1
00:01:08,240 --> 00:01:05,430
preparations were completed here at

2
00:01:10,920 --> 00:01:08,250
KSC's payload processing facilities

3
00:01:15,450 --> 00:01:10,930
assembling the telescopes performing the

4
00:01:18,000 --> 00:01:15,460
proper testing and the checkout the

5
00:01:19,590 --> 00:01:18,010
three telescopes include the Hopkins

6
00:01:21,180 --> 00:01:19,600
ultraviolet telescope developed at the

7
00:01:24,690 --> 00:01:21,190
Johns Hopkins University in Baltimore

8
00:01:26,520 --> 00:01:24,700
Maryland the ultraviolet imaging

9
00:01:27,780 --> 00:01:26,530
telescope developed by NASA's Goddard

10
00:01:32,040 --> 00:01:27,790
Space Flight Center in Greenbelt

11
00:01:34,440 --> 00:01:32,050
Maryland and the Wisconsin ultraviolet

12
00:01:36,210 --> 00:01:34,450
photo polarimeter experiment developed

13
00:01:38,030 --> 00:01:36,220

at the University of Wisconsin at

14
00:01:40,980 --> 00:01:38,040
Madison

15
00:01:42,749 --> 00:01:40,990
the simultaneous observations by the

16
00:01:45,060 --> 00:01:42,759
three telescopes will complement one

17
00:01:47,370 --> 00:01:45,070
another Shuttle Endeavor is poised at

18
00:01:50,399 --> 00:01:47,380
launch pad 39a ready for the second

19
00:01:52,410 --> 00:01:50,409
launch of the year all countdown events

20
00:01:54,960 --> 00:01:52,420
are on schedule and the launch team here

21
00:01:57,570 --> 00:01:54,970
in fire room three is not checking any

22
00:02:03,440 --> 00:01:57,580
technical issues that would prevent an

23
00:02:06,210 --> 00:02:03,450
on-time launch at 1:37 a.m. Eastern Time

24
00:02:13,259 --> 00:02:06,220
the window extends today for two and a

25
00:02:14,910 --> 00:02:13,269
half hours or until 407 in just a few

26
00:02:17,039 --> 00:02:14,920
minutes we will be getting live coverage

27
00:02:19,560 --> 00:02:17,049
of the flight crew sitting down to have

28
00:02:22,320 --> 00:02:19,570
their pre-flight meal crew has been

29
00:02:23,640 --> 00:02:22,330
divided up onto two teams the red and

30
00:02:26,039 --> 00:02:23,650
the blue team so that they can operate

31
00:02:42,700 --> 00:02:26,049
in two different shifts during the

32
00:02:54,120 --> 00:02:45,770
and here we have the crew of mission STS

33
00:02:59,220 --> 00:02:57,810
here we have dr. Ron parise payload

34
00:03:03,390 --> 00:02:59,230
specialist flying on the shuttle for the

35
00:03:06,420 --> 00:03:03,400
second time today sitting next to him is

36
00:03:08,370 --> 00:03:06,430
dr. John Grunsfeld also flying for the

37
00:03:13,340 --> 00:03:08,380
second time as a payload specialist and

38
00:03:15,960 --> 00:03:13,350

we have the rookie pilot bill Gregory

39
00:03:19,130 --> 00:03:15,970
commander Steve Oswald flying for the

40
00:03:24,270 --> 00:03:22,770
halo commander tamara jernigan she's

41
00:03:29,490 --> 00:03:24,280
also flying aboard the shuttle for the

42
00:03:33,380 --> 00:03:29,500
third time today and we have Sam

43
00:03:36,000 --> 00:03:33,390
Durant's flying aboard the shuttle again

44
00:03:43,110 --> 00:03:36,010
and we have rookie you Wendy Lawrence

45
00:03:45,030 --> 00:03:43,120
also the flight engineer crew will be

46
00:03:46,650 --> 00:03:45,040
going into weather briefing getting an

47
00:03:47,940 --> 00:03:46,660
update on conditions here at Kennedy

48
