



1
00:00:40,389 --> 00:00:04,710
i'm greg johnson pilot of sts-134

2
00:01:24,830 --> 00:00:45,350
we

3
00:01:29,990 --> 00:01:27,429
is good morning endeavor and a special

4
00:01:32,069 --> 00:01:30,000
good morning to you today mark

5
00:01:35,350 --> 00:01:32,079
good morning houston

6
00:01:37,190 --> 00:01:35,360
and good morning tucson arizona as well

7
00:01:38,469 --> 00:01:37,200
uh that song is for a band named

8
00:01:41,910 --> 00:01:38,479
calexico

9
00:01:44,789 --> 00:01:41,920
from my wife gabby's hometown they're

10
00:01:48,469 --> 00:01:44,799
from uh tucson arizona as well

11
00:01:50,630 --> 00:01:48,479
and it's about two people on a trip

12
00:01:53,510 --> 00:01:50,640
reaching

13
00:01:55,910 --> 00:01:53,520

across the distance and it references

14

00:01:58,389 --> 00:01:55,920

places like signal hill

15

00:02:00,630 --> 00:01:58,399

and gate pass in tucson

16

00:02:02,149 --> 00:02:00,640

and i know she really really wants to

17

00:02:04,310 --> 00:02:02,159

get back there

18

00:02:06,870 --> 00:02:04,320

and is really looking forward to that so

19

00:02:08,630 --> 00:02:06,880

it's an appropriate song because that's

20

00:02:11,190 --> 00:02:08,640

uh that's coming soon

21

00:02:11,200 --> 00:02:15,430

thanks a lot mark we appreciate that

22

00:02:22,070 --> 00:02:17,030

endeavor we are on board with you on the

23

00:02:26,229 --> 00:02:24,150

thanks megan and if you like the

24

00:02:28,470 --> 00:02:26,239

maneuver we can kick it off right now or

25

00:02:29,949 --> 00:02:28,480

we can wait until about

26

00:02:33,110 --> 00:02:29,959

13

27

00:02:34,390 --> 00:02:33,120

52 it looks like

28

00:02:37,190 --> 00:02:34,400

i'm checking

29

00:02:39,670 --> 00:02:37,200

this is aboard the flight deck

30

00:02:42,470 --> 00:02:39,680

of endeavor as the crew members get

31

00:02:44,229 --> 00:02:42,480

ready for all of the undock fly around

32

00:02:46,229 --> 00:02:44,239

and re-rendezvous

33

00:02:48,390 --> 00:02:46,239

activities

34

00:02:50,949 --> 00:02:48,400

commander mark kelly in the forward

35

00:02:53,190 --> 00:02:50,959

right in this view and his commander's

36

00:02:56,949 --> 00:02:53,200

seat on the flight deck

37

00:02:59,910 --> 00:02:56,959

pilot greg johnson to the left

38

00:03:01,910 --> 00:02:59,920

and behind them greg chatatov you see

39

00:03:04,550 --> 00:03:01,920

polishing the windows for good camera

40

00:03:06,309 --> 00:03:04,560

views out the overhead windows you're

41

00:03:09,430 --> 00:03:06,319

looking at the aft flight deck of

42

00:03:11,030 --> 00:03:09,440

endeavor the two windows looking after

43

00:03:12,550 --> 00:03:11,040

are the two windows that look out into

44

00:03:13,750 --> 00:03:12,560

the payload bay

45

00:03:15,830 --> 00:03:13,760

of the shuttle

46

00:03:18,149 --> 00:03:15,840

roberto vittori mission specialist

47

00:03:22,149 --> 00:03:18,159

number two who also serves as the flight

48

00:03:24,229 --> 00:03:22,159

engineer for launch and landing he uh

49

00:03:26,070 --> 00:03:24,239

for those events he is actually seated

50

00:03:29,190 --> 00:03:26,080

in a uh

51
00:03:32,470 --> 00:03:29,200
a chair a seat right between

52
00:03:34,550 --> 00:03:32,480
and just behind the commander and pilot

53
00:03:36,630 --> 00:03:34,560
the mission specialist seats on the

54
00:03:37,750 --> 00:03:36,640
flight deck and on the mid deck are

55
00:03:39,990 --> 00:03:37,760
removed

56
00:03:42,710 --> 00:03:40,000
and stowed away during on-orbit

57
00:03:45,110 --> 00:03:42,720
operations for landing launch and

58
00:03:51,910 --> 00:03:45,120
landing activities they're bolted to the

59
