



1
00:00:41,330 --> 00:00:38,540
when the final hours of the STS 34

2
00:00:42,860 --> 00:00:41,340
launch countdown at this time everything

3
00:00:44,360 --> 00:00:42,870
is proceeding smoothly here in the

4
00:00:48,200 --> 00:00:44,370
firing room at the launch control center

5
00:00:49,819 --> 00:00:48,210
in at launch pad 39b a full five day

6
00:00:51,410 --> 00:00:49,829
mission begins with the primary

7
00:00:54,350 --> 00:00:51,420
objective of deploying the Galileo

8
00:00:55,939 --> 00:00:54,360
spacecraft from the payload Bay so it

9
00:00:58,399 --> 00:00:55,949
can begin a six-year journey to the

10
00:00:59,990 --> 00:00:58,409
planet Jupiter several scientific

11
00:01:02,060 --> 00:01:00,000
experiments will be conducted and

12
00:01:05,420 --> 00:01:02,070
orbiter detailed test objectives will

13
00:01:09,889 --> 00:01:05,430

also be performed during the mission and

14

00:01:11,960 --> 00:01:09,899

we have the STS 34 flight crew with a

15

00:01:16,040 --> 00:01:11,970

pumpkin decorated in an astronaut suit

16

00:01:18,700 --> 00:01:16,050

we've got commanded Don Williams this is

17

00:01:21,440 --> 00:01:18,710

going to be his second flight today

18

00:01:23,450 --> 00:01:21,450

we've got mission specialist Franklin

19

00:01:26,840 --> 00:01:23,460

chang-diaz making his second flight as

20

00:01:30,440 --> 00:01:26,850

well mission specialist Shannon lucid

21

00:01:32,240 --> 00:01:30,450

this is her second flight and mission

22

00:01:35,960 --> 00:01:32,250

specialist Ellen Baker making her first

23

00:01:43,930 --> 00:01:35,970

flight today pilot Mike McCauley also

24

00:01:48,950 --> 00:01:46,100

like who will be departing for the

25

00:01:51,200 --> 00:01:48,960

launchpad and about an hour in ten

26

00:01:54,740 --> 00:01:51,210

minutes or so after they get their

27

00:02:40,440 --> 00:01:54,750

weather briefing and Don their flight

28

00:02:45,660 --> 00:02:42,750

but in forecast for this morning remains

29

00:02:58,410 --> 00:02:45,670

the same with a 60% chance of not

30

00:03:00,420 --> 00:02:58,420

violating our weather criteria they're

31

00:03:02,880 --> 00:03:00,430

called khru altitude protection systems

32

00:03:06,690 --> 00:03:02,890

and they have consisted a helmet

33

00:03:08,250 --> 00:03:06,700

these are pressurized garments and they

34

00:03:11,479 --> 00:03:08,260

do wear gloves and boots there's pilot

35

00:03:11,489 --> 00:03:16,729

he's mission specialist Shannon lucid

36

00:03:23,390 --> 00:03:19,140

crew does need assistance getting into

37

00:03:28,009 --> 00:03:23,400

these suits they are bulkier than the

38

00:03:31,920 --> 00:03:28,019

other suits that were worn previous to

39

00:03:49,070 --> 00:03:31,930

the STS 26 mission mission specialists

40

00:04:43,280 --> 00:03:52,050

and we got the flight crew here led by

41

00:04:48,150 --> 00:04:46,200

STS 34 commander Don Williams now

42

00:04:53,969 --> 00:04:48,160

preparing for his entry into Atlantis

43

00:04:56,400 --> 00:04:53,979

his crew module williams is a captain in

44

00:04:58,860 --> 00:04:56,410

the United States Navy he's born in

45

00:05:01,800 --> 00:04:58,870

Lafayette Indiana mission specialist

46

00:05:06,570 --> 00:05:01,810

Shannon Lucid is being prepared to board

47

00:05:08,760 --> 00:05:06,580

the orbiter at this time she was born in

48

00:05:24,320 --> 00:05:08,770

Shanghai China but considers Bethany

49

00:05:28,310 --> 00:05:26,630

at t-minus seven minutes 30 seconds the

50

00:05:45,260 --> 00:05:28,320

orbiter access arm will be retracted

51
00:05:51,860 --> 00:05:45,270
away from the vehicle we start a

52
00:05:55,100 --> 00:05:51,870
retraction of the orbiters access on ngd

53
00:05:56,780 --> 00:05:55,110
flight - one - okay we're gonna be go on