00:03:50,880 --> 00:03:47,950
Space Center and also at the

49
00:03:52,860 --> 00:03:50,890
transoceanic abort sites then they'll

50
00:03:56,100 --> 00:03:52,870
get into their launch and entry suits

51
00:03:57,720 --> 00:03:56,110
and right out to the launch pad climb

52
00:04:06,130 --> 00:03:57,730
aboard the shuttle and prepare for

53
00:04:10,150 --> 00:04:08,830
countdown clock has remained at t-minus

54
00:04:11,980 --> 00:04:10,160
3 hours and holding

55
00:04:16,210 --> 00:04:11,990
we've got about nine minutes remaining

56
00:04:19,720 --> 00:04:16,220
in this hold got about five minutes

57
00:04:21,819 --> 00:04:19,730
remaining in this built-in hold at

58
00:04:29,290 --> 00:04:21,829
t-minus three hours and holding this is

59
00:04:33,909 --> 00:04:29,300
shuttle launch control here we have the

60
00:04:37,020 --> 00:04:33,919
astronauts for STS 67 on the third floor

61
00:04:39,820 --> 00:04:37,030
the operations and check-out building

62
00:05:52,650 --> 00:04:39,830
and now going to go down the hallway

63
00:06:00,640 --> 00:05:56,860

this is shuttle launch control the STS

64
00:06:04,030 --> 00:06:00,650
67 crew has arrived at launch pad 39a at

65
00:06:06,130 --> 00:06:04,040
the 195-foot level just getting out the

66
00:06:08,980 --> 00:06:06,140
elevators and they will be walking

67
00:06:14,730 --> 00:06:08,990
across the orbiter access arm see pilot

68
00:06:40,030 --> 00:06:17,920
crews getting ready to climb aboard the

69
00:06:42,340 --> 00:06:40,040
orbiter all conversations on channel 2 1

70
00:06:44,080 --> 00:06:42,350
2 doing extra contest will be heard by

71
00:06:51,960 --> 00:06:44,090
the cruise channel to the remain silent

72
00:07:03,670 --> 00:06:54,100
remember the crew is ready for sea with

73
00:07:05,740 --> 00:07:03,680
astral contract and there were LPC don't

74
00:07:08,890 --> 00:07:05,750
ask for calm 6 just appropriate volume

75
00:07:11,230 --> 00:07:08,900
control at around 1 2 I come amb and

76
00:07:19,660 --> 00:07:11,240
air-to-air for comfort do not change

77
00:07:22,480 --> 00:07:19,670
audio channels with configuration in Del

78
00:07:28,720 --> 00:07:22,490
Oro TC count check on Eric round 1

79
00:07:35,830 --> 00:07:28,730
how do you copy clear LP and that's what

80
00:07:44,469 --> 00:07:35,840
that's 2 1 ps2 click down sick we click

81
00:07:44,479 --> 00:07:57,579
GLS is go for away a receptor

82
00:08:01,479 --> 00:07:59,619
the orbiter access crew arm is being

83
00:08:04,329 --> 00:08:01,489
retracted away from the vehicle and into

84
00:08:05,799 --> 00:08:04,339
the launch configuration this arm can be

85
00:08:19,610 --> 00:08:05,809
extended in just a few seconds if

86
00:08:24,209 --> 00:08:21,629
profile test of the orbiters

87
00:08:26,159 --> 00:08:24,219
aerosurfaces has started orbiter flight

88
00:08:28,019 --> 00:08:26,169

control services are being moved through

89
00:08:32,820 --> 00:08:28,029
a pre-programmed pattern to verify they

90
00:08:44,360 --> 00:08:34,950
three main engines are being gimballed

91
00:08:48,600 --> 00:08:46,830
all systems are go for launch at this

92
00:08:50,580 --> 00:08:48,610
time just a few minutes away from the

93
00:08:53,100 --> 00:08:50,590
8th voyage of Endeavour with a crew of

94
00:09:05,790 --> 00:08:53,110