00:03:51,920 --> 00:03:56,630
houston on the big loop

60
00:04:09,830 --> 00:04:00,390
copy we are go for undocking

61
00:04:16,550 --> 00:04:12,470
houston and station we have physical

62
00:04:16,560 --> 00:04:23,350
houston copies

63
00:04:26,150 --> 00:04:24,469

endeavor

64

00:04:27,189 --> 00:04:26,160

undocking from the international space

65

00:04:30,390 --> 00:04:27,199

station

66

00:04:33,790 --> 00:04:30,400

right on schedule at 10 55 pm central 11

67

00:04:37,270 --> 00:04:33,800

55 eastern as the two spacecraft fly

68

00:04:39,510 --> 00:04:37,280

215 miles above bolivia tracking

69

00:04:41,110 --> 00:04:39,520

northeasterly

70

00:04:43,430 --> 00:04:41,120

endeavour

71

00:04:44,950 --> 00:04:43,440

setting her sails one last time

72

00:04:45,990 --> 00:04:44,960

departing the international space

73

00:04:48,469 --> 00:04:46,000

station

74

00:05:09,270 --> 00:04:48,479

after 12 missions to the orbiting

75

00:05:14,390 --> 00:05:11,510

fair wins and phones see

76

00:05:16,950 --> 00:05:14,400

yeah thanks ron

77

00:05:20,550 --> 00:05:16,960

appreciate all the help

78

00:05:20,560 --> 00:05:28,790

go navy

79

00:05:33,510 --> 00:05:31,830

as we come up on about our 200th sunrise

80

00:05:37,029 --> 00:05:33,520

of the mission we can see

81

00:05:40,550 --> 00:05:37,039

clearly see ams now on station and elc

82

00:05:42,070 --> 00:05:40,560

3. i just want to congratulate the whole

83

00:05:45,590 --> 00:05:42,080

team on the ground

84

00:05:47,510 --> 00:05:45,600

and the expedition 27 and 28 crews

85

00:05:50,070 --> 00:05:47,520

for all the hard work

86

00:05:51,990 --> 00:05:50,080

that you guys have put into this

87

00:05:53,590 --> 00:05:52,000

we're the ones that get to see this

88

00:05:55,749 --> 00:05:53,600

incredible view

89

00:05:58,870 --> 00:05:55,759

um but you know you're all with us in

90

00:06:01,029 --> 00:05:58,880

spirit and this is really a new day for

91

00:06:03,909 --> 00:06:01,039

uh science aboard the space station so

92

00:06:05,670 --> 00:06:03,919

uh thanks to all of you

93

00:06:07,430 --> 00:06:05,680

endeavor thanks very much for the kind

94

00:06:10,309 --> 00:06:07,440

words we'll pass the message and it's a

95

00:06:17,749 --> 00:06:10,319

pleasure for us to be part of the team

96

00:06:22,309 --> 00:06:20,710

all right i think it's about time

97

00:06:24,309 --> 00:06:22,319

all right spanky you ready somebody went

98

00:06:35,430 --> 00:06:24,319

in it'll just be a second while we set

99

00:06:48,550 --> 00:06:36,550

all right

100

00:07:14,230 --> 00:06:50,309

a

101
00:07:16,390 --> 00:07:14,240
stretching 357 feet from tip to tip

102
00:07:19,309 --> 00:07:16,400
the pressurized volume

103
00:07:21,589 --> 00:07:19,319
perpendicular volume there is about

104
00:07:23,909 --> 00:07:21,599
240 feet

105
00:07:26,309 --> 00:07:23,919
at the bottom the docking port from

106
00:07:27,029 --> 00:07:26,319
which uh endeavor departed

107
00:07:29,830 --> 00:07:27,039
the

108
00:07:32,230 --> 00:07:29,840
european columbus science laboratory off

109
00:07:33,189 --> 00:07:32,240
to the left and the japanese experiment

110
00:07:36,390 --> 00:07:33,199
module

111
00:07:38,230 --> 00:07:36,400
kibo the japanese word for hope

112
00:07:39,749 --> 00:07:38,240
off to the right

113
00:07:42,469 --> 00:07:39,759

and then heading down the length of the

114

00:07:44,790 --> 00:07:42,479

volume the harmony connecting node to

115

00:07:47,350 --> 00:07:44,800

which those modules are attached

116

00:07:49,029 --> 00:07:47,360

in turn is attached to the us laboratory

117

00:07:53,909 --> 00:07:49,039

destiny

118

00:07:55,749 --> 00:07:53,919

