



1
00:01:49,429 --> 00:00:03,830
hi i'm tony antonelli of the sts-132

2
00:01:55,030 --> 00:01:51,350
good morning atlantis a special good

3
00:01:57,429 --> 00:01:55,040
morning to you today tony

4
00:01:59,910 --> 00:01:57,439
good morning houston it's a great place

5
00:02:01,109 --> 00:01:59,920
to wake up and uh now a great song to

6
00:02:03,990 --> 00:02:01,119
wake up to

7
00:02:06,469 --> 00:02:04,000
like to say thanks to my family janine

8
00:02:08,630 --> 00:02:06,479
michael and danny and then also that was

9
00:02:10,949 --> 00:02:08,640
a little shout out to marshall space

10
00:02:17,670 --> 00:02:10,959
flight center for all they do to get the

11
00:02:21,750 --> 00:02:20,790
atlantis good config for the burn

12
00:02:23,270 --> 00:02:21,760
cappy

13
00:02:26,229 --> 00:02:23,280

and we're looking at space station on

14

00:02:28,390 --> 00:02:26,239

the nose in the daytime it's pretty cool

15

00:02:29,750 --> 00:02:28,400

yeah and uh stations look got a camera

16

00:02:32,630 --> 00:02:29,760

on you and we're looking right back at

17

00:02:34,710 --> 00:02:32,640

you it's pretty cool from here as well

18

00:02:36,630 --> 00:02:34,720

awesome

19

00:02:39,270 --> 00:02:36,640

two engines will fire for one minute

20

00:02:41,670 --> 00:02:39,280

three seconds uh changing the velocity

21

00:02:43,350 --> 00:02:41,680

by a hundred feet per second or about 68

22

00:02:45,990 --> 00:02:43,360

miles per hour

23

00:02:49,350 --> 00:02:46,000

this will raise the perigee or the low

24

00:02:52,710 --> 00:02:49,360

end of atlantis orbit from 145 up to 210

25

00:02:56,790 --> 00:02:52,720

statute miles and the apogee or high end

26

00:03:02,630 --> 00:02:56,800

of atlantis orbit from 212 up to 214

27

00:03:09,270 --> 00:03:06,070

a clear view of the start of the

28

00:03:11,589 --> 00:03:09,280

nc4 burn with both engines firing again

29

00:03:16,149 --> 00:03:11,599

this is a little more than one minute

30

00:03:19,350 --> 00:03:17,350

aboard

31

00:03:22,710 --> 00:03:19,360

space shuttle atlantis up on the flight

32

00:03:25,190 --> 00:03:22,720

deck uh mission specialist piers sellers

33

00:03:27,030 --> 00:03:25,200

there on the left

34

00:03:30,149 --> 00:03:27,040

mission specialist steve bowen one of

35

00:03:32,309 --> 00:03:30,159

the space walkers you see his back to

36

00:03:59,750 --> 00:03:32,319

the camera on the right in this view

37

00:04:05,509 --> 00:04:02,869

atlantis good config for the burn

38

00:04:10,869 --> 00:04:08,309

this will be a 12 second

39

00:04:13,670 --> 00:04:10,879

firing of the left orbital maneuvering

40

00:04:16,229 --> 00:04:13,680

system engine a delta v or total change

41

00:04:17,909 --> 00:04:16,239

in velocity of 9.6 feet per second or

42

00:04:33,189 --> 00:04:17,919

about six and a half

43

00:04:33,199 --> 00:04:42,629

good burn atlantis

44

00:04:47,030 --> 00:04:44,870

first views using the uh

45

00:04:49,510 --> 00:04:47,040

sequential still

46

00:04:51,110 --> 00:04:49,520

photo imagery from space shuttle

47

00:04:52,629 --> 00:04:51,120

atlantis of the international space

48

00:04:57,590 --> 00:04:52,639

station the

49

00:04:58,870 --> 00:04:57,600

current range is just under 39 000 feet

50

00:05:04,150 --> 00:04:58,880

about seven

51
