



1  
00:00:08,230 --> 00:00:06,150  
space shuttle discovery the venerable

2  
00:00:10,629 --> 00:00:08,240  
veteran of america's human space flight

3  
00:00:13,030 --> 00:00:10,639  
fleet proudly resting atop launch pad

4  
00:00:14,709 --> 00:00:13,040  
39a here at nasa's kennedy space center

5  
00:00:17,590 --> 00:00:14,719  
in florida

6  
00:00:22,310 --> 00:00:17,600  
her wings outstretched and ready to soar

7  
00:00:24,790 --> 00:00:22,320  
into space for the 39th and final time

8  
00:00:26,790 --> 00:00:24,800  
shuttle discovery is completing 27 years

9  
00:00:27,830 --> 00:00:26,800  
of service the oldest space shuttle in

10  
00:00:29,669 --> 00:00:27,840  
the fleet

11  
00:00:33,670 --> 00:00:29,679  
launching for the first time in august

12  
00:00:35,670 --> 00:00:33,680  
1984 on mission 41d and over the years

13  
00:00:37,670 --> 00:00:35,680

discovery has achieved many notable

14

00:00:40,790 --> 00:00:37,680

accomplishments

15

00:00:42,830 --> 00:00:40,800

in total discovery has spent 351 days in

16

00:00:47,430 --> 00:00:42,840

orbit to be exact

17

00:00:48,910 --> 00:00:47,440

8440 hours 50 minutes and 41 seconds

18

00:00:51,029 --> 00:00:48,920

orbited earth

19

00:00:54,229 --> 00:00:51,039

5628 times

20

00:00:56,790 --> 00:00:54,239

flown 246 crew members to date

21

00:00:58,790 --> 00:00:56,800

docked to the mir space station once and

22

00:01:03,110 --> 00:00:58,800

to the international space station 12

23

00:01:06,230 --> 00:01:04,710

about three and a half miles away from

24

00:01:07,910 --> 00:01:06,240

discovery

25

00:01:10,469 --> 00:01:07,920

launch controllers here in kennedy's

26  
00:01:12,310 --> 00:01:10,479  
launch control center firing room 4 are

27  
00:01:14,550 --> 00:01:12,320  
overseeing all the shuttle systems and

28  
00:01:17,109 --> 00:01:14,560  
verifying the step-by-step processes

29  
00:01:20,630 --> 00:01:17,119  
that will lead to an expected liftoff at

30  
00:01:22,390 --> 00:01:20,640  
4 50 and 27 seconds pm eastern standard

31  
00:01:23,990 --> 00:01:22,400  
time

32  
00:01:25,510 --> 00:01:24,000  
once again at this point there are no

33  
00:01:27,510 --> 00:01:25,520  
technical issues that stand in the way

34  
00:01:29,190 --> 00:01:27,520  
of today's launch

35  
00:01:32,230 --> 00:01:29,200  
and we're going to take a look at the

36  
00:01:36,550 --> 00:01:32,240  
crew suiting up preparing for today's

37  
00:01:39,109 --> 00:01:36,560  
launch of discovery on sts-133

38  
00:01:40,550 --> 00:01:39,119

and we're seeing commander steve lindsey

39

00:01:42,950 --> 00:01:40,560

with one of the suit technicians

40

00:01:49,749 --> 00:01:42,960

assisting him into his aces suit or his

41

00:01:54,550 --> 00:01:51,670

pilot eric bowe

42

00:01:56,950 --> 00:01:54,560

he flew on sts-126

43

00:02:01,030 --> 00:01:56,960

he is our pilot today he's logged over 4

44

00:02:03,429 --> 00:02:01,040

000 hours in 45 different aircraft

45

00:02:05,990 --> 00:02:03,439

this is alvin drew mission specialist

46

00:02:07,990 --> 00:02:06,000

one he's a colonel in the air force

47

00:02:11,350 --> 00:02:08,000

once again we have an all-veteran crew

48

00:02:13,190 --> 00:02:11,360

alvin drew flew on sts-118

49

00:02:14,949 --> 00:02:13,200

he'll be one of our two spacewalkers on

50

00:02:16,710 --> 00:02:14,959

the mission

51  
00:02:18,949 --> 00:02:16,720  
mike barrett

52  
00:02:21,589 --> 00:02:18,959  
mission specialist number three

53  
00:02:23,990 --> 00:02:21,599  
he's a veteran of expeditions 19 and 20

54  
00:02:26,390 --> 00:02:24,000  
aboard the international space station

55  
00:02:27,990 --> 00:02:26,400  
he spent 197 days aboard the space

56  
00:02:30,150 --> 00:02:28,000  
station and performed two spacewalks

57  
00:02:33,030 --> 00:02:30,160  
while he was there

