1
00:00:25,830 --> 00:00:04,150
hi i'm george zamka sts-130 commander

2
00:00:25,840 --> 00:00:42,790
i think i'm going the cat man

3
00:01:13,510 --> 00:00:54,310
i

4
00:01:16,950 --> 00:01:13,520
great

5
00:01:20,630 --> 00:01:16,960
but now i'm leaving and i can't be late

6
00:01:20,640 --> 00:01:28,950
i'm going to get mandu

7
00:01:32,630 --> 00:01:31,030
good morning endeavor

8
00:01:37,910 --> 00:01:32,640
and a special good morning to you today

9
00:01:42,230 --> 00:01:40,469
good morning shannon uh it's a beautiful

10
00:01:44,149 --> 00:01:42,240
day up here in endeavour thanks very

11
00:01:47,350 --> 00:01:44,159
much for that song and thanks

12
00:01:49,910 --> 00:01:47,360
to my beautiful wife elisa and

13
00:01:51,270 --> 00:01:49,920

devon and alan

14
00:01:55,030 --> 00:01:51,280
and you're very welcome we're all

15
00:01:57,429 --> 00:01:55,040
excited about rendezvous day

16
00:01:58,870 --> 00:01:57,439
just before commander jeff williams and

17
00:02:00,630 --> 00:01:58,880
his crewmates

18
00:02:01,910 --> 00:02:00,640
have their first daily planning

19
00:02:04,069 --> 00:02:01,920
conference

20
00:02:06,069 --> 00:02:04,079
they'll be touching base with

21
00:02:07,429 --> 00:02:06,079
their several flight control teams

22
00:02:08,949 --> 00:02:07,439
around the world

23
00:02:11,750 --> 00:02:08,959
getting an update on

24
00:02:14,470 --> 00:02:11,760
the plan provided them for this day's

25
00:02:19,110 --> 00:02:16,550
earlier jeff williams and mission

26
00:02:21,510 --> 00:02:19,120
control were discussing the day's events

27
00:02:24,470 --> 00:02:21,520
in which williams and station flight

28
00:02:27,430 --> 00:02:24,480
engineer ola kotov will be involved

29
00:02:29,430 --> 00:02:27,440
in documenting the approach of the space

30
00:02:31,670 --> 00:02:29,440
shuttle endeavor to the station

31
00:02:34,309 --> 00:02:31,680
specifically mapping out

32
00:02:36,630 --> 00:02:34,319
pictures of endeavors heat shield

33
00:02:38,710 --> 00:02:36,640
looking at the thermal protection tiles

34
00:02:39,670 --> 00:02:38,720
on the top side and underside of

35
00:02:41,430 --> 00:02:39,680
endeavor

36
00:02:44,470 --> 00:02:41,440
so that that imagery can be downlinked

37
00:02:47,910 --> 00:02:44,480
to experts on the ground for analysis

38
00:02:49,589 --> 00:02:47,920

and a determination of the health of the

39
00:02:51,750 --> 00:02:49,599
heat shield

40
00:02:53,110 --> 00:02:51,760
this is now a view inside the

41
00:02:55,110 --> 00:02:53,120
space shuttle endeavour on the aft

42
00:02:58,309 --> 00:02:55,120
flight deck astronaut kay hire floating

43
00:03:01,910 --> 00:03:00,229
she's been working on preparing for

44
00:03:03,190 --> 00:03:01,920
rendezvous and docking of the space

45
00:03:05,110 --> 00:03:03,200
shuttle to the international space

46
00:03:14,550 --> 00:03:05,120
station along with endeavors commander

47
00:03:18,070 --> 00:03:16,309
this is a view from a camera inside

48
00:03:19,910 --> 00:03:18,080
endeavour's payload bay looking at the

49
00:03:22,790 --> 00:03:19,920
orbiter docking system

50
00:03:24,550 --> 00:03:22,800
this is the portion of the space shuttle

51
00:03:25,589 --> 00:03:24,560
that links up to the international space

52
00:03:26,949 --> 00:03:25,599
station

53
00:03:28,869 --> 00:03:26,959
as all the crew members are getting

54
00:03:31,670 --> 00:03:28,879
ready for docking to the international

55
00:04:24,710 --> 00:03:31,680
space station there patrick in view

56
00:04:28,390 --> 00:04:26,070
and there the

57
00:04:30,150 --> 00:04:28,400
terminal initiation burn using

58
00:04:51,590 --> 00:04:30,160
endeavour's orbital maneuvering system

59
00:04:55,189 --> 00:04:53,189
