



1  
00:00:15,040 --> 00:00:25,429  
we're ready too we're watching thanks

2  
00:00:27,750 --> 00:00:26,870  
and

3  
00:00:30,870 --> 00:00:27,760  
this is

4  
00:00:33,270 --> 00:00:30,880  
time when we we have a goodbye our

5  
00:00:36,790 --> 00:00:33,280  
friends our colleagues the actual crew

6  
00:00:39,670 --> 00:00:36,800  
of her struggle atlantis that

7  
00:00:41,510 --> 00:00:39,680  
her did an excellent job

8  
00:00:42,790 --> 00:00:41,520  
performing freely is

9  
00:00:44,709 --> 00:00:42,800  
installing

10  
00:00:47,270 --> 00:00:44,719  
the new russian module

11  
00:00:48,869 --> 00:00:47,280  
and just having the fun

12  
00:00:52,310 --> 00:00:48,879  
enjoying

13  
00:00:53,590 --> 00:00:52,320

the living station and working in space

14

00:00:54,869 --> 00:00:53,600

and they

15

00:00:55,830 --> 00:00:54,879

show

16

00:00:58,389 --> 00:00:55,840

that

17

00:00:59,910 --> 00:00:58,399

good example of friendship

18

00:01:02,229 --> 00:00:59,920

professionalism

19

00:01:04,710 --> 00:01:02,239

and classic that's just in their

20

00:01:04,710 --> 00:01:04,720

behavior

21

00:01:09,429 --> 00:01:07,190

so it's really

22

00:01:10,950 --> 00:01:09,439

goodbye by the time

23

00:01:13,190 --> 00:01:10,960

the departure

24

00:01:16,390 --> 00:01:13,200

so again thank you thank you ken thank

25

00:01:19,270 --> 00:01:16,400

you all for uh thank you for excellent

26

00:01:21,910 --> 00:01:19,280

job for your

27

00:01:24,070 --> 00:01:21,920

patient for your

28

00:01:25,590 --> 00:01:24,080

work for everything

29

00:01:40,390 --> 00:01:25,600

and we enjoy

30

00:01:45,510 --> 00:01:42,870

well like we are one happy shuttle crew

31

00:01:46,630 --> 00:01:45,520

and we are happy because of all of your

32

00:01:48,230 --> 00:01:46,640

effort too

33

00:01:50,550 --> 00:01:48,240

i think through our entire dock time

34

00:01:52,149 --> 00:01:50,560

frame here we were a 12-person crew that

35

00:01:53,990 --> 00:01:52,159

operated together

36

00:01:56,389 --> 00:01:54,000

and that was the only way that we got

37

00:01:58,069 --> 00:01:56,399

everything done and got mrm installed

38

00:01:58,870 --> 00:01:58,079

and got the ebas done

39

00:02:02,069 --> 00:01:58,880

so

40

00:02:04,550 --> 00:02:02,079

we are happy but this one is to

41

00:02:05,510 --> 00:02:04,560

friends we're going to leave behind

42

00:02:07,190 --> 00:02:05,520

and

43

00:02:09,029 --> 00:02:07,200

new friends that we've made close

44

00:02:11,750 --> 00:02:09,039

friends my friend

45

00:02:14,470 --> 00:02:11,760

we've had a great time together

46

00:02:15,350 --> 00:02:14,480

and tj will be home soon she'll be home

47

00:02:20,550 --> 00:02:15,360

soon

48

00:02:24,150 --> 00:02:22,390

we're going to close the hat shortly and

49

00:02:25,910 --> 00:02:24,160

we're gonna depart and of course as

50

00:02:27,510 --> 00:02:25,920

always it'll be a little bit sad but

51  
00:03:59,110 --> 00:02:27,520  
we'll see you all on the surface of

52  
00:04:05,270 --> 00:04:02,949  
the crews of expedition 23 and space

53  
00:04:06,869 --> 00:04:05,280  
shuttle atlantis bidding farewell to one

54  
00:04:10,229 --> 00:04:06,879  
another

55  
00:04:11,670 --> 00:04:10,239  
preparing to uh close the hatches after

56  
00:04:14,070 --> 00:04:11,680  
more than

57  
00:04:22,629 --> 00:04:14,080  
after the hatches have been opened for

58  
00:04:27,749 --> 00:04:25,510  
atlantis's crew of six

59  
00:04:29,110 --> 00:04:27,759  
the farewell ceremony

60  
00:04:31,670 --> 00:04:29,120  
hosted by

61  
00:04:35,430 --> 00:04:31,680  
station expedition 23 commander russian

62  
00:04:39,590 --> 00:04:35,440  
cosmonaut oleg kotov you heard him first

63  
00:04:43,189 --> 00:04:39,600

followed by shuttle commander ken ham

64

00:04:45,270 --> 00:04:43,199

