1
00:00:07,909 --> 00:00:04,630
this is uh the sts-133 interview with

2
00:00:09,750 --> 00:00:07,919
pilot eric bowe um eric tell us about uh

3
00:00:12,070 --> 00:00:09,760
the place where you grew up and and and

4
00:00:13,589 --> 00:00:12,080
tell us how that place influenced uh who

5
00:00:16,710 --> 00:00:13,599
you've become

6
00:00:18,870 --> 00:00:16,720
well i grew up in atlanta georgia and it

7
00:00:20,790 --> 00:00:18,880
had a big influence on me you know get

8
00:00:22,950 --> 00:00:20,800
kind of put in motion the kind of my

9
00:00:24,710 --> 00:00:22,960
goals and objectives and and obviously

10
00:00:25,670 --> 00:00:24,720
the schooling was a real important part

11
00:00:26,950 --> 00:00:25,680
of

12
00:00:29,669 --> 00:00:26,960
having the opportunity to work here at

13
00:00:32,870 --> 00:00:29,679

nasa and so for me the things that i

14
00:00:33,910 --> 00:00:32,880
remember as a kid i remember my

15
00:00:35,510 --> 00:00:33,920
um

16
00:00:37,670 --> 00:00:35,520
just getting started with

17
00:00:39,190 --> 00:00:37,680
being involved very involved with the

18
00:00:41,270 --> 00:00:39,200
sports in school

19
00:00:43,350 --> 00:00:41,280
and also a lot of other activities with

20
00:00:45,190 --> 00:00:43,360
and i and i still talked to friends back

21
00:00:46,869 --> 00:00:45,200
home in atlanta

22
00:00:49,350 --> 00:00:46,879
it would be your favorite sport coming

23
00:00:51,350 --> 00:00:49,360
up i had a couple i enjoyed soccer i

24
00:00:54,069 --> 00:00:51,360
participated in cross country and i also

25
00:00:56,470 --> 00:00:54,079
was on the wrestling team okay

26
00:00:59,029 --> 00:00:56,480
did you have occasion to to see the

27
00:01:00,630 --> 00:00:59,039
atlanta area from space uh on your last

28
00:01:01,910 --> 00:01:00,640
flight i did get the chance to see the

29
00:01:03,110 --> 00:01:01,920
atlanta area in space so one of the

30
00:01:04,950 --> 00:01:03,120
things that was pretty cool is they were

31
00:01:07,109 --> 00:01:04,960
having a georgia tech i went there for

32
00:01:09,030 --> 00:01:07,119
my master's degree and they were having

33
00:01:10,469 --> 00:01:09,040
a game and someone told us as we were

34
00:01:12,870 --> 00:01:10,479
flying over we had a couple crew members

35
00:01:16,149 --> 00:01:12,880
on last flight that

36
00:01:17,830 --> 00:01:16,159
on sts-126 and that this shuttle

37
00:01:19,510 --> 00:01:17,840
actually flew over top of atlanta and we

38
00:01:20,550 --> 00:01:19,520

were looking down while they were

39
00:01:22,390 --> 00:01:20,560
looking up and they actually talked

40
00:01:24,469 --> 00:01:22,400
about it at the football game so it's a

41
00:01:26,870 --> 00:01:24,479
neat event cool could you actually see

42
00:01:29,030 --> 00:01:26,880
much detail now you can see you could

43
00:01:30,550 --> 00:01:29,040
see atlanta and see the lights i i i

44
00:01:32,469 --> 00:01:30,560
would like to say i saw the football

45
00:01:36,710 --> 00:01:32,479
game but that's that'd be stretching a

46
00:01:40,550 --> 00:01:38,310
every accomplishment begins with with

47
00:01:42,069 --> 00:01:40,560
some form of motivation

48
00:01:43,590 --> 00:01:42,079
you've been an astronaut for about 10

49
00:01:45,990 --> 00:01:43,600
years uh

50
00:01:47,910 --> 00:01:46,000
tell us what motivated you to to pursue

51
00:01:49,910 --> 00:01:47,920
this line of work out of all the things

52
00:01:51,910 --> 00:01:49,920
out there that were possible well what

53
00:01:53,830 --> 00:01:51,920
motivated me to be an astronaut probably

54
00:01:56,149 --> 00:01:53,840
the first thing i can remember as a kid

55
00:01:59,590 --> 00:01:56,159
is i remember my parents calling me in

56
00:02:01,590 --> 00:01:59,600
in 1969 to watch a black and white tv of

57
00:02:03,429 --> 00:02:01,600
the first moon landing and i was five at

58
00:02:05,429 --> 00:02:03,439
the time and as a kid i don't remember a

59
00:02:06,789 --> 00:02:05,439
whole lot but i do remember as as i got

60
00:02:08,630 --> 00:02:06,799
older i remember them you know the

61
00:02:10,869 --> 00:02:08,640
emphasis they put on and you know as i

62
00:02:13,670 --> 00:02:10,879
got older i thought about you know what

63
00:02:15,350 --> 00:02:13,680

a neat endeavor that uh

64
00:02:17,510 --> 00:02:15,360
humans had participated actually walk on

65
00:02:19,270 --> 00:02:17,520
something that you look at

66
00:02:21,190 --> 00:02:19,280
oftentimes in the night sky and so that

67
00:02:22,630 --> 00:02:21,200
was kind of set the bit of something you

68
00:02:23,670 --> 00:02:22,640
know maybe if i was lucky enough and had

69
00:02:25,830 --> 00:02:23,680
the opportunity i'd like to be an

70
00:02:28,630 --> 00:02:25,840
astronaut and i was also very interested

71
00:02:31,509 --> 00:02:28,640
in aviation as a

72
00:02:32,869 --> 00:02:31,519
kid and so i was involved in a

73
00:02:34,630 --> 00:02:32,879
group called civil air patrol which is

74
00:02:36,550 --> 00:02:34,640
very active with the air force and

75
00:02:39,990 --> 00:02:36,560
flying and doing a lot of other

76
00:02:42,309 --> 00:02:40,000
activities so that kind of spurred on my

77
00:02:43,589 --> 00:02:42,319
inspiration to to do flying i was really

78
00:02:45,270 --> 00:02:43,599
i went to the air force academy after

79
00:02:47,190 --> 00:02:45,280
that and i was interested in being a

80
00:02:48,790 --> 00:02:47,200
fighter pilot was one of my goals and

81
00:02:50,550 --> 00:02:48,800
got to do that for a while so those kind

82
00:02:52,390 --> 00:02:50,560
of inspirations along the way and the

83
00:02:55,190 --> 00:02:52,400
doors kept opening and the opportunity

84
00:02:57,270 --> 00:02:55,200
presented itself where i was a

85
00:02:58,630 --> 00:02:57,280
test pilot at the time and i was still

86
00:03:00,309 --> 00:02:58,640
interested in being an astronaut so i

87
00:03:02,070 --> 00:03:00,319
applied and was lucky enough to be

88
00:03:03,990 --> 00:03:02,080

selected okay

89
00:03:06,630 --> 00:03:04,000
uh take us back in if you would again

90
00:03:08,470 --> 00:03:06,640
recount for us uh the steps you took uh

91
00:03:10,070 --> 00:03:08,480
in your military career to to get to the

92
00:03:11,990 --> 00:03:10,080
nasa astronaut corps

93
00:03:15,350 --> 00:03:12,000
well as a space shuttle pilot there's

94
00:03:16,550 --> 00:03:15,360
kind of a track if to be a pilot and a

95
00:03:18,229 --> 00:03:16,560
commander

96
00:03:21,030 --> 00:03:18,239
typically the background is you have to

97
00:03:22,869 --> 00:03:21,040
be a military test spot so i started uh

98
00:03:25,670 --> 00:03:22,879
my career i was a

99
00:03:27,110 --> 00:03:25,680
a fighter pilot flying f-4s at clark air

100
00:03:28,949 --> 00:03:27,120
base in the philippines and then i went

101
00:03:31,270 --> 00:03:28,959
on i was an instructor pilot for a while

102
00:03:32,390 --> 00:03:31,280
and t-38s and 1838's at columbus air

103
00:03:35,630 --> 00:03:32,400
force base

104
00:03:38,229 --> 00:03:35,640
flying

105
00:03:40,070 --> 00:03:38,239
f-15cs and from there i went to test

106
