1
00:00:00,400 --> 00:00:19,830
t-minus 30 seconds to launch

2
00:00:19,840 --> 00:00:34,549
and ignition

3
00:00:41,990 --> 00:00:38,950
and liftoff of the soyuz 27 rocket and

4
00:00:45,270 --> 00:00:42,000
spacecraft carrying mike fossum

5
00:00:59,349 --> 00:00:45,280
satoshi furukawa and sergei volkov into

6
00:00:59,359 --> 00:01:03,910
good first stage performance

7
00:01:08,310 --> 00:01:06,310
102 tons of thrust from the four

8
00:01:10,390 --> 00:01:08,320
boosters and single engine

9
00:01:13,190 --> 00:01:10,400
first stage of the soyuz measures 68

10
00:01:14,630 --> 00:01:13,200
feet by 28 feet in diameter it's burning

11
00:01:30,550 --> 00:01:14,640
liquid fuel for the first two minutes

12
00:01:34,870 --> 00:01:33,109
one minute into the launch of soyuz 27

13
00:01:40,469 --> 00:01:34,880

to the international space station all

14
00:01:43,830 --> 00:01:42,390
at one minute and 10 seconds the speed

15
00:01:52,310 --> 00:01:43,840
of the rocket should be approximately

16
00:01:56,710 --> 00:01:54,149
standing by for the jettison of the four

17
00:01:58,870 --> 00:01:56,720
strap-on bursters one minute 58 seconds

18
00:02:03,590 --> 00:01:58,880
into the launch launch vehicle perimeter

19
00:02:31,350 --> 00:02:05,910
the crew feels great everything is okay

20
00:02:36,550 --> 00:02:33,750
one minute 58 seconds and the four strap

21
00:02:38,390 --> 00:02:36,560
on boosters have completed their job

22
00:02:42,309 --> 00:02:38,400
dropping away at an ounce two to twenty

23
00:02:48,630 --> 00:02:44,790
escape tower has jettisoned

24
00:03:01,430 --> 00:02:51,509
stage one separation confirmed we feel

25
00:03:07,750 --> 00:03:03,830
launch vehicle structural parameters

26
00:03:13,750 --> 00:03:07,760
phenomena 150 seconds of the flight okay

27
00:03:18,309 --> 00:03:16,149
second stage of the soyuz is 56 feet in

28
00:03:21,270 --> 00:03:18,319
length 13 and a half feet in diameter it

29
00:03:22,869 --> 00:03:21,280
has a single engine that provides 96

30
00:03:25,350 --> 00:03:22,879
tons of thrust for its three minutes and

31
00:03:26,790 --> 00:03:25,360
28 seconds of operation

32
00:03:29,750 --> 00:03:26,800
we're continuing to receive live

33
00:03:32,229 --> 00:03:29,760
in-cabin views of survey golf volkov on

34
00:03:36,910 --> 00:03:32,239
the left and satoshi furukawa on the

35
00:03:40,949 --> 00:03:40,070
180 seconds

36
00:03:43,350 --> 00:03:40,959
the

37
00:03:45,509 --> 00:03:43,360
vehicle stabilization

38
00:03:46,630 --> 00:03:45,519

is stable

39
00:04:09,270 --> 00:03:46,640
we feel

40
00:04:14,789 --> 00:04:11,670
there's a look at mike fossum waving to

41
00:04:17,670 --> 00:04:14,799
the camera as he rides the soyuz vehicle

42
00:04:19,590 --> 00:04:17,680
into space again headed for a rendezvous

43
00:04:26,830 --> 00:04:19,600
with the international space station on

44
00:04:31,270 --> 00:04:28,390
230.

