



1
00:00:49,890 --> 00:00:47,430
this is shuttle launch control at

2
00:00:51,569 --> 00:00:49,900
t-minus three hours and holding with one

3
00:00:55,799 --> 00:00:51,579
hour 16 minutes remaining in this

4
00:00:58,350 --> 00:00:55,809
built-in hold during this hold final

5
00:01:00,359 --> 00:00:58,360
inspection team is on the pad for most

6
00:01:06,450 --> 00:01:00,369
the entire duration of that two hour

7
00:01:08,130 --> 00:01:06,460
period they entered the pad as we went

8
00:01:12,350 --> 00:01:08,140
to the t-minus three hour and holding

9
00:01:14,640 --> 00:01:12,360
point at about 6 o'clock this evening

10
00:01:17,880 --> 00:01:14,650
this is shuttle launch control at

11
00:01:20,249 --> 00:01:17,890
t-minus 3 hours and holding the closeout

12
00:01:23,520 --> 00:01:20,259
crew is in the white room awaiting the

13
00:01:26,310 --> 00:01:23,530

arrival of the astronauts and about

14

00:01:28,200 --> 00:01:26,320

another 90 minutes time temperature at

15

00:01:30,419 --> 00:01:28,210

launch time expected to be about 49

16

00:01:33,410 --> 00:01:30,429

degrees with easterly winds 8 to 12

17

00:01:40,859 --> 00:01:33,420

knots and humidity about 70 percent

18

00:01:43,139 --> 00:01:40,869

visibility 7 to 10 miles this is shuttle

19

00:01:44,730 --> 00:01:43,149

launch control at t-minus 3 hours and

20

00:01:47,999 --> 00:01:44,740

holding we're now live in the crew

21

00:01:50,789 --> 00:01:48,009

quarters where we are undergoing our

22

00:01:53,429 --> 00:01:50,799

suit up activities for tonight

23

00:01:57,739 --> 00:01:53,439

there's dr. Bernard Harris mission

24

00:02:01,139 --> 00:01:57,749

specialist number one Michael Pfohl

25

00:02:03,359 --> 00:02:01,149

mission specialist dr. roles in the MS

26

00:02:07,020 --> 00:02:03,369

number two he's our flight engineer on

27

00:02:08,389 --> 00:02:07,030

this mission and there we have blad

28

00:02:10,559 --> 00:02:08,399

emeriti Tov

29

00:02:12,900 --> 00:02:10,569

making his first flight on the shuttle

30

00:02:16,920 --> 00:02:12,910

he spent one year onboard the MIR space

31

00:02:19,350 --> 00:02:16,930

station this is his third flight in

32

00:02:22,960 --> 00:02:21,400

and he'll be doing a lot of the

33

00:02:30,300 --> 00:02:22,970

communications between the shuttle and

34

00:02:53,250 --> 00:02:30,310

the mirror there's our first one pilot

35

00:02:53,260 --> 00:02:56,760

and

36

00:03:03,630 --> 00:03:00,230

Janice Voss making her second flight

37

00:03:07,830 --> 00:03:03,640

she's prime on the RMS with a Spartan

38

00:03:09,990 --> 00:03:07,840

retrieval on other things and that

39
00:03:16,050 --> 00:03:10,000
appears to be our commander Jim whether

40
00:03:24,150 --> 00:03:16,060
it be he's making his third flight on

41
00:03:31,950 --> 00:03:24,160
STS 63 at t-minus three hours in holding

42
00:03:43,710 --> 00:03:31,960
this is shuttle launch control and here

43
00:03:49,089 --> 00:03:46,720
strange weather be commander change

44
00:03:51,160 --> 00:03:49,099
whether he hunted Eileen Collins mission

45
00:03:55,619 --> 00:03:51,170
specialist michael foale specialist

46
00:04:01,030 --> 00:03:55,629
Dennis Ross dr. bernard harris and a

47
00:04:06,470 --> 00:04:03,920
standing by now to pick up the countdown

48
00:04:13,850 --> 00:04:06,480
we have about 15 seconds remaining in

49
00:04:15,830 --> 00:04:13,860
the hold and again we're not working any

50
00:04:20,030 --> 00:04:15,840
problems in the countdown tonight at all

51

00:04:22,310 --> 00:04:20,040

so far 4 3 2 1

52

00:04:31,520 --> 00:04:22,320

and we're at t-minus 3 hours and

53

00:04:34,250 --> 00:04:31,530

Counting this is shuttle launch control

54

00:04:36,650 --> 00:04:34,260

at t-minus two hours 41 minutes 30

55

00:04:39,140 --> 00:04:36,660

seconds and counting in the white room

56

00:04:41,780 --> 00:04:39,150

now we see commander Jim Weatherby being

57

00:04:44,810 --> 00:04:41,790

assisted with his launch and entry suit

58

00:04:50,720 --> 00:04:44,820

