



1
00:00:15,190 --> 00:00:13,589
one minute to launch now soyuz is on

2
00:00:35,350 --> 00:00:15,200
internal power

3
00:00:45,430 --> 00:00:38,069
35 seconds now the first umbilical tower

4
00:00:57,189 --> 00:00:47,190
crown umbilical to the third stage has

5
00:01:04,950 --> 00:00:59,110
12 seconds the launch command has been

6
00:01:06,630 --> 00:01:05,830
five

7
00:01:07,510 --> 00:01:06,640
four

8
00:01:08,390 --> 00:01:07,520
three

9
00:01:11,990 --> 00:01:08,400
two

10
00:01:12,000 --> 00:01:16,950
and liftoff

11
00:01:21,749 --> 00:01:19,350
butch wilmore alexander simakutiyap and

12
00:01:43,429 --> 00:01:21,759
elena sorova now making their way to the

13
00:01:49,510 --> 00:01:47,350

soyuz is delivering 900 or 930 000

14

00:01:51,590 --> 00:01:49,520

pounds of thrust from its four boosters

15

00:01:54,149 --> 00:01:51,600

and single engine the first stage of the

16

00:01:55,670 --> 00:01:54,159

soyuz measures 68 feet in length and 24

17

00:01:57,590 --> 00:01:55,680

feet in diameter

18

00:02:03,670 --> 00:01:57,600

burning liquid fuel for the first two

19

00:02:08,790 --> 00:02:06,149

view of it here in the night skies

20

00:02:11,430 --> 00:02:08,800

above baikonur cosmodrome in kazakhstan

21

00:02:20,390 --> 00:02:11,440

as it makes its way now one minute into

22

00:02:24,550 --> 00:02:22,309

one minute ten seconds velocity at this

23

00:02:27,510 --> 00:02:24,560

point is one thousand and one hundred

24

00:02:27,520 --> 00:02:40,550

everything nominal so far

25

00:02:40,560 --> 00:03:03,030

oh

26

00:03:08,149 --> 00:03:04,790

one minute and 54 seconds now on to

27

00:03:10,869 --> 00:03:08,159

launch everything going well

28

00:03:14,790 --> 00:03:10,879

and uh hey the escape tower has been

29

00:03:17,910 --> 00:03:16,630

at this point the four strap on boosters

30

00:03:20,149 --> 00:03:17,920

have been jettisoned these have

31

00:03:22,790 --> 00:03:20,159

completed their job and dropped away at

32

00:03:26,470 --> 00:03:22,800

an altitude of 28 statute miles

33

00:03:41,430 --> 00:03:26,480

soyuz now traveling about 3 350 miles an

34

00:03:45,910 --> 00:03:43,350

back with in cabin views of the crew

35

00:03:48,550 --> 00:03:45,920

inside the soyuz as it makes its way now

36

00:03:51,110 --> 00:03:48,560

two and a half minutes into flight

37

00:03:52,149 --> 00:03:51,120

still seeing alexander samokutyaev on

38

00:03:54,630 --> 00:03:52,159

the

39

00:03:56,869 --> 00:03:54,640

bottom left-hand side and elena sorova

40

00:03:58,869 --> 00:03:56,879

on the top right

41

00:04:01,110 --> 00:03:58,879

which will more out of

42

00:04:02,949 --> 00:04:01,120

out of view here but uh sitting next to

43

00:04:03,990 --> 00:04:02,959

semakutiya

44

00:04:06,710 --> 00:04:04,000

now at

45

00:04:08,149 --> 00:04:06,720

two minutes and 55 seconds into launch

46

00:04:09,990 --> 00:04:08,159

at this point the launch shroud has been

47

00:04:18,229 --> 00:04:10,000

jettisoned and the rocket altitude is

48

00:04:21,990 --> 00:04:20,069

all continuing to go well three minutes

49

00:04:24,310 --> 00:04:22,000

and 10 seconds into the flight soyuz is

50

00:04:28,550 --> 00:04:24,320

traveling at a speed of about 4 700

51
00:04:31,350 --> 00:04:30,230
soyuz core stage is performing as

52
00:04:34,150 --> 00:04:31,360
expected

53
00:04:36,230 --> 00:04:34,160
it's 56 feet in length 13 and a half

54
00:04:38,230 --> 00:04:36,240
feet in diameter with a single engine