00:05:09,510 --> 00:05:06,870
the space shuttle and the space station

52
00:05:12,390 --> 00:05:09,520
should be moving into an orbital sunrise

53
00:05:34,070 --> 00:05:12,400
as they approach the central upper

54
00:05:34,080 --> 00:05:43,590
thank you

55
00:05:48,469 --> 00:05:46,469
the international space station a still

56
00:05:51,110 --> 00:05:48,479
image taken

57
00:05:53,990 --> 00:05:51,120
from space shuttle atlantis

58
00:05:54,000 --> 00:06:33,670
2600 feet

59
00:06:39,029 --> 00:06:36,870
700 feet directly beneath the

60
00:06:41,990 --> 00:06:39,039
international space station space

61
00:06:43,590 --> 00:06:42,000
shuttle atlantis on its 32nd voyage into

62
00:06:47,830 --> 00:06:43,600
space

63
00:06:50,309 --> 00:06:47,840

station from underneath

64

00:06:52,870 --> 00:06:50,319

in the payload bay all of the equipment

65

00:06:54,629 --> 00:06:52,880

that will be left behind

66

00:06:57,110 --> 00:06:54,639

on the international space station in

67

00:07:00,550 --> 00:06:57,120

the forward portion of the payload bay

68

00:07:01,350 --> 00:07:00,560

of course the docking system

69

00:07:04,150 --> 00:07:01,360

and

70

00:07:08,870 --> 00:07:04,160

next is the uh integrated cargo carrier

71

00:07:13,909 --> 00:07:08,880

housing a new space to ground antenna

72

00:07:19,270 --> 00:07:16,950

swapped the new ones for the existing

73

00:07:20,710 --> 00:07:19,280

batteries on the p6 truss element of the

74

00:07:23,430 --> 00:07:20,720

station

75

00:07:25,670 --> 00:07:23,440

in the back end did the russian mini

76

00:07:37,909 --> 00:07:25,680

research module rasviet the russian word

77

00:07:43,830 --> 00:07:40,150

and stationed in houston atlantis is

78

00:07:45,110 --> 00:07:43,840

initiating the rpm in two

79

00:07:49,270 --> 00:07:45,120

mark

80

00:07:52,230 --> 00:07:50,070

the

81

00:07:55,189 --> 00:07:52,240

r bar pitch maneuver underway under

82

00:08:05,110 --> 00:07:55,199

control and command of shuttle commander

83

00:08:09,749 --> 00:08:07,189

that

84

00:08:13,110 --> 00:08:09,759

maneuver initiated just as the two

85

00:08:15,350 --> 00:08:13,120

spacecraft crossed the southern coast of

86

00:08:17,909 --> 00:08:15,360

portugal the swing

87

00:08:20,550 --> 00:08:17,919

will take it across spain

88

00:08:24,230 --> 00:08:20,560

and france and then out across central

89

00:08:31,990 --> 00:08:27,430

northern portions of italy and then out

90

00:08:32,000 --> 00:09:45,110

poland before swinging out across russia

91

00:09:49,990 --> 00:09:47,829

station crew given the go to start the

92

00:09:52,550 --> 00:09:50,000

photos there's conducting the

93

00:09:55,509 --> 00:09:52,560

photography across the entire

94

00:10:23,670 --> 00:09:55,519

underside of atlantis's thermal

95

00:10:31,269 --> 00:10:28,310

and atlantis is now approaching the

96

00:10:33,590 --> 00:10:31,279

the velocity vector directly in front of

97

00:10:40,150 --> 00:10:33,600

the docking port the pressurized mating

98

00:10:43,990 --> 00:10:42,230

atlantis and station on the big loop on

99

00:10:47,590 --> 00:10:44,000

behalf of both the shuttle and station

100

00:10:49,990 --> 00:10:47,600

flight control rooms your go for docking

101
00:11:25,190 --> 00:10:50,000
atlanta's copies go for docking thank

102
00:11:25,200 --> 00:11:31,110
