1
00:00:06,470 --> 00:00:03,990
the visiting vehicle officer here in

2
00:00:09,350 --> 00:00:06,480
mission control now reports uh that we

3
00:00:10,470 --> 00:00:09,360
are uh now in the fly around mode

4
00:00:13,190 --> 00:00:10,480
uh so

5
00:00:15,350 --> 00:00:13,200
soyuz vehicle has approached a slightly

6
00:00:16,630 --> 00:00:15,360
ahead of schedule actually and to begin

7
00:00:18,390 --> 00:00:16,640
its fly around

8
00:00:19,590 --> 00:00:18,400
this is a

9
00:00:23,109 --> 00:00:19,600
typical

10
00:00:24,070 --> 00:00:23,119
means of aligning the soyuz precisely

11
00:00:25,990 --> 00:00:24,080
to the

12
00:00:28,070 --> 00:00:26,000
hoist module of the international space

13
00:00:31,830 --> 00:00:28,080

station this is a fly around angle of

14
00:00:34,870 --> 00:00:31,840
about 110 degrees to permit the soyuz to

15
00:00:37,510 --> 00:00:34,880
be precisely aligned uh with the docking

16
00:00:39,670 --> 00:00:37,520
port of the poist module for a few

17
00:00:41,430 --> 00:00:39,680
seconds if you will of station keeping

18
00:00:43,990 --> 00:00:41,440
enabling the russian flight controllers

19
00:00:46,229 --> 00:00:44,000
here in korea to be able to assess their

20
00:00:47,750 --> 00:00:46,239
systems before the final command is

21
00:00:50,229 --> 00:00:47,760
given for the terminal phase of the

22
00:00:52,069 --> 00:00:50,239
rendezvous final approach for contact to

23
00:00:54,790 --> 00:00:52,079
capture

24
00:00:56,229 --> 00:00:54,800
but now back as we are in the final

25
00:00:57,430 --> 00:00:56,239
phase of the rendezvous to bring the

26
00:00:59,670 --> 00:00:57,440
soyuz

27
00:01:01,990 --> 00:00:59,680
mso2 vehicle to its docking to the

28
00:01:05,910 --> 00:01:02,000
international space station

29
00:01:07,990 --> 00:01:05,920
the soyuz is now just 290 meters away

30
00:01:09,990 --> 00:01:08,000
still in the process of its fly around

31
00:01:12,390 --> 00:01:10,000
to precisely the line itself with the

32
00:01:13,830 --> 00:01:12,400
poisk module on the space-facing side

33
00:01:16,310 --> 00:01:13,840
of the russian segment of the

34
00:01:18,710 --> 00:01:16,320
international space station all of the

35
00:01:21,030 --> 00:01:18,720
soyuz systems are in excellent shape the

36
00:01:23,749 --> 00:01:21,040
soyuz is currently at the international

37
00:01:26,149 --> 00:01:23,759
space station both crossing the west

38
00:01:28,310 --> 00:01:26,159

coast of africa directly over the gambia

39
00:01:31,270 --> 00:01:28,320
moving from southwest to northeast at an

40
00:01:33,910 --> 00:01:31,280
altitude of 250 statute miles

41
00:01:37,190 --> 00:01:33,920
trailing those two vehicles the orbital

42
00:01:39,350 --> 00:01:37,200
atk cygnus unmanned cargo craft that

43
00:01:40,630 --> 00:01:39,360
will arrive for its capture and

44
00:01:42,710 --> 00:01:40,640
installation

45
00:01:44,950 --> 00:01:42,720
to the international space station on

46
00:01:46,950 --> 00:01:44,960
sunday morning but first things first

47
00:01:49,350 --> 00:01:46,960
and that is the arrival of kimbrough

48
00:01:51,830 --> 00:01:49,360
riverkopf and varasenko just minutes

49
00:01:53,910 --> 00:01:51,840
away as the fly around is about to be

50
00:01:55,830 --> 00:01:53,920
completed for a period of a few seconds

51
00:01:57,190 --> 00:01:55,840
of station keeping that will enable

52
00:01:59,350 --> 00:01:57,200
russian flight controllers here at the

53
00:02:02,069 --> 00:01:59,360
russian mission control center outside

54
00:02:04,870 --> 00:02:02,079
of moscow to complete final checks on

55
00:02:12,550 --> 00:02:04,880
the soyuz spacecraft before the command

56
00:02:17,750 --> 00:02:15,670
the soyuz ms-02 vehicle

57
00:02:20,630 --> 00:02:17,760
currently sitting passively at a

58
00:02:22,470 --> 00:02:20,640
distance of about 192 meters away from

59
00:02:24,150 --> 00:02:22,480
the international space station

60
00:02:26,949 --> 00:02:24,160
currently crossing the border between

61
00:02:30,229 --> 00:02:26,959
mali and algeria moving from southwest

62
00:02:32,470 --> 00:02:30,239
to northeast in an orbit incline 51.6

63
00:02:34,229 --> 00:02:32,480

degrees to either side of the equator

64
00:02:37,270 --> 00:02:34,239
the soyuz and the international space

65
00:02:39,990 --> 00:02:37,280
station are looking respectively at

66
00:02:43,350 --> 00:02:40,000
each other and the crew members aboard

67
00:02:45,350 --> 00:02:43,360
the station by nasa's cade rubins takoya

68
00:02:47,990 --> 00:02:45,360
onishi of the japan aerospace

69
00:02:51,350 --> 00:02:48,000
exploration agency and station commander

70
00:02:54,150 --> 00:02:51,360
anatoly ivanishin arose cosmos with a uh