as he prepares to enter space shuttle

59

00:04:52,570 --> 00:04:50,730

discovery and Janus rather I think

60

00:05:08,170 --> 00:04:52,580

Collins will be sitting in the right

61

00:05:08,180 --> 00:05:13,520

t-minus four minutes

62

00:05:19,110 --> 00:05:16,890

preparing now to gimbal the main engines

63

00:05:29,329 --> 00:05:19,120

of the orbiter and the flight controls

64

00:05:37,919 --> 00:05:33,869

standing by to retract the been

65

00:05:39,809 --> 00:05:37,929

armed the Cox beanie cap yeah they're

66

00:05:48,389 --> 00:05:39,819

calling Emily and her fine no one

67

00:05:50,399 --> 00:05:48,399

expected their gaseous oxygen vent hood

68

00:06:00,200 --> 00:05:50,409

now being moved off the top of the tank

69

00:06:06,089 --> 00:06:02,489

I've got oxygen tank now it's like

70

00:06:08,100 --> 00:06:06,099

pressure discovery crew OTC close and

71

00:06:12,029 --> 00:06:08,110

lock your visors and initiate o2 flow

72

00:06:15,469 --> 00:06:12,039

have a good flight that's it work them

73

00:06:25,320 --> 00:06:18,299

anybody turn off the heaters on the

74

00:06:27,359 --> 00:06:25,330

solid rocket booster joints then we'll

75

00:06:30,959 --> 00:06:27,369

have a final check of the booster

76
00:06:34,409 --> 00:06:30,969
commands solid rocket booster nozzles

77
00:06:36,299 --> 00:06:34,419
being gimbaled t-minus 18 seconds solid

78
00:06:40,799 --> 00:06:36,309
rocket boosters armed sound suppression

79
00:06:44,489 --> 00:06:40,809
water system activated t-minus 10

80
00:06:47,429 --> 00:06:44,499
seconds go for main engine start main

81
00:06:50,969 --> 00:06:47,439
engines now started engines up and

82
00:06:54,089 --> 00:06:50,979
running three two one and liftoff of

83
00:06:55,739 --> 00:06:54,099
space shuttle Discovery on a mission to

84
00:07:00,529 --> 00:06:55,749
prepare for the next era of world

85
00:07:06,089 --> 00:07:04,019
Roger old is good you soon is now

86
00:07:08,489 --> 00:07:06,099
controlling discovery on its 20th trip

87
00:07:10,799 --> 00:07:08,499
to space discovery rolling on course for

88
00:07:12,749 --> 00:07:10,809

an orbit with the MIR space station Mir

89

00:07:20,730 --> 00:07:12,759

currently half a world away above the

90

00:07:25,359 --> 00:07:23,169

three ended on discovery now dawdling

91

00:07:27,850 --> 00:07:25,369

down to two thirds titled Discovery's

92

00:07:29,409 --> 00:07:27,860

altitude now 17 nautical miles 15

93

00:07:33,669 --> 00:07:29,419

nautical miles northeast of the Kennedy

94

00:07:35,379 --> 00:07:33,679

Space Center discovery traveling 2,800

95

00:07:36,999 --> 00:07:35,389

miles per hour flight controllers

96

00:07:52,320 --> 00:07:37,009

standing by for burnout and jettison of

97

00:07:56,110 --> 00:07:54,370

booster officer confirms a good

98

00:07:57,969 --> 00:07:56,120

separation in jettison the twin solid

99

00:09:04,240 --> 00:07:57,979

rockets discovery now in its second

100

00:09:15,630 --> 00:09:06,190

Wow did I see that we're predicting a

101

00:09:36,210 --> 00:09:24,460

fifteen PM let's go for me it's a start

102

00:10:00,320 --> 00:09:36,220

Alvin choking copy binge liftoff liftoff

103

00:10:12,500 --> 00:10:08,750

that's a visa copy SRB step and buy for

104

00:10:26,780 --> 00:10:12,510

two inch Intel mark discovery to engine

105

00:10:40,670 --> 00:10:29,870

performance nominal discovery

106

00:10:43,879 --> 00:10:40,680

performance nominal no action r 1u l 2d

107

00:10:46,639 --> 00:10:43,889

failed of discovery Houston domino Miko

108

00:10:48,860 --> 00:10:46,649

homes 1 is not required we also see our

109

00:11:29,290 --> 00:10:48,870

1u and l 2d felt off no action at this

110

00:11:29,300 --> 00:11:35,280

it was good please yes

111

00:11:40,710 --> 00:11:37,020

but the

112

00:15:48,500 --> 00:11:40,720

right here there's a pad that was where

113

00:15:53,130 --> 00:15:51,090

the guidance navigation and control

114

00:15:56,880 --> 00:15:53,140