55
00:04:40,390 --> 00:04:38,240
with four fuel chambers providing

56
00:04:41,110 --> 00:04:40,400
between 178

57
00:04:44,390 --> 00:04:41,120
and

58
00:04:45,749 --> 00:04:44,400
one pounds of thrust for its three

59
00:04:48,230 --> 00:04:45,759
minutes and twenty eight seconds of

60
00:04:49,670 --> 00:04:48,240
operation

61
00:04:52,070 --> 00:04:49,680
stage will continue to burn until the

62
00:04:54,310 --> 00:04:52,080
four minute 43 second mark

63
00:04:56,790 --> 00:04:54,320

soyuz uses what's called a hot stage

64

00:04:58,550 --> 00:04:56,800

technique third stage will ignite while

65

00:05:00,950 --> 00:04:58,560

the second is still burning

66

00:05:03,590 --> 00:05:00,960

this is why the soyuz has an open area

67

00:05:06,550 --> 00:05:03,600

between the second and third stages

68

00:05:08,870 --> 00:05:06,560

and they are finally a view of

69

00:05:10,950 --> 00:05:08,880

butch wilmore inside the soyuz and again

70

00:05:13,029 --> 00:05:10,960

the toy rabbit that's going to indicate

71

00:05:19,510 --> 00:05:13,039

when the crew has made it

72

00:05:23,510 --> 00:05:21,510

everything continuing to operate

73

00:05:24,550 --> 00:05:23,520

nominally as the

74

00:05:28,070 --> 00:05:24,560

soyuz

75

00:05:46,150 --> 00:05:30,550

4 minutes and 20 seconds now into its

76

00:05:46,160 --> 00:05:57,670

foreign

77

00:06:02,710 --> 00:05:59,830

four minutes now and 48 seconds into

78

00:06:09,350 --> 00:06:02,720

flight core booster is separating at an

79

00:06:13,270 --> 00:06:10,870

so he's now being propelled by the

80

00:06:15,830 --> 00:06:13,280

single engine the soyuz third stage this

81

00:06:17,670 --> 00:06:15,840

engine is providing 67 000 pounds of

82

00:06:44,230 --> 00:06:17,680

thrust and will burn for four minutes in

83

00:06:48,550 --> 00:06:46,309

five and a half minutes into the flight

84

00:06:49,670 --> 00:06:48,560

now everything continuing to perform as

85

00:06:52,070 --> 00:06:49,680

expected

86

00:06:54,390 --> 00:06:52,080

as soyuz

87

00:06:56,950 --> 00:06:54,400

makes its way

88

00:07:15,029 --> 00:06:56,960

into space and on path for the

89

00:07:15,039 --> 00:07:42,390

foreign

90

00:07:46,869 --> 00:07:44,629

team on the ground continuing to perform

91

00:07:48,710 --> 00:07:46,879

to report that every uh

92

00:07:51,270 --> 00:07:48,720

thing working as expected all systems

93

00:07:55,110 --> 00:07:51,280

performing nominally at this point

94

00:08:04,469 --> 00:07:55,120

six minutes and uh 45 seconds now into

95

00:08:24,869 --> 00:08:06,790

alexander sama kutia commander for the

96

00:08:24,879 --> 00:08:39,829

thank

97

00:08:42,630 --> 00:08:41,670

seven and a half minutes into today's

98

00:08:46,070 --> 00:08:42,640

flight

99

00:08:48,150 --> 00:08:46,080

so he's now traveling at about 13 500

100

00:08:49,990 --> 00:08:48,160

miles an hour

101
00:08:52,550 --> 00:08:50,000
once the third stage delivers the soyuz

102
00:08:54,150 --> 00:08:52,560
to orbit and the module is separated a

103
00:08:55,990 --> 00:08:54,160
series of pre-programmed commands will

104
00:08:57,990 --> 00:08:56,000
be executed to prepare the soyuz for

105
00:09:00,070 --> 00:08:58,000
orbital operations

106
00:09:02,470 --> 00:09:00,080
these stored commands called

107
00:09:04,150 --> 00:09:02,480
time tagged commands allow many of the

108
00:09:05,750 --> 00:09:04,160
soyuz systems to be automatically

109
00:09:06,829 --> 00:09:05,760