this is mission control houston with a

60
00:04:56,629 --> 00:04:55,199
view from a video camera on the outside

61
00:04:58,310 --> 00:04:56,639
of the international space station

62
00:04:59,510 --> 00:04:58,320
looking at the space shuttle endeavour

63
00:05:02,070 --> 00:04:59,520

with the

64
00:05:03,990 --> 00:05:02,080
horizon of the earth

65
00:05:05,510 --> 00:05:04,000
below

66
00:05:08,469 --> 00:05:05,520
endeavour is behind the international

67
00:05:10,710 --> 00:05:08,479
space station at a distance of

68
00:05:12,550 --> 00:05:10,720
about 27 000

69
00:05:13,909 --> 00:05:12,560
feet

70
00:05:15,749 --> 00:05:13,919
we're about

71
00:05:16,790 --> 00:05:15,759
a little more than five statute miles

72
00:05:19,110 --> 00:05:16,800
away

73
00:05:22,070 --> 00:05:19,120
two vehicles are orbiting

74
00:05:24,710 --> 00:05:22,080
about 215 statute miles above the earth

75
00:05:26,790 --> 00:05:24,720
passing into an orbital sunset over the

76
00:05:31,189 --> 00:05:26,800
south pacific ocean about to cross over

77
00:05:34,870 --> 00:05:33,590
we're now two hours away from docking of

78
00:05:43,189 --> 00:05:34,880
the spatial endeavor to the

79
00:05:46,070 --> 00:05:44,710
this is a view from a camera on the

80
00:05:48,070 --> 00:05:46,080
outside of the international space

81
00:05:49,270 --> 00:05:48,080
station continuing to watch

82
00:06:07,749 --> 00:05:49,280
the space shuttle endeavor as it

83
00:06:11,909 --> 00:06:10,390
houston for hhl report it's within six

84
00:06:15,110 --> 00:06:11,919
feet of tcs

85
00:06:16,950 --> 00:06:15,120
and .02 of the r dot it's uh working out

86
00:06:26,790 --> 00:06:16,960
pretty good

87
00:06:32,710 --> 00:06:29,029
endeavors pilot terry burt's uh giving a

88
00:06:34,790 --> 00:06:32,720

status using the handheld laser

89
00:06:37,430 --> 00:06:34,800
to provide some

90
00:06:38,710 --> 00:06:37,440
information about the rendezvous of the

91
00:06:42,950 --> 00:06:38,720
space shuttle with the international

92
00:06:47,029 --> 00:06:44,469
this is mission control houston with a

93
00:06:49,110 --> 00:06:47,039
view again from the center line cameron

94
00:06:50,870 --> 00:06:49,120
endeavors orbiter docking system is a

95
00:06:51,830 --> 00:06:50,880
snapshot of that view from the video

96
00:06:53,350 --> 00:06:51,840
camera

97
00:06:54,390 --> 00:06:53,360
looking up at the international space

98
00:06:56,469 --> 00:06:54,400
station

99
00:07:07,589 --> 00:06:56,479
endeavour is about 1600 feet away from

100
00:07:14,390 --> 00:07:09,670
endeavor houston on a big loop you are

101
00:07:14,400 --> 00:07:21,110
endeavor copies go inside 600 feet

102
00:07:24,710 --> 00:07:23,029
this is a view of the space shuttle

103
00:07:27,909 --> 00:07:24,720
endeavor from a camera on board the

104
00:07:30,390 --> 00:07:27,919
international space station

105
00:07:33,029 --> 00:07:30,400
and the outboard truss structure

106
00:07:34,629 --> 00:07:33,039
camera mounted looking down at the space

107
00:07:39,110 --> 00:07:34,639
shuttle

108
00:07:45,510 --> 00:07:43,189
approaching the 600 foot mark where

109
00:07:46,950 --> 00:07:45,520
endeavors commander george zamko will

110
00:07:49,029 --> 00:07:46,960
pause

111
00:07:50,469 --> 00:07:49,039
for the r bar or rendezvous pitch

112
00:07:53,830 --> 00:07:50,479
maneuver to

113
00:07:56,790 --> 00:07:53,840

conduct a nine-minute backflip

114
00:07:59,029 --> 00:07:56,800
showing the different sides and

115
00:08:01,510 --> 00:07:59,039
upper and lower surface of endeavor to

116
00:08:02,309 --> 00:08:01,520
the station

117
00:08:04,070 --> 00:08:02,319
where

118
00:08:05,589 --> 00:08:04,080
station crew members jeff williams and

119
00:08:08,309 --> 00:08:05,599
oleg kotov

120