officer here in Mission Control reports

115

00:15:59,010 --> 00:15:56,890

that the crew is completed their flight

116

00:16:01,290 --> 00:15:59,020

control systems checkout and data

117

00:16:03,120 --> 00:16:01,300

processing systems officer reports that

118

00:16:04,770 --> 00:16:03,130

the onboard flight control computers for

119

00:16:07,530 --> 00:16:04,780

discovery are now being transitioned

120

00:16:10,290 --> 00:16:07,540

from the checkout software they've been

121

00:16:14,610 --> 00:16:10,300

in for the past hour and 15 minutes back

122

00:16:19,650 --> 00:16:14,620

to the software that is the standard for

123

00:16:21,630 --> 00:16:19,660

orbital operations that checkout appear

124

00:16:23,660 --> 00:16:21,640

to go very well with no problems

125

00:16:26,430 --> 00:16:23,670

seen by flight controllers on the ground

126
00:16:41,019 --> 00:16:26,440
all of Discovery systems in good shape

127
00:17:01,720 --> 00:16:51,019
ok 1 3 D 2 & 3 D 3 recurring only is 3 D

128
00:17:06,559 --> 00:17:01,730
3 1 good and make right 81 82 and hd3

129
00:17:16,549 --> 00:17:06,569
after power all was green where green

130
00:17:19,759 --> 00:17:16,559
after 4 minutes right now red as an

131
00:17:23,029 --> 00:17:19,769
extension to the mid-deck of the space

132
00:17:25,250 --> 00:17:23,039
shuttle allowing a experiments bestowed

133
00:17:26,840 --> 00:17:25,260
along in the mid-deck lockers seen on

134
00:17:29,509 --> 00:17:26,850
the right hand side of this television

135
00:17:33,560 --> 00:17:29,519
view on board space had before this

136
00:18:07,930 --> 00:17:33,570
flight or 20 different experiments that

137
00:18:17,210 --> 00:18:13,909
go in Ming I just wish that the VIU cm

138
00:18:20,110 --> 00:18:17,220

and once again I have the same signature

139

00:18:25,430 --> 00:18:20,120

I must say I think it's the signal and

140

00:18:29,750 --> 00:18:25,440

not semester configuration ok thanks

141

00:18:32,060 --> 00:18:29,760

your efforts wakes we suggest you go to

142

00:18:34,100 --> 00:18:32,070

the other controller and as you know you

143

00:18:42,180 --> 00:18:34,110

are just pin it to the other actuator

144

00:18:50,080 --> 00:18:44,440

okay that's one will do thanks a lot

145

00:18:52,869 --> 00:18:50,090

Kate and clay I've cycled the circuit

146

00:19:08,230 --> 00:18:52,879

breaker on the SVU number one copy that

147

00:19:13,330 --> 00:19:10,870

and discovery Houston on camera Bravo

148

00:19:16,330 --> 00:19:13,340

we've had some last-minute requests from

149

00:19:19,180 --> 00:19:16,340

odor acts to do some adjusting for

150

00:19:26,170 --> 00:19:19,190

camera Bravo we're going to do that at

151

00:19:29,970 --> 00:19:26,180

this time no action project first one

152

00:19:37,830 --> 00:19:29,980

ways first here and there goes a dipole

153

00:19:46,780 --> 00:19:43,360

here's the third fear have a dipole and

154

00:19:48,970 --> 00:19:46,790

we cut up a velocity and we copy wax we

155

00:19:56,020 --> 00:19:48,980

watched it from the ground it was very

156

00:20:13,680 --> 00:19:56,030

interesting and we have camera D at this

157

00:20:37,650 --> 00:20:17,539

to discovery here comes the door closure

158

00:20:37,660 --> 00:22:18,360

moving

159

00:22:26,770 --> 00:22:22,299

discovery disregard the fourth rs-422 I

160

00:22:56,649 --> 00:22:26,780

got it down to a limiting that's good

161

00:23:02,080 --> 00:22:59,320

just got reduced and when somebody has a

162

00:23:04,149 --> 00:23:02,090

chance we'd like you to turn on tips we

163

00:24:15,409 --> 00:23:04,159

have a couple of messages to send up to

164

00:26:14,430 --> 00:24:25,110

one plus 325 stop manure rotation and

165

00:26:19,440 --> 00:26:16,020

good morning from the flight deck of

166

00:26:21,270 --> 00:26:19,450

discovery we're in preparations final

167

00:26:22,980 --> 00:26:21,280

preparations for our rendezvous with Mir

168

00:26:26,820 --> 00:26:22,990

which will occur in a couple hours we'll

169

