1184
00:51:10,640 --> 00:51:09,060
after you complete the experiment before

1185
00:51:14,810 --> 00:51:10,650
the results actually get published and

1186
00:51:16,370 --> 00:51:14,820
in some cases they're there a science

1187
00:51:18,530 --> 00:51:16,380
scientific things that take another

1188
00:51:20,630 --> 00:51:18,540

period of time before they're applied so

1189
00:51:22,040 --> 00:51:20,640
there there's a long lag between you do

1190
00:51:25,490 --> 00:51:22,050
the experiment and when you actually see

1191
00:51:27,410 --> 00:51:25,500
hey this affected my life and so yeah

1192
00:51:29,089 --> 00:51:27,420
it's not it's not a hey tonight on the

1193
00:51:31,550 --> 00:51:29,099
news we did this experiment this it's

1194
00:51:33,650 --> 00:51:31,560
not an immediate phenomenon so that's

1195
00:51:35,540 --> 00:51:33,660
one of our challenges there's lots of

1196
00:51:37,339 --> 00:51:35,550
things that go on onboard ISS that are

1197
00:51:39,380 --> 00:51:37,349
really exciting and we try to publish

1198
00:51:41,780 --> 00:51:39,390
those publicize those we're looking at a

1199
00:51:45,070 --> 00:51:41,790
number of avenues both we go through we

1200
00:51:50,030 --> 00:51:45,080
have the NASA channels where we're using

1201
00:51:51,380 --> 00:51:50,040
more social media today you get tweets I

1202
00:51:53,150 --> 00:51:51,390
don't know if you do but you get tweets

1203
00:51:55,250 --> 00:51:53,160
from the the crew that's living on board

1204
00:51:57,440 --> 00:51:55,260
ISS that's that's a really interesting

1205
00:52:01,550 --> 00:51:57,450
way to stay connected to what's going on

1206
00:52:03,380 --> 00:52:01,560
we have Twitter accounts where we

1207
00:52:05,570 --> 00:52:03,390
publicize the research that's going on

1208
00:52:07,579 --> 00:52:05,580
board ISS so every day two or three

1209
00:52:09,380 --> 00:52:07,589
times you get you get a message about

1210
00:52:13,470 --> 00:52:09,390
what's going on ISS so we're trying to

1211
00:52:15,580 --> 00:52:13,480
connect with people the way they rely

1212
00:52:18,910 --> 00:52:15,590
22 the world today so we're going

1213
00:52:21,490 --> 00:52:18,920

through through written media we're

1214
00:52:23,140 --> 00:52:21,500
going through TV we're going through the

1215
00:52:24,460 --> 00:52:23,150
web we're going through YouTube we're

1216
00:52:26,470 --> 00:52:24,470
through Twitter we're going through all

1217
00:52:27,940 --> 00:52:26,480
these tines types of methods and we're

1218
00:52:31,210 --> 00:52:27,950
going to continue to evolve to try to

1219
00:52:32,980 --> 00:52:31,220
get that message out but the bottom line

1220
00:52:34,510 --> 00:52:32,990
is it's never going to be as exciting is

1221
00:52:36,070 --> 00:52:34,520
when you see when you see a shuttle

1222
00:52:37,930 --> 00:52:36,080
launch or you hear the sonic booms when

1223
00:52:40,870 --> 00:52:37,940
a when a shuttle is flying over Orlando

1224
00:52:42,610 --> 00:52:40,880
on its way into into KSC so we'll look

1225
00:52:44,920 --> 00:52:42,620
at other ways to try to try to connect

1226
00:52:48,220 --> 00:52:44,930
when we have research results we're

1227
00:52:50,380 --> 00:52:48,230
doing our best to to announce those and

1228
00:52:53,140 --> 00:52:50,390
and publish those not only in the

1229
00:52:55,420 --> 00:52:53,150
scientific media but but also in the

1230
00:52:57,190 --> 00:52:55,430
global media ton for folks to understand

1231
00:52:58,780 --> 00:52:57,200
exactly what that might mean without

1232
00:53:00,850 --> 00:52:58,790
necessarily understanding all the

1233
00:53:02,830 --> 00:53:00,860
technical details of that research and

1234
00:53:05,410 --> 00:53:02,840
if you have ideas by the way we're

1235
00:53:06,790 --> 00:53:05,420
looking for for great ideas so we're

1236
00:53:09,550 --> 00:53:06,800
doing our best but we certainly need

1237
00:53:13,540 --> 00:53:09,560
need need help so if you have ideas we'd

1238
00:53:15,520 --> 00:53:13,550

certainly be an interesting well i think

1239
00:53:17,350 --> 00:53:15,530
that actually if you did have some

1240
00:53:19,120 --> 00:53:17,360
scientific results it could be even more

1241
00:53:20,830 --> 00:53:19,130
exciting than a shuttle blasting off or

1242
00:53:24,220 --> 00:53:20,840
landing that's been going on for 30

1243
00:53:27,130 --> 00:53:24,230
years so if you have a scientific

1244
00:53:30,700 --> 00:53:27,140
experiment that shows the effects on the

1245
00:53:34,720 --> 00:53:30,710
blood or the thinking or the brain of a

1246
00:53:37,000 --> 00:53:34,730
human in space or a virus or something

1247
00:53:39,490 --> 00:53:37,010
like that that the general public could

1248
00:53:41,020 --> 00:53:39,500
learn about that would be astonishing so

1249
00:53:43,480 --> 00:53:41,030
that's what I'm looking for do you have

1250
00:53:45,550 --> 00:53:43,490
anything going on right now or that's

1251
00:53:47,590 --> 00:53:45,560
planned in the next few years this is

1252
00:53:49,390 --> 00:53:47,600
what we're going to look at and we want

1253
00:53:51,850 --> 00:53:49,400
to let all of you know about it because

1254
00:53:55,540 --> 00:53:51,860
this is what we are examining and this

1255
00:53:57,160 --> 00:53:55,550
is what could occur as a result sure I

1256
00:53:58,510 --> 00:53:57,170
understand your question we're looking

1257
