



1
00:00:06,260 --> 00:00:03,800
good afternoon thank you for joining us

2
00:00:07,810 --> 00:00:06,270
it is my privilege to introduce the crew

3
00:00:11,570 --> 00:00:07,820
of the final space shuttle mission

4
00:00:13,490 --> 00:00:11,580
sts-135 to my left is commander Chris

5
00:00:15,470 --> 00:00:13,500
Ferguson chris is a native of

6
00:00:18,140 --> 00:00:15,480
Philadelphia Pennsylvania in a retired

7
00:00:20,510 --> 00:00:18,150
captain in the US Navy he joined NASA in

8
00:00:22,700 --> 00:00:20,520
1998 and has since served on to Space

9
00:00:26,810 --> 00:00:22,710
Shuttle missions his first he served as

10
00:00:29,859 --> 00:00:26,820
pilot on sts-1 15 in 2006 and next serve

11
00:00:31,939 --> 00:00:29,869
as the commander of sts-1 26 in 2008

12
00:00:34,370 --> 00:00:31,949
since then he has served as the deputy

13
00:00:35,930 --> 00:00:34,380

of the sorry deputy chief of the

14

00:00:37,610 --> 00:00:35,940

astronaut office before being assigned

15

00:00:39,950 --> 00:00:37,620

as commander for this mission last fall

16

00:00:41,090 --> 00:00:39,960

he will lead this crew on their 12-day

17

00:00:43,490 --> 00:00:41,100

mission to the international space

18

00:00:46,790 --> 00:00:43,500

station now turning it over to Chris to

19

00:00:48,979 --> 00:00:46,800

introduce his crew thanks Nicole good

20

00:00:51,770 --> 00:00:48,989

afternoon to everybody this is a day

21

00:00:53,299 --> 00:00:51,780

filled with filled with media it's

22

00:00:55,310 --> 00:00:53,309

interesting interest in the crew

23

00:00:56,569 --> 00:00:55,320

interest in the mission itself and

24

00:00:58,459 --> 00:00:56,579

hopefully this morning you've had an

25

00:00:59,990 --> 00:00:58,469

opportunity to listen a little bit to

26

00:01:02,750 --> 00:01:00,000

the mission itself of course a lot of

27

00:01:05,299 --> 00:01:02,760

the focus has been on the fact that this

28

00:01:07,250 --> 00:01:05,309

is the historic final flight of the

29

00:01:09,950 --> 00:01:07,260

space shuttle but that said we do have

30

00:01:11,899 --> 00:01:09,960

we have a very busy very event filled

31

00:01:14,149 --> 00:01:11,909

packed mission that we have to pull off

32

00:01:17,210 --> 00:01:14,159

before we can finish up on the runway

33

00:01:20,749 --> 00:01:17,220

and celebrate the 30-year history of the

34

00:01:23,359 --> 00:01:20,759

space shuttle program to my left is the

35

00:01:25,760 --> 00:01:23,369

crew and I'm going to before I introduce

36

00:01:27,770 --> 00:01:25,770

Doug I'm going to gush on the crew a

37

00:01:31,819 --> 00:01:27,780

little bit you know this is the right

38

00:01:33,380 --> 00:01:31,829

crew for the right time we have we've

39

00:01:35,060 --> 00:01:33,390

had only nine months to train we've had

40

00:01:36,859 --> 00:01:35,070

only four crew members to do it with and

41

00:01:39,350 --> 00:01:36,869

in that short period of time we've

42

00:01:41,450 --> 00:01:39,360

managed to have a lot of fun we've

43

00:01:43,670 --> 00:01:41,460

managed to laugh and we've managed to

44

00:01:45,679 --> 00:01:43,680

get an awful awful lot of work done so

45

00:01:47,090 --> 00:01:45,689

what a great group of people and it's

46

00:01:49,310 --> 00:01:47,100

been really my honor and pleasure to

47

00:01:51,590 --> 00:01:49,320

work with work with them and it's going

48

00:01:54,410 --> 00:01:51,600

to be absolutely a joy to fly with them

49

00:01:57,350 --> 00:01:54,420

here in a short week or so to my left is

50

00:01:59,179 --> 00:01:57,360

is the pilot Doug Hurley doug is going

51
00:02:00,440 --> 00:01:59,189
to keep me out of trouble hopefully he's

52
00:02:01,880 --> 00:02:00,450
going to keep a good eye on me make sure

53
00:02:03,770 --> 00:02:01,890
that I do what I'm supposed to do when

54
00:02:05,030 --> 00:02:03,780
I'm supposed to do it Bob all put the

55
00:02:06,830 --> 00:02:05,040
landing gear down at the very end of the

56
00:02:09,109 --> 00:02:06,840
mission he comes from upstate New York

57
00:02:11,330 --> 00:02:09,119
he is a active duty colonel in the

58
00:02:12,920 --> 00:02:11,340
Marine Corps and a Hornet pilot he's a

59
00:02:13,650 --> 00:02:12,930
veteran of a single space shuttle flight

60
00:02:15,600 --> 00:02:13,660
sts-1

61
00:02:18,300 --> 00:02:15,610
27 which which flew a couple years ago

62
00:02:20,730 --> 00:02:18,310
Doug thanks Chris good afternoon

63
00:02:23,390 --> 00:02:20,740

everybody get right to introducing our

64

00:02:25,920 --> 00:02:23,400

mission specialist one sandy Magnus

65

00:02:28,410 --> 00:02:25,930

she's got a tremendous background and

66

00:02:31,340 --> 00:02:28,420

she comes with a lot of place space

67

00:02:33,690 --> 00:02:31,350

flight experience first on sts-1 12

68

00:02:35,700 --> 00:02:33,700

shuttle mission and then she spent four

69

00:02:38,100 --> 00:02:35,710

and a half months on board space station

70

00:02:41,520 --> 00:02:38,110

so she is our space station expert on

71

00:02:44,580 --> 00:02:41,530

this mission and also just as important

72

00:02:45,780 --> 00:02:44,590

our transfers are our loadmaster she's

73

00:02:46,980 --> 00:02:45,790

going to keep us honest throughout the

74

00:02:50,190 --> 00:02:46,990

mission get everything transferred

75

00:02:51,480 --> 00:02:50,200

across the hatch and it and it's just a

76

00:02:54,270 --> 00:02:51,490

great pleasure to be able to fly with

77

00:02:57,120 --> 00:02:54,280

her sandy thank you Doug to my left is

78

00:02:58,800 --> 00:02:57,130

Rex Walheim he's a retired Air Force

79

00:03:00,540 --> 00:02:58,810

colonel he's our mission specialist too

80

00:03:02,700 --> 00:03:00,550

so he's actually keeping an eye on Doug

81

00:03:04,920 --> 00:03:02,710

and Fergie during launch and landing and

82

00:03:06,570 --> 00:03:04,930

keeping him honest so he'll prod Doug to

83

00:03:09,300 --> 00:03:06,580

prod fergie to put the landing gear down

84

00:03:11,490 --> 00:03:09,310

and rex has been on several he's the

85

00:03:13,380 --> 00:03:11,500

veteran of two space flights lots of EV

86

00:03:16,020 --> 00:03:13,390

a time he's actually our EV a expert and

87

00:03:18,240 --> 00:03:16,030

he will be the one running the EBA that

88

00:03:20,640 --> 00:03:18,250

Mike and Ron will be doing for us Rex is

89

00:03:23,580 --> 00:03:20,650

very detailed oriented he's backing me

90

00:03:26,340 --> 00:03:23,590

up on a loadmaster and he's been just

91

00:03:27,960 --> 00:03:26,350

fantastic to work with and it's been a

92

00:03:31,860 --> 00:03:27,970

lot of fun we're classmates too so it

93

00:03:33,120 --> 00:03:31,870

makes it even extra special all right

94

00:03:34,530 --> 00:03:33,130

with that we'll start with questions

95

00:03:37,080 --> 00:03:34,540

here from the Johnson Space Center will

96

00:03:43,560 --> 00:03:37,090

start at this side if you could sit your

97

00:03:47,400 --> 00:03:43,570

name and affiliation DBS news I guess

98

00:03:48,840 --> 00:03:47,410

for the commander a lot of we did learn

99

00:03:50,280 --> 00:03:48,850

about the mission today and I think that

100

00:03:52,680 --> 00:03:50,290

if you were looking at this mission as a

101
00:03:54,330 --> 00:03:52,690
standalone flight there have been other

102
00:03:55,979 --> 00:03:54,340
flights somewhat like this what makes it

103
00:03:57,150 --> 00:03:55,989
unique of course it's the last flight

104
00:03:58,170 --> 00:03:57,160
and there's there's so much history

105
00:04:00,510 --> 00:03:58,180
involved there's so much emotion

106
00:04:02,040 --> 00:04:00,520
involved with everybody on the team I

107
00:04:05,610 --> 00:04:02,050
mean you've been asked this question

108
00:04:07,260 --> 00:04:05,620
about 9,000 times by now maybe more but

109
00:04:08,729 --> 00:04:07,270
but tell me a little bit about that I

110
00:04:10,590 --> 00:04:08,739
mean what's y'all's view of the flight

111
00:04:12,720 --> 00:04:10,600
is from the historical perspective and

112
00:04:14,550 --> 00:04:12,730
how you're dealing with that yeah you

113
00:04:16,949 --> 00:04:14,560

know I was thinking about this a little

114

00:04:21,479 --> 00:04:16,959

bit the other night why you know why the

115

00:04:23,700 --> 00:04:21,489

emotion why the passion and you know

116

00:04:25,080 --> 00:04:23,710

great mechanical achievements you know

117

00:04:26,990 --> 00:04:25,090

things that we have built over the

118

00:04:29,240 --> 00:04:27,000

course of our history ships

119

00:04:32,480 --> 00:04:29,250

I mean cars and we tend to personify

120

00:04:34,730 --> 00:04:32,490

them we give them a life and the shuttle

121

00:04:36,260 --> 00:04:34,740

is is is probably the epitome of

122

00:04:40,820 --> 00:04:36,270

something like that you know it's been

123

00:04:42,950 --> 00:04:40,830

it's it's been a lifelong love for a lot

124

00:04:45,110 --> 00:04:42,960

of people who have worked on the program

125

00:04:46,340 --> 00:04:45,120

and it's it's probably gone a little bit

126
00:04:48,440 --> 00:04:46,350
longer than we thought it was it is

127
00:04:50,240 --> 00:04:48,450
actually turned into careers I mean two

128
00:04:52,430 --> 00:04:50,250
generations of careers could potentially

129
00:04:55,640 --> 00:04:52,440
have have occurred over the course of

130
00:04:58,880 --> 00:04:55,650
the shuttles lifespan and I think that

131
00:05:01,280 --> 00:04:58,890
that really therein lies the crux of why

132
00:05:02,960 --> 00:05:01,290
the emotion because we do we tend to

133
00:05:05,540 --> 00:05:02,970
treat these vehicles as though they're a

134
00:05:07,370 --> 00:05:05,550
little part of us and you know to see

135
00:05:10,480 --> 00:05:07,380
them go away it's it's a little bit like

136
00:05:12,920 --> 00:05:10,490
your your your morning a friend and

137
00:05:14,330 --> 00:05:12,930
they've been wonderful to us there's an

138
00:05:17,090 --> 00:05:14,340

enormous amount of history to look back

139

00:05:18,409 --> 00:05:17,100

upon and when it's all said and done I

140

00:05:19,430 --> 00:05:18,419

think we'll look back on the shuttle

141

00:05:23,090 --> 00:05:19,440

program and say it's just been a

142

00:05:24,020 --> 00:05:23,100

tremendous success but you know hope I

143

00:05:27,200 --> 00:05:24,030

answered your question in there

144

00:05:31,310 --> 00:05:27,210

somewhere man okay what you doing on

145

00:05:33,260 --> 00:05:31,320

this side Irene Klotz with Reuters I

146

00:05:36,980 --> 00:05:33,270

guess for any one of you wants to take

147

00:05:39,200 --> 00:05:36,990

this where do you feel the pinch most

148

00:05:41,870 --> 00:05:39,210

having just four of you in other words

149

00:05:45,500 --> 00:05:41,880

if you had like a fifth person or a six

150

00:05:47,330 --> 00:05:45,510

person what would they be doing where do

151
00:05:51,050 --> 00:05:47,340
you what do you feel that what do you

152
00:05:52,550 --> 00:05:51,060
feel the absence the most i think the

153
00:05:53,930 --> 00:05:52,560
busiest day we're going to have we were

154
00:05:56,510 --> 00:05:53,940
actually discussing earlier in the

155
00:05:58,580 --> 00:05:56,520
office is flight day 12 right after we

156
00:06:00,200 --> 00:05:58,590
undock and we're deploying the Pico sat

157
00:06:03,170 --> 00:06:00,210
we got to have to get the cabin ready

158
00:06:05,240 --> 00:06:03,180
for return we have to wind up some of

159
00:06:07,580 --> 00:06:05,250
the last minute science that we're doing

160
00:06:09,880 --> 00:06:07,590
we've got standard before landing checks

161
00:06:12,320 --> 00:06:09,890
so it's an extremely busy day and

162
00:06:13,610 --> 00:06:12,330
there's no sort of white space if you

163
00:06:15,380 --> 00:06:13,620

well there's no cushion in the timeline

164

00:06:17,420 --> 00:06:15,390

so we probably could use an extra pair

165

00:06:19,610 --> 00:06:17,430

of hands or two that day the ground is

166

00:06:20,630 --> 00:06:19,620

going to help us out a lot and we'll get

167

00:06:23,000 --> 00:06:20,640

through it but we're going to be very

168

00:06:27,820 --> 00:06:23,010

very busy at a very very high pace at

169

00:06:31,129 --> 00:06:27,830

the end of the mission all right

170

00:06:33,559 --> 00:06:31,139

Tracy Tracy Watson USA today I think for

171

00:06:35,480 --> 00:06:33,569

for Rex I know you've been really busy

172

00:06:37,489 --> 00:06:35,490

training but has it started to percolate