seven on the 16 day flight to study the

95
00:09:11,140 --> 00:09:09,460
Devereaux CC closed oxidizes 802 blow

96
00:09:16,840 --> 00:09:11,150
and good luck on your record-setting

97
00:09:19,330 --> 00:09:16,850
60-day measures little close and start

98
00:09:22,090 --> 00:09:19,340
the flow thanks mr. sloman isn't on

99
00:09:32,070 --> 00:09:22,100
another spaceship and if dr. Holly does

100
00:09:37,019 --> 00:09:35,340
t-minus 20 seconds thousands of gallons

101
00:09:53,370 --> 00:09:37,029
of water will be dumped onto the launch

102
00:09:55,650 --> 00:09:53,380
platform the next few seconds to

103
00:09:59,220 --> 00:09:55,660
ignition and liftoff of Endeavour on a

104
00:10:08,610 --> 00:09:59,230
voyage to view the universe here's the

105
00:10:13,290 --> 00:10:10,770
rolling-over under way aboard endeavour

106
00:10:15,720 --> 00:10:13,300
vehicles now in a heads-down position on

107
00:10:37,080 --> 00:10:15,730
course for a 20 28 and a half degree

108
00:10:38,640 --> 00:10:37,090
orbit endeavours engines have now

109
00:10:40,020 --> 00:10:38,650
throttled down as the orbiter passes

110
00:10:41,910 --> 00:10:40,030
through the area of maximum dynamic

111
00:10:47,190 --> 00:10:41,920
pressure on the vehicle in the lower

112
00:10:52,080 --> 00:10:47,200
atmosphere Devers already 2 miles

113
00:11:02,010 --> 00:10:52,090

downrange from the launch site traveling

114
00:11:08,850 --> 00:11:02,020
more than 1,000 miles per hour endeavour

115
00:11:10,620 --> 00:11:08,860
Houston go at throttle up the three

116
00:11:20,100 --> 00:11:10,630
liquid fueled engines are back at full

117
00:11:25,570 --> 00:11:22,510
at the one-minute 30 second mark

118
00:11:28,540 --> 00:11:25,580
endeavour is travelling 1700 miles per

119
00:11:30,670 --> 00:11:28,550
hour the altitude is 82 thousand feet

120
00:11:46,170 --> 00:11:30,680
downrange from the launch site 12

121
00:12:04,160 --> 00:11:48,540
standing by for burnout and separation

122
00:12:09,680 --> 00:12:07,550
and SRB separation is confirmed aboard

123
00:12:11,990 --> 00:12:09,690
endeavour at the two-minute 15-second

124
00:12:14,660 --> 00:12:12,000
mark the vehicle is at an altitude of

125
00:12:17,390 --> 00:12:14,670
100 78,000 feet downrange from the

126
00:12:20,120 --> 00:12:17,400
launch site 38 nautical miles endeavour

127
00:12:33,430 --> 00:12:20,130
is now traveling 4,500 feet per second

128
00:12:33,440 --> 00:12:48,060
Oh

129
00:12:48,070 --> 00:12:59,320
GLS is go for each ELO to position

130
00:12:59,330 --> 00:13:15,540
in the LSS go for main engine start

131
00:13:32,160 --> 00:13:24,880
copy Roger roll endeavour Lions we see

132
00:14:01,620 --> 00:13:35,610
rot a lot 300 104 endeavour Houston go

133
00:14:09,389 --> 00:14:03,809
performance nominal 103 converging

134
00:14:11,790 --> 00:14:09,399
Deborah Houston performance nominal -

135
00:14:29,070 --> 00:14:11,800
engine Ben career endeavour Houston -

136
00:14:43,350 --> 00:14:31,470
I get it return endeavour Houston

137
00:14:46,470 --> 00:14:43,360
negative return standby for press day to

138
00:17:56,190 --> 00:14:46,480

mark and every Houston press to ATO

139
00:17:59,820 --> 00:17:58,510
welcome to the big deck of the Space

140
00:18:02,380 --> 00:17:59,830
Shuttle Endeavor

141
00:18:05,650 --> 00:18:02,390