00:54:00,730 --> 00:53:58,520
at all kinds of things a lot of the

1258
00:54:03,550 --> 00:54:00,740
research that we're doing our research

1259
00:54:04,780 --> 00:54:03,560
on humans as relating to living in a

1260
00:54:08,050 --> 00:54:04,790
zero gravity environment that would

1261
00:54:11,680 --> 00:54:08,060
support long-term humans presence in

1262
00:54:15,100 --> 00:54:11,690
space so traveling to Mars things like

1263
00:54:16,930 --> 00:54:15,110

that so we're doing a lot of research on

1264
00:54:18,820 --> 00:54:16,940
that we're doing research we've had some

1265
00:54:20,410 --> 00:54:18,830
research on micro encapsulation which

1266
00:54:22,930 --> 00:54:20,420
might be really important to delivery of

1267
00:54:26,089 --> 00:54:22,940
drugs that would be targeted for

1268
00:54:29,239 --> 00:54:26,099
specific areas of the body or maybe

1269
00:54:31,370 --> 00:54:29,249
tumors that's that's been done and and

1270
00:54:34,160 --> 00:54:31,380
continues to be researched that has

1271
00:54:36,259 --> 00:54:34,170
promised to do significant things but

1272
00:54:39,170 --> 00:54:36,269
there's no it's not a hey this is a cure

1273
00:54:41,779 --> 00:54:39,180
for this disease but but very promising

1274
00:54:44,380 --> 00:54:41,789
results we've done experiments onboard

1275
00:54:47,089 --> 00:54:44,390
the shuttle and ISS that show that

1276
00:54:48,950 --> 00:54:47,099
viruses and bacteria can be more

1277
00:54:51,410 --> 00:54:48,960
virulent in a in a zero-g environment

1278
00:54:53,930 --> 00:54:51,420
which is leading to how you how you

1279
00:54:55,519 --> 00:54:53,940
might vaccinate against those things and

1280
00:54:57,349 --> 00:54:55,529
there's been a number of those one of

1281
00:54:59,089 --> 00:54:57,359
them has do with Salmonella and they're

1282
00:55:01,789 --> 00:54:59,099
also looking at some other bacteria that

1283
00:55:04,460 --> 00:55:01,799
disease-causing bacteria and and how you

1284
00:55:07,039 --> 00:55:04,470
might create a vaccine as a result of

1285
00:55:10,219 --> 00:55:07,049
what you learned from how these bacteria

1286
00:55:13,069 --> 00:55:10,229
and viruses behave in space a dr. ting

1287
00:55:14,599 --> 00:55:13,079
and his his group is launching a ms

1288
00:55:16,609 --> 00:55:14,609

which has the potential to look at

1289
00:55:19,219 --> 00:55:16,619
basically understanding of our universe

1290
00:55:23,739 --> 00:55:19,229
and how it was how it was created so a

1291
00:55:27,859 --> 00:55:23,749
huge potential for for results at least

1292
00:55:29,120 --> 00:55:27,869
understanding where we came from and so

1293
00:55:31,519 --> 00:55:29,130
that I think there are a number of

1294
00:55:35,299 --> 00:55:31,529
things out there I can't give you hey we

1295
00:55:36,890 --> 00:55:35,309
solved this unsolved problem and it's

1296
00:55:38,269 --> 00:55:36,900
going to affect every person's life at

1297
00:55:40,999 --> 00:55:38,279
this point in time we're we're

1298
00:55:42,559 --> 00:55:41,009
definitely optimistic that we might get

1299
00:55:46,099 --> 00:55:42,569
something like that but in the meantime

1300
00:55:48,349 --> 00:55:46,109
we're making significant advances in a

1301
00:55:52,459 --> 00:55:48,359
quite a quite a broad range of areas

1302
00:55:54,170 --> 00:55:52,469
we're doing a binary a capillary flow

1303
00:55:57,289 --> 00:55:54,180
experiment that looked at bubbles and

1304
00:55:59,269 --> 00:55:57,299
how they affect the flow of liquids

1305
00:56:01,459 --> 00:55:59,279
which has effects not only on human

1306
00:56:03,769 --> 00:56:01,469
beings but also maybe in terms of

1307
00:56:07,880 --> 00:56:03,779
decompresses compression sickness but

1308
00:56:10,009 --> 00:56:07,890
also has flows importance for the future

1309
00:56:12,620 --> 00:56:10,019
space vehicles not only human but

1310
00:56:16,459 --> 00:56:12,630
unmanned vehicles and how propellant or

1311
00:56:18,170 --> 00:56:16,469
liquids might might behave better in

1312
00:56:20,690 --> 00:56:18,180
that environment so you improve engine

1313
00:56:21,979 --> 00:56:20,700

performance improve cooling all those

1314
00:56:23,779 --> 00:56:21,989
kinds of things that those are

1315
00:56:26,900 --> 00:56:23,789
experiments that are going on board ISS

1316
00:56:29,870 --> 00:56:26,910
as we speak so quiet quite a number of

1317
00:56:33,799 --> 00:56:29,880
things that are going on I just not a

1318
00:56:36,289 --> 00:56:33,809
great earth-shattering finding just yet

1319
00:56:38,540 --> 00:56:36,299
and and we're looking forward to to that

1320
00:56:40,430 --> 00:56:38,550
day coming

1321
00:56:42,200 --> 00:56:40,440
okay let's go down to Florida to the

1322
00:56:47,510 --> 00:56:42,210
Kennedy Space Center for a couple of

1323
00:56:50,690 --> 00:56:47,520
questions this is todd halvorson of

1324
00:56:52,940 --> 00:56:50,700
florida today with a with a couple if i

1325
00:56:56,450 --> 00:56:52,950
could first for Jon I'm wondering if you

1326
00:57:02,240 --> 00:56:56,460
could remind us of the pedigree of this

1327
00:57:04,100 --> 00:57:02,250
external tank on sts-134 I seem to

1328
00:57:06,980 --> 00:57:04,110
remember that this one might have been

1329
00:57:09,260 --> 00:57:06,990
damaged in Katrina and if we you could

1330
00:57:13,550 --> 00:57:09,270
just remind us of the pedigree and tell

1331
