1
00:00:02,570 --> 00:00:16,070
[Music]

2
00:00:20,429 --> 00:00:17,990
good day and welcome to space station

3
00:00:21,990 --> 00:00:20,439
live for monday august 5th

4
00:00:24,070 --> 00:00:22,000
2013.

5
00:00:25,509 --> 00:00:24,080
you are inside the international space

6
00:00:27,750 --> 00:00:25,519
station flight control room at the

7
00:00:30,150 --> 00:00:27,760
johnson space center in houston where

8
00:00:32,150 --> 00:00:30,160
the orbit 2 team is on console watching

9
00:00:34,630 --> 00:00:32,160
over the activities of the half dozen

10
00:00:37,510 --> 00:00:34,640
humans on the orbital outpost comprising

11
00:00:39,670 --> 00:00:37,520
the expedition 36 crew

12
00:00:41,990 --> 00:00:39,680
on console at this hour flight director

13
00:00:43,750 --> 00:00:42,000

richard jones is presiding over the

14
00:00:45,350 --> 00:00:43,760
activities on board the international

15
00:00:47,910 --> 00:00:45,360
space station on the right side of your

16
00:00:49,830 --> 00:00:47,920
screen to his left in the middle is

17
00:00:51,670 --> 00:00:49,840
astronaut anna fisher who is the

18
00:00:53,830 --> 00:00:51,680
communications link between the flight

19
00:00:55,830 --> 00:00:53,840
control team here in houston and the

20
00:00:57,110 --> 00:00:55,840
crew members on board the orbital

21
00:00:59,430 --> 00:00:57,120
laboratory

22
00:01:00,869 --> 00:00:59,440
the six crew members on board led by

23
00:01:03,270 --> 00:01:00,879
commander

24
00:01:05,590 --> 00:01:03,280
pavel vinogradov are split into

25
00:01:07,830 --> 00:01:05,600
basically two teams who arrived at

26
00:01:09,990 --> 00:01:07,840
separate times in their respective soyuz

27
00:01:12,630 --> 00:01:10,000
vehicles from left to right flight

28
00:01:14,950 --> 00:01:12,640
engineer alexander misurkin vinogradov

29
00:01:16,710 --> 00:01:14,960
and nasa's chris cassidy who launched to

30
00:01:18,230 --> 00:01:16,720
the international space station on their

31
00:01:21,109 --> 00:01:18,240
soyuz vehicle from the baikonur

32
00:01:24,469 --> 00:01:21,119
cosmodrome in kazakhstan back on march

33
00:01:27,429 --> 00:01:24,479
29th they were joined two months later

34
00:01:29,990 --> 00:01:27,439
by the other trio on board the complex

35
00:01:32,630 --> 00:01:30,000
flight engineer karen nyberg of nasa

36
00:01:34,950 --> 00:01:32,640
russian cosmonaut fyodor yurchikhin and

37
00:01:37,830 --> 00:01:34,960
european space agency astronaut luca

38
00:01:40,230 --> 00:01:37,840

parmitano those three arrived on board

39
00:01:43,590 --> 00:01:40,240
the international space station on may

40
00:01:47,429 --> 00:01:43,600
29th that trio is currently in the midst

41
00:01:49,830 --> 00:01:47,439
of their 69th day in space the cassidy

42
00:01:51,429 --> 00:01:49,840
misurkin and vinogradov trio in their

43
00:01:59,510 --> 00:01:51,439
130th

44
00:02:02,550 --> 00:02:00,630
this week in the life of the

45
00:02:05,350 --> 00:02:02,560
international space station began on the

46
00:02:06,230 --> 00:02:05,360
southern coast of japan on saturday when

47
00:02:24,710 --> 00:02:06,240
a

48
00:02:26,710 --> 00:02:24,720
is currently on route to the

49
00:02:29,030 --> 00:02:26,720
international space station a flawless

50
00:02:31,350 --> 00:02:29,040
countdown after the vehicle was fueled

51
00:02:35,030 --> 00:02:31,360
resulted in the engines and the solid

52
00:02:38,070 --> 00:02:35,040
rocket boosters igniting at 248 and 46

53
00:02:39,990 --> 00:02:38,080