ten feet

103
00:11:31,120 --> 00:11:38,069
post contact thrust is armed

104
00:11:38,079 --> 00:11:49,110
standing by for contact and capture

105
00:11:49,120 --> 00:11:55,190
houston and station capture confirmed

106
00:11:58,870 --> 00:11:57,829
atlantis uh station knight swedish

107
00:12:03,110 --> 00:11:58,880
developer

108
00:12:11,829 --> 00:12:07,990
gabby station free drift thanks luigi

109
00:12:17,590 --> 00:12:13,030
stational

110
00:12:21,670 --> 00:12:20,230
220 miles above the south pacific

111
00:12:23,750 --> 00:12:21,680
atlantis has arrived at the

112
00:12:26,389 --> 00:12:23,760
international space station the first

113
00:12:28,870 --> 00:12:26,399

visit of atlantis in six months since

114

00:12:30,389 --> 00:12:28,880

the sts-129 mission

115

00:12:31,430 --> 00:12:30,399

last november

116

00:12:34,470 --> 00:12:31,440

the

117

00:12:35,670 --> 00:12:34,480

docking took place at 9 28 a.m central

118

00:12:38,069 --> 00:12:35,680

time

119

00:12:40,389 --> 00:12:38,079

one day 20 hours 8 minutes into

120

00:13:25,269 --> 00:12:40,399

atlanta's voyage to the international

121

00:13:29,269 --> 00:13:26,870

this is mission control houston the

122

00:13:32,710 --> 00:13:29,279

hatches between the two spacecraft now

123

00:13:35,829 --> 00:13:32,720

open 11 18 a.m central time one day 21

124

00:13:36,790 --> 00:13:35,839

hours 58 minutes into atlantis's mission

125

00:13:38,870 --> 00:13:36,800

the

126

00:13:40,470 --> 00:13:38,880

official joint operations between

127

00:13:41,990 --> 00:13:40,480

atlantis and the international space

128

00:13:46,310 --> 00:13:42,000

station begins

129

00:13:47,990 --> 00:13:46,320

the complex orbiting 212 miles

130

00:13:50,150 --> 00:13:48,000

above the uh

131

00:13:52,629 --> 00:13:50,160

upper northeastern portion of the

132

00:13:54,550 --> 00:13:52,639

pacific ocean as uh atlantis and the

133

00:13:56,790 --> 00:13:54,560

international space station track off

134

00:13:59,269 --> 00:13:56,800

the coast of ecuador

135

00:14:43,590 --> 00:13:59,279

just about to fly high above panama and

136

00:14:48,230 --> 00:14:46,230

commander ken ham

137

00:15:09,670 --> 00:14:48,240

second visit to the international space

138

00:15:12,949 --> 00:15:10,949

next is

139

00:15:15,509 --> 00:15:12,959

michael good his first visit to the

140

00:15:18,629 --> 00:15:15,519

international space station his second

141

00:15:20,949 --> 00:15:18,639

mission in space he flew aboard atlantis

142

00:15:23,430 --> 00:15:20,959

a year ago this month

143

00:15:27,509 --> 00:15:23,440

as part of the hubble space telescope

144

00:15:30,629 --> 00:15:27,519

servicing mission crew on sts-125

145

00:15:35,110 --> 00:15:33,509

an expedition 1617 crew member very

146

00:15:38,310 --> 00:15:35,120

familiar with the international space

147

00:15:44,870 --> 00:15:41,590

his second visit to the complex

148

00:15:46,670 --> 00:15:44,880

behind him pilot tony antonelli

149

00:16:57,590 --> 00:15:46,680

he flew as part of the

150

00:16:57,600 --> 00:17:04,630

great

151

00:17:10,069 --> 00:17:07,110

and again it's our pleasure to

152

00:17:11,909 --> 00:17:10,079

welcome them and so see them here and so

153

00:17:14,470 --> 00:17:11,919

really really glad and so that's a

154

