

070



1  
00:00:04,470 --> 00:00:01,990  
endeavor will also bring up to the

2  
00:00:06,309 --> 00:00:04,480  
station the express logistics carrier 3

3  
00:00:07,269 --> 00:00:06,319  
that external platform for the space

4  
00:00:08,790 --> 00:00:07,279  
station

5  
00:00:10,629 --> 00:00:08,800  
that holds large equipment that will

6  
00:00:12,789 --> 00:00:10,639  
carry spare parts and equipment to

7  
00:00:15,190 --> 00:00:12,799  
sustain the space station's operation in

8  
00:00:17,349 --> 00:00:15,200  
space once the last space shuttle flight

9  
00:00:19,750 --> 00:00:17,359  
has occurred this summer

10  
00:00:21,590 --> 00:00:19,760  
there are four planned evas or

11  
00:00:24,630 --> 00:00:21,600  
spacewalks outside the international

12  
00:00:26,310 --> 00:00:24,640  
space station during the sts-134 mission

13  
00:00:42,069 --> 00:00:26,320

to do maintenance and install new

14  
00:00:47,430 --> 00:00:45,110  
and here is commander mark kelly our 134

15  
00:00:49,990 --> 00:00:47,440  
mission commander making his

16  
00:00:53,189 --> 00:00:50,000  
fourth flight on the space shuttle

17  
00:00:54,470 --> 00:00:53,199  
he's logged a total of 38 days in

18  
00:00:57,590 --> 00:00:54,480  
space

19  
00:01:02,549 --> 00:00:57,600  
his latest flight was in 2008

20  
00:01:07,350 --> 00:01:05,429  
going over to our pilot now greg johnson

21  
00:01:09,429 --> 00:01:07,360  
he's making his

22  
00:01:11,670 --> 00:01:09,439  
second space flight previously also

23  
00:01:15,350 --> 00:01:11,680  
pilot on sts-123

24  
00:01:22,469 --> 00:01:18,390  
he's logged over 4 000 hours in 40

25  
00:01:26,710 --> 00:01:24,390  
this is mike fink mission specialist

26

00:01:28,469 --> 00:01:26,720

number one this is his

27

00:01:30,149 --> 00:01:28,479

third space flight but his first space

28

00:01:32,310 --> 00:01:30,159

shuttle flight he was launched

29

00:01:35,670 --> 00:01:32,320

previously from russia on

30

00:01:38,069 --> 00:01:35,680

soya spacecraft and he's locked 365 days

31

00:01:42,789 --> 00:01:38,079

in space with over 26 hours on six

32

00:01:42,799 --> 00:01:50,389

mission specialist greg shamatoff

33

00:01:53,190 --> 00:01:51,590

this is his

34

00:01:55,429 --> 00:01:53,200

second space flight but he's already

35

00:01:58,709 --> 00:01:55,439

logged 183 days in space aboard the

36

00:01:58,719 --> 00:02:08,309

he's canadian born from montreal

37

00:02:13,270 --> 00:02:09,830

and there's drew feustel mission

38

00:02:16,949 --> 00:02:13,280

specialist number three making his

39

00:02:21,910 --> 00:02:20,229

he served as uh

40

00:02:23,510 --> 00:02:21,920

an astronaut for more than a decade i'm

41

00:02:27,750 --> 00:02:23,520

working on both the space shuttle and

42

00:02:29,830 --> 00:02:27,760

the space station branches in houston

43

00:02:36,630 --> 00:02:29,840

he flew on the fifth and final hst

44

00:02:36,640 --> 00:02:43,430

and roberto vittori

45

00:02:48,309 --> 00:02:46,309

he's mission specialist number two

46

00:02:50,710 --> 00:02:48,319

he was selected as an astronaut by the

47

00:02:51,830 --> 00:02:50,720

european space agency he's from turbo

48

00:02:53,430 --> 00:02:51,840

italy

49

00:03:09,830 --> 00:02:53,440

and he has flown to the international

50

00:03:14,949 --> 00:03:12,790

and here come our astronauts leaving the

51

00:03:16,869 --> 00:03:14,959

suit-up room bound for

52

00:03:27,350 --> 00:03:16,879

the elevator they will take them down to

53

00:03:31,910 --> 00:03:29,509

this is the same elevator that all

54

00:03:33,509 --> 00:03:31,920

astronauts since apollo have used to

55

00:03:46,070 --> 00:03:33,519

leave the crew quarters and go out to

56

00:03:46,080 --> 00:04:25,830

guys

57

00:04:30,390 --> 00:04:27,670

it's about a 20 minute ride from the

58

00:04:31,990 --> 00:04:30,400

astronaut quarters out to the launch pad

59

00:04:33,670 --> 00:04:32,000

covering

60

00:04:36,710 --> 00:04:33,680

about 10 miles

61