remaining behind all of the crimson

65

00:04:48,790 --> 00:04:45,280

shirts those are the

66

00:04:51,590 --> 00:04:48,800

crew members of expedition 23

67

00:05:02,710 --> 00:04:51,600

the blue shirts the crew of

68

00:07:29,950 --> 00:05:03,670

the

69

00:07:34,629 --> 00:07:31,909

foreign

70

00:07:41,110 --> 00:07:34,639

okay we're about to put 4.102 in what

71

00:07:41,120 --> 00:08:02,790

okay we copy it already

72

00:08:11,990 --> 00:08:05,029

now our little fan is off so they're

73

00:08:12,000 --> 00:09:24,389

here

74

00:09:28,070 --> 00:09:25,990

station on two

75

00:09:31,030 --> 00:09:28,080

for the uh that's closer procedure are

76  
00:09:32,470 --> 00:09:31,040  
you ready for me to begin with step four

77  
00:09:33,670 --> 00:09:32,480  
not yet we're just finished up step

78  
00:09:38,230 --> 00:09:33,680  
three at this time i'll give you a call

79  
00:09:38,240 --> 00:10:59,269  
thanks for

80  
00:10:59,279 --> 00:12:13,110  
tennis

81  
00:12:21,750 --> 00:12:15,190  
glass houston air around two for cryo

82  
00:12:21,760 --> 00:12:28,310  
go ahead for crowd config

83  
00:12:33,110 --> 00:12:30,790  
on out on a15

84  
00:12:38,389 --> 00:12:33,120  
crowd tank five heater

85  
00:12:42,550 --> 00:12:41,430  
that's complete and on r1

86  
00:12:44,870 --> 00:12:42,560  
o2

87  
00:12:47,430 --> 00:12:44,880  
tank two and three heaters alpha and

88  
00:13:00,790 --> 00:12:47,440

bravo that's four switches to auto

89

00:13:05,829 --> 00:13:02,870

okay that's complete

90

00:13:08,470 --> 00:13:05,839

and a note if if you get a spec 6802 or

91

00:13:10,150 --> 00:13:08,480

h2 tank p message please deactivate the

92

00:13:12,150 --> 00:13:10,160

heaters for that tank

93

00:13:14,230 --> 00:13:12,160

we're just configuring an o2 system to

94

00:13:17,509 --> 00:13:14,240

get on tank three and you might see some

95

00:13:19,990 --> 00:13:17,519

d-strat in tanks one two possibly four

96

00:13:23,509 --> 00:13:20,000

and five

97

00:13:25,030 --> 00:13:23,519

okay so uh for any uh

98

00:13:30,790 --> 00:13:25,040

tanks that trip a message will

99

00:13:30,800 --> 00:13:39,910

good read back

100

00:13:44,870 --> 00:13:42,150

in atlantis we're ready to hand over

101  
00:13:46,470 --> 00:13:44,880  
attitude controls as soon as station

102  
00:14:17,030 --> 00:13:46,480  
confirms

103  
00:14:20,710 --> 00:14:19,030  
and work aboard

104  
00:14:22,389 --> 00:14:20,720  
space shuttle atlantis and the

105  
00:14:24,389 --> 00:14:22,399  
international space station closing of

106  
00:14:25,829 --> 00:14:24,399  
the hatches between the two spacecraft

107  
00:14:29,030 --> 00:14:25,839  
there are actually three hatches that

108  
00:14:31,670 --> 00:14:29,040  
will be closed on the far end the

109  
00:14:34,150 --> 00:14:31,680  
orbiter's docking system hatch

110  
00:14:37,269 --> 00:14:34,160  
will be closed and tracy caldwell dyson

111  
00:14:38,949 --> 00:14:37,279  
will close the a pass hatch which is the

112  
00:14:41,590 --> 00:14:38,959  
docking the hatch on the docking

113  
00:14:44,310 --> 00:14:41,600

mechanism on the station side and then

114

00:14:46,470 --> 00:14:44,320

the forward hatch nearest the camera at

115

00:14:48,389 --> 00:14:46,480

the harmony module interface to the

116

00:14:51,990 --> 00:14:48,399

pressurized mating adapter that will be

117

00:14:54,069 --> 00:14:52,000

the third and final hatch closed

118

00:14:57,030 --> 00:14:54,079

in the meantime space shuttle atlantis's

119

00:14:59,590 --> 00:14:57,040

digital autopilot is just about to be

120

00:15:01,910 --> 00:14:59,600

reconfigured so that atlantis's thruster

121

00:15:03,590 --> 00:15:01,920

jets will take over attitude control of

122

00:15:07,430 --> 00:15:03,600

the entire station

123

00:15:09,590 --> 00:15:07,440