45
00:04:33,749 --> 00:04:31,280
seconds in flight

46
00:04:35,990 --> 00:04:33,759
the vehicle is stable

47
00:04:39,189 --> 00:04:36,000
copy we're so great

48
00:04:42,790 --> 00:04:39,199
everything on board is okay

49
00:04:45,189 --> 00:04:42,800
page two thrusters and nominal 250

50
00:04:46,629 --> 00:04:45,199
seconds in flight

51
00:04:48,870 --> 00:04:46,639
in the upper right hand corner you can

52
00:04:51,430 --> 00:04:48,880
see that small toy pig that is the

53
00:04:53,590 --> 00:04:51,440
mascot of this uh mission

54
00:04:56,870 --> 00:04:53,600
who was given to sergei volkov by his

55
00:04:56,880 --> 00:05:11,990
michael we can see you now

56
00:05:17,430 --> 00:05:14,070
the core booster burns out and separates

57
00:05:19,749 --> 00:05:17,440
at an altitude of 105 miles

58
00:05:24,310 --> 00:05:19,759
standing by for that to occur at the 4

59
00:05:27,749 --> 00:05:25,749
and the visiting vehicle officer here in

60
00:05:29,430 --> 00:05:27,759
mission control confirmed second stage

61
00:05:31,350 --> 00:05:29,440
separation the four liquid fueled

62
00:05:33,270 --> 00:05:31,360
engines have finished their

63
00:05:35,110 --> 00:05:33,280

job for the day and are now dropping

64
00:05:36,150 --> 00:05:35,120
away about four minutes of power flight

65
00:05:39,350 --> 00:05:36,160
remaining

66
00:05:40,790 --> 00:05:39,360
separation a crew feels great everything

67
00:05:42,870 --> 00:05:40,800
on board is okay

68
00:05:45,110 --> 00:05:42,880
soy is now being propelled by a single

69
00:05:47,189 --> 00:05:45,120
engine of the soyuz's third stage

70
00:05:49,110 --> 00:05:47,199
this engine provides 30 tons of thrust

71
00:06:04,830 --> 00:05:49,120
and it's going to burn for four minutes

72
00:06:12,390 --> 00:06:08,790
foreign 330

73
00:06:27,150 --> 00:06:12,400
seconds into five the thrusters of stage

74
00:06:32,870 --> 00:06:30,629
350 seconds in flight system parameters

75
00:06:34,950 --> 00:06:32,880
are nominal

76
00:07:19,110 --> 00:06:34,960
micro

77
00:07:19,120 --> 00:07:41,110
vehicle is stable

78
00:07:41,120 --> 00:07:51,270
and rotation are nominal

79
00:07:51,280 --> 00:07:56,230
functioning as expected

80
00:08:01,110 --> 00:07:58,390
now seven minutes and 30 seconds into

81
00:08:07,469 --> 00:08:01,120
the flight speed of this soyuz is now

82
00:08:50,790 --> 00:08:10,629
450 seconds in flight

83
00:08:55,509 --> 00:08:52,710
just over eight minutes into the flight

84
00:08:58,630 --> 00:08:55,519
of the soyuz 27 spacecraft achieving

85
00:08:59,910 --> 00:08:58,640
orbital insertion

86
00:09:19,350 --> 00:08:59,920
flight

87
00:09:19,360 --> 00:09:26,070
no issues right is nominal

88
00:09:26,080 --> 00:09:33,590

nation

89
00:09:40,230 --> 00:09:36,550
michael we congratulate you

90
00:09:42,150 --> 00:09:40,240
on their successful lunch and now

91
00:09:44,710 --> 00:09:42,160
mission control moscow will be talking

92
00:09:46,389 --> 00:09:44,720
to you okay week rpo we're talking to

93
00:09:48,630 --> 00:09:46,399
mission control moscow eridance this is

94
00:10:03,430 --> 00:09:48,640
ncc master how about

95
00:10:07,269 --> 00:10:05,350
visiting vehicle report officer reports

96
00:10:15,910 --> 00:10:07,279
that all arrays and antennas have been

97
00:10:20,069 --> 00:10:18,310
so i'll step through a series of time

98
00:10:22,310 --> 00:10:20,079
tag commands that allow the soyuz

99
00:10:25,269 --> 00:10:22,320
systems to be automatically activated by

100
00:10:26,150 --> 00:10:25,279
the onboard computers

101
00:10:28,949 --> 00:10:26,160
uh

102
00:10:32,150 --> 00:10:28,959
led is no longer eliminated we are

103
00:10:34,630 --> 00:10:32,160
opening up one and two cardio the third

104
00:10:36,310 --> 00:10:34,640
stage cut off and separation is complete

105
00:10:38,150 --> 00:10:36,320
that single liquid fueled engine has

106
00:10:41,509 --> 00:10:38,160