00:57:16,730 --> 00:57:13,560
us why you think it's safe to fly yes

1332
00:57:23,510 --> 00:57:16,740
this this external tank external tank 1

1333
00:57:26,660 --> 00:57:23,520
22 was in a was in one of our production

1334
00:57:30,650 --> 00:57:26,670
cells down at it Massoud when Hurricane

1335
00:57:32,690 --> 00:57:30,660
Katrina hit and several small chunks of

1336
00:57:36,460 --> 00:57:32,700
concrete were dislodged from the roof

1337
00:57:41,090 --> 00:57:36,470
and glanced off the off the tank

1338
00:57:43,400 --> 00:57:41,100

damaging the foam we kind of put that

1339
00:57:45,860 --> 00:57:43,410
tank to the side for a while while we

1340
00:57:47,870 --> 00:57:45,870
were doing normal processing I asked the

1341
00:57:49,820 --> 00:57:47,880
team several years ago to go back and

1342
00:57:52,010 --> 00:57:49,830
look at et 122 and see if it was a

1343
00:57:54,920 --> 00:57:52,020
viable flight tank all the foam in that

1344
00:57:57,110 --> 00:57:54,930
area was dissected the LOX tank they did

1345
00:58:00,410 --> 00:57:57,120
eddy current they did all kinds of

1346
00:58:02,500 --> 00:58:00,420
non-destructive analysis on it as a very

1347
00:58:05,450 --> 00:58:02,510
good tank so they replaced that foam

1348
00:58:07,610 --> 00:58:05,460
they went to the to the inner tank area

1349
00:58:09,290 --> 00:58:07,620
there was one stringer that had been

1350
00:58:12,710 --> 00:58:09,300
nicked they took that stringer off put

1351
00:58:15,830 --> 00:58:12,720
anyone on reef on that area they did

1352
00:58:18,710 --> 00:58:15,840
testing because this the the TPS or the

1353
00:58:21,290 --> 00:58:18,720
foam that's on et 122 is almost 10 years

1354
00:58:23,870 --> 00:58:21,300
old so they did pull tests all over the

1355
00:58:25,790 --> 00:58:23,880
tank and did assessments to make sure

1356
00:58:27,890 --> 00:58:25,800
that it's a it's a good tank and safe to

1357
00:58:31,190 --> 00:58:27,900
fly then they did all of the return to

1358
00:58:35,750 --> 00:58:31,200
flight modifications that we we had done

1359
00:58:37,940 --> 00:58:35,760
on tanks after Columbia to 122 they did

1360
00:58:40,520 --> 00:58:37,950
things like taking the the flange apart

1361
00:58:42,200 --> 00:58:40,530
reversing bolts injecting foam cutting

1362
00:58:44,870 --> 00:58:42,210
off league pass where he could get cryo

1363
00:58:49,640 --> 00:58:44,880

pumping in release foam all of that work

1364
00:58:51,470 --> 00:58:49,650
was done on ET 122 we were not since it

1365
00:58:53,960 --> 00:58:51,480
was an older tank

1366
00:58:59,900 --> 00:58:53,970
when we talked about doing the the locks

1367
00:59:03,080 --> 00:58:59,910
inner tank stringer fix that we did on

1368
00:59:04,940 --> 00:59:03,090
the last light we didn't have sufficient

1369
00:59:07,849 --> 00:59:04,950
metal material to determine whether

1370
00:59:10,040 --> 00:59:07,859
those stringers were of the lower

1371
00:59:12,080 --> 00:59:10,050
fracture toughness that we've seen

1372
00:59:14,780 --> 00:59:12,090
recently so we went ahead and put that

1373
00:59:17,810 --> 00:59:14,790
modification all the way around the the

1374
00:59:22,190 --> 00:59:17,820
locks flange however in doing that

1375
00:59:24,560 --> 00:59:22,200
modification you have to drill out all

1376
00:59:27,560 --> 00:59:24,570
the stringers to make sure you can put a

1377
00:59:29,990 --> 00:59:27,570
new fastener in and the guys that it

1378
00:59:35,780 --> 00:59:30,000
Marshall took the the shavings from

1379
00:59:37,760 --> 00:59:35,790
those those drill out areas and mount

1380
00:59:40,040 --> 00:59:37,770
and I'm polished them took a look at him

1381
00:59:44,810 --> 00:59:40,050
under skåne electron microscope and

1382
00:59:48,650 --> 00:59:44,820
determined that the the material crystal

1383
00:59:51,859 --> 00:59:48,660
structure the metal structure was of a

1384
00:59:53,599 --> 00:59:51,869
very good lot of the stringers we do not

1385
00:59:57,770 --> 00:59:53,609
have the issue that we had with the last

1386
01:00:00,160 --> 00:59:57,780
flight or the last tank and in the metal

1387
01:00:02,420 --> 01:00:00,170
is is of the normal fracture toughness

1388
01:00:03,470 --> 01:00:02,430

even though we had that modification on

1389
01:00:05,270 --> 01:00:03,480
there we went ahead and put it on before

1390
01:00:06,470 --> 01:00:05,280
we knew that in the process of doing

1391
01:00:08,390 --> 01:00:06,480
that modification we understood that

1392
01:00:09,560 --> 01:00:08,400
actually we didn't need to do that so we

1393
01:00:11,840 --> 01:00:09,570
went and made sure we did all the

1394
01:00:13,070 --> 01:00:11,850
testing that the modification would work

1395
01:00:16,520 --> 01:00:13,080
with the normal fracture toughness

1396
01:00:19,040 --> 01:00:16,530
material and it's it's that was good

1397
01:00:23,599 --> 01:00:19,050
results so we have a lot of confidence

1398
01:00:27,800 --> 01:00:23,609
in in ET 122 it doesn't look real pretty

1399
01:00:29,870 --> 01:00:27,810
because we did some some foam patches it

1400
01:00:32,630 --> 01:00:29,880
looks a little more like the hail

1401
01:00:38,510 --> 01:00:32,640
damaged tank that we flew which I think

1402
01:00:40,520 --> 01:00:38,520
was et 120 and but it's from all of our

1403
01:00:44,770 --> 01:00:40,530
testing and all of our experience we we

1404
