1
00:01:04,469 --> 00:00:16,520
[Music]

2
00:01:04,479 --> 00:01:07,600
so

3
00:02:12,790 --> 00:01:39,710
[Music]

4
00:02:14,550 --> 00:02:12,800
good morning you are looking at a live

5
00:02:17,350 --> 00:02:14,560
view from the international space

6
00:02:19,670 --> 00:02:17,360
station at spacex's dragon resupply

7
00:02:22,390 --> 00:02:19,680
spacecraft connected to the station's

8
00:02:24,150 --> 00:02:22,400
canada arm 2 and position positioned

9
00:02:27,270 --> 00:02:24,160
just outside the station's harmony

10
00:02:30,150 --> 00:02:27,280
module where it will be birthed shortly

11
00:02:31,990 --> 00:02:30,160
this spacecraft which is carrying 5 500

12
00:02:35,270 --> 00:02:32,000
pounds of crew supplies hardware

13
00:02:37,190 --> 00:02:35,280

research and more is rounding out its

14
00:02:39,350 --> 00:02:37,200
two day journey to the space station

15
00:02:43,910 --> 00:02:39,360
where it will remain for about a month

16
00:02:48,390 --> 00:02:46,229
we are live from the international space

17
00:02:50,710 --> 00:02:48,400
station flight control room at johnson

18
00:02:52,470 --> 00:02:50,720
space center in houston texas where

19
00:02:54,869 --> 00:02:52,480
flight controllers are switching between

20
00:02:56,710 --> 00:02:54,879
the orbit one and two shifts

21
00:02:58,470 --> 00:02:56,720
these teams monitor all of the systems

22
00:03:00,949 --> 00:02:58,480
aboard the station and they're currently

23
00:03:05,270 --> 00:03:00,959
controlling the canadarm2 to bring the

24
00:03:06,869 --> 00:03:05,280
dragon spacecraft up to the station

25
00:03:10,949 --> 00:03:06,879
leading teams this morning is flight

26
00:03:15,350 --> 00:03:12,869
seated in the white shirt to his right

27
00:03:17,910 --> 00:03:15,360
is capcom or capsule communicator travis

28
00:03:19,830 --> 00:03:17,920
fitzgerald who is relaying information

29
00:03:23,190 --> 00:03:19,840
from the ground to the astronauts aboard

30
00:03:27,030 --> 00:03:25,110
this morning's visiting vehicle officer

31
00:03:28,710 --> 00:03:27,040
is david harshman he's in communication

32
00:03:31,430 --> 00:03:28,720
with the spacex team in hawthorne

33
00:03:33,910 --> 00:03:31,440
california keeping tabs on dragon with

34
00:03:36,149 --> 00:03:33,920
information from both teams and robotics

35
00:03:37,910 --> 00:03:36,159
controller is jared olson and his team

36
00:03:45,350 --> 00:03:37,920
is controlling the candid arm 2 for

37
00:03:49,509 --> 00:03:47,589
you can see that dragon is positioned

38
00:03:51,509 --> 00:03:49,519

close outside the international space

39
00:03:53,270 --> 00:03:51,519
station's harmony module and the common

40
00:03:54,869 --> 00:03:53,280
berthing mechanism

41
00:03:57,110 --> 00:03:54,879
and over the next several minutes we'll

42
00:03:59,589 --> 00:03:57,120
see dragon move slowly in through the

43
00:04:01,509 --> 00:03:59,599
use of that candid arm 2 until it is

44
00:04:03,270 --> 00:04:01,519
attached and secured to the station

45
00:04:05,110 --> 00:04:03,280
through a series of

46
00:04:06,309 --> 00:04:05,120
locks and bolts

47
00:04:08,229 --> 00:04:06,319
and it will remain there for

48
00:04:10,630 --> 00:04:08,239
approximately a month as the crew

49
00:04:12,869 --> 00:04:10,640
unloads the research and supplies on

50
00:04:14,869 --> 00:04:12,879
board before reloading it

51
00:05:11,510 --> 00:04:14,879
and sending it back to earth for a safe

52
00:05:15,909 --> 00:05:13,430
dragon was captured this morning by

53
00:05:18,150 --> 00:05:15,919
canadian space agency astronaut david

54
00:05:20,310 --> 00:05:18,160
saint jock and backed up by nasa's nick

55
00:05:22,710 --> 00:05:20,320