00:26:28,170 --> 00:26:26,830

initiate the final portion and enter the

170

00:26:30,120 --> 00:26:28,180

checklist here in a couple of hours I

171

00:26:31,560 --> 00:26:30,130

thought I'd walk around the copper

172

00:26:33,390 --> 00:26:31,570

flutter around the cockpit and show you

173

00:26:36,020 --> 00:26:33,400

a little bit about what we'll be doing

174

00:26:38,640 --> 00:26:36,030

in the next four hours

175

00:26:40,230 --> 00:26:38,650

both Arlene and I will be up in the

176

00:26:41,370 --> 00:26:40,240

forward part of the flight deck in our

177

00:26:45,120 --> 00:26:41,380

seats

178

00:26:47,430 --> 00:26:45,130

for the first part of the rendezvous and

179

00:26:48,930 --> 00:26:47,440

let me step back just a second the very

180

00:26:51,600 --> 00:26:48,940

first maneuver that we accomplished for

181

00:26:54,210 --> 00:26:51,610

the rendezvous occurred and launch we

182

00:26:56,370 --> 00:26:54,220

waited until the launch pad was in the

183

00:26:58,920 --> 00:26:56,380

plane of the mirror and then we cooked

184

00:27:00,300 --> 00:26:58,930

we walked into that plane ever since

185

00:27:02,550 --> 00:27:00,310

launch we've been doing a couple of

186

00:27:04,830 --> 00:27:02,560

burns to optimize the trajectory in

187

00:27:06,060 --> 00:27:04,840

preparation for the rendezvous when we

188

00:27:08,100 --> 00:27:06,070

get into the final portion of the

189

00:27:11,100 --> 00:27:08,110

rendezvous timeline here in an hour -

190

00:27:12,120 --> 00:27:11,110

I'll even I will both be in our forward

191

00:27:14,520 --> 00:27:12,130

flight deck seats

192

00:27:16,320 --> 00:27:14,530

most of the burns that we accomplished

193

00:27:17,760 --> 00:27:16,330

at that point will be targeted by the

194

00:27:19,980 --> 00:27:17,770

ground or I guess all of them will be

195

00:27:21,780 --> 00:27:19,990

targeted by the ground it's all done

196

00:27:23,430 --> 00:27:21,790

automatically by computers we just

197

00:27:28,080 --> 00:27:23,440

verify the data and enter it into the

198

00:27:29,940 --> 00:27:28,090

key boards and then execute the burn as

199

00:27:30,420 --> 00:27:29,950

we get into the middle portion of the

200

00:27:34,800 --> 00:27:30,430

rendezvous

201
00:27:36,390 --> 00:27:34,810
it becomes ground targeted we have

202
00:27:38,160 --> 00:27:36,400
onboard steering but it's a manually

203
00:27:41,070 --> 00:27:38,170
flown burn will actually control the

204
00:27:43,560 --> 00:27:41,080
burn manually via that ground targeting

205
00:27:45,210 --> 00:27:43,570
eventually we'd go to onboard targeting

206
00:27:47,910 --> 00:27:45,220
where the sensors on board the vehicle

207
00:27:52,890 --> 00:27:47,920
are a little bit more accurate than the

208
00:27:54,390 --> 00:27:52,900
ground tracking solutions and so we do

209
00:27:55,980 --> 00:27:54,400
that mainly up here on the front part of

210
00:28:01,970 --> 00:27:55,990
the flight deck as we get into the final

211
00:28:06,840 --> 00:28:04,380
and we'll perform the last couple of

212
00:28:17,070 --> 00:28:06,850
burns before getting into proximity

213
00:28:19,740 --> 00:28:17,080

operations from the aft station I will

214

00:28:21,870 --> 00:28:19,750

be looking at the overhead windows

215

00:28:23,340 --> 00:28:21,880

facing backwards in the vehicle but of

216

00:28:25,019 --> 00:28:23,350

course in space everything is relative

217

00:28:27,480 --> 00:28:25,029

so it doesn't matter we have a set of

218

00:28:30,180 --> 00:28:27,490

controls back here and we can fly

219

00:28:32,519 --> 00:28:30,190

translations of our vehicle with this

220

00:28:34,169 --> 00:28:32,529

hand controller and rotations from this

221

00:28:39,210 --> 00:28:34,179

hand controller although the rotations

222

00:28:41,190 --> 00:28:39,220

are typically all done automatically we

223

00:28:44,490 --> 00:28:41,200

will acquire visual sight of the MIR at

224

00:28:47,669 --> 00:28:44,500

this overhead window and I have a coax

