



1  
00:00:08,930 --> 00:00:03,860  
endeavour ISS this is jay SCPA oh how do

2  
00:00:11,240 --> 00:00:08,940  
you hear me Rob we have you loud and

3  
00:00:12,589 --> 00:00:11,250  
clear good to see you're on and the rest

4  
00:00:16,519 --> 00:00:12,599  
of the crew and we have questions here

5  
00:00:18,500 --> 00:00:16,529  
in Houston hi this is Robert Pearlman

6  
00:00:20,689 --> 00:00:18,510  
with collectspace.com with a question

7  
00:00:22,160 --> 00:00:20,699  
for Mark Kelly this is of course the

8  
00:00:24,500 --> 00:00:22,170  
final flight of space shuttle Endeavour

9  
00:00:26,269 --> 00:00:24,510  
but it's coming just before the 40th

10  
00:00:27,950 --> 00:00:26,279  
anniversary of another spacecraft named

11  
00:00:30,679 --> 00:00:27,960  
endeavour flying to the moon on Apollo

12  
00:00:32,089 --> 00:00:30,689  
15 and while a rover Opportunity is

13  
00:00:34,970 --> 00:00:32,099

making its way to a crater named

14

00:00:36,410 --> 00:00:34,980

endeavor on Mars with that in mind how

15

00:00:38,000 --> 00:00:36,420

would you place your mission and the

16

00:00:40,520 --> 00:00:38,010

missions of space shuttle Endeavour into

17

00:00:45,619 --> 00:00:40,530

the larger context of humanity's space

18

00:00:49,180 --> 00:00:45,629

exploration endeavors well there's also

19

00:00:52,100 --> 00:00:49,190

a ship going around Australia right now

20

00:00:53,689 --> 00:00:52,110

commemorating the ship endeavor that did

21

00:00:57,200 --> 00:00:53,699

one of the first voyages to

22

00:00:58,490 --> 00:00:57,210

circumnavigate Australia so you know

23

00:01:00,229 --> 00:00:58,500

it's pretty significant the space

24

00:01:03,979 --> 00:01:00,239

shuttles been the workhorse of the u.s.