58  
00:02:35,110 --> 00:02:33,040  
kennedy space center native nicole stott

59  
00:02:37,430 --> 00:02:35,120  
who worked here processing shuttles for

60  
00:02:40,070 --> 00:02:37,440  
many years before becoming an astronaut

61  
00:02:42,949 --> 00:02:40,080  
she's mission specialist four

62  
00:02:45,509 --> 00:02:42,959  
hometown of clearwater florida

63  
00:02:49,509 --> 00:02:45,519

she flew 87 days on the international

64

00:02:51,990 --> 00:02:49,519

space station on expeditions 20 and 21

65

00:02:54,869 --> 00:02:52,000

and also performed a spacewalk of six

66

00:02:57,270 --> 00:02:54,879

hours and 39 minutes

67

00:03:00,470 --> 00:02:57,280

and the newest member of the sts-133

68

00:03:02,550 --> 00:03:00,480

crew steve bowen who replaced tim copra

69

00:03:07,589 --> 00:03:02,560

after the unfortunate bicycle accident

70

00:03:13,190 --> 00:03:10,470

steve is mission specialist too

71

00:03:15,670 --> 00:03:13,200

he logged 27 days in space with five

72

00:03:18,949 --> 00:03:15,680

space walks he's a space flight veteran

73

00:03:21,430 --> 00:03:18,959

and there we see peggy whitson

74

00:03:23,190 --> 00:03:21,440

jerry ross a number of other members of

75

00:03:25,030 --> 00:03:23,200

the nasa family helping to prepare

76

00:03:27,190 --> 00:03:25,040

today's

77

00:03:34,630 --> 00:03:27,200

astronaut crew for their mission to

78

00:03:40,070 --> 00:03:37,110

and here comes the crew of space shuttle

79

00:03:41,750 --> 00:03:40,080

discovery the sts-133 crew is walking

80

00:03:43,830 --> 00:03:41,760

out of their crew quarters in the

81

00:03:45,350 --> 00:03:43,840

operations and checkout building

82

00:03:51,830 --> 00:03:45,360

followed by some of the astronaut

83

00:03:57,429 --> 00:03:54,229

and here we have the crew

84

00:03:59,350 --> 00:03:57,439

walking out of crew corners

85

00:04:01,830 --> 00:03:59,360

this is a very historical walkway it's

86

00:04:03,589 --> 00:04:01,840

the same path that the apollo astronauts

87

00:04:05,910 --> 00:04:03,599

took to go to the moon

88

00:04:08,949 --> 00:04:05,920

and over the last 30 years there's been

89

00:04:11,910 --> 00:04:08,959

133 odd shuttle crews that walked out

90

00:04:14,869 --> 00:04:11,920

here to catch this bus for the exciting

91

00:04:16,310 --> 00:04:14,879

ride out to the launch pad

92

00:04:17,749 --> 00:04:16,320

there you see him standing there just

93

00:04:20,949 --> 00:04:17,759

waving

94

00:04:28,070 --> 00:04:20,959

to the press and media and the crowd

95

00:04:33,510 --> 00:04:30,230

has got to be an exciting moment

96

00:04:35,350 --> 00:04:33,520

it is and you sit in the bus and uh

97

00:04:37,430 --> 00:04:35,360

it's an exciting moment but you know

98

00:04:38,950 --> 00:04:37,440

there is a certain amount of uh

99

00:04:40,550 --> 00:04:38,960

tension in the air as you can imagine

100

00:04:42,070 --> 00:04:40,560

it's a bit like uh

101  
00:04:44,390 --> 00:04:42,080  
first night jitters for an actor on a

102  
00:04:45,830 --> 00:04:44,400  
stage show possibly

103  
00:04:51,350 --> 00:04:45,840  
you know you're going to go on a great

104  
00:04:54,469 --> 00:04:52,790  
this

105  
00:04:56,550 --> 00:04:54,479  
view

106  
00:04:57,590 --> 00:04:56,560  
showing the convoy heading out to the

107  
00:05:03,670 --> 00:04:57,600  
pad

108  
00:05:08,469 --> 00:05:05,510  
there you can see some of the employees

109  
00:05:11,350 --> 00:05:08,479  
of the kennedy space center

110  
00:05:13,189 --> 00:05:11,360  
waving to the crew and wishing them well

111  
00:05:14,310 --> 00:05:13,199  
this is this is a great moment for the

112  
00:05:15,909 --> 00:05:14,320  
crew to

113  
00:05:17,909 --> 00:05:15,919

feel a sense of

114

00:05:19,830 --> 00:05:17,919

camaraderie and excitement and spirit

115