00:08:38,709 --> 00:08:08,319
are positioned with digital cameras to

121
00:08:42,790 --> 00:08:40,149
endeavor and the international space

122
00:08:45,110 --> 00:08:42,800
station are orbiting about 216 statute

123
00:08:46,389 --> 00:08:45,120
miles above the earth over the pacific

124
00:09:21,509 --> 00:08:46,399
ocean just to the east of the

125
00:09:25,590 --> 00:09:23,430
the space shuttle endeavor is continuing

126
00:09:27,509 --> 00:09:25,600
through this maneuver a nine minute

127
00:09:33,269 --> 00:09:27,519
backflip called the rendezvous pitch

128
00:09:38,710 --> 00:09:35,590
going through that prescribed mapping of

129
00:09:41,190 --> 00:09:38,720
the underside of endeavors

130
00:10:26,870 --> 00:09:41,200
looking at the the per thermal

131
00:10:31,430 --> 00:10:29,509
as soon as i called that up that did tcs

132
00:10:33,269 --> 00:10:31,440
did switch to cw

133
00:10:35,110 --> 00:10:33,279
we'd like you to keep those steps handy

134
00:10:42,310 --> 00:10:35,120
but for now it's looking good and no

135
00:10:49,590 --> 00:10:45,430
let me know if it is

136
00:10:53,990 --> 00:10:52,069
this is a view from the video camera

137
00:10:55,110 --> 00:10:54,000
inside the orbiter docking system on

138
00:10:57,350 --> 00:10:55,120

endeavor

139
00:10:59,350 --> 00:10:57,360
it's a snapshot to

140
00:11:00,710 --> 00:10:59,360
from that camera being updated

141
00:11:06,150 --> 00:11:00,720
periodically looking at the

142
00:11:12,069 --> 00:11:08,470
endeavour houston on a big loop you are

143
00:11:12,079 --> 00:11:34,150
great news cj thanks go for docking

144
00:11:48,630 --> 00:11:38,150
204

145
00:11:52,069 --> 00:11:50,230
this is mission control houston now with

146
00:11:53,509 --> 00:11:52,079
a live view inside the space shuttle

147
00:11:56,949 --> 00:11:53,519
endeavour

148
00:11:58,150 --> 00:11:56,959
commander george zamka at the controls

149
00:12:00,550 --> 00:11:58,160
flying endeavor towards the

150
00:12:02,230 --> 00:12:00,560
international space station houston air

151
00:12:08,829 --> 00:12:02,240
to ground two we're coming on board on

152
00:12:08,839 --> 00:12:45,030
deck that cj thanks for the heads up

153
00:12:49,430 --> 00:12:47,110
commander george zamka continuing to use

154
00:12:56,310 --> 00:12:49,440
the centerline camera view

155
00:13:18,949 --> 00:12:59,190
and houston and station were initiating

156
00:13:27,030 --> 00:13:22,629
zamkas confirmed the alignment

157
00:13:31,190 --> 00:13:29,190
these updated snapshots from video

158
00:13:32,870 --> 00:13:31,200
cameras on board endeavor showing the

159
00:13:52,710 --> 00:13:32,880
vehicle getting closer and closer to the

160
00:13:52,720 --> 00:14:04,870
never houston for terry please hit pause

161
00:14:04,880 --> 00:14:08,949
station houston capture confirmed

162
00:14:08,959 --> 00:14:12,150
houston copies

163
00:14:12,160 --> 00:14:21,750

docking confirmed at 1106 p.m

164
00:14:21,760 --> 00:14:33,509
confirmed

165
00:14:37,110 --> 00:14:35,670
this is a view from a video camera on

166
00:14:39,110 --> 00:14:37,120
the outside of the international space

167
00:14:40,949 --> 00:14:39,120
station the space shuttle endeavor is

168
00:14:42,629 --> 00:14:40,959
just visible

169
00:14:44,710 --> 00:14:42,639
as the two spacecraft are passing

170
00:15:06,790 --> 00:14:44,720
through an orbital sunrise things will

171
00:15:10,389 --> 00:15:08,470
deborah houston air to ground two we are

172
00:15:13,350 --> 00:15:10,399
locked up solid now so we'll take all

173
00:15:16,069 --> 00:15:13,360
the docking system stuff and any shuttle

174
00:15:20,550 --> 00:15:16,079
specific calls over on this loop

175
00:15:24,790 --> 00:15:20,560
we are ready for a six decimal 109.