01:00:52,240 --> 01:00:48,170
follow for John and I have a couple for

1405
01:00:55,130 --> 01:00:52,250
Kirk to John I was just wondering as

1406
01:00:57,980 --> 01:00:55,140
manager the shuttle program where you

1407
01:01:03,470 --> 01:00:57,990
think the orbiters should roost in

1408
01:01:05,360 --> 01:01:03,480
retirement totally focused on the

1409
01:01:09,260 --> 01:01:05,370
operational life of

1410
01:01:11,840 --> 01:01:09,270
of the vehicles and and once we land and

1411
01:01:15,860 --> 01:01:11,850
we mark where they land at whatever

1412
01:01:17,500 --> 01:01:15,870
landing strip we go to I walk away and

1413
01:01:20,770 --> 01:01:17,510

then it's somebody else's issue you know

1414
01:01:23,270 --> 01:01:20,780
Dorothy is actively working the the

1415
01:01:25,010 --> 01:01:23,280
disposition of the assets and and

1416
01:01:27,620 --> 01:01:25,020
getting the vehicles prepared I

1417
01:01:30,200 --> 01:01:27,630
understand that general Bolden is going

1418
01:01:31,880 --> 01:01:30,210
to announce on April twelfth where the

1419
01:01:35,110 --> 01:01:31,890
orbiters will go and at that time we'll

1420
01:01:37,220 --> 01:01:35,120
start working with those museums to

1421
01:01:39,310 --> 01:01:37,230
understand their requirements and

1422
01:01:41,300 --> 01:01:39,320
transportation requirements and and

1423
01:01:44,240 --> 01:01:41,310
they'll have a good understanding of how

1424
01:01:46,700 --> 01:01:44,250
we're going to save the vehicles before

1425
01:01:48,500 --> 01:01:46,710
they get to their their respective

1426
01:01:50,270 --> 01:01:48,510
places but I haven't been involved at

1427
01:01:56,210 --> 01:01:50,280
all in the discussions and I am very

1428
01:01:59,720 --> 01:01:56,220
happy for that thanks and for Kirk I'm

1429
01:02:02,150 --> 01:01:59,730
wondering if you can compare the error

1430
01:02:07,970 --> 01:02:02,160
maybe this is John to compare the up

1431
01:02:12,100 --> 01:02:07,980
mask capacity on sts-135 to a X number

1432
01:02:14,360 --> 01:02:12,110
of progress cargo carrier flights to the

1433
01:02:18,440 --> 01:02:14,370
International Space Station I'm trying

1434
01:02:20,990 --> 01:02:18,450
to get a good handle on exactly how much

1435
01:02:26,900 --> 01:02:21,000
more you can get up on that particular

1436
01:02:33,049 --> 01:02:31,250
yeah yeah so I you know I get you a

1437
01:02:35,329 --> 01:02:33,059
better number based on on the numbers

1438
01:02:39,380 --> 01:02:35,339

that we have there but but I would say

1439
01:02:42,589 --> 01:02:39,390
it's about seven seven times six to

1440
01:02:43,880 --> 01:02:42,599
seven times in the MPL m itself and then

1441
01:02:47,299 --> 01:02:43,890
you have the mid-deck which is probably

1442
01:02:50,420 --> 01:02:47,309
another three so close to it gets close

1443
01:02:54,380 --> 01:02:50,430
to nine nine times but but but let me

1444
01:02:55,609 --> 01:02:54,390
I'll get to the exact number but but the

1445
01:02:58,839 --> 01:02:55,619
thing I wanted to point out that's

1446
01:03:04,370 --> 01:02:58,849
different about shuttle then than it is

1447
01:03:06,230 --> 01:03:04,380
from a progress number one you get you

1448
01:03:08,980 --> 01:03:06,240
get the capability to bring up and in

1449
01:03:12,710 --> 01:03:08,990
this case return unpressurized cargo so

1450
01:03:14,539 --> 01:03:12,720
our plan is on on that flight is we're

1451
01:03:16,309 --> 01:03:14,549
going to return a failed pump module so

1452
01:03:19,190 --> 01:03:16,319
we'll get to bring it home and look at

1453
01:03:22,279 --> 01:03:19,200
it understand why we had that that

1454
01:03:24,140 --> 01:03:22,289
failure so we'll we're also bringing up

1455
01:03:26,539 --> 01:03:24,150
an unpressurized payload that will bring

1456
01:03:29,089 --> 01:03:26,549
up and we wouldn't be able to do that on

1457
01:03:31,700 --> 01:03:29,099
on a progress vehicle and then in

1458
01:03:33,799 --> 01:03:31,710
addition you have crewmember chef humans

1459
01:03:36,950 --> 01:03:33,809
there that can can do additional work

1460
01:03:38,900 --> 01:03:36,960
for you so we can do maintenance on ISS

1461
01:03:42,680 --> 01:03:38,910
we could do assembly on ISS we could do

1462
01:03:44,390 --> 01:03:42,690
cargo transfer and cargo packing all

1463
01:03:46,789 --> 01:03:44,400

those kinds of things will will be able

1464
01:03:49,940 --> 01:03:46,799
to do that the shuttle allows us to do

1465
01:03:51,589 --> 01:03:49,950
that are not available on a progress we

1466
01:03:54,799 --> 01:03:51,599
even bring up significant amounts of

1467
01:03:57,349 --> 01:03:54,809
water we don't bring it up it it's a

1468
01:03:59,450 --> 01:03:57,359
byproduct of the fuel cell operation so

1469
01:04:01,910 --> 01:03:59,460
all those things are unique about

1470
01:04:07,849 --> 01:04:01,920
shuttle that that a progress wouldn't

1471
01:04:11,120 --> 01:04:07,859
have directly thanks and I'm wondering

1472
01:04:16,880 --> 01:04:11,130
what your thoughts are Curt on the idea

1473
01:04:19,039 --> 01:04:16,890
of combining SpaceX's cots to and cats

1474
01:04:21,559 --> 01:04:19,049
three flights the objectives of those

1475
01:04:24,319 --> 01:04:21,569
two flights in New a single flight which

1476
01:04:26,660 --> 01:04:24,329
would be the next one up there I mean

1477
01:04:29,240 --> 01:04:26,670
that would involve birthing the Dragon