hague who took their place in the cupola

56
00:05:25,029 --> 00:05:22,720
module and used the canada arm 2 as you

57
00:05:27,189 --> 00:05:25,039
can see in this time lapse to reach out

58
00:05:28,870 --> 00:05:27,199
and grapple the spacecraft when it was

59
00:05:31,189 --> 00:05:28,880
about 30 feet away from the

60
00:05:33,189 --> 00:05:31,199
international space station

61
00:05:35,270 --> 00:05:33,199
the astronauts then turned the controls

62
00:05:37,270 --> 00:05:35,280
back over to teams on the ground here in

63
00:05:39,189 --> 00:05:37,280

mission control and they're now using

64
00:05:40,950 --> 00:05:39,199
the canadarm2 to reposition the

65
00:05:49,749 --> 00:05:40,960
spacecraft and bring it into the

66
00:05:53,990 --> 00:05:51,430
the international space station is

67
00:05:56,270 --> 00:05:54,000
currently traveling over 17 thousand

68
00:05:59,110 --> 00:05:56,280
miles an hour and flying

69
00:06:04,309 --> 00:05:59,120
261 statute miles above the south

70
00:06:08,390 --> 00:06:05,990
throughout our coverage we'll see the

71
00:06:11,830 --> 00:06:08,400
space station vary from light to

72
00:06:14,150 --> 00:06:11,840
darkness as it crosses over into the

73
00:06:16,550 --> 00:06:14,160
night side of the earth

74
00:06:18,790 --> 00:06:16,560
as the station rotates about as the

75
00:06:46,550 --> 00:06:18,800
station orbits the earth about every 90

76
00:06:46,560 --> 00:06:50,629
my

77
00:06:54,870 --> 00:06:52,790
the crew on board the station is will be

78
00:06:55,670 --> 00:06:54,880
preparing for their midday meal coming

79
00:06:57,749 --> 00:06:55,680
up

80
00:06:59,670 --> 00:06:57,759
and they have been informed to not

81
00:07:02,230 --> 00:06:59,680
exercise any longer

82
00:07:03,909 --> 00:07:02,240
as any exercise might cause vibrations

83
00:07:45,589 --> 00:07:03,919
that would disturb the placement of the

84
00:07:49,189 --> 00:07:47,270
as you can see we're in a short

85
00:07:50,790 --> 00:07:49,199
satellite handover period right now

86
00:07:52,710 --> 00:07:50,800
which occurs from time to time on the

87
00:07:54,869 --> 00:07:52,720
international space station

88
00:07:56,710 --> 00:07:54,879

the data and communications including

89
00:07:58,150 --> 00:07:56,720
some of the visuals from the station

90
00:08:00,309 --> 00:07:58,160
come through a series of satellites

91
00:08:02,790 --> 00:08:00,319
called tdrs which is the tracking data

92
00:08:05,110 --> 00:08:02,800
and relay satellite system

93
00:08:07,270 --> 00:08:05,120
these losses of communication are

94
00:08:31,749 --> 00:08:07,280
tracked by the teams

95
00:08:35,750 --> 00:08:33,430
dragon began its journey to the

96
00:08:39,110 --> 00:08:35,760
international space station on saturday

97
00:08:41,269 --> 00:08:39,120
may the 4th at 1 48 a.m central time

98
00:08:43,670 --> 00:08:41,279
when it lifted off from nasa's kennedy

99
00:08:45,750 --> 00:08:43,680
space center cape canaveral air force

100
00:08:48,070 --> 00:08:45,760
station in florida

101
00:08:51,269 --> 00:08:48,080
it was the second launch attempt for

102
00:08:57,350 --> 00:08:51,279
dragon the night before having postponed

103
00:09:01,190 --> 00:08:59,910
and about 12 minutes after dragon's

104
00:09:02,630 --> 00:09:01,200
launch

105
00:09:05,110 --> 00:09:02,640
solar arrays

106
00:09:07,269 --> 00:09:05,120
unfurled and began collecting good power

107
00:09:09,030 --> 00:09:07,279
propelling it for its next two-day

108
00:09:11,350 --> 00:09:09,040
journey to the international space

109
00:09:15,269 --> 00:09:11,360
station where you see it now outside of

110
00:09:19,110 --> 00:09:17,269
this is spacex's 17th commercial

111