that uh 300

119

00:08:00,869 --> 00:07:55,759

almost 360

120

00:08:05,350 --> 00:08:03,350

and then the first us element of the

121

00:08:08,150 --> 00:08:05,360

international space station launched

122

00:08:09,749 --> 00:08:08,160

back in december of 1998 the unity

123

00:08:11,990 --> 00:08:09,759

module

124

00:08:13,830 --> 00:08:12,000

is the connecting point from the u.s

125

00:08:15,029 --> 00:08:13,840

segment to the russian segment of the

126
00:08:17,589 --> 00:08:15,039
station

127
00:08:19,270 --> 00:08:17,599
next in line the first ever component of

128
00:08:21,430 --> 00:08:19,280
the international space station the

129
00:08:24,950 --> 00:08:21,440
zarya control module

130
00:08:31,350 --> 00:08:28,390
mostly retracted in accordion style

131
00:08:32,469 --> 00:08:31,360
the zvezda module on the back end is the

132
00:08:35,670 --> 00:08:32,479
uh

133
00:08:37,110 --> 00:08:35,680
the next module with its solar arrays

134
00:08:39,589 --> 00:08:37,120
deployed

135
00:08:42,070 --> 00:08:39,599
served as the early living quarters and

136
00:08:44,470 --> 00:08:42,080
the control section of the russian

137
00:08:47,509 --> 00:08:44,480
segment of the complex and then on the

138
00:08:48,389 --> 00:08:47,519

back end with the scissor-shaped solar

139

00:08:51,430 --> 00:08:48,399

arrays

140

00:08:53,269 --> 00:08:51,440

is the european space agency

141

00:08:55,110 --> 00:08:53,279

automatic automated

142

00:08:59,110 --> 00:08:55,120

transfer vehicle

143

00:09:01,750 --> 00:08:59,120

known as the johannes kepler it's been

144

00:09:04,230 --> 00:09:01,760

a part of the space station since late

145

00:09:06,630 --> 00:09:04,240

february when it arrived delivering

146

00:09:09,590 --> 00:09:06,640

supplies to the station it's one of

147

00:09:12,470 --> 00:09:09,600

several visiting vehicles that the

148

00:09:13,750 --> 00:09:12,480

station hosts including the russian

149

00:09:16,470 --> 00:09:13,760

soyuz

150

00:09:18,710 --> 00:09:16,480

capsule which delivers crews to and from

151
00:09:34,430 --> 00:09:18,720
the station and also the progress supply

152
00:09:40,870 --> 00:09:37,190
640 feet

153
00:09:44,790 --> 00:09:40,880
from the international space station

154
00:09:51,110 --> 00:09:47,910
the fly around of about 180 degrees now

155
00:09:53,590 --> 00:09:51,120
of the 360 degree fly around so

156
00:10:15,670 --> 00:09:53,600
endeavors now

157
00:10:15,680 --> 00:10:18,710
bravo

158
00:10:22,389 --> 00:10:21,350
that that block of activity means that

159
00:10:24,550 --> 00:10:22,399
the

160
00:10:28,150 --> 00:10:24,560
shuttle crew is now going to initiate a

161
00:10:31,990 --> 00:10:28,160
radar acquisition switching the ku band

162
00:10:41,350 --> 00:10:32,000
antenna system from the comm mode to

163
00:10:46,949 --> 00:10:43,430

beautiful view of the russian segment of

164

00:11:20,949 --> 00:10:46,959

the station with endeavor

165

00:11:28,310 --> 00:11:22,710

endeavor houston on two for radar

166

00:11:30,949 --> 00:11:29,350

go ahead

167

00:11:33,190 --> 00:11:30,959

mark we need to need you to check your

168

00:11:39,509 --> 00:11:33,200

config on a1 upper please we see a

169

00:11:39,519 --> 00:11:45,750

okay uh just call them up to us houston

170

00:11:45,760 --> 00:11:53,829

ku power to stand by

171

00:11:57,269 --> 00:11:54,949

okay it looks like you're in a good

172

00:12:11,110 --> 00:11:57,279

config now

173

00:12:15,910 --> 00:12:14,150

600 feet from the space station

174

00:12:19,750 --> 00:12:15,920

tracking toward the

175

00:12:19,760 --> 00:12:31,269

endeavor now behind and below

176

00:12:31,279 --> 00:12:49,030

we concur