25

00:01:06,350 --> 00:01:03,989

space program for over 30 years now and

26

00:01:08,810 --> 00:01:06,360

it's been an incredible success we've

27

00:01:10,580 --> 00:01:08,820

never built anything that can do what

28

00:01:12,590 --> 00:01:10,590

the Space Shuttle can do carry that

29

00:01:16,010 --> 00:01:12,600

tremendous mass to orbit bring stuff

30

00:01:18,050 --> 00:01:16,020

back do spacewalks robotic operations I

31

00:01:21,020 --> 00:01:18,060

mean it's what built literally built the

32

00:01:22,850 --> 00:01:21,030

space station so to retire the Space

33

00:01:24,740 --> 00:01:22,860

Shuttle is pretty significant in the

34

00:01:27,050 --> 00:01:24,750

last flight you know it's it's

35

00:01:29,120 --> 00:01:27,060

bittersweet but I think it's time you

36

00:01:31,730 --> 00:01:29,130

know that we move on and do something

37

00:01:35,770 --> 00:01:31,740

you know equally exciting build a new

38

00:01:42,859 --> 00:01:39,890

thanks and for Mike Fink you'll soon

39

00:01:45,679 --> 00:01:42,869

hold the record for the most time in in

40

00:01:47,719 --> 00:01:45,689

space by u.s. astronaut and but by the

41

00:01:50,660 --> 00:01:47,729

all-time list you'll still rank I

42

00:01:53,210 --> 00:01:50,670

believe 20 20th behind 19 Russian

43

00:01:54,620 --> 00:01:53,220

cosmonauts as our longest traveled space

44

00:01:56,539 --> 00:01:54,630

explorer and an experienced space

45

00:01:58,370 --> 00:01:56,549

station crew member do you feel there's

46

00:02:00,740 --> 00:01:58,380

a value to extending the length of

47

00:02:03,889 --> 00:02:00,750

individual crew members ISS expeditions

48

00:02:10,169 --> 00:02:03,899

for going in preparation for going

49

00:02:13,110 --> 00:02:10,179

further out into the solar system that

50

00:02:15,869 --> 00:02:13,120

a great question it's certainly an honor

51  
00:02:17,970 --> 00:02:15,879  
to get a chance to fly up in space and

52  
00:02:20,309 --> 00:02:17,980  
you know especially for long periods of

53  
00:02:22,770 --> 00:02:20,319  
time and I think any records that are

54  
00:02:24,209 --> 00:02:22,780  
happening now even the greatest show on

55  
00:02:27,149 --> 00:02:24,219  
the Russian side of eight hundred and

56  
00:02:29,849 --> 00:02:27,159  
four days that's all going to be long

57  
00:02:31,559 --> 00:02:29,859  
forgotten when humans really start to

58  
00:02:33,330 --> 00:02:31,569  
explore the solar system especially with

59  
00:02:36,240 --> 00:02:33,340  
some of the new vehicles that NASA is

60  
00:02:38,429 --> 00:02:36,250  
going to come up with so it's it's I

61  
00:02:40,530 --> 00:02:38,439  
think in preparation for that you know

62  
00:02:43,289 --> 00:02:40,540  
six months at a time it seems to be what

63  
00:02:45,300 --> 00:02:43,299

seems to be working now for the space

64

00:02:46,530 --> 00:02:45,310  
station anything longer than that's

65

00:02:48,479 --> 00:02:46,540  
going to be a little bit tougher but I

66

00:02:50,729 --> 00:02:48,489  
think we can live up here relatively

67

00:02:52,020 --> 00:02:50,739  
indefinitely yo year missions not out of

68

00:02:54,149 --> 00:02:52,030  
the question aboard the space station

69

00:02:57,809 --> 00:02:54,159  
would be a lot more interesting to spend

70

00:02:59,729 --> 00:02:57,819  
a year going to Mars however this is

71

00:03:01,979 --> 00:02:59,739  
going down with the German Space Agency

72

00:03:04,470 --> 00:03:01,989  
and space explorer Association question

73

00:03:06,809 --> 00:03:04,480  
for box you are the prime operator of

74

00:03:09,030 --> 00:03:06,819  
the SMR RMS what was your most

75

00:03:11,099 --> 00:03:09,040  
challenging robotics task and what was

76

00:03:17,729 --> 00:03:11,109

it like working at the robotic station

77

00:03:21,270 --> 00:03:17,739

in the cupola we set few to earth well

78

00:03:23,729 --> 00:03:21,280

Gerhard I'll tell you what the cupola

79

00:03:28,559 --> 00:03:23,739

was everything that I had heard from

80

00:03:32,550 --> 00:03:28,569

other people x 10 it's in a magnificent

81

00:03:35,009 --> 00:03:32,560

view you have a view of literally half

82

00:03:38,280 --> 00:03:35,019

of the space station operating from the

83

00:03:41,460 --> 00:03:38,290

cupola some of the robotic ops that we

84

00:03:42,869 --> 00:03:41,470

did on EV a2 didn't even need any

85

00:03:47,849 --> 00:03:42,879

cameras you could just look out the

86

00:03:49,830 --> 00:03:47,859

window a lot of the robotics op robotic

87

00:03:51,869 --> 00:03:49,840

ops that we're doing on this mission are

88

00:03:55,219 --> 00:03:51,879

located on the other side of the station

89  
00:03:59,249 --> 00:03:55,229  
for example when we installed a MS&E Ic3

90  
00:04:00,719 --> 00:03:59,259  
so the advantage of the cupola wasn't

91  
00:04:03,509 --> 00:04:00,729  
apparent as far as looking out the

92  
00:04:06,119 --> 00:04:03,519  
window but just as a place to be as a

93  
00:04:08,249 --> 00:04:06,129  
place to operate the robotic arm it was

94  
00:04:12,149 --> 00:04:08,259  
a wonderful and it is a wonderful

95  
00:04:14,729 --> 00:04:12,159  
wonderful place to be thank you question

96  
00:04:17,399 --> 00:04:14,739  
for the spacewalk s2 and mike photo

97  
00:04:19,409 --> 00:04:17,409  
you'll perform 3 EBA is kind of a

98  
00:04:22,270 --> 00:04:19,419  
surgery on the final Hubble servicing

99  
00:04:23,890 --> 00:04:22,280  
mission and three on this is explanation

100  
00:04:26,260 --> 00:04:23,900  
what are the major difference is

101  
00:04:28,210 --> 00:04:26,270  
executing the EVs on Hubble and the

102  
00:04:33,850 --> 00:04:28,220  
station and what were the most difficult

103  
00:04:35,530 --> 00:04:33,860  
and most exciting moments I'll get hired

104  
00:04:37,409 --> 00:04:35,540  
thanks that's a that's a good question a

105  
00:04:40,240 --> 00:04:37,419  
tough one to answer I can tell you that

106  
00:04:42,400 --> 00:04:40,250  
each of the epa's were challenging and

107  
00:04:44,710 --> 00:04:42,410  
and I can tell you that now after three

108  
00:04:47,500 --> 00:04:44,720  
days of being outside I'm pretty worn

109  
00:04:49,570 --> 00:04:47,510  
out and my hands my hands are very tired

110  
00:04:51,370 --> 00:04:49,580  
as well and and I don't know that I'd be

111  
00:04:54,940 --> 00:04:51,380  
ready to go out to tomorrow like Mike

112  
00:04:56,409 --> 00:04:54,950  
and Greg are going to but the difference

113  
00:04:58,060 --> 00:04:56,419

is of course or that Hubble are very

114

00:04:59,680 --> 00:04:58,070

couple is very close to the to our

115

00:05:01,210 --> 00:04:59,690

airlock and we don't have to travel far

116

00:05:03,310 --> 00:05:01,220

on the payload Bay to reach it and

117

00:05:05,110 --> 00:05:03,320

perform the tasks and of course with

118

00:05:07,780 --> 00:05:05,120

Space Station we Traverse over long

119

00:05:09,820 --> 00:05:07,790

distances and especially in the dark

120

00:05:12,310 --> 00:05:09,830

it's very easy to get a little bit

121

00:05:14,620 --> 00:05:12,320

disoriented and sometimes lost and and I

122

00:05:16,570 --> 00:05:14,630

know I went the wrong way a few times at

123

00:05:19,480 --> 00:05:16,580

least briefly trying to understand

124

00:05:20,620 --> 00:05:19,490

really where I was headed so but the

125

00:05:22,420 --> 00:05:20,630

work is the work is challenging

126

00:05:24,370 --> 00:05:22,430

unfortunately the space station was

127

00:05:27,750 --> 00:05:24,380

built to be serviced by astronauts

128

00:05:30,219 --> 00:05:27,760

Hubble was not built really that way

129

00:05:32,740 --> 00:05:30,229

although we have performed as you know

130

00:05:34,270 --> 00:05:32,750

many servicing missions to it so the

131

00:05:36,580 --> 00:05:34,280

tasks are just is challenging I worked

132

00:05:38,020 --> 00:05:36,590

just as hard in fact I think harder with

133

00:05:39,940 --> 00:05:38,030

all the activities we had and we're just

134

00:05:41,710 --> 00:05:39,950

having to be done with three successful

135

00:05:45,190 --> 00:05:41,720

spacewalks and looking forward to a

136

00:05:47,040 --> 00:05:45,200

fourth and for Mike you perform sick

137

00:05:49,990 --> 00:05:47,050

CBA's in the russian orlan spacesuits

138

00:05:52,210 --> 00:05:50,000

during expedition 9 and 18 on this

139

00:05:55,300 --> 00:05:52,220

mission you executed two of you three

140

00:05:57,040 --> 00:05:55,310

plan TVA's in the US EMU spacesuit what

141

00:05:59,469 --> 00:05:57,050

are the advantage and disadvantage of

142

00:06:01,659 --> 00:05:59,479

each type of space suit and other task