this is where we spend a lot of our

142
00:18:07,960 --> 00:18:05,660
off-duty hours you'll notice on the far

143
00:18:10,510 --> 00:18:07,970
wall we have some sleep stations

144
00:18:12,940 --> 00:18:10,520
installed this is very important for our

145
00:18:15,400 --> 00:18:12,950
flight we are the crew of seven and

146
00:18:17,920 --> 00:18:15,410
we're up 24 hours a day as we split

147
00:18:20,710 --> 00:18:17,930
ourselves into two shifts the red team

148
00:18:22,570 --> 00:18:20,720
is asleep right now the sleep stations

149
00:18:25,270 --> 00:18:22,580
provide them with the privacy they need

150
00:18:29,400 --> 00:18:25,280
to get a good night's rest they'll be

151
00:18:32,020 --> 00:18:29,410
waking up in a few hours coming on duty

152
00:18:34,270 --> 00:18:32,030
the white containers that you see a

153
00:18:37,840 --> 00:18:34,280
Velcro to the wall contain our personal

154
00:18:39,460 --> 00:18:37,850
hygiene kitten annoy list environment

155
00:18:42,510 --> 00:18:39,470
it's really important to have velcro

156
00:18:45,070 --> 00:18:42,520
around otherwise everything will float

157
00:18:46,690 --> 00:18:45,080
the mid-deck also provides us with an

158
00:18:48,910 --> 00:18:46,700
opportunity to carry some smaller

159
00:18:51,310 --> 00:18:48,920
experiments you're looking at two of

160
00:18:53,760 --> 00:18:51,320
them right now one of them was sponsored

161
00:18:56,260 --> 00:18:53,770
by Massachusetts Institute of Technology

162
00:18:58,360 --> 00:18:56,270
experiment and control Systems Theory

163
00:19:00,040 --> 00:18:58,370

we're actually doing some work for a

164
00:19:03,160 --> 00:19:00,050
future space station that we are going

165
00:19:05,890 --> 00:19:03,170
to develop for our experiment there's a

166
00:19:09,810 --> 00:19:05,900
protein crystal growth experiment as are

167
00:19:12,610 --> 00:19:09,820
the two that I'm panning to right now

168
00:19:14,500 --> 00:19:12,620
through an ongoing research project

169
00:19:16,210 --> 00:19:14,510
that's flown on many settles we have

170
00:19:17,890 --> 00:19:16,220
found that we can grow more pure

171
00:19:21,940 --> 00:19:17,900
crystals we were up in this weightless

172
00:19:24,460 --> 00:19:21,950
environment well let's go and see you

173
00:19:27,100 --> 00:19:24,470
the rest of the shuttle oh yes Tammy

174
00:19:29,470 --> 00:19:27,110
she's taking a break before work to get

175
00:19:31,210 --> 00:19:29,480
herself something to drink she's

176
00:19:33,940 --> 00:19:31,220
actually over in our area that you could

177
00:19:36,250 --> 00:19:33,950
call the kitchen or the galley Scott

178
00:19:39,010 --> 00:19:36,260
needs to dispense water so we can fill

179
00:19:42,610 --> 00:19:39,020
our drink bags and also rehydrate our

180
00:19:45,190 --> 00:19:42,620
food plus the flute on board is

181
00:19:46,930 --> 00:19:45,200
freeze-dried and some of its what we

182
00:19:48,640 --> 00:19:46,940
call thermal stabilized we'll all we

183
00:19:51,250 --> 00:19:48,650
have to do is throw it into the slalom

184
00:19:53,440 --> 00:19:51,260
and we also have our board you can see

185
00:19:55,060 --> 00:19:53,450
how the controls on the right hand side

186
00:19:56,980 --> 00:19:55,070
then we have a beads of selecting the

187
00:20:01,830 --> 00:19:56,990