00:09:21,269 --> 00:09:19,120
resupply mission to the international

112
00:09:23,110 --> 00:09:21,279
space station but it's a welcome back

113
00:09:25,030 --> 00:09:23,120

for this dragon capsule which has

114
00:09:51,110 --> 00:09:25,040
visited the station before

115
00:09:55,030 --> 00:09:52,790
you may be able to see that dragon is

116
00:09:55,990 --> 00:09:55,040
slowly moving in towards the harmony

117
00:09:57,910 --> 00:09:56,000
module

118
00:10:00,550 --> 00:09:57,920
teams here on the ground

119
00:10:02,069 --> 00:10:00,560
send commands to control the robotic arm

120
00:10:03,829 --> 00:10:02,079
and it will move in very small

121
00:10:12,949 --> 00:10:03,839
increments as the teams perform

122
00:10:17,430 --> 00:10:14,550
as we mentioned dragon will be attached

123
00:10:19,430 --> 00:10:17,440
with a series of latches and bolts

124
00:10:21,509 --> 00:10:19,440
the first of those is the series of

125
00:10:23,829 --> 00:10:21,519
latches and to us it will look like

126
00:10:25,670 --> 00:10:23,839
dragon is attached to the station once

127
00:10:28,150 --> 00:10:25,680
those are have secured the vehicle but

128
00:10:30,790 --> 00:10:28,160
birthing itself will be confirmed after

129
00:11:16,949 --> 00:10:30,800
the additional 16 bolts have created an

130
00:11:20,710 --> 00:11:18,470
once dragon is attached to the

131
00:11:23,110 --> 00:11:20,720
international space station crews will

132
00:11:25,670 --> 00:11:23,120
begin accessing the cargo later today

133
00:11:27,430 --> 00:11:25,680
and tomorrow and will continue unloading

134
00:11:29,750 --> 00:11:27,440
the spacecraft over the next several

135
00:11:31,670 --> 00:11:29,760
weeks before reloading it with about

136
00:11:33,910 --> 00:11:31,680
four thousand two hundred pounds of

137
00:11:48,710 --> 00:11:33,920
research hardware and crew supplies to

138
00:11:53,990 --> 00:11:50,550

however before opening those hatches

139
00:11:56,230 --> 00:11:54,000
later today dragon will be outfitted in

140
00:11:59,030 --> 00:11:56,240
the area known as the vestibule which is

141
00:12:00,870 --> 00:11:59,040
the space between dragon and the station

142
00:12:03,509 --> 00:12:00,880
and that'll prepare the crews to open

143
00:12:05,030 --> 00:12:03,519
the hatch there are two hatches and the

144
00:12:06,470 --> 00:12:05,040
crew will need to open those to access

145
00:12:08,470 --> 00:12:06,480
the contents there's a hatch on the

146
00:12:13,350 --> 00:12:08,480
station side and a hatch on dragon

147
00:12:16,870 --> 00:12:15,190
as you can see the arm is now in a hold

148
00:12:19,190 --> 00:12:16,880
position

149
00:12:21,750 --> 00:12:19,200
this allows the teams on the ground to

150
00:12:23,670 --> 00:12:21,760
make their final alignment checks

151
00:14:01,269 --> 00:12:23,680
preparing for the spacecraft to be

152
00:14:06,310 --> 00:14:03,110
the first stage of capture for or

153
00:14:08,550 --> 00:14:06,320
birthing for dragon is called rtl ready

154
00:14:11,750 --> 00:14:08,560
to latch and teams on the ground are now

155
00:14:13,509 --> 00:14:11,760
preparing for that those four latches

156
00:15:18,069 --> 00:14:13,519
once dragon is connected to the space

157
00:15:22,949 --> 00:15:20,230
dragon moving even slower

158
00:15:25,189 --> 00:15:22,959
into its birthing position

159
00:16:13,670 --> 00:15:25,199
where those four latches will first

160
00:17:13,590 --> 00:16:15,189
those latches are now beginning to

161
00:17:17,270 --> 00:17:15,510
all four of those latches have been

162
00:17:19,510 --> 00:17:17,280
attached

163
00:18:42,789 --> 00:17:19,520

that's the first stage capture

164
00:18:47,110 --> 00:18:44,789