00:04:42,070 --> 00:04:39,270

may allow another 10 minutes or so for

62

00:04:44,550 --> 00:04:42,080

the crew to

63

00:04:46,629 --> 00:04:44,560

get off the astra van and look around a

64

00:04:48,870 --> 00:04:46,639

little bit and head up the fixed service

65

00:04:53,189 --> 00:04:48,880

structure and

66

00:04:55,510 --> 00:04:53,199

then begin boarding the space shuttle so

67

00:04:56,390 --> 00:04:55,520

that allows for about a half an hour for

68

00:04:58,070 --> 00:04:56,400

the entire

69

00:05:00,310 --> 00:04:58,080

process from the time they leave the

70

00:05:02,230 --> 00:05:00,320

astronaut quarters until they

71

00:05:12,310 --> 00:05:02,240

start boarding

72

00:05:12,320 --> 00:05:26,070

surface

73

00:05:29,749 --> 00:05:28,150

crew taking a moment to

74

00:05:31,830 --> 00:05:29,759

look at space shuttle endeavour

75

00:05:33,990 --> 00:05:31,840

something that most crews like to do

76

00:06:19,510 --> 00:05:34,000

before they

77

00:06:24,150 --> 00:06:22,390

and otc ovcc

78

00:06:26,230 --> 00:06:24,160

obcc otc

79

00:06:59,670 --> 00:06:26,240

my crew has arrived at the orbiter crew

80

00:07:03,430 --> 00:07:01,749

drew feustel is up next he's mission

81

00:07:09,589 --> 00:07:03,440

specialist number three making his

82

00:07:14,469 --> 00:07:11,909

he's served more than

83

00:07:16,150 --> 00:07:14,479

a decade as a nasa astronaut working on

84

00:07:26,710 --> 00:07:16,160

both the space shuttle and the space

85

00:07:33,510 --> 00:07:27,830

and

86

00:07:46,309 --> 00:07:37,430

vcc otc ms3 on board at this time zero

87

00:07:46,319 --> 00:07:53,589

this is a live shot

88

00:07:53,599 --> 00:08:24,230

from the mid-deck area

89

00:08:33,790 --> 00:08:26,309

this is mission specialist number four

90

00:08:38,230 --> 00:08:36,469

sts-134 is his

91

00:08:40,709 --> 00:08:38,240

second space flight but he's already

92

00:08:47,430 --> 00:08:40,719

logged 183 days in space aboard the

93

00:08:52,230 --> 00:08:50,070

otccr

94

00:08:55,350 --> 00:08:52,240

pdr this is otc i have you loud and

95

00:08:57,030 --> 00:08:55,360

clear good morning mark

96

00:09:02,150 --> 00:08:57,040

hey good morning how are you

97

00:09:07,590 --> 00:09:04,870

at cmtc berta

98

00:09:14,630 --> 00:09:07,600

and mike fink waiting to enter the white

99

00:09:19,150 --> 00:09:17,590

otc yes sir i can give you steps 590

100

00:09:21,670 --> 00:09:19,160

through

101  
00:09:23,190 --> 00:09:21,680  
592-598 with completed implementation of

102  
00:09:32,150 --> 00:09:23,200  
step 92

103  
00:09:37,509 --> 00:09:34,949  
break shamitoff now

104  
00:09:41,110 --> 00:09:37,519  
on board he's going to be sitting in the

105  
00:09:41,120 --> 00:09:58,070  
joining drew feustel on the middeck

106  
00:10:02,829 --> 00:10:00,550  
this is astronaut mike fink

107  
00:10:05,990 --> 00:10:02,839  
he's mission specialist number

108  
00:10:07,670 --> 00:10:06,000  
one this is his

109  
00:10:11,829 --> 00:10:07,680  
third space flight but his first space

110  
00:10:16,630 --> 00:10:13,550  
he's logged over

111  
00:10:19,269 --> 00:10:16,640  
365 days in space

112  
00:10:21,190 --> 00:10:19,279  
with over 26 hours on

113  
00:10:32,230 --> 00:10:21,200

six spacewalks on the international

114

00:10:38,949 --> 00:10:36,069

otc tlt complex

115

00:10:42,310 --> 00:10:38,959

tlt otc i have you loud and clear good

116

00:10:42,320 --> 00:10:55,110

good morning mark

117

00:10:55,120 --> 00:11:03,350

your checklist

118

00:11:19,590 --> 00:11:05,829

copy that

119

00:11:31,670 --> 00:11:22,710

this is reproductory mission specialist

120

00:11:37,030 --> 00:11:34,550

he was selected as an astronaut by the

121

00:11:39,430 --> 00:11:37,040

european space agency and is from

122

00:11:41,190 --> 00:11:39,440

viterbo italy

123

00:11:46,230 --> 00:11:41,200

and he is flown to the international

124

00:11:52,069 --> 00:11:48,630

ms4 otc i have you loud and clear

125

00:11:52,079 --> 00:11:57,670

