1
00:00:16,550 --> 00:00:14,709
coming up on the transition to auto

2
00:00:27,189 --> 00:00:16,560
sequence start in the first umbilical

3
00:00:32,310 --> 00:00:30,310
25 seconds

4
00:00:34,150 --> 00:00:32,320
the third stage ground power umbilical

5
00:00:36,229 --> 00:00:34,160
is separated

6
00:00:41,990 --> 00:00:36,239
standing by for the issuance of launch

7
00:01:01,029 --> 00:00:45,270
we have engine start

8
00:01:05,910 --> 00:01:04,149
liftoff of the soyuz tma17m

9
00:01:08,390 --> 00:01:05,920
on its way to catch up with the

10
00:01:18,149 --> 00:01:08,400
international space station five hours

11
00:01:25,109 --> 00:01:19,910
early reports of good first stage

12
00:01:29,670 --> 00:01:27,910
soyuz is delivering 930 000 pounds of

13
00:01:31,350 --> 00:01:29,680

thrust from the four boosters and the

14
00:01:33,990 --> 00:01:31,360
single engine

15
00:01:35,670 --> 00:01:34,000
the first stage of the soyuz measures 68

16
00:01:37,910 --> 00:01:35,680
feet in length

17
00:01:39,749 --> 00:01:37,920
24 feet in diameter it's burning liquid

18
00:01:59,990 --> 00:01:39,759
fuel for the first two minutes six

19
00:02:04,310 --> 00:02:02,469
already traveling 1100 miles per hour

20
00:02:28,229 --> 00:02:04,320
and transitioning through the area of

21
00:02:36,229 --> 00:02:30,550
one minute 35 seconds all continuing to

22
00:02:36,239 --> 00:02:44,869
do you load that increasing

23
00:02:44,879 --> 00:03:03,270
standing by for escape tower jettison

24
00:03:06,710 --> 00:03:05,030
those have completed their job they've

25
00:03:09,270 --> 00:03:06,720
dropped away from the vehicle at an

26
00:03:11,910 --> 00:03:09,280
altitude of 28 statute miles

27
00:03:18,149 --> 00:03:11,920
the vehicle is now traveling 3 350 miles

28
00:03:31,509 --> 00:03:20,869
standing by for launch shroud

29
00:03:37,309 --> 00:03:34,390
they are stable and 150 seconds into the

30
00:03:41,270 --> 00:03:38,869
160

31
00:03:42,869 --> 00:03:41,280
seconds into the flight now staring

32
00:03:46,630 --> 00:03:42,879
jettison

33
00:03:49,910 --> 00:03:46,640
now

34
00:03:51,270 --> 00:03:49,920
traveling 4 500 miles per hour

35
00:03:53,670 --> 00:03:51,280
approaching three minutes into the

36
00:03:57,509 --> 00:03:55,670
we are sending command number 12 copy

37
00:04:01,030 --> 00:03:57,519
command number 12.