1478
01:04:32,809 --> 01:04:29,250
spacecraft to your international space

1479
01:04:35,539 --> 01:04:32,819
station and I'm wondering if if you guys

1480
01:04:38,539 --> 01:04:35,549
are good to go on combining the

1481
01:04:40,240 --> 01:04:38,549
objectives of those two flights yeah

1482
01:04:43,510 --> 01:04:40,250
we're still under negotiations

1483
01:04:46,720 --> 01:04:43,520
with with SpaceX when I say we NASA is

1484
01:04:49,390 --> 01:04:46,730
ISS is certainly a part of that are our

1485
01:04:54,730 --> 01:04:49,400
c-3po organization as part of that and

1486
01:04:57,190 --> 01:04:54,740
and so it has not been finally agreed to

1487
01:04:58,780 --> 01:04:57,200
we have requirements that their demo

1488
01:05:00,880 --> 01:04:58,790

flight number two is going to achieve

1489
01:05:03,070 --> 01:05:00,890
and and additional requirements that

1490
01:05:05,080 --> 01:05:03,080
demo flight three was going to achieve

1491
01:05:06,880 --> 01:05:05,090
and so the discussion is really can we

1492
01:05:08,920 --> 01:05:06,890
achieve all those things in one flight

1493
01:05:11,800 --> 01:05:08,930
and then come in and safely birth to the

1494
01:05:14,320 --> 01:05:11,810
ISS not only do those demos but but also

1495
01:05:16,270 --> 01:05:14,330
rose objectives but look at the results

1496
01:05:18,280 --> 01:05:16,280
and make sure that that everything's

1497
01:05:23,170 --> 01:05:18,290
operating is we'd like before it gets

1498
01:05:26,410 --> 01:05:23,180
gets close to you know the humans on

1499
01:05:29,020 --> 01:05:26,420
board ISS and certainly the the the ISS

1500
01:05:31,540 --> 01:05:29,030
a you know a very expensive asset as

1501
01:05:33,820 --> 01:05:31,550
well so we're under negotiations it's

1502
01:05:35,110 --> 01:05:33,830
certainly possible and we we helped how

1503
01:05:40,330 --> 01:05:35,120
come some agreement here in the very

1504
01:05:44,710 --> 01:05:40,340
near term thanks in the last question

1505
01:05:50,980 --> 01:05:44,720
from KSC for Kirk also now that the

1506
01:05:53,950 --> 01:05:50,990
Assembly of the US OS is complete I'm

1507
01:05:58,960 --> 01:05:53,960
wondering if you can give us a good idea

1508
01:06:01,330 --> 01:05:58,970
of the habitable volume of the space

1509
01:06:03,970 --> 01:06:01,340
station in a way that you know my

1510
01:06:07,570 --> 01:06:03,980
next-door neighbor could could relate to

1511
01:06:09,760 --> 01:06:07,580
it thanks you know I apologize Todd I

1512
01:06:15,130 --> 01:06:09,770
don't have a great we've used the volume

1513
01:06:16,600 --> 01:06:15,140

of a large a large house but but I don't

1514
01:06:17,890 --> 01:06:16,610
have a great analogy for you right now

1515
01:06:19,870 --> 01:06:17,900
I'll tell you what I'll work on that

1516
01:06:23,140 --> 01:06:19,880
next time next time i'm here i'll have a

1517
01:06:26,680 --> 01:06:23,150
great a great analogy for you you know

1518
01:06:29,260 --> 01:06:26,690
the beauty of ISS is that that it

1519
01:06:31,420 --> 01:06:29,270
operates in space and you can use you

1520
01:06:34,660 --> 01:06:31,430
know the entire volume not just the not

1521
01:06:36,730 --> 01:06:34,670
just the floor and you know the crews

1522
01:06:38,500 --> 01:06:36,740
that come back i had a chance to talk to

1523
01:06:42,010 --> 01:06:38,510
Scott right after he land and he's

1524
01:06:45,130 --> 01:06:42,020
talking about how how big it is and so

1525
01:06:49,270 --> 01:06:45,140
it really is even with six people on

1526
01:06:50,590 --> 01:06:49,280
board it's quite roomy so it's it is

1527
01:06:53,980 --> 01:06:50,600
large and I'll come up with a great

1528
01:06:59,060 --> 01:06:56,450
okay I think that's all from Todd we got

1529
01:07:01,040 --> 01:06:59,070
a time for just a few more here start I

1530
01:07:03,440 --> 01:07:01,050
start with Mark again Beth and then

1531
01:07:05,960 --> 01:07:03,450
we'll grab some other thank you Mark

1532
01:07:07,640 --> 01:07:05,970
kuro for aviation week i apologize i

1533
01:07:10,130 --> 01:07:07,650
think i might be dialing back to the

1534
01:07:11,540 --> 01:07:10,140
very first part of the briefing but some

1535
01:07:13,520 --> 01:07:11,550
of the scheduling shows the progress

1536
01:07:16,040 --> 01:07:13,530
launching and docking with the space

1537
01:07:18,980 --> 01:07:16,050
station during the endeavor mission that

1538
01:07:21,830 --> 01:07:18,990

can that happen or does that get d

1539
01:07:24,410 --> 01:07:21,840
conflicted at some point it will need to

1540
01:07:30,290 --> 01:07:24,420
be d conflicted we would not we would

1541
01:07:31,720 --> 01:07:30,300
not want to do that thank you John can

1542
01:07:33,890 --> 01:07:31,730
you give us an update on on

1543
01:07:35,360 --> 01:07:33,900
decommissioning discovery and I guess

1544
01:07:36,890 --> 01:07:35,370
I'm looking you told us last time we

1545
01:07:38,780 --> 01:07:36,900
talked about this was back in September

1546
01:07:40,760 --> 01:07:38,790
and you're talking about taking some

1547
01:07:42,590 --> 01:07:40,770
components off for forensic studies and

1548
01:07:43,820 --> 01:07:42,600
engineering study etc can you give us a

1549
01:07:45,530 --> 01:07:43,830
better sense since this museum

1550
01:07:47,000 --> 01:07:45,540
announcements coming up what sort of

1551
01:07:48,530 --> 01:07:47,010