00:05:21,909 --> 00:05:19,840

that the employees offer you really get

116

00:05:24,150 --> 00:05:21,919

a sense that uh

117

00:05:25,670 --> 00:05:24,160

they're with you on this trip and that

118

00:05:27,189 --> 00:05:25,680

they're really behind you and really

119

00:05:28,629 --> 00:05:27,199

supportive of you

120

00:05:44,230 --> 00:05:28,639

and

121

00:05:47,749 --> 00:05:46,230

here you can see a camera view from the

122

00:05:48,790 --> 00:05:47,759

launch pad itself

123

00:05:50,629 --> 00:05:48,800

as the

124

00:05:52,390 --> 00:05:50,639

astro van is

125

00:05:54,150 --> 00:05:52,400

crossing the trackway the crawler track

126  
00:05:55,990 --> 00:05:54,160  
ray that uh

127  
00:05:57,590 --> 00:05:56,000  
the crawler uses to deliver the whole

128  
00:06:00,870 --> 00:05:57,600  
shuttle assembly

129  
00:06:03,189 --> 00:06:00,880  
to the launch pad

130  
00:06:04,790 --> 00:06:03,199  
the crew will step out of the astro van

131  
00:06:08,309 --> 00:06:04,800  
and uh

132  
00:06:10,309 --> 00:06:08,319  
you'll probably see them step back and

133  
00:06:12,710 --> 00:06:10,319  
look up which is a little hard to do in

134  
00:06:15,749 --> 00:06:14,629  
heavy suits that they have

135  
00:06:18,309 --> 00:06:15,759  
but

136  
00:06:19,909 --> 00:06:18,319  
you get an opportunity to stand there

137  
00:06:22,550 --> 00:06:19,919  
and see the shuttle from a very unique

138  
00:06:24,309 --> 00:06:22,560

perspective uh

139

00:06:25,990 --> 00:06:24,319

the view itself is spectacular but your

140

00:06:27,749 --> 00:06:26,000

perspective is particularly unique

141

00:06:29,590 --> 00:06:27,759

because you know that it is the ride

142

00:06:30,469 --> 00:06:29,600

that's going to take you

143

00:06:32,070 --> 00:06:30,479

uh

144

00:06:34,070 --> 00:06:32,080

out into orbit

145

00:06:37,590 --> 00:06:34,080

in that amazing eight and a half minute

146

00:06:41,189 --> 00:06:37,600

ride that it is capable of executing

147

00:06:45,270 --> 00:06:43,510

yeah that's a good view of them uh

148

00:06:47,029 --> 00:06:45,280

walking along the edge of the flame

149

00:06:48,390 --> 00:06:47,039

trench

150

00:06:50,870 --> 00:06:48,400

to uh

151  
00:06:52,710 --> 00:06:50,880  
just have a look

152  
00:06:55,270 --> 00:06:52,720  
do a visual pre-flight of their vehicle

153  
00:07:01,510 --> 00:06:55,280  
in preparation for

154  
00:07:05,270 --> 00:07:03,749  
this is one advantage of launching in

155  
00:07:06,710 --> 00:07:05,280  
the cooler months in florida is that

156  
00:07:08,150 --> 00:07:06,720  
this is uh

157  
00:07:09,589 --> 00:07:08,160  
quite enjoyable to be out there when you

158  
00:07:11,749 --> 00:07:09,599  
do this in the summer months in those

159  
00:07:27,670 --> 00:07:11,759  
suits it can get quite hot you can

160  
00:07:32,550 --> 00:07:29,909  
there you can see the crew having a

161  
00:07:35,350 --> 00:07:32,560  
group hug and a little quiet moment for

162  
00:07:41,430 --> 00:07:35,360  
themselves to

163  
00:07:55,589 --> 00:07:43,749

wish each other well

164

00:08:00,710 --> 00:07:58,309

and we are a t minus two hours 20

165

00:08:02,790 --> 00:08:00,720

minutes 28 seconds and counting as we

166

00:08:05,189 --> 00:08:02,800

see commander steve lindsey entering

167

00:08:07,270 --> 00:08:05,199

space shuttle discovery

168

00:08:08,790 --> 00:08:07,280

first member to enter traditionally is

169

00:08:10,790 --> 00:08:08,800

the commander

170

00:08:12,790 --> 00:08:10,800

and astronaut support person kay hire

171

00:08:15,670 --> 00:08:12,800

will assist him into his seat

172

00:08:18,070 --> 00:08:15,680

help configure his communications gear

173

00:08:19,670 --> 00:08:18,080

and not too long from now we'll be

174

00:08:21,430 --> 00:08:19,680

opening up the communications links and