176
00:15:27,990 --> 00:15:26,470
this is mission control houston the crew

177
00:15:29,829 --> 00:15:28,000
on board the space shuttle endeavour is

178
00:15:32,230 --> 00:15:29,839
standing by to continue with the

179
00:15:34,710 --> 00:15:32,240
procedure to retract the orbiter docking

180
00:15:38,150 --> 00:15:37,110
there is still a little bit of relative

181
00:15:40,550 --> 00:15:38,160
motion

182
00:15:42,230 --> 00:15:40,560
seen between the two spacecraft and that

183
00:15:43,749 --> 00:15:42,240
is not

184
00:15:45,990 --> 00:15:43,759
unexpected

185
00:15:48,629 --> 00:15:46,000
and it takes just a

186
00:15:51,350 --> 00:15:48,639
while for that to dampen out usually

187
00:15:52,310 --> 00:15:51,360
within 30 minutes or less

188
00:15:54,150 --> 00:15:52,320

before

189
00:15:57,910 --> 00:15:54,160
they can continue on with the procedure

190
00:16:01,430 --> 00:15:58,949
pull that

191
00:16:03,509 --> 00:16:01,440
ring into the orbiter docking system for

192
00:16:30,310 --> 00:16:03,519
the final set of latches to connect the

193
00:16:30,320 --> 00:16:47,990
thanks for the tag up

194
00:16:48,000 --> 00:16:52,389
oh

195
00:17:16,150 --> 00:16:54,790
you guys look awesome

196
00:17:16,160 --> 00:17:30,710
pretty good

197
00:17:30,720 --> 00:17:41,750
good

198
00:17:41,760 --> 00:17:52,549
thank you

199
00:17:52,559 --> 00:18:08,870
hello

200
00:18:08,880 --> 00:18:20,950
chamber parker

201
00:18:25,590 --> 00:18:23,190
a little bit more detail later

202
00:18:28,789 --> 00:18:25,600
there's also a cautionary panel

203
00:18:30,710 --> 00:18:28,799
back there and there's a two atus one at

204
00:18:32,789 --> 00:18:30,720
this end just to the right of the hatch

205
00:18:34,549 --> 00:18:32,799
and one at the far end

206
00:18:36,549 --> 00:18:34,559
in the gem we've got emergency equipment

207
00:18:38,870 --> 00:18:36,559
as soon as you go through the hatch look

208
00:18:40,870 --> 00:18:38,880
up and it's there and there's another

209
00:18:43,510 --> 00:18:40,880
set at the far end before you go into

210
00:18:45,669 --> 00:18:43,520
the jlp you look up and you'll see the

211
00:18:47,669 --> 00:18:45,679
the red markings um

212
00:18:49,110 --> 00:18:47,679
and then up in the jlp way in the back

213
00:18:50,870 --> 00:18:49,120

won't do you much good because you

214
00:18:54,710 --> 00:18:50,880
probably wouldn't find it anyway there's

215
00:18:59,990 --> 00:18:56,950
we're actually i think we're going to be

216
00:19:01,750 --> 00:19:00,000
and we're not going to be moving

217
00:19:03,750 --> 00:19:01,760
we're back now with the live view inside

218
00:19:05,510 --> 00:19:03,760
the space shuttle flight control room

219
00:19:08,310 --> 00:19:05,520