54
00:05:59,450 --> 00:05:56,790
Tao but we're gonna have to switch sites

55
00:06:09,350 --> 00:05:59,460
- as their Gosa go we hold at t-minus

56
00:06:31,940 --> 00:06:11,719
at this time the three main engines are

57
00:06:45,920 --> 00:06:34,340
liquid oxygen tank now reported at

58
00:06:47,330 --> 00:06:45,930
flight pressure do you - two minutes my

59
00:06:50,150 --> 00:06:47,340
crew has been instructed to close their

60
00:06:55,670 --> 00:06:50,160
visors less than two minutes away now

61
00:06:59,840 --> 00:06:55,680
from launch all systems are go to minus

62
00:07:00,680 --> 00:06:59,850
31 seconds we have a go for autosequence

63
00:07:02,540 --> 00:07:00,690

start

64

00:07:04,370 --> 00:07:02,550

Atlantis's for redundant computers have

65

00:07:11,390 --> 00:07:04,380

primary control of critical vehicle

66

00:07:19,550 --> 00:07:11,400

functions through liftoff t-minus 20 he

67

00:07:26,080 --> 00:07:19,560

finds 15 11 10 9 we have a go for main

68

00:07:35,470 --> 00:07:26,090

engine start six five four three two one

69

00:07:35,480 --> 00:07:48,120

controlling

70

00:07:58,200 --> 00:07:54,350

I didn't confirm the good roll maneuver

71

00:08:00,690 --> 00:07:58,210

three engines throttling back now to 65%

72

00:08:07,950 --> 00:08:00,700

as Atlantis passes through the area of

73

00:08:11,930 --> 00:08:07,960

maximum dynamic pressure rolls now at

74

00:08:30,870 --> 00:08:11,940

65% I see he's looking good velocity

75

00:08:33,420 --> 00:08:30,880

2,000 feet per second velocity now 1,400

76
00:08:37,320 --> 00:08:33,430
feet per second downrange distance 3

77
00:08:40,650 --> 00:08:37,330
nautical miles Atlantis

78
00:08:45,510 --> 00:08:40,660
go at throttle up engines now throttling

79
00:08:48,510 --> 00:08:45,520
back engines now back to 104 percent all

80
00:08:50,790 --> 00:08:48,520
systems performing well standing by for

81
00:08:59,910 --> 00:08:50,800
separation of the solid rocket boosters

82
00:09:02,490 --> 00:08:59,920
at 2 minutes and 4 seconds velocity now

83
00:09:40,389 --> 00:09:02,500
2,700 feet per second downrange 10

84
00:09:46,429 --> 00:09:43,610
separation of SRBs confirmed velocity

85
00:09:56,620 --> 00:09:46,439
now 4200 feet per second downrange 33

86
00:09:56,630 --> 00:10:03,030
like it's a global ride it looks great

87
00:10:03,040 --> 00:10:24,310
congratulations to all of you

88
00:10:33,340 --> 00:10:31,540

Atlanta Houston I just ran it has been a

89

00:10:37,570 --> 00:10:33,350

long time coming but you have a go for

90

00:10:39,700 --> 00:10:37,580

deploy okay I understand we have a girl

91

00:10:41,800 --> 00:10:39,710

for deploy so we're starting out on step

92

00:11:04,230 --> 00:10:41,810

five is have a page for - tan and just

93

00:11:04,240 --> 00:11:09,780

they'll adapt again

94

00:11:38,900 --> 00:11:13,080

like they track option target 94 body

95

00:11:38,910 --> 00:12:18,750

the

96

00:12:18,760 --> 00:12:23,699

okay that's great news Shannon thanks

97

00:12:29,440 --> 00:12:27,040

ground telemetry is confirming Shannon

98

00:12:32,290 --> 00:12:29,450

lucid report of tilt table motion the

99

00:12:35,530 --> 00:12:32,300

tilt table was at 29 degrees it's now

100

00:13:14,870 --> 00:12:35,540

moving up to an elevation of 58 degrees

101
00:13:19,460 --> 00:13:16,999
and the Sunnyvale flight director has

102
00:13:21,439 --> 00:13:19,470
just confirmed the successful deploy of

103
00:13:27,889 --> 00:13:21,449
the inertial upper stage and gallileo

104
00:13:30,620 --> 00:13:27,899
gallileo reports positive telemetry of

105
00:13:33,379 --> 00:13:30,630
deploy also we see the orbiter

106
00:13:36,170 --> 00:13:33,389
performing a minus X translation

107
00:13:43,490 --> 00:13:36,180
maneuver to move away from the I u.s.