175

00:08:22,790 --> 00:08:21,440

we'll be able to hear

176

00:08:24,230 --> 00:08:22,800

steve lindsey

177

00:08:25,589 --> 00:08:24,240

speak to

178

00:08:39,509 --> 00:08:25,599

to the launch control center and to

179

00:08:43,589 --> 00:08:41,509

okay and uh handshakes as mike barrett

180

00:08:45,110 --> 00:08:43,599

prepares to enter

181

00:08:46,870 --> 00:08:45,120

shuttle discovery

182

00:08:48,070 --> 00:08:46,880

on the mid deck

183

00:08:51,030 --> 00:08:48,080

mike barrett

184

00:08:54,310 --> 00:08:51,040

on board at this time

185

00:08:55,750 --> 00:08:54,320

and that's ovcc travis thompson

186

00:08:57,030 --> 00:08:55,760

announcing that barrett has passed the

187

00:08:59,070 --> 00:08:57,040

threshold and is now in the current

188

00:09:06,389 --> 00:08:59,080

module

189

00:09:13,190 --> 00:09:09,590

otc ovcc

190

00:09:17,910 --> 00:09:13,200

tilt bow on board at this time

191

00:09:22,070 --> 00:09:20,550

and i see pilot bow sliding feet first

192

00:09:23,110 --> 00:09:22,080

through the interdict access onto the

193

00:09:25,670 --> 00:09:23,120

flight deck

194

00:09:26,630 --> 00:09:25,680

where he'll be assisted into his plt

195

00:09:28,389 --> 00:09:26,640

seat

196

00:09:30,310 --> 00:09:28,399

here's a good shot from the window

197

00:09:31,990 --> 00:09:30,320

looking left across the flight deck as

198

00:09:33,910 --> 00:09:32,000

he comes up to the seat

199

00:09:37,110 --> 00:09:33,920

that's the parachute laying down on top

200

00:09:39,430 --> 00:09:37,120

of the seat at the moment

201  
00:09:40,710 --> 00:09:39,440  
so the parachute is already in place yes

202  
00:09:42,230 --> 00:09:40,720  
we'll put the parachutes on the seat

203  
00:09:44,710 --> 00:09:42,240  
first and then we put a harness on the

204  
00:09:46,710 --> 00:09:44,720  
crewman and now he's uh

205  
00:09:48,150 --> 00:09:46,720  
he's being assisted up into his seat

206  
00:09:49,509 --> 00:09:48,160  
he's got to get his feet around the hand

207  
00:09:50,870 --> 00:09:49,519  
controller and stick his feet in the

208  
00:09:52,550 --> 00:09:50,880  
foot well

209  
00:09:54,389 --> 00:09:52,560  
and i see that the chute has moved a

210  
00:09:56,230 --> 00:09:54,399  
little the chute is on a

211  
00:09:57,590 --> 00:09:56,240  
a teflon sheet that allows it to move

212  
00:09:58,870 --> 00:09:57,600  
around so they can get the chute right

213  
00:10:00,870 --> 00:09:58,880

where they want it then they pull that

214

00:10:16,230 --> 00:10:00,880

teflon sheet out and the velcro sticks

215

00:10:21,910 --> 00:10:20,230

nicole i giving a sign to her family

216

00:10:24,069 --> 00:10:21,920

and preparing to board space shuttle

217

00:10:27,190 --> 00:10:24,079

discovery

218

00:10:30,069 --> 00:10:27,200

otc ovcc

219

00:10:31,110 --> 00:10:30,079

good ovcc nicole scott on board at this

220

00:10:36,949 --> 00:10:31,120

time

221

00:10:40,949 --> 00:10:39,110

and nicole will be um going into seat

222

00:10:43,190 --> 00:10:40,959

three

223

00:10:45,990 --> 00:10:43,200

behind the pilot on the flight deck

224

00:10:49,190 --> 00:10:46,000

behind them and nicole will be uh nicole

225

00:10:50,069 --> 00:10:49,200

stott will be seated in seat four during

226

00:10:52,150 --> 00:10:50,079

entry

227

00:11:13,190 --> 00:10:52,160

doing the flight engineer duties that

228

00:11:17,430 --> 00:11:15,590

ms-1 houston we read you loud and clear

229

00:11:19,269 --> 00:11:17,440

good afternoon nicole

230

00:11:21,590 --> 00:11:19,279

and we can see alvin drew who just

231

00:11:29,350 --> 00:11:21,600

entered the hatch

232

00:11:36,150 --> 00:11:33,430

tmqc that's a complete step 617

233

00:11:48,870 --> 00:11:36,160

an n a for the ms5 slot

234

00:11:54,069 --> 00:11:51,750

ntd this is sro on 212.