225

00:28:49,289 --> 00:28:47,679

sight or a hard mounted manual sight in

226
00:28:50,970 --> 00:28:49,299
the overhead window when all else fails

227
00:28:53,519 --> 00:28:50,980
mike is gonna tell you a little bit

228
00:28:55,860 --> 00:28:53,529
about his magic devices in his ranging

229
00:28:58,830 --> 00:28:55,870
sensors when all else fails if they

230
00:29:00,600 --> 00:28:58,840
start acting funny or the radar starts

231
00:29:03,690 --> 00:29:00,610
walking around on the rear giving us bad

232
00:29:05,610 --> 00:29:03,700
navigation we always have the old iron

233
00:29:07,590 --> 00:29:05,620
sight at the top window which never

234
00:29:09,060 --> 00:29:07,600
moves and there's no software and so

235
00:29:13,799 --> 00:29:09,070
it's a reliable piece of gear and we

236
00:29:15,500 --> 00:29:13,809
just fly visually as we panel up around

237
00:29:17,909 --> 00:29:15,510
over to the port side of the vehicle

238
00:29:19,680 --> 00:29:17,919

I'll take the camera and a lot for the

239

00:29:25,440 --> 00:29:19,690

mic to Mike and he'll tell you a little

240

00:29:27,990 --> 00:29:25,450

bit about his magic senses and Houston

241

00:29:29,279 --> 00:29:28,000

while jim is over there on the starboard

242

00:29:33,810 --> 00:29:29,289

side looking out over the overhead

243

00:29:35,310 --> 00:29:33,820

window table that way basically Adam and

244

00:29:39,029 --> 00:29:35,320

myself and Eileen will be on the flight

245

00:29:40,980 --> 00:29:39,039

deck supporting him and we'll be in the

246

00:29:43,649 --> 00:29:40,990

rendezvous tools these are computers

247

00:29:48,870 --> 00:29:43,659

that we have sent out specifically that

248

00:29:50,850 --> 00:29:48,880

will allow us to plot Roger yeah what

249

00:29:52,049 --> 00:29:50,860

have to actually displays from our

250

00:29:54,450 --> 00:29:52,059

different sensors that are in the

251
00:29:57,340 --> 00:29:54,460
payload Bay I actually have a handheld

252
00:30:13,130 --> 00:29:59,889
and I will be pointing it up out of the

253
00:30:16,940 --> 00:30:15,650
and this handheld laser is really no

254
00:30:19,669 --> 00:30:16,950
different from anything that the police

255
00:30:22,370 --> 00:30:19,679
would use to do traffic to traffic

256
00:30:24,410 --> 00:30:22,380
patrol monitoring and we can basically

257
00:30:25,940 --> 00:30:24,420
point it out of the window and pull the

258
00:30:27,860 --> 00:30:25,950
trigger and I get a readout on the back

259
00:30:30,410 --> 00:30:27,870
of it as to how far away the mirror will

260
00:30:32,570 --> 00:30:30,420
be and also how fast Jim is closing on

261
00:30:35,230 --> 00:30:32,580
it and in fact when I pull the trigger

262
00:30:38,150 --> 00:30:35,240
it will actually be displayed back here

263
00:30:39,860 --> 00:30:38,160

on these computers and I can take those

264

00:30:42,500 --> 00:30:39,870

arrange marks and put them into the

265

00:30:43,850 --> 00:30:42,510

computer and get an idea as to how our

266

00:30:46,490 --> 00:30:43,860

trajectory towards the mirror is

267

00:30:48,730 --> 00:30:46,500

progressing this is Mission Control

268

00:30:51,470 --> 00:30:48,740

Houston we continue to receive a

269

00:30:54,470 --> 00:30:51,480

television image from Discovery as a

270

00:30:58,730 --> 00:30:54,480

discovery passes to the west of

271

00:31:00,080 --> 00:30:58,740

Australia over the MIR space station

272

00:31:03,650 --> 00:31:00,090

currently lying

273

00:31:08,060 --> 00:31:03,660

less than 200 nautical miles ahead Mir

274

00:31:10,250 --> 00:31:08,070

is the steady bright light located in

275

00:31:13,549 --> 00:31:10,260

the upper half of upper center of the

276
00:31:15,530 --> 00:31:13,559
television image discovery just moving

277
00:31:20,990 --> 00:31:15,540
into sunset also visible in the image

278
00:31:25,909 --> 00:31:21,000
are pieces of ice and fuel that is

279
00:31:28,039 --> 00:31:25,919
leaked from steering jets and also other

280
00:31:29,659 --> 00:31:28,049