173

00:06:39,230 --> 00:06:37,499

through that this is the last time

174

00:06:41,809 --> 00:06:39,240

you'll be doing taking many of these

175

00:06:43,879 --> 00:06:41,819

steps with the last acid and entry

176

00:06:45,499 --> 00:06:43,889

essence him tomorrow do you stop and

177

00:06:46,879 --> 00:06:45,509

think about that you're just too busy to

178

00:06:48,079 --> 00:06:46,889

give it out we're not too busy to think

179

00:06:48,799 --> 00:06:48,089

about it because you know originally

180

00:06:49,999 --> 00:06:48,809

thought you know we're going to

181

00:06:51,350 --> 00:06:50,009

concentrate our training and we and we

182

00:06:53,689 --> 00:06:51,360

do concentrate on our training very much

183

00:06:55,159 --> 00:06:53,699

but as these major milestones of lasts

184

00:06:57,679 --> 00:06:55,169

have built up it's kind of become a

185

00:06:59,659 --> 00:06:57,689

crescendo for instance our first with

186

00:07:01,070 --> 00:06:59,669

this person was our last single system

187

00:07:03,050 --> 00:07:01,080

trainer event and which was you know a

188

00:07:05,589 --> 00:07:03,060

little on the smaller events then we get

189

00:07:09,649 --> 00:07:05,599

into our more bigger sims is their last

190

00:07:11,570 --> 00:07:09,659

our last fixed based simulator orbits

191

00:07:12,829 --> 00:07:11,580

him basically then we started some of

192

00:07:14,149 --> 00:07:12,839

the really big ones like the last roll

193

00:07:15,409 --> 00:07:14,159

out of a space shuttle vehicle down at

194

00:07:16,700 --> 00:07:15,419

the Kennedy Space Center we went down

195

00:07:17,839 --> 00:07:16,710

there and it's like wow this is the last

196

00:07:19,730 --> 00:07:17,849

time one's going to roll out of the

197

00:07:21,409 --> 00:07:19,740

hangar and then the role at the pad

198

00:07:23,959 --> 00:07:21,419

obviously was a real big deal with the

199

00:07:24,889 --> 00:07:23,969

the last time hopefully a we hope we

200

00:07:26,149 --> 00:07:24,899

have to come back to the hangar for

201
00:07:28,159 --> 00:07:26,159
anything but all things considered

202
00:07:29,689 --> 00:07:28,169
should be the last time a vehicle rolls

203
00:07:30,980 --> 00:07:29,699
to the pad and sit as they get bigger

204
00:07:32,659 --> 00:07:30,990
and bigger it gets a little bit tougher

205
00:07:33,920 --> 00:07:32,669
thanks wow this really is the last time

206
00:07:36,649 --> 00:07:33,930
we're going to do this kind of thing so

207
00:07:38,779 --> 00:07:36,659
it you can't ignore it and we still

208
00:07:41,149 --> 00:07:38,789
obviously we also do our job but as as

209
00:07:42,709 --> 00:07:41,159
as Chris likes to say we do try to savor

210
00:07:44,179 --> 00:07:42,719
each one of these little lasts and and

211
00:07:45,709 --> 00:07:44,189
try to appreciate the people who made it

212
00:07:47,300 --> 00:07:45,719
possible and also think about the people

213
00:07:49,279 --> 00:07:47,310

that are that have gone on to different

214

00:07:50,719 --> 00:07:49,289

jobs that are no longer here that have

215

00:07:52,579 --> 00:07:50,729

been part of this program for 30 years

216

00:07:54,790 --> 00:07:52,589

and it's a it's really an amazing thing

217

00:07:57,949 --> 00:07:54,800

to be part of a kind of tail end of it

218

00:08:00,439 --> 00:07:57,959

all right Ryan course guard from KPRC

219

00:08:02,089 --> 00:08:00,449

here in Houston and I guess this would

220

00:08:04,519 --> 00:08:02,099

probably be for our pilot what is the

221

00:08:06,769 --> 00:08:04,529

one question you have not been asked

222

00:08:10,159 --> 00:08:06,779

about this last mission and what is the

223

00:08:11,659 --> 00:08:10,169

answer you know that's that it's a great

224

00:08:12,800 --> 00:08:11,669

question and I'm not sure I've thought

225

00:08:16,339 --> 00:08:12,810

of the question that I haven't been

226

00:08:18,589 --> 00:08:16,349

asked yet honestly Ryan um you know it

227

00:08:20,540 --> 00:08:18,599

is you get the gamut from you know

228

00:08:22,159 --> 00:08:20,550

what's it feel like to be in the last

229

00:08:24,079 --> 00:08:22,169

shuttle flight to you know what are you

230

00:08:25,399 --> 00:08:24,089

going to do on flight day five kind of

231

00:08:26,389 --> 00:08:25,409

thing you know and that's specific that

232

00:08:29,149 --> 00:08:26,399

general what are going to be thinking

233

00:08:30,469 --> 00:08:29,159

about on the way back home so you know

234

00:08:32,600 --> 00:08:30,479

honestly I don't know what question I

235

00:08:36,110 --> 00:08:32,610

haven't been asked yet that needs to be

236

00:08:38,029 --> 00:08:36,120

asked but we hope we you know get across

237

00:08:39,860 --> 00:08:38,039

the message that you know this this is

238

00:08:41,029 --> 00:08:39,870

to honor all those folks that worked on

239

00:08:43,579 --> 00:08:41,039

the show for so many years

240

00:08:45,499 --> 00:08:43,589

and you know we just we just want to do

241

00:08:48,710 --> 00:08:45,509

the best job possible to complete the

242

00:08:51,350 --> 00:08:48,720

program that way right next thing about

243

00:08:52,670 --> 00:08:51,360

jenison Sarah ABC News for Sandy so we

244

00:08:55,550 --> 00:08:52,680

heard a little bit earlier about the

245

00:08:58,040 --> 00:08:55,560

color coding process for transfers could

246

00:08:59,660 --> 00:08:58,050

you elaborate a little bit on how the

247

00:09:01,519 --> 00:08:59,670

back and forth will work and how you'll

248

00:09:02,990 --> 00:09:01,529

keep track of everything yeah the

249

00:09:05,090 --> 00:09:03,000

transfer community has come up with a

250

00:09:07,069 --> 00:09:05,100

great scheme you know we're transferring

251
00:09:08,660 --> 00:09:07,079
and since the dawn of time you know

252
00:09:10,699 --> 00:09:08,670
we've been transferring things back and

253
00:09:12,650 --> 00:09:10,709
forth across the station so anything

254
00:09:15,860 --> 00:09:12,660
that we fly up with a yellow label on it

255
00:09:17,660 --> 00:09:15,870
needs to go to station anything with a

256
00:09:19,160 --> 00:09:17,670
green label that's on station we need to

257
00:09:20,930 --> 00:09:19,170
grab and put somewhere either on the

258
00:09:22,340 --> 00:09:20,940
shuttle or the MPN so it makes it a

259
00:09:24,410 --> 00:09:22,350
little bit more straightforward to

260
00:09:26,059 --> 00:09:24,420
identify things that have to go across

261
00:09:28,670 --> 00:09:26,069
the hatch from one way or the other and

262
00:09:30,199 --> 00:09:28,680
that that's a that's a really nice

263
00:09:31,970 --> 00:09:30,209

scheme actually because it's kind of let

264

00:09:33,410 --> 00:09:31,980

you grab and go in some cases but you

265

00:09:35,740 --> 00:09:33,420

must read the notes column of the

266

00:09:38,540 --> 00:09:35,750

transfer list to get everything right

267

00:09:39,920 --> 00:09:38,550

plug in there you stand still and hold a

268

00:09:41,389 --> 00:09:39,930

yellow label in your hand you're liable

269

00:09:43,670 --> 00:09:41,399

to become a part of shuttle Krause

270

00:09:46,490 --> 00:09:43,680

station cargo so it's we're going to

271

00:09:48,889 --> 00:09:46,500

reach a pretty high pitch fervor around

272

00:09:53,090 --> 00:09:48,899

about flight day five moving any one of

273

00:09:54,110 --> 00:09:53,100

the gush I think we have 360 CTV's I

274

00:09:56,059 --> 00:09:54,120

mean there's a there's an enormous

275

00:10:00,319 --> 00:09:56,069

amount of just individual items that

276

00:10:02,360 --> 00:10:00,329

have to go over so I Robert Pearlman

277

00:10:04,160 --> 00:10:02,370

with collectspace.com for anyone who

278

00:10:05,840 --> 00:10:04,170

wants to take it there's been a lot of

279

00:10:07,550 --> 00:10:05,850

questions about the last that you're

280

00:10:09,170 --> 00:10:07,560

setting but in the course of preparing

281

00:10:11,750 --> 00:10:09,180

for the mission or the mission itself

282

00:10:13,490 --> 00:10:11,760

are there any firsts that you'll

283

00:10:17,540 --> 00:10:13,500

accomplish or that you have accomplished

284

00:10:18,920 --> 00:10:17,550

during your training I'm sure there's a

285

00:10:21,410 --> 00:10:18,930

lot of firsts I mean I think every

286

00:10:22,819 --> 00:10:21,420

shuttle mission has firsts well I'll

287

00:10:25,670 --> 00:10:22,829

give you one for instance that comes to

288

00:10:28,250 --> 00:10:25,680

mind of course this is one of the last

289

00:10:31,540 --> 00:10:28,260

few opportunities will have to get good

290

00:10:34,370 --> 00:10:31,550

photo documentation of the outside of

291

00:10:36,889 --> 00:10:34,380

the space station and Soyuz does provide

292

00:10:38,120 --> 00:10:36,899

us with some with some views that put

293

00:10:39,439 --> 00:10:38,130

the optical quality I think if the

294

00:10:42,470 --> 00:10:39,449

shuttle windows are just a little bit

295

00:10:45,439 --> 00:10:42,480

better so with what we've coordinated

296

00:10:48,710 --> 00:10:45,449

after the undock is a 90 degrees station

297

00:10:51,559 --> 00:10:48,720

y'all so it's it's going to rotate for

298

00:10:53,210 --> 00:10:51,569

us so we can get some real nice shots to

299

00:10:57,410 --> 00:10:53,220

perhaps quantify

300

00:10:58,639 --> 00:10:57,420

any atomic oxygen damage or any damage

301

00:11:01,670 --> 00:10:58,649

that may have occurred to the side

302

00:11:02,900 --> 00:11:01,680

through mm OD on both sides of the space

303

00:11:04,249 --> 00:11:02,910

station plus I think it'll be an

304

00:11:05,749 --> 00:11:04,259

interesting perspective that we haven't

305

00:11:08,540 --> 00:11:05,759

seen before so that's the first time I

306

00:11:12,829 --> 00:11:08,550

think we've done this anybody else have

307

00:11:14,960 --> 00:11:12,839

anything just one quick thing it's it's

308

00:11:16,910 --> 00:11:14,970

not a first that shuttle crew has gone

309

00:11:19,009 --> 00:11:16,920

to Russia to do training or other things

310

00:11:21,650 --> 00:11:19,019

but I'm fairly certain it's a first for

311

00:11:24,439 --> 00:11:21,660

all four crew members to be fitted for

312

00:11:26,569 --> 00:11:24,449

sokol suits and tested and all those

313

00:11:28,129 --> 00:11:26,579

different things we you know we made two

314

00:11:30,410 --> 00:11:28,139

trips over to Russia for that very

315

00:11:32,600 --> 00:11:30,420

purpose and as you know that's you know

316

00:11:34,939 --> 00:11:32,610

in case there's some requirement for a

317

00:11:36,740 --> 00:11:34,949

rescue so there are four circle suits

318

00:11:39,650 --> 00:11:36,750

sitting over in Russia actually one is

319

00:11:41,480 --> 00:11:39,660

in the NP LM Rex's you know with his

320

00:11:44,119 --> 00:11:41,490

name on it ready to go in case they're

321

00:11:45,350 --> 00:11:44,129

needed so that's probably a first don't

322

00:11:47,629 --> 00:11:45,360

quote me on it but I think it's probably

323

00:11:50,179 --> 00:11:47,639

pretty close actually another example if

324

00:11:52,730 --> 00:11:50,189

you don't mind we're using the Incas and

325

00:11:54,230 --> 00:11:52,740

the community that owns the shuttle

326

00:11:55,340 --> 00:11:54,240

cameras in the shuttle flight control

327

00:11:57,829 --> 00:11:55,350

room they're actually going to be

328

00:11:59,869 --> 00:11:57,839

actively assisting during the robotics

329

00:12:02,509 --> 00:11:59,879

work because we're short-handed on board

330

00:12:04,129 --> 00:12:02,519

fergie is going to set some up and then

331

00:12:05,629 --> 00:12:04,139

be released to go do some transfer and

332

00:12:07,790 --> 00:12:05,639

some other tasks so we're actively using

333

00:12:08,869 --> 00:12:07,800

the Incas in a way that we haven't used

334

00:12:10,009 --> 00:12:08,879

before and they'll be controlling

335

00:12:11,509 --> 00:12:10,019

cameras and setting up cameras and

336

00:12:12,579 --> 00:12:11,519

helping us with our robotics tasks

337

00:12:14,869 --> 00:12:12,589

that's the first time that's happened

338

00:12:15,889 --> 00:12:14,879

that's kind of me is that one of the

339

00:12:17,600 --> 00:12:15,899

scenarios of this mission there was

340

00:12:21,559 --> 00:12:17,610

always going to be the cases it that the

341

00:12:22,730 --> 00:12:21,569

ground is our ms 345 so we're going to

342

00:12:24,170 --> 00:12:22,740