00:03:41,670 --> 00:03:40,080
pilot school and that's one of those

107
00:03:43,350 --> 00:03:41,680
things that i was talking about that's

108
00:03:45,670 --> 00:03:43,360
kind of a requirement to

109
00:03:48,309 --> 00:03:45,680
to be it's not specifically written but

110
00:03:50,630 --> 00:03:48,319
just about every uh pilot of the space

111
00:03:52,229 --> 00:03:50,640
shuttle pilot or commander has been a

112
00:03:54,309 --> 00:03:52,239
test pilot through a military test pot

113
00:03:56,390 --> 00:03:54,319

school and then after that i was a test

114
00:04:00,309 --> 00:03:56,400
pilot at eglin air force base flying

115
00:04:02,070 --> 00:04:00,319
f-15s okay when did you um

116
00:04:03,750 --> 00:04:02,080
first apply

117
00:04:05,270 --> 00:04:03,760
to become an astronaut and how long of a

118
00:04:06,070 --> 00:04:05,280
time period was it from when you made

119
00:04:08,229 --> 00:04:06,080
that

120
00:04:10,390 --> 00:04:08,239
first application to when you when you

121
00:04:12,070 --> 00:04:10,400
finally got the call

122
00:04:13,509 --> 00:04:12,080
well my first application to be an

123
00:04:15,990 --> 00:04:13,519
astronaut was

124
00:04:19,270 --> 00:04:16,000
let's say i was back in i'm in the class

125
00:04:21,990 --> 00:04:19,280
of 2000 so i but you applied in 1999

126
00:04:23,270 --> 00:04:22,000
for the class and it uh you

127
00:04:24,629 --> 00:04:23,280
as a military officer you had to fly

128
00:04:27,189 --> 00:04:24,639
through the military and that's about

129
00:04:29,990 --> 00:04:27,199
six months prior to actually going to to

130
00:04:31,350 --> 00:04:30,000
nasa so about the beginning of 1999 is

131
00:04:33,030 --> 00:04:31,360
when i started putting putting together

132
00:04:35,110 --> 00:04:33,040
my application process and then i went

133
00:04:36,469 --> 00:04:35,120
to nasa after it got

134
00:04:39,590 --> 00:04:36,479
forwarded by the air force they have

135
00:04:41,749 --> 00:04:39,600
their own screening board and then

136
00:04:43,510 --> 00:04:41,759
typically have an interview process with

137
00:04:45,110 --> 00:04:43,520
nasa and so it took about a year and a

138
00:04:47,430 --> 00:04:45,120

half from the time i applied to the time

139
00:04:48,230 --> 00:04:47,440
i actually got accepted as an astronaut

140
00:04:49,990 --> 00:04:48,240
okay

141
00:04:51,830 --> 00:04:50,000
do you recall

142
00:04:53,909 --> 00:04:51,840
where you were when you when you when

143
00:04:54,710 --> 00:04:53,919
you finally found out when you got the

144
00:04:56,310 --> 00:04:54,720
call

145
00:04:56,950 --> 00:04:56,320
saying hey do you want to want to come

146
00:04:58,469 --> 00:04:56,960
to

147
00:04:59,670 --> 00:04:58,479
join the astronaut cory would tell us

148
00:05:00,550 --> 00:04:59,680
that story about where you were and what

149
00:05:02,070 --> 00:05:00,560
you were doing

150
00:05:03,909 --> 00:05:02,080
it's kind of an interesting story

151
00:05:05,830 --> 00:05:03,919
because there's in my class there's four

152
00:05:07,270 --> 00:05:05,840
of us that are from the eglin area

153
00:05:08,950 --> 00:05:07,280
because i was at eglin air force base as

154
00:05:11,830 --> 00:05:08,960
a test pilot and there are a couple

155
00:05:14,150 --> 00:05:11,840
other people in like applying to be

156
00:05:15,990 --> 00:05:14,160
test pilots and my office just happened

157
00:05:18,070 --> 00:05:16,000
to be off the main area where we did our

158
00:05:20,550 --> 00:05:18,080
flying and so i would go go there

159
00:05:22,070 --> 00:05:20,560
periodically and so i saw a few of the

160
00:05:23,350 --> 00:05:22,080
other

161
00:05:24,950 --> 00:05:23,360
friends that i had that i knew were

162
00:05:27,110 --> 00:05:24,960
applying and i could tell by their faces

163
00:05:28,790 --> 00:05:27,120

they they'd gotten a call

164
00:05:30,390 --> 00:05:28,800
and so i was interested when i went back

165
00:05:31,909 --> 00:05:30,400
to my office to kind of see if i had

166
00:05:33,909 --> 00:05:31,919
gotten a call as well

167
00:05:35,909 --> 00:05:33,919
and you can kind of tell based on who's

168
00:05:37,029 --> 00:05:35,919
calling you you know what it was and so

169
00:05:39,189 --> 00:05:37,039
they

170
00:05:41,110 --> 00:05:39,199
told me to call call back and it worked

171
00:05:42,550 --> 00:05:41,120
out that the the call was a good one and

172
00:05:44,310 --> 00:05:42,560
so it was great to come back and

173
00:05:46,070 --> 00:05:44,320
celebrate so it was a

174
00:05:47,749 --> 00:05:46,080
interesting time what was your reaction

175
00:05:48,870 --> 00:05:47,759
what was your emotional i was elated

176
00:05:50,629 --> 00:05:48,880
obviously as a you know great

177
00:05:52,790 --> 00:05:50,639
opportunity something i'd dreamt about

178
00:05:53,830 --> 00:05:52,800
my whole life to get the opportunity for

179
00:05:55,029 --> 00:05:53,840
and it was

180
00:05:56,070 --> 00:05:55,039
a uh

181
00:05:57,270 --> 00:05:56,080
you know

182
00:05:58,390 --> 00:05:57,280
pure joy

183
00:06:01,670 --> 00:05:58,400
okay

184
00:06:05,270 --> 00:06:03,110
how would you characterize the value of

185
00:06:07,830 --> 00:06:05,280
education in your life what what what

186
00:06:08,710 --> 00:06:07,840
has it meant to you what has it enabled

187
00:06:10,550 --> 00:06:08,720
you

188
00:06:12,710 --> 00:06:10,560

to do what kind of things

189
00:06:16,230 --> 00:06:12,720
uh education you know i think education

190
00:06:17,510 --> 00:06:16,240
is extremely part important part of

191
00:06:18,629 --> 00:06:17,520
my life something that is really

192
00:06:19,990 --> 00:06:18,639
important to me when i go out and talk

193
00:06:21,670 --> 00:06:20,000
to other people i really like to

194
00:06:23,670 --> 00:06:21,680
emphasize education because it's allowed

195
00:06:24,469 --> 00:06:23,680
me the opportunity to do a lot of

196
00:06:26,629 --> 00:06:24,479
different things i've had the

197
00:06:27,990 --> 00:06:26,639
opportunity to fly in a high performance

198
00:06:29,350 --> 00:06:28,000
jet aircraft

199
00:06:31,590 --> 00:06:29,360
a test pilot on high performance jet

200
00:06:33,510 --> 00:06:31,600
aircraft and then the opportunity to be

201
00:06:35,029 --> 00:06:33,520
an astronaut and to really understand

202
00:06:36,629 --> 00:06:35,039
how and and i'm really interested in

203
00:06:38,870 --> 00:06:36,639
just technology against the world is

204
00:06:41,110 --> 00:06:38,880
changing very quickly right now and it's

205
00:06:42,710 --> 00:06:41,120
uh to me education it gives you that

206
00:06:44,390 --> 00:06:42,720
opportunity to understand the changes

207
00:06:46,790 --> 00:06:44,400
and to to adapt to them as they come

208
00:06:48,950 --> 00:06:46,800
along okay

209
00:06:51,189 --> 00:06:48,960
what experiences stand out most in your

210
00:06:52,150 --> 00:06:51,199
mind about about your previous space

211
00:06:54,150 --> 00:06:52,160
flight

212
00:06:55,110 --> 00:06:54,160
the things i remember the most

213
00:06:57,070 --> 00:06:55,120

that you know

214
00:06:59,909 --> 00:06:57,080