143

00:06:07,659 --> 00:06:01,669

easier to execute in either the Russian

144

00:06:09,490 --> 00:06:07,669

of the u.s. suit that's a great question

145

00:06:11,560 --> 00:06:09,500

I've had the privilege of being in the

146

00:06:14,890 --> 00:06:11,570

Russian suit and I like it very much the

147

00:06:16,330 --> 00:06:14,900

Orlan is pressurized to about 6 pounds

148

00:06:19,240 --> 00:06:16,340

per square inch or point four

149

00:06:21,460 --> 00:06:19,250

atmospheres it's a very serviceable suit

150

00:06:23,980 --> 00:06:21,470

and we don't have to spend a long time

151  
00:06:27,790 --> 00:06:23,990  
getting ready the pre brief time is

152  
00:06:30,670 --> 00:06:27,800  
relatively short and the American suit

153  
00:06:32,440 --> 00:06:30,680  
is more mobile because it runs at a

154  
00:06:34,779 --> 00:06:32,450  
lower pressure but that means we have a

155  
00:06:35,380 --> 00:06:34,789  
long pre-breathe time and takes a longer

156  
00:06:37,570 --> 00:06:35,390  
time to get

157  
00:06:39,580 --> 00:06:37,580  
ready however both suits are great for

158  
00:06:41,860 --> 00:06:39,590  
what they do it's great to go out in

159  
00:06:43,540 --> 00:06:41,870  
space and go on go on a spacewalk but I

160  
00:06:46,210 --> 00:06:43,550  
think every spacewalk that I've been on

161  
00:06:51,070 --> 00:06:46,220  
is really tough spacewalks are not easy

162  
00:06:53,440 --> 00:06:51,080  
at all hi Denise Chow at space com a

163  
00:06:54,490 --> 00:06:53,450

question for Mark Kelly um the past two

164

00:06:56,320 --> 00:06:54,500

days nASA has made some big

165

00:06:58,180 --> 00:06:56,330

announcements in terms of a development

166

00:07:00,250 --> 00:06:58,190

plan for a vehicle for deep-space

167

00:07:02,080 --> 00:07:00,260

exploration and a sample return mission

168

00:07:06,090 --> 00:07:02,090

to an asteroid now as curious as to what

169

00:07:11,800 --> 00:07:09,340

well we didn't see when we we don't get

170

00:07:14,860 --> 00:07:11,810

a have a lot of time to look at a lot of

171

00:07:17,950 --> 00:07:14,870

news here we did get the announcement on

172

00:07:19,600 --> 00:07:17,960

the multi-purpose crew vehicle that

173

00:07:22,930 --> 00:07:19,610

Lockheed Martin you know originally it

174

00:07:25,990 --> 00:07:22,940

was Orion and now it's that design is

175

00:07:27,760 --> 00:07:26,000

going to be used to you know hopefully

176

00:07:29,770 --> 00:07:27,770

one day come back to the space station

177

00:07:33,120 --> 00:07:29,780

and do some other things so we're pretty

178

00:07:35,730 --> 00:07:33,130

excited about it I within the space

179

00:07:38,700 --> 00:07:35,740

within the astronaut office I worked

180

00:07:41,380 --> 00:07:38,710

Orion stuff before I was assigned to

181

00:07:43,690 --> 00:07:41,390

sts-134 I think it's a good vehicle it's

182

00:07:45,520 --> 00:07:43,700

a good design and you know hopefully

183

00:07:49,210 --> 00:07:45,530

folks from our office will be flying it

184

00:07:51,040 --> 00:07:49,220

one day and a question for Ron Garan um

185

00:07:52,930 --> 00:07:51,050

what has it been like living on the

186

00:07:55,630 --> 00:07:52,940

space station with the construction

187

00:07:57,790 --> 00:07:55,640

pretty well complete and also before

188

00:07:59,380 --> 00:07:57,800

Dmitri Katie and Paulo left what was it

189

00:08:04,930 --> 00:07:59,390

like being in the station with a pretty

190

00:08:06,670 --> 00:08:04,940

full house well you know I was here

191

00:08:08,230 --> 00:08:06,680

three years ago and it was a big place

192

00:08:11,410 --> 00:08:08,240

then and it's a it's an even bigger

193

00:08:12,880 --> 00:08:11,420

place now you know it's a it's a

194

00:08:14,770 --> 00:08:12,890

wonderful place to live and work it so

195

00:08:17,050 --> 00:08:14,780

it's a wonderful wonderful perspective

196

00:08:18,280 --> 00:08:17,060

we have on the planet up here and you

197

00:08:20,770 --> 00:08:18,290

know the science that we're doing on

198

00:08:22,570 --> 00:08:20,780

board I think is really going to make a

199

00:08:24,400 --> 00:08:22,580

big difference on the earth i think you

200

00:08:25,870 --> 00:08:24,410

know when I was here last time we were

201  
00:08:27,940 --> 00:08:25,880  
just getting the science going and it's

202  
00:08:29,860 --> 00:08:27,950  
really starting to ramp up now and you

203  
00:08:32,770 --> 00:08:29,870  
know we've got world-class laboratories

204  
00:08:35,020 --> 00:08:32,780  
throughout the the complex here that are

205  
00:08:37,420 --> 00:08:35,030  
really going to I think make some

206  
00:08:39,550 --> 00:08:37,430  
breakthroughs and it really you know

207  
00:08:40,870 --> 00:08:39,560  
it's this is a tremendous investment in

208  
00:08:43,300 --> 00:08:40,880  
the future of our planet in the future

209  
00:08:45,610 --> 00:08:43,310  
of humanity and it's really neat to be a

210  
00:08:47,740 --> 00:08:45,620  
part of that and to see to see all these

211  
00:08:49,199 --> 00:08:47,750  
years of construction finally you know

212  
00:08:54,449 --> 00:08:49,209  
the result of that

213  
00:08:57,150 --> 00:08:54,459

come into fruition is really nice mark

214

00:08:58,980 --> 00:08:57,160

karo for aviation week and have a

215

00:09:00,540 --> 00:08:58,990

question for the shuttle crew I'm

216

00:09:05,129 --> 00:09:00,550

wondering how much Professional

217

00:09:07,379 --> 00:09:05,139

Responsibility even pressure you feel to

218

00:09:10,079 --> 00:09:07,389

do all you can to place the space

219

00:09:18,749 --> 00:09:10,089

station in the best possible footing

220

00:09:20,639 --> 00:09:18,759

before the shuttle retires that's a very

221

00:09:23,850 --> 00:09:20,649

good question and you know it very much

222

00:09:26,850 --> 00:09:23,860

is a big part of our mission I mean this

223

00:09:28,850 --> 00:09:26,860

is the last flight really before the

224

00:09:30,929 --> 00:09:28,860

station is considered assembly complete

225

00:09:32,759 --> 00:09:30,939

much of what we have up here we're

226

00:09:34,579 --> 00:09:32,769

bringing some logistics but we've

227

00:09:38,249 --> 00:09:34,589

installed some external spare equipment

228

00:09:40,049 --> 00:09:38,259

you know during this mission and you

229

00:09:41,819 --> 00:09:40,059

know and the whole point of that is to

230

00:09:43,259 --> 00:09:41,829

make sure that the there's longevity for

231

00:09:45,299 --> 00:09:43,269

the station without the shuttle for many

232

00:09:48,780 --> 00:09:45,309

years to come hopefully to 2020 and well

233

00:09:50,850 --> 00:09:48,790

beyond without the shuttle as Mark

234

00:09:52,980 --> 00:09:50,860

mentioned earlier it's very hard to

235

00:09:55,379 --> 00:09:52,990

bring bring things up that ago

236

00:09:56,489 --> 00:09:55,389

externally and bring things down and you

237

00:09:58,410 --> 00:09:56,499

know there will be the possibility to

238

00:10:01,109 --> 00:09:58,420

spacewalks of course from the airlock in

239

00:10:02,669 --> 00:10:01,119

the station but the servicing the space

240

00:10:05,069 --> 00:10:02,679

station is going to be more difficult

241

00:10:07,439 --> 00:10:05,079

and although we do have you no other

242

00:10:11,129 --> 00:10:07,449

vehicles from other countries a TV at

243

00:10:12,809 --> 00:10:11,139

HTV and progress for supply bringing

244

00:10:14,329 --> 00:10:12,819

things down the darn that are not

245

00:10:16,530 --> 00:10:14,339

working to figure out what we know with

246

00:10:18,650 --> 00:10:16,540

how to repair them or how to improve

247

00:10:20,549 --> 00:10:18,660

them will be a little more difficult but

248

00:10:22,470 --> 00:10:20,559

this is a you know this is very

249

00:10:24,629 --> 00:10:22,480

important and and it's really the point

250

00:10:25,859 --> 00:10:24,639

of everything we're doing i was trying

251  
00:10:28,109 --> 00:10:25,869  
to make sure the space station is well

252  
00:10:30,059 --> 00:10:28,119  
positioned to handle a full crew of six

253  
00:10:31,829 --> 00:10:30,069  
and enable it to do the science that

254  
00:10:35,519 --> 00:10:31,839  
it's designed to do know that will carry

255  
00:10:37,079 --> 00:10:35,529  
us forward hi it's bill Harwood with CBS

256  
00:10:39,269 --> 00:10:37,089  
News and Greg you can keep the mic I'll

257  
00:10:40,559 --> 00:10:39,279  
ask you this question you know we were

258  
00:10:43,769 --> 00:10:40,569  
talking the other day about how it's

259  
00:10:45,299 --> 00:10:43,779  
been 27 years since the space station

260  