00:17:21,750 --> 00:17:14,480

really big event for us and bringing us

155

00:17:26,150 --> 00:17:23,829

and for almost all of us on board

156

00:17:28,230 --> 00:17:26,160

atlantis we've been here before but it's

157

00:17:30,230 --> 00:17:28,240

bigger than we remember and

158

00:17:38,950 --> 00:17:30,240

speaking for myself better than i

159

00:17:42,710 --> 00:17:40,870

we'll start with my name we're going to

160

00:17:45,990 --> 00:17:42,720

go to columbus

161

00:17:48,870 --> 00:17:46,000

station and i touched russian side very

162

00:17:50,950 --> 00:17:48,880

very slightly just show the general

163

00:17:55,270 --> 00:17:50,960

aspects of the russian segment and again

164

00:18:22,230 --> 00:17:57,110

yeah you won't use the russian media to

165

00:18:25,270 --> 00:18:23,430

and same for you if you want to come

166

00:18:26,950 --> 00:18:25,280

over to the midnight please come over

167

00:18:28,310 --> 00:18:26,960

anytime you want

168

00:18:29,669 --> 00:18:28,320

for the flight deck just make sure one

169

00:18:32,470 --> 00:18:29,679

of us is around

170

00:19:08,950 --> 00:18:34,070

so we'll start with

171

00:19:08,960 --> 00:19:32,390

nearly on the starboard side um

172

00:19:35,430 --> 00:19:34,150

the robotics officer inside the space

173

00:19:37,270 --> 00:19:35,440

station flight control room is

174

00:19:38,870 --> 00:19:37,280

confirming that

175

00:19:40,870 --> 00:19:38,880

the integrated cargo carrier is now

176
00:19:42,549 --> 00:19:40,880
being lifted out of atlantis payload bay

177
00:19:45,990 --> 00:19:42,559
the retention latches that held it down

178
00:19:49,110 --> 00:19:47,590
so the station's arm is now in control

179
00:19:50,310 --> 00:19:49,120
of lifting that out and flying it over

180
00:19:51,909 --> 00:19:50,320
to uh

181
00:19:55,350 --> 00:19:51,919
where it will shortly be installed on

182
00:19:58,710 --> 00:19:57,350
this cargo carrier has spare parts on

183
00:20:00,070 --> 00:19:58,720
both the front and the back side of it

184
00:20:01,270 --> 00:20:00,080
on the back side of the batteries that

185
00:20:04,149 --> 00:20:01,280
will be installed on the second the

186
00:20:06,070 --> 00:20:04,159
third spacewalk of this mission

187
00:20:07,510 --> 00:20:06,080
on the front side is the spare space to

188
00:20:11,029 --> 00:20:07,520

ground antenna which you can see

189

00:20:15,669 --> 00:20:12,789

along with it is its boom that it will

190

00:20:17,430 --> 00:20:15,679

be installed upon

191

00:20:19,190 --> 00:20:17,440

there's also a brand new work site for

192

00:20:20,549 --> 00:20:19,200

the dexter

193

00:20:22,710 --> 00:20:20,559

robotic

194

00:20:25,029 --> 00:20:22,720

system that is uh also there it has

195

00:20:27,590 --> 00:20:25,039

three different sides on it that dexter

196

00:20:28,950 --> 00:20:27,600

can basically stand on top of and use

197

00:20:30,310 --> 00:20:28,960

the different sides to store the

198

00:20:31,430 --> 00:20:30,320

different parts that it's working on so

199

00:20:33,510 --> 00:20:31,440

that it can free up its arms and

200

00:20:34,630 --> 00:20:33,520

continue its work

201
00:20:36,149 --> 00:20:34,640
all of this will be installed on the

202
00:20:42,310 --> 00:20:36,159
first spacewalk of the mission which

203