thanks mark also have you loud and clear

126

00:11:57,680 --> 00:12:10,550

i can verify step 685 thanks

127

00:12:14,710 --> 00:12:13,110

and roberto vittori now climbing on

128

00:12:18,069 --> 00:12:14,720

board endeavour

129

00:12:20,069 --> 00:12:18,079

and otc ovcc mission specialist number

130

00:12:22,790 --> 00:12:20,079

two

131

00:12:24,790 --> 00:12:22,800

ms2 on board at this time and that is

132

00:12:27,110 --> 00:12:24,800

all crew members on board

133

00:12:37,350 --> 00:12:27,120

so all of the crew members are now on

134

00:12:40,949 --> 00:12:39,269

an entity or your polls go is that

135

00:12:43,670 --> 00:12:40,959

affirmative that is affirmative we are

136

00:12:45,509 --> 00:12:43,680

all go okay copy that

137

00:12:47,670 --> 00:12:45,519

casey chief processing engineer verify

138

00:12:49,430 --> 00:12:47,680

no constraints to launch no constraints

139

00:12:51,750 --> 00:12:49,440

thank you steve casey safety mission

140

00:12:53,750 --> 00:12:51,760

assurance kfc safety and mission of san

141

00:12:55,670 --> 00:12:53,760

francisco thank you dave

142

00:12:58,150 --> 00:12:55,680

hello launch manager like space station

143

00:12:59,990 --> 00:12:58,160

processing teams go thank you bill

144

00:13:01,910 --> 00:13:00,000

range weather weather has no constraints

145

00:13:03,350 --> 00:13:01,920

for launch thank you kathy

146

00:13:04,710 --> 00:13:03,360

and ops manager

147

00:13:06,470 --> 00:13:04,720

mike things look real good today thanks

148

00:13:08,310 --> 00:13:06,480

to your team for getting us back here uh

149

00:13:09,350 --> 00:13:08,320

your good luck endeavor good thank you

150

00:13:10,870 --> 00:13:09,360

sir

151  
00:13:14,949 --> 00:13:10,880  
endeavor launch director air to ground

152  
00:13:19,350 --> 00:13:17,590  
okay mark looks like a great day to uh

153  
00:13:20,870 --> 00:13:19,360  
launch endeavor for the final time so on

154  
00:13:22,069 --> 00:13:20,880  
behalf of the thousands of proud

155  
00:13:22,949 --> 00:13:22,079  
americans who have been part of her

156  
00:13:24,230 --> 00:13:22,959  
journey

157  
00:13:27,590 --> 00:13:24,240  
good luck godspeed and we'll see you

158  
00:13:32,230 --> 00:13:29,990  
thank you sir on this final flight of

159  
00:13:34,470 --> 00:13:32,240  
space shuttle endeavor we want to thank

160  
00:13:36,310 --> 00:13:34,480  
all the tens of thousands of dedicated

161  
00:13:38,550 --> 00:13:36,320  
employees that have put their hands

162  
00:13:40,629 --> 00:13:38,560  
on this incredible ship and dedicated

163  
00:13:42,310 --> 00:13:40,639

their lives to the space shuttle program

164

00:13:44,069 --> 00:13:42,320

as americans we endeavor to build a

165

00:13:46,790 --> 00:13:44,079

better life than the generation before

166

00:13:49,110 --> 00:13:46,800

and we endeavor to be a united nation in

167

00:13:51,110 --> 00:13:49,120

these efforts we are often tested this

168

00:13:53,110 --> 00:13:51,120

mission represents the power of teamwork

169

00:13:54,870 --> 00:13:53,120

commitment and exploration it is in the

170

00:13:57,990 --> 00:13:54,880

dna of our great country to reach for

171

00:13:59,829 --> 00:13:58,000

the stars and explore we must not stop

172

00:14:02,389 --> 00:13:59,839

to all the millions watching today

173

00:14:04,230 --> 00:14:02,399

including our spouses children family

174

00:14:05,670 --> 00:14:04,240

and friends we thank you for your

175

00:14:08,389 --> 00:14:05,680

support

176

00:14:10,389 --> 00:14:08,399

endeavor otc it's your final voyage this

177

00:14:12,470 --> 00:14:10,399

is both a sad and proud moment for your

178

00:14:14,150 --> 00:14:12,480

launch team and for america but your

179

00:14:16,389 --> 00:14:14,160

legacy will live on

180

00:14:18,470 --> 00:14:16,399

mission success with ams a truly

181

00:14:23,269 --> 00:14:18,480

international effort godspeed and see

182

00:14:23,279 --> 00:14:33,590

thanks for the words appreciate it

183