things are going to stay on the orbiter

1552
01:07:50,450 --> 01:07:48,540
for display and what things are going to

1553
01:07:52,100 --> 01:07:50,460
be replaced with mock-ups like engines I

1554
01:07:54,320 --> 01:07:52,110
assume and things like that sure the

1555
01:07:57,170 --> 01:07:54,330
actually that's been kind of a kind of a

1556
01:07:58,820 --> 01:07:57,180
fun discussion to have right now let me

1557
01:08:02,090 --> 01:07:58,830
tell you where discovery is it's in opf

1558
01:08:04,190 --> 01:08:02,100
to the forward RCS is being removed

1559
01:08:06,710 --> 01:08:04,200
right now and sent to the hypergolic

1560
01:08:09,050 --> 01:08:06,720
maintenance facility for saving we're

1561
01:08:11,870 --> 01:08:09,060
going to start removing the main engines

1562
01:08:13,900 --> 01:08:11,880
next next week and we'll take the elms

1563
01:08:16,430 --> 01:08:13,910

pods off also send them out to the

1564
01:08:18,559 --> 01:08:16,440
hypergolic maintenance facility then

1565
01:08:21,519 --> 01:08:18,569
it's going to be rolled over to to the

1566
01:08:24,050 --> 01:08:21,529
VA be it will tempt stow it over there

1567
01:08:25,940 --> 01:08:24,060
for when it endeavour comes back it'll

1568
01:08:28,250 --> 01:08:25,950
go into opf to and atlantis is out of

1569
01:08:33,230 --> 01:08:28,260
opf one will bring discovery and Opie if

1570
01:08:38,480 --> 01:08:33,240
one and keep working on it you know we

1571
01:08:41,809 --> 01:08:38,490
want to display the vehicles as as

1572
01:08:43,519 --> 01:08:41,819
realistically as possible right but the

1573
01:08:45,470 --> 01:08:43,529
thought that it's going to be a flyable

1574
01:08:50,329 --> 01:08:45,480
orbiter is just not true there's a lot

1575
01:08:51,710 --> 01:08:50,339
of safety issues where you have toxic

1576
01:08:54,349 --> 01:08:51,720
chemicals and things that we've got to

1577
01:08:55,400 --> 01:08:54,359
take that plumbing off and and and we're

1578
01:08:57,170 --> 01:08:55,410
not going to replace that well either

1579
01:08:59,360 --> 01:08:57,180
safe it in place we can't save in place

1580
01:09:03,349 --> 01:08:59,370
you just remove it and and don't have it

1581
01:09:06,380 --> 01:09:03,359
there the main engines are an extremely

1582
01:09:09,920 --> 01:09:06,390
valuable asset and I want to say

1583
01:09:13,610 --> 01:09:09,930
all of our block to SS Emmys that we

1584
01:09:16,190 --> 01:09:13,620
have we have a plan to store them in a

1585
01:09:19,160 --> 01:09:16,200
purge safe environment along with all of

1586
01:09:21,590 --> 01:09:19,170
the the ground systems required to

1587
01:09:23,150 --> 01:09:21,600
maintain them until we decide what to do

1588
01:09:26,890 --> 01:09:23,160

with the next program so what we what we

1589
01:09:32,810 --> 01:09:26,900
did is we went and really searched the

1590
01:09:34,790 --> 01:09:32,820
the facilities for excess hardware that

1591
01:09:37,000 --> 01:09:34,800
we could build up into some main engines

1592
01:09:42,410 --> 01:09:37,010
and we've been doing that here recently

1593
01:09:45,470 --> 01:09:42,420
so we'll have nine engines will put into

1594
01:09:47,120 --> 01:09:45,480
each of the vehicles that are older

1595
01:09:49,040 --> 01:09:47,130
technology engines but they're real

1596
01:09:52,370 --> 01:09:49,050
nozzles that flew their real combustion

1597
01:09:54,170 --> 01:09:52,380
chambers real pumps and so will take out

1598
01:09:55,550 --> 01:09:54,180
the the really good engines that we'd

1599
01:09:58,550 --> 01:09:55,560
like to say if the next program will put

1600
01:10:01,880 --> 01:09:58,560
in rebuilt engines that we kind of

1601
01:10:03,200 --> 01:10:01,890
scrapped together and and that is what

1602
01:10:05,420 --> 01:10:03,210
will be displayed I'm also trying to

1603
01:10:08,540 --> 01:10:05,430
find enough funds and enough parts to

1604
01:10:10,070 --> 01:10:08,550
build some static engines that we can

1605
01:10:12,020 --> 01:10:10,080
display with those vehicles as well as

1606
01:10:14,450 --> 01:10:12,030
people can see how big and how complex

1607
01:10:17,270 --> 01:10:14,460
they really are I'm also trying to save

1608
01:10:18,620 --> 01:10:17,280
the ohms engines the small orbital

1609
01:10:21,800 --> 01:10:18,630
maneuvering system two engines on the

1610
01:10:23,720 --> 01:10:21,810
back same reason as if we can use them

1611
01:10:26,420 --> 01:10:23,730
in a future program I think they're very

1612
01:10:29,030 --> 01:10:26,430
valuable assets we don't have a lot of

1613
01:10:32,060 --> 01:10:29,040

spares on those so those are probably

1614
01:10:33,410 --> 01:10:32,070
going to be mocked up and and at least

1615
01:10:36,260 --> 01:10:33,420
have a nozzle but probably nothing

1616
01:10:38,030 --> 01:10:36,270
nothing behind it in the elms pod there

1617
01:10:40,220 --> 01:10:38,040
are some things on the the vehicles

1618
01:10:43,130 --> 01:10:40,230
especially discovery that we haven't

1619
01:10:46,880 --> 01:10:43,140
looked at since it was built out in out

1620
01:10:50,120 --> 01:10:46,890
in California and things like actuators

1621
01:10:51,710 --> 01:10:50,130
that it's very invasive to go in I had

1622
01:10:54,140 --> 01:10:51,720
some pretty good debates with the the

1623
01:10:55,730 --> 01:10:54,150
ground operations team about the

1624
01:10:56,960 --> 01:10:55,740