from my previous space flight which was

215
00:07:01,110 --> 00:06:59,919
sts-126 was one getting a chance to see

216
00:07:03,350 --> 00:07:01,120
the earth and i'm really looking forward

217
00:07:04,790 --> 00:07:03,360
to it on this flight again it's just the

218
00:07:06,710 --> 00:07:04,800
uh it's amazing kind of like when you go

219
00:07:08,230 --> 00:07:06,720
on a vacation and you come back things

220
00:07:10,710 --> 00:07:08,240
kind of fade over time and so i'm kind

221
00:07:12,309 --> 00:07:10,720
of interested to to the colors the

222
00:07:14,469 --> 00:07:12,319
vividness of the planet that you can

223
00:07:16,070 --> 00:07:14,479
really see that the the earth is alive

224
00:07:18,309 --> 00:07:16,080
and also you kind of get an appreciation

225
00:07:19,990 --> 00:07:18,319
for how how big the earth is and at the

226
00:07:21,110 --> 00:07:20,000
same time how small we are as compared

227
00:07:22,710 --> 00:07:21,120
to the rest of the universe as you're

228
00:07:24,150 --> 00:07:22,720
already in the planet you start thinking

229
00:07:25,990 --> 00:07:24,160
about all the stars and other things

230
00:07:28,710 --> 00:07:26,000
around there and also the chance just to

231
00:07:30,469 --> 00:07:28,720
see you know the world without borders

232
00:07:32,070 --> 00:07:30,479
you know we we're used to looking at a

233
00:07:33,670 --> 00:07:32,080
globe with borders when you're in orbit

234
00:07:35,589 --> 00:07:33,680
everything you know you can see it's one

235
00:07:36,469 --> 00:07:35,599
earth and and you can see

236
00:07:38,870 --> 00:07:36,479
uh

237
00:07:39,909 --> 00:07:38,880
right now the earth is you know the

238
00:07:41,350 --> 00:07:39,919

people the earth are kind of getting

239
00:07:44,629 --> 00:07:41,360
together and starting to work more and

240
00:07:46,710 --> 00:07:44,639
more together as a group everyone on the

241
00:07:49,270 --> 00:07:46,720
crew has has flown before you're all

242
00:07:50,869 --> 00:07:49,280
veterans space for space fliers

243
00:07:53,029 --> 00:07:50,879
including three crew members who've

244
00:07:55,510 --> 00:07:53,039
actually done iss long duration space

245
00:07:57,350 --> 00:07:55,520
flights how how important and how much

246
00:07:59,510 --> 00:07:57,360
of a benefit is having

247
00:08:01,110 --> 00:07:59,520
that type of experience

248
00:08:02,150 --> 00:08:01,120
going to be to successfully completing

249
00:08:03,270 --> 00:08:02,160
this mission

250
00:08:05,510 --> 00:08:03,280
well it always makes things a little

251
00:08:07,110 --> 00:08:05,520
easier when you've had a group that's

252
00:08:08,550 --> 00:08:07,120
done the tasks that you're going to go

253
00:08:09,909 --> 00:08:08,560
do so a lot of things will be familiar

254
00:08:11,749 --> 00:08:09,919
to us you do obviously do a lot of

255
00:08:13,110 --> 00:08:11,759
training on the ground and the training

256
00:08:14,790 --> 00:08:13,120
gets you very well

257
00:08:16,070 --> 00:08:14,800
ready for what needs to be done on orbit

258
00:08:17,430 --> 00:08:16,080
but there are a lot of things that you

259
00:08:19,189 --> 00:08:17,440
just can't train you know what it's like

260
00:08:21,430 --> 00:08:19,199
to actually to move around we call it

261
00:08:22,950 --> 00:08:21,440
translation in space

262
00:08:25,430 --> 00:08:22,960
how is it to eat you know just all your

263
00:08:27,589 --> 00:08:25,440

kind of basic functions sleeping

264
00:08:29,270 --> 00:08:27,599
a lot of those things are unknowns until

265
00:08:30,390 --> 00:08:29,280
you get up in space so it makes things a

266
00:08:31,990 --> 00:08:30,400
little easier

267
00:08:34,230 --> 00:08:32,000
for the groove because you kind of know

268
00:08:35,750 --> 00:08:34,240
how to adapt your you you've done it

269
00:08:38,070 --> 00:08:35,760
before and you know that you can get get

270
00:08:40,149 --> 00:08:38,080
back there and do it again

271
00:08:41,909 --> 00:08:40,159
the content of of the mission has has

272
00:08:43,430 --> 00:08:41,919
gone through some changes uh since you

273
00:08:45,350 --> 00:08:43,440
first started training for for the

274
00:08:47,829 --> 00:08:45,360
mission uh tell us about how how that's

275
00:08:49,829 --> 00:08:47,839
impacted the training flow and and what

276
00:08:50,870 --> 00:08:49,839
kinds of adjustments the crew has had to

277
00:08:53,030 --> 00:08:50,880
make

278
00:08:54,870 --> 00:08:53,040
well the the training flow has changed

279
00:08:56,470 --> 00:08:54,880
and it will keep adapting right up until

280
00:08:57,829 --> 00:08:56,480
launch and it'll even change once we get

281
00:09:00,389 --> 00:08:57,839
up into space and

282
00:09:02,550 --> 00:09:00,399
in the air force we have

283
00:09:04,230 --> 00:09:02,560
a saying that basically says flexibility

284
00:09:06,230 --> 00:09:04,240
is the key to air power and i kind of

285
00:09:07,670 --> 00:09:06,240
like to apply that in space the same way

286
00:09:08,389 --> 00:09:07,680
you know flexibility is just the name of

287
00:09:09,430 --> 00:09:08,399
the game

288
00:09:10,630 --> 00:09:09,440

and that's one of the things that we

289
00:09:11,670 --> 00:09:10,640
train on the ground is that things are

290
00:09:12,949 --> 00:09:11,680
going to change things are going to be

291
00:09:15,190 --> 00:09:12,959
different we have a flight plan when we

292
00:09:16,630 --> 00:09:15,200
go on orbit and most of the time you

293
00:09:17,910 --> 00:09:16,640
only carry the first three days of the

294
00:09:18,949 --> 00:09:17,920
flight plan with you because you know

295
00:09:21,430 --> 00:09:18,959
the next

296
00:09:22,710 --> 00:09:21,440
four to you know 10 11 days depending on

297
00:09:23,750 --> 00:09:22,720
what the mission is are going to change

298
00:09:25,750 --> 00:09:23,760
once you get on orbit and they're going

299
00:09:27,670 --> 00:09:25,760
to send you up the new plan as it comes

300
00:09:29,269 --> 00:09:27,680
aboard so it's you know change to me is

301
00:09:30,870 --> 00:09:29,279
something to be expected and you always

302
00:09:32,870 --> 00:09:30,880
just want to be ready for it and i think

303
00:09:35,509 --> 00:09:32,880
it's a important thing that we train to

304
00:09:37,350 --> 00:09:35,519
is to be ready for that change

305
00:09:39,509 --> 00:09:37,360
how would you uh characterize the

306
00:09:41,670 --> 00:09:39,519
contributions of the thousands of people

307
00:09:43,910 --> 00:09:41,680
that work behind the scenes uh to to

308
00:09:45,750 --> 00:09:43,920
ensure the success and safety of every

309
00:09:46,949 --> 00:09:45,760
mission and every crew

310
00:09:48,389 --> 00:09:46,959
well the thousands of people that are

311
00:09:49,590 --> 00:09:48,399
involved in space runs to me is one of

312
00:09:51,030 --> 00:09:49,600
the coolest parts about being an

313
00:09:52,949 --> 00:09:51,040

astronaut is to realize you're just one

314
00:09:55,269 --> 00:09:52,959
piece of the the

315
00:09:56,949 --> 00:09:55,279
numerous people that make make up the

316
00:09:58,790 --> 00:09:56,959