amount of water and whether or not we

188
00:20:05,020 --> 00:20:01,840

want hot or cold we also have a small

189
00:20:08,760 --> 00:20:05,030
oven now below this rehydration station

190
00:20:12,250 --> 00:20:08,770
which Tammy is getting into right now

191
00:20:14,290 --> 00:20:12,260
yeah I think she's gonna pass up some

192
00:20:17,380 --> 00:20:14,300
food to Sam he has to get an opportunity

193
00:20:20,830 --> 00:20:17,390
to come down much experiments and it's

194
00:20:21,670 --> 00:20:20,840
telescopes keep them so busy that's the

195
00:20:25,180 --> 00:20:21,680
only way to do it

196
00:20:27,910 --> 00:20:25,190
weightlessness is great well pakistanis

197
00:20:31,480 --> 00:20:27,920
got to go back up to work yeah let me

198
00:20:34,060 --> 00:20:31,490
give you a better view like I said we

199
00:20:36,640 --> 00:20:34,070
had a beautiful setup the freeze-dried

200
00:20:40,780 --> 00:20:36,650
packages we have on board going to be

201
00:21:23,940 --> 00:20:40,790
defeating them as well you can see some

202
00:21:23,950 --> 00:26:57,539
you

203
00:27:02,239 --> 00:26:59,700
this is bass lab operation sensible

204
00:27:05,100 --> 00:27:02,249
we're again seeing real-time video from

205
00:27:07,799 --> 00:27:05,110
endeavour from the Hopkins ultraviolet

206
00:27:09,960 --> 00:27:07,809
telescope seeing the finder camera image

207
00:27:13,139 --> 00:27:09,970
as the telescope is now trained on

208
00:27:17,399 --> 00:27:13,149
Jupiter and its moons we're using two of

209
00:27:20,669 --> 00:27:17,409
the moons as so-called guide stars those

210
00:27:25,310 --> 00:27:20,679
are the moons Europa and Ganymede which

211
00:27:28,200 --> 00:27:25,320
the crosshairs are focused on the actual

212
00:27:30,899 --> 00:27:28,210
moon Io which is the subject of

213
00:27:33,359 --> 00:27:30,909

observation here would be showing should

214
00:27:35,129 --> 00:27:33,369
be showing up within the crosshairs

215
00:27:38,159 --> 00:27:35,139
right in the center of the screen on

216
00:27:40,879 --> 00:27:38,169
NASA TV and of course the large dis

217
00:27:44,249 --> 00:27:40,889
white disc about the size of a nickel is

218
00:27:46,229 --> 00:27:44,259
Jupiter itself their large red planet of

219
00:27:47,820 --> 00:27:46,239
our solar system down at the bottom of

220
00:27:50,700 --> 00:27:47,830
the screen we can say to see that we're

221
00:27:58,200 --> 00:27:50,710
taking data with the Hopkins telescope

222
00:28:02,159 --> 00:27:58,210
spectrometer to try and measure elements

223
00:28:05,549 --> 00:28:02,169
that are showing up in the ejection of

224
00:29:02,360 --> 00:28:05,559
material by volcano volcanoes on the

225
00:29:02,370 --> 00:29:11,020
arrest like

226
00:29:18,160 --> 00:29:14,970
he said I think we're going to simply

227
00:29:29,860 --> 00:29:18,170
taking out all those things all those

228
00:29:31,630 --> 00:29:29,870
crew photo DVD copies Sam other debates

229
00:29:37,270 --> 00:29:31,640
that we did last night

230
00:29:39,220 --> 00:29:37,280
okay this real-time video down light

231
00:29:42,100 --> 00:29:39,230
from the guidance system of the Hopkins

232
00:29:45,010 --> 00:29:42,110
ultraviolet telescope shows the globular

233
00:29:48,760 --> 00:29:45,020
cluster of 47 ciccone which is a primary

234