235

00:11:55,110 --> 00:11:54,079

write a photo brainstorm is no go at

236

00:11:56,949 --> 00:11:55,120

this time

237

00:11:59,670 --> 00:11:56,959

central command remoting system is

238

00:12:02,389 --> 00:11:59,680

partially operational when selecting a

239

00:12:03,269 --> 00:12:02,399

screen the string will go down

240

00:12:04,629 --> 00:12:03,279

and

241

00:12:06,710 --> 00:12:04,639

they

242

00:12:08,550 --> 00:12:06,720

experience this event the other last

243

00:12:10,790 --> 00:12:08,560

night had confidence in system as long

244

00:12:12,629 --> 00:12:10,800

as they didn't direct select that screen

245

00:12:15,350 --> 00:12:12,639

that we were confident in the system

246

00:12:17,190 --> 00:12:15,360

however at the same time with experience

247

00:12:18,790 --> 00:12:17,200

when selecting a different screen

248

00:12:23,190 --> 00:12:18,800

they are not confident in the system at

249

00:12:25,829 --> 00:12:24,870

discovery launch director here to ground

250

00:12:27,269 --> 00:12:25,839

one

251

00:12:28,629 --> 00:12:27,279

software discovery

252

00:12:30,150 --> 00:12:28,639

okay steve um how much you've been

253

00:12:31,590 --> 00:12:30,160

following this but the range is having a

254

00:12:33,110 --> 00:12:31,600

little bit of an issue with their with

255

00:12:35,430 --> 00:12:33,120

their range safety

256

00:12:36,870 --> 00:12:35,440

uh command system the display of their

257

00:12:39,430 --> 00:12:36,880

command system and they're talking it

258

00:12:40,710 --> 00:12:39,440

actively over there um hopeful that

259

00:12:42,230 --> 00:12:40,720

we'll get through it not quite sure if

260

00:12:44,389 --> 00:12:42,240

we will yet or not but the right people

261

00:12:45,829 --> 00:12:44,399

are working on it so we're gonna take

262

00:12:47,670 --> 00:12:45,839

this one on down to the wire we'll go

263

00:12:49,990 --> 00:12:47,680

through our polls here and uh take you

264

00:12:53,430 --> 00:12:50,000

on down to five minutes and see if we

265

00:12:57,110 --> 00:12:53,440

can't get you a good flight today

266

00:13:01,030 --> 00:12:59,030

this is shuttle launch control

267

00:13:02,629 --> 00:13:01,040

five minutes remaining in our hold at t

268

00:13:04,310 --> 00:13:02,639

minus nine minutes

269

00:13:06,710 --> 00:13:04,320

this is the ntd conducting the launch

270

00:13:09,590 --> 00:13:06,720

status check all stations verify ready

271

00:13:10,870 --> 00:13:09,600

to resume count and go for launch otc

272

00:13:15,750 --> 00:13:10,880

purchase ego

273

00:13:18,870 --> 00:13:15,760

tvc tbc go ptc ptc's go lps helping us

274

00:13:39,910 --> 00:13:18,880

go distance flight houston flight is go

275

00:13:46,069 --> 00:13:42,629

and cdr

276

00:13:52,310 --> 00:13:49,750

launch director entity yes sir

277

00:13:54,550 --> 00:13:52,320

our launch team is ready to proceed sro

278

00:13:56,629 --> 00:13:54,560

has uh concerns to go to five minutes

279

00:13:57,750 --> 00:13:56,639

okay copy all that i'll do my polls this

280

00:13:59,829 --> 00:13:57,760

time

281

00:14:01,590 --> 00:13:59,839

kc chief processing engineer verify no

282

00:14:03,189 --> 00:14:01,600

constraints to launch no constraints

283

00:14:05,189 --> 00:14:03,199

thank you steve casey safety initial

284

00:14:06,949 --> 00:14:05,199

insurance ksc safety admission

285

00:14:09,269 --> 00:14:06,959

assurances go pending resolution of the

286

00:14:10,230 --> 00:14:09,279

range issue

287

00:14:11,910 --> 00:14:10,240

copy

288

00:14:13,750 --> 00:14:11,920

payload launch manager mike the space

289

00:14:14,629 --> 00:14:13,760

station processing teams go

290

00:14:16,470 --> 00:14:14,639

copy

291

00:14:18,550 --> 00:14:16,480

range weather weather has no constraints

292

00:14:19,670 --> 00:14:18,560

for launch copy thank you kathy and ops

293

00:14:21,590 --> 00:14:19,680

manager

294

00:14:23,189 --> 00:14:21,600

mike on our side mmt's in really good

295

00:14:24,949 --> 00:14:23,199

shape vehicles looking perfect weather's

296

00:14:26,230 --> 00:14:24,959

looking great we'll stand by here and

297

00:14:29,269 --> 00:14:26,240

see if the range can resolve their issue

298

00:14:30,710 --> 00:14:29,279

but we are go okay copy that and

299

00:14:32,069 --> 00:14:30,720

we'll take it on down to five and see if

300

00:14:33,269 --> 00:14:32,079

we can't get there

301  
00:14:34,069 --> 00:14:33,279  
yeah that's a good plan mike let's keep

302  
00:14:37,030 --> 00:14:34,079  
going

303  
00:14:38,710 --> 00:14:37,040  
and casey safety initial insurance

304  
00:14:41,110 --> 00:14:38,720  
can i see safety in this insurance let's

305  
00:14:50,470 --> 00:14:41,120  
see if we get uh to go from sro you're

306  
00:14:54,310 --> 00:14:52,230  
once again we will come out of the hold

307  
00:14:56,829 --> 00:14:54,320  
at t minus nine minutes we will count

308  
00:14:59,189 --> 00:14:56,839  
down to t minus five

309  
00:15:00,550 --> 00:14:59,199  
minutes between

310  
00:15:02,389 --> 00:15:00,560  
now and then

311  
00:15:03,430 --> 00:15:02,399  
if the range safety

312  
00:15:04,949 --> 00:15:03,440  
system

313  
00:15:06,949 --> 00:15:04,959

condition is uh

314

00:15:08,949 --> 00:15:06,959

corrected we will continue to count down

315

00:15:14,310 --> 00:15:08,959

for launch if not we will hold it five

316

00:15:17,990 --> 00:15:16,550

and discovery otc from the processing

317

00:15:22,629 --> 00:15:18,000

team of discovery to the crew of

318

00:15:25,269 --> 00:15:24,069

thank you very much

319

00:15:27,350 --> 00:15:25,279

thanks for all the work you did getting

320

00:15:29,110 --> 00:15:27,360

this ready to go and uh

321

00:15:30,790 --> 00:15:29,120

appreciate all your work and for those

322

00:15:32,389 --> 00:15:30,800

watching get ready to witness the

323

00:15:50,150 --> 00:15:32,399

majesty and the power of discovery as

324

00:15:55,749 --> 00:15:52,870

two minutes and 48 seconds of hold time

325

00:16:01,509 --> 00:15:55,759

remain in today's launch window of space

326

00:16:05,189 --> 00:16:03,030

manager on 212.