the mission and each one of those people

317
00:10:00,870 --> 00:09:58,800
it makes a tremendous

318
00:10:02,230 --> 00:10:00,880
difference in the space program and one

319
00:10:03,750 --> 00:10:02,240
of the things i always find interesting

320
00:10:04,870 --> 00:10:03,760
is we get to go around and see a lot of

321
00:10:06,790 --> 00:10:04,880
different places whether it's the

322
00:10:09,110 --> 00:10:06,800
vendors that are making the equipment of

323
00:10:10,790 --> 00:10:09,120
the people training us or the workers

324
00:10:12,310 --> 00:10:10,800
that are at the different locate

325
00:10:13,829 --> 00:10:12,320
different nasa centers that are actually

326
00:10:15,670 --> 00:10:13,839
putting the equipment together or

327
00:10:17,190 --> 00:10:15,680
researching what needs to be done and as

328
00:10:18,230 --> 00:10:17,200
you start to ask well who worked on this

329
00:10:20,069 --> 00:10:18,240
who worked on that there's always

330
00:10:21,590 --> 00:10:20,079
another 100 people that you didn't know

331
00:10:22,870 --> 00:10:21,600
about that's doing some other part of

332
00:10:24,230 --> 00:10:22,880
the mission so

333
00:10:26,470 --> 00:10:24,240
to me it's a very important part of the

334
00:10:29,269 --> 00:10:26,480
mission and what is what makes

335
00:10:32,470 --> 00:10:29,279
working here at nasa a great thing

336
00:10:34,630 --> 00:10:32,480
if your launch schedule holds uh you're

337
00:10:35,990 --> 00:10:34,640
you're scheduled to be on orbit on iss

338
00:10:38,550 --> 00:10:36,000

right around the time of the 10th

339
00:10:40,630 --> 00:10:38,560
anniversary of the arrival of expedition

340
00:10:43,750 --> 00:10:40,640
one uh the crew that started the

341
00:10:46,630 --> 00:10:43,760
continuous human presence on iss

342
00:10:48,389 --> 00:10:46,640
discuss if you would the significance of

343
00:10:51,990 --> 00:10:48,399
that milestone that that they

344
00:10:54,150 --> 00:10:52,000
accomplished and um also space station's

345
00:10:55,670 --> 00:10:54,160
importance to the future of space

346
00:10:57,430 --> 00:10:55,680
exploration

347
00:10:59,030 --> 00:10:57,440
well you know expedition one when they

348
00:11:01,269 --> 00:10:59,040
went up you know it's been all it'll be

349
00:11:05,030 --> 00:11:01,279
almost 10 years if we arrive when we

350
00:11:06,710 --> 00:11:05,040
arrive on orbit it's gonna you know it's

351
00:11:08,230 --> 00:11:06,720
it's the beginning of a long process you

352
00:11:10,230 --> 00:11:08,240
know we've had continuous presence of

353
00:11:12,069 --> 00:11:10,240
humans in space uh since then and we

354
00:11:13,430 --> 00:11:12,079
hope to continue that for you know

355
00:11:14,389 --> 00:11:13,440
forever if we can do that because we

356
00:11:16,870 --> 00:11:14,399
think you know space is going to

357
00:11:18,470 --> 00:11:16,880
continue to become more and more uh

358
00:11:20,470 --> 00:11:18,480
important as time goes on there'll be

359
00:11:22,150 --> 00:11:20,480
things that we'll be looking for on uh

360
00:11:24,150 --> 00:11:22,160
new places you know part of its

361
00:11:26,550 --> 00:11:24,160
exploration finding new places to go

362
00:11:28,310 --> 00:11:26,560
those materials on the moon and

363
00:11:30,230 --> 00:11:28,320

everything else so i i kind of look at

364
00:11:33,190 --> 00:11:30,240
you know our exploration of space kind

365
00:11:34,630 --> 00:11:33,200
of like the uh our exploration on

366
00:11:36,630 --> 00:11:34,640
many new technologies you know you look

367
00:11:39,030 --> 00:11:36,640
at the computer and if i asked you 15 20

368
00:11:41,030 --> 00:11:39,040
years ago what computers were were good

369
00:11:42,150 --> 00:11:41,040
for for the individual person

370
00:11:43,750 --> 00:11:42,160
most people would have said not a whole

371
00:11:45,190 --> 00:11:43,760
lot but you know now almost everyone has

372
00:11:46,870 --> 00:11:45,200
a computer in their home or they're

373
00:11:49,030 --> 00:11:46,880
carrying mobile computers in their hands

374
00:11:50,710 --> 00:11:49,040
so i kind of look at space in the same

375
00:11:52,310 --> 00:11:50,720
way you know right now we're making

376
00:11:53,670 --> 00:11:52,320
those those steps and the steps are

377
00:11:54,710 --> 00:11:53,680
getting bigger and bigger as we move

378
00:11:56,629 --> 00:11:54,720
forward

379
00:11:58,550 --> 00:11:56,639
with you know through history so i think

380
00:12:00,389 --> 00:11:58,560
we'll look back at this time this

381
00:12:01,590 --> 00:12:00,399
construction of this international space

382
00:12:04,629 --> 00:12:01,600
station and a lot of times that gets

383
00:12:06,470 --> 00:12:04,639
forgotten as how much of this uh program

384
00:12:08,870 --> 00:12:06,480
is an international program and bringing

385
00:12:12,389 --> 00:12:08,880
together all these countries and and

386
00:12:13,910 --> 00:12:12,399
what i would say is the most complex uh

387
00:12:17,990 --> 00:12:13,920
piece of equipment that's ever been

388
00:12:20,150 --> 00:12:18,000

assembled uh is a great thing

389
00:12:21,990 --> 00:12:20,160
uh tell us what the key objectives of

390
00:12:24,790 --> 00:12:22,000
this mission are

391
00:12:26,629 --> 00:12:24,800
well the big big uh overriding objective

392
00:12:29,430 --> 00:12:26,639
is to leave the space station since the

393
00:12:31,350 --> 00:12:29,440
shuttle is uh the last couple flights

394
00:12:33,430 --> 00:12:31,360
here is to leave in the best shape

395
00:12:35,269 --> 00:12:33,440
logistically and also you know just in

396
00:12:37,110 --> 00:12:35,279
every way that we can so that when the

397
00:12:39,030 --> 00:12:37,120
the shuttle does

398
00:12:41,829 --> 00:12:39,040
complete its mission that we have the

399
00:12:44,150 --> 00:12:41,839
space station in a good uh

400
00:12:45,990 --> 00:12:44,160
condition so that it's ready to

401
00:12:47,910 --> 00:12:46,000
continue on to right now it's planned

402
00:12:49,670 --> 00:12:47,920
until 2020 but you know the good chance

403
00:12:52,389 --> 00:12:49,680
it may even go beyond that

404
00:12:54,710 --> 00:12:52,399
so that's our big overriding goal but

405
00:12:56,949 --> 00:12:54,720
for us we're bringing up a

406
00:12:59,269 --> 00:12:56,959
permanent multi-purpose module a pmm

407
00:13:00,710 --> 00:12:59,279
which is a big basically a container

408
00:13:02,310 --> 00:13:00,720
that's pressurized and is the

409
00:13:03,430 --> 00:13:02,320
temperature is maintained and we're

410
00:13:05,590 --> 00:13:03,440
going to attach that to the space

411
00:13:06,870 --> 00:13:05,600
station as one of the last

412
00:13:08,710 --> 00:13:06,880
habitable

413
00:13:10,949 --> 00:13:08,720

volumes on the space station and then

414
00:13:13,269 --> 00:13:10,959
we're also bringing up a platform which

415
00:13:14,870 --> 00:13:13,279
is called the express logistics carrier

416
00:13:16,389 --> 00:13:14,880
4 which is basically just a big pallet

417
00:13:18,069 --> 00:13:16,399
in the back that we're going to grab

418
00:13:19,670 --> 00:13:18,079
with the robotic arm and attach that