00:10:46,949 --> 00:10:45,309  
program was approved and I remember

261  
00:10:49,230 --> 00:10:46,959  
talking to bill Shepard in the early 90s

262  
00:10:50,639 --> 00:10:49,240  
about the wall of e VA and all the

263  
00:10:51,929 --> 00:10:50,649

concern about doing this and you guys

264

00:10:54,689 --> 00:10:51,939

are getting ready to do the last shuttle

265

00:10:56,939 --> 00:10:54,699

e VA and all that time is assembly comes

266

00:10:57,960 --> 00:10:56,949

down can somebody I don't know reflect

267

00:11:01,800 --> 00:10:57,970

on the

268

00:11:03,809 --> 00:11:01,810

how far nASA has come in developing this

269

00:11:13,829 --> 00:11:03,819

EV a capability that you've used to

270

00:11:15,499 --> 00:11:13,839

build the station well that's a that's a

271

00:11:18,329 --> 00:11:15,509

good point that you've made and

272

00:11:20,309 --> 00:11:18,339

certainly being able to perform

273

00:11:21,929 --> 00:11:20,319

spacewalks is critical to the life of

274

00:11:24,300 --> 00:11:21,939

the space station and we've seen in

275

00:11:25,920 --> 00:11:24,310

every shuttle mission and many of the

276

00:11:28,439 --> 00:11:25,930

space station expeditions that have been

277

00:11:30,900 --> 00:11:28,449

here the requirement for me VA s if we

278

00:11:32,790 --> 00:11:30,910

didn't have that capability the station

279

00:11:34,619 --> 00:11:32,800

certainly would not be able to last as

280

00:11:37,619 --> 00:11:34,629

long as we we plan for it to last and

281

00:11:39,119 --> 00:11:37,629

also I think that as the capability to

282

00:11:41,009 --> 00:11:39,129

do spacewalks has something to do with

283

00:11:44,340 --> 00:11:41,019

certification longer than what original

284

00:11:46,439 --> 00:11:44,350

plans are so to be able to maintain that

285

00:11:48,059 --> 00:11:46,449

that's just a part of life to work and

286

00:11:49,710 --> 00:11:48,069

live in space we will always have to

287

00:11:51,749 --> 00:11:49,720

have the ability to go out and put our

288

00:11:53,429 --> 00:11:51,759

hands on two objects and we've certainly

289

00:11:54,869 --> 00:11:53,439

seen that and what I can reflect back on

290

00:11:57,119 --> 00:11:54,879

the Hubble Space Telescope it would

291

00:11:58,710 --> 00:11:57,129

never have lasted as long as it has nor

292

00:12:01,110 --> 00:11:58,720

would it have last will last into the

293

00:12:03,090 --> 00:12:01,120

future without the assistance of humans

294

00:12:05,400 --> 00:12:03,100

in the loop with tools in their hands

295

00:12:07,590 --> 00:12:05,410

going out to perform the work because

296

00:12:09,689 --> 00:12:07,600

number one many of those tasks are

297

00:12:11,460 --> 00:12:09,699

critical and has to be performed in very

298

00:12:13,199 --> 00:12:11,470

short order and we just don't have the

299

00:12:15,299 --> 00:12:13,209

capability right now with robotics or

300

00:12:16,920 --> 00:12:15,309

other devices you know any other

301  
00:12:18,840 --> 00:12:16,930  
capability to get out there and get the

302  
00:12:20,939 --> 00:12:18,850  
work done so the space walking is

303  
00:12:24,299 --> 00:12:20,949  
critical the ability to get outside and

304  
00:12:26,850 --> 00:12:24,309  
do the work is important and on the last

305  
00:12:29,189 --> 00:12:26,860  
EV a four EV a three of course we tested

306  
00:12:31,679 --> 00:12:29,199  
out a new protocol pre breeze protocol

307  
00:12:34,590 --> 00:12:31,689  
which allows us to have sort of a normal

308  
00:12:37,860 --> 00:12:34,600  
morning spend less time on oxygen masks

309  
00:12:39,749 --> 00:12:37,870  
and be able to get outside without the

310  
00:12:41,999 --> 00:12:39,759  
additional pre-planning that we have had

311  
00:12:43,410 --> 00:12:42,009  
in the past that required camping out in

312  
00:12:46,129 --> 00:12:43,420  
the airlock overnighed to reduce

313  
00:12:48,179 --> 00:12:46,139

pressure so the capabilities are

314

00:12:51,749 --> 00:12:48,189

important for the longevity of space

315

00:12:54,389 --> 00:12:51,759

station and in folks back at the centers

316

00:12:56,970 --> 00:12:54,399

in on earth have been working to advance

317

00:12:58,710 --> 00:12:56,980

those capabilities and make an expedite

318

00:12:59,819 --> 00:12:58,720

our capability to get outside and do the

319

00:13:02,699 --> 00:12:59,829

work that we need to do when it's

320

00:13:04,650 --> 00:13:02,709

required let me ask might think a

321

00:13:06,569 --> 00:13:04,660

related question if I could on Friday

322

00:13:09,100 --> 00:13:06,579

you guys are going to go over a thousand

323

00:13:11,590 --> 00:13:09,110

hours and EV a time during assembly of

324

00:13:13,870 --> 00:13:11,600

ISS for more than 40 days which is

325

00:13:15,730 --> 00:13:13,880

either an incredibly an incredible

326

00:13:16,870 --> 00:13:15,740

milestone or maybe it's just a trivial

327

00:13:19,030 --> 00:13:16,880

milestone I don't know how do you look

328

00:13:24,730 --> 00:13:19,040

at that a thousand hours of EV a time

329

00:13:27,850 --> 00:13:24,740

thanks yeah a thousand hours that's

330

00:13:29,769 --> 00:13:27,860

that's pretty impressive in fact we had

331

00:13:32,500 --> 00:13:29,779

concerns when we were first designing

332

00:13:36,190 --> 00:13:32,510

the space station of how much time evaa

333

00:13:38,110 --> 00:13:36,200

0 geba time it would take up at that

334

00:13:41,259 --> 00:13:38,120

point we weren't really as experience

335

00:13:43,600 --> 00:13:41,269

with with EV a the shuttle program paved

336

00:13:45,940 --> 00:13:43,610

the way with some of the earlier ebas

337

00:13:49,420 --> 00:13:45,950

getting our extra vehicular Mobility

338

00:13:51,940 --> 00:13:49,430

unit EMU up and running and and then

339

00:13:54,100 --> 00:13:51,950

getting it to really shine some of the

340

00:13:55,720 --> 00:13:54,110

tools and techniques that came along for

341

00:13:58,420 --> 00:13:55,730

space station building are very helpful

342

00:14:00,460 --> 00:13:58,430

the the stints that we did at Hubble

343

00:14:02,079 --> 00:14:00,470

Space Telescope we still use some of

344

00:14:04,180 --> 00:14:02,089

those tools to this day for the space

345

00:14:06,040 --> 00:14:04,190

station so we've really come a long way

346

00:14:07,389 --> 00:14:06,050

with space walking we've learned a lot

347

00:14:09,850 --> 00:14:07,399

from our Russian partners and they've

348

00:14:12,759 --> 00:14:09,860

learned a lot from us and the new suits

349

00:14:15,610 --> 00:14:12,769

that we have and the capabilities allow

350

00:14:18,220 --> 00:14:15,620

us to do longer spacewalks I don't think

351  
00:14:20,050 --> 00:14:18,230  
anybody at 10 20 30 years ago would

352  
00:14:22,030 --> 00:14:20,060  
imagine that we would have so many

353  
00:14:25,689 --> 00:14:22,040  
eight-hour spacewalks even like the one

354  
00:14:27,850 --> 00:14:25,699  
we had just this week it's Chris

355  
00:14:29,290 --> 00:14:27,860  
Baltimore with Reuters a question for

356  
00:14:31,689 --> 00:14:29,300  
commander Kelly or perhaps for Mike

357  
00:14:33,670 --> 00:14:31,699  
Garen springboarding off of Mark crows

358  
00:14:36,550 --> 00:14:33,680  
question about the station in the

359  
00:14:37,720 --> 00:14:36,560  
retirement of the shuttle fleet time

360  
00:14:40,150 --> 00:14:37,730  
when a fleet means that we're losing

361  
00:14:41,680 --> 00:14:40,160  
quite a bit of capability and just

362  
00:14:43,210 --> 00:14:41,690  
wondering what your assessment is in

363  
00:14:45,280 --> 00:14:43,220

terms of whether the space shuttle is

364

00:14:48,009 --> 00:14:45,290

ready to make this transition and if

365

00:14:50,380 --> 00:14:48,019

there are concerns about the kinds of

366

00:14:56,139 --> 00:14:50,390

capabilities that won't be in the

367

00:14:57,790 --> 00:14:56,149

toolbox in future years well i think you

368

00:15:00,340 --> 00:14:57,800

mean they're the retirement of the space

369

00:15:02,829 --> 00:15:00,350

shuttle and a transition to the museum

370

00:15:05,519 --> 00:15:02,839

if that's what you're referring to its

371

00:15:09,880 --> 00:15:05,529

it'll be a little bit more difficult atv

372

00:15:12,009 --> 00:15:09,890

progress hdv provides you know a certain

373

00:15:14,110 --> 00:15:12,019

up mass capability it's not what the

374

00:15:18,850 --> 00:15:14,120

Space Shuttle can do it can't bring

375

00:15:21,189 --> 00:15:18,860

anything home that you can reuse so it's

376

00:15:23,049 --> 00:15:21,199

going to be it'll be a challenge it'll

377

00:15:25,089 --> 00:15:23,059