00:14:41,590 --> 00:14:36,629

otc plt caution and warning memory is

184

00:14:44,230 --> 00:14:41,600

clear no unexpected errors copy that

185

00:14:47,350 --> 00:14:44,240

endeavor otc close and lock your visors

186

00:14:50,150 --> 00:14:47,360

initiate o2 flow

187

00:14:52,949 --> 00:14:52,150

go from the start

188

00:14:53,910 --> 00:14:52,959

eight

189

00:14:55,910 --> 00:14:53,920

seven

190

00:14:56,870 --> 00:14:55,920

six

191

00:15:00,069 --> 00:14:56,880

four

192

00:15:03,430 --> 00:15:00,079

three two

193

00:15:05,990 --> 00:15:03,440

zero and liftoff for the final launch of

194

00:15:25,110 --> 00:15:06,000

endeavour expanding our knowledge

195

00:15:31,829 --> 00:15:27,269

begins a heads down position on course

196

00:15:46,870 --> 00:15:31,839

for a 51.6 degree 136 by 36 statute mile

197

00:15:50,310 --> 00:15:48,790

three engines now throttling down as

198

00:15:51,990 --> 00:15:50,320

endeavor

199

00:15:53,829 --> 00:15:52,000

passes through the area of maximum

200

00:15:57,030 --> 00:15:53,839

dynamic pressure on the vehicle in the

201  
00:15:57,040 --> 00:16:01,269  
approaching one minute into the flight

202  
00:16:01,279 --> 00:16:05,350  
endeavor go at throttle up

203  
00:16:10,230 --> 00:16:06,829  
roger go ahead throttle

204  
00:16:12,790 --> 00:16:10,240  
up endeavors three main engines now back

205  
00:16:13,990 --> 00:16:12,800  
at full throttle all three engines in

206  
00:16:15,509 --> 00:16:14,000  
good shape

207  
00:16:19,670 --> 00:16:15,519  
endeavors already

208  
00:16:21,749 --> 00:16:19,680  
traveling 1300 miles per hour

209  
00:16:23,509 --> 00:16:21,759  
at an altitude of 11 miles downrange

210  
00:16:30,389 --> 00:16:23,519  
from the kennedy space center now 12

211  
00:16:35,910 --> 00:16:34,389  
at liftoff endeavor fully fueled

212  
00:16:38,150 --> 00:16:35,920  
weighed four and a half million pounds

213  
00:16:40,629 --> 00:16:38,160

it's already lost half that weight in

214

00:16:42,629 --> 00:16:40,639

propellant now burned that weight

215

00:16:45,030 --> 00:16:42,639

next event is burnout and separation of

216

00:16:47,350 --> 00:16:45,040

the twin solid rocket boosters

217

00:16:49,030 --> 00:16:47,360

that up coming here shortly at the

218

00:16:51,749 --> 00:16:49,040

two minute three second point those

219

00:16:59,990 --> 00:16:51,759

boosters are burning 11 000 pounds of

220

00:17:16,829 --> 00:17:03,350

and standing by for separation of the

221

00:17:21,350 --> 00:17:19,429

boosters the onboard guidance system has

222

00:17:23,510 --> 00:17:21,360

done its job of settling out any

223

00:17:24,870 --> 00:17:23,520

dispersions introduced at burst booster

224

00:17:27,990 --> 00:17:24,880

separation

225

00:17:30,390 --> 00:17:28,000

the uh orbiter is now traveling 3 200

226

00:17:33,190 --> 00:17:30,400

miles per hour downrange 50 miles

227

00:17:35,270 --> 00:17:33,200

altitude 37 miles all systems in good

228

00:17:37,270 --> 00:17:35,280

shape

229

00:17:39,430 --> 00:17:37,280

three good uh hydraulic systems

230

00:17:41,510 --> 00:17:39,440

auxiliary power units and fuel cells the

231

00:17:45,190 --> 00:17:41,520

fuel cells providing electrical power to

232

00:17:45,200 --> 00:17:49,590

roger systems engines

233

00:17:53,909 --> 00:17:52,150

endeavour can reach uh a towel site in

234

00:17:56,070 --> 00:17:53,919

the event of a single engine failure

235

00:17:57,830 --> 00:17:56,080

however all three are in good shape

236

00:18:01,190 --> 00:17:57,840

space shuttle endeavour sailing into

237

00:18:03,590 --> 00:18:01,200

fair winds on its final historic voyage

238

00:18:06,230 --> 00:18:03,600

this view looking down the external fuel

239

00:18:08,470 --> 00:18:06,240

tank the orbiter there on the top

240

00:18:09,830 --> 00:18:08,480

as endeavor continues to power its way

241

00:18:12,390 --> 00:18:09,840

into orbit

242

00:18:16,470 --> 00:18:12,400

traveling 4 000 miles per hour downrange

243

00:18:43,029 --> 00:18:16,480