where the team on the ground is watching

220
00:19:09,190 --> 00:19:08,320
over robotics operations as the

221
00:19:10,549 --> 00:19:09,200
space

222
00:19:12,789 --> 00:19:10,559
station

223
00:19:15,029 --> 00:19:12,799
robotic arm moves in to grapple the

224
00:19:17,110 --> 00:19:15,039
shuttle's orbiter boom sensor system to

225
00:19:19,270 --> 00:19:17,120
get ready to hand it off to the space

226
00:19:20,630 --> 00:19:19,280
shuttle robotic arm which because of the

227
00:19:23,270 --> 00:19:20,640
configuration of the station at this

228
00:19:27,430 --> 00:19:23,280
point doesn't have a good access to pick

229
00:19:32,070 --> 00:19:29,270
this is mission control houston looking

230
00:19:33,430 --> 00:19:32,080
at a live view of the robotics work

231
00:19:35,909 --> 00:19:33,440
going on

232
00:19:36,789 --> 00:19:35,919
on both the space station and space

233
00:19:38,950 --> 00:19:36,799
shuttle

234
00:19:39,990 --> 00:19:38,960
side of the hatches that were

235
00:19:46,470 --> 00:19:40,000
opened

236
00:19:51,909 --> 00:19:48,549
hatch opening took place at 1 16 am

237
00:19:53,430 --> 00:19:51,919
central time after an 11 06 pm docking

238
00:19:55,909 --> 00:19:53,440

of endeavor to the international space

239
00:19:57,510 --> 00:19:55,919
station and as you can probably tell

240
00:19:59,669 --> 00:19:57,520
from all the conversations going on

241
00:20:01,750 --> 00:19:59,679
there's quite a bit of work already

242
00:20:03,830 --> 00:20:01,760
happening between the two crews this

243
00:20:05,590 --> 00:20:03,840
particular

244
00:20:08,149 --> 00:20:05,600
bit of work that we're witnessing here

245
00:20:13,110 --> 00:20:08,159
is the transfer of the or the handoff of

246
00:20:16,710 --> 00:20:14,789
space shuttle's robotic arm from the

247
00:20:19,270 --> 00:20:16,720
space station robotic arm

248
00:20:20,390 --> 00:20:19,280
some of the other work going on

249
00:20:23,669 --> 00:20:20,400
includes

250
00:20:28,549 --> 00:20:26,549
from the glacier freezer in the space

251
00:20:30,870 --> 00:20:28,559
shuttle that's the general laboratory

252
00:20:32,870 --> 00:20:30,880
active cryogenic iss experiment

253
00:20:35,830 --> 00:20:32,880
refrigerator

254
00:20:37,830 --> 00:20:35,840
for its official name shortened of

255
00:20:41,110 --> 00:20:37,840
course to glacier

256
00:20:43,110 --> 00:20:41,120
crews working to transfer some of the

257
00:20:45,669 --> 00:20:43,120
science experiments brought up by

258
00:20:47,510 --> 00:20:45,679
endeavor in that freezer to the

259
00:20:50,950 --> 00:20:47,520
international space station in

260
00:20:53,669 --> 00:20:50,960
particular they're working on the

261
00:20:55,590 --> 00:20:53,679