we're going to use them like they're

343

00:12:25,009 --> 00:12:24,180

with us and there's the be times where

344

00:12:26,150 --> 00:12:25,019

we're not going to the answer to

345

00:12:28,400 --> 00:12:26,160

questions we're going to call the ground

346

00:12:30,679 --> 00:12:28,410

as if we had our fellow crew members up

347

00:12:31,670 --> 00:12:30,689

there and so we're just one big team and

348

00:12:33,410 --> 00:12:31,680

we're going to definitely need their

349

00:12:36,910 --> 00:12:33,420

help with only four sets of hands on

350

00:12:40,160 --> 00:12:36,920

board alright next question Center good

351
00:12:41,689 --> 00:12:40,170
Jill told Bay Area Houston magazine I

352
00:12:43,100 --> 00:12:41,699
have a traditional question that I've

353
00:12:45,049 --> 00:12:43,110
been asking both shuttle and station

354
00:12:46,639 --> 00:12:45,059
crews during their pre-flight press

355
00:12:49,460 --> 00:12:46,649
briefing so I'll continue that tradition

356
00:12:51,439 --> 00:12:49,470
here for friggin whoever else wants to

357
00:12:53,150 --> 00:12:51,449
chime in what do you think will be the

358
00:12:58,670 --> 00:12:53,160
most challenging part of your mission

359
00:13:00,829 --> 00:12:58,680
and also the most rewarding part how

360
00:13:02,660 --> 00:13:00,839
kind of start out where sandy left off

361
00:13:05,120 --> 00:13:02,670
on the challenging the challenging part

362
00:13:06,569 --> 00:13:05,130
of this mission why I believe be flight

363
00:13:09,090 --> 00:13:06,579

day 12 after

364

00:13:11,009 --> 00:13:09,100

knocking today before we get ready you

365

00:13:14,999 --> 00:13:11,019

know there will be a public affairs

366

00:13:17,429 --> 00:13:15,009

event that day that will probably be

367

00:13:19,139 --> 00:13:17,439

fairly popular so we have that to fit in

368

00:13:21,689 --> 00:13:19,149

along with all of the other normal

369

00:13:24,269 --> 00:13:21,699

events that normally take place prior to

370

00:13:26,519 --> 00:13:24,279

prior to landing we have to turn the

371

00:13:27,960 --> 00:13:26,529

orbiter back into an airplane if you

372

00:13:29,369 --> 00:13:27,970

will we have to set the seat subway to

373

00:13:30,689 --> 00:13:29,379

run cooling lines we have to pack

374

00:13:34,289 --> 00:13:30,699

everything away so it's not going to

375

00:13:35,759 --> 00:13:34,299

fall when we re-enter so so there's our

376

00:13:38,819 --> 00:13:35,769

big challenge day and like I said follow

377

00:13:40,530 --> 00:13:38,829

closely there in trail by flight day 2

378

00:13:42,479 --> 00:13:40,540

which is the inspection day which we

379

00:13:45,169 --> 00:13:42,489

normally pull off with about six folks

380

00:13:47,069 --> 00:13:45,179

in rotating fashion but we've made a few

381

00:13:49,319 --> 00:13:47,079

accommodations to what normally occurs

382

00:13:52,559 --> 00:13:49,329

on flight day to in order to fit

383

00:13:55,049 --> 00:13:52,569

everything so many um that's that's my

384

00:13:56,579 --> 00:13:55,059

cut anybody else gotta I think for me

385

00:13:58,259 --> 00:13:56,589

the challenging day will be during the

386

00:13:59,789 --> 00:13:58,269

spacewalk I'm going to be controlling

387

00:14:01,379 --> 00:13:59,799

the spacewalk from inside I'm not going

388

00:14:04,199 --> 00:14:01,389

outside doing spacewalk but I'm gonna be

389

00:14:05,429 --> 00:14:04,209

helping Mike and Ron do the spacewalk by

390

00:14:07,079 --> 00:14:05,439

reading their checklist reading their

391

00:14:08,189 --> 00:14:07,089

emergency procedures and it's going to

392

00:14:09,720 --> 00:14:08,199

be little bit lonely on the space

393

00:14:12,179 --> 00:14:09,730

shuttles mid-deck our flight deck that

394

00:14:13,769 --> 00:14:12,189

day because usually when I do as the IV

395

00:14:15,780 --> 00:14:13,779

which is called the interval cooler crew

396

00:14:17,519 --> 00:14:15,790

officer who's directing this the

397

00:14:19,350 --> 00:14:17,529

spacewalk I usually have somebody else

398

00:14:21,239 --> 00:14:19,360

work in the tapes making sure everything

399

00:14:22,769 --> 00:14:21,249

set up working the hell the cameras for

400

00:14:24,509 --> 00:14:22,779

the space Walker so they're not blooming

401
00:14:27,539 --> 00:14:24,519
out and they're they're the right focus

402
00:14:29,039 --> 00:14:27,549
and stuff right right light scheme and

403
00:14:30,299 --> 00:14:29,049
so there's gonna be times we're going to

404
00:14:31,530 --> 00:14:30,309
be holding on to a check was holding out

405
00:14:33,059 --> 00:14:31,540
of the mic and saying little help here

406
00:14:34,379 --> 00:14:33,069
and there's going to be nobody around so

407
00:14:35,879 --> 00:14:34,389
it's going to be a little challenging

408
00:14:38,100 --> 00:14:35,889
and we've we've actually also

409
00:14:39,449 --> 00:14:38,110
accommodated for that that when I if I

410
00:14:40,739 --> 00:14:39,459
need a break for instance i will call

411
00:14:42,840 --> 00:14:40,749
down to the ground and we'll have what's

412
00:14:45,150 --> 00:14:42,850
called a ground ivy or interview later

413
00:14:46,799 --> 00:14:45,160

officer that's Kate Rubens so I'll give

414

00:14:48,689 --> 00:14:46,809

her a heads up hey Kate I'm going to go

415

00:14:50,220 --> 00:14:48,699

take a break so you're going to be taken

416

00:14:51,780 --> 00:14:50,230

over in about five minutes and she'll

417

00:14:53,549 --> 00:14:51,790

take over from the ground controlling

418

00:14:54,840 --> 00:14:53,559

the spacewalk I'll come back get my

419

00:14:56,850 --> 00:14:54,850

bearings what's going on and i'll take

420

00:14:59,220 --> 00:14:56,860

the spacewalk over again so it's going

421

00:15:00,419 --> 00:14:59,230

to be a challenge for me to be in number

422

00:15:04,289 --> 00:15:00,429

different places at one time during that

423

00:15:05,939 --> 00:15:04,299

spacewalk okay so i'm very enticing with

424

00:15:08,309 --> 00:15:05,949

National Space Society and not austra

425

00:15:09,569 --> 00:15:08,319

magazine I think I have a question for

426

00:15:12,119 --> 00:15:09,579

Doug that he hasn't been asked before

427

00:15:13,769 --> 00:15:12,129

but you'll have to tell me or not I'd

428

00:15:16,199 --> 00:15:13,779

like you to describe the payload bay

429

00:15:18,170 --> 00:15:16,209

door opening manoeuvre that during post

430

00:15:19,940 --> 00:15:18,180

insertion and what it looks like

431

00:15:21,769 --> 00:15:19,950

the windows and so on as you move how

432

00:15:23,420 --> 00:15:21,779

long does it take to to get to that

433

00:15:26,240 --> 00:15:23,430

attitude and then which one of you is

434

00:15:27,950 --> 00:15:26,250

opening the doors and will this be the

435

00:15:29,960 --> 00:15:27,960

last time that the payload bay doors are

436

00:15:31,880 --> 00:15:29,970

actually opened and we'll see that and

437

00:15:33,800 --> 00:15:31,890

have you on any of your other fights

438

00:15:35,780 --> 00:15:33,810

noticed anything coming out of the

439

00:15:37,850 --> 00:15:35,790

payload Bay like they did on the first

440

00:15:40,010 --> 00:15:37,860

shuttle flight when we first opened

441

00:15:41,389 --> 00:15:40,020

those doors there was some stuff that

442

00:15:43,160 --> 00:15:41,399

floated out and I just wonder if you've

443

00:15:48,230 --> 00:15:43,170

ever noticed anything flowed out of the

444

00:15:51,920 --> 00:15:48,240

payload Bay on my first flight I

445

00:15:53,449 --> 00:15:51,930

actually barely knew that we opened the

446

00:15:55,160 --> 00:15:53,459

doors because I was busy doing something

447

00:15:56,720 --> 00:15:55,170

else I remember looking back and you

448

00:15:58,940 --> 00:15:56,730

just get the light starts to come in

449

00:16:00,500 --> 00:15:58,950

from the back windows as the doors open

450

00:16:02,329 --> 00:16:00,510

it doesn't take very long Rex and Fergie

451
00:16:04,550 --> 00:16:02,339
are going to are going to do it on our

452
00:16:08,630 --> 00:16:04,560
mission at least that's the tentative

453
00:16:10,970 --> 00:16:08,640
plan and you do you see some bits and

454
00:16:13,190 --> 00:16:10,980
pieces of small bits and pieces of stuff

455
00:16:15,139 --> 00:16:13,200
floating out occasionally I know that's

456
00:16:17,180 --> 00:16:15,149
fairly common you know dust particles

457
00:16:19,699 --> 00:16:17,190
and other things like that but you know

458
00:16:21,829 --> 00:16:19,709
usually you have a camera running and

459
00:16:23,120 --> 00:16:21,839
you have at least two folks looking out

460
00:16:24,650 --> 00:16:23,130
the back window to see anything if it

461
00:16:27,530 --> 00:16:24,660
looks big and they can grab a camera if

462
00:16:29,570 --> 00:16:27,540
they need to but you know it's a pretty

463
00:16:31,100 --> 00:16:29,580

standard maneuver and yeah as far as I

464

00:16:33,380 --> 00:16:31,110

know this will be this will be it for

465

00:16:34,850 --> 00:16:33,390

payload bay door opening we hope to just

466

00:16:39,970 --> 00:16:34,860

open them once and close them once on

467

00:16:43,010 --> 00:16:39,980

the way home companies child space.com

468

00:16:44,420 --> 00:16:43,020

question for commander Ferguson a lot of

469

00:16:47,510 --> 00:16:44,430

has been discussed today about this

470

00:16:49,490 --> 00:16:47,520

being a four-person crew and I was just

471

00:16:51,949 --> 00:16:49,500

wondering how valuable is it that

472

00:16:53,360 --> 00:16:51,959

everyone on your crew has a significant

473

00:16:55,130 --> 00:16:53,370

amount of space flight experience and

474

00:16:57,769 --> 00:16:55,140

has that made your job easier so far

475

00:17:00,079 --> 00:16:57,779

yeah I'd have to say it's invaluable it

476
00:17:02,060 --> 00:17:00,089
would have been at everyone has flown

477
00:17:04,160 --> 00:17:02,070
once and we all are rookies at one time

478
00:17:06,470 --> 00:17:04,170
and I think we know that as rookies we

479
00:17:08,000 --> 00:17:06,480
carry just a little bit of a i would say

480
00:17:10,490 --> 00:17:08,010
liability but it just takes a little

481
00:17:12,770 --> 00:17:10,500
while to get up to speed i think having

482
00:17:15,890 --> 00:17:12,780
for folks who have done this at least

483
00:17:17,870 --> 00:17:15,900
once in the past will add dramatically

484
00:17:19,309 --> 00:17:17,880
to to our efficiency on orbit and that's

485
00:17:21,650 --> 00:17:19,319
really what it comes down to how quickly

486
00:17:24,559 --> 00:17:21,660
can you do what you need to do when it's

487
00:17:26,090 --> 00:17:24,569
on your timeline you know if I just want

488
00:17:28,189 --> 00:17:26,100

to get back again to this flight day 12

489

00:17:29,690 --> 00:17:28,199

thing we were talking our entry flight

490

00:17:30,340 --> 00:17:29,700

director Tony ciccotti yesterday a

491

00:17:32,140 --> 00:17:30,350

little bit

492

00:17:34,539 --> 00:17:32,150

and even he i think was taken back a

493

00:17:36,669 --> 00:17:34,549

little bit by he said I looked at your

494

00:17:38,740 --> 00:17:36,679

flight plan on sis on flight 812 and

495

00:17:40,930 --> 00:17:38,750

there's absolutely no white space on

496

00:17:42,310 --> 00:17:40,940

your schedule whatsoever of course white

497

00:17:43,480 --> 00:17:42,320

space just being those little moments

498

00:17:45,580 --> 00:17:43,490

you have to catch your breath between

499

00:17:47,710 --> 00:17:45,590

the activities that you have to do so

500

00:17:50,320 --> 00:17:47,720

again you know just to touch on what

501
00:17:51,580 --> 00:17:50,330
what you were alluding to having for

502
00:17:53,230 --> 00:17:51,590
folks with the experience in the

503
00:17:54,580 --> 00:17:53,240
background to do these things we're

504
00:17:56,320 --> 00:17:54,590
hoping that we can create our own wife

505
00:17:58,210 --> 00:17:56,330
space by doing them quickly enough that

506
00:18:02,350 --> 00:17:58,220
then we catch a break or two during the

507
00:18:05,350 --> 00:18:02,360
day Pat patent get your news service

508
00:18:08,649 --> 00:18:05,360
this is a question for all of you what

509
00:18:11,380 --> 00:18:08,659
is your message to America on the last

510
00:18:13,899 --> 00:18:11,390
flight especially the schoolchildren and

511
00:18:20,770 --> 00:18:13,909
what special memento are each of you

512
00:18:21,940 --> 00:18:20,780
flying into space well I'll start well

513
00:18:24,159 --> 00:18:21,950