the dragon spacecraft you see outside

165
00:18:49,750 --> 00:18:47,120
the station's harmony module today

166
00:18:52,789 --> 00:18:49,760
arrives with around 5 500 pounds of

167
00:18:55,669 --> 00:18:52,799
total cargo about 3 300 pounds of that

168
00:18:58,150 --> 00:18:55,679
is pressurized while another 2100 is

169
00:19:01,990 --> 00:18:58,160
unpressurized

170
00:19:04,230 --> 00:19:02,000
and about 1 600 pounds of the cargo the

171
00:19:06,470 --> 00:19:04,240
bulk of the pressurized cargo is

172
00:19:07,510 --> 00:19:06,480
actually science investigations there's

173
00:19:08,950 --> 00:19:07,520
always

174
00:19:10,950 --> 00:19:08,960
science going on on the international

175
00:19:31,669 --> 00:19:10,960
space station it is our orbiting

176
00:19:35,029 --> 00:19:33,430
dragon may look like it is attached to

177
00:19:36,630 --> 00:19:35,039
the international space station and

178
00:19:38,390 --> 00:19:36,640
while we do have that first stage

179
00:19:40,230 --> 00:19:38,400
capture we'll be looking for second

180
00:19:43,430 --> 00:19:40,240
stage capture to occur and that's the

181
00:19:45,110 --> 00:19:43,440
driving of 16 bolts to firmly attach

182
00:21:06,310 --> 00:19:45,120
dragon to the international space

183
00:21:09,990 --> 00:21:08,149
the canada arm is now

184
00:21:11,990 --> 00:21:10,000
limp which sets it up for the second

185
00:21:14,630 --> 00:21:12,000
stage capture to begin shortly that's

186
00:21:16,390 --> 00:21:14,640
that driving of 16 bolts to secure

187
00:21:55,110 --> 00:21:16,400
dragon to the international space

188
00:21:59,190 --> 00:21:57,110

as you can see the station is now in an

189
00:22:01,190 --> 00:21:59,200
orbital night time having recently

190
00:22:03,350 --> 00:22:01,200
crossed the terminator line that's the

191
00:22:05,830 --> 00:22:03,360
line between daylight and night time as

192
00:22:07,990 --> 00:22:05,840
the station orbits the earth at over 17

193
00:22:10,149 --> 00:22:08,000
000 miles an hour

194
00:22:12,470 --> 00:22:10,159
it's currently over the indian ocean and

195
00:24:19,909 --> 00:22:12,480
will be coming up to cross australia

196
00:24:24,470 --> 00:24:22,390
upon its arrival today spacex's dragon

197
00:24:26,950 --> 00:24:24,480
is the sixth vehicle parked at the space

198
00:24:29,269 --> 00:24:26,960
station right now it joins two soyuz

199
00:24:31,430 --> 00:24:29,279
spacecraft two russian progress resupply

200
00:24:58,710 --> 00:24:31,440
crafts and northrop grumman's cygnus

201
00:25:01,909 --> 00:25:00,149
you can see the configuration of those

202
00:27:19,830 --> 00:25:01,919
spacecraft on the international space

203
00:27:22,710 --> 00:27:20,789
we've been looking forward to the

204
00:27:24,230 --> 00:27:22,720
arrival of dragon and we're expecting it

205
00:27:26,789 --> 00:27:24,240
a little bit earlier

206
00:27:28,710 --> 00:27:26,799
but on april 29th teams identified an

207
00:27:30,149 --> 00:27:28,720
issue with the main bus switching unit

208
00:27:31,909 --> 00:27:30,159
that's a

209
00:27:33,669 --> 00:27:31,919
distributes power to two of the eight

210
00:27:35,750 --> 00:27:33,679
channels on the station and there were

211
00:27:38,070 --> 00:27:35,760
no concerns to the crew or the station

212
00:27:40,070 --> 00:27:38,080
but it's important that the station has

213
00:27:41,990 --> 00:27:40,080

its full power capability when a vehicle

214
00:27:47,510 --> 00:27:42,000
arrives and the canadarm2 had a backup

215
00:27:52,389 --> 00:27:49,750
this video shows a remove and replace of

216
00:27:54,630 --> 00:27:52,399
that mbsu which occurred over two days

217
00:27:56,230 --> 00:27:54,640
last week

218