327

00:16:07,990 --> 00:16:05,199

go ahead i got verbal confirmation from

328

00:16:09,509 --> 00:16:08,000

the 45th wing commander we are go and we

329

00:16:10,629 --> 00:16:09,519

do not need sr's ghost i would like you

330

00:16:12,710 --> 00:16:10,639

to proceed

331

00:16:14,710 --> 00:16:12,720

probably that entity was that uh

332

00:16:16,389 --> 00:16:14,720

verification that range will

333

00:16:17,990 --> 00:16:16,399

support today's launch

334

00:16:20,870 --> 00:16:18,000

you need to press on pick up the clock

335

00:16:21,829 --> 00:16:20,880

on your mark copy that and sro ntd i

336

00:16:24,550 --> 00:16:21,839

need to put

337

00:16:26,069 --> 00:16:24,560

your whole switch to proceed position

338

00:16:28,550 --> 00:16:26,079

40 seconds remaining in our launch

339

00:16:28,560 --> 00:16:32,870

range is go

340

00:17:02,230 --> 00:16:34,790

tlis has the sro hold been removed

341

00:17:08,069 --> 00:17:05,029

t-minus five minutes and counting tlt

342

00:17:09,669 --> 00:17:08,079

otc perform apu start

343

00:17:12,949 --> 00:17:09,679

elt in work

344

00:17:18,309 --> 00:17:12,959

and cd-rotc reconfigure heaters

345

00:17:22,630 --> 00:17:20,710

t-minus four minutes 41 seconds and

346

00:17:27,750 --> 00:17:22,640

counting

347

00:17:31,270 --> 00:17:29,590

final test of the flight control

348

00:17:33,110 --> 00:17:31,280

surfaces is underway

349

00:17:34,549 --> 00:17:33,120

this is a pre-programmed pattern of

350

00:17:36,470 --> 00:17:34,559

movements designed to verify the

351

00:17:43,909 --> 00:17:36,480

readiness of the flight control surfaces

352

00:17:48,870 --> 00:17:46,230

gaseous oxygen vent hood or beanie cap

353

00:17:51,110 --> 00:17:48,880

is slowly being retracted away

354

00:17:54,789 --> 00:17:51,120

from the top of the external tank

355

00:17:58,070 --> 00:17:54,799

your visors and initiate o2 flow

356

00:18:01,590 --> 00:17:59,909

orbiter test conductor john crackson

357

00:18:09,510 --> 00:18:01,600

requesting pilot eric beau clear the

358

00:18:13,270 --> 00:18:10,950

auto sequence starts

359

00:18:14,950 --> 00:18:13,280

and we have a go for auto sequence start

360

00:18:16,710 --> 00:18:14,960

discovery's onboard computers have

361

00:18:19,029 --> 00:18:16,720

primary control of all the vehicle's

362

00:18:21,029 --> 00:18:19,039

critical functions

363

00:18:23,990 --> 00:18:21,039

20 seconds

364

00:18:26,230 --> 00:18:24,000

the sound suppression water system

365

00:18:28,150 --> 00:18:26,240

has been activated protecting discovery

366

00:18:30,789 --> 00:18:28,160

and the launch pad from acoustical

367

00:18:36,549 --> 00:18:33,430

go for main engine start

368

00:18:37,430 --> 00:18:36,559

we have main engine start

369

00:18:38,710 --> 00:18:37,440

two

370

00:18:41,350 --> 00:18:38,720

one

371

00:18:44,390 --> 00:18:41,360

booster ignition and the final liftoff

372

00:18:46,390 --> 00:18:44,400

of discovery a tribute to the dedication

373

00:18:55,029 --> 00:18:46,400

hard work and pride of america's space

374

00:18:59,110 --> 00:18:56,630

space shuttle now tower over onto its

375

00:19:01,029 --> 00:18:59,120

back for the 11-minute ride into orbit

376

00:19:23,590 --> 00:19:01,039

discovery now making one last reach for

377

00:19:26,630 --> 00:19:25,029

discovery's engines are now throttling

378

00:19:28,310 --> 00:19:26,640

down as the orbiter passes through the

379

00:19:29,909 --> 00:19:28,320

area of maximum pressure reducing the

380

00:19:41,909 --> 00:19:29,919

stress on the shuttle as it goes

381

00:19:51,669 --> 00:19:44,070

discovery houston you are go at throttle

382

00:19:54,070 --> 00:19:52,710

well commander steve lindsay

383

00:19:55,830 --> 00:19:54,080

acknowledging the call from capcom

384

00:20:01,270 --> 00:19:55,840