90 miles altitude 50 miles 3 minutes 15

244

00:18:48,150 --> 00:18:45,990

all three main engines still looking in

245

00:18:57,270 --> 00:18:48,160

in good shape hydraulic systems and

246

00:18:57,280 --> 00:19:01,350

endeavor negative return

247

00:19:05,909 --> 00:19:04,150

roger negative return

248

00:19:07,830 --> 00:19:05,919

endeavour can no longer return to the

249

00:19:09,590 --> 00:19:07,840

kennedy space center in the event of an

250

00:19:11,990 --> 00:19:09,600

engine failure now but all three are

251  
00:19:14,310 --> 00:19:12,000  
still in good shape as are all the other

252  
00:19:15,990 --> 00:19:14,320  
systems aboard the orbiter quiet here in

253  
00:19:18,150 --> 00:19:16,000  
mission control as a team of flight

254  
00:19:19,430 --> 00:19:18,160  
controllers watches watches over all of

255  
00:19:21,430 --> 00:19:19,440  
the systems

256  
00:19:24,630 --> 00:19:21,440  
four minutes 20 seconds into the flight

257  
00:19:27,190 --> 00:19:24,640  
endeavors traveling 5500 miles per hour

258  
00:19:31,669 --> 00:19:27,200  
altitude now 63 miles traveling

259  
00:19:38,710 --> 00:19:31,679  
downrange 186 miles or about 335 000

260  
00:19:42,630 --> 00:19:40,789  
environmental and control systems

261  
00:19:45,350 --> 00:19:42,640  
officer here reporting a good flash

262  
00:19:47,270 --> 00:19:45,360  
evaporator system providing cooling to

263  
00:19:48,870 --> 00:19:47,280

all of the avionics equipment aboard the

264

00:19:50,390 --> 00:19:48,880

vehicle

265

00:19:52,310 --> 00:19:50,400

traveling into space on the forward

266

00:19:53,990 --> 00:19:52,320

flight deck as commander mark kelly and

267

00:19:55,430 --> 00:19:54,000

pilot greg johnson

268

00:19:57,909 --> 00:19:55,440

between and behind them as flight

269

00:20:00,150 --> 00:19:57,919

engineer roberto vittori and rounding

270

00:20:04,830 --> 00:20:00,160

out the flight deck crew as mike fink

271

00:20:09,029 --> 00:20:07,350

roger endeavor can reach orbit on two

272

00:20:11,750 --> 00:20:09,039

engines should one fail at this point

273

00:20:13,350 --> 00:20:11,760

however all three are still performing

274

00:20:15,350 --> 00:20:13,360

as planned

275

00:20:18,310 --> 00:20:15,360

down on the mid deck of endeavor drew

276  
00:20:19,990 --> 00:20:18,320  
feustel and greg chatatov feustel headed

277  
00:20:23,029 --> 00:20:20,000  
to the international space station for

278  
00:20:25,029 --> 00:20:23,039  
the first time victorian fink making

279  
00:20:27,190 --> 00:20:25,039  
their first voyage on the space shuttle

280  
00:20:29,110 --> 00:20:27,200  
after flying to the international space

281  
00:20:36,310 --> 00:20:29,120  
station aboard

282  
00:20:43,590 --> 00:20:40,390  
endeavor single engine ops three

283  
00:20:47,510 --> 00:20:45,270  
that call indicates that endeavor could

284  
00:20:49,909 --> 00:20:47,520  
reach a transatlantic abort site on one

285  
00:20:51,510 --> 00:20:49,919  
engine if it lost two of the three

286  
00:20:54,470 --> 00:20:51,520  
although all three are still in good

287  
00:21:01,350 --> 00:20:54,480  
shape five minutes 50 seconds into the

288  
00:21:12,789 --> 00:21:03,990

endeavor press domico and single engine

289

00:21:16,950 --> 00:21:14,549

several calls there endeavour can reach

290

00:21:18,470 --> 00:21:16,960

a safe orbit on two engines now the

291

00:21:20,390 --> 00:21:18,480

guidance system is controlling the

292

00:21:21,510 --> 00:21:20,400

engines to roll endeavor to a heads up

293

00:21:22,870 --> 00:21:21,520

position

294

00:21:24,470 --> 00:21:22,880

to optimize the air-to-ground

295

00:21:30,870 --> 00:21:24,480

communications through the satellite

296

00:21:34,789 --> 00:21:32,870

flight controllers reporting to flight

297

00:21:38,789 --> 00:21:34,799

director richard jones are in good shape

298

00:21:46,230 --> 00:21:41,510

copy shutdown plan

299

00:21:57,190 --> 00:21:46,240

for mark your go the plus x go the pitch

300