I'll tell you if I had to look back and

514

00:18:26,230 --> 00:18:24,169

come up with a single message that could

515

00:18:28,299 --> 00:18:26,240

somehow summarize the tremendous success

516

00:18:29,740 --> 00:18:28,309

of the shuttle program I'd say that it

517

00:18:31,570 --> 00:18:29,750

lies especially when we talk about

518

00:18:35,289 --> 00:18:31,580

school aged children is the inspiration

519

00:18:37,360 --> 00:18:35,299

that it that it provides you know I was

520

00:18:39,460 --> 00:18:37,370

inspired as a high school student in a

521

00:18:41,919 --> 00:18:39,470

college student and i was in college

522

00:18:44,380 --> 00:18:41,929

when I watched sts-1 launched from a

523

00:18:46,360 --> 00:18:44,390

television in the college cafeteria and

524

00:18:48,070 --> 00:18:46,370

I remember thinking to myself it would

525

00:18:51,399 --> 00:18:48,080

just be fantastic to be a part of a

526

00:18:54,190 --> 00:18:51,409

program like that I think as now we're

527

00:18:56,950 --> 00:18:54,200

going to transition slowly to Commercial

528

00:18:58,870 --> 00:18:56,960

Crew capability you know to get us to

529

00:19:01,360 --> 00:18:58,880

low-earth orbit into the International

530

00:19:06,039 --> 00:19:01,370

Space Station but it seems like in that

531

00:19:07,510 --> 00:19:06,049

period of time in the 60s and 70s and

532

00:19:09,789 --> 00:19:07,520

early 80's we were extraordinarily

533

00:19:12,460 --> 00:19:09,799

focused on the government organization

534

00:19:15,340 --> 00:19:12,470

that got us all there and I i can speak

535

00:19:18,039 --> 00:19:15,350

at least personally it really it set a

536

00:19:19,690 --> 00:19:18,049

tone for me so I think we're going to

537

00:19:23,500 --> 00:19:19,700

miss a little bit of that you know that

538

00:19:26,470 --> 00:19:23,510

motivation fact as far as a personal

539

00:19:29,049 --> 00:19:26,480

memento I'm taking you know we've we've

540

00:19:31,419 --> 00:19:29,059

had a lot of we've had a lot of requests

541

00:19:33,010 --> 00:19:31,429

everybody just with that one last thing

542

00:19:38,080 --> 00:19:33,020

that they would like to fly on a space

543

00:19:40,630 --> 00:19:38,090

shuttle i am i'm taking a medallion that

544

00:19:41,970 --> 00:19:40,640

will celebrate the centennial of naval

545

00:19:44,370 --> 00:19:41,980

aviation

546

00:19:46,380 --> 00:19:44,380

my as my personal item there are a few

547

00:19:47,820 --> 00:19:46,390

others in there it's of course a

548

00:19:49,260 --> 00:19:47,830

milestone for the Navy Marine Corps in

549

00:19:51,120 --> 00:19:49,270

the Coast Guard as they celebrate 100

550

00:19:54,150 --> 00:19:51,130

years of flying and with Doug and I both

551
00:19:59,310 --> 00:19:54,160
with naval aviation training backgrounds

552
00:20:01,169 --> 00:19:59,320
we thought it was appropriate yeah I

553
00:20:03,299 --> 00:20:01,179
would have to echo some of Fergie's

554
00:20:05,250 --> 00:20:03,309
remarks I mean you know that this is

555
00:20:06,780 --> 00:20:05,260
what I remember inspiring me to get into

556
00:20:09,210 --> 00:20:06,790
this business was you know watching

557
00:20:11,370 --> 00:20:09,220
sts-1 launch and and seeing this

558
00:20:14,250 --> 00:20:11,380
magnificent white vehicle go into space

559
00:20:17,159 --> 00:20:14,260
for the first time and it's really just

560
00:20:20,280 --> 00:20:17,169
it's been there my whole adult life and

561
00:20:22,470 --> 00:20:20,290
and just just the majesty of it as req

562
00:20:24,930 --> 00:20:22,480
says and just just the accomplishments

563
00:20:26,850 --> 00:20:24,940

that that we've had and I hope soon

564

00:20:28,680 --> 00:20:26,860

there will be another space program a

565

00:20:31,049 --> 00:20:28,690

vehicle that we have that will inspire

566

00:20:32,580 --> 00:20:31,059

children the same way to want to get

567

00:20:34,080 --> 00:20:32,590

into this business or get into math and

568

00:20:37,890 --> 00:20:34,090

science and engineering and those types

569

00:20:40,830 --> 00:20:37,900

of fields because it you know that's

570

00:20:42,570 --> 00:20:40,840

kind of what led me down this that this

571

00:20:47,000 --> 00:20:42,580

path and it's and it's just been a great

572

00:20:49,590 --> 00:20:47,010

ride as far as what I'm taking I have a

573

00:20:51,210 --> 00:20:49,600

Marine Corps flag in a small Marine

574

00:20:53,789 --> 00:20:51,220

Corps flag and a small Navy flag you

575

00:20:55,350 --> 00:20:53,799

know as Fergie said you know we're naval

576

00:20:58,560 --> 00:20:55,360

aviation background and it's the

577

00:21:00,150 --> 00:20:58,570

hundredth the centennial for naval

578

00:21:02,340 --> 00:21:00,160

aviation and we're we're very proud to

579

00:21:03,539 --> 00:21:02,350

be naval aviators and you know we just

580

00:21:06,810 --> 00:21:03,549

want to take a little bit of that with

581

00:21:09,600 --> 00:21:06,820

us into space you know as human beings

582

00:21:11,039 --> 00:21:09,610

we naturally like to explore every time

583

00:21:13,440 --> 00:21:11,049

you read a new book or take a different

584

00:21:14,880 --> 00:21:13,450

route with your car try new food and and

585

00:21:16,890 --> 00:21:14,890

I think what the space program does is

586

00:21:19,140 --> 00:21:16,900

sort of illustrate two young young

587

00:21:21,690 --> 00:21:19,150

people and actually our country you know

588

00:21:24,720 --> 00:21:21,700

this need this drive this desire to

589

00:21:26,490 --> 00:21:24,730

explore in a large scale so I I would

590

00:21:29,400 --> 00:21:26,500

say to young people take a look at all

591

00:21:31,799 --> 00:21:29,410

of the frontiers that we have yet to

592

00:21:33,539 --> 00:21:31,809

explore and and using math and

593

00:21:35,370 --> 00:21:33,549

engineering and science and technology

594

00:21:36,960 --> 00:21:35,380

to do that is is just fascinating

595

00:21:38,190 --> 00:21:36,970

because you're figuring how the way the

596

00:21:40,260 --> 00:21:38,200

world works and you're learning how to

597

00:21:42,270 --> 00:21:40,270

take all that and build these vehicles

598

00:21:44,039 --> 00:21:42,280

and these procedures and these processes

599

00:21:47,070 --> 00:21:44,049

that let us move those boundaries even

600

00:21:49,140 --> 00:21:47,080

more and more further away and it's just

601
00:21:51,990 --> 00:21:49,150
really exciting to be able to do that

602
00:21:53,830 --> 00:21:52,000
and no matter what the job you have at

603
00:21:56,080 --> 00:21:53,840
NASA you are part of that process

604
00:21:58,000 --> 00:21:56,090
and it's just very exciting to be here

605
00:22:02,049 --> 00:21:58,010
and it's a really neat industry to get

606
00:22:05,500 --> 00:22:02,059
into and and work in as far as mementos

607
00:22:07,060 --> 00:22:05,510
go taking some some items from the

608
00:22:10,690 --> 00:22:07,070
universities that I attended and some

609
00:22:12,880 --> 00:22:10,700
small trinkets from my family and for me

610
00:22:15,600 --> 00:22:12,890
I think they've my crewmates have pretty

611
00:22:17,560 --> 00:22:15,610
much echoed my feelings about what

612
00:22:19,210 --> 00:22:17,570
message should be to America I think

613
00:22:20,769 --> 00:22:19,220

number one it should be celebrate what

614

00:22:22,360 --> 00:22:20,779

the Space Shuttle is done thirty-year

615

00:22:24,340 --> 00:22:22,370

incredible career where it's launched

616

00:22:26,169 --> 00:22:24,350

probes to different planets it's

617

00:22:27,760 --> 00:22:26,179

launched the Hubble Space Telescope it's

618

00:22:29,260 --> 00:22:27,770

fixed the Hubble Space Telescope and

619

00:22:31,180 --> 00:22:29,270

then the crown jewel it's built the

620

00:22:32,740 --> 00:22:31,190

International Space Station so from that

621

00:22:35,049 --> 00:22:32,750

I hope we celebrate what the shuttle did

622

00:22:36,370 --> 00:22:35,059

and then I hope we as we use the

623

00:22:38,080 --> 00:22:36,380

International Space Station in the age

624

00:22:39,970 --> 00:22:38,090

of utilization and we learn about our

625

00:22:41,470 --> 00:22:39,980

the human body about how to survive in

626
00:22:43,299 --> 00:22:41,480
space about how to build systems that

627
00:22:44,830 --> 00:22:43,309
can survive in space I hope that

628
00:22:46,630 --> 00:22:44,840
inspires us to take the next step

629
00:22:47,889 --> 00:22:46,640
because the next step is to go beyond

630
00:22:49,539 --> 00:22:47,899
low-earth orbit and we really need to

631
00:22:50,950 --> 00:22:49,549
take that step and i hope the

632
00:22:53,529 --> 00:22:50,960
celebration of what the Space Shuttle

633
00:22:55,269 --> 00:22:53,539
has done does not does not die off and

634
00:22:56,529 --> 00:22:55,279
that people have a chance to say we've

635
00:22:58,899 --> 00:22:56,539
done some great things let's do the next

636
00:23:00,430 --> 00:22:58,909
thing let's help the the commercial

637
00:23:02,080 --> 00:23:00,440
industry get us to low-earth orbit but

638
00:23:03,310 --> 00:23:02,090

we've been doing that for 50 years so

639

00:23:05,680 --> 00:23:03,320

now let's take the next step let's go

640

00:23:07,659 --> 00:23:05,690

beyond Earth orbit and so I hope it it

641

00:23:10,510 --> 00:23:07,669

does inspire people for that for stuff I

642

00:23:12,549 --> 00:23:10,520

bring and bring some medallions and some

643

00:23:15,340 --> 00:23:12,559

charms for my family and friends and

644

00:23:18,610 --> 00:23:15,350

that kind of consume the standard stuff

645

00:23:20,710 --> 00:23:18,620

like that all right in the center here

646

00:23:23,139 --> 00:23:20,720

with Ted sandy Ted Oberg from channel 13

647

00:23:24,490 --> 00:23:23,149

here in town I thinking about 8,000

648

00:23:25,779 --> 00:23:24,500

pounds worth of stuff you're taken up

649

00:23:28,000 --> 00:23:25,789

right and you have the benefit of

650

00:23:30,820 --> 00:23:28,010

weightlessness but is it still how

651
00:23:33,970 --> 00:23:30,830
tiring how much physical work is

652
00:23:35,500 --> 00:23:33,980
involved in moving you know 8,000 pounds

653
00:23:37,870 --> 00:23:35,510
worth of stuff from the minivan into the

654
00:23:39,639 --> 00:23:37,880
living room you know it's funny because

655
00:23:41,380 --> 00:23:39,649
what we'd like to do on flight day six

656
00:23:43,360 --> 00:23:41,390
and seven is set up one of those bucket

657
00:23:45,010 --> 00:23:43,370
brigades or you kind of toss the bag the

658
00:23:46,570 --> 00:23:45,020
next person and toss the bag the next

659
00:23:48,610 --> 00:23:46,580
person of that will turn it into it's

660
00:23:51,639 --> 00:23:48,620
kind of a game but it you know it's it's

661
00:23:53,169 --> 00:23:51,649
fun to fly around with these bags back

662
00:23:54,130 --> 00:23:53,179
and forth and it's it's demanding from

663
00:23:55,600 --> 00:23:54,140

the viewpoint that you're always in

664

00:23:56,830 --> 00:23:55,610

motion and X actually mentally demanding

665

00:23:59,100 --> 00:23:56,840

because you have to keep track of what

666

00:24:01,269 --> 00:23:59,110

you transferred and and things like that

667

00:24:02,770 --> 00:24:01,279

but it is interesting because you're in

668

00:24:04,779 --> 00:24:02,780

zero gravity you have to pay attention

669

00:24:05,220 --> 00:24:04,789

to the mass of the item that you're

670

00:24:07,080 --> 00:24:05,230

moving

671

00:24:08,340 --> 00:24:07,090

because if you know the easiest way to

672

00:24:10,340 --> 00:24:08,350

move things is usually to hold it

673

00:24:12,480 --> 00:24:10,350

between your legs or give it a push and

674

00:24:15,210 --> 00:24:12,490

if the mass for example we're

675

00:24:17,580 --> 00:24:15,220

transferring a treadmill track and it's

676
00:24:19,230 --> 00:24:17,590
about the same mass as I have and I

677
00:24:21,090 --> 00:24:19,240
moved one of these on 112 and so as I

678
00:24:22,560 --> 00:24:21,100
reached up to you know I was holding it

679
00:24:24,720 --> 00:24:22,570
between my knees and I reached up to

680
00:24:26,310 --> 00:24:24,730
move and I started rotating instead of

681
00:24:28,400 --> 00:24:26,320
translating because my center of mass

682
00:24:31,260 --> 00:24:28,410
had changed because I had so much more

683
00:24:32,730 --> 00:24:31,270
down near my knees and sorry and so you

684
00:24:35,159 --> 00:24:32,740