activated on board

110
00:09:09,509 --> 00:09:06,839
computers

111
00:09:31,350 --> 00:09:09,519
as at precise times stored in those

112
00:09:31,360 --> 00:09:59,910
okay

113
00:09:59,920 --> 00:10:08,710

is

114

00:10:11,430 --> 00:10:10,389

nine minutes now until launch and the

115

00:10:13,590 --> 00:10:11,440

third

116

00:10:15,990 --> 00:10:13,600

stage of the soyuz has

117

00:10:17,910 --> 00:10:16,000

separated the single liquid fueled

118

00:10:21,110 --> 00:10:17,920

engine shut down and dropped away at an

119

00:10:23,190 --> 00:10:21,120

altitude of about 125 statute miles

120

00:10:25,750 --> 00:10:23,200

third stage is performing

121

00:10:31,750 --> 00:10:25,760

a maneuver that will open a valve and

122

00:10:35,430 --> 00:10:33,110

team here on the ground reporting that

123

00:10:37,110 --> 00:10:35,440

third stage separation

124

00:10:39,350 --> 00:10:37,120

that looked like a good ride we got to

125

00:10:42,310 --> 00:10:39,360

see about the first uh 30 seconds and

126
00:10:44,230 --> 00:10:42,320
then lost the uh soyuz behind the dragon

127
00:10:45,990 --> 00:10:44,240
but we are happy to be watching nasa tv

128
00:10:50,069 --> 00:10:46,000
and see these guys safely in orbit and

129
00:10:50,079 --> 00:10:53,990
houston copy sounds good to us

130
00:10:57,829 --> 00:10:55,670
team on board the international space

131
00:10:58,949 --> 00:10:57,839
station reported they got to watch the

132
00:11:00,470 --> 00:10:58,959
launch

133
00:11:02,870 --> 00:11:00,480
as i was saying the

134
00:11:05,269 --> 00:11:02,880
third stage cut off and separated as

135
00:11:08,870 --> 00:11:05,279
planned and the crew

136
00:11:10,710 --> 00:11:08,880
and its capsule are now safely in orbit

137
00:11:12,630 --> 00:11:10,720
spacecraft is automatically executing

138
00:11:31,190 --> 00:11:12,640

its pre-programmed commands to deploy

139

00:11:36,870 --> 00:11:32,870
soyuz is orbiting at an altitude of

140

00:11:38,310 --> 00:11:36,880
about 143 miles by 118 miles that orbit

141

00:11:40,230 --> 00:11:38,320
will be raised systematically over the

142

00:11:42,069 --> 00:11:40,240
course of the next six hours placing it

143

00:11:45,030 --> 00:11:42,079
in close proximity to the international

144

00:11:48,630 --> 00:11:46,870
control of the spacecraft from here on

145

00:11:55,990 --> 00:11:48,640
will be overseen by the russian mission

146

00:11:56,000 --> 00:12:18,949
foreign

147

00:12:23,750 --> 00:12:20,710
still getting a good view here of the

148

00:12:26,389 --> 00:12:23,760
crew inside the soyuz now as i mentioned

149

00:12:29,670 --> 00:12:26,399
already to space and

150

00:12:31,590 --> 00:12:29,680
getting ready to move into rendezvous

151
00:12:32,790 --> 00:12:31,600
preparations as they begin making with

152
00:12:46,550 --> 00:12:32,800
their way towards the international

153
00:12:46,560 --> 00:12:57,269
foreign

154
00:12:57,279 --> 00:13:11,269
is

155
00:13:11,279 --> 00:13:29,350
foreign

156
00:13:29,360 --> 00:13:43,430
that's your mind

157
00:13:43,440 --> 00:14:42,829
foreign

158
00:14:48,230 --> 00:14:45,430
right view here of the

159
00:14:50,230 --> 00:14:48,240
soyuz to limit your displays as the crew

160
00:14:53,829 --> 00:14:50,240
again getting to work now that they have

161
00:14:56,150 --> 00:14:53,839
made it onto orbit safely and are

162
00:14:58,710 --> 00:14:56,160
getting ready to move on to uh

163
00:15:00,550 --> 00:14:58,720

the activities that will put them