419
00:13:21,350 --> 00:13:19,680
it's going to carry some spare parts and

420
00:13:23,190 --> 00:13:21,360
will be used in the future so those are

421
00:13:24,870 --> 00:13:23,200
kind of our big payloads and then we're

422
00:13:26,470 --> 00:13:24,880
doing some space walks which are kind of

423
00:13:28,470 --> 00:13:26,480
finishing up the last

424
00:13:30,550 --> 00:13:28,480
uh you know kind of get the last

425
00:13:31,829 --> 00:13:30,560
finishing touches on the construction of

426
00:13:33,590 --> 00:13:31,839
the space station to make sure it's in a

427
00:13:35,990 --> 00:13:33,600
good configuration before shuttle

428
00:13:38,790 --> 00:13:36,000
finishes up okay

429
00:13:39,949 --> 00:13:38,800
and as the pilot um talk about if you

430
00:13:42,870 --> 00:13:39,959
would just some of your key

431
00:13:45,030 --> 00:13:42,880
responsibilities uh in that capacity

432
00:13:46,150 --> 00:13:45,040
well the pilot along with the commander

433
00:13:48,389 --> 00:13:46,160
we kind of

434
00:13:49,750 --> 00:13:48,399
split up these roles rolls works fairly

435
00:13:51,590 --> 00:13:49,760
heavily on

436
00:13:53,750 --> 00:13:51,600
basically operating and maintaining the

437
00:13:55,990 --> 00:13:53,760
space shuttle so one of my big jobs is

438
00:13:59,110 --> 00:13:56,000

the pilot is is just working kind of the

439
00:14:00,230 --> 00:13:59,120
the systems of the space shuttle and

440
00:14:02,629 --> 00:14:00,240
keeping everything kind of running

441
00:14:05,030 --> 00:14:02,639
smoothly other jobs that i do is i also

442
00:14:06,389 --> 00:14:05,040
assist with flying the vehicle i'll do

443
00:14:08,949 --> 00:14:06,399
the undock and fly around on this

444
00:14:10,790 --> 00:14:08,959
mission i'm also working on the

445
00:14:12,629 --> 00:14:10,800
robotic arm on the

446
00:14:15,430 --> 00:14:12,639
space shuttle and so we'll be doing some

447
00:14:17,350 --> 00:14:15,440
robotics both to inspect the shuttle we

448
00:14:18,870 --> 00:14:17,360
do inspection pre-docking and

449
00:14:22,230 --> 00:14:18,880
post-docking and we'll also do some

450
00:14:26,629 --> 00:14:22,240
robotic work or handing off that elc for

451
00:14:30,629 --> 00:14:26,639
that pilot from the the payload bay

452
00:14:32,710 --> 00:14:30,639
up to the space station arm okay and to

453
00:14:34,949 --> 00:14:32,720
the best of your knowledge um the the

454
00:14:36,550 --> 00:14:34,959
pmm

455
00:14:38,310 --> 00:14:36,560
how has it been

456
00:14:40,629 --> 00:14:38,320
configured or what's been what's been

457
00:14:41,990 --> 00:14:40,639
different about it to make it uh to make

458
00:14:45,110 --> 00:14:42,000
it

459
00:14:46,150 --> 00:14:45,120
a great question the

460
00:14:51,350 --> 00:14:46,160
the

461
00:14:53,670 --> 00:14:51,360
permanent multi-purpose module which is

462
00:14:56,230 --> 00:14:53,680
basically uh taking what we used to call

463
00:14:58,230 --> 00:14:56,240

an mplm on my last mission sts-126 it

464
00:14:59,910 --> 00:14:58,240
was called an mplm multi-purpose

465
00:15:02,550 --> 00:14:59,920
logistics module and basically it's been

466
00:15:05,269 --> 00:15:02,560
converted what we what they've added is

467
00:15:07,750 --> 00:15:05,279
uh added on some basically uh micro

468
00:15:09,269 --> 00:15:07,760
meteorite protection so it won't it'll

469
00:15:11,269 --> 00:15:09,279
help it if it gets struck in space

470
00:15:13,509 --> 00:15:11,279
they've added taken off some things that

471
00:15:14,790 --> 00:15:13,519
don't need to be used anymore so reduce

472
00:15:16,550 --> 00:15:14,800
the weight so that we carry more things

473
00:15:18,069 --> 00:15:16,560
up to orbit and they've also just kind

474
00:15:20,629 --> 00:15:18,079
of looked at the interior and added some

475
00:15:24,949 --> 00:15:20,639
small modifications that make it

476
00:15:27,590 --> 00:15:24,959
work better for a permanent module okay

477
00:15:30,949 --> 00:15:27,600
you're also scheduled to deliver um

478
00:15:33,749 --> 00:15:30,959
robonaut r2 to the station um tell us

479
00:15:36,230 --> 00:15:33,759
what you know about uh r2 and and what

480
00:15:37,749 --> 00:15:36,240
its purpose is going to be on station

481
00:15:39,990 --> 00:15:37,759
well robonaut's kind of going along that

482
00:15:42,629 --> 00:15:40,000
idea of technology that we've been kind

483
00:15:44,230 --> 00:15:42,639
of talking about in today's interview is

484
00:15:46,310 --> 00:15:44,240
you know robotics is kind of coming into

485
00:15:48,150 --> 00:15:46,320
that age where it's getting more

486
00:15:49,990 --> 00:15:48,160
uh

487
00:15:51,670 --> 00:15:50,000
basically we're trying to look work look

488
00:15:53,590 --> 00:15:51,680

for that synergy between humans and

489
00:15:55,590 --> 00:15:53,600
machines you know we have a lot of

490
00:15:57,189 --> 00:15:55,600
unmanned aerial vehicles uavs that are

491
00:15:59,189 --> 00:15:57,199
out flying around and they're working

492
00:16:01,030 --> 00:15:59,199
with humans and you know robots we use

493
00:16:03,590 --> 00:16:01,040
them in all kinds of different factories

494
00:16:04,310 --> 00:16:03,600
but this is this robot robonaut 2 looks

495
00:16:06,389 --> 00:16:04,320
more

496
00:16:08,550 --> 00:16:06,399
something like you'd see in a science

497
00:16:09,990 --> 00:16:08,560
fiction movie and so we're looking for

498
00:16:12,310 --> 00:16:10,000
those areas where we can kind of build

499
00:16:13,990 --> 00:16:12,320
on the strengths of the machine and also

500
00:16:16,389 --> 00:16:14,000
the strengths of the humans and and and

501
00:16:18,470 --> 00:16:16,399
look for that synergy where we can uh

502
00:16:23,430 --> 00:16:18,480
get the most out of uh

503
00:16:26,710 --> 00:16:25,110
the day after you make it to orbit

504
00:16:29,590 --> 00:16:26,720
you're scheduled to do an inspection of

505
00:16:31,110 --> 00:16:29,600
the shuttle's exterior tiles

506
00:16:33,269 --> 00:16:31,120
talk us through what's going to happen

507
00:16:35,189 --> 00:16:33,279
uh during that process and what your

508
00:16:36,310 --> 00:16:35,199
involvement will be for that well i'm

509
00:16:38,550 --> 00:16:36,320
one of three crew members that's going

510
00:16:40,389 --> 00:16:38,560
to be doing the tests it'll also be al

511
00:16:41,749 --> 00:16:40,399
drew and steve lindsey and the three of

512
00:16:43,030 --> 00:16:41,759
us are basically working together to

513
00:16:44,710 --> 00:16:43,040

accomplish this inspection of course we

514
00:16:47,269 --> 00:16:44,720
have a huge team on the ground

515
00:16:49,829 --> 00:16:47,279
that's uh really helping us analyze all

516
00:16:51,030 --> 00:16:49,839
the the video and the data that we get

517
00:16:53,189 --> 00:16:51,040
from inspecting the wings but the

518
00:16:55,350 --> 00:16:53,199
process is basically have the small

519
00:16:58,790 --> 00:16:55,360
uh the robotic arm from the shuttle that

520
00:17:00,629 --> 00:16:58,800
we reach back and grab a boom a sensor

521
00:17:02,790 --> 00:17:00,639
system that we have on the

522
00:17:05,429 --> 00:17:02,800