have to think a little bit about what

685
00:24:37,169 --> 00:24:35,169
you're moving and how it relates to you

686
00:24:38,909 --> 00:24:37,179
in order to adjust how your trans

687
00:24:40,200 --> 00:24:38,919
translating around and that's kind of

688
00:24:41,640 --> 00:24:40,210

interesting you know get a little lesson

689

00:24:44,250 --> 00:24:41,650

in Newton's laws while you're doing your

690

00:24:46,400 --> 00:24:44,260

work but but it's a lot easier to move

691

00:24:51,210 --> 00:24:46,410

it around up there than it is down here

692

00:24:53,549 --> 00:24:51,220

all right next Eric Eric burger with the

693

00:24:56,669 --> 00:24:53,559

Houston Chronicle and I'm wondering what

694

00:24:58,169 --> 00:24:56,679

it's like it's kind of like in some

695

00:24:59,940 --> 00:24:58,179

respects at your Super Bowl athletes

696

00:25:02,490 --> 00:24:59,950

with all the requests I imagine you've

697

00:25:06,419 --> 00:25:02,500

gotten for launch tickets maybe you

698

00:25:08,460 --> 00:25:06,429

could talk a little bit about just sort

699

00:25:09,450 --> 00:25:08,470

of the hoopla around the launch and sort

700

00:25:11,520 --> 00:25:09,460

of the interactions you've had with

701
00:25:13,159 --> 00:25:11,530
family and friends about it since

702
00:25:17,070 --> 00:25:13,169
everyone is really focused on this one

703
00:25:20,039 --> 00:25:17,080
mm-hmm Rex you're always good at these

704
00:25:22,080 --> 00:25:20,049
kind of code boy well it it has really

705
00:25:24,210 --> 00:25:22,090
been it has been tough trying to figure

706
00:25:25,860 --> 00:25:24,220
out how to make sure everybody's taken

707
00:25:28,380 --> 00:25:25,870
care of that people get a chance to see

708
00:25:30,570 --> 00:25:28,390
the launch and that is a it is something

709
00:25:32,150 --> 00:25:30,580
that goes on besides you know behind the

710
00:25:34,350 --> 00:25:32,160
scenes as we're training for the flight

711
00:25:35,730 --> 00:25:34,360
but what I've tried to do is I first of

712
00:25:37,350 --> 00:25:35,740
all try to make sure my immediate family

713
00:25:39,510 --> 00:25:37,360

is taken care of everybody's got got

714

00:25:40,950 --> 00:25:39,520

tickets and then you branch out some of

715

00:25:42,270 --> 00:25:40,960

your friends and you also branch out and

716

00:25:43,830 --> 00:25:42,280

people who have done stuff in the past

717

00:25:45,030 --> 00:25:43,840

some of my old bosses I want to make

718

00:25:46,409 --> 00:25:45,040

sure I take care of them something like

719

00:25:47,970 --> 00:25:46,419

and then I want to make sure I takes

720

00:25:48,930 --> 00:25:47,980

care of my co-workers that people I've

721

00:25:51,180 --> 00:25:48,940

worked with here at the Johnson Space

722

00:25:53,669 --> 00:25:51,190

Center in other places so I made sure

723

00:25:54,990 --> 00:25:53,679

they are invited and and then you get a

724

00:25:56,460 --> 00:25:55,000

number of requests as you mentioned the

725

00:25:58,500 --> 00:25:56,470

tickets are starting to get more

726
00:26:00,840 --> 00:25:58,510
valuable to people as we get closer and

727
00:26:02,190 --> 00:26:00,850
and then you have to make the real hard

728
00:26:04,260 --> 00:26:02,200
choices because you end up with just a

729
00:26:06,600 --> 00:26:04,270
few choices left and you get you find

730
00:26:07,980 --> 00:26:06,610
out there people that are sick kids that

731
00:26:09,510 --> 00:26:07,990
want to come to the launch and we were

732
00:26:10,980 --> 00:26:09,520
able to work with the public affairs

733
00:26:14,280 --> 00:26:10,990
people to bring people with you know

734
00:26:15,870 --> 00:26:14,290
sort of the make-a-wish type of request

735
00:26:17,399 --> 00:26:15,880
to get to the launch and to be able to

736
00:26:19,060 --> 00:26:17,409
be able to see it close so we've had

737
00:26:20,740 --> 00:26:19,070
people from Iraq

738
00:26:23,200 --> 00:26:20,750

wounded veterans said that wants to come

739

00:26:25,539 --> 00:26:23,210

to the come to the come to launch and we

740

00:26:27,549 --> 00:26:25,549

made sure that he got he got tickets and

741

00:26:30,190 --> 00:26:27,559

he being well taken care of too so their

742

00:26:32,080 --> 00:26:30,200

stuff like that that you just have to

743

00:26:33,759 --> 00:26:32,090

make some hard choices and but it works

744

00:26:34,930 --> 00:26:33,769

out it's worked out very well the NASA

745

00:26:36,999 --> 00:26:34,940

is taking real good care of us given

746

00:26:38,950 --> 00:26:37,009

this a lot of tickets to hand out and

747

00:26:41,409 --> 00:26:38,960

we've been able to take care of most the

748

00:26:43,120 --> 00:26:41,419

people that that we that are the closest

749

00:26:44,409 --> 00:26:43,130

to us and we also people that maybe

750

00:26:46,269 --> 00:26:44,419

aren't as close to us that we think are

751
00:26:47,980 --> 00:26:46,279
the most deserving so hasn't been easy

752
00:26:49,840 --> 00:26:47,990
but I think we've we've done our best to

753
00:26:52,180 --> 00:26:49,850
try to be as fair and equitable as

754
00:26:53,919 --> 00:26:52,190
possible you know if I could just hang

755
00:26:55,570 --> 00:26:53,929
on to that I mean we are as enormously

756
00:26:57,340 --> 00:26:55,580
proud of this vehicle as I think the

757
00:26:59,110 --> 00:26:57,350
rest of America is and I've always

758
00:27:01,090 --> 00:26:59,120
espoused you know every taxpaying

759
00:27:02,700 --> 00:27:01,100
American citizen needs to go see a space

760
00:27:04,749 --> 00:27:02,710
shuttle launch because they come back

761
00:27:06,519 --> 00:27:04,759
after seeing it and they're a little bit

762
00:27:09,909 --> 00:27:06,529
different you know they understand they

763
00:27:11,799 --> 00:27:09,919

get it so we have tried to and I found

764

00:27:14,080 --> 00:27:11,809

you know through my opportunities to

765

00:27:16,269 --> 00:27:14,090

launch I have tried to space those out

766

00:27:18,759 --> 00:27:16,279

I've tried to allow people different

767

00:27:20,529 --> 00:27:18,769

turns to come because I do want you know

768

00:27:22,629 --> 00:27:20,539

to do my little part to try to enable as

769

00:27:24,249 --> 00:27:22,639

many people as possible to come and see

770

00:27:27,369 --> 00:27:24,259

because they will remember this event

771

00:27:29,200 --> 00:27:27,379

for the rest of their lives okay up in

772

00:27:31,629 --> 00:27:29,210

the front closure Marsha dent Associated

773

00:27:33,369 --> 00:27:31,639

Press astronauts never want launched a

774

00:27:35,619 --> 00:27:33,379

blaze but with only eight days left to

775

00:27:38,610 --> 00:27:35,629

the last shuttle flight could you use

776

00:27:40,990 --> 00:27:38,620

some more time just to let the program

777

00:27:45,129 --> 00:27:41,000

go on a little more before it has to

778

00:27:46,930 --> 00:27:45,139

come to an inevitable end yeah well I'll

779

00:27:48,669 --> 00:27:46,940

give you my two cents I'm sure everybody

780

00:27:51,279 --> 00:27:48,679

has a feeling on that uh you know the

781

00:27:53,669 --> 00:27:51,289

crew is uh we've been enormously busy

782

00:27:55,389 --> 00:27:53,679

especially here in the last month or so

783

00:27:56,889 --> 00:27:55,399

personally I'm looking forward to

784

00:27:58,990 --> 00:27:56,899

quarantine tomorrow to settle down a

785

00:28:01,299 --> 00:27:59,000

little bit maybe cat gather some of my

786

00:28:02,590 --> 00:28:01,309

thoughts take a few notes and review

787

00:28:04,779 --> 00:28:02,600

some of the things that I've desperately

788

00:28:07,810 --> 00:28:04,789

needed a review for the last a couple

789

00:28:11,369 --> 00:28:07,820

weeks or so that have kind of got lost

790

00:28:14,200 --> 00:28:11,379

in in this you know the the the

791

00:28:15,850 --> 00:28:14,210

excitement surrounding the final mission

792

00:28:16,899 --> 00:28:15,860

so I just kind of leave with that I'm

793

00:28:20,680 --> 00:28:16,909

looking forward to a little bit of quiet

794

00:28:21,999 --> 00:28:20,690

time you know just leading up to the to

795

00:28:26,710 --> 00:28:22,009

the final launch you know eight days

796

00:28:28,629 --> 00:28:26,720

away it does sound so final I don't

797

00:28:31,000 --> 00:28:28,639

think we want any more time though we're

798

00:28:31,430 --> 00:28:31,010

ready we're trained and we want to go do

799

00:28:38,060 --> 00:28:31,440

it

800

00:28:41,149 --> 00:28:38,070

of did tag on what Rex was talking about

801
00:28:44,090 --> 00:28:41,159
with guests you know I I was part of a

802
00:28:45,919 --> 00:28:44,100
mission that did not go on time not even

803
00:28:49,970 --> 00:28:45,929
close we scrubbed I think five times

804
00:28:52,369 --> 00:28:49,980
before we finally went and the we have

805
00:28:53,749 --> 00:28:52,379
the easy part of the job getting on the

806
00:28:55,279 --> 00:28:53,759
rocket and going into space in that

807
00:28:57,799 --> 00:28:55,289
regard you know they're sitting there

808
00:28:59,629 --> 00:28:57,809
waiting anticipating going through all

809
00:29:01,789 --> 00:28:59,639
the things that they go through prior to

810
00:29:03,200 --> 00:29:01,799
the launch and then to have delays it's

811
00:29:05,299 --> 00:29:03,210
real tough on your family your friends

812
00:29:07,340 --> 00:29:05,309
and your guests so just from that

813
00:29:09,830 --> 00:29:07,350

standpoint alone I'm a little sensitive

814

00:29:17,119 --> 00:29:09,840

to hopefully we will go on time the

815

00:29:20,149 --> 00:29:17,129

first day so Greg Dobbs with HDNet

816

00:29:23,210 --> 00:29:20,159

television since there is no rescue

817

00:29:26,649 --> 00:29:23,220

vehicle in the event you need one can

818

00:29:28,820 --> 00:29:26,659

you describe your long stays and your

819

00:29:33,619 --> 00:29:28,830

periodic departures from the space

820

00:29:35,240 --> 00:29:33,629

station as you know because we don't

821

00:29:38,570 --> 00:29:35,250

have a rescue vehicle will be coming

822

00:29:40,639 --> 00:29:38,580

home sort of in a line on the Soyuz is

823

00:29:42,950 --> 00:29:40,649

with Rex coming first and then Fergie

824

00:29:44,720 --> 00:29:42,960

and Doug and then I and so we will

825

00:29:48,470 --> 00:29:44,730

slowly become incorporated into space

826

00:29:50,119 --> 00:29:48,480

station lifestyle when if when this

827

00:29:52,399 --> 00:29:50,129

would happen if this would happen Rex's

828

00:29:54,919 --> 00:29:52,409

i lk would go immediately into the soyuz

829

00:29:58,009 --> 00:29:54,929

that ron garan i believe is the right

830

00:29:59,629 --> 00:29:58,019

one in and then Fergie's would go where

831

00:30:01,549 --> 00:29:59,639

Mike Fossum would go so Mike and Ron

832

00:30:03,799 --> 00:30:01,559

would actually extend their stay in

833

00:30:05,840 --> 00:30:03,809

order to accommodate Rex and furry

834

00:30:07,369 --> 00:30:05,850

coming home and then the next couple of

835

00:30:08,869 --> 00:30:07,379

Soyuz have come up with an empty right

836

00:30:11,810 --> 00:30:08,879

seat and then Doug and I would slowly

837

00:30:13,669 --> 00:30:11,820

rotate down as those toys came down

838

00:30:16,639 --> 00:30:13,679

after their full six-month mission as

839

00:30:18,799 --> 00:30:16,649

far as being ready for it we had some

840

00:30:19,789 --> 00:30:18,809

training basic training on the space

841

00:30:22,070 --> 00:30:19,799

station some of the big picture

842

00:30:23,480 --> 00:30:22,080

emergency type scenarios and some of the

843

00:30:25,879 --> 00:30:23,490

warning type scenarios where we would

844

00:30:29,149 --> 00:30:25,889

have to react quickly and expeditiously

845

00:30:30,830 --> 00:30:29,159

but the plan is that if we would have an

846

00:30:32,930 --> 00:30:30,840

extended stay on the space station we

847

00:30:35,119 --> 00:30:32,940

would get additional training on the

848

00:30:36,950 --> 00:30:35,129

station and it's actually you know after

849

00:30:38,509 --> 00:30:36,960

living there for a few weeks you can

850

00:30:41,060 --> 00:30:38,519

very easily get into the routine of the

851
00:30:42,499 --> 00:30:41,070
everyday life and how you do operations

852
00:30:44,960 --> 00:30:42,509
and then the specialized training would

853
00:30:46,279 --> 00:30:44,970
come over a period of a month or

854
00:30:48,919 --> 00:30:46,289
two or however the training community

855