seconds p.m central time on saturday

54
00:02:44,070 --> 00:02:40,000
which was 4 40

55
00:02:46,869 --> 00:02:44,080
8 and 46 seconds am japan time on sunday

56
00:02:48,229 --> 00:02:46,879
morning the rise to orbit

57
00:02:51,030 --> 00:02:48,239
arcing out

58
00:02:53,830 --> 00:02:51,040
actually over the south east

59
00:02:56,949 --> 00:02:53,840
was picture perfect the solid rocket

60
00:02:58,790 --> 00:02:56,959
boosters firing in concert with the two

61
00:03:01,110 --> 00:02:58,800
engines comprising the first stage of

62
00:03:02,949 --> 00:03:01,120
the h-2b rocket the solid rocket

63
00:03:05,350 --> 00:03:02,959

boosters burning out two minutes into

64
00:03:07,190 --> 00:03:05,360
the flight they were jettisoned

65
00:03:10,790 --> 00:03:07,200
followed about a minute and a half later

66
00:03:13,750 --> 00:03:10,800
by the jettisoning of the fairing that

67
00:03:16,229 --> 00:03:13,760
enshrouded the htv-4 cargo ship the

68
00:03:17,750 --> 00:03:16,239
unpiloted cargo ship that is currently

69
00:03:18,710 --> 00:03:17,760
on route to the international space

70
00:03:21,110 --> 00:03:18,720
station

71
00:03:23,750 --> 00:03:21,120
the first stage engine cut off at about

72
00:03:25,990 --> 00:03:23,760
the 5 minute 46 second mark into the

73
00:03:29,350 --> 00:03:26,000
flight the first and second stages of

74
00:03:32,309 --> 00:03:29,360
the h2b rocket separated and the second

75
00:03:34,470 --> 00:03:32,319
stage engine ignited just seconds later

76
00:03:35,990 --> 00:03:34,480
and burned for about eight minutes and

77
00:03:39,509 --> 00:03:36,000
10 seconds

78
00:03:41,750 --> 00:03:39,519
to finally place the htv-4 vehicle into

79
00:03:43,910 --> 00:03:41,760
its preliminary orbit and to begin a

80
00:03:47,110 --> 00:03:43,920
six-day chase to catch up to the

81
00:03:49,670 --> 00:03:47,120
international space station ironically

82
00:03:51,509 --> 00:03:49,680
at the time that the htv-4 was placed

83
00:03:53,430 --> 00:03:51,519
into its preliminary orbit the

84
00:03:55,910 --> 00:03:53,440
international space station flew

85
00:03:58,309 --> 00:03:55,920
directly overhead over the tanagashima

86
00:04:01,429 --> 00:03:58,319
space center in southern japan from

87
00:04:02,470 --> 00:04:01,439
where the htv4 left just a few minutes

88
00:04:04,470 --> 00:04:02,480

earlier

89
00:04:05,750 --> 00:04:04,480
since launch a series of rendezvous

90
00:04:08,710 --> 00:04:05,760
burns have been

91
00:04:11,429 --> 00:04:08,720
successfully executed to fine-tune the

92
00:04:14,149 --> 00:04:11,439
path of the htv-4 cargo ship to the

93
00:04:16,469 --> 00:04:14,159
international space station additional

94
00:04:18,789 --> 00:04:16,479
engine firings and mid-course correction

95
00:04:22,310 --> 00:04:18,799
burns are on tap for the remainder of

96
00:04:24,950 --> 00:04:22,320
the week setting up the htv

97
00:04:27,670 --> 00:04:24,960
for its uh arrival at the international

98
00:04:32,710 --> 00:04:27,680
space station on friday morning

99
00:04:35,710 --> 00:04:32,720
the htv is loaded with 3.6 tons of cargo

100
00:04:38,950 --> 00:04:35,720
involved in that cargo complement some

101
00:04:42,469 --> 00:04:38,960
4094 pounds of dry cargo spare parts and

102
00:04:44,150 --> 00:04:42,479
experiment hardware some 1257

103
00:04:46,230 --> 00:04:44,160
pounds of water and two dozen

104
00:04:47,189 --> 00:04:46,240
contingency water bags

105
00:04:50,550 --> 00:04:47,199
that

106
00:04:53,430 --> 00:04:50,560
cargo is housed inside the htv itself