00:20:47,190 --> 00:20:43,909
ready to go

204
00:20:47,200 --> 00:21:09,750
houston's ready

205
00:21:12,789 --> 00:21:11,270
there at the top left hand corner of the

206
00:21:15,430 --> 00:21:12,799
screen you can see the sphere space to

207
00:21:16,789 --> 00:21:15,440
ground antenna that is its boom

208
00:21:19,750 --> 00:21:16,799
that is laying there from left to right

209
00:21:21,350 --> 00:21:19,760
at the very bottom of this cargo pallet

210
00:21:23,350 --> 00:21:21,360
that space to ground antenna is about

211
00:21:27,190 --> 00:21:23,360
six feet by six feet wide just to give

212
00:21:29,190 --> 00:21:27,200
you a sense of exactly how big it is

213
00:21:31,669 --> 00:21:29,200

as the station's robotic arm continues

214

00:21:33,510 --> 00:21:31,679

to move this cargo pallet

215

00:21:34,710 --> 00:21:33,520

up toward the mobile base structure the

216

00:21:36,870 --> 00:21:34,720

station and the shuttle are currently

217

00:21:38,070 --> 00:21:36,880

over the pacific ocean

218

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

they're heading toward the northeast

219

00:21:42,070 --> 00:21:39,760

they'll soon be crossing the western

220

00:21:44,789 --> 00:21:42,080

edge of mexico and crossing out over

221

00:21:46,230 --> 00:21:44,799

parts of new mexico and texas

222

00:21:56,310 --> 00:21:46,240

and then continuing to head toward the

223

00:21:59,669 --> 00:21:57,669

you can see the quest airlock there on

224

00:22:00,870 --> 00:21:59,679

the far right hand portion of the screen

225

00:22:02,789 --> 00:22:00,880

there

226

00:22:04,149 --> 00:22:02,799

and that is also going to be uh the

227

00:22:07,029 --> 00:22:04,159

scene of quite a bit of activity over

228

00:22:08,950 --> 00:22:07,039

the next couple of hours

229

00:22:11,110 --> 00:22:08,960

as the crew gets ready to review the

230

00:22:12,870 --> 00:22:11,120

procedures for tomorrow's spacewalk this

231

00:22:14,390 --> 00:22:12,880

will be the first of the mission

232

00:22:16,070 --> 00:22:14,400

it'll be conducted by garrett riesman

233

00:22:18,149 --> 00:22:16,080

and steve bowen

234

00:22:19,909 --> 00:22:18,159

they will be camping out tonight inside

235

00:22:21,110 --> 00:22:19,919

that quest airlock at a reduced

236

00:22:25,029 --> 00:22:21,120

atmosphere they're going to take it down

237

00:22:28,390 --> 00:22:26,950

this will allow them to get their bodies

238

00:22:30,070 --> 00:22:28,400

prepared get all the nitrogen out of

239

00:22:31,510 --> 00:22:30,080

their bloodstreams and it reduces the

240

00:22:32,870 --> 00:22:31,520

amount of time

241

00:22:34,950 --> 00:22:32,880

that they have to spend getting ready

242

00:23:12,310 --> 00:22:34,960

tomorrow morning before they head out of

243

00:23:16,230 --> 00:23:14,789

the robotics officer inside the space

244

00:23:19,029 --> 00:23:16,240

station flight control room is

245

00:23:20,789 --> 00:23:19,039

confirming that the arm with this

246

00:23:23,350 --> 00:23:20,799

integrated cargo carrier on the end of

247

00:23:26,149 --> 00:23:23,360

it is at the pre-install position

248

00:23:28,310 --> 00:23:26,159

this is uh basically the next to last

249

00:23:29,909 --> 00:23:28,320

step before they will push this cargo

250

00:23:30,950 --> 00:23:29,919

carrier down toward where it's going to