00:30:50,600 --> 00:30:48,929
felt was the appropriate rate to de set

856
00:30:52,669 --> 00:30:50,610
to a site it it's there's a very good

857
00:30:55,430 --> 00:30:52,679
plan in place and we'll be able to I

858
00:30:57,110 --> 00:30:55,440
think sort of assimilate into space

859
00:31:00,470 --> 00:30:57,120
station live fairly straightforwardly if

860
00:31:02,360 --> 00:31:00,480
it would happen if I could just add on

861
00:31:04,820 --> 00:31:02,370
to that as well it's a you know this is

862
00:31:07,820 --> 00:31:04,830
a very low likelihood case but any SC

863
00:31:09,620 --> 00:31:07,830

the engineering safety arm of NASA has

864

00:31:11,390 --> 00:31:09,630

done an extraordinarily thorough job of

865

00:31:14,120 --> 00:31:11,400

making sure that we have a good plan to

866

00:31:15,919 --> 00:31:14,130

get home and the order in which the

867

00:31:17,690 --> 00:31:15,929

people were picked were key of course

868

00:31:19,370 --> 00:31:17,700

Doug and Sandy you heard you heard him

869

00:31:20,899 --> 00:31:19,380

say they'll be last it so because they

870

00:31:22,820 --> 00:31:20,909

have talents that we need on board as

871

00:31:24,140 --> 00:31:22,830

long as possible so I wasn't sure

872

00:31:26,960 --> 00:31:24,150

whether to take that personally or not

873

00:31:29,060 --> 00:31:26,970

but sandy and Doug will be there for a

874

00:31:32,299 --> 00:31:29,070

good long time letting their robotic and

875

00:31:34,730 --> 00:31:32,309

evie a potentially VA skills to the mix

876
00:31:37,430 --> 00:31:34,740
to make sure that we were able to serve

877
00:31:39,110 --> 00:31:37,440
a station even if we're down to largely

878
00:31:42,980 --> 00:31:39,120
just the shuttle crew being there doing

879
00:31:44,930 --> 00:31:42,990
it okay the second round Haley campus at

880
00:31:47,360 --> 00:31:44,940
the Galveston County Daily News this is

881
00:31:50,029 --> 00:31:47,370
a question for Sandy we've heard a

882
00:31:52,399 --> 00:31:50,039
couple people talk today about how they

883
00:31:53,810 --> 00:31:52,409
aren't looking at this only as the final

884
00:31:55,760 --> 00:31:53,820
shuttle mission they're looking forward

885
00:31:57,680 --> 00:31:55,770
to what's next for NASA and I'm just

886
00:31:59,630 --> 00:31:57,690
curious if you're taking a similar mind

887
00:32:02,840 --> 00:31:59,640
frame I'm sorry missed the last part

888
00:32:06,200 --> 00:32:02,850

you're curious can you repeat the last

889

00:32:07,760 --> 00:32:06,210

part would be the last and some of the

890

00:32:09,830 --> 00:32:07,770

people today who we've heard talk are

891

00:32:11,870 --> 00:32:09,840

talking about how they're not looking at

892

00:32:13,399 --> 00:32:11,880

this only as the last space shuttle

893

00:32:15,440 --> 00:32:13,409

mission but they're looking forward to

894

00:32:17,120 --> 00:32:15,450

what's next for NASA and I'm curious if

895

00:32:19,310 --> 00:32:17,130

you're taking a similar mind frame Oh

896

00:32:21,950 --> 00:32:19,320

certainly I think we're all excited

897

00:32:23,240 --> 00:32:21,960

about the opportunities that NASA will

898

00:32:25,070 --> 00:32:23,250

have in the future to get out of

899

00:32:27,740 --> 00:32:25,080

low-earth orbit and start pushing the

900

00:32:29,210 --> 00:32:27,750

boundaries of our you know our space

901
00:32:31,340 --> 00:32:29,220
exploration if you look at what we've

902
00:32:33,289 --> 00:32:31,350
been able to do for the last many

903
00:32:35,120 --> 00:32:33,299
decades we've established ourselves very

904
00:32:36,740 --> 00:32:35,130
firmly in low-earth orbit to the point

905
00:32:39,140 --> 00:32:36,750
that there are commercial companies who

906
00:32:40,880 --> 00:32:39,150
feel comfortable in starting to operate

907
00:32:42,529 --> 00:32:40,890
in that same arena and that's what as a

908
00:32:44,000 --> 00:32:42,539
government agency we are supposed to do

909
00:32:46,100 --> 00:32:44,010
is keep breaking down these frontiers

910
00:32:47,810 --> 00:32:46,110
and so now that you know there's there's

911
00:32:49,310 --> 00:32:47,820
interest developing in low-earth orbit

912
00:32:52,480 --> 00:32:49,320
and these these particular frontiers

913
00:32:55,250 --> 00:32:52,490

have been explored and sort of you know

914

00:32:56,960 --> 00:32:55,260

understood at some level it's it's

915

00:32:57,930 --> 00:32:56,970

important for us to go beyond low-earth

916

00:32:59,249 --> 00:32:57,940

orbit we're looking for

917

00:33:01,200 --> 00:32:59,259

to those kinds of missions you know

918

00:33:03,029 --> 00:33:01,210

whether it's to the Moon or Mars or high

919

00:33:06,029 --> 00:33:03,039

Earth orbit you know satellite servicing

920

00:33:07,740 --> 00:33:06,039

or an asteroid or whatever it may take

921

00:33:08,909 --> 00:33:07,750

well you know we're learning lots by

922

00:33:10,769 --> 00:33:08,919

living on the International Space

923

00:33:13,350 --> 00:33:10,779

Station for long periods of time to

924

00:33:14,460 --> 00:33:13,360

establish the information that we need

925

00:33:17,009 --> 00:33:14,470

to start taking longer and longer

926

00:33:18,509 --> 00:33:17,019

missions to various destinations and

927

00:33:21,389 --> 00:33:18,519

it's gonna be pretty exciting I think

928

00:33:23,970 --> 00:33:21,399

you start seeing that okay there in the

929

00:33:27,779 --> 00:33:23,980

front of the blue so sauce with NASA

930

00:33:30,389 --> 00:33:27,789

Space Flight com are there for any for

931

00:33:32,580 --> 00:33:30,399

any of you are there any advantages to

932

00:33:36,450 --> 00:33:32,590

only having four people on the space

933

00:33:38,009 --> 00:33:36,460

shuttle for a mission I'll I'll give you

934

00:33:42,990 --> 00:33:38,019

a short answer there are less opinions

935

00:33:44,580 --> 00:33:43,000

to contend with I'm sure everybody

936

00:33:47,340 --> 00:33:44,590

probably has a feeling about this you

937

00:33:49,080 --> 00:33:47,350

know there's pluses and minuses the

938

00:33:51,330 --> 00:33:49,090

minuses of course is there's just less

939

00:33:55,769 --> 00:33:51,340

hands to hold things and help you do

940

00:33:57,419 --> 00:33:55,779

work on the plus side there's two or

941

00:33:59,730 --> 00:33:57,429

three depending upon when you consider a

942

00:34:02,430 --> 00:33:59,740

full crew less fewer seeds fewer shoots

943

00:34:04,169 --> 00:34:02,440

fewer parachutes to do with you know

944

00:34:07,049 --> 00:34:04,179

fewer space suits so there's there's

945

00:34:08,639 --> 00:34:07,059

less bulk associated with it but you

946

00:34:11,250 --> 00:34:08,649

know I think by and large having another

947

00:34:14,430 --> 00:34:11,260

body on board is a positive thing and

948

00:34:18,599 --> 00:34:14,440

that the net effect will be will miss

949

00:34:20,669 --> 00:34:18,609

them I think we thought you know when we

950

00:34:22,079 --> 00:34:20,679

had four people on the crew we thought

951
00:34:24,510 --> 00:34:22,089
wow the mid-deck is just going to be

952
00:34:27,839 --> 00:34:24,520
this expanse you know relatively in

953
00:34:30,270 --> 00:34:27,849
space terms and we found out fairly

954
00:34:31,889 --> 00:34:30,280
quickly that that was not the case the

955
00:34:33,960 --> 00:34:31,899
program's did their best to make sure

956
00:34:35,970 --> 00:34:33,970
that every nook and cranny of the

957
00:34:38,309 --> 00:34:35,980
shuttle was filled to take stuff up the

958
00:34:40,859 --> 00:34:38,319
station for this you know next phase so

959
00:34:43,319 --> 00:34:40,869
not quite as much room as we thought so

960
00:34:44,669 --> 00:34:43,329
I think like Chris said we maybe could

961
00:34:48,059 --> 00:34:44,679
have used an extra hand might have been

962
00:34:51,119 --> 00:34:48,069
better for us in the long run okay next

963
00:34:53,609 --> 00:34:51,129

here in the green got on with a German

964

00:34:55,770 --> 00:34:53,619

Space Agency and space Expo Association

965

00:34:58,319 --> 00:34:55,780

question for X could you explain a

966

00:35:01,559 --> 00:34:58,329

little bit your own as I VA for the

967

00:35:02,970 --> 00:35:01,569

spacebook sure the when we get to the

968

00:35:04,290 --> 00:35:02,980

space station we are basically one big

969

00:35:06,300 --> 00:35:04,300

team that the shuttle and station

970

00:35:08,400 --> 00:35:06,310

combined and since we're kind of

971

00:35:10,710 --> 00:35:08,410

short-handed on the shuttle it would be

972

00:35:11,770 --> 00:35:10,720

harder for us potentially to do the

973

00:35:14,410 --> 00:35:11,780

spacewalk virus

974

00:35:16,300 --> 00:35:14,420

like some some missions have and so the

975

00:35:18,790 --> 00:35:16,310

decision was made early on that it just

976
00:35:20,770 --> 00:35:18,800
used the whole team and to use Mike and

977
00:35:22,210 --> 00:35:20,780
Ron as the spacewalkers and so that's

978
00:35:23,920 --> 00:35:22,220
great they've done space walk before so

979
00:35:26,050 --> 00:35:23,930
it made a lot of sense now I'm the

980
00:35:28,450 --> 00:35:26,060
leeds-based Walker for contingencies if

981
00:35:30,730 --> 00:35:28,460
we had it so that made me the choice for

982
00:35:33,040 --> 00:35:30,740
the IV which is interview hick Uhler the

983
00:35:34,210 --> 00:35:33,050
guy inside who monitors the spacewalk

984
00:35:36,730 --> 00:35:34,220
and helps them read their checklist so

985
00:35:38,830 --> 00:35:36,740
my job will be to basically be there

986
00:35:40,210 --> 00:35:38,840
their eyes and ears for things that they

987
00:35:42,550 --> 00:35:40,220
can't reach in space when they're out

988
00:35:44,170 --> 00:35:42,560

there and in doing a spacewalk there

989

00:35:45,100 --> 00:35:44,180

they want their checklist but they don't

990

00:35:46,540 --> 00:35:45,110

have them with them the only thing they

991

00:35:48,130 --> 00:35:46,550

have is a cuff checklist on their arm

992

00:35:49,930 --> 00:35:48,140

that they can read for emergencies quick

993

00:35:51,430 --> 00:35:49,940

actions I'll have all the detailed steps

994

00:35:53,500 --> 00:35:51,440

for what they need to do I'll have

995

00:35:54,940 --> 00:35:53,510

what's called a crib sheet which is the

996

00:35:56,950 --> 00:35:54,950

DH what you do when something doesn't go

997

00:35:58,120 --> 00:35:56,960

right and I'll have I'll have also have

998

00:36:00,160 --> 00:35:58,130

a copy there cuff checklist so I'll

999

00:36:02,350 --> 00:36:00,170

guide them through and help them go

1000

00:36:03,790 --> 00:36:02,360

step-by-step through these through these

1001
00:36:05,440 --> 00:36:03,800
procedures and the nice thing about it

1002
00:36:07,780 --> 00:36:05,450
is that since they launched earlier

1003
00:36:09,670 --> 00:36:07,790
sandy and I've had a chance to to go in

1004
00:36:10,810 --> 00:36:09,680
the water and and basically proof a lot

1005
00:36:12,880 --> 00:36:10,820
of these procedures so we've gone

1006
00:36:14,890 --> 00:36:12,890
through several times and making sure

1007
00:36:17,110 --> 00:36:14,900
and get them as finely tuned and as

1008
00:36:19,300 --> 00:36:17,120
easily executable as possible and I

1009
00:36:20,440 --> 00:36:19,310
think we're there and Mike and Rhonda

1010
00:36:21,820 --> 00:36:20,450
obviously seen it but they haven't seen

1011
00:36:23,950 --> 00:36:21,830
it quite some of these tasks quite as

1012
00:36:24,970 --> 00:36:23,960
much and so my job will be to kind of

1013
00:36:27,370 --> 00:36:24,980

guide them through that when they

1014

00:36:29,380 --> 00:36:27,380

executed okay next question here in the

1015

00:36:30,850 --> 00:36:29,390

black gate with Harvard journalism the

1016

00:36:32,470 --> 00:36:30,860

Space Shuttle was an American program

1017

00:36:35,200 --> 00:36:32,480

but it built the International Space

1018

00:36:36,430 --> 00:36:35,210

Station can you speak briefly about how

1019

00:36:38,620 --> 00:36:36,440

far we've come and working with our

1020

00:36:40,210 --> 00:36:38,630

space partners and sandy could you take

1021

00:36:42,130 --> 00:36:40,220

a moment to speak to young women and

1022

00:36:45,400 --> 00:36:42,140

girls about what it means to be part of

1023

00:36:47,350 --> 00:36:45,410

the last shuttle flight well in terms of

1024

00:36:49,420 --> 00:36:47,360

what the shuttle program is done with

1025

00:36:51,430 --> 00:36:49,430

respect to you know International Space