108
00:13:53,389 --> 00:13:43,500
Galileo stack Galileo is isolated to

109
00:14:12,889 --> 00:13:53,399
another world Roger Atlantis would copy

110
00:14:12,899 --> 00:15:30,440
just

111
00:15:54,930 --> 00:15:39,449
good morning Atlanta who enjoyed

112
00:15:56,220 --> 00:15:54,940
ourselves at the Bohemian Rhapsody oh we

113
00:16:02,040 --> 00:15:56,230

thank you and we're sure glad you

114

00:16:04,139 --> 00:16:02,050

recognized it we carry a first aid kit

115

00:16:07,050 --> 00:16:04,149

success for one of these walkers which

116

00:16:09,449 --> 00:16:07,060

is where we store most of the materials

117

00:16:14,100 --> 00:16:09,459

experiments that stated a living height

118

00:16:15,960 --> 00:16:14,110

of 70 that's like they kiss carry pretty

119

00:16:26,790 --> 00:16:15,970

much what if doctors black bag would

120

00:16:26,800 --> 00:16:42,120

we carry of course

121

00:16:51,010 --> 00:16:46,140

things you buy in a drugstore savages

122

00:16:53,410 --> 00:16:51,020

adhesive tape common medications for

123

00:16:56,200 --> 00:16:53,420

cold differ fever runny nose you things

124

00:16:58,120 --> 00:16:56,210

like that we also carry a few things

125

00:17:53,960 --> 00:16:58,130

just in case there's a more serious

126

00:18:01,070 --> 00:17:56,910

we carry very basic things like if I'd

127

00:18:06,780 --> 00:18:03,780

the doctor aboard as a matter of fact

128

00:18:11,880 --> 00:18:06,790

there usually isn't a doctor on board so

129

00:18:13,920 --> 00:18:11,890

we generally trace two crewmembers basic

130

00:18:16,800 --> 00:18:13,930

first-aid problem very basic medical

131

00:18:28,669 --> 00:18:16,810

problem and all three members all crew

132

00:18:37,669 --> 00:18:31,110

set the crew cab so we have a few

133

00:18:57,320 --> 00:18:40,230

show you how to take care of things such

134

00:19:02,549 --> 00:18:57,330

as like that if we can't find the answer

135

00:19:04,230 --> 00:19:02,559

the medical checklist we have a video

136

00:19:06,299 --> 00:19:04,240

link in an audio link to the Mission

137

00:19:10,660 --> 00:19:06,309

Control Center well we can talk to a

138

00:19:15,770 --> 00:19:13,910

we don't have any medical problems in

139

00:19:18,200 --> 00:19:15,780

the shuttle that are serious however we

140

00:19:22,250 --> 00:19:18,210

do have to think about what to do for

141

00:19:24,650 --> 00:19:22,260

Space Station is going up for maybe

142

00:19:26,360 --> 00:19:24,660

three or six months at a time you can't

143

00:19:28,100 --> 00:19:26,370

rush to the emergency room you can't to

144

00:19:30,980 --> 00:19:28,110

give you a doctor a call of help you

145

00:19:33,380 --> 00:19:30,990

come by and make a house call so we're

146

00:19:34,760 --> 00:19:33,390

expanding our medical capabilities so

147

00:19:38,330 --> 00:19:34,770

that we can handle things like minor

148

00:19:40,280 --> 00:19:38,340

surgery or even medical stabilization of

149

00:19:43,970 --> 00:19:40,290

a patient who's got some more serious

150

00:19:45,770 --> 00:19:43,980

problem we're not that far from Earth we

151
00:19:47,690 --> 00:19:45,780
can come off fairly quickly if there was

152
00:19:52,820 --> 00:19:47,700
the treat medical emergency if a space

153
00:19:54,020 --> 00:19:52,830
station we might not have that option to

154
00:19:55,730 --> 00:19:54,030