be a logistical challenge for

378

00:15:27,219 --> 00:15:25,099

the the folks that manage the space

379

00:15:30,309 --> 00:15:27,229

station program but they've planned

380

00:15:31,479 --> 00:15:30,319

ahead and we'll be able to will be able

381

00:15:34,569 --> 00:15:31,489

to handle it and we're going to have a

382

00:15:36,909 --> 00:15:34,579

very capable space station and the the

383

00:15:40,299 --> 00:15:36,919

cruise onboard are going to be able to

384

00:15:42,999 --> 00:15:40,309

contribute in a robust science program

385

00:15:52,509 --> 00:15:43,009

so it's a it's planned to work out and I

386

00:15:54,789 --> 00:15:52,519

think it will endeavor ISS this is

387

00:15:56,529 --> 00:15:54,799

Houston ACR that concludes questions

388

00:15:58,929 --> 00:15:56,539

from the Johnson Space Center please

389

00:16:05,499 --> 00:15:58,939

stand by for a voice check from KSC PA

390

00:16:09,789 --> 00:16:05,509

OH another ISS this is KSC PA oh how do

391

00:16:17,349 --> 00:16:09,799

you hear me will you got you loud and

392

00:16:19,599 --> 00:16:17,359

clear how to hear us unclear none of the

393

00:16:21,579 --> 00:16:19,609

associated press could I start with You

394

00:16:23,949 --> 00:16:21,589

commander Kelly I know you've been

395

00:16:25,119 --> 00:16:23,959

chatting by phone with your wife daily

396

00:16:28,059 --> 00:16:25,129

i'm just wondering have you had a chance

397

00:16:33,429 --> 00:16:28,069

to videocon with her yet or is that in

398

00:16:35,589 --> 00:16:33,439

what days are left of your mission yeah

399

00:16:38,439 --> 00:16:35,599

the plan is to do that tomorrow as a

400

00:16:40,629 --> 00:16:38,449

matter of fact so I plan to do it from

401  
00:16:43,509 --> 00:16:40,639  
the cupola get her a check give her a

402  
00:16:44,829 --> 00:16:43,519  
chance to look outside look at the space

403  
00:16:46,509 --> 00:16:44,839  
shuttle docked to the space station

404  
00:16:48,789 --> 00:16:46,519  
that's an incredible view to see

405  
00:16:51,849 --> 00:16:48,799  
endeavour sitting there with the with

406  
00:16:53,819 --> 00:16:51,859  
the planet just below its towel you can

407  
00:16:56,079 --> 00:16:53,829  
see I mean you're pretty close and

408  
00:16:57,609 --> 00:16:56,089  
looking forward to talking to her I've

409  
00:17:00,249 --> 00:16:57,619  
been speaking with her every night

410  
00:17:02,559 --> 00:17:00,259  
before I go to bed it's her morning but

411  
00:17:04,419 --> 00:17:02,569  
it'll be nice to do it via video be able

412  
00:17:06,669 --> 00:17:04,429  
to see how she's doing and for her to

413  
00:17:11,919 --> 00:17:06,679

join us on board the space station for a

414

00:17:13,899 --> 00:17:11,929

little bit I'm how long of a session do

415

00:17:15,609 --> 00:17:13,909

you expect that to be and is it going to

416

00:17:19,239 --> 00:17:15,619

be a special treat for you to see her

417

00:17:24,970 --> 00:17:19,249

post surgery with the repairs to her

418

00:17:29,230 --> 00:17:24,980

skull well I think she sells bandages on

419

00:17:33,190 --> 00:17:29,240

so you know I haven't really thought

420

00:17:35,859 --> 00:17:33,200

about what what to expect the amount of

421

00:17:36,520 --> 00:17:35,869

time is I think it's about 20 or 30

422

00:17:38,590 --> 00:17:36,530

minutes

423

00:17:41,230 --> 00:17:38,600

typically our hopefully it'll be in a

424

00:17:45,640 --> 00:17:41,240

day pass so I could show her some neat

425

00:17:47,980 --> 00:17:45,650

views of the earth thank you and I'd

426

00:17:50,530 --> 00:17:47,990

like to ask a few of the shuttle crew

427

00:17:53,440 --> 00:17:50,540

members there we thought their thoughts

428

00:17:56,680 --> 00:17:53,450

their reflections on space shuttle

429

00:17:58,360 --> 00:17:56,690

endeavour's you know the flights almost

430

00:18:00,190 --> 00:17:58,370

over this is almost it there's just a

431

00:18:01,960 --> 00:18:00,200

couple more days left for flying for

432

00:18:04,240 --> 00:18:01,970

endeavor what are your thoughts when you

433

00:18:13,120 --> 00:18:04,250

take a moment to pause and think about

434

00:18:15,250 --> 00:18:13,130

that I spent quite a lot of time before

435

00:18:18,940 --> 00:18:15,260

going to sleep looking out of the cupola

436

00:18:22,330 --> 00:18:18,950

and endeavour is there waiting with the

437

00:18:24,640 --> 00:18:22,340

robotic arm deployed this is my first

438

00:18:27,820 --> 00:18:24,650

opportunity to fly on the shadow and I

439

00:18:30,640 --> 00:18:27,830

need to say that is a great machine it

440

00:18:33,880 --> 00:18:30,650

perform extremely well and same thing

441

00:18:37,510 --> 00:18:33,890

with the robotic arm I'm very pleased

442

00:18:45,700 --> 00:18:37,520

and it's a unique has been a unique

443

00:18:49,390 --> 00:18:45,710

experience for me happy to be here todd

444

00:18:52,300 --> 00:18:49,400

halvorson of Florida today for I don't

445

00:18:55,510 --> 00:18:52,310

know one of the American guys you guys

446

00:18:59,950 --> 00:18:55,520

are on the cusp of being able to declare

447

00:19:03,580 --> 00:18:59,960

victory assembly complete on the US OS

448

00:19:06,070 --> 00:19:03,590

and and I'm wondering if you could write

449

00:19:09,580 --> 00:19:06,080

this accomplishment and where it stands

450

00:19:18,250 --> 00:19:09,590

in the history of human engineering

451  
00:19:21,460 --> 00:19:18,260  
achievements yes you're absolutely right

452  
00:19:24,010 --> 00:19:21,470  
you know we have one more EV a that's

453  
00:19:25,740 --> 00:19:24,020  
going to leave the the boom from the

454  
00:19:27,940 --> 00:19:25,750  
shuttle behind that can be used for

455  
00:19:30,940 --> 00:19:27,950  
helping us reach different parts of the

456  
00:19:35,140 --> 00:19:30,950  
space station robotically if needed

457  
00:19:37,210 --> 00:19:35,150  
later we've already installed a pallet

458  
00:19:38,620 --> 00:19:37,220  
of external spare equipment and but you

459  
00:19:40,060 --> 00:19:38,630  
know our the part that were we've added

460  
00:19:42,480 --> 00:19:40,070  
that was most significant on our mission

461  
00:19:44,830 --> 00:19:42,490  
was the Alpha Magnetic Spectrometer and

462  
00:19:46,900 --> 00:19:44,840  
now this is amazing scientific

463  
00:19:47,940 --> 00:19:46,910

instrument that really as a possibility

464

00:19:51,000 --> 00:19:47,950

of

465

00:19:52,590 --> 00:19:51,010

making some on told discoveries about

466

00:19:54,899 --> 00:19:52,600

the nature of our universe so this is a

467

00:19:57,180 --> 00:19:54,909

really fascinating and a really big

468

00:20:00,180 --> 00:19:57,190

contribution I think to the to the space

469

00:20:01,860 --> 00:20:00,190

station but the space station itself you

470

00:20:03,509 --> 00:20:01,870

know it's it's unbelievable it's it's a

471

00:20:05,820 --> 00:20:03,519

million it is a million pounds of

472

00:20:07,860 --> 00:20:05,830

modules and hardware and scientific

473

00:20:10,220 --> 00:20:07,870

equipment and laboratories and and and

474

00:20:13,529 --> 00:20:10,230

you know we've had 12 people up here

475

00:20:16,049 --> 00:20:13,539

until the last soy his crew just left

476

00:20:17,460 --> 00:20:16,059

and it's an amazing busy place with

477

00:20:20,279 --> 00:20:17,470

around the world up around the world

478

00:20:21,930 --> 00:20:20,289

operations control centers and I think

479

00:20:23,460 --> 00:20:21,940

the things that are going to be done up

480

00:20:25,560 --> 00:20:23,470

here over the next several years are

481

00:20:27,539 --> 00:20:25,570

really going to push us far into the

482

00:20:29,159 --> 00:20:27,549

future it's really our doorstep to the

483

00:20:31,889 --> 00:20:29,169

future into exploring the rest of the

484

00:20:33,620 --> 00:20:31,899

solar system and beyond so I think it's

485

00:20:36,539 --> 00:20:33,630

something we really should be proud of

486

00:20:38,310 --> 00:20:36,549

not just Americans at all the Americans

487

00:20:41,220 --> 00:20:38,320

and Russians and all of Europe and in

488

00:20:44,159 --> 00:20:41,230

Canada and all our national partners

489

00:20:45,930 --> 00:20:44,169

it's really an amazing Japan a really

490

00:20:48,779 --> 00:20:45,940

amazing thing we've done together and

491

00:20:50,100 --> 00:20:48,789

it's going to be a terrific next decade

492

00:20:55,860 --> 00:20:50,110

i think all working together toward the

493

00:20:58,820 --> 00:20:55,870

future thanks very much for that I

494

00:21:02,639 --> 00:20:58,830

wanted to ask Mark Kelly about the

495