00:29:51,720 --> 00:29:48,770
target for this orbit the stars are

235
00:29:54,250 --> 00:29:51,730
extremely numerous and and quite right

236
00:29:56,070 --> 00:29:54,260
mount operations teams are working with

237
00:29:59,680 --> 00:29:56,080
the on-orbit

238
00:30:54,710 --> 00:29:59,690

astronauts to determine the precise

239
00:31:11,540 --> 00:30:57,769
Astro Huntsville were gopher line 41

240
00:31:20,740 --> 00:31:17,830
that's the rostro go ahead

241
00:32:17,880 --> 00:31:20,750
you should be getting Whoopi video down

242
00:32:30,570 --> 00:32:21,430
okay John if you see good act marks item

243
00:32:30,580 --> 00:35:52,359
and then followed by an item number one

244
00:35:59,059 --> 00:35:55,339
and three CJ and Big Sandy middle school

245
00:36:00,980 --> 00:35:59,069
this is wa4 si R hi Nick well it's good

246
00:36:03,950 --> 00:36:00,990
to hear you on the air here and we're

247
00:36:11,599 --> 00:36:03,960
ready to ready to talk to you guys go

248
00:36:13,160 --> 00:36:11,609
ahead okay I copy that now yeah well you

249
00:36:15,380 --> 00:36:13,170
know when I was in the fourth grade

250
00:36:19,510 --> 00:36:15,390
the mercury program was in full swing

251
00:36:22,400 --> 00:36:19,520
and I used to watch the mercury launches

252
00:36:24,829 --> 00:36:22,410
my teacher would bring a TV into school

253
00:36:26,660 --> 00:36:24,839
and I would watch them all and I got

254
00:36:29,030 --> 00:36:26,670
really excited about it then and I think

255
00:36:30,950 --> 00:36:29,040
ever since then it was sort of in the

256
00:36:41,730 --> 00:36:30,960
back of my mind of flying in space is

257
00:36:47,040 --> 00:36:44,579
oh I think the human race could live on

258
00:36:51,000 --> 00:36:47,050
other planets in fact I would very much

259
00:36:54,510 --> 00:36:51,010
like to see us colonize Mars I think

260
00:36:57,300 --> 00:36:54,520
Mars is a great great expansion area for

261
00:36:59,099 --> 00:36:57,310
us because it's it's a little bit like

262
00:37:02,520 --> 00:36:59,109
the earth in the way it's built and

263
00:37:07,700 --> 00:37:02,530

could be built into a planet that humans

264
00:37:11,400 --> 00:37:09,990
Space Station Mir Space Station there

265
00:37:18,330 --> 00:37:11,410
this is the Space Shuttle Endeavor how

266
00:37:27,880 --> 00:37:26,560
dr. thyroid I present English voice if

267
00:37:32,760 --> 00:37:27,890
you correctly

268
00:37:34,990 --> 00:37:32,770
I was wondering how your English was

269
00:37:39,550 --> 00:37:35,000
trying out an army but it sounds like

270
00:37:39,560 --> 00:37:47,599
let's go slow flow a key for me

271
00:37:55,380 --> 00:37:50,220
how you liking you knew your new home

272
00:37:58,260 --> 00:37:55,390
dr. Beckett we all settled in it's not

273
00:38:00,990 --> 00:37:58,270
bad at all it's nice and living and

274
00:38:03,750 --> 00:38:01,000
places in a pool it places a river one

275
00:38:09,930 --> 00:38:03,760
so you can migrate to Evers no separable

276
00:38:11,520 --> 00:38:09,940
to the sea it sure is and that actually

277
00:38:14,339 --> 00:38:11,530
the scenery around where I am I've got

278
00:38:18,260 --> 00:38:14,349
six other faces but it looks an awful

279
00:38:20,520 --> 00:38:18,270
lot like discovery get back in 92 north

280
00:38:22,200 --> 00:38:20,530