00:28:02,070 --> 00:27:56,240
using the special purpose dextrous

219
00:28:05,190 --> 00:28:03,190
station is now in an optimal

220
00:28:10,149 --> 00:28:05,200
configuration for the capture and

221
00:28:14,870 --> 00:28:12,549
and we're getting word that those 16

222
00:28:17,190 --> 00:28:14,880
bolts which are the second stage capture

223
00:28:42,310 --> 00:28:17,200
are now beginning to rotate and further

224
00:28:42,320 --> 00:29:21,190
my

225
00:29:25,430 --> 00:29:23,029
the 16 volts that are turning now are

226
00:29:27,750 --> 00:29:25,440
referred to as a bolts which stands for

227
00:29:29,990 --> 00:29:27,760
acquired bolts and once they are

228
00:29:31,830 --> 00:29:30,000
attached it will secure

229
00:32:21,029 --> 00:29:31,840
dragon and that will conclude today's

230
00:32:25,029 --> 00:32:23,430
we're continuing to monitor the birthing

231
00:32:26,789 --> 00:32:25,039
of the

232
00:32:32,630 --> 00:32:26,799
dragon resupply craft to the

233
00:32:39,430 --> 00:32:35,830
dragon was captured this morning

234
00:32:41,990 --> 00:32:39,440
at 6 03 a.m central time by canada's

235
00:32:43,509 --> 00:32:42,000
defeat st jack and important to note

236
00:32:45,830 --> 00:32:43,519
david is actually the first canadian

237
00:33:08,310 --> 00:32:45,840
space agency astronaut to use the canada

238
00:33:08,320 --> 00:35:04,470

my

239
00:35:09,349 --> 00:35:06,550
station houston space to ground to no

240
00:35:11,270 --> 00:35:09,359
response required but the exercise

241
00:36:56,390 --> 00:35:11,280
constraints are lifted feel free to

242
00:37:01,430 --> 00:36:58,950
and now those 16 bolts have finished

243
00:37:03,829 --> 00:37:01,440
driving into dragon

244
00:37:06,310 --> 00:37:03,839
firmly securing it to the harmony module

245
00:37:10,310 --> 00:37:06,320
on board the international space station

246
00:37:15,109 --> 00:37:12,710
this wraps up dragon's two-day journey

247
00:37:16,950 --> 00:37:15,119
after it launched on may 4th

248
00:37:19,270 --> 00:37:16,960
and arrived this morning being captured

249
00:37:23,270 --> 00:37:19,280
by canadian space agency astronaut david

250
00:37:27,589 --> 00:37:25,270
ground teams then used the canada arm 2

251
00:37:31,030 --> 00:37:27,599
to birth the dragon to the international

252
00:37:35,030 --> 00:37:31,040
space station at 8 32 a.m central time

253
00:37:37,109 --> 00:37:35,040
as the station was flying about 254

254
00:37:59,990 --> 00:37:37,119
statute miles

255
00:38:03,190 --> 00:38:01,510
now the dragon is attached to the

256
00:38:05,990 --> 00:38:03,200
international space station it will

257
00:38:07,670 --> 00:38:06,000
remain on board for about a month and

258
00:38:09,990 --> 00:38:07,680
the crew will begin to open the hatch

259
00:38:11,430 --> 00:38:10,000
later this afternoon

260
00:38:13,670 --> 00:38:11,440
they'll spend the next few weeks

261
00:38:16,470 --> 00:38:13,680
unloading the cargo before reloading it

262
00:38:19,109 --> 00:38:16,480
with about 4 200 pounds of research

263
00:38:33,510 --> 00:38:19,119

hardware and crew supplies and sending

264
00:38:36,790 --> 00:38:35,109
that wraps up our coverage for this

265
00:38:39,990 --> 00:38:36,800
morning's

266
00:38:41,589 --> 00:38:40,000
dragon mission spacex's 17th commercial

267
00:38:43,750 --> 00:38:41,599
resupply mission to the international

268
00:38:45,430 --> 00:38:43,760
space station thank you for joining us

269
00:38:47,349 --> 00:38:45,440
live from the international space

270
00:39:11,270 --> 00:38:47,359
station flight control room this is

271
00:39:11,280 --> 00:39:14,550
it's

272
00:39:14,560 --> 00:39:45,430
foreign

273
00:39:45,440 --> 00:39:54,670
let's go