it's a choreographed event the station

124

00:15:12,710 --> 00:15:09,600

is commanded into free drift so that

125

00:15:18,710 --> 00:15:12,720

it's control moment gyro's are taken out

126

00:15:18,720 --> 00:15:31,829

okay atlantis cop is in adapt and auto

127

00:15:37,670 --> 00:15:35,189

and atlantis now is assuming attitude

128

00:15:39,990 --> 00:15:37,680

attitude control and will remain in

129

00:15:42,790 --> 00:15:40,000

attitude control throughout the

130

00:15:44,990 --> 00:15:42,800

remainder of the undocking phase

131

00:15:48,069 --> 00:15:45,000

we are on step 12 of

132

00:15:52,949 --> 00:15:48,079

0.14.102 when holding for a station side

133

00:15:52,959 --> 00:23:30,630

you can copy

134

00:23:30,640 --> 00:24:56,630

houston copies

135

00:24:56,640 --> 00:25:03,590

equalization valve is closed

136

00:25:08,230 --> 00:25:06,549

copy step 17 is closed sorry step 17 is

137

00:25:09,350 --> 00:25:08,240

complete eight pass hatch closed thanks

138

00:25:10,950 --> 00:25:09,360

wiki

139

00:25:12,470 --> 00:25:10,960

thank you

140

00:25:17,350 --> 00:25:12,480

and uh if you guys okay then i'll move

141

00:25:17,360 --> 00:25:46,630

happy we are ready for step 18 twitchy

142

00:25:50,549 --> 00:25:48,070

and houston atlantis we're going to

143

00:25:56,230 --> 00:25:50,559

change lio any uh words on which camp to

144

00:26:01,510 --> 00:25:58,830

here's that for the cute card uh two

145

00:26:04,390 --> 00:26:01,520

sts-129 cards

146

00:26:52,549 --> 00:26:05,350

okay

147

00:26:57,430 --> 00:26:55,590

with the hatch closed the

148

00:26:59,750 --> 00:26:57,440

hatches were open between the two

149

00:27:03,510 --> 00:26:59,760

spacecraft for joint operations for six

150

00:27:06,870 --> 00:27:03,520

days 20 hours and 25 minutes the hatch

151  
00:27:09,990 --> 00:27:06,880  
was opened on may 16

152  
00:27:27,029 --> 00:27:10,000  
and closed at 7 43 a.m

153  
00:27:33,110 --> 00:27:30,070  
the next activity on atlantis is to swap

154  
00:27:35,990 --> 00:27:33,120  
out the lithium hydroxide canisters that

155  
00:27:38,789 --> 00:27:36,000  
that lithium hydroxide is a chemical

156  
00:27:41,430 --> 00:27:38,799  
method for scrubbing carbon dioxide out

157  
00:27:44,070 --> 00:27:41,440  
of the cabin atmosphere and then the

158  
00:27:46,230 --> 00:27:44,080  
crew will press on through the remaining

159  
00:27:47,350 --> 00:27:46,240  
steps in preparation for undocking

160  
00:27:49,430 --> 00:27:47,360  
including

161  
00:27:52,310 --> 00:27:49,440  
installation of the centerline camera in

162  
00:27:54,230 --> 00:27:52,320  
the orbiter docking system

163  
00:27:57,190 --> 00:27:54,240

they'll conduct a series of leak checks

164

00:27:59,190 --> 00:27:57,200

between the station's far hatch that you

165

00:28:01,110 --> 00:27:59,200

see in the far end of this view and the

166

00:28:03,830 --> 00:28:01,120

shuttles hatch that area is known as a

167

00:28:06,470 --> 00:28:03,840

vestibule they'll perform a

168

00:28:08,789 --> 00:28:06,480

leak check between the seals of those

169

00:28:09,750 --> 00:28:08,799

two hatches that will come after

170

00:28:13,430 --> 00:28:09,760

the

171

00:28:14,830 --> 00:28:13,440

closed

172

00:28:18,870 --> 00:28:14,840

the crew

173

00:28:21,430 --> 00:28:18,880

members swede suici naguchi and tracy

174

00:28:22,630 --> 00:28:21,440

caldwell dyson expedition 23 flight

175

00:28:25,430 --> 00:28:22,640

engineers

176

00:28:27,350 --> 00:28:25,440

along with tj creamer

177

00:28:29,269 --> 00:28:27,360

continuing to step through the

178

00:28:31,110 --> 00:28:29,279

procedures that they are following along

179

00:28:32,070 --> 00:28:31,120

on the laptop computer that you see

180

00:28:35,269 --> 00:28:32,080

there

181

00:28:36,950 --> 00:28:35,279

our part of 4.102 is complete with the