well you know I figured if we were ever

281
00:38:26,839 --> 00:38:22,210
in orbit again we probably be on the

282
00:38:31,710 --> 00:38:30,270
it's kind of amazing we've got 13 human

283
00:38:34,680 --> 00:38:31,720
beings in orbit right now and I think

284
00:38:36,000 --> 00:38:34,690
that you just start them off on your big

285
00:38:38,520 --> 00:38:36,010
adventure and what about the endures

286
00:38:42,270 --> 00:38:38,530
tomorrow but I think the fact that we've

287
00:38:43,830 --> 00:38:42,280
got 13 humans on obits does is is

288
00:38:46,680 --> 00:38:43,840

signaling that we've got a whole new

289
00:38:48,270 --> 00:38:46,690
horizon that just unfolding for us

290
00:38:53,130 --> 00:38:48,280
through with our joint space efforts and

291
00:38:54,990 --> 00:38:53,140
now we're real happy for you well I'm

292
00:38:57,630 --> 00:38:55,000
happy for you I believe you have a

293
00:39:00,120 --> 00:38:57,640
successful life everyone on board and

294
00:39:08,240 --> 00:39:00,130
happy to pass along the ventilations to

295
00:39:13,050 --> 00:39:11,340
we sure appreciate the words and we've

296
00:39:14,760 --> 00:39:13,060
had just a great flight here we the

297
00:39:17,220 --> 00:39:14,770
orbiters been working just great we've

298
00:39:20,430 --> 00:39:17,230
gathered a lot of ultraviolet data for

299
00:39:22,110 --> 00:39:20,440
the guys on the ground and we're hoping

300
00:39:24,210 --> 00:39:22,120
to come home tomorrow to weather lets us

301
00:40:17,950 --> 00:39:24,220
win if not we'll just be forced to spend

302
00:40:17,960 --> 00:44:51,640
you

303
00:44:55,839 --> 00:44:53,950
endeavour Houston about a minute to L OS

304
00:44:59,039 --> 00:44:55,849
will pick you up on the other side at 21

305
00:45:01,989 --> 00:44:59,049
25 and it looks like we have a view of

306
00:45:04,259 --> 00:45:01,999
some sort of tropical cyclone sort of

307
00:45:09,390 --> 00:45:04,269
system out there in the Indian Ocean

308
00:45:14,979 --> 00:45:11,920
yep we certainly have some clouds out

309
00:47:05,250 --> 00:45:14,989
here Ralph and I guess we'll see you out

310
00:47:16,440 --> 00:47:13,040
huh traffic go ahead John

311
00:47:19,620 --> 00:47:16,450
he had to pass the acquisitions the IPS

312
00:47:23,490 --> 00:47:19,630
is pointing a little bit off that this

313
00:47:25,050 --> 00:47:23,500

one as soon as we commanded the Astro

314
00:47:27,540 --> 00:47:25,060
star tracker it was almost right out

315
00:47:45,920 --> 00:47:27,550
with the star view display we have up

316
00:47:58,320 --> 00:47:48,660
we're seeing some amazing lightning from

317
00:48:04,260 --> 00:47:58,330
our downlink cameras endeavour is better

318
00:48:12,480 --> 00:48:04,270
with your eyeballs despite a picture

319
00:48:18,470 --> 00:48:14,339
and we got the city lights to these

320
00:48:35,820 --> 00:48:26,280
that's an incredible view we can see the

321
00:49:24,310 --> 00:48:35,830
Cape very clearly after Huntsville to

322
00:49:30,970 --> 00:49:28,300
well it was a great job we've got an

323
00:49:33,610 --> 00:49:30,980
awful lot of observations and data IPS

324
00:49:35,380 --> 00:49:33,620
perform fantastic astral payload did too

325
00:49:39,730 --> 00:49:35,390
as did the crew

326
00:49:43,120 --> 00:49:39,740
I guess what it's time to get close to