shut down and dropped away at a now to

107
00:10:43,829 --> 00:10:41,519
125 statute miles as we saw by the

108
00:10:47,509 --> 00:10:43,839
floating pig toy they are in

109
00:10:49,190 --> 00:10:47,519
microgravity now

110
00:10:51,030 --> 00:10:49,200
third stage performing an avoidance

111
00:10:55,829 --> 00:10:51,040
maneuver by opening a valve in its

112
00:11:03,110 --> 00:10:58,230
the soyuz capsule and crew inside now

113
00:11:09,829 --> 00:11:05,630

should be at an altitude about 143 by

114
00:11:15,110 --> 00:11:13,110
that orbit will be increased

115
00:11:17,509 --> 00:11:15,120
bit by bit over the course of the next

116
00:11:19,269 --> 00:11:17,519
two days putting it in proximity with

117
00:11:22,069 --> 00:11:19,279
the international space station for that

118
00:11:24,470 --> 00:11:22,079
uh 4 22 p.m central time docking on

119
00:11:40,310 --> 00:11:24,480
thursday to the earth-facing port of the

120
00:11:43,990 --> 00:11:42,150
aboard the international space station

121
00:11:46,310 --> 00:11:44,000
uh there are future crewmates commander

122
00:11:49,269 --> 00:11:46,320
andrei borosenko and flight engineers

123
00:11:50,710 --> 00:11:49,279
ron garan and alexander sama katyayev uh

124
00:11:52,550 --> 00:11:50,720
watching the video that is being

125
00:11:58,069 --> 00:11:52,560
uplinked for mission control houston of

126
00:12:01,829 --> 00:11:59,670
flight director brian smith and his team

127
00:12:04,470 --> 00:12:01,839
here monitoring uh the systems of the

128
00:12:07,269 --> 00:12:04,480
international space station

129
00:12:36,550 --> 00:12:07,279
as the expedition crew aboard

130
00:12:36,560 --> 00:12:51,509
what's your

131
00:12:55,350 --> 00:12:53,670
202 for

132
00:13:00,629 --> 00:12:55,360
decimal four

133
00:13:06,389 --> 00:13:03,829
seven six twenty five eighteen

134
00:13:27,750 --> 00:13:06,399
zero twenty six two six 266

135
00:13:33,670 --> 00:13:31,190
coming up for the crew later today at 6

136
00:13:35,269 --> 00:13:33,680
52 p.m central time

137
00:13:38,230 --> 00:13:35,279
there will be one of the first of the

138
00:13:41,110 --> 00:13:38,240

rendezvous burns which will change the

139
00:13:43,509 --> 00:13:41,120
speed of the spacecraft by about 32

140
00:13:46,790 --> 00:13:43,519
miles an hour

141
00:13:48,949 --> 00:13:46,800
a second burns schedule for 7 34 pm

142
00:13:57,030 --> 00:13:48,959
central time that will change this

143
00:14:02,710 --> 00:14:00,389
and then finally at 3 53 pm

144
00:14:06,230 --> 00:14:02,720
will be the

145
00:14:07,829 --> 00:14:06,240
last of the initial rendezvous burns

146
00:14:09,910 --> 00:14:07,839
which will uh change the speed of the

147
00:14:12,629 --> 00:14:09,920
spacecraft by four and a half miles an

148
00:14:14,389 --> 00:14:12,639
hour and continue to refine the approach

149
00:14:48,230 --> 00:14:14,399
to the international space station for

150
00:14:53,350 --> 00:14:50,790
and so to recap the activities of today

151
00:14:55,829 --> 00:14:53,360
the soyuz spacecraft was launched from

152
00:14:58,790 --> 00:14:55,839
the baikonur cosmodrome of kazakhstan to

153
00:15:01,509 --> 00:14:58,800
the international space station at 3 12

154
00:15:04,069 --> 00:15:01,519
p.m central time carrying nasa astronaut

155
00:15:06,069 --> 00:15:04,079
mike fossum cosmonaut sergei volkov the

156
00:15:08,310 --> 00:15:06,079
spacecraft commander and japan aerospace

157
00:15:11,189 --> 00:15:08,320
exploration agency astronaut satoshi

158
00:15:11,199 --> 00:15:19,110
trio is now safely on orbit

159
00:15:28,949 --> 00:15:21,990
please make enough next compass is at 0

160
00:15:52,310 --> 00:15:30,310
zero zero

161
00:15:57,189 --> 00:15:54,949
we're fine

162
00:15:58,550 --> 00:15:57,199
we feel great

163
00:16:00,550 --> 00:15:58,560

good news

164
00:16:04,069 --> 00:16:00,560
and we can see you

165
00:16:06,790 --> 00:16:04,079
two three three 150.

