



1
00:00:19,510 --> 00:00:16,870
this is the 38th walk to the space

2
00:00:22,900 --> 00:00:19,520
shuttle program the tenth watch for a

3
00:00:26,800 --> 00:00:22,910
total columbia and the six walks in

4
00:00:30,190 --> 00:00:26,810
darkness out the station is Google the

5
00:00:32,710 --> 00:00:30,200
last 10 days observations of the walls

6
00:00:34,840 --> 00:00:32,720
and galaxies between dr. ran flock by

7
00:00:37,180 --> 00:00:34,850
the seven-member like glue Bing Bing

8
00:00:40,420 --> 00:00:37,190
free ultraviolet telescopes and I'm

9
00:00:43,930 --> 00:00:40,430
broadband x-ray telescope they don't

10
00:00:48,520 --> 00:00:43,940
we'll need for Columbia movies 218

11
00:00:59,310 --> 00:00:48,530
statute on and it intermittently methods

12
00:01:04,630 --> 00:01:01,930
this is a wrench control in a few

13
00:01:07,890 --> 00:01:04,640

minutes to me a little party we're now

14

00:01:14,830 --> 00:01:07,900

at the dining room the astronaut course

15

00:01:21,910 --> 00:01:14,840

which one specialist a sucker to fix

16

00:01:35,040 --> 00:01:21,920

what's wrong please and the panel for

17

00:01:57,030 --> 00:01:53,590

specialist specialist and after

18

00:02:03,389 --> 00:01:57,040

breakfast will see the weather briefing

19

00:03:23,340 --> 00:02:03,399

cat-lair take on the foot into FG s 55

20

00:03:23,350 --> 00:03:59,490

minutes so that they headed down

21

00:04:07,060 --> 00:04:03,220

this is Sherlock the colonel t-minus two

22

00:04:13,140 --> 00:04:07,070

hours 55 minutes until they fell through

23

00:04:20,890 --> 00:04:13,150

nominating be a Scrooge and boarding in

24

00:04:58,210 --> 00:04:20,900

elevated and advanced Rantala five pilot

25

00:05:24,399 --> 00:04:58,220

John Gardner and after man down on the

26
00:07:35,020 --> 00:05:28,679
the could not coming off we elevated and

27
00:07:42,440 --> 00:07:40,310
I'd agree with the ground one on the

28
00:07:47,360 --> 00:07:42,450
Houston advancements about clear fealty

29
00:07:49,250 --> 00:07:47,370
how do you write whatever okay we get to

30
00:07:53,120 --> 00:07:49,260
the same let's configure for air to grab

31
00:09:36,190 --> 00:07:53,130
to everyone down for breakfast and

32
00:09:36,200 --> 00:09:43,040
positions

33
00:09:43,050 --> 00:10:10,940
the main engines systems and systems

34
00:12:17,639 --> 00:10:22,400
link to the gas itself in December one

35
00:12:22,710 --> 00:12:20,160
right before going down through the

36
00:12:26,910 --> 00:12:22,720
legend through the auxiliary power units

37
00:12:37,259 --> 00:12:26,920
and super cool cells I'm in out 6100

38
00:12:39,179 --> 00:12:37,269

cool three main engines are now pulling

39

00:12:40,949 --> 00:12:39,189

down these phobias passes through the

40

00:12:44,519 --> 00:12:40,959

period of maximum dynamic pressure on

41

00:12:46,499 --> 00:12:44,529

the door at 18,000 feet three main

42

00:12:49,919 --> 00:12:46,509

engines now throttling back up and we

43

00:13:01,049 --> 00:12:49,929

showed them the out 104 percent clumbia

44

00:13:04,169 --> 00:13:01,059

go around left Roger go at throttle up

45

00:13:07,350 --> 00:13:04,179

in our economy at 67,000 eight going to

46

00:14:27,360 --> 00:13:07,360

kalka miles throughout our velocity 2500

47

00:14:27,370 --> 00:15:42,340

you

48

00:15:42,350 --> 00:16:17,280

hand over this will information

49

00:16:22,300 --> 00:16:19,870

images on des instead looking at the

50

00:16:24,220 --> 00:16:22,310

game line up from the Robin district

51
00:16:27,070 --> 00:16:24,230
periscope planning to access parking

52
00:16:29,770 --> 00:16:27,080
system and appellate underneath the moon

53
00:16:32,770 --> 00:16:29,780
enforcement pineville beauty of tortilla

54
00:16:36,970 --> 00:16:32,780
is visible on the right hand side of the

55
00:16:40,180 --> 00:16:36,980
screen a physical toon toons these tombs