177

00:12:49,040 --> 00:13:32,150

mark we see a good ku config now thanks

178

00:13:47,990 --> 00:13:36,550

now uh heading across the tasman sea the

179

00:13:52,710 --> 00:13:50,629

endeavor in the space station about nine

180

00:13:55,750 --> 00:13:52,720

minutes from moving into an orbital

181

00:17:55,350 --> 00:13:55,760

sunset as they track off the southern

182

00:17:59,590 --> 00:17:58,070

endeavor silhouetted against the cloud

183

00:18:05,190 --> 00:17:59,600

cover of the

184

00:18:05,200 --> 00:18:08,150

go ahead drew

185

00:18:12,230 --> 00:18:10,070

hi megan i know our messages this

186

00:18:15,110 --> 00:18:12,240

morning said disregard if storm doesn't

187

00:18:17,029 --> 00:18:15,120

switch over to tcs source but i'm happy

188

00:18:24,310 --> 00:18:17,039

to manually switch it if folks want it

189

00:18:31,029 --> 00:18:25,830

and true that's not required but thanks

190

00:18:31,039 --> 00:18:52,310

okay

191

00:19:36,549 --> 00:18:55,190

this view at a range of three thousand

192

00:19:41,750 --> 00:19:38,470

yeah we're back

193

00:19:51,110 --> 00:19:41,760

all right did you bring more ice cream

194

00:19:51,120 --> 00:20:31,350

you guys look great out there

195

00:20:31,360 --> 00:20:36,149

194208

196

00:20:36,159 --> 00:23:19,669

that's a good tig

197

00:23:23,750 --> 00:23:20,830

good burn

198

00:23:26,710 --> 00:23:23,760

endeavor so with that endeavor has

199

00:23:30,230 --> 00:23:26,720

performed the final separation maneuver

200

00:23:33,270 --> 00:23:30,240

from the international space station

201
00:23:36,230 --> 00:23:33,280
the result of the uh separation

202
00:23:39,110 --> 00:23:36,240
burn number three you could see the

203
00:23:41,110 --> 00:23:39,120
thruster jets firing on the nose and

204
00:23:42,870 --> 00:23:41,120
tail of uh endeavor

205
00:23:44,549 --> 00:23:42,880
the result of that burn is is that

206
00:23:47,669 --> 00:23:44,559
endeavor will phase away from the

207
00:23:50,070 --> 00:23:47,679
station now at a rate of about 10.3

208
00:23:57,990 --> 00:23:50,080
statute miles every orbiter every hour

209
00:24:01,750 --> 00:24:00,310
here in the shuttle flight control room

210
00:24:03,909 --> 00:24:01,760
the

211
00:24:06,230 --> 00:24:03,919
shift change is just about to get

212
00:24:08,310 --> 00:24:06,240
underway

213
00:24:11,909 --> 00:24:08,320

with the orbit one team just about to

214

00:24:14,549 --> 00:24:11,919

wrap up its final shift of the mission

215

00:24:16,149 --> 00:24:14,559

are complete with storm and with that

216

00:24:17,029 --> 00:24:16,159

we're closing another chapter on the

217

00:24:19,029 --> 00:24:17,039

flight

218

00:24:20,390 --> 00:24:19,039

i'd like to say that over the past uh

219

00:24:22,230 --> 00:24:20,400

year and a half it's been a pleasure to

220

00:24:23,830 --> 00:24:22,240

work with the software and hardware

221

00:24:25,510 --> 00:24:23,840

developers for storm everybody did a

222

00:24:27,510 --> 00:24:25,520

great job and getting the components

223

00:24:29,909 --> 00:24:27,520

ready for the flight and we look forward

224

00:24:31,750 --> 00:24:29,919

to uh you know continued developments of

225

00:24:33,190 --> 00:24:31,760

this hardware and software and hope that

226

00:24:34,950 --> 00:24:33,200

it contributes to the development of

227

00:24:39,350 --> 00:24:34,960

future vehicles it's been an honorable

228

00:24:42,789 --> 00:24:41,029

drew we appreciate your words we also

229

00:24:44,310 --> 00:24:42,799

appreciate your hard work and we've got

230

00:24:48,710 --> 00:24:44,320

a room full of happy people down here

231

00:24:53,909 --> 00:24:50,549

good data