charlie hobart as discovery's three main

385

00:20:04,470 --> 00:20:02,710

lindsay is joined on the flight deck by

386

00:20:12,070 --> 00:20:04,480

pilot eric bowen mission specialist al

387

00:20:15,990 --> 00:20:13,669

mission specialist mike barrett and

388

00:20:17,190 --> 00:20:16,000

steve bowen

389

00:20:18,390 --> 00:20:17,200

discovery's three main engines are

390

00:20:20,230 --> 00:20:18,400

burning fuel at a rate that would drain

391

00:20:22,149 --> 00:20:20,240

an average swimming pool in about 25

392

00:20:23,510 --> 00:20:22,159

seconds

393

00:20:25,190 --> 00:20:23,520

the engines combined with the solid

394

00:20:28,230 --> 00:20:25,200

rocket boosters produce more than seven

395

00:20:29,909 --> 00:20:28,240

million pounds of thrust

396

00:20:31,270 --> 00:20:29,919

one minute 50 seconds into the flight

397

00:20:33,270 --> 00:20:31,280

we're standing by for separation of the

398

00:20:34,110 --> 00:20:33,280

twin solid rocket boosters discovery now

399

00:20:37,830 --> 00:20:34,120

traveling

400

00:20:39,750 --> 00:20:37,840

2695 miles an hour its altitude 24 miles

401  
00:20:53,590 --> 00:20:39,760  
downrange in the kennedy space center 29

402  
00:20:57,029 --> 00:20:55,510  
booster separation confirmed discovery's

403  
00:20:58,870 --> 00:20:57,039  
guidance is now converging as the

404  
00:21:04,390 --> 00:20:58,880  
shuttle's onboard computers fine-tune

405  
00:21:09,270 --> 00:21:06,149  
two minutes 25 seconds into the flight

406  
00:21:11,350 --> 00:21:09,280  
discovery traveling 3189 miles an hour

407  
00:21:16,070 --> 00:21:11,360  
its altitude 37 miles down range from

408  
00:21:19,190 --> 00:21:17,590  
discovery now getting a boost into orbit

409  
00:21:20,549 --> 00:21:19,200  
from its twin orbital maneuvering system

410  
00:21:21,669 --> 00:21:20,559  
engines on either side of the shuttle's

411  
00:21:23,029 --> 00:21:21,679  
tail

412  
00:21:25,350 --> 00:21:23,039  
these two engines will burn for two

413  
00:21:26,230 --> 00:21:25,360

minutes and 32 seconds your two-engine

414

00:21:28,390 --> 00:21:26,240

towel

415

00:21:30,630 --> 00:21:28,400

we do have updates to your no-com mode

416

00:21:32,870 --> 00:21:30,640

boundaries and we did launch late into

417

00:21:35,029 --> 00:21:32,880

pain one our only pain

418

00:21:38,070 --> 00:21:35,039

the contingency abort boundaries we'll

419

00:21:39,750 --> 00:21:38,080

use our in-plane plus 230 let me know

420

00:21:48,149 --> 00:21:39,760

when you're ready to copy the new presta

421

00:21:51,430 --> 00:21:49,830

discoveries engines are now swiveling to

422

00:21:53,190 --> 00:21:51,440

roll the shuttle to a heads up position

423

00:21:58,470 --> 00:21:53,200

to get better communication with nasa's

424

00:22:09,430 --> 00:22:03,510

discover your single engine zaragosa 104

425

00:22:12,470 --> 00:22:11,110

discovery can now make it to emergency

426  
00:22:13,669 --> 00:22:12,480  
landing sites in europe should two

427  
00:22:15,909 --> 00:22:13,679  
engines fail at this point but the

428  
00:22:17,990 --> 00:22:15,919  
flight continues to go well

429  
00:22:21,669 --> 00:22:18,000  
six minutes 24 seconds into the flight

430  
00:22:23,909 --> 00:22:21,679  
the shuttle traveling 9800 miles an hour

431  
00:22:25,830 --> 00:22:23,919  
it's altitude 67 miles downrange from

432  
00:22:27,110 --> 00:22:25,840  
the kennedy space center

433  
00:22:29,990 --> 00:22:27,120  
miles

434  
00:22:32,390 --> 00:22:30,000  
for you nominal shutdown on all three

435  
00:22:41,350 --> 00:22:32,400  
and pinto you'll be go for the plus x

436  
00:22:47,590 --> 00:22:44,310  
discovery we saw a nominal miko ohms one

437  
00:22:49,190 --> 00:22:47,600  
not required preliminary tig for ohms 2

438  
00:22:51,190 --> 00:22:49,200

37 30.