talk about some of the medical

155
00:19:57,920 --> 00:19:55,740
experiments that we're doing onboard the

156
00:20:19,150 --> 00:19:57,930
shuttle Atlantis until then have a good

157
00:21:03,840 --> 00:20:20,230
once you see what you're doing here

158
00:21:03,850 --> 00:23:32,520
got a 50

159
00:23:32,530 --> 00:24:33,430
you can see

160
00:24:58,389 --> 00:24:37,880
did that and now the door I'll begin to

161
00:25:11,240 --> 00:25:02,120
you see how the door slowly closes just

162
00:25:11,250 --> 00:25:48,029
all that goes down

163
00:25:57,129 --> 00:25:51,519

we paid these pictures of the Gretna

164

00:26:00,609 --> 00:25:57,139

this is Alex beretta with the fiber

165

00:26:04,119 --> 00:26:00,619

optics device that we will be testing is

166

00:26:12,850 --> 00:26:04,129

a demonstration of a really really good

167

00:26:14,169 --> 00:26:12,860

capability that we now have okay we

168

00:26:17,320 --> 00:26:14,179

could do a lot better

169

00:26:20,940 --> 00:26:17,330

of course we provide this pictures in

170

00:29:26,030 --> 00:26:20,950

color is that better be the next step

171

00:29:32,460 --> 00:29:29,100

that's affirmed on your execute package

172

00:29:35,970 --> 00:29:32,470

should be on board you can hear the

173

00:29:39,180 --> 00:29:35,980

whine of the WCS and Franklin is getting

174

00:29:42,240 --> 00:29:39,190

prepared for international phone call

175

00:29:59,040 --> 00:29:42,250

this hair is full of soap I don't know

176
00:29:59,050 --> 00:30:17,530
well our hair is clean now time to shave

177
00:30:17,540 --> 00:30:23,239
he looked good blue that hair

178
00:30:28,100 --> 00:30:25,409
I'm gonna put the rest of us to shame

179
00:30:37,570 --> 00:30:28,110
Franklin

180
00:31:49,030 --> 00:30:41,060
yeah hey Mike

181
00:31:57,890 --> 00:31:54,820
and this is the back of Atlantis

182
00:32:07,700 --> 00:31:57,900
everybody trying to grab a bite to eat

183
00:32:10,700 --> 00:32:09,440
after that it's probably tough when

184
00:36:17,880 --> 00:32:10,710
you're competing with a couple of

185
00:36:17,890 --> 00:37:05,480
and we see it this looks great

186
00:37:10,800 --> 00:37:09,060
so the ice per minute up to the ceiling

187
00:37:12,750 --> 00:37:10,810
with a couple of spring but geez here

188
00:37:14,970 --> 00:37:12,760

they camera about it on it just above my

189

00:37:16,440 --> 00:37:14,980

head as you can see there the reflection

190

00:37:19,260 --> 00:37:16,450

is not too bad off the top of my head

191

00:37:20,970 --> 00:37:19,270

and the experiment itself display is

192

00:37:22,470 --> 00:37:20,980

over to the top side which is dependent

193

00:37:25,320 --> 00:37:22,480

where I'm headed right now in order to

194

00:37:27,510 --> 00:37:25,330

read out what the display was fan we

195

00:37:30,120 --> 00:37:27,520

applied to look inside the chamber isn't

196

00:37:32,070 --> 00:37:30,130

that chamber light and the focus on the

197

00:37:33,810 --> 00:37:32,080

filament wire or where the crystals grow

198

00:37:36,090 --> 00:37:33,820

is excellent it there's the big very

199

00:37:37,410 --> 00:37:36,100

sharply and focus that we haven't seen

200

00:37:39,900 --> 00:37:37,420

any crystals yet I don't know whether

201
00:38:00,270 --> 00:37:39,910
that's to be expected or not but what

202
00:38:00,280 --> 00:39:36,300
well inject MCC

203