such items that remain with the shuttle

281
00:31:33,260 --> 00:31:29,669
as it circles in orbit and are very

282
00:31:36,230 --> 00:31:33,270
visible during at times of sunrise and

283
00:31:41,270 --> 00:31:36,240
sunset those particles show up very

284
00:31:53,019 --> 00:31:41,280
brightly discovering good config go for

285
00:31:53,029 --> 00:32:12,880
I check over the birth

286
00:32:18,620 --> 00:32:15,410
configuration

287
00:32:29,589 --> 00:32:18,630
integration right now it's like station

288
00:32:41,680 --> 00:32:31,879

and he's interstellar you have my best

289

00:32:51,070 --> 00:32:44,209

can discovery when it kind of those feet

290

00:32:51,080 --> 00:32:59,769

five thousand and twenty three Houston

291

00:33:06,379 --> 00:33:03,649

and Houston discovery the LTI up the

292

00:33:08,269 --> 00:33:06,389

docking port is four to four and TCS is

293

00:33:35,110 --> 00:33:08,279

showing four to eight says about what we

294

00:33:35,120 --> 00:34:31,790

probably

295

00:34:31,800 --> 00:34:45,470

build a lineage official Shaukat minimum

296

00:35:19,370 --> 00:34:49,669

houston when can you get cameras again

297

00:35:31,800 --> 00:35:21,779

elevating depends on what reflective

298

00:35:42,780 --> 00:35:33,360

carry on our camera we temporarily

299

00:36:12,700 --> 00:35:46,440

what the great at o'clock you see ya

300

00:36:18,540 --> 00:36:12,710

happy wings oh - Krishna

301
00:37:25,340 --> 00:36:26,590
you're gonna have to get in let me know

302
00:37:25,350 --> 00:37:45,020
basil and

303
00:37:45,030 --> 00:37:54,400
pretty good now oops stop that

304
00:38:08,350 --> 00:37:56,890
one of those posters you're doing there

305
00:38:08,360 --> 00:38:36,459
585

306
00:38:46,339 --> 00:38:41,900
whatever you thought discovery has

307
00:39:06,900 --> 00:38:46,349
started a slow ascent from the velocity

308
00:39:15,460 --> 00:39:11,640
what better get my masters what about my

309
00:39:17,650 --> 00:39:15,470
discovery discovery for melodeon closer

310
00:39:20,380 --> 00:39:17,660
together we are bringing our nation's

311
00:39:22,240 --> 00:39:20,390
closer together the next time we

312
00:39:24,520 --> 00:39:22,250
approach we will shake your hand but

313
00:39:25,770 --> 00:39:24,530

together we will lead our world into the

314

00:39:28,450 --> 00:39:25,780

next millennium

315

00:39:32,230 --> 00:39:28,460

can we please leave

316

00:39:35,410 --> 00:39:32,240

Nazi cosmic Ischia Corellia sack please

317

00:39:39,180 --> 00:39:35,420

please Julie masse Nazi before the u s--

318

00:39:42,760 --> 00:39:39,190

t r-- us cut down waves that seems yes

319

00:39:46,150 --> 00:39:42,770

wave by smell through Blue Goose looky

320

00:39:51,580 --> 00:39:46,160

here yes yeah flaky on this photo you

321

00:39:58,980 --> 00:39:51,590

see a CC toilet yeah for the computer

322

00:40:05,830 --> 00:40:02,080

really serious release because what sort

323

00:40:16,410 --> 00:40:05,840

of a deal in Florida possibly stability

324

00:40:23,880 --> 00:40:19,240

meanwhile we're getting live pictures

325

00:40:32,860 --> 00:40:29,910

this is physician dr. valaria Polyakov

326

00:40:44,520 --> 00:40:32,870

he currently has the record for the most

327

00:40:53,880 --> 00:40:51,010

go ahead discovering yes the sun came up

328

00:40:57,090 --> 00:40:53,890

they were in the maneuver of course and

329

00:41:01,000 --> 00:40:57,100

they're firing jets we're firing yet

330

00:41:02,920 --> 00:41:01,010

their arrays are moving it was acquitted

331

00:41:09,970 --> 00:41:02,930

it as a little puffy group the beautiful

332

00:41:13,910 --> 00:41:09,980

side it's a great world it is a great

333

00:41:17,760 --> 00:41:13,920

world wings up there in down here

334

00:41:24,780 --> 00:41:17,770

so cut cutter with precious become trash

335

00:41:36,390 --> 00:41:24,790

supremacy centric remark is made to

336

00:41:42,820 --> 00:41:39,820

spasiba I want to say that beer is very

337

00:41:46,390 --> 00:41:42,830