difficulty of going to get some of these

1625
01:10:58,610 --> 01:10:56,970
things but from an engineering

1626
01:11:00,800 --> 01:10:58,620
standpoint this is a this is a

1627
01:11:05,180 --> 01:11:00,810
once-in-a-lifetime opportunity to go see

1628
01:11:08,180 --> 01:11:05,190
how a reusable vehicle actually how it

1629
01:11:11,270 --> 01:11:08,190
how it weathered this many cycles as

1630
01:11:13,790 --> 01:11:11,280
many times on orbit this much time into

1631
01:11:15,860 --> 01:11:13,800
in ground processing so we'll go get

1632
01:11:18,170 --> 01:11:15,870
actuate representative actuators we're

1633
01:11:20,300 --> 01:11:18,180
going to get main engine flow liners

1634
01:11:21,650 --> 01:11:20,310
things that basically you

1635
01:11:23,060 --> 01:11:21,660
you started with it and then you built

1636
01:11:25,130 --> 01:11:23,070
the orbit around it right so it's very

1637
01:11:27,350 --> 01:11:25,140
invasive to going and get them but but I

1638
01:11:29,840 --> 01:11:27,360

really have asked the team to to go in

1639
01:11:31,910 --> 01:11:29,850
there and do that and we'll send those

1640
01:11:33,680 --> 01:11:31,920
out to our labs and we'll we'll get

1641
01:11:37,040 --> 01:11:33,690
reports back and I think it's you know

1642
01:11:38,660 --> 01:11:37,050
that's kind of the the the next legacy

1643
01:11:40,430 --> 01:11:38,670
of the shuttle program is to give you a

1644
01:11:43,640 --> 01:11:40,440
lot of material knowledge a lot of

1645
01:11:46,940 --> 01:11:43,650
design knowledge in how things worked

1646
01:11:48,500 --> 01:11:46,950
over a long period of time and so you

1647
01:11:50,690 --> 01:11:48,510
know the vehicles they're going to look

1648
01:11:54,080 --> 01:11:50,700
very much like the the vehicles that

1649
01:11:56,000 --> 01:11:54,090
that have operated in space we're going

1650
01:11:58,520 --> 01:11:56,010
to put on some hardware so we can save

1651
01:12:00,410 --> 01:11:58,530
some of the higher value hardware we're

1652
01:12:01,970 --> 01:12:00,420
going to say fit so that the public's

1653
01:12:03,950 --> 01:12:01,980
not exposed to anything anything

1654
01:12:05,540 --> 01:12:03,960
dangerous and we'll remove some things

1655
01:12:09,770 --> 01:12:05,550
but the public would never see you know

1656
01:12:11,990 --> 01:12:09,780
whether there's a left inboard elevon

1657
01:12:13,400 --> 01:12:12,000
actuator or not right we'll just we'll

1658
01:12:15,050 --> 01:12:13,410
put something else in there that'll keep

1659
01:12:17,000 --> 01:12:15,060
the olive on to the right position and

1660
01:12:20,360 --> 01:12:17,010
and then we'll go off and learn about it

1661
01:12:21,710 --> 01:12:20,370
but you know to me it's it's it's more

1662
01:12:23,180 --> 01:12:21,720
important to get that engineering

1663
01:12:25,310 --> 01:12:23,190

knowledge out of these vehicles than it

1664
01:12:29,180 --> 01:12:25,320
is to have total total accuracy and a

1665
01:12:31,790 --> 01:12:29,190
museum now when general Bolden announces

1666
01:12:33,470 --> 01:12:31,800
who is going to get the vehicles we will

1667
01:12:35,360 --> 01:12:33,480
go into negotiations because I'm sure

1668
01:12:36,980 --> 01:12:35,370
they will have an input into what they

1669
01:12:40,130 --> 01:12:36,990
would like to have and so we'll discuss

1670
01:12:41,390 --> 01:12:40,140
our plans and in and the reasons behind

1671
01:12:44,630 --> 01:12:41,400
them and I'm sure there will be some

1672
01:12:46,370 --> 01:12:44,640
negotiations there you're planning that

1673
01:12:47,810 --> 01:12:46,380
really invasive stuff on is it just the

1674
01:12:49,010 --> 01:12:47,820
one orbiter you hoping to do that on all

1675
01:12:51,160 --> 01:12:49,020
three I will do it on all three

1676
01:12:54,020 --> 01:12:51,170
discovery since it has more flight time

1677
01:12:56,420 --> 01:12:54,030
it's it's a little bit more of interest

1678
01:12:58,040 --> 01:12:56,430
to us but you know whenever you get

1679
01:13:00,770 --> 01:12:58,050
engineering data like that you want the

1680
01:13:03,560 --> 01:13:00,780
bigger the pool of information you you

1681
01:13:04,790 --> 01:13:03,570
can get the better your data is so we'll

1682
01:13:08,120 --> 01:13:04,800
do that on all three matter of fact I

1683
01:13:09,320 --> 01:13:08,130
have a I have a my program requirements

1684
01:13:13,910 --> 01:13:09,330
Control Board we're going to review that

1685
01:13:15,350 --> 01:13:13,920
today for endeavor and talk about the

1686
01:13:19,340 --> 01:13:15,360
in-state what we're going to pull out

1687
01:13:21,500 --> 01:13:19,350
and in what it's going to what we hope

1688
01:13:23,000 --> 01:13:21,510

to accomplish from that you know and the

1689
01:13:25,220 --> 01:13:23,010
other thing that I have to kind of work

1690
01:13:28,160 --> 01:13:25,230
around is it costs money all right I

1691
01:13:29,840 --> 01:13:28,170
have to keep the ground operations team

1692
01:13:33,070 --> 01:13:29,850
and contractors and the experts in doing

1693
01:13:34,930 --> 01:13:33,080
this around two

1694
01:13:37,450 --> 01:13:34,940
to do this work and so I'm negotiating

1695
01:13:41,140 --> 01:13:37,460
to get the money to be able to to do

1696
01:13:42,610 --> 01:13:41,150
that so far bill Gerstenmaier and in the

1697
01:13:44,380 --> 01:13:42,620
essay quarters and the team really

1698