00:39:41,080 --> 00:39:38,860
the rest of us down here appreciate the

204
00:39:42,880 --> 00:39:41,090
medical work that y'all are doing well

205
00:40:14,140 --> 00:39:42,890
and we hope that it makes our flights

206
00:40:14,150 --> 00:40:23,020
this is Ellen taking blood pressure

207
00:40:23,030 --> 00:41:27,060
or look at that concentration

208
00:41:35,350 --> 00:41:33,910
I could go for that but why would you

209
00:42:26,420 --> 00:41:35,360
Rhett knows what you rather be doing ah

210
00:42:30,630 --> 00:42:28,710
that's a beautiful day here it's warmed

211
00:42:59,579 --> 00:42:30,640
up a bit I guess it's about 78 or 80

212
00:43:05,759 --> 00:43:02,099
they saw a ready light on p.m. could you

213
00:47:18,420 --> 00:43:05,769

check that for us they expected they

214

00:47:33,720 --> 00:47:21,250

Atlantis Houston the lakebed is go and

215

00:47:39,730 --> 00:47:35,950

Atlantis should cross the California

216

00:47:41,710 --> 00:47:39,740

coast at about Mach 4 and an altitude of

217

00:47:48,299 --> 00:47:41,720

a hundred and five thousand feet

218

00:47:54,299 --> 00:47:50,470

television cameras at Edwards have

219

00:47:57,400 --> 00:47:54,309

picked up a visual on Atlantis now at

220

00:48:29,020 --> 00:47:57,410

Mach two seventy seven thousand feet

221

00:48:39,650 --> 00:48:32,300

velocity now Mach 1.6 altitude 69

222

00:49:13,210 --> 00:48:39,660

thousand feet 38 miles out Atlantis now

223

00:49:17,540 --> 00:49:15,680

Atlantis Houston your nav looks good you

224

00:49:31,610 --> 00:49:17,550

can disregard the nav edit message and

225

00:49:44,010 --> 00:49:35,760

velocity now 900 feet per second

226

00:49:44,020 --> 00:49:57,300

Atlantis Houston take care data to NAB

227

00:50:01,360 --> 00:49:59,170

Atlantis Houston you're looking great

228

00:50:09,060 --> 00:50:01,370

turn it on the hack surfaces clear

229

00:50:18,600 --> 00:50:12,070

Atlantis now right on the imaginary line

230

00:51:06,060 --> 00:50:21,940

velocity is 500 feet per second 5,800

231

00:51:06,070 --> 00:51:17,750

landing gear down in law

232

00:51:17,760 --> 00:51:24,079

bang your touchdown

233

00:51:29,630 --> 00:51:27,589

and nose gear touchdown and Atlanta's

234

00:51:44,660 --> 00:51:29,640

rolls out at the conclusion of mission

235

00:51:53,690 --> 00:51:46,870

an official main gear touchdown

236

00:52:15,740 --> 00:51:53,700

touchdown time was at 9:33 a.m. Pacific

237

00:52:20,670 --> 00:52:18,569

Roger Atlantis congratulations on an

238

00:52:21,930 --> 00:52:20,680

outstanding mission you've extended the

239

00:52:30,359 --> 00:52:21,940

shuttles reach to the outer planets

240

00:52:38,250 --> 00:52:30,369

Bravo Zulu Roger that Mike we'd like a

241

00:53:16,359 --> 00:52:38,260

2001 shutdown please you guys super

242

00:53:22,130 --> 00:53:19,730

STS 34 crew led by commander Don

243

00:53:25,460 --> 00:53:22,140

Williams coming down the stairs at

244

00:53:28,760 --> 00:53:25,470

Dryden there to greet them is Admiral

245

00:53:30,260 --> 00:53:28,770

Richard truly administrator of NASA dr.

246

00:53:33,890 --> 00:53:30,270

Billin or the associate administrator

247

00:53:38,049 --> 00:53:33,900

for Space Flight junior Thompson the

248

00:53:43,069 --> 00:53:38,059

deputy administrator and Michael coats

249

00:53:44,809 --> 00:53:43,079

astronaut as well as Don petty director