251
00:23:34,830 --> 00:23:30,960
be mounted

252
00:23:39,750 --> 00:23:37,510
system this view you can see the dexter

253
00:23:43,909 --> 00:23:39,760
robot there at the top center part of

254
00:23:50,630 --> 00:23:47,510
part of this cargo carrier

255
00:23:52,470 --> 00:23:50,640
has some spare parts for

256
00:23:54,630 --> 00:23:52,480
dexter to use there's sort of a worksite

257
00:23:56,230 --> 00:23:54,640
platform that dexter will be able to be

258
00:23:58,390 --> 00:23:56,240
mounted on top of

259
00:24:00,149 --> 00:23:58,400
that has three different sides to it

260
00:24:01,350 --> 00:24:00,159
so that if dexter is working with its

261
00:24:02,549 --> 00:24:01,360
two arms that you see there it can

262
00:24:03,990 --> 00:24:02,559
actually pick up

263
00:24:05,590 --> 00:24:04,000

something outside the station store it

264

00:24:06,870 --> 00:24:05,600

down on that worksite platform one of

265

00:24:08,310 --> 00:24:06,880

the sides of it

266

00:24:12,070 --> 00:24:08,320

and which will free up his arm to do

267

00:24:12,080 --> 00:24:16,549

robo going into maneuver to the grapple

268

00:24:16,559 --> 00:24:20,310

we copy pierce we're ready

269

00:24:24,630 --> 00:24:22,710

the crew is steadily working to get this

270

00:24:26,710 --> 00:24:24,640

integrated cargo carrier

271

00:24:28,630 --> 00:24:26,720

uh successfully installed on the mobile

272

00:24:30,310 --> 00:24:28,640

base system

273

00:24:36,630 --> 00:24:30,320

there's a payload attachment point on

274

00:24:39,750 --> 00:24:37,990

one for

275

00:24:45,190 --> 00:24:39,760

ssrms

276

00:24:50,390 --> 00:24:47,750

we copy tracy thanks for all the great

277

00:24:52,630 --> 00:24:50,400

work we'll take it from here and as you

278

00:24:54,630 --> 00:24:52,640

know if you do see the things moving

279

00:24:57,750 --> 00:24:54,640

outside we will be continuing with the

280

00:25:07,110 --> 00:24:57,760

robo-ops for the next quite a few hours

281

00:25:10,870 --> 00:25:08,870

once they get to verification that this

282

00:25:13,190 --> 00:25:10,880

cargo carrier is

283

00:25:14,789 --> 00:25:13,200

adequately attached to this payload

284

00:25:15,830 --> 00:25:14,799

attachment point on the outside of the

285

00:25:19,269 --> 00:25:15,840

station

286

00:25:20,789 --> 00:25:19,279

will back away from it

287

00:25:24,230 --> 00:25:20,799

and its job will be wrapped up for the

288

00:25:28,149 --> 00:25:26,230

meanwhile garrett riesman steve bowen

289

00:25:29,909 --> 00:25:28,159

are currently inside the quest airlock

290

00:25:31,909 --> 00:25:29,919

they're wearing some oxygen masks at

291

00:25:33,750 --> 00:25:31,919

this point in time this is all standard

292

00:25:36,230 --> 00:25:33,760

procedure for them to breathe

293

00:25:38,149 --> 00:25:36,240

some enriched oxygen for about 45

294

00:25:40,710 --> 00:25:38,159

minutes they will be able to close the

295

00:25:42,789 --> 00:25:40,720

hatch between quest and the rest of the

296

00:25:45,029 --> 00:25:42,799

station coming up in about 15 minutes or

297

00:25:47,950 --> 00:25:45,039

so and then once that is done they will

298

00:25:50,470 --> 00:25:47,960

reduce the pressure inside quest from

299

00:25:53,510 --> 00:25:50,480

14.4 where it's had right now down to