other side of the sill of the space

523
00:17:07,029 --> 00:17:05,439
shuttle we'll pull that up and with that

524
00:17:09,270 --> 00:17:07,039
extra boom it gives us more length than

525
00:17:10,949 --> 00:17:09,280
we can actually look at the front

526
00:17:13,350 --> 00:17:10,959
leading edge we call it

527
00:17:15,189 --> 00:17:13,360
rcc uh the leading edges of the wings of

528
00:17:16,710 --> 00:17:15,199
the shuttle and we check both sides of

529
00:17:18,710 --> 00:17:16,720
that and we're also going to look at the

530
00:17:20,789 --> 00:17:18,720
nose cap and some other

531
00:17:22,309 --> 00:17:20,799
big tile areas and other big areas that

532
00:17:23,750 --> 00:17:22,319
we can take a look at and all that data

533
00:17:25,110 --> 00:17:23,760
is going to be processed in the ground

534
00:17:25,909 --> 00:17:25,120
and again hundreds and hundreds of

535
00:17:27,750 --> 00:17:25,919
people on the ground are going to

536
00:17:30,230 --> 00:17:27,760
analyze that data and and see if we

537
00:17:33,190 --> 00:17:30,240
basically took any damage in this

538
00:17:35,350 --> 00:17:33,200

pre-docking inspection uh if we've had

539
00:17:37,669 --> 00:17:35,360
any damage from ascent is primarily what

540
00:17:39,270 --> 00:17:37,679
they're looking for okay

541
00:17:41,909 --> 00:17:39,280
walk us through if you would too also

542
00:17:43,510 --> 00:17:41,919
the um the rendezvous and docking phases

543
00:17:46,150 --> 00:17:43,520
of the flight what what are you going to

544
00:17:47,270 --> 00:17:46,160
be doing for that well as a pilot you

545
00:17:49,350 --> 00:17:47,280
you do

546
00:17:50,950 --> 00:17:49,360
your your basically the whole

547
00:17:53,029 --> 00:17:50,960
crew is going to be working on rondo and

548
00:17:55,350 --> 00:17:53,039
docking but as a pilot i'm

549
00:17:57,190 --> 00:17:55,360
primarily assisting the commander and

550
00:17:59,190 --> 00:17:57,200
kind of getting the profile right and

551
00:18:00,870 --> 00:17:59,200
doing the orbital burns and right after

552
00:18:02,070 --> 00:18:00,880
we get onto orbit we're doing orbital

553
00:18:04,870 --> 00:18:02,080
burns that are actually setting us up

554
00:18:07,029 --> 00:18:04,880
for the rendezvous but primarily on the

555
00:18:08,789 --> 00:18:07,039
uh basically our

556
00:18:10,310 --> 00:18:08,799
third day up in orbit after we do the

557
00:18:12,630 --> 00:18:10,320
inspection flight we call it flight day

558
00:18:13,990 --> 00:18:12,640
three is where we usually do the

559
00:18:16,070 --> 00:18:14,000
rendezvous and docking and it's

560
00:18:18,310 --> 00:18:16,080
basically a bunch of

561
00:18:19,909 --> 00:18:18,320
orbital burns small burns that correct

562
00:18:21,510 --> 00:18:19,919
or orbit and as we get closer we make

563
00:18:23,669 --> 00:18:21,520

smaller and smaller burns and eventually

564
00:18:25,909 --> 00:18:23,679
we take over visually and then from the

565
00:18:27,270 --> 00:18:25,919
visual perspective we fly around the

566
00:18:29,110 --> 00:18:27,280
space station from

567
00:18:30,470 --> 00:18:29,120
as the space station's flying around we

568
00:18:32,310 --> 00:18:30,480
kind of pull up

569
00:18:33,750 --> 00:18:32,320
in front of it as we're going around in

570
00:18:36,710 --> 00:18:33,760
orbit and then we end up visually

571
00:18:38,789 --> 00:18:36,720
docking with the space station okay

572
00:18:40,950 --> 00:18:38,799
uh on that same day that you docked i

573
00:18:45,190 --> 00:18:40,960
think you touched on on

574
00:18:48,789 --> 00:18:45,200
this before that you're going to also

575
00:18:50,310 --> 00:18:48,799
post docking get to taking that elc 4

576
00:18:52,710 --> 00:18:50,320
out of the payload bay can you talk us

577
00:18:53,669 --> 00:18:52,720
through that process and

578
00:18:56,470 --> 00:18:53,679
up to

579
00:18:57,190 --> 00:18:56,480
telling us specifically where elc 4 will

580
00:18:58,870 --> 00:18:57,200
be

581
00:19:01,350 --> 00:18:58,880
temporarily

582
00:19:02,630 --> 00:19:01,360
stowed i guess at elc 4 again that's a

583
00:19:04,150 --> 00:19:02,640
pallet that's in the back that's going

584
00:19:07,190 --> 00:19:04,160
to that's right now is carrying a

585
00:19:09,270 --> 00:19:07,200
radiator and it's also got some other

586
00:19:10,789 --> 00:19:09,280
devices that can carry other

587
00:19:12,549 --> 00:19:10,799
boxes that we can use in the future it's

588
00:19:14,070 --> 00:19:12,559

basically kind of a good storage

589
00:19:15,830 --> 00:19:14,080
location but primarily what we're

590
00:19:18,390 --> 00:19:15,840
carrying on it that it has is a spare

591
00:19:20,150 --> 00:19:18,400
radiator that we can use to cool some of

592
00:19:23,350 --> 00:19:20,160
the systems on the space

593
00:19:25,190 --> 00:19:23,360
station anyway once we dock right away

594
00:19:26,950 --> 00:19:25,200
even before we open the hatches

595
00:19:28,390 --> 00:19:26,960
the space station robotic arm is

596
00:19:30,870 --> 00:19:28,400
actually going to reach in

597
00:19:32,870 --> 00:19:30,880
uh grab the pallet and

598
00:19:35,029 --> 00:19:32,880
basically pull out put it in a position

599
00:19:36,310 --> 00:19:35,039
then we're going to use the shuttle arm

600
00:19:39,350 --> 00:19:36,320
we'll actually have set it up to get

601
00:19:41,430 --> 00:19:39,360
some views so that the robotic the space

602
00:19:43,190 --> 00:19:41,440
station arm can actually it'll make it

603
00:19:44,230 --> 00:19:43,200
easier for them to grab the pallet

604
00:19:45,430 --> 00:19:44,240
they're going to move it out to a

605
00:19:47,430 --> 00:19:45,440
position then we're going to take the

606
00:19:49,830 --> 00:19:47,440
robotic arm of the shuttle grab the

607
00:19:51,190 --> 00:19:49,840
pallet and then now the space station

608
00:19:52,950 --> 00:19:51,200
arm is actually going to reposition

609
00:19:54,549 --> 00:19:52,960
itself so it's actually going to have to

610
00:19:55,830 --> 00:19:54,559
we call it a walk-off it'll have to

611
00:19:57,990 --> 00:19:55,840
change the

612
00:20:00,310 --> 00:19:58,000
place where it attaches on the other end

613
00:20:01,909 --> 00:20:00,320

move down and get itself in a position

614
00:20:04,470 --> 00:20:01,919
then it will grab

615
00:20:06,149 --> 00:20:04,480
the elc4 again from us will move out of

616
00:20:08,710 --> 00:20:06,159
the way and then they will actually end

617
00:20:11,830 --> 00:20:08,720
up putting it on the starboard neighbor

618
00:20:13,430 --> 00:20:11,840
nader side of the space station okay on

619
00:20:14,789 --> 00:20:13,440
the truss

620
00:20:17,350 --> 00:20:14,799
and um

621
00:20:20,070 --> 00:20:17,360
is the process of getting a pmm out

622
00:20:22,870 --> 00:20:20,080
about as involved is it is it it is it's

623
00:20:23,669 --> 00:20:22,880
fairly involved you know we're moving it

624
00:20:26,149 --> 00:20:23,679
uh

625
00:20:27,750 --> 00:20:26,159
it it won't involve the shuttle arm but

626
00:20:29,430 --> 00:20:27,760
it's it's it's again going to be a

627
00:20:32,230 --> 00:20:29,440