107
00:04:55,590 --> 00:04:53,440
known as pressurized cargo then outside

108
00:04:58,790 --> 00:04:55,600
on what is known as the exposed pallet

109
00:05:02,469 --> 00:04:58,800
in a slot in the htv vehicle is external

110
00:05:04,790 --> 00:05:02,479
cargo a 516 pound main bus switching

111
00:05:06,150 --> 00:05:04,800
unit for the station's power supply on

112
00:05:09,990 --> 00:05:06,160
the board the international space

113
00:05:12,390 --> 00:05:10,000

station a 644 pound utility transfer

114
00:05:14,390 --> 00:05:12,400
assembly integrated assembly that's

115
00:05:16,950 --> 00:05:14,400
basically a

116
00:05:19,670 --> 00:05:16,960
an electronics assembly for the solar

117
00:05:23,749 --> 00:05:19,680
alpha rotary joint on the international

118
00:05:26,550 --> 00:05:23,759
space station and a 721 pound experiment

119
00:05:27,350 --> 00:05:26,560
called the space test program

120
00:05:32,230 --> 00:05:27,360
for

121
00:05:34,629 --> 00:05:32,240
that hardware housed on the

122
00:05:38,150 --> 00:05:34,639
exposed pallet that will be extracted

123
00:05:41,110 --> 00:05:38,160
from the side slot on the htv itself on

124
00:05:42,870 --> 00:05:41,120
sunday and installed after a handoff to

125
00:05:45,510 --> 00:05:42,880
the japanese robotic arm it will be

126
00:05:46,550 --> 00:05:45,520
installed on the porch of the kibo

127
00:05:48,469 --> 00:05:46,560
module

128
00:05:50,230 --> 00:05:48,479
where the experiments will be plucked

129
00:05:53,590 --> 00:05:50,240
out of that pallet one by one and

130
00:05:55,909 --> 00:05:53,600
installed on the exposed facility the

131
00:05:59,189 --> 00:05:55,919
experiment platform on the outside of

132
00:06:00,790 --> 00:05:59,199
the kibo module

133
00:06:03,510 --> 00:06:00,800
the rendezvous burns that will

134
00:06:05,590 --> 00:06:03,520
eventually lead up to and include the

135
00:06:07,670 --> 00:06:05,600
grapple of the htv

136
00:06:10,629 --> 00:06:07,680
for its birthing on the earth-facing

137
00:06:12,070 --> 00:06:10,639
side of harmony will result in the htv

138
00:06:14,550 --> 00:06:12,080

approaching the international space

139
00:06:16,950 --> 00:06:14,560
station from below along what is known

140
00:06:19,189 --> 00:06:16,960
as the radial vector or r bar directly

141
00:06:22,070 --> 00:06:19,199
below the the station at a point at

142
00:06:24,150 --> 00:06:22,080
about 35 feet away uh astronauts karen

143
00:06:26,629 --> 00:06:24,160
nyberg and chris cassidy operating from

144
00:06:28,710 --> 00:06:26,639
the robotics workstation in the cupola

145
00:06:31,590 --> 00:06:28,720
will reach out and grapple the

146
00:06:33,749 --> 00:06:31,600
barrel-like htv cargo ship maneuver it

147
00:06:36,390 --> 00:06:33,759
in place and slowly inch its way toward

148
00:06:38,150 --> 00:06:36,400
a common berthing mechanism a docking

149
00:06:40,390 --> 00:06:38,160
mechanism if you will on the

150
00:06:42,390 --> 00:06:40,400
earth-facing side of the harmony uh

151
00:06:43,670 --> 00:06:42,400
connecting module on the international

152
00:06:46,870 --> 00:06:43,680
space station

153
00:06:49,510 --> 00:06:46,880
once uh it is uh in place uh then

154
00:06:52,150 --> 00:06:49,520
commanding of uh bolting will uh take

155
00:06:54,870 --> 00:06:52,160
place uh with first and second stage

156
00:06:57,350 --> 00:06:54,880
capture uh to follow the second stage

157
00:06:59,830 --> 00:06:57,360
capture actually representing the formal

158