71
00:02:56,390 --> 00:02:54,160
excellent view of the soyuz vehicle and

72
00:02:58,710 --> 00:02:56,400
the soyuz similarly looking at the

73
00:03:00,470 --> 00:02:58,720
station as they await the final approval

74
00:03:02,390 --> 00:03:00,480
for the command to initiate the final

75
00:03:30,949 --> 00:03:02,400
approach for docking

76
00:03:36,869 --> 00:03:33,910
an excellent view of the soyuz ms-02 and

77
00:03:39,589 --> 00:03:36,879
its thruster firings uh to orient itself

78
00:03:42,710 --> 00:03:39,599
and its uh solar array wings into the

79
00:03:44,630 --> 00:03:42,720
proper orientation uh for the uh

80
00:03:47,350 --> 00:03:44,640
initiation the final approach so we'll

81
00:03:49,030 --> 00:03:47,360
be standing by a short time from now uh

82
00:03:51,110 --> 00:03:49,040
to receive that word from the russian

83
00:03:53,270 --> 00:03:51,120
flight controllers here in korea

84
00:04:06,710 --> 00:03:53,280
all soyuz systems in excellent shape the

85
00:04:12,390 --> 00:04:09,270
flying over the heart of italy at an

86
00:04:15,190 --> 00:04:12,400
altitude of 250 miles a great view of

87
00:04:16,710 --> 00:04:15,200
the soyuz mso2

88
00:04:18,870 --> 00:04:16,720

two days after its launch for the

89
00:04:21,349 --> 00:04:18,880
baikonur cosmodrome in kazakhstan its

90
00:04:23,670 --> 00:04:21,359
solar rays properly oriented for the

91
00:04:39,990 --> 00:04:23,680
final few feet prior to contact and

92
00:04:50,870 --> 00:04:42,710
range 47 and rate rate

93
00:04:54,390 --> 00:04:53,350
we have slight misalignment of cross

94
00:05:03,510 --> 00:04:54,400
hairs

95
00:05:08,310 --> 00:05:05,510
now passing over russian ground stations

96
00:05:11,189 --> 00:05:08,320
uh over romania

97
00:05:14,230 --> 00:05:11,199
again a great view of the soyuz mso2

98
00:05:18,070 --> 00:05:14,240
spacecraft uh closing in

99
00:05:20,230 --> 00:05:18,080
just about 35 meters away from its

100
00:05:22,230 --> 00:05:20,240
docking to the poisk module to complete

101
00:05:23,590 --> 00:05:22,240
a two-day journey from the launch pad at

102
00:05:25,909 --> 00:05:23,600
baikonur

103
00:05:30,070 --> 00:05:25,919
and to restore the space station to a

104
00:05:34,310 --> 00:05:31,990
just underneath the docking port you can

105
00:05:37,029 --> 00:05:34,320
see that diamond-shaped

106
00:05:38,870 --> 00:05:37,039
mechanism that is the docking target

107
00:05:41,350 --> 00:05:38,880
to which the automated rendezvous system

108
00:05:43,270 --> 00:05:41,360
will align the crosshairs just a few

109
00:05:45,909 --> 00:05:43,280
moments from now

110
00:05:48,469 --> 00:05:45,919
again no issues of the soyuz being

111
00:05:50,870 --> 00:05:48,479
guided in automatically at this point

112
00:05:52,790 --> 00:05:50,880
for its docking just 22 meters

113
00:05:56,309 --> 00:05:52,800

separating soyuz in the international

114
00:06:01,670 --> 00:05:58,950
the center of the target is lower and to

115
00:06:03,029 --> 00:06:01,680
the left of one square and we have a

116
00:06:11,909 --> 00:06:03,039
slight

117
00:06:11,919 --> 00:06:16,230
range 15 meters

118
00:06:21,990 --> 00:06:19,510
1.5 squares along the target diameter we

119
00:06:23,350 --> 00:06:22,000
did not observe

120
00:06:25,430 --> 00:06:23,360
any um

121
00:06:27,029 --> 00:06:25,440
objects

122
00:06:30,150 --> 00:06:27,039
rate is

123
00:06:35,590 --> 00:06:33,510
13 meters now between the soyuz and its

124
00:06:37,270 --> 00:06:35,600
docking port

125
00:06:39,189 --> 00:06:37,280
on the space facing side of the

126
00:06:40,629 --> 00:06:39,199
international space station the price

127
00:06:42,629 --> 00:06:40,639
module

128
00:06:44,550 --> 00:06:42,639
coming in at a rate of just over one

129
00:06:46,830 --> 00:06:44,560
tenth of a meter per second

130
00:06:51,110 --> 00:06:46,840
right on the marks no issues

131
00:07:06,390 --> 00:06:51,120
reported flying over southern russia

132
00:07:11,110 --> 00:07:08,629
eight meters now separating the two

133
00:07:12,710 --> 00:07:11,120
vehicles as we stand by for contact and

134
00:07:22,230 --> 00:07:12,720
capture of the international space

135
00:07:22,240 --> 00:07:35,270
we still have slight misalignment

136
00:07:39,110 --> 00:07:37,510
we have contact docking confirmed and

137
00:07:42,870 --> 00:07:39,120
capture confirmed

138
00:07:44,790 --> 00:07:42,880

at 4 52 a.m central time

139
00:07:49,270 --> 00:07:44,800
as the international space station and

140
00:07:51,110 --> 00:07:49,280
soyuz mso2 flew 251 statute miles over

141
00:07:54,070 --> 00:07:51,120
southern russia

142
00:07:55,589 --> 00:07:54,080
again docking confirmed at 4 52 a.m