327
00:49:54,100 --> 00:49:43,130
stow are orbiting astrophysics

328
00:50:16,220 --> 00:49:54,110
laboratory right it is so uh that's

329
00:50:23,560 --> 00:50:18,710
a little bit sad seeing this beautiful

330
00:50:27,320 --> 00:50:26,000
what's going to find job for us and

331
00:50:29,540 --> 00:50:27,330
world will police have been part of the

332
00:50:30,770 --> 00:50:29,550
mission Dave we have I tried to tell me

333
00:50:31,460 --> 00:50:30,780
camera a I don't know if you have TV

334
00:50:35,480 --> 00:50:31,470
available

335
00:50:39,310 --> 00:50:35,490
we've permitir thank you we're getting a

336
00:50:39,320 --> 00:52:50,100
good morning Tammy

337
00:52:55,020 --> 00:52:52,410
endeavor now being commanded into its

338
00:52:57,330 --> 00:52:55,030

first role reversal this is a maneuver

339
00:53:00,720 --> 00:52:57,340
to bank the orbiter from left to right

340
00:53:02,940 --> 00:53:00,730
or vice versa to increase the drag

341
00:53:05,670 --> 00:53:02,950
during the entry thus slowing the

342
00:53:08,490 --> 00:53:05,680
airspeed of the orbiter and dissipating

343
00:53:12,600 --> 00:53:08,500
the proper energy on the command of the

344
00:53:14,010 --> 00:53:12,610
onboard computers every Houston we

345
00:53:14,970 --> 00:53:14,020
showed you approaching the hack no

346
00:53:20,910 --> 00:53:14,980
change the weather

347
00:53:24,030 --> 00:53:20,920
the winds are to 3-0 at 15 peak 22 that

348
00:53:27,390 --> 00:53:24,040
three peak for from the right 15 and

349
00:53:29,700 --> 00:53:27,400
peak 22 on the head we would like a late

350
00:53:38,430 --> 00:53:29,710
the drag chute deploy just in case we

351
00:53:40,620 --> 00:53:38,440
can get across one BTO endeavour is

352
00:53:41,970 --> 00:53:40,630
traveling right now at a descent rate

353
00:53:43,800 --> 00:53:41,980
seven times steeper than that of a

354
00:53:54,660 --> 00:53:43,810
commercial jetliner Azaz wall prepares

355
00:54:12,660 --> 00:53:57,010
pilot bill Gregory has deployed the

356
00:54:12,670 --> 00:54:28,190
main gear touchdown

357
00:54:36,550 --> 00:54:32,060
nose gear touchdown the drag chute has

358
00:54:40,360 --> 00:54:38,740
endeavor rolling out on runway two two

359
00:54:42,130 --> 00:54:40,370
at Edwards Air Force Base to complete a

360
00:55:15,579 --> 00:54:42,140
shuttle record six point nine million

361
00:55:20,059 --> 00:55:18,499
copy we'll stop endeavor and welcome

362
00:55:21,680 --> 00:55:20,069
home and ever after a fantastic

363
00:55:23,660 --> 00:55:21,690

record-setting mission it'll be a tough

364
00:55:49,270 --> 00:55:23,670
one to beat and it sure is nice to have

365
00:56:41,020 --> 00:55:56,180
okay that should close the lights okay

366
00:56:47,140 --> 00:56:45,070
okay post-landing deltas fine copy will

367
00:56:49,210 --> 00:56:47,150
stop never and welcome home and ever

368
00:56:50,380 --> 00:56:49,220
after a fantastic record-setting mission

369
00:56:52,800 --> 00:56:50,390
it'll be a tough one to beat

370
00:57:00,070 --> 00:56:52,810
and it sure is nice to have y'all home

371
00:57:03,250 --> 00:57:00,080
max no media Delta's he's got to pick up

372
00:57:05,500 --> 00:57:03,260
in the post laning Gary he's used to no

373
00:57:25,260 --> 00:57:05,510
post-landing deltas and your go to pick