01:13:46,240 --> 01:13:44,390
understand that this is a unique

1699
01:13:48,130 --> 01:13:46,250
opportunity to get that engineering data

1700
01:13:49,480 --> 01:13:48,140
and they've a fully supported it but

1701
01:13:52,770 --> 01:13:49,490
we're still working through through them

1702
01:13:54,730 --> 01:13:52,780
yeah good time for two more that

1703
01:13:58,420 --> 01:13:54,740
Phillips lost with NASA Space Flight

1704
01:14:00,670 --> 01:13:58,430
compher mr. Shannon for the 135 vehicle

1705
01:14:03,400 --> 01:14:00,680
and the tanking test on that are you

1706
01:14:05,200 --> 01:14:03,410
planning on x-ring the backside of the

1707
01:14:07,750 --> 01:14:05,210
inner tank for that vehicle and if so

1708
01:14:08,860 --> 01:14:07,760
would that require rollback if we were

1709
01:14:10,570 --> 01:14:08,870
going to do that it would require

1710
01:14:13,240 --> 01:14:10,580
rollback that is not our plan right now

1711
01:14:15,850 --> 01:14:13,250
we have very high confidence that the

1712
01:14:18,100 --> 01:14:15,860
repair will be very effective so we'll

1713
01:14:19,510 --> 01:14:18,110

do the tanking test will will x-ray the

1714
01:14:22,480 --> 01:14:19,520
areas that are available to us on the

1715
01:14:23,830 --> 01:14:22,490
orbiter side if it all looks good then

1716
01:14:25,600 --> 01:14:23,840
we have sufficient flight rationale to

1717
01:14:27,220 --> 01:14:25,610
go fly of course if we find something

1718
01:14:28,990 --> 01:14:27,230
then yes I would expect we would roll

1719
01:14:32,530 --> 01:14:29,000
back and go through the whole thing that

1720
01:14:34,840 --> 01:14:32,540
we did previously thanks Irene Klotz

1721
01:14:36,880 --> 01:14:34,850
with the Reuters on John how many main

1722
01:14:40,090 --> 01:14:36,890
engines have you found to put into

1723
01:14:43,810 --> 01:14:40,100
storage end for Kirk the the 135 flight

1724
01:14:48,070 --> 01:14:43,820
does that carry the replacement for one

1725
01:14:50,770 --> 01:14:48,080
or two cots delivery missions okay the

1726
01:14:53,140 --> 01:14:50,780
COTS question will be curt for me I 14

1727
01:14:55,210 --> 01:14:53,150
right now blocked two engines and we're

1728
01:14:56,560 --> 01:14:55,220
actually looking at hardware to see if

1729
01:14:58,510 --> 01:14:56,570
we could build up another one or two

1730
01:15:01,300 --> 01:14:58,520
that would be available for future

1731
01:15:04,360 --> 01:15:01,310
programs yeah and we don't look at it as

1732
01:15:06,550 --> 01:15:04,370
a as a replacement for a specific number

1733
01:15:08,440 --> 01:15:06,560
of cots missions we're doing is we're

1734
01:15:10,270 --> 01:15:08,450
launching a lot of consumables launching

1735
01:15:13,030 --> 01:15:10,280
some significant amount of food and

1736
01:15:16,780 --> 01:15:13,040
we're also launching significant number

1737
01:15:19,720 --> 01:15:16,790
of spares to keep our systems on orbit

1738
01:15:21,340 --> 01:15:19,730

particular the environmental control and

1739
01:15:25,480 --> 01:15:21,350
life support system so we'll be able to

1740
01:15:28,270 --> 01:15:25,490
last without a regular supply chain for

1741
01:15:32,050 --> 01:15:28,280
a little while so it's not hey we this

1742
01:15:34,540 --> 01:15:32,060
this place exactly I can last 22 cots

1743
01:15:37,090 --> 01:15:34,550
missions or three cots missions it's

1744
01:15:42,130 --> 01:15:37,100
really building us margin to last about

1745
01:15:44,560 --> 01:15:42,140
a year if we needed to so in terms of

1746
01:15:45,210 --> 01:15:44,570
what we expect from from consumables and

1747
01:15:47,340 --> 01:15:45,220
then

1748
01:15:48,810 --> 01:15:47,350
who knows exactly when those those

1749
01:15:50,210 --> 01:15:48,820
spares would be required so it really

1750
01:15:53,160 --> 01:15:50,220
puts us in a position to allow

1751
01:15:55,260 --> 01:15:53,170
flexibility for these guys to to learn

1752
01:16:02,160 --> 01:15:55,270
and finish their development and be

1753
01:16:05,070 --> 01:16:02,170
successful I do but not not in my head

1754
01:16:07,620 --> 01:16:05,080
so if you'd like certainly as certainly

1755
01:16:09,720 --> 01:16:07,630
as we get closer we can provide that but

1756
01:16:11,700 --> 01:16:09,730
but I could tell you what we have the

1757
01:16:13,230 --> 01:16:11,710
manifest right now about what what

1758
01:16:17,880 --> 01:16:13,240
spares we're launching in and how much

1759
01:16:18,900 --> 01:16:17,890
food and and clothes and so forth okay

1760
01:16:21,030 --> 01:16:18,910
that's all the time we have for this

1761
01:16:22,590 --> 01:16:21,040
briefing but stay tuned at the bottom of

1762
01:16:25,230 --> 01:16:22,600
the hour you'll hear all about the Alpha

1763
01:16:27,120 --> 01:16:25,240

Magnetic Spectrometer that starts at

1764
01:16:28,620 --> 01:16:27,130
nine-thirty central and then that's

1765
01:16:30,750 --> 01:16:28,630
followed by a mission overview by the

1766
01:16:32,430 --> 01:16:30,760
two flight directors that will oversee

1767
01:16:34,410 --> 01:16:32,440
the mission from Mission Control and

1768
01:16:36,360 --> 01:16:34,420
then of course the spacewalk briefing

1769
01:16:38,220 --> 01:16:36,370
and then the crew in the afternoon so a

1770
01:16:40,650 --> 01:16:38,230
great series of briefings coming up on

1771
01:16:43,080 --> 01:16:40,660
the details of the mission so stay tuned