process of getting it out and getting in

628
00:20:36,950 --> 00:20:32,240
situation a position that we can put it

629
00:20:41,669 --> 00:20:39,029
now you you aren't directly involved

630
00:20:43,110 --> 00:20:41,679
with the the evas um

631
00:20:45,669 --> 00:20:43,120
but if you could just kind of give us a

632
00:20:47,029 --> 00:20:45,679
synopsis of of what al drew and tim

633
00:20:49,830 --> 00:20:47,039
copper are going to do

634
00:20:51,750 --> 00:20:49,840
um on on just

635
00:20:52,950 --> 00:20:51,760
conglomerate them both basically that's

636
00:20:55,190 --> 00:20:52,960
kind of some of the tasks that they're

637
00:20:56,870 --> 00:20:55,200
going to do yeah they're a big task that

638
00:20:58,549 --> 00:20:56,880

they're going to do on the the space

639
00:20:59,750 --> 00:20:58,559
walks is again get it in the good

640
00:21:01,270 --> 00:20:59,760
configuration there's some lights that

641
00:21:03,190 --> 00:21:01,280
need to be

642
00:21:05,430 --> 00:21:03,200
repaired or changed out they have covers

643
00:21:06,470 --> 00:21:05,440
that that needs to be secured one of the

644
00:21:08,789 --> 00:21:06,480
other tasks they're going to do is

645
00:21:10,470 --> 00:21:08,799
there's a on we have these

646
00:21:11,990 --> 00:21:10,480
basically it's like a small train system

647
00:21:14,870 --> 00:21:12,000
on the trust that we can move back and

648
00:21:17,590 --> 00:21:14,880
forth that has can carry the robotic arm

649
00:21:19,750 --> 00:21:17,600
and on the end of that track we took off

650
00:21:21,029 --> 00:21:19,760
basically the the stoppers to keep it

651
00:21:23,029 --> 00:21:21,039
and they're going to install a stopper

652
00:21:24,630 --> 00:21:23,039
on one of those so a lot of

653
00:21:25,909 --> 00:21:24,640
different tasks and i'm sure those tasks

654
00:21:27,990 --> 00:21:25,919
will probably change once we get to

655
00:21:29,510 --> 00:21:28,000
orbit because there's you know something

656
00:21:31,350 --> 00:21:29,520
priorities change and so they'll be

657
00:21:33,350 --> 00:21:31,360
adding on to that so they've got a lot

658
00:21:35,029 --> 00:21:33,360
of different varied tasks

659
00:21:37,029 --> 00:21:35,039
to get us in that

660
00:21:39,110 --> 00:21:37,039
good final

661
00:21:41,029 --> 00:21:39,120
position okay

662
00:21:43,510 --> 00:21:41,039
you will however be involved with

663
00:21:45,909 --> 00:21:43,520

activating the pmm but what does that

664
00:21:50,789 --> 00:21:48,870
we'll have just birthed the

665
00:21:52,390 --> 00:21:50,799
the day of prior the

666
00:21:53,830 --> 00:21:52,400
pmm underneath and so now we're going to

667
00:21:56,710 --> 00:21:53,840
get into the

668
00:21:58,390 --> 00:21:56,720
the pmm so activation involves basically

669
00:21:59,430 --> 00:21:58,400
there's some basically got to open two

670
00:22:01,190 --> 00:21:59,440
hatches

671
00:22:03,029 --> 00:22:01,200
and because there's a hatch on the

672
00:22:04,230 --> 00:22:03,039
station side and a hatch on the pmm side

673
00:22:06,310 --> 00:22:04,240
and there's obviously an area in the

674
00:22:07,669 --> 00:22:06,320
middle that we call a vestibule and so

675
00:22:09,830 --> 00:22:07,679
we're gonna have to equalize the

676
00:22:11,029 --> 00:22:09,840
pressure between these two also get the

677
00:22:12,789 --> 00:22:11,039
temperatures

678
00:22:16,789 --> 00:22:12,799
right check the seals make sure that

679
00:22:18,710 --> 00:22:16,799
those are well once we open the station

680
00:22:20,710 --> 00:22:18,720
side hatch we're gonna have to look in

681
00:22:23,350 --> 00:22:20,720
and there's covers on that to protect

682
00:22:24,870 --> 00:22:23,360
them from the cold or you know

683
00:22:26,710 --> 00:22:24,880
basically from the environment of space

684
00:22:29,110 --> 00:22:26,720
we'll take those covers off and then

685
00:22:31,110 --> 00:22:29,120
we're going to have to set up the long

686
00:22:32,950 --> 00:22:31,120
term linkage that's going to be between

687
00:22:34,390 --> 00:22:32,960
this permanent module so it has to talk

688
00:22:36,230 --> 00:22:34,400

to the computers on space station so i

689
00:22:37,909 --> 00:22:36,240
have to hook those lines up there'll be

690
00:22:39,190 --> 00:22:37,919
commands that have to be set and again

691
00:22:41,909 --> 00:22:39,200
scott and i will be working on this

692
00:22:43,430 --> 00:22:41,919
together to to to put these things

693
00:22:44,789 --> 00:22:43,440
together but again there's a huge team

694
00:22:46,390 --> 00:22:44,799
on the ground that's

695
00:22:47,750 --> 00:22:46,400
analyzing a lot of this data that we're

696
00:22:49,270 --> 00:22:47,760
that's being sent down to make sure that

697
00:22:50,630 --> 00:22:49,280
we're at the right configuration that we

698
00:22:51,669 --> 00:22:50,640
want to be in before we open all the

699
00:22:53,830 --> 00:22:51,679
hatches

700
00:22:55,350 --> 00:22:53,840
how long of a process is that and and

701
00:22:57,430 --> 00:22:55,360
what is is it

702
00:22:59,830 --> 00:22:57,440
what kind of things could

703
00:23:01,750 --> 00:22:59,840
possibly throw a wrench and

704
00:23:02,950 --> 00:23:01,760
well it's you know there are all kinds

705
00:23:04,870 --> 00:23:02,960
of things that can always you know

706
00:23:06,870 --> 00:23:04,880
there's always the unknown is always the

707
00:23:08,390 --> 00:23:06,880
the challenge but you know we we have

708
00:23:09,590 --> 00:23:08,400
contingencies for all those things but a

709
00:23:11,350 --> 00:23:09,600
lot of times there's things they haven't

710
00:23:13,029 --> 00:23:11,360
even thought of or something completely

711
00:23:14,470 --> 00:23:13,039
different but usually from those other

712
00:23:16,549 --> 00:23:14,480
contingencies that you thought of it

713
00:23:18,470 --> 00:23:16,559

helps you get your plans started and and

714
00:23:20,230 --> 00:23:18,480
we usually figure out a good solution to

715
00:23:22,149 --> 00:23:20,240
come to but it's going to take anywhere

716
00:23:23,990 --> 00:23:22,159
from four to six hours to to get it all

717
00:23:26,630 --> 00:23:24,000
configured and get all the everything

718
00:23:30,870 --> 00:23:26,640
the way we'd like it set up for opening

719
00:23:34,149 --> 00:23:32,870
after your work on station is complete

720
00:23:36,789 --> 00:23:34,159
you'll undock

721
00:23:40,870 --> 00:23:36,799
and make the preparation to to return to

722
00:23:43,350 --> 00:23:40,880
earth uh it might be one of the last

723
00:23:45,430 --> 00:23:43,360
opportunities for anybody to see

724
00:23:47,990 --> 00:23:45,440
uh space station from that vantage point

725
00:23:49,590 --> 00:23:48,000
from inside of a shuttle backing away as

726
00:23:50,549 --> 00:23:49,600
you sit here today trying to imagine

727
00:23:53,830 --> 00:23:50,559
that

728
00:23:55,669 --> 00:23:53,840
what's going through your head about

729
00:23:58,149 --> 00:23:55,679
that well it's always neat i've only

730
00:24:00,630 --> 00:23:58,159
done it one other time for myself

731
00:24:02,390 --> 00:24:00,640