beautiful and it was very exciting

338

00:41:55,270 --> 00:41:46,400

and we are very happy to meet you in the

339

00:41:59,860 --> 00:41:55,280

sky was terrible was discovery total

340

00:42:04,030 --> 00:41:59,870

illegality in Episode three approval

341

00:42:07,470 --> 00:42:04,040

ratings of the desire start fever who is

342

00:42:16,630 --> 00:42:07,480

the rate of caribou in Komodo

343

00:42:30,920 --> 00:42:16,640

she was Armando Virginia fever you are

344

00:42:48,680 --> 00:42:35,480

that's the god yes pursue that yes yes

345

00:43:02,010 --> 00:42:51,690

discovery a magnificent picture mere

346

00:43:06,029 --> 00:43:02,020

crossing the horizon now we should have

347

00:43:29,080 --> 00:43:06,039

it on IMAX also as we certainly have it

348

00:43:29,090 --> 00:43:33,330

uh

349

00:43:38,370 --> 00:43:37,180

resmio Swiss dot Eliminator passar upon

350

00:43:45,340 --> 00:43:38,380

a tree shaker

351
00:43:48,400 --> 00:43:45,350
Kokua Elia karoku of Equestria nachos

352
00:43:57,070 --> 00:43:48,410
Rebecca through the equal as wellit's

353
00:44:06,820 --> 00:43:57,080
ever asked my virginity and we think

354
00:44:10,260 --> 00:44:06,830
will have good angles with TCS okay as

355
00:44:17,190 --> 00:44:10,270
minus two point one L is one point zero

356
00:44:22,600 --> 00:44:19,600
pthen we are saying absolutely no much

357
00:44:29,200 --> 00:44:22,610
to be raised from where we float round

358
00:44:31,270 --> 00:44:29,210
of Agape understand top knee Wang's new

359
00:44:34,270 --> 00:44:31,280
points item alleged confirms that from

360
00:44:38,100 --> 00:44:34,280
their position I don't think that dot to

361
00:44:47,950 --> 00:44:38,110
the right of the orbiter is Venus okay

362
00:44:51,820 --> 00:44:47,960
discovery from wanks Kay Eileen we have

363
00:44:54,400 --> 00:44:51,830

been watching on the flight deck and we

364

00:44:56,620 --> 00:44:54,410

have been looking at your smiles so some

365

00:45:00,850 --> 00:44:56,630

of this information may have gotten to

366

00:45:07,900 --> 00:45:00,860

you by another means but you are go to

367

00:45:11,110 --> 00:45:07,910

approach to ten meters thank you very

368

00:45:14,710 --> 00:45:11,120

much story and everybody who worked the

369

00:45:16,750 --> 00:45:14,720

issue again thank you very much you're

370

00:45:30,780 --> 00:45:16,760

welcome and thank you for all you have

371

00:45:35,820 --> 00:45:33,690

and discovery Houston is hand over down

372

00:45:38,430 --> 00:45:35,830

here and hand over time down here in the

373

00:45:42,030 --> 00:45:38,440

control center rod and mark will take it

374

00:45:44,790 --> 00:45:42,040

from here all and I have had a pleasure

375

00:45:46,770 --> 00:45:44,800

putting their things together I have a

376

00:45:48,480 --> 00:45:46,780

great time enjoy the view outside and

377

00:45:51,020 --> 00:45:48,490

heads up watch out for that first step

378

00:45:52,920 --> 00:45:51,030

it's a long one

379

00:45:55,050 --> 00:45:52,930

Harrison fuller currently going through

380

00:45:56,310 --> 00:45:55,060

checkouts of their space suits to ensure

381

00:45:59,310 --> 00:45:56,320

that they're in a good working order

382

00:46:01,260 --> 00:45:59,320

before and before they begin a pre

383

00:46:10,100 --> 00:46:01,270

breathe in of pure oxygen that will last

384

00:46:19,200 --> 00:46:15,290

that this view showing a microphone

385

00:46:33,610 --> 00:46:19,210

suited up in the airlock and a Nord

386

00:46:40,000 --> 00:46:37,930

once again mike foale is evreyone and is

387

00:47:05,400 --> 00:46:40,010

wearing red stripes on the legs of his

388

00:47:11,230 --> 00:47:09,040

mission specialist Mike Foale is has

389

00:47:14,050 --> 00:47:11,240

completed installing the large handling

390

00:47:16,390 --> 00:47:14,060

tool on the Spartan spacecraft he will

391

00:47:18,550 --> 00:47:16,400

now go to a point where he will be able

392

00:47:21,610 --> 00:47:18,560

to ingress the portable foot restraint