00:21:05,220 --> 00:21:02,649

upcoming atmospheric re-entry and

496

00:21:07,259 --> 00:21:05,230

landing this is going to be a night

497

00:21:08,850 --> 00:21:07,269

landing and I think it might be your

498

00:21:12,840 --> 00:21:08,860

first night landing and I'm wondering

499

00:21:16,620 --> 00:21:12,850

what you think the challenges are going

500

00:21:18,419 --> 00:21:16,630

to be and if you could kind of give us

501  
00:21:24,299 --> 00:21:18,429  
an idea what do you think it'll be like

502  
00:21:27,710 --> 00:21:24,309  
Thanks well the biggest challenge is

503  
00:21:31,500 --> 00:21:27,720  
it's going to be dark you know that's

504  
00:21:33,060 --> 00:21:31,510  
you know night landings the fact that

505  
00:21:34,980 --> 00:21:33,070  
you don't have a horizon out the window

506  
00:21:36,509 --> 00:21:34,990  
could be a little bit more of a

507  
00:21:38,610 --> 00:21:36,519  
challenge but these are mostly

508  
00:21:40,980 --> 00:21:38,620  
instrument approaches I mean they really

509  
00:21:43,590 --> 00:21:40,990  
are i mean we fly the equivalent of what

510  
00:21:46,169 --> 00:21:43,600  
an ILS would be in an airplane it's a

511  
00:21:47,970 --> 00:21:46,179  
much steeper glide slope about 20

512  
00:21:51,480 --> 00:21:47,980  
degrees instead of about two or three

513  
00:21:54,509 --> 00:21:51,490

degrees so but we fly the approach

514

00:21:56,639 --> 00:21:54,519

exactly the same we have some very

515

00:22:00,240 --> 00:21:56,649

bright lights on the runway so once you

516

00:22:01,710 --> 00:22:00,250

get down below about 100 or 50 feet it's

517

00:22:03,210 --> 00:22:01,720

almost like daytime there

518

00:22:06,440 --> 00:22:03,220

when you get get very close to the

519

00:22:08,910 --> 00:22:06,450

ground I've got a lot of night landings

520

00:22:10,680 --> 00:22:08,920

over I think about a hundred on an

521

00:22:12,090 --> 00:22:10,690

aircraft carrier those are challenging

522

00:22:14,910 --> 00:22:12,100

too so I've kind of been in this

523

00:22:20,400 --> 00:22:14,920

position before I'm ready for it and

524

00:22:22,890 --> 00:22:20,410

look forward to it endeavour ISS this is

525

00:22:24,690 --> 00:22:22,900

Houston ACR that concludes questions

526  
00:22:26,610 --> 00:22:24,700  
from the Kennedy Space Center please

527  
00:22:30,630 --> 00:22:26,620  
stand by for a follow-up question from

528  
00:22:32,010 --> 00:22:30,640  
the Johnson Space Center hi this is

529  
00:22:35,670 --> 00:22:32,020  
Robert Pearlman with collectspace.com

530  
00:22:37,290 --> 00:22:35,680  
again with a question for ron garan the

531  
00:22:39,090 --> 00:22:37,300  
shuttle crew brought up with them LEGO

532  
00:22:41,610 --> 00:22:39,100  
sets as part of an educational outreach

533  
00:22:44,040 --> 00:22:41,620  
project and I know Katie Collman was

534  
00:22:46,320 --> 00:22:44,050  
quote-unquote trained by her son with

535  
00:22:48,510 --> 00:22:46,330  
the expectation that she would be

536  
00:22:50,820 --> 00:22:48,520  
building them but how are your LEGO

537  
00:22:52,860 --> 00:22:50,830  
building skills and what do you hope

538  
00:22:58,610 --> 00:22:52,870

kids watching and perhaps even building

539

00:23:03,810 --> 00:23:01,440

well I mean educate educate outreach is

540

00:23:05,460 --> 00:23:03,820

a big part of what we do at NASA I think

541

00:23:06,720 --> 00:23:05,470

just the fact that we're flying in space

542

00:23:09,090 --> 00:23:06,730

and the amazing things that we're doing

543

00:23:11,520 --> 00:23:09,100

in space are very inspiring I know when

544

00:23:14,100 --> 00:23:11,530

I was a kid I was inspired by the space

545

00:23:16,410 --> 00:23:14,110

program and I you know as far as the

546

00:23:18,680 --> 00:23:16,420

legos go I think well I think my lego

547

00:23:20,700 --> 00:23:18,690

skills are pretty good I'll have to see

548

00:23:23,160 --> 00:23:20,710

but you know that we have lots of

549

00:23:27,000 --> 00:23:23,170

different methods of education outreach

550

00:23:29,220 --> 00:23:27,010

that's one of them and you know I think

551  
00:23:30,960 --> 00:23:29,230  
that's you know one of the one of the

552  
00:23:34,560 --> 00:23:30,970  
reasons why we have the space station is

553  
00:23:36,180 --> 00:23:34,570  
to inspire the next generation it's bill

554  
00:23:38,400 --> 00:23:36,190  
hard one more time with a question for

555  
00:23:40,920 --> 00:23:38,410  
one of the Russian guys if I can for

556  
00:23:42,060 --> 00:23:40,930  
commander borisenko you've been up there

557  
00:23:44,220 --> 00:23:42,070  
for a while I'm wondering what your

558  
00:23:46,050 --> 00:23:44,230  
impression of life in the space station

559  
00:23:57,980 --> 00:23:46,060  
is and how you're enjoying your stay so

560  
00:24:08,330 --> 00:24:04,940  
yeah but not the I'll be answering

561  
00:24:11,390 --> 00:24:08,340  
that one in Russian Stan say that our

562  
00:24:14,480 --> 00:24:11,400  
life here on the station is the life

563  
00:24:18,470 --> 00:24:14,490

that's filled with work we're on duty 24

564

00:24:22,100 --> 00:24:18,480

7 even when we're asleep we're always

565

00:24:24,680 --> 00:24:22,110

ready to we're always ready to quickly

566

00:24:40,750 --> 00:24:24,690

respond to whatever situation that may

567

00:24:46,580 --> 00:24:44,169

everybody that this has been the first

568

00:24:49,400 --> 00:24:46,590

space flight of such an important

569

00:24:52,490 --> 00:24:49,410

vehicle such an important vehicle that's

570

00:24:57,080 --> 00:24:52,500

a space station is really hard to

571

00:25:00,290 --> 00:24:57,090

maintain by by the capabilities of just

572

00:25:01,820 --> 00:25:00,300

you know the two folks and so you know

573

00:25:04,610 --> 00:25:01,830

the folks that were waiting for us here

574

00:25:07,600 --> 00:25:04,620

previous increment took us from the zero

575

00:25:11,740 --> 00:25:07,610

cycle all the way through all the

576

00:25:13,910 --> 00:25:11,750

elements of hand over and so we're not

577

00:25:17,060 --> 00:25:13,920

rookies anymore in the station has

578

00:25:20,240 --> 00:25:17,070

become our home and we're here to

579

00:25:21,680 --> 00:25:20,250

welcome and be happy to have any guests

580

00:25:25,100 --> 00:25:21,690

that may come and visit and we're here

581

00:25:30,070 --> 00:25:25,110

to share their experiences in also

582

00:25:35,360 --> 00:25:33,470

endeavor ISS this is Houston ACR that

583

00:25:37,310 --> 00:25:35,370

concludes questions from the Johnson

584

00:25:43,810 --> 00:25:37,320

Space Center please stand by for a voice

585

00:25:54,310 --> 00:25:47,450

ISS ISS this is either appear at the

586

00:26:05,800 --> 00:26:00,860

we hear you loud and clear this is now

587

00:26:14,000 --> 00:26:10,820

buongiorno bad this is kibaki's folia

588

00:26:17,720 --> 00:26:14,010

the movie think we do say the moment

589

00:26:20,150 --> 00:26:17,730

that you enter in the space station is

590

00:26:23,120 --> 00:26:20,160

the first time that too two people were

591

00:26:26,180 --> 00:26:23,130

at the same time unfortunately due to

592

00:26:29,030 --> 00:26:26,190

availability we didn't have chance to

593

00:26:35,210 --> 00:26:29,040

have to see your entrance can you please

594

00:26:37,850 --> 00:26:35,220

tell us how it was leveraging the

595

00:26:41,720 --> 00:26:37,860

operations Ganges and radish when we

596

00:26:44,000 --> 00:26:41,730

record in the station in the probe a

597

00:26:47,600 --> 00:26:44,010

very very fickle and then that no the

598

00:26:51,020 --> 00:26:47,610

proof in order to check the pressure of

599

00:26:53,870 --> 00:26:51,030

the shuttle finally portal ona we open

600

00:26:57,680 --> 00:26:53,880

the big door lithonia reality building

601  
00:27:01,100 --> 00:26:57,690  
the fancy it happened in two phases the

602  
00:27:03,980 --> 00:27:01,110  
first phase is me and the Commandant we

603  
00:27:06,380 --> 00:27:03,990  
went to open the big door oh very you

604  
00:27:09,410 --> 00:27:06,390  
know the despot end to remove one of the

605  
00:27:12,830 --> 00:27:09,420  
most important experiences of the

606  
00:27:15,650 --> 00:27:12,840  
mission experiment revista when we open

607  
00:27:19,490 --> 00:27:15,660  
the big door I saw Paulo on the other

608  
00:27:23,210 --> 00:27:19,500  
side we said hi to each other then I got

609  
00:27:25,490 --> 00:27:23,220  
back mid trivia will expand we went it

610  
00:27:27,800 --> 00:27:25,500  
will put on the side the experiment pero

611  
00:27:30,530 --> 00:27:27,810  
Agrabah Joe there was the whole

612  