1026
00:36:53,020 --> 00:36:51,440
work I think you can say that paved the

1027
00:36:54,730 --> 00:36:53,030
way for the space station and a lot of

1028
00:36:56,650 --> 00:36:54,740
ways because the shuttle provided a lot

1029
00:36:58,060 --> 00:36:56,660
of opportunities for people to fly and

1030
00:37:00,040 --> 00:36:58,070
we had a lot of international

1031
00:37:01,930 --> 00:37:00,050
partnerships on the space shuttle

1032
00:37:03,970 --> 00:37:01,940
building up to the space station program

1033
00:37:06,790 --> 00:37:03,980
of course it was an integral vehicle for

1034
00:37:09,310 --> 00:37:06,800
the building of the the space station

1035
00:37:11,020 --> 00:37:09,320
and and that program of course will

1036
00:37:13,030 --> 00:37:11,030
continue on and we'll get some great

1037
00:37:16,240 --> 00:37:13,040
science and work from the space station

1038
00:37:18,070 --> 00:37:16,250

in the future as far as being the last

1039

00:37:20,080 --> 00:37:18,080

woman on the space shuttle you know it's

1040

00:37:23,290 --> 00:37:20,090

it's it's kind of a funny milestone

1041

00:37:26,080 --> 00:37:23,300

because Fergie's the last navy guy and

1042

00:37:27,640 --> 00:37:26,090

and doug's the last marine guy and he's

1043

00:37:29,110 --> 00:37:27,650

the letter X over here is less air force

1044

00:37:31,150 --> 00:37:29,120

guy and we're continuing to fly people

1045

00:37:33,370 --> 00:37:31,160

in space with women men engineers

1046

00:37:36,130 --> 00:37:33,380

scientists pilots flight engineers

1047

00:37:38,140 --> 00:37:36,140

people from all walks of life and that

1048

00:37:41,170 --> 00:37:38,150

will just continue to expand that pool

1049

00:37:44,140 --> 00:37:41,180

as we you know expand our roles in space

1050

00:37:47,140 --> 00:37:44,150

so i would tho encourage the any young

1051
00:37:48,610 --> 00:37:47,150
woman listening that they should

1052
00:37:50,620 --> 00:37:48,620
consider math and science and

1053
00:37:52,360 --> 00:37:50,630
engineering and technology as a career

1054
00:37:53,560 --> 00:37:52,370
because it's a lot of fun you get it

1055
00:37:55,360 --> 00:37:53,570
like i said earlier you get to figure

1056
00:37:57,070 --> 00:37:55,370
out how things work you get to take that

1057
00:37:58,540 --> 00:37:57,080
and make new things and it's like

1058
00:38:00,280 --> 00:37:58,550
putting a big jigsaw put the puzzle

1059
00:38:01,870 --> 00:38:00,290
together it's just a lot of fun and so i

1060
00:38:04,060 --> 00:38:01,880
would i would really encourage young

1061
00:38:08,080 --> 00:38:04,070
people to follow those kinds of career

1062
00:38:10,330 --> 00:38:08,090
paths ok here in the black Jim Oberg

1063
00:38:11,920 --> 00:38:10,340

with NBC News it's fascinating to see

1064

00:38:13,630 --> 00:38:11,930

how you worked on having a four-person

1065

00:38:15,910 --> 00:38:13,640

crew do the job of a five or six or

1066

00:38:17,560 --> 00:38:15,920

seven person crew but Chris you had a

1067

00:38:18,940 --> 00:38:17,570

leg up on that didn't you were you the

1068

00:38:20,590 --> 00:38:18,950

commander of the four-person crew that

1069

00:38:22,870 --> 00:38:20,600

was standing by the rescue the Hubble

1070

00:38:24,640 --> 00:38:22,880

mission and did that have any what kind

1071

00:38:27,010 --> 00:38:24,650

of thinking did you do about that you

1072

00:38:28,420 --> 00:38:27,020

were almost ready to launch so you were

1073

00:38:30,550 --> 00:38:28,430

already launched the foreperson grew two

1074

00:38:32,020 --> 00:38:30,560

years ago to that of any thing to do

1075

00:38:35,110 --> 00:38:32,030

with your selection perhaps for this

1076

00:38:37,270 --> 00:38:35,120

mission that's actually a very good

1077

00:38:39,040 --> 00:38:37,280

point because we started for a template

1078

00:38:40,960 --> 00:38:39,050

for the busy times of flight we it's a

1079

00:38:42,310 --> 00:38:40,970

post insertion shortly after launch is a

1080

00:38:44,290 --> 00:38:42,320

very busy time as you convert the

1081

00:38:45,850 --> 00:38:44,300

orbiter from a rocket into you know a

1082

00:38:48,130 --> 00:38:45,860

place to live for the next couple weeks

1083

00:38:49,750 --> 00:38:48,140

and also prior to landing there's

1084

00:38:51,700 --> 00:38:49,760

another big conversion that goes in

1085

00:38:53,770 --> 00:38:51,710

there is a very busy day and I started

1086

00:38:55,540 --> 00:38:53,780

with the templates that I had from sts

1087

00:38:57,190 --> 00:38:55,550

400 which of course as you said was a

1088

00:38:58,690 --> 00:38:57,200

four-person crew to do something like

1089

00:39:01,960 --> 00:38:58,700

that so I had a little bit of an

1090

00:39:03,340 --> 00:39:01,970

advantage but if you had to look at

1091

00:39:05,860 --> 00:39:03,350

these rescue flights that we have

1092

00:39:08,620 --> 00:39:05,870

continually maintained the capability to

1093

00:39:10,990 --> 00:39:08,630

do we have always had a four-person crew

1094

00:39:12,820 --> 00:39:11,000

and the commander who had just launched

1095

00:39:14,140 --> 00:39:12,830

who ends up by default being the

1096

00:39:16,180 --> 00:39:14,150

commander for the rescue flight if it's

1097

00:39:18,340 --> 00:39:16,190

need it always has a plan so we had a

1098

00:39:19,930 --> 00:39:18,350

little bit of a leg up but it was a it

1099

00:39:22,000 --> 00:39:19,940

was still a lengthy process to put

1100

00:39:25,720 --> 00:39:22,010

together an entire mission for four

1101

00:39:30,770 --> 00:39:25,730

people okay then

1102

00:39:32,360 --> 00:39:30,780

Helen boil with MSNBC I heard that this

1103

00:39:36,230 --> 00:39:32,370

is the first crew where everyone on the

1104

00:39:37,700 --> 00:39:36,240

crew is twittering away can you tell me

1105

00:39:39,560 --> 00:39:37,710

a little bit about the experience of

1106

00:39:41,810 --> 00:39:39,570

tweeting is their kind of an alpha

1107

00:39:44,960 --> 00:39:41,820

tweeter among you someone who look up to

1108

00:39:47,630 --> 00:39:44,970

for advice that would have to be sandy I

1109

00:39:50,870 --> 00:39:47,640

think yeah I think I get that prize

1110

00:39:53,180 --> 00:39:50,880

mainly because I had started on Twitter

1111

00:39:56,690 --> 00:39:53,190

a couple years ago when I did a USO trip

1112

00:40:00,080 --> 00:39:56,700

to Iraq after my expedition 18 trip and

1113

00:40:02,510 --> 00:40:00,090

so I had a little bit of introduction to

1114

00:40:04,430 --> 00:40:02,520

it but i will say that i keep the the

1115

00:40:06,410 --> 00:40:04,440

tweets that i do are very simplistic and

1116

00:40:08,150 --> 00:40:06,420

just words these guys send pictures and

1117

00:40:09,830 --> 00:40:08,160

do all kinds of sophisticated things so

1118

00:40:12,860 --> 00:40:09,840

i may have the quantity but i don't

1119

00:40:15,020 --> 00:40:12,870

necessarily have the quality i think I

1120

00:40:16,640 --> 00:40:15,030

is an avenue to social networking it

1121

00:40:18,260 --> 00:40:16,650

forces me to learn a little bit about

1122

00:40:20,570 --> 00:40:18,270

what everyone else is doing out there so

1123

00:40:22,010 --> 00:40:20,580

I Ivan I've enjoyed it but it reached

1124

00:40:23,720 --> 00:40:22,020

the culmination yesterday when we were

1125

00:40:25,460 --> 00:40:23,730

learning about our survival radios which

1126

00:40:27,380 --> 00:40:25,470

is a very capable survival radio if we

1127

00:40:29,200 --> 00:40:27,390

ever needed it and I ask the

1128

00:40:34,250 --> 00:40:29,210

questionable but can it send a tweet and

1129

00:40:36,200 --> 00:40:34,260

I think the answer was no okay I think

1130

00:40:38,900 --> 00:40:36,210

we have one last follow-up here here on

1131

00:40:41,450 --> 00:40:38,910

it's a watching how busy things are on

1132

00:40:42,950 --> 00:40:41,460

departure day curse you all remember

1133

00:40:45,230 --> 00:40:42,960

last time you're in orbit I understand

1134

00:40:48,770 --> 00:40:45,240

you left sandy behind are you going to

1135

00:40:50,060 --> 00:40:48,780

be your extra careful this time well if

1136

00:40:51,560 --> 00:40:50,070

she's standing around with a transfer

1137

00:40:54,620 --> 00:40:51,570

tag on her she might end up in the wrong

1138

00:40:56,330 --> 00:40:54,630

place no we were actually we cannot

1139

00:40:58,220 --> 00:40:56,340

leave anybody behind we cannot afford to

1140

00:40:59,720 --> 00:40:58,230

leave anybody behind on this flight and

1141

00:41:02,210 --> 00:40:59,730

I know that sandy would love to spend

1142

00:41:03,560 --> 00:41:02,220

another increment up there of course

1143

00:41:06,170 --> 00:41:03,570

we're taking her back to her home or

1144

00:41:09,110 --> 00:41:06,180

former home but we need her we need it

1145

00:41:10,190 --> 00:41:09,120

for the ride home okay with that we will

1146

00:41:11,870 --> 00:41:10,200

be switching over to Kennedy Space

1147

00:41:17,030 --> 00:41:11,880

Center where we have a reporter with a

1148

00:41:20,390 --> 00:41:17,040

couple of questions I thanks very much

1149

00:41:21,800 --> 00:41:20,400

James Dean with Florida today we had a

1150

00:41:24,290 --> 00:41:21,810

pretty neat opportunity down here

1151

00:41:27,170 --> 00:41:24,300

recently to to climb inside discoveries

1152

00:41:28,850 --> 00:41:27,180

crew cabin and really help to get a

1153

00:41:31,790 --> 00:41:28,860

better appreciation of kind of

1154

00:41:33,080 --> 00:41:31,800

environment you guys work and living up

1155

00:41:35,600 --> 00:41:33,090

there and I just wanted if any of you

1156

00:41:37,290 --> 00:41:35,610

could you know Doug you mentioned that

1157

00:41:40,350 --> 00:41:37,300

that

1158

00:41:42,090 --> 00:41:40,360

mid deck still won't feel quite as won't

1159

00:41:43,740 --> 00:41:42,100

feel real expansive it certainly didn't

1160

00:41:46,680 --> 00:41:43,750

feel that way to me is being only one

1161

00:41:48,030 --> 00:41:46,690

person in there obviously I'll have a

1162

00:41:49,830 --> 00:41:48,040

little more room than usual this time

1163

00:41:51,200 --> 00:41:49,840

but but can you or any of you just try

1164

00:41:54,150 --> 00:41:51,210

to give a little bit of an impression of

1165

00:41:57,180 --> 00:41:54,160

just the experience what it feels like

1166

00:41:58,740 --> 00:41:57,190

to live and work inside a space shuttle

1167

00:42:00,390 --> 00:41:58,750

obviously there'll be times when you

1168

00:42:01,650 --> 00:42:00,400

know you'll be off you'll be able to get

1169

00:42:03,710 --> 00:42:01,660

out into the space station but for the

1170

00:42:06,660 --> 00:42:03,720

times when perhaps you're not docked

1171

00:42:08,130 --> 00:42:06,670

just you know kind of the what it's like

1172

00:42:11,220 --> 00:42:08,140

to be in that environment are there any

1173

00:42:15,060 --> 00:42:11,230

particular aspects that that are kind of

1174

00:42:16,620 --> 00:42:15,070

your favorite parts of that life yeah

1175

00:42:19,620 --> 00:42:16,630

it's a it's a good question i think when

1176

00:42:21,000 --> 00:42:19,630

we we give tours especially over in

1177

00:42:22,260 --> 00:42:21,010

building nine which has the full-scale

1178

00:42:23,910 --> 00:42:22,270

mock-up of the flight deck in the

1179

00:42:25,800 --> 00:42:23,920

mid-deck it gives people that sense of

1180

00:42:28,380 --> 00:42:25,810

the actual size that we're dealing with

1181

00:42:30,570 --> 00:42:28,390

and one thing we always try to convey to

1182

00:42:33,450 --> 00:42:30,580

folks is remember in space you can use

1183

00:42:37,080 --> 00:42:33,460

all the volume not it's not a floor it's

1184

00:42:39,060 --> 00:42:37,090

not a ceiling it's not a wall so it does

1185

00:42:41,250 --> 00:42:39,070

become a lot more roomy than you would

1186

00:42:43,740 --> 00:42:41,260

think with the obviously with the aid of

1187

00:42:45,060 --> 00:42:43,750

microgravity because you can just put

1188

00:42:46,610 --> 00:42:45,070

yourself up in a corner get out of

1189

00:42:50,670 --> 00:42:46,620

somebody's way if they're moving

1190

00:42:54,060 --> 00:42:50,680

upstairs or downstairs but yeah as I as

1191

00:42:56,240 --> 00:42:54,070

I kind of alluded to before we have in

1192

00:42:58,890 --> 00:42:56,250

place of seats on the mid-deck we have

1193

00:43:01,530 --> 00:42:58,900

large transfer bags that are going to be