00:21:57,200 --> 00:22:02,070

endeavor single engine press 104

301  
00:22:06,710 --> 00:22:04,630  
roger single engine press 104 endeavor

302  
00:22:08,630 --> 00:22:06,720  
can reach orbit on one engine should two

303  
00:22:11,590 --> 00:22:08,640  
fail however all three are still in good

304  
00:22:13,430 --> 00:22:11,600  
shape the three main engines are flowing

305  
00:22:15,909 --> 00:22:13,440  
fuel through their

306  
00:22:17,750 --> 00:22:15,919  
power systems at a rate equivalent to

307  
00:22:22,070 --> 00:22:17,760  
draining an average backyard swimming

308  
00:22:27,510 --> 00:22:25,190  
seven minutes 20 seconds into the flight

309  
00:22:30,470 --> 00:22:27,520  
altitude 64 miles downrange from the

310  
00:22:33,430 --> 00:22:30,480  
kennedy space center 630 miles

311  
00:22:34,789 --> 00:22:33,440  
endeavors traveling 13 500 miles per

312  
00:22:36,789 --> 00:22:34,799  
hour

313  
00:22:39,190 --> 00:22:36,799

we're now seeing uh throttling on the

314

00:22:41,750 --> 00:22:39,200

three main engines to maintain the

315

00:22:58,950 --> 00:22:41,760

3g or three times gravity load on the

316

00:23:05,350 --> 00:23:02,149

engines at 82 percent of rated thrust

317

00:23:08,149 --> 00:23:05,360

eight minutes into the flight the next

318

00:23:30,710 --> 00:23:08,159

activity is a main engine cutoff that's

319

00:23:37,190 --> 00:23:32,390

and main engine cutoff has been

320

00:23:45,750 --> 00:23:39,029

applied dynamics reporting a nominal

321

00:23:45,760 --> 00:23:56,789

and separation from the external tank

322

00:24:01,669 --> 00:23:59,350

endeavors commander mark kelly now

323

00:24:04,149 --> 00:24:01,679

firing the thruster jets to position the

324

00:24:07,029 --> 00:24:04,159

orbiter for photography of the external

325

00:24:16,830 --> 00:24:07,039

tank we did see a nominal miko ohms1 is

326

00:24:28,470 --> 00:24:19,510

required mike it's greg uh good to hear

327

00:24:31,669 --> 00:24:30,310

greg we're ready for that uh we've about

328

00:24:37,830 --> 00:24:31,679

four minutes left and it's good to hear

329

00:24:43,830 --> 00:24:40,710

thanks man okay it's coming now

330

00:24:46,549 --> 00:24:43,840

i see four lights on my mpc player

331

00:24:48,310 --> 00:24:46,559

so hopefully you're getting it pilot

332

00:24:50,070 --> 00:24:48,320

greg johnson reporting that you're about

333

00:24:52,149 --> 00:24:50,080

to begin sending down some of the video

334

00:24:53,669 --> 00:24:52,159

the crew recorded today

335

00:24:56,710 --> 00:24:53,679

we got it greg we got it up on a big

336

00:24:56,720 --> 00:25:09,350

excellent

337

00:25:09,360 --> 00:25:19,990

foreign

338

00:25:20,000 --> 00:25:48,390

also

339

00:25:53,909 --> 00:25:51,669

all right the next thing is a little bit

340

00:25:55,590 --> 00:25:53,919

ago i told mark that

341

00:25:56,630 --> 00:25:55,600

it was a maneuver planned while you guys

342

00:25:58,630 --> 00:25:56,640

were sleeping i was going to be

343

00:26:00,310 --> 00:25:58,640

controlled from the ground i told them

344

00:26:03,110 --> 00:26:00,320

we weren't going to do that

345

00:26:05,430 --> 00:26:03,120

and now uh apparently we might do that

346

00:26:07,029 --> 00:26:05,440

we're not really sure so you might be

347

00:26:08,630 --> 00:26:07,039

maneuvering this evening while you're

348

00:26:10,549 --> 00:26:08,640

sleeping we can control that from the

349

00:26:13,029 --> 00:26:10,559

ground there's no action for you

350

00:26:14,950 --> 00:26:13,039

but just if you saw something happening

351

00:26:16,710 --> 00:26:14,960

we don't want you to be surprised so

352

00:26:18,149 --> 00:26:16,720

we're not sure you may or may not have a

353

00:26:21,909 --> 00:26:18,159

maneuver control from the ground this

354

00:26:26,070 --> 00:26:24,950

okay man we got that

355

00:26:27,430 --> 00:26:26,080

and then

356

00:26:30,390 --> 00:26:27,440

finally

357

00:26:32,630 --> 00:26:30,400

we have uh

358

00:26:34,549 --> 00:26:32,640