56
00:16:45,790 --> 00:16:40,190
where the cat tomorrow till 20 * packer

57
00:16:48,970 --> 00:16:45,800
and the lower is the first batted in

58
00:16:51,490 --> 00:16:48,980
Janelle's go for the ult not seen that

59
00:16:53,640 --> 00:16:51,500
episode fact I've dope and they were the

60
00:17:04,030 --> 00:16:53,650
devil is kinda back at all of the photo

61
00:17:07,000 --> 00:17:04,040
bitter exponent and let them in to be no

62
00:17:15,080 --> 00:17:07,010
Manito large circle that does the Togo

63
00:17:21,150 --> 00:17:18,450

when we again upon signal from Columbia

64

00:17:22,680 --> 00:17:21,160

will be expecting a communications check

65

00:17:26,430 --> 00:17:22,690

with the payload operations control

66

00:17:29,120 --> 00:17:26,440

center from that point on Columbia well

67

00:17:33,750 --> 00:17:29,130

deal communications with the ground with

68

00:17:35,880 --> 00:17:33,760

the on 110 and being over to the

69

00:17:40,010 --> 00:17:35,890

outside Nashville communicating with

70

00:17:42,870 --> 00:17:40,020

cream in her in the am back and the

71

00:17:46,080 --> 00:17:42,880

observatory workstation and will be

72

00:17:49,740 --> 00:17:46,090

referred to by the clock huntsville is a

73

00:17:50,970 --> 00:17:49,750

throw-in on a separate event it will be

74

00:17:53,490 --> 00:17:50,980

committee heads into the Commission

75

00:17:56,310 --> 00:17:53,500

control center and cumbia with the same

76

00:17:57,600 --> 00:17:56,320

consonant end zone home i used the

77

00:19:09,659 --> 00:17:57,610

Commission controls that are here

78

00:19:09,669 --> 00:20:14,930

good then here you go

79

00:20:20,549 --> 00:20:17,250

and we're take the whole team is in

80

00:20:22,769 --> 00:20:20,559

science operations run it having us

81

00:20:27,899 --> 00:20:22,779

inside Mission Operations control point

82

00:20:33,139 --> 00:20:27,909

is to install 49 go further up and talk

83

00:20:36,870 --> 00:20:33,149

about a telescope investigator than 18

84

00:20:43,049 --> 00:20:36,880

sandals or death columbia just now the

85

00:21:03,350 --> 00:20:43,059

party as into educational procedures

86

00:21:12,480 --> 00:21:03,360

inundated detector going to go down like

87

00:21:18,480 --> 00:21:12,490

I'm back in Council and seeing on the

88

00:21:21,810 --> 00:21:18,490

data that Bell is credible check out and

89

00:21:24,240 --> 00:21:21,820

it was preceded and it is it was not

90

00:21:29,210 --> 00:21:24,250

small the violent total parameter here

91

00:21:32,070 --> 00:21:29,220

at phase five monopolist control console

92

00:22:34,420 --> 00:21:32,080

and watch closely as this video

93

00:22:38,330 --> 00:22:36,710

this is mr. the trophies during the

94

00:22:40,670 --> 00:22:38,340

artists evening live television down

95

00:22:43,790 --> 00:22:40,680

from the apt flight deck columbia

96

00:22:45,980 --> 00:22:43,800

amenity work is taking place with the

97

00:23:15,140 --> 00:22:45,990

aschburgh Valastro package and edge

98

00:23:22,460 --> 00:23:17,520

and the next four minutes and three

99

00:23:28,220 --> 00:23:22,470

minutes on the story this party is down

100

00:23:31,290 --> 00:23:28,230

for six this is an x-ray positive

101
00:23:40,530 --> 00:23:31,300
galaxies incentive on the constellation

102
00:24:13,919 --> 00:23:51,230
I came looking more than a little later

103
00:24:13,929 --> 00:24:23,690
you

104
00:24:29,629 --> 00:24:26,330
the implosion compositions it continued

105
00:24:32,779 --> 00:24:29,639
looking at the description he was in the

106
00:24:40,940 --> 00:24:32,789
process of them my sense of substitution

107
00:25:32,760 --> 00:24:40,950
procedures that states that mission

108
00:25:32,770 --> 00:25:54,720
after dual exercise device

109
00:25:54,730 --> 00:26:38,640
like

110
00:26:38,650 --> 00:26:49,370
you

111