00:27:33,080 --> 00:27:30,540  
equipment inside the station Fatima

613  
00:27:36,140 --> 00:27:33,090

Sandler first fi most part in the

614

00:27:38,230 --> 00:27:36,150

shelter was very particular nature and

615

00:27:41,380 --> 00:27:38,240

everything flowed but in reality

616

00:27:44,690 --> 00:27:41,390

gentlemen we work in a shuttle in a very

617

00:27:47,480 --> 00:27:44,700

small place in a conventional therefore

618

00:27:49,850 --> 00:27:47,490

feet the floor is not very comfortable

619

00:27:54,380 --> 00:27:49,860

turno de la Stazione a entering inside

620

00:27:55,630 --> 00:27:54,390

the station changes the way to work the

621

00:27:58,420 --> 00:27:55,640

space of the stage

622

00:28:01,750 --> 00:27:58,430

sean is much bigger than a fat the first

623

00:28:04,990 --> 00:28:01,760

effect for you down to come out from a

624

00:28:08,080 --> 00:28:05,000

tunnel very tight to a prettier place

625

00:28:10,810 --> 00:28:08,090

with pantel ultimo at that moment some

626

00:28:13,780 --> 00:28:10,820

Posada traverso latch I went through the

627

00:28:16,000 --> 00:28:13,790

arch the big door the country Paulo was

628

00:28:18,280 --> 00:28:16,010

there with the other five managers of

629

00:28:22,420 --> 00:28:18,290

the crew and we said hi to each other

630

00:28:26,740 --> 00:28:22,430

and hug each other so no Victoria

631

00:28:30,970 --> 00:28:26,750

gentlemen we are Victoria jinto how was

632

00:28:34,210 --> 00:28:30,980

Howard the experiment altri equally man

633

00:28:39,910 --> 00:28:34,220

lumen but also the very small experiment

634

00:28:42,700 --> 00:28:39,920

how did they go I nested ms quarter

635

00:28:45,430 --> 00:28:42,710

journa was this theory from the since

636

00:28:48,760 --> 00:28:45,440

the fourth day no vaccine adopted we did

637

00:28:52,140 --> 00:28:48,770

a double operation that's Eon to robotic

638

00:28:54,880 --> 00:28:52,150

arms lega me and a colleague of mine

639

00:28:58,210 --> 00:28:54,890

Linton a little shot we were inside the

640

00:29:01,900 --> 00:28:58,220

shuttle rebel in order to operate the

641

00:29:06,100 --> 00:29:01,910

robotic ER de la Steve Adela shuttle mms

642

00:29:09,220 --> 00:29:06,110

from the shuttle AMS SAT behind then we

643

00:29:11,710 --> 00:29:09,230

passed it to the robotic arm of the

644

00:29:14,890 --> 00:29:11,720

space Jason from sin antigen now it's

645

00:29:17,410 --> 00:29:14,900

working it's already on everything was

646

00:29:20,620 --> 00:29:17,420

perfectly and it's transmitting already

647

00:29:23,830 --> 00:29:20,630

here is you tatty and now we have great

648

00:29:26,050 --> 00:29:23,840

wishes to good results mass of the

649

00:29:28,630 --> 00:29:26,060

universe and the sheriff Italian history

650

00:29:31,120 --> 00:29:28,640

also with other pleasure I did all the

651  
00:29:34,270 --> 00:29:31,130  
time in experiment they were all turned

652  
00:29:36,970 --> 00:29:34,280  
on the meter such a civil a Ganza of the

653  
00:29:39,250 --> 00:29:36,980  
mentalist is obviously these experiments

654  
00:29:48,280 --> 00:29:39,260  
and infants they are all working they

655  
00:29:55,380 --> 00:29:52,150  
we should get the signal back now okay

656  
00:29:58,960 --> 00:29:55,390  
we can start asking questions again

657  
00:30:02,380 --> 00:29:58,970  
Mario Sileo needed idea sunyani from

658  
00:30:06,190 --> 00:30:02,390  
right tg-2 I would like to talk to

659  
00:30:10,120 --> 00:30:06,200  
victory veterano you are already a

660  
00:30:13,090 --> 00:30:10,130  
veteran of the special missions does

661  
00:30:14,590 --> 00:30:13,100  
that cause you a lot of emotions when

662  
00:30:18,370 --> 00:30:14,600  
you are up there oh it's like going to

663  
00:30:20,520 --> 00:30:18,380

the office on a daily basis yeah Mia

664

00:30:24,550 --> 00:30:20,530

tears oportunidad this is my third

665

00:30:27,040 --> 00:30:24,560

opportunity to before in 2005 the very

666

00:30:29,740 --> 00:30:27,050

first time on the shuttle every mission

667

00:30:32,800 --> 00:30:29,750

gives a unique experience that are not

668

00:30:35,080 --> 00:30:32,810

too different especially con con las I

669

00:30:37,300 --> 00:30:35,090

use with the particular of the Soyuz

670

00:30:40,870 --> 00:30:37,310

aspetta McGarry lyric antero-posterior

671

00:30:43,780 --> 00:30:40,880

right now I am waiting significative I

672

00:30:47,680 --> 00:30:43,790

maintain the space station means he grew

673

00:30:51,460 --> 00:30:47,690

up a lot since last time I saw in 2005 a

674

00:30:53,290 --> 00:30:51,470

la casa hit double twice as much but the

675

00:30:56,710 --> 00:30:53,300

nomicon I can tell you that the majority

676  
00:30:59,880 --> 00:30:56,720  
of the components are made in Italy and

677  
00:31:02,560 --> 00:30:59,890  
in Europe therefore the Columbus

678  
00:31:06,070 --> 00:31:02,570  
elaborated internodal p.m. FML I also

679  
00:31:09,700 --> 00:31:06,080  
work inside the pmm esclusivamente I was

680  
00:31:11,860 --> 00:31:09,710  
exclusively constructed in Italy Posada

681  
00:31:14,890 --> 00:31:11,870  
balamani del industry taliana it also

682  
00:31:18,130 --> 00:31:14,900  
went through the Italian industry it's a

683  
00:31:21,520 --> 00:31:18,140  
big jewelry unica it's a unique

684  
00:31:23,770 --> 00:31:21,530  
opportunity to see the land contest ok

685  
00:31:27,250 --> 00:31:23,780  
criminal in a context sibila she said

686  
00:31:30,040 --> 00:31:27,260  
that before was not possible esclusivo

687  
00:31:33,640 --> 00:31:30,050  
back on as you can see with this unique

688  
00:31:37,750 --> 00:31:33,650

Vulcan if to that of the land chest kuna

689

00:31:40,800 --> 00:31:37,760

me soon every mission is unique continue

690

00:31:43,930 --> 00:31:40,810

to but every unique every mission has

691

00:31:46,630 --> 00:31:43,940

unique task full of shot this

692

00:31:49,750 --> 00:31:46,640

particularly experience with the shuttle

693

00:31:52,770 --> 00:31:49,760

will avoid all so beautiful a tree tanto

694

00:31:57,900 --> 00:31:52,780

Juanita and also unique

695

00:32:01,890 --> 00:31:57,910

to hear is oh no I'm 300 after it this

696

00:32:04,530 --> 00:32:01,900

is Angela Angela Stroh from TG 1 I would

697

00:32:06,360 --> 00:32:04,540

like to ask victory one curiosity

698

00:32:11,010 --> 00:32:06,370

medicals I mean to distract you are

699

00:32:15,000 --> 00:32:11,020

meticulously trained to fly therefore

700

00:32:19,370 --> 00:32:15,010

you are you are able to confront every

701  
00:32:23,880 --> 00:32:19,380  
situation can you tell us some occasion

702  
00:32:28,140 --> 00:32:23,890  
that you have to use your knowledgeable

703  
00:32:31,140 --> 00:32:28,150  
your knowledge and abilities the destron

704  
00:32:33,540 --> 00:32:31,150  
enters yeah the training and model

705  
00:32:36,870 --> 00:32:33,550  
interpreter illustrates the way to

706  
00:32:38,880 --> 00:32:36,880  
interpret the Russian experience and the

707  
00:32:42,270 --> 00:32:38,890  
American one systematic accomplished

708  
00:32:46,920 --> 00:32:42,280  
it's a very systematic training in the

709  
00:32:49,410 --> 00:32:46,930  
specific of the mission 134 we did two

710  
00:32:52,490 --> 00:32:49,420  
years of training reproduce it's

711  
00:32:56,280 --> 00:32:52,500  
impossible to reproduce the microgravity

712  
00:33:00,450 --> 00:32:56,290  
but it is impossible to produce in the

713  
00:33:03,300 --> 00:33:00,460

land the very particulars of the way you

714

00:33:05,910 --> 00:33:03,310

work in the station outside the

715

00:33:09,030 --> 00:33:05,920

atmosphere of a structure very

716

00:33:12,210 --> 00:33:09,040

particular which is the International

717

00:33:15,420 --> 00:33:12,220

Space Station service in reality science

718

00:33:18,930 --> 00:33:15,430

they did it helps you to get to know

719

00:33:22,380 --> 00:33:18,940

under the systems but in reality tootin

720

00:33:25,980 --> 00:33:22,390

temporary Alan it's all a real time from

721

00:33:28,560 --> 00:33:25,990

the moment that you turn off the engines

722

00:33:32,250 --> 00:33:28,570

is adapted to the moment that your or

723

00:33:34,680 --> 00:33:32,260

your body gets adapted for what arrest

724

00:33:39,330 --> 00:33:34,690

understand all this cannot be proved

725

00:33:43,020 --> 00:33:39,340

through training on temple real and it

726

00:33:46,200 --> 00:33:43,030

becomes a real time soon as proof he

727

00:33:49,440 --> 00:33:46,210

wore an astronaut we can do and can

728

00:33:51,480 --> 00:33:49,450

adapt to those particular conditions in