some words from your families they

359

00:26:37,190 --> 00:26:34,559

wanted us to let you know

360

00:26:39,029 --> 00:26:37,200

that they had a great time at the launch

361

00:26:41,430 --> 00:26:39,039

it was a great launch

362

00:26:42,950 --> 00:26:41,440

uh it was very very nice they appreciate

363

00:26:45,269 --> 00:26:42,960

everything you did for him and wish you

364

00:26:46,630 --> 00:26:45,279

all the best of luck in your flight had

365

00:26:49,990 --> 00:26:46,640

a great time and he'll be coming back

366

00:26:54,070 --> 00:26:51,909

well that's fantastic math thanks for

367

00:26:56,070 --> 00:26:54,080

the uh the kind and thoughtful awards uh

368

00:26:57,669 --> 00:26:56,080

we all we wish them all the best as well

369

00:26:58,789 --> 00:26:57,679

and a safe return back and we're happy

370

00:27:01,190 --> 00:26:58,799

that our friends and family were all

371

00:27:03,750 --> 00:27:01,200

there to see us launch off into the uh

372

00:27:05,269 --> 00:27:03,760

the sunrise there

373

00:27:14,870 --> 00:27:05,279

coffee will do that you guys have a good

374

00:27:17,990 --> 00:27:16,549

on the big screen and

375

00:27:20,070 --> 00:27:18,000

we've got about another minute and a

376

00:27:24,630 --> 00:27:20,080

half and then we can pick it up another

377

00:27:28,389 --> 00:27:27,110

okay sounds good

378

00:27:30,789 --> 00:27:28,399

hey drew

379

00:27:34,149 --> 00:27:30,799

hey here you are yeah thanks back in

380

00:27:35,830 --> 00:27:34,159

space we are back in black

381

00:27:38,310 --> 00:27:35,840

that was one heck of a ride it was

382

00:27:40,630 --> 00:27:38,320

awesome fantastic and uh it's good to be

383

00:27:41,990 --> 00:27:40,640

here we just get reconfigured here for

384

00:27:43,909 --> 00:27:42,000

the uh

385

00:27:46,870 --> 00:27:43,919

with the cameras

386

00:27:50,870 --> 00:27:46,880

and uh we're gonna get busy all right

387

00:27:55,350 --> 00:27:52,549

are you ready for the almost two burn

388

00:27:56,870 --> 00:27:55,360

taz ready for those two bloor fern are

389

00:27:58,630 --> 00:27:56,880

you sure

390

00:27:59,669 --> 00:27:58,640

i'm not sure i am getting used to this

391

00:28:01,750 --> 00:27:59,679

again

392

00:28:03,990 --> 00:28:01,760

okay holmes burns starting in five

393

00:28:11,269 --> 00:28:04,000

seconds about now

394

00:28:16,710 --> 00:28:13,750

that's a real burnout it's a long burn

395

00:28:18,070 --> 00:28:16,720

again you're right there goes this yeah

396

00:28:20,230 --> 00:28:18,080

that's like a

397

00:28:23,669 --> 00:28:20,240

tenth of a g where's your other boot by

398

00:28:23,679 --> 00:28:28,789

hey we're trying to work down here

399

00:28:37,510 --> 00:28:31,510

that's a good oh bam that's a good

400

00:28:43,430 --> 00:28:39,110

all right enough playing around let's

401  
00:28:45,990 --> 00:28:44,630  
ready

402  
00:28:48,149 --> 00:28:46,000  
okay we're going to open the payload bay

403  
00:28:52,070 --> 00:28:48,159  
doors now

404  
00:28:53,430 --> 00:28:52,080  
we lost the close indication as expected

405  
00:29:00,710 --> 00:28:53,440  
10 seconds

406  
00:29:05,510 --> 00:29:03,269  
yes now we go to

407  
00:29:11,269 --> 00:29:05,520  
the next block the next block i'll have

408  
00:29:19,430 --> 00:29:13,510  
stand by

409  
00:29:26,310 --> 00:29:22,149  
i see good now the forward and aft

410  
00:29:26,320 --> 00:29:31,029  
so far so good mark all right

411  
00:29:36,230 --> 00:29:34,149  
one time is the time

412  
00:29:38,950 --> 00:29:36,240  
as you expect

413  
00:29:41,269 --> 00:29:38,960

another 15 seconds

414

00:29:43,990 --> 00:29:41,279

and you always keep track of the big

415

00:29:45,990 --> 00:29:44,000

switch yes i am i have my eyeballs on it

416

00:29:48,470 --> 00:29:46,000

my fingers can get to it there we go

417

00:29:51,430 --> 00:29:48,480

start of payload bay door opening

418

00:29:51,440 --> 00:30:26,389

it looks like a dual motor time

419