samples brought up for the nanoskeleton

262
00:20:57,029 --> 00:20:55,600
experiment that is uh subtitled

263
00:22:39,909 --> 00:20:57,039

production of high performance

264
00:22:43,990 --> 00:22:41,909
back now with a live view of the

265
00:22:45,909 --> 00:22:44,000
continuing robotics work that's going on

266
00:22:48,710 --> 00:22:45,919
on the station and shuttle with the

267
00:22:50,710 --> 00:22:48,720
space shuttle robotic arm moving in to

268
00:22:52,710 --> 00:22:50,720
grab onto the orbital boom sensor system

269
00:22:57,350 --> 00:22:52,720
currently being held by the space

270
00:23:02,230 --> 00:22:59,590
good view here of the

271
00:23:03,270 --> 00:23:02,240
station robotic arm grab holding on to

272
00:23:05,190 --> 00:23:03,280
that

273
00:23:08,789 --> 00:23:05,200
orbital room sensor system in the middle

274
00:23:10,710 --> 00:23:08,799
with the on the edge of the screen the

275
00:23:13,830 --> 00:23:10,720
shuttle robotic arm which you can't see

276
00:24:20,710 --> 00:23:13,840
but it's moving in also to grab onto the

277
00:24:25,110 --> 00:24:22,310
pilot terry verts and mission specialist

278
00:24:28,390 --> 00:24:25,120
kay howard continuing to maneuver the

279
00:24:29,990 --> 00:24:28,400
space shuttle robotic arm and uh now

280
00:24:32,549 --> 00:24:30,000
along with the orbiter boom sensor

281
00:24:34,630 --> 00:24:32,559
system into place for the

282
00:24:36,870 --> 00:24:34,640
viewing of the

283
00:24:38,630 --> 00:24:36,880
tranquility node installation during the

284
00:24:43,830 --> 00:24:38,640
first spacewalk of the mission on flight

285
00:24:49,750 --> 00:24:46,310
its next actual work would be the flat

286
00:24:51,830 --> 00:24:49,760
day six focused inspection

287
00:24:53,190 --> 00:24:51,840
of the shuttle's heat shield if that

288
00:24:55,750 --> 00:24:53,200

does

289
00:24:58,070 --> 00:24:55,760
prove to be necessary mission

290
00:24:59,750 --> 00:24:58,080
managers here on the ground are

291
00:25:01,110 --> 00:24:59,760
thinking about that right now and we'll

292
00:25:03,269 --> 00:25:01,120
be uh

293
00:25:04,870 --> 00:25:03,279
using the data that's been collected

294
00:25:07,029 --> 00:25:04,880
from various inspection methods and

295
00:25:08,470 --> 00:25:07,039
that's being studied right now by

296
00:25:10,230 --> 00:25:08,480
experts here on the ground to see if

297
00:25:12,149 --> 00:25:10,240
there's any indication of damage to the

298
00:25:13,350 --> 00:25:12,159
shuttle's heat shield i'll be taking

299
00:25:14,950 --> 00:25:13,360
that

300
00:25:18,070 --> 00:25:14,960
their findings into consideration as

301
00:25:19,590 --> 00:25:18,080
they make those that decision but the