my last mission to to actually you know

732
00:24:04,070 --> 00:24:02,400
fly around and look at stations so just

733
00:24:06,070 --> 00:24:04,080
getting the opportunity to do it at all

734
00:24:07,590 --> 00:24:06,080
is truly amazing and the fact that it

735
00:24:09,830 --> 00:24:07,600
may be one of the last times that a

736
00:24:11,269 --> 00:24:09,840
shuttle gets to do it is you know it's

737
00:24:13,909 --> 00:24:11,279
honored to get the opportunity to do it

738
00:24:14,789 --> 00:24:13,919

and i will be appreciating every second

739
00:24:18,470 --> 00:24:14,799
and

740
00:24:19,990 --> 00:24:18,480
just trying to put it in my memory you

741
00:24:21,269 --> 00:24:20,000
know just like when you're on a vacation

742
00:24:23,110 --> 00:24:21,279
you're watching something that's you

743
00:24:25,190 --> 00:24:23,120
know really neat or going to some other

744
00:24:27,350 --> 00:24:25,200
type of event i will try to record all

745
00:24:30,789 --> 00:24:27,360
that in my memory bank so that i can

746
00:24:33,430 --> 00:24:30,799
play it back for uh years to come

747
00:24:37,909 --> 00:24:33,440
this mission is also scheduled to be one

748
00:24:42,070 --> 00:24:39,990
what does it mean to you to have had a

749
00:24:43,990 --> 00:24:42,080
part in the shuttle program it's it's

750
00:24:46,549 --> 00:24:44,000
it's uh it's something that many

751
00:24:48,950 --> 00:24:46,559
consider to be an american institution

752
00:24:50,390 --> 00:24:48,960
oh it's great uh great to have the

753
00:24:52,070 --> 00:24:50,400
opportunity to participate in the space

754
00:24:53,430 --> 00:24:52,080
program you know from

755
00:24:54,870 --> 00:24:53,440
from all the people i know that

756
00:24:57,110 --> 00:24:54,880
participate in the space program there

757
00:24:59,350 --> 00:24:57,120
and there are many it's a great

758
00:25:01,510 --> 00:24:59,360
opportunity to to

759
00:25:03,430 --> 00:25:01,520
to to be part of history you know to to

760
00:25:04,470 --> 00:25:03,440
see all these things happening and and

761
00:25:06,549 --> 00:25:04,480
seeing

762
00:25:07,909 --> 00:25:06,559
as we advance in space it hasn't been

763
00:25:09,350 --> 00:25:07,919

that many years ago that we walked on

764
00:25:11,990 --> 00:25:09,360
the moon and here we are

765
00:25:13,990 --> 00:25:12,000
uh you know have us a fully completed

766
00:25:15,990 --> 00:25:14,000
space station almost and you know we're

767
00:25:17,909 --> 00:25:16,000
at that point where now we're gonna

768
00:25:19,909 --> 00:25:17,919
we've had continuous presence in space

769
00:25:21,430 --> 00:25:19,919
for about 10 years so there's many

770
00:25:23,669 --> 00:25:21,440
things many exciting things happen in

771
00:25:24,950 --> 00:25:23,679
space and i'm looking forward to

772
00:25:26,390 --> 00:25:24,960
exploration that we know is going to

773
00:25:29,029 --> 00:25:26,400
happen in the future going back to the

774
00:25:30,230 --> 00:25:29,039
moon onto mars and you know onto a lot

775
00:25:31,510 --> 00:25:30,240
of other different

776
00:25:33,510 --> 00:25:31,520
uh

777
00:25:37,590 --> 00:25:33,520
bodies on the the

778
00:25:41,430 --> 00:25:38,870
can you

779
00:25:42,710 --> 00:25:41,440
give us an idea if if you can can from

780
00:25:44,310 --> 00:25:42,720
from memory right off the top of your

781
00:25:45,669 --> 00:25:44,320
head what maybe you remember some of

782
00:25:47,590 --> 00:25:45,679
discovery's

783
00:25:51,029 --> 00:25:47,600
magical moments or greatest hits if you

784
00:25:52,710 --> 00:25:51,039
had to compile a list of of some of the

785
00:25:54,549 --> 00:25:52,720
the missions and

786
00:25:56,710 --> 00:25:54,559
events that discovery's been involved

787
00:25:59,029 --> 00:25:56,720
with what what

788
00:26:00,549 --> 00:25:59,039

what top two or so

789
00:26:02,470 --> 00:26:00,559
would have to be on that list well

790
00:26:04,310 --> 00:26:02,480
discovery's had a lot of you know kind

791
00:26:05,830 --> 00:26:04,320
of great first it's it's been the

792
00:26:07,750 --> 00:26:05,840
workhorse of the fleet it's really done

793
00:26:10,470 --> 00:26:07,760
a lot of great things it's uh

794
00:26:12,630 --> 00:26:10,480
you know it's been on two return to

795
00:26:14,390 --> 00:26:12,640
flights after challenger and after

796
00:26:15,909 --> 00:26:14,400
columbia it was a return to flights it's

797
00:26:18,390 --> 00:26:15,919
the only orbiter that's actually flown

798
00:26:20,789 --> 00:26:18,400
uh four missions in the same year it put

799
00:26:22,950 --> 00:26:20,799
hubble in space for the uh

800
00:26:25,029 --> 00:26:22,960
you know and we just had a hubble

801
00:26:26,950 --> 00:26:25,039
repair mission that just happened so

802
00:26:29,430 --> 00:26:26,960
uh

803
00:26:31,510 --> 00:26:29,440
discovery has really had the opportunity

804
00:26:33,590 --> 00:26:31,520
to to to see the full spectrum they also

805
00:26:35,269 --> 00:26:33,600
went up to amir for the first time got

806
00:26:36,630 --> 00:26:35,279
really close to it on the first

807
00:26:38,390 --> 00:26:36,640
rendezvous they didn't dock with it but

808
00:26:41,110 --> 00:26:38,400
then they also did the last docking with

809
00:26:44,230 --> 00:26:41,120
mirror so it's had a you know quite a

810
00:26:45,909 --> 00:26:44,240
long history and it's

811
00:26:50,630 --> 00:26:45,919
it's an honor to be on one of the last

812
00:26:57,190 --> 00:26:55,110
how would you uh characterize how

813
00:26:58,390 --> 00:26:57,200

the space shuttle the vehicle

814
00:27:00,230 --> 00:26:58,400
um

815
00:27:04,310 --> 00:27:00,240
what what it's meant uh to the

816
00:27:09,430 --> 00:27:07,269
uh well the space shuttle is

817
00:27:11,750 --> 00:27:09,440
you know is really an amazing vehicle if

818
00:27:14,470 --> 00:27:11,760
you think about it they took technology

819
00:27:16,390 --> 00:27:14,480
from the 60s like the x-15 and a lot of

820
00:27:18,710 --> 00:27:16,400
other things that test pilots worked out

821
00:27:21,190 --> 00:27:18,720
to look at a vehicle that could re-enter

822
00:27:23,269 --> 00:27:21,200
and land on a runway and to actually you

823
00:27:25,909 --> 00:27:23,279
know i i got on and started flying it

824
00:27:28,470 --> 00:27:25,919
for the first time in 2008 and i've been

825
00:27:30,389 --> 00:27:28,480
at nasa for years before that and and

826
00:27:32,070 --> 00:27:30,399
studied it and it's truly an amazing

827
00:27:34,070 --> 00:27:32,080
machine when you really think about the

828
00:27:37,110 --> 00:27:34,080
technology and it's still amazing today

829
00:27:38,310 --> 00:27:37,120
even uh 30 years later that uh that we

830
00:27:40,470 --> 00:27:38,320
that we can build a vehicle that we can

831
00:27:42,470 --> 00:27:40,480
put in orbit and actually land on a spot

832
00:27:44,549 --> 00:27:42,480
on the earth of our choosing and so i

833
00:27:46,070 --> 00:27:44,559
think that's a a great thing and i think

834
00:27:48,710 --> 00:27:46,080
in the future there will be

835
00:27:51,909 --> 00:27:48,720
other wing vehicles that we'll see in