393

00:47:24,400 --> 00:47:21,620

on the end of the robot arm Bernard

394

00:47:26,290 --> 00:47:24,410

Harris is currently installing a small

395

00:47:29,800 --> 00:47:26,300

handling tool on the other side of

396

00:47:32,590 --> 00:47:29,810

Spartan mission specialist Vladimir teed

397

00:47:35,740 --> 00:47:32,600

off will now maneuver the robot arm to a

398

00:47:37,990 --> 00:47:35,750

position where the two spacewalking

399

00:47:44,110 --> 00:47:38,000

astronauts are well above the payload

400

00:47:54,850 --> 00:47:44,120

Bay this will put them in an environment

401
00:47:57,700 --> 00:47:54,860
that is as cold as possible babies put

402
00:48:01,150 --> 00:47:57,710
on with your feet against hardware's yes

403
00:48:03,550 --> 00:48:01,160
some thermal transfer I think that's a

404
00:48:54,210 --> 00:48:03,560
which i think is very relevant for the

405
00:49:03,780 --> 00:48:56,790
I copy that I am featur like to release

406
00:49:07,730 --> 00:49:03,790
off my mark 3 - well with Italy's

407
00:49:10,230 --> 00:49:07,740
Michael good movie

408
00:49:15,120 --> 00:49:10,240
lieutenant hole a spark Pines clear

409
00:49:15,990 --> 00:49:15,130
beautiful after that I felt the springs

410
00:49:18,510 --> 00:49:16,000
push up on it

411
00:49:22,020 --> 00:49:18,520
yep I have tripped up over Missy and

412
00:49:24,390 --> 00:49:22,030
Mike okay I'm gonna lift it out of the

413
00:49:26,400 --> 00:49:24,400

guides very pretty I am I in the guides

414

00:49:28,800 --> 00:49:26,410

on that I saw your two inches of ever

415

00:49:30,770 --> 00:49:28,810

guides on my side and seemed to be

416

00:49:32,940 --> 00:49:30,780

flipped toward me

417

00:49:34,500 --> 00:49:32,950

that's correct Mike here a little bit

418

00:49:39,800 --> 00:49:34,510

lower on your side and I remembered

419

00:49:41,580 --> 00:49:39,810

outside okay discovery coming up

420

00:49:43,650 --> 00:49:41,590

unfortunately we're a minute and a half

421

00:49:47,970 --> 00:49:43,660

to Teeter cell OS get you back at nine

422

00:49:50,640 --> 00:49:47,980

hours and five minutes I can you have

423

00:49:54,600 --> 00:49:50,650

your hands full all together that's the

424

00:49:56,430 --> 00:49:54,610

best way to do it and like one action

425

00:50:01,670 --> 00:49:56,440

for you it to help you warm up if you

426

00:50:10,590 --> 00:50:04,470

Michael I am ready hit superhuman

427

00:50:17,940 --> 00:50:10,600

I am ready buddy okay so forward that's

428

00:50:20,280 --> 00:50:17,950

good continue okay I'll leave my left

429

00:50:23,010 --> 00:50:20,290

header is closed on a lock on the long

430

00:50:24,480 --> 00:50:23,020

run okay I copy that next is to

431

00:50:39,840 --> 00:50:24,490

disconnect your slide water safety

432

00:50:49,790 --> 00:50:39,850

tether from the intersector okay got it

433

00:50:49,800 --> 00:55:26,819

either

434

00:55:33,520 --> 00:55:29,729

both in the semester pink comes on a lot

435

00:55:33,530 --> 00:55:36,850

tonight

436

00:55:36,860 --> 00:57:12,270

we know him

437

00:57:18,330 --> 00:57:15,960

landing gears down and locked

438

00:57:22,710 --> 00:57:18,340

main gear touchdown

439

00:57:22,720 --> 00:57:30,210

standing by for drag chute deploy

440

00:57:36,180 --> 00:57:33,150

nose gear touchdown discovery rolling

441

00:58:39,839 --> 00:57:36,190

out after three million miles in 130

442

00:58:44,589 --> 00:58:42,790

roger wheelstop discovery welcome home

443

00:58:46,750 --> 00:58:44,599

and congratulations on an outstanding

444

00:59:10,300 --> 00:58:46,760

mission y'all did a terrific job up

445

00:59:16,270 --> 00:59:13,600

so Chauncey CSS all axes reach about

446

00:59:18,550 --> 00:59:16,280

3,000 feet low there's going 80 more

447

00:59:28,420 --> 00:59:18,560

with the winning discovery I will put

448

00:59:30,190 --> 00:59:28,430

you all low at the 180 Discovery on

449

00:59:32,140 --> 00:59:30,200

glide slope and centerline surface winds