00:07:01,990 --> 00:06:59,840
uh mating of the htv to the

159
00:07:04,550 --> 00:07:02,000
international space station and a

160
00:07:05,589 --> 00:07:04,560
month-long stay on the international

161
00:07:07,830 --> 00:07:05,599
outpost

162
00:07:10,870 --> 00:07:07,840
for the unloading of its equipment on

163
00:07:13,270 --> 00:07:10,880

september 4th the htv will be unbirthed

164
00:07:15,029 --> 00:07:13,280
and discarded loaded with trash for a

165
00:07:17,270 --> 00:07:15,039
fiery reentry back into the earth's

166
00:07:19,510 --> 00:07:17,280
atmosphere where it will burn up

167
00:07:22,150 --> 00:07:19,520
over the pacific ocean

168
00:07:24,390 --> 00:07:22,160
to that end nyberg chris cassidy and

169
00:07:26,629 --> 00:07:24,400
luca parmitano have been rehearsing

170
00:07:29,189 --> 00:07:26,639
grapple procedures today using the

171
00:07:31,830 --> 00:07:29,199
station's robotic arm the canadarm2

172
00:07:34,150 --> 00:07:31,840
again operating out of the cupola on the

173
00:07:36,950 --> 00:07:34,160
international space station parmitano

174
00:07:38,150 --> 00:07:36,960
will be responsible for monitoring the

175
00:07:40,710 --> 00:07:38,160
systems

176
00:07:42,950 --> 00:07:40,720
on the htv as it makes its glacial

177
00:07:46,150 --> 00:07:42,960
approach toward its grapple

178
00:07:49,430 --> 00:07:46,160
by nyberg and cassidy here is a view in

179
00:07:51,510 --> 00:07:49,440
fact of chris cassidy inside the row

180
00:07:52,710 --> 00:07:51,520
inside the cupola at the robotics

181
00:07:55,189 --> 00:07:52,720
workstation

182
00:07:57,670 --> 00:07:55,199
where he and nyberg have been rehearsing

183
00:08:01,029 --> 00:07:57,680
what they call offset grapple procedures

184
00:08:03,189 --> 00:08:01,039
a variety of fine tune techniques to

185
00:08:05,749 --> 00:08:03,199
make sure that they have the proficiency

186
00:08:07,990 --> 00:08:05,759
that they need on friday to reach out

187
00:08:16,550 --> 00:08:08,000
and grab onto the htv

188
00:08:21,990 --> 00:08:19,350

also uh involved today uh more activity

189
00:08:24,390 --> 00:08:22,000
with robonaut the humanoid robot that

190
00:08:25,749 --> 00:08:24,400
has been operating remotely from the

191
00:08:27,430 --> 00:08:25,759
marshall space flight center in

192
00:08:29,830 --> 00:08:27,440
huntsville alabama

193
00:08:32,790 --> 00:08:29,840
robonaut has been working with a task

194
00:08:35,990 --> 00:08:32,800
board in destiny in these uh so-called

195
00:08:37,670 --> 00:08:36,000
teleops that result in more data

196
00:08:39,829 --> 00:08:37,680
collection about the operation of a

197
00:08:40,790 --> 00:08:39,839
robot from ground controllers back on

198
00:08:42,870 --> 00:08:40,800
earth

199
00:08:45,190 --> 00:08:42,880
and on the russian segment of the

200
00:08:47,350 --> 00:08:45,200
international space station cosmonauts

201
00:08:50,070 --> 00:08:47,360
fyodor yurchikhin and alexander mazurkin

202
00:08:52,470 --> 00:08:50,080
began work with their russian orlan

203
00:08:54,389 --> 00:08:52,480
spacesuits as they prepare for a pair of

204
00:08:58,470 --> 00:08:54,399
spacewalks outside the piers docking

205
00:09:01,350 --> 00:08:58,480
compartment on august 16th and 22nd to

206
00:09:03,430 --> 00:09:01,360
continue to deploy experiments and

207
00:09:05,750 --> 00:09:03,440
connect cables in preparation for the

208
00:09:07,990 --> 00:09:05,760
launch of a russian laboratory module

209
00:09:09,670 --> 00:09:08,000
later this year that's a glimpse of