729

00:33:54,420 --> 00:33:51,490

a fashion that authority to Train also

730

00:33:58,500 --> 00:33:54,430

baidu becoming a treasure wherever you

731

00:34:01,740 --> 00:33:58,510

learn and but the spaceflight is

732

00:34:05,130 --> 00:34:01,750

something you have to adopt yourself in

733

00:34:06,360 --> 00:34:05,140

the moment dead just say you're not

734

00:34:09,149 --> 00:34:06,370

allowed you know

735

00:34:11,850 --> 00:34:09,159

to train yourself there are exceptions

736

00:34:14,790 --> 00:34:11,860

regular it was like example at the start

737

00:34:18,690 --> 00:34:14,800

seeing to adopt yourself under land

738

00:34:21,659 --> 00:34:18,700

tecnica particularly with a special

739

00:34:24,649 --> 00:34:21,669

technical way in a swimming pool where

740

00:34:28,919 --> 00:34:24,659

the astronauts they use certain suits

741

00:34:33,659 --> 00:34:28,929

with a certain equipment that they float

742

00:34:36,389 --> 00:34:33,669

inside the swimming pool and estimating

743

00:34:39,060 --> 00:34:36,399

bohemian also the training in the water

744

00:34:43,290 --> 00:34:39,070

the antique alone gives you training but

745

00:34:48,090 --> 00:34:43,300

it's not identical therefore you have to

746

00:34:50,190 --> 00:34:48,100

adopt yourself in real time love Lisa

747

00:34:52,430 --> 00:34:50,200

Kelly nice Katie given to borrow it is

748

00:34:57,090 --> 00:34:52,440

Rebecca no serum I would like to know

749

00:35:02,970 --> 00:34:57,100

the emotions is there a moment that you

750

00:35:06,570 --> 00:35:02,980

might remember or not forget I've

751  
00:35:09,870 --> 00:35:06,580  
revoluta I would have liked I've had the

752  
00:35:13,920 --> 00:35:09,880  
camera at the moment of the launch of

753  
00:35:16,890 --> 00:35:13,930  
the shuttle that's one of the most

754  
00:35:19,500 --> 00:35:16,900  
emotional moment of all the mission two

755  
00:35:21,570 --> 00:35:19,510  
years in training container wash the

756  
00:35:25,020 --> 00:35:21,580  
reston and also when they count down

757  
00:35:30,720 --> 00:35:25,030  
deland juventino the last intention the

758  
00:35:32,820 --> 00:35:30,730  
29 of april a la da da da croatian mr.

759  
00:35:35,700 --> 00:35:32,830  
Kendall and are at zero then the

760  
00:35:37,890 --> 00:35:35,710  
countdown went 2-0 in Quail momenta in

761  
00:35:41,580 --> 00:35:37,900  
the very moment I would have a therapy I

762  
00:35:45,360 --> 00:35:41,590  
would have liked to took a picture but

763  
00:35:47,940 --> 00:35:45,370

it was not possible because we are in a

764

00:35:52,110 --> 00:35:47,950

conditions there are / very extremely

765

00:35:54,780 --> 00:35:52,120

particular we are sitting vertically but

766

00:35:59,280 --> 00:35:54,790

well Don fight whatever chance we in

767

00:36:01,670 --> 00:35:59,290

that very instant you know in moment to

768

00:36:05,100 --> 00:36:01,680

the land at the moment Oregon of the

769

00:36:08,430 --> 00:36:05,110

launch of the shuttles which is

770

00:36:12,150 --> 00:36:08,440

characterized culture it's like a big

771

00:36:15,920 --> 00:36:12,160

kick out silly re when the engines get

772

00:36:17,660 --> 00:36:15,930

on return team president it is also very

773

00:36:20,960 --> 00:36:17,670

impressionist that

774

00:36:24,710 --> 00:36:20,970

for three minutes make a lot of big

775

00:36:28,609 --> 00:36:24,720

impression c'est pour la visibility and

776

00:36:31,970 --> 00:36:28,619

also the visibility mo Kadri because we

777

00:36:35,660 --> 00:36:31,980

are looking towards the sky if there are

778

00:36:38,990 --> 00:36:35,670

clouds lock your things vista with the

779

00:36:41,359 --> 00:36:39,000

course of a seal of the eye so China we

780

00:36:44,510 --> 00:36:41,369

are just going towards the sky but the

781

00:36:47,030 --> 00:36:44,520

other very moment very particular it was

782

00:36:49,480 --> 00:36:47,040

in the space when the engines turned off

783

00:36:53,780 --> 00:36:49,490

incredible a Provost Eva and this

784

00:36:56,690 --> 00:36:53,790

progressive grace that brings you from 0

785

00:36:59,809 --> 00:36:56,700

to 25 thousand kilometres per alchemist

786

00:37:02,089 --> 00:36:59,819

it transformed you in the conjugal job

787

00:37:04,760 --> 00:37:02,099

and everything around you starts to

788

00:37:07,370 --> 00:37:04,770

floating even this is one of the moment

789

00:37:09,980 --> 00:37:07,380

the makes impression finna marietta the

790

00:37:12,890 --> 00:37:09,990

moment but at the end i can tell you

791

00:37:16,520 --> 00:37:12,900

moments there's many of them Geneva late

792

00:37:19,880 --> 00:37:16,530

slide inside of the result reasonably

793

00:37:22,970 --> 00:37:19,890

feta he makes an incredible effect from

794

00:37:26,270 --> 00:37:22,980

how you see the land from the space when

795

00:37:33,799 --> 00:37:26,280

we are in orbit we have chance to see

796

00:37:37,280 --> 00:37:33,809

backward our blue planet Pina lily

797

00:37:41,450 --> 00:37:37,290

per conto digiovanni caprara big this is

798

00:37:43,780 --> 00:37:41,460

kori rae della Sera what impression did

799

00:37:48,349 --> 00:37:43,790

it make you to celebrate in the space

800

00:37:54,309 --> 00:37:48,359

this particular fact like a hundred and

801  
00:37:58,960 --> 00:37:56,900  
una delle cose again one of the

802  
00:38:01,849 --> 00:37:58,970  
things that I do with more pleasure I

803  
00:38:05,239 --> 00:38:01,859  
always try to do not lose the

804  
00:38:08,420 --> 00:38:05,249  
opportunity to look outside when we pass

805  
00:38:11,420 --> 00:38:08,430  
over Italy officially it is very hard

806  
00:38:14,870 --> 00:38:11,430  
and extremely to take a picture because

807  
00:38:17,089 --> 00:38:14,880  
Italy is always partially and the cover

808  
00:38:21,109 --> 00:38:17,099  
is a friend a little momentum so I

809  
00:38:24,440 --> 00:38:21,119  
always wish was so surprised or to see

810  
00:38:28,069 --> 00:38:24,450  
them so I can take a picture of Italy

811  
00:38:30,109 --> 00:38:28,079  
and also when I pass by the station is

812  
00:38:34,849 --> 00:38:30,119  
logically de it's something that hits

813  
00:38:38,349 --> 00:38:34,859

you the I Italian Italy's Italy is all

814

00:38:42,650 --> 00:38:38,359

one dozen unique very talented it is

815

00:38:46,130 --> 00:38:42,660

different from the European continent

816

00:38:48,620 --> 00:38:46,140

due to the Alps and the mountains west

817

00:38:50,960 --> 00:38:48,630

of Elysium our Mediterranean and you see

818

00:38:54,589 --> 00:38:50,970

it in this beautiful Mediterranean Sea

819

00:38:57,859 --> 00:38:54,599

the to wait Cecily imagine a there are

820

00:39:00,109 --> 00:38:57,869

around the main take on this image else

821

00:39:03,650 --> 00:39:00,119

the symbolic symbolic of yad yad alibi

822

00:39:07,359 --> 00:39:03,660

is the symbolic trip of the flag during

823

00:39:10,819 --> 00:39:07,369

one occasion they gave it to me

824

00:39:14,989 --> 00:39:10,829

celebrating 150 years italia this sense

825

00:39:18,079 --> 00:39:14,999

of italy the this desire to transmit to

826

00:39:20,599 --> 00:39:18,089

see asthma the enthusiasm that needed by

827

00:39:23,839 --> 00:39:20,609

Derek a little incident in order to see

828

00:39:26,420 --> 00:39:23,849

that Italy is not only present at the

829

00:39:29,150 --> 00:39:26,430

International Space Station but is also

830

00:39:32,720 --> 00:39:29,160

protagonist Eva fetching like you said

831

00:39:35,239 --> 00:39:32,730

before a significant percentage on here

832

00:39:37,970 --> 00:39:35,249

sonoda Fabregas unit and they are made

833

00:39:41,539 --> 00:39:37,980

in Italy in Italy and they went through

834

00:39:45,170 --> 00:39:41,549

Italian hands and they are exclusively

835

00:39:47,479 --> 00:39:45,180

were constructed and finance with by our

836

00:39:49,910 --> 00:39:47,489

Italian industry in a package or no

837

00:39:53,120 --> 00:39:49,920

shrank a colonist until a few days ago

838

00:39:55,489 --> 00:39:53,130

Paolo Nespoli was here too now he's got

839

00:39:58,460 --> 00:39:55,499

back to Houston inland perinton be

840

00:40:02,960 --> 00:39:58,470

Saturn in order and also for both of us

841

00:40:11,650 --> 00:40:02,970

it was a very big honor to be part of

842

00:40:19,819 --> 00:40:15,200

endeavour ISS this is Houston ACR thank

843

00:40:23,660 --> 00:40:19,829

you that concludes the event Thank You

844

00:40:25,849 --> 00:40:23,670

media JSC KFC and in Italy station for

845

00:40:29,240 --> 00:40:25,859

now in resuming operational audio