00:26:54,030 --> 00:26:51,750
as a Mission Control Houston we're

112
00:26:56,580 --> 00:26:54,040
looking at poverty from the mid-deck of

113
00:27:02,670 --> 00:26:56,590

pilot guy garden I put in any kinda

114

00:27:05,100 --> 00:27:02,680

turned actor system work tambien this is

115

00:27:07,830 --> 00:27:05,110

a detailed tests objective number 6 30

116

00:27:09,960 --> 00:27:07,840

for that one of the detailed test

117

00:27:33,600 --> 00:27:09,970

objectives flying aboard and Carnegie

118

00:28:52,320 --> 00:27:49,780

guys mentioned that's amazing ok we'll

119

00:28:57,519 --> 00:28:54,880

leave reprod communications with

120

00:28:59,169 --> 00:28:57,529

Columbia and just a fool did mission

121

00:29:01,360 --> 00:28:59,179

specialist Jeff Hoffman ready it down

122

00:29:06,190 --> 00:29:01,370

that the troubleshooting procedures set

123

00:29:08,440 --> 00:29:06,200

up for unsuccessful in buying your

124

00:29:14,799 --> 00:29:08,450

pointing system to acquire this star

125

00:29:16,870 --> 00:29:14,809

Doggett be fun at Mission Control outfit

126

00:29:20,289 --> 00:29:16,880

also is still working with the bait

127

00:29:23,580 --> 00:29:20,299

processing systems officer to come up

128

00:29:26,710 --> 00:29:23,590

with a software version of that

129

00:29:29,830 --> 00:29:26,720

operation for those star trackers on

130

00:29:32,649 --> 00:29:29,840

ground that can be loaded into them and

131

00:29:35,610 --> 00:29:32,659

hopefully correct that problems in the

132

00:29:41,080 --> 00:29:35,620

meantime the crew may continue to do

133

00:29:43,779 --> 00:29:41,090

attempt to part star targets manual

134

00:29:49,669 --> 00:29:43,789

control of this reporting system CTA

135

00:29:55,109 --> 00:29:52,619

using many more control yes has proved

136

00:30:22,830 --> 00:29:55,119

somewhat successful and it obtained some

137

00:30:28,560 --> 00:30:26,020

now did the look in media planets area

138

00:30:31,480 --> 00:30:28,570

here wolf everybody was not project eat

139

00:30:34,180 --> 00:30:31,490

very much involved in real time

140

00:30:38,080 --> 00:30:34,190

activities during his observation in

141

00:30:44,940 --> 00:30:38,090

this case the members of the Wisconsin

142

00:30:54,960 --> 00:30:50,620

this observation the dial-in procedure

143

00:30:57,630 --> 00:30:54,970

where members of the Wisconsin I violet

144

00:31:00,000 --> 00:30:57,640

budget support team were actually

145

00:31:07,740 --> 00:31:00,010

commanding their instruments for the

146

00:31:13,480 --> 00:31:07,750

vessels rental and we're gonna see

147

00:31:23,110 --> 00:31:13,490

highly magnified image from the strain

148

00:31:27,160 --> 00:31:23,120

on this galaxy NGC 1068 you mosaic type

149

00:31:29,670 --> 00:31:27,170

of display we're seeing this then you

150

00:31:32,080 --> 00:31:29,680

just read pickles pickle Fellini

151
00:31:34,900 --> 00:31:32,090
detective and when this consummation and

152
00:39:52,270 --> 00:31:34,910
they will break a to very bright objects

153
00:39:57,710 --> 00:39:55,070
and then the United States Secretary of

154
00:39:59,540 --> 00:39:57,720
State James Baker and the Soviet

155
00:40:01,940 --> 00:39:59,550
Ministry of Foreign Affairs talk about

156
00:40:04,010 --> 00:40:01,950
not they arrived in the control center

157
00:40:05,600 --> 00:40:04,020
and obviously one that Matt no I'm the

158
00:40:08,450 --> 00:40:05,610
control center and the flight control

159
00:40:28,150 --> 00:40:08,460
room from cheaper basic adjustments

160
00:40:28,160 --> 00:45:58,480
ok

161
00:45:58,490 --> 00:47:07,830
for vans and everybody

162
00:47:12,360 --> 00:47:10,230
deployment times for a landing tonight

163
00:47:15,810 --> 00:47:12,370

with the Harith deorbit burn and take

164

00:47:20,010 --> 00:47:15,820

place by Columbia by at about 10 49 p.m.