1194

00:43:02,580 --> 00:43:01,540

there which you know we we initially

1195

00:43:04,230 --> 00:43:02,590

didn't think they would take up that

1196

00:43:05,280 --> 00:43:04,240

much space but they're fairly big and

1197

00:43:06,810 --> 00:43:05,290

they have a lot of stuff in them so

1198

00:43:09,270 --> 00:43:06,820

we'll work around those but we can also

1199

00:43:11,820 --> 00:43:09,280

use them as work tables if needed and

1200

00:43:14,520 --> 00:43:11,830

things like that but it is it's just

1201
00:43:16,320 --> 00:43:14,530
the to be able to explore an entire the

1202
00:43:18,810 --> 00:43:16,330
entire volume of the Space Shuttle makes

1203
00:43:24,840 --> 00:43:18,820
it seem a lot bigger in microgravity

1204
00:43:27,690 --> 00:43:24,850
than it is when it's on the ground well

1205
00:43:30,630 --> 00:43:27,700
thanks and would any of you care to

1206
00:43:34,500 --> 00:43:30,640
speak to at specifically Atlantis's

1207
00:43:35,700 --> 00:43:34,510
legacy after a 33rd flight obviously

1208
00:43:38,310 --> 00:43:35,710
we're we're thinking more about the

1209
00:43:41,340 --> 00:43:38,320
program as a whole but this being its

1210
00:43:42,900 --> 00:43:41,350
turn to take that last flight I'm the

1211
00:43:45,870 --> 00:43:42,910
Atlantis frequent flier I'll be glad to

1212
00:43:47,250 --> 00:43:45,880
take that one Atlantis has 120 million

1213
00:43:48,840 --> 00:43:47,260

miles on her and I think she can handle

1214

00:43:51,340 --> 00:43:48,850

5 million more without a problem at all

1215

00:43:53,590 --> 00:43:51,350

she's taking me safely to orbit twice

1216

00:43:56,020 --> 00:43:53,600

home and I think it's absolutely great

1217

00:43:58,740 --> 00:43:56,030

ship advances has launched like

1218

00:44:02,950 --> 00:43:58,750

international I'm sorry probes to

1219

00:44:04,840 --> 00:44:02,960

Magellan to Venus and Galileo Jupiter it

1220

00:44:06,040 --> 00:44:04,850

serviced the Hubble Space Telescope in

1221

00:44:07,540 --> 00:44:06,050

this last mission and it's brought up

1222

00:44:09,310 --> 00:44:07,550

some of the big pieces of the space

1223

00:44:11,980 --> 00:44:09,320

station like the s0 truss in the

1224

00:44:14,080 --> 00:44:11,990

Columbus European laboratory module it's

1225

00:44:15,610 --> 00:44:14,090

been absolutely fabulous ship both times

1226

00:44:17,530 --> 00:44:15,620

i've flown it not a single alarm all the

1227

00:44:20,830 --> 00:44:17,540

way to orbit and I'm looking forward to

1228

00:44:22,360 --> 00:44:20,840

flying her again okay we're turning back

1229

00:44:24,550 --> 00:44:22,370

here to the Johnson Space Center we have

1230

00:44:26,380 --> 00:44:24,560

a follow-up on them right row for

1231

00:44:28,450 --> 00:44:26,390

aviation week given that you're

1232

00:44:32,710 --> 00:44:28,460

launching is a 12-day mission then you

1233

00:44:35,130 --> 00:44:32,720

might need some more time how much will

1234

00:44:37,120 --> 00:44:35,140

the four of you be thinking about

1235

00:44:39,250 --> 00:44:37,130

conserving power and that kind of thing

1236

00:44:41,560 --> 00:44:39,260

maybe even more than they're thinking

1237

00:44:44,370 --> 00:44:41,570

about it in Mission Control to give

1238

00:44:46,540 --> 00:44:44,380

yourself a possibility of extra day I

1239

00:44:49,330 --> 00:44:46,550

can take that one because we've been

1240

00:44:52,870 --> 00:44:49,340

following this closely we're right if we

1241

00:44:54,460 --> 00:44:52,880

launch on time of course cryo o2 and h2

1242

00:44:55,930 --> 00:44:54,470

is usually the limiting factor we use

1243

00:44:58,720 --> 00:44:55,940

those that produce electricity and our

1244

00:45:01,030 --> 00:44:58,730

fuel cells we launch right on time and

1245

00:45:03,070 --> 00:45:01,040

the load for the cryotanks is favorable

1246

00:45:04,690 --> 00:45:03,080

we're under the impression we can get an

1247

00:45:06,160 --> 00:45:04,700

extra day at least we have another day

1248

00:45:07,650 --> 00:45:06,170

capability where they'll decide to add

1249

00:45:11,530 --> 00:45:07,660

it onto the mission or not i'm not sure

1250

00:45:12,910 --> 00:45:11,540

if we delay a day enough of that cry

1251

00:45:15,910 --> 00:45:12,920

will have boiled off i don't think we'll

1252

00:45:17,740 --> 00:45:15,920

have a full day capability to answer

1253

00:45:19,060 --> 00:45:17,750

your question about conserving power no

1254

00:45:20,620 --> 00:45:19,070

one has approached the crew you know

1255

00:45:21,880 --> 00:45:20,630

flight directors program management has

1256

00:45:24,460 --> 00:45:21,890

not approached us asking us to

1257

00:45:26,500 --> 00:45:24,470

voluntarily conserve power we always try

1258

00:45:30,160 --> 00:45:26,510

to save it and of course there are

1259

00:45:33,070 --> 00:45:30,170

formalities we can go to a groupie power

1260

00:45:34,630 --> 00:45:33,080

down Group C power down if necessary but

1261

00:45:36,430 --> 00:45:34,640

the crew always takes a measure to save

1262

00:45:38,230 --> 00:45:36,440

power we always want to try to build a

1263

00:45:39,850 --> 00:45:38,240

little extra margin into our capability

1264

00:45:42,850 --> 00:45:39,860

but no one has that formally asked us to

1265

00:45:44,140 --> 00:45:42,860

voluntarily do that okay believe you

1266

00:45:46,390 --> 00:45:44,150

have another follow up here go ahead and

1267

00:45:49,000 --> 00:45:46,400

have any thoughts with the Reuters for

1268

00:45:50,860 --> 00:45:49,010

Chris you mentioned a little earlier

1269

00:45:53,320 --> 00:45:50,870

that when you're talking about your

1270

00:45:55,120 --> 00:45:53,330

launch guests that people come back from

1271

00:45:57,310 --> 00:45:55,130

seeing a launch a little bit differently

1272

00:45:59,680 --> 00:45:57,320

and get a little better sense of what

1273

00:46:01,900 --> 00:45:59,690

this program is all about well obviously

1274

00:46:04,900 --> 00:46:01,910

that that's going away and I'm just

1275

00:46:07,960 --> 00:46:04,910

wondering if you have any thoughts about

1276

00:46:10,060 --> 00:46:07,970

how NASA I guess it's almost like a

1277

00:46:14,950 --> 00:46:10,070

branding issue or something like what

1278

00:46:19,120 --> 00:46:14,960

what sort of experience people who are

1279

00:46:22,120 --> 00:46:19,130

not flying can have that still make this

1280

00:46:25,090 --> 00:46:22,130

program and a viable and visceral and

1281

00:46:27,370 --> 00:46:25,100

meaningful that's a good question Irene

1282

00:46:29,080 --> 00:46:27,380

and that I think that's why we're headed

1283

00:46:33,910 --> 00:46:29,090

in the direction that we're headed is to

1284

00:46:36,070 --> 00:46:33,920

make it available if not possible but at

1285

00:46:41,200 --> 00:46:36,080

least available to anyone who perhaps is

1286

00:46:43,050 --> 00:46:41,210

not an asset trained master and I'm not

1287

00:46:48,610 --> 00:46:43,060

sure if I'm going down the wrong line

1288

00:46:51,790 --> 00:46:48,620

tell me but you know going over and you

1289

00:46:53,530 --> 00:46:51,800

talk about the NASA branding as well you

1290

00:46:55,390 --> 00:46:53,540

know I'll go out on a limb here and I'll

1291

00:46:56,920 --> 00:46:55,400

say that the next aside from these four

1292

00:46:59,830 --> 00:46:56,930

individuals at this table the next

1293

00:47:02,740 --> 00:46:59,840

person that flies a u.s. rocket to low

1294

00:47:04,450 --> 00:47:02,750

Earth orbit probably will not have an

1295

00:47:07,620 --> 00:47:04,460

ass evangeline will probably have a

1296

00:47:10,090 --> 00:47:07,630

badge that has Boeing or SpaceX or

1297

00:47:11,590 --> 00:47:10,100

Sierra Nevada or which is kind of an

1298

00:47:12,670 --> 00:47:11,600

interesting concept if you think about

1299

00:47:16,450 --> 00:47:12,680

it that we're headed in this direction

1300

00:47:20,410 --> 00:47:16,460

now as time goes on and those low Earth

1301

00:47:23,260 --> 00:47:20,420

orbit capabilities are proven then we'll

1302

00:47:26,230 --> 00:47:23,270

probably enlist the NASA astronauts to

1303

00:47:28,030 --> 00:47:26,240

to go up and you know either pilot the

1304

00:47:30,580 --> 00:47:28,040

Rockets or at least transport folks to

1305

00:47:32,440 --> 00:47:30,590

low Earth orbit but there is there's

1306

00:47:33,910 --> 00:47:32,450

definitely a metamorphosis going on and

1307

00:47:35,470 --> 00:47:33,920

we're going to see it over the course of

1308

00:47:37,060 --> 00:47:35,480

the next four years as a lot of these

1309

00:47:39,130 --> 00:47:37,070

commercial partners come on board and

1310

00:47:42,130 --> 00:47:39,140

you know fly their their rockets in

1311

00:47:43,270 --> 00:47:42,140

twenty fifteen or twenty sixteen okay

1312

00:47:45,280 --> 00:47:43,280

and I believe we have time for one last

1313

00:47:47,590 --> 00:47:45,290

question Marcia Marcia Dunn Associated

1314

00:47:50,710 --> 00:47:47,600

Press I notice you're all wearing dark

1315

00:47:52,120 --> 00:47:50,720

somber looking suits are you mourning

1316

00:47:56,230 --> 00:47:52,130

the loss of a friend as you put it

1317

00:48:00,310 --> 00:47:56,240

commander or is this just your way of

1318

00:48:01,390 --> 00:48:00,320

commemorating with is a very big deal I

1319

00:48:02,710 --> 00:48:01,400

think we're wearing these colors because

1320

00:48:04,900 --> 00:48:02,720

these is the color suits we interviewed

1321

00:48:06,760 --> 00:48:04,910

with 15 years ago so that's the main

1322

00:48:08,470 --> 00:48:06,770

reason we don't have a lot of suits but

1323

00:48:10,270 --> 00:48:08,480

you know we do have these suits we're

1324

00:48:12,180 --> 00:48:10,280

not morning we're celebrating the 30

1325

00:48:14,170 --> 00:48:12,190

year program of the Space Shuttle it's

1326
00:48:16,540 --> 00:48:14,180
absolutely tremendous accomplishments

1327
00:48:17,590 --> 00:48:16,550
that the spatial has inspired us is this

1328
00:48:19,390 --> 00:48:17,600
inspired the

1329
00:48:21,400 --> 00:48:19,400
the workforce and the country as a whole

1330
00:48:22,960 --> 00:48:21,410
and you know in some ways I think that

1331
00:48:24,760 --> 00:48:22,970
the shuttle will continue to inspire

1332
00:48:26,740 --> 00:48:24,770
people because now for the first time

1333
00:48:27,910 --> 00:48:26,750
when these vehicles go to go to museums

1334
00:48:29,530 --> 00:48:27,920
people are gonna have a chance to go

1335
00:48:32,290 --> 00:48:29,540
right up to a space shuttle and see a

1336
00:48:33,910 --> 00:48:32,300
real one and think wow we used to be

1337
00:48:36,190 --> 00:48:33,920
able to launch those things into orbit

1338
00:48:37,300 --> 00:48:36,200

and so I hope it it generates that same

1339

00:48:39,820 --> 00:48:37,310

kind of enthused that childlike

1340

00:48:41,290 --> 00:48:39,830

enthusiasm people say wow it can make a

1341

00:48:42,640 --> 00:48:41,300

door but let's do it again let's let's

1342

00:48:44,980 --> 00:48:42,650

make sure we do it again I hope it makes

1343

00:48:46,630 --> 00:48:44,990

people redouble their efforts to to get

1344

00:48:48,250 --> 00:48:46,640

us to the point where we can not only go

1345

00:48:52,330 --> 00:48:48,260

to low Earth or go beyond low Earth

1346

00:48:54,100 --> 00:48:52,340

orbit okay one final follow-up here in

1347

00:48:56,380 --> 00:48:54,110

the center it's going to get over it

1348

00:49:00,130 --> 00:48:56,390

from channel 13 here you were talking

1349

00:49:01,720 --> 00:49:00,140

about these orbiters going to museums if

1350

00:49:05,590 --> 00:49:01,730

I can get one of you in trouble this

1351

00:49:10,270 --> 00:49:05,600

Houston deserve one of these you've law

1352

00:49:12,280 --> 00:49:10,280

you're going to get us in trouble you

1353

00:49:13,780 --> 00:49:12,290

know speaking as a taxpaying Houston

1354

00:49:15,280 --> 00:49:13,790

citizen I would have really liked to

1355

00:49:17,800 --> 00:49:15,290

have seen a space shuttle come to

1356

00:49:19,540 --> 00:49:17,810

Houston as to whether we deserve it you

1357

00:49:21,580 --> 00:49:19,550

know i'll leave that to the folks who

1358

00:49:23,710 --> 00:49:21,590

developed the criteria to pick where

1359

00:49:27,330 --> 00:49:23,720

they really went but I would have

1360

00:49:31,120 --> 00:49:29,650

okay with that that is all the time we