166
00:16:08,710 --> 00:16:06,800
this is the time when the tv will be off

167
00:16:10,949 --> 00:16:08,720
and we'll send the command to deactivate

168
00:16:15,749 --> 00:16:14,790
okay now we are proceeding with the kspr

169
00:16:16,790 --> 00:16:15,759
led

170
00:16:25,829 --> 00:16:16,800
checkup

171
00:16:30,629 --> 00:16:28,389
and so uh all systems working well

172
00:16:32,710 --> 00:16:30,639
aboard the soyuz spacecraft as fossum

173
00:16:34,150 --> 00:16:32,720
furukawa and volkov speed toward the

174
00:16:35,829 --> 00:16:34,160
international space station again

175
00:16:39,110 --> 00:16:35,839
they're scheduled to dock the spacecraft

176
00:16:43,030 --> 00:16:39,120
with their new home at 3 22

177
00:16:45,030 --> 00:16:43,040
4 22 p.m central time on june the 9th

178
00:16:47,030 --> 00:16:45,040
they'll be joining expedition 28 uh

179
00:16:49,430 --> 00:16:47,040
commander andre borosenko and flight

180
00:16:52,069 --> 00:16:49,440
engineer alexander sama kodayav both of

181
00:16:53,670 --> 00:16:52,079
the russian federal space agency and ron

182
00:16:54,949 --> 00:16:53,680
garan of nasa

183
00:16:56,790 --> 00:16:54,959
that trio has been aboard the

184
00:17:01,670 --> 00:16:56,800
international space station since april

185
00:17:05,350 --> 00:17:03,670
they saw the departure of

186
00:17:07,669 --> 00:17:05,360
the previous crew

187
00:17:09,669 --> 00:17:07,679
commander dmitry kondrachev and flight

188
00:17:11,750 --> 00:17:09,679

engineers paolo nespoli of the

189
00:17:13,110 --> 00:17:11,760
european space agency and katie coleman

190
00:17:15,110 --> 00:17:13,120
of nasa

191
00:17:17,510 --> 00:17:15,120
who are back home on the ground safe and

192
00:17:20,710 --> 00:17:17,520
sound and undergoing rehabilitation

193
00:17:22,549 --> 00:17:20,720
following their five months in orbit

194
00:17:33,029 --> 00:17:22,559
good morning

195
00:17:34,710 --> 00:17:33,039
congratulations guys from the bottom of

196
00:17:36,470 --> 00:17:34,720
my heart congratulations on the

197
00:17:37,830 --> 00:17:36,480
successful launch everything has been

198
00:17:40,710 --> 00:17:37,840
deployed

199
00:17:42,310 --> 00:17:40,720
no issues just be

200
00:17:44,789 --> 00:17:42,320
careful

201
00:17:48,150 --> 00:17:44,799
again everything's great sergey as we

202
00:17:52,070 --> 00:17:49,990
no need to rush and then everything will

203
00:18:27,669 --> 00:17:52,080
be fine best of luck to you guys yes

204
00:18:31,190 --> 00:18:29,350
to loosen uh

205
00:19:23,190 --> 00:18:31,200
shoulder straps

206
00:19:28,470 --> 00:19:25,750
and now the orbital parameter is

207
00:19:30,310 --> 00:19:28,480
inclination is 5167

208
00:19:32,390 --> 00:19:30,320
and please don't forget to

209
00:19:35,590 --> 00:19:32,400
deactivate a thermal sensor could you

210
00:19:47,669 --> 00:19:37,110
in 20 minutes after the first

211
00:19:47,679 --> 00:20:01,350
the time will be 23 43.

212
00:20:07,110 --> 00:20:03,830
after we do the third measurement for

213
00:20:10,390 --> 00:20:07,120

the leg check uh we're asking you go to

214
00:20:15,430 --> 00:20:10,400
delta glove okay wake up yo and then

215
00:20:49,750 --> 00:20:15,440
next home pass is zero zero 45.

216
00:20:54,630 --> 00:20:51,909
this is mission control houston uh 20

217
00:20:56,470 --> 00:20:54,640
minutes into the launch of the soyuz 27

218
00:20:58,950 --> 00:20:56,480
spacecraft carrying

219
00:21:01,669 --> 00:20:58,960
mike fossum sergey volkov and satoshi

220
00:21:04,789 --> 00:21:01,679
furukawa into orbit all systems aboard

221
00:21:06,870 --> 00:21:04,799
the soyuz tma-02m spacecraft working

222
00:21:08,789 --> 00:21:06,880
well it's solar arrays and antennas

223
00:21:09,750 --> 00:21:08,799
successfully deployed

224
00:21:11,190 --> 00:21:09,760
the crew

225
00:21:13,430 --> 00:21:11,200
is going to work with mission control

226
00:21:15,350 --> 00:21:13,440
moscow on refining the orbit to the

227
00:21:17,750 --> 00:21:15,360
international space station

228
00:21:19,270 --> 00:21:17,760
again setting up for a rendezvous and

229
00:21:21,590 --> 00:21:19,280
docking with the

230
00:21:23,590 --> 00:21:21,600
rossviet or mini research module one

231
00:21:25,190 --> 00:21:23,600
port on the international space station

232
00:21:26,950 --> 00:21:25,200
that's the earth-facing port on the

233
00:21:27,750 --> 00:21:26,960
zarya module

234
00:21:30,549 --> 00:21:27,760
that

235
00:21:32,789 --> 00:21:30,559
docking is scheduled for 4 22 pm central

236
00:21:35,430 --> 00:21:32,799
time on thursday we'll begin nasa

237
00:21:41,590 --> 00:21:35,440
television coverage at 3 30 pm central

238
00:21:45,270 --> 00:21:43,830

and then following that nasa tv coverage

239
00:21:47,190 --> 00:21:45,280
of the hatch opening and welcoming

240
00:21:49,830 --> 00:21:47,200
ceremony aboard the orbiting laboratory