165

00:47:23,420 --> 00:47:20,020

central standard time and the zune touch

166

00:47:34,410 --> 00:47:23,430

nano at Edwards Air Force Base run 122 @

167

00:47:36,570 --> 00:47:34,420

1151 p.m. central standard time the

168

00:47:38,880 --> 00:47:36,580

decision that a tool and night was

169

00:47:42,000 --> 00:47:38,890

driven by the weather forecast for

170

00:47:45,480 --> 00:47:42,010

edwards air force base on tuesday that

171

00:47:48,150 --> 00:47:45,490

forecast showed unacceptable conditions

172

00:47:52,530 --> 00:47:48,160

for the shuttles landing with low miles

173

00:47:55,350 --> 00:47:52,540

and Ray within 30 nautical miles due to

174

00:47:56,880 --> 00:47:55,360

credit the passage through deserts also

175

00:47:59,100 --> 00:47:56,890

a factor in that decision was the

176
00:48:00,920 --> 00:47:59,110
following day Wednesday night where

177
00:48:05,100 --> 00:48:00,930
there are back up opportunities for

178
00:48:07,080 --> 00:48:05,110
landing Edwards weather even Martians

179
00:48:10,380 --> 00:48:07,090
like that due to the cold front that

180
00:48:12,990 --> 00:48:10,390
will go through and also on that night

181
00:48:17,530 --> 00:48:13,000
they can be Space Center weather

182
00:48:22,420 --> 00:48:19,870
will be now in the terminal area on both

183
00:48:26,290 --> 00:48:22,430
guidance and navigation transitioning to

184
00:48:32,320 --> 00:48:26,300
a neural energy management homes now 59

185
00:48:35,530 --> 00:48:32,330
miles altitude 66,000 team a city not

186
00:48:42,370 --> 00:48:35,540
125 call me and I've ascending the 323 p

187
00:48:49,520 --> 00:48:45,860
Tom communications ball sticks doing has

188
00:48:51,170 --> 00:48:49,530

been activated command advanced Brendan

189

00:48:53,330 --> 00:48:51,180

final sky garden now manually

190

00:49:19,370 --> 00:48:53,340

controlling the before is it reaches for

191

00:49:23,820 --> 00:49:22,050

combien a funky North beginning its turn

192

00:49:26,070 --> 00:49:23,830

around the heading alignment under the

193

00:49:31,200 --> 00:49:26,080

manual control of crew commander ranch

194

00:49:37,040 --> 00:49:31,210

brand and public garden finance a

195

00:49:39,420 --> 00:49:37,050

certain ports a very shortly yeah

196

00:49:42,120 --> 00:49:39,430

Brandon will be incorporating that

197

00:49:49,450 --> 00:49:42,130

microwave on the system date and onboard

198

00:49:56,989 --> 00:49:53,620

that way for garden system provides

199

00:49:58,729 --> 00:49:56,999

along the way will provide a highly

200

00:50:06,580 --> 00:49:58,739

accurate three-dimensional positioning

201
00:50:11,900 --> 00:50:09,860
arranged on that one altitude 15,000

202
00:50:27,370 --> 00:50:11,910
feet will be descending two hundred

203
00:50:32,319 --> 00:50:30,150
as going to the result upon approach

204
00:50:35,740 --> 00:50:32,329
commander parent will be watching for

205
00:50:38,589 --> 00:50:35,750
the contest you like the news from the

206
00:50:41,859 --> 00:50:38,599
petty which will serve as cross old one

207
00:50:59,740 --> 00:50:41,869
date as he likes Columbia's way towards

208
00:51:03,640 --> 00:50:59,750
run away 22 name six nautical miles into

209
00:51:20,549 --> 00:51:03,650
the 8000 feet descending it 120 feet per

210
00:51:26,679 --> 00:51:23,319
and we have a few seconds and Commander

211
00:51:28,359 --> 00:51:26,689
Brown will perform two people were to

212
00:51:31,839 --> 00:51:28,369
take some of the steep angle and at the

213
00:51:35,469 --> 00:51:31,849

box office on the reaches for Edwards

214

00:52:25,700 --> 00:51:35,479

kind of going to ground with 22 ok for

215

00:52:32,549 --> 00:52:30,210

and this can touch all two hundred

216

00:57:37,430 --> 00:52:32,559

twenty-five thousand pounds of Columbia

217

00:57:43,260 --> 00:57:40,500

it ended at the base of the stairs by