00:30:26,399 --> 00:30:34,630

oh there's the sunshine

420

00:30:39,909 --> 00:30:38,549

waiting for the door indication

421

00:30:41,430 --> 00:30:39,919

door is open

422

00:30:51,110 --> 00:30:41,440

the port side

423

00:30:59,830 --> 00:30:54,950

i see a small piece of fod it's a washer

424

00:31:04,870 --> 00:31:02,230

another another one in the back i see

425

00:31:06,230 --> 00:31:04,880

two two washers one's a washer i'm

426  
00:31:08,310 --> 00:31:06,240  
trying to get a

427  
00:31:16,070 --> 00:31:08,320  
good tally on it with the camera

428  
00:31:40,070 --> 00:31:17,269  
got a

429  
00:31:57,350 --> 00:31:42,470  
halo bay door opening is looking very

430  
00:31:57,360 --> 00:32:10,870  
there's the washer

431  
00:32:14,789 --> 00:32:13,269  
mark that's about a half inch washer all

432  
00:32:17,190 --> 00:32:14,799  
right um

433  
00:32:19,590 --> 00:32:17,200  
i see them all open also

434  
00:32:21,110 --> 00:32:19,600  
and it looked good outside

435  
00:32:22,950 --> 00:32:21,120  
we're rolling all right here we are in

436  
00:32:23,990 --> 00:32:22,960  
the flight deck of endeavor flight day

437  
00:32:26,389 --> 00:32:24,000  
one

438  
00:32:29,590 --> 00:32:26,399

recently in space sorry about the cloud

439

00:32:31,909 --> 00:32:29,600

deck when we took off

440

00:32:33,430 --> 00:32:31,919

we're really excited it's great to be up

441

00:32:35,590 --> 00:32:33,440

here

442

00:32:36,870 --> 00:32:35,600

yeah it was a spectacular ride i

443

00:32:38,950 --> 00:32:36,880

couldn't see anything about the lockers

444

00:32:41,269 --> 00:32:38,960

but it was still a lot of fun

445

00:32:42,950 --> 00:32:41,279

no master alarms i'll have to say it was

446

00:32:44,470 --> 00:32:42,960

a lot different than

447

00:32:47,269 --> 00:32:44,480

flying on the soyuz

448

00:32:53,350 --> 00:32:47,279

ready for the left accumulator

449

00:32:56,389 --> 00:32:54,549

hey guys

450

00:32:58,950 --> 00:32:56,399

here we are roberto and i we're on the

451  
00:33:01,110 --> 00:32:58,960  
mid deck we're setting up uh gira which

452  
00:33:02,230 --> 00:33:01,120  
is our water purification system over

453  
00:33:04,389 --> 00:33:02,240  
here

454  
00:33:06,630 --> 00:33:04,399  
and uh

455  
00:33:08,310 --> 00:33:06,640  
we've been in space now for what

456  
00:33:10,630 --> 00:33:08,320  
four hours five hours something like

457  
00:33:13,029 --> 00:33:10,640  
that and um amazingly we're all feeling

458  
00:33:14,230 --> 00:33:13,039  
great it's uh this is awesome i just i

459  
00:33:18,549 --> 00:33:14,240  
can't wait to get back to the space

460  
00:33:21,190 --> 00:33:18,559  
station and uh feeling just awesome

461  
00:33:23,190 --> 00:33:21,200  
my first ride on the shuttle was uh

462  
00:33:25,509 --> 00:33:23,200  
amazing launch

463  
00:33:28,230 --> 00:33:25,519

and then mikko

464

00:33:29,430 --> 00:33:28,240

i was a little afraid but got quickly

465

00:33:31,029 --> 00:33:29,440

adapted

466

00:33:33,509 --> 00:33:31,039

and

467

00:33:36,070 --> 00:33:33,519

it's very interesting to work with the

468

00:33:38,389 --> 00:33:36,080

old shallow systems and i need to say

469

00:33:40,630 --> 00:33:38,399

that it's easier here in microgravity

470

00:33:41,830 --> 00:33:40,640

than was in the in the during the

471

00:33:43,430 --> 00:33:41,840

training flow

472

00:33:48,470 --> 00:33:43,440

most of the

473

00:33:50,549 --> 00:33:48,480

sense it's uh it is very intuitive and

474

00:33:52,310 --> 00:33:50,559

uh happy to be here

475

00:33:53,430 --> 00:33:52,320

it was a great ride up it was an awesome

476

00:33:54,870 --> 00:33:53,440

flight up

477

00:33:57,029 --> 00:33:54,880

as heck we're

478

00:33:58,870 --> 00:33:57,039

as excited as we were being on on top of

479

00:34:01,269 --> 00:33:58,880

the rocket that was great

480

00:34:02,950 --> 00:34:01,279

you are in camera you're upside down hey

481

00:34:04,630 --> 00:34:02,960

didn't i see you up here last time i