439

00:22:58,789 --> 00:22:51,200

welcome to you and your veteran crew

440

00:22:58,799 --> 00:23:09,510

good to be here

441

00:23:13,510 --> 00:23:11,430

this camera view is from inside the

442

00:23:15,590 --> 00:23:13,520

payload bay at the forward end of the

443

00:23:18,950 --> 00:23:15,600

payload bay on the port side it's known

444

00:23:23,669 --> 00:23:20,789

the orbiter docking system is in the

445

00:23:26,070 --> 00:23:23,679

lower left hand corner of the frame

446

00:23:33,830 --> 00:23:26,080

as we see first the starboard side the

447

00:23:38,470 --> 00:23:35,669

beyond the orbiter docking system that's

448

00:23:40,549 --> 00:23:38,480

in the lower left hand side of our frame

449

00:23:42,789 --> 00:23:40,559

if you look aft in the payload bay you

450

00:23:45,350 --> 00:23:42,799

see the other

451  
00:23:47,830 --> 00:23:45,360  
the other payloads including the express

452  
00:23:50,789 --> 00:23:47,840  
logistics carrier and then beyond it the

453  
00:23:53,269 --> 00:23:50,799  
permanent multi-purpose module

454  
00:23:57,350 --> 00:23:53,279  
formerly known as the

455  
00:24:00,149 --> 00:23:57,360  
multi-purpose logistics module leonardo

456  
00:24:02,310 --> 00:24:00,159  
has the port side payload bay doors open

457  
00:24:04,710 --> 00:24:02,320  
you can see just a bit of the space

458  
00:24:07,430 --> 00:24:04,720  
shuttle's robotic arm there in the lower

459  
00:24:09,750 --> 00:24:07,440  
right hand corner of the frame

460  
00:24:11,990 --> 00:24:09,760  
heading back toward the uh

461  
00:24:15,190 --> 00:24:12,000  
the left side ohms pod

462  
00:24:18,149 --> 00:24:15,200  
and the uh vertical stabilizer

463  
00:24:22,070 --> 00:24:18,159

of shuttle discovery

464

00:24:24,390 --> 00:24:22,080

payload bay doors opened at 5 27 central

465

00:24:31,350 --> 00:24:24,400

time this afternoon as discovery was

466

00:24:31,360 --> 00:24:35,430

then we see a good cryo config thank you

467

00:24:38,549 --> 00:24:36,630

thank you

468

00:24:39,750 --> 00:24:38,559

and bim uh can you also tell us we may

469

00:24:41,669 --> 00:24:39,760

have missed it with our all of our

470

00:24:43,110 --> 00:24:41,679

dropouts earlier but uh if you guys are

471

00:24:44,470 --> 00:24:43,120

finished with the payload bay flood

472

00:24:49,750 --> 00:24:44,480

lights can you confirm that they have

473

00:24:53,029 --> 00:24:51,669

they have not been turned off yet

474

00:24:55,430 --> 00:24:53,039

we can turn them off now if you're ready

475

00:25:11,750 --> 00:24:56,789

we're ready but that's whenever you're

476  
00:25:15,830 --> 00:25:13,590  
and just like that

477  
00:25:19,269 --> 00:25:15,840  
the floodlights on board

478  
00:25:21,590 --> 00:25:19,279  
discovery the payload bay turned off

479  
00:25:23,350 --> 00:25:21,600  
as the crew gets their spaceship in the

480  
00:25:26,149 --> 00:25:23,360  
proper configuration

481  
00:25:29,750 --> 00:25:26,159  
for the overnight period while

482  
00:25:32,710 --> 00:25:29,760  
they sleep the flood lights turned on in

483  
00:25:33,830 --> 00:25:32,720  
order off rather in order to conserve

484  
00:25:36,230 --> 00:25:33,840  
uh

485  
00:25:43,029 --> 00:25:36,240  
the cryogenic components that are used

486  
00:25:46,710 --> 00:25:44,630  
the

487  
00:25:49,510 --> 00:25:46,720  
light that we do see in this view is

488  
00:25:51,390 --> 00:25:49,520

coming from an imminent sunrise

489

00:25:54,470 --> 00:25:51,400

discovery is now

490

00:25:55,990 --> 00:25:54,480

143 miles above the southern end of

491

00:26:00,390 --> 00:25:56,000

africa

492

00:26:04,710 --> 00:26:02,870

and as we can see just moments away from