38
00:04:03,509 --> 00:04:01,040

we are receiving the image

39
00:04:06,229 --> 00:04:03,519
all guidance systems are nominal at this

40
00:04:07,910 --> 00:04:06,239
point the core stage of the soyuz is a

41
00:04:08,869 --> 00:04:07,920
56 feet

42
00:04:10,789 --> 00:04:08,879
tall

43
00:04:13,110 --> 00:04:10,799
spacecraft 13 and a half feet in

44
00:04:16,949 --> 00:04:13,120
diameter the single engine with four

45
00:04:19,830 --> 00:04:16,959
fuel chambers providing between 178 and

46
00:04:22,310 --> 00:04:19,840
222 thousand pounds of thrust for the

47
00:04:23,430 --> 00:04:22,320
three minute 28 seconds time of

48
00:04:25,430 --> 00:04:23,440
operation

49
00:04:28,310 --> 00:04:25,440
this stage will burn until the four

50
00:04:31,350 --> 00:04:28,320
minute 43 second point so about one more

51
00:04:35,350 --> 00:04:33,270
at that point the soyuz uses what's

52
00:04:37,110 --> 00:04:35,360
called a hot stage

53
00:04:39,350 --> 00:04:37,120
transition which the third stage will

54
00:04:50,790 --> 00:04:39,360
actually ignite while the second stage

55
00:05:12,870 --> 00:04:53,830
on his first voyage into space

56
00:05:24,150 --> 00:05:15,510
and everything is nominal uh copy

57
00:05:28,710 --> 00:05:26,469
four minutes 30 seconds standing by for

58
00:05:30,550 --> 00:05:28,720
burnout of the core booster

59
00:05:51,270 --> 00:05:30,560
which will separate at an altitude of

60
00:05:53,909 --> 00:05:52,629
second stage

61
00:05:56,150 --> 00:05:53,919
separation

62
00:05:58,230 --> 00:05:56,160
these thrusters operated second stage

63
00:05:59,909 --> 00:05:58,240

separation has been confirmed the soyuz

64
00:06:02,230 --> 00:05:59,919
is now being propelled by the single

65
00:06:04,790 --> 00:06:02,240
engine of the third stage

66
00:06:06,550 --> 00:06:04,800
an engine providing 67 000 pounds of

67
00:06:12,230 --> 00:06:06,560
thrust which will burn for the next four

68
00:06:30,629 --> 00:06:14,550
all all guidance systems still working

69
00:06:34,469 --> 00:06:33,670
the russian mission control center at

70
00:06:52,150 --> 00:06:34,479
the

71
00:06:53,909 --> 00:06:52,160
everything is fine

72
00:06:57,510 --> 00:06:53,919
six minutes into the mission two minutes

73
00:06:59,350 --> 00:06:57,520
45 seconds remain in powered flight

74
00:07:00,629 --> 00:06:59,360
three crew members on their way to a

75
00:07:02,469 --> 00:07:00,639
rendezvous and docking with the

76
00:07:05,990 --> 00:07:02,479
international space station later

77
00:07:10,390 --> 00:07:08,150
soyuz commander oleg kononenko and

78
00:07:13,110 --> 00:07:10,400
kamiya yui from the japan aerospace

79
00:07:36,550 --> 00:07:13,120
exploration agency out of view chell

80
00:07:40,390 --> 00:07:38,390
traveling more than 10 000 miles per

81
00:07:41,990 --> 00:07:40,400
hour now

82
00:07:44,869 --> 00:07:42,000
approaching seven minutes into the

83
00:07:47,189 --> 00:07:44,879
flight

84
00:07:50,150 --> 00:07:47,199
launch occurred on time at 402 this

85
00:07:51,670 --> 00:07:50,160
afternoon central time 502 eastern

86
00:07:53,189 --> 00:07:51,680
daylight time

87
00:07:55,350 --> 00:07:53,199
302 am

88
00:08:26,070 --> 00:07:55,360

thursday morning at the baikonur

89
00:08:31,749 --> 00:08:28,230
seven minutes 30 seconds into the flight

90
00:08:33,430 --> 00:08:31,759
the soyuz is now traveling 13 500 miles

91
00:08:35,750 --> 00:08:33,440
per hour

92
00:08:38,709 --> 00:08:35,760
and all reports are continuing uh that

93
00:08:40,870 --> 00:08:38,719
the vehicle is operating as expected

94
00:08:43,269 --> 00:08:40,880
once the third stage delivers the soyuz

95
00:08:45,110 --> 00:08:43,279
to orbit and the module is separated

96
00:08:47,430 --> 00:08:45,120
there's a series of pre-programmed

97
00:08:51,350 --> 00:08:47,440
commands that will be executed to

98
00:08:53,750 --> 00:08:51,360
prepare the soyuz for orbital operations

99
00:08:56,310 --> 00:08:53,760
these stored commands are called time

100
00:08:59,030 --> 00:08:56,320
tagged commands and they allow many of

101
00:09:01,110 --> 00:08:59,040
these soyuz's systems that to be

102
00:09:03,590 --> 00:09:01,120
automatically activated by onboard

103
00:09:07,990 --> 00:09:03,600
computers at precise times that are

104
00:09:10,630 --> 00:09:08,000
stored inside those computer software

105
00:09:18,470 --> 00:09:10,640
eight minutes 15 seconds into the flight

106
00:09:23,670 --> 00:09:20,829
all the control systems are functioning

107
00:09:25,910 --> 00:09:23,680
nominally eight minutes 30 seconds we're

108
00:09:27,590 --> 00:09:25,920
standing by for third stage cut off and

109
00:09:47,269 --> 00:09:27,600
separation of the third stage from the

110
00:09:53,030 --> 00:09:50,550
and that confirms it the third stage is

111
00:09:55,269 --> 00:09:53,040
shut down

112
00:09:56,710 --> 00:09:55,279
welcome to space to oleg kononenko

113
00:09:59,269 --> 00:09:56,720

kamiya yui

114
00:10:02,310 --> 00:09:59,279
and chell lendgren

115
00:10:03,910 --> 00:10:02,320
a very smooth ride to orbit

116
00:10:09,990 --> 00:10:03,920
following launch from the baikonur

117
00:10:10,000 --> 00:10:15,509
page 33

118
00:10:20,230 --> 00:10:18,389
third stage actually performs a slight

119
00:10:22,470 --> 00:10:20,240
avoidance maneuver to

120
00:10:41,190 --> 00:10:22,480
which occurs by opening a valve

121
00:10:45,350 --> 00:10:43,509
commands are already uh

122
00:10:51,590 --> 00:10:45,360
doing their job the solar arrays on the

123
00:11:11,990 --> 00:10:53,670
in one

124
00:11:17,110 --> 00:11:14,630
you will have to send the command the

125
00:11:35,990 --> 00:11:17,120
inhibit of earth air or dynamic

126
00:11:40,550 --> 00:11:38,949
and just to correct one one of the

127
00:11:43,030 --> 00:11:40,560
solar panels has been deployed they're

128
00:11:44,389 --> 00:11:43,040
issuing commands for the deployment of

129
00:11:51,110 --> 00:11:44,399
the second

130
00:11:54,550 --> 00:11:52,470
copy so

131
00:12:06,150 --> 00:11:54,560
the one is set

132
00:12:06,160 --> 00:12:35,910
yes copy please continue working

133
00:12:35,920 --> 00:12:58,949
uh

134
00:12:58,959 --> 00:13:19,670
inaudible

135
00:13:22,629 --> 00:13:20,949
twenty three

136
00:13:24,150 --> 00:13:22,639
thirty thirty five one

137
00:13:26,949 --> 00:13:24,160
twenty four

138
00:13:29,910 --> 00:13:26,959

seventeen point one twenty five

139
00:13:32,550 --> 00:13:29,920
seventeen point two twenty six

140
00:14:01,350 --> 00:13:32,560
two hundred and fifteen forty and the

141
00:14:01,360 --> 00:14:06,710
okay copy

142
00:14:10,710 --> 00:14:08,550
now a little more than 13 minutes into

143
00:14:12,629 --> 00:14:10,720
the flight

144
00:14:15,350 --> 00:14:12,639
recapping the launch occurred on time at