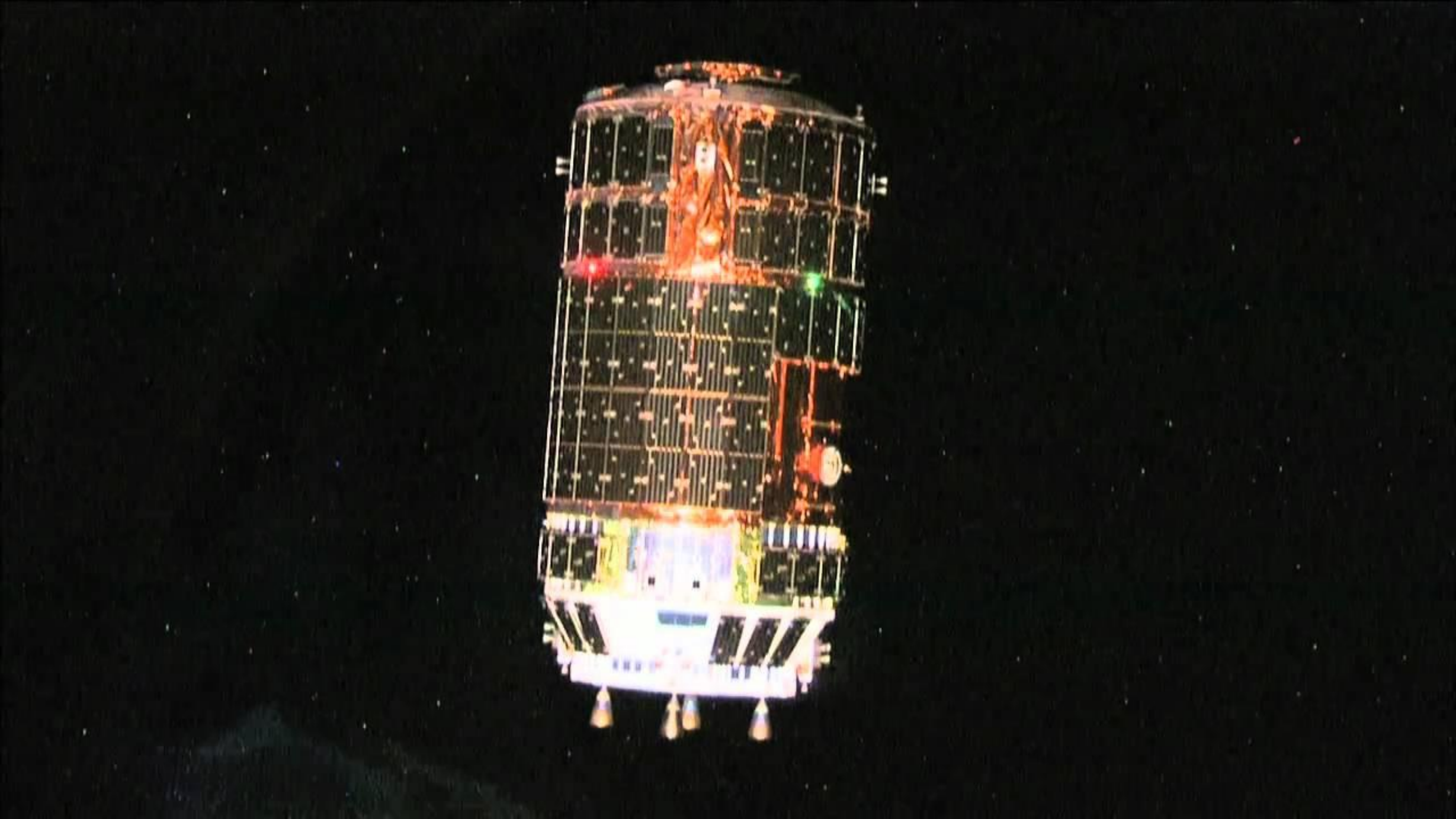

1
00:00:05,110 --> 00:00:02,389
the international space station's

2
00:00:07,349 --> 00:00:05,120
expedition 25 will celebrate the 10th

3
00:00:08,870 --> 00:00:07,359
anniversary of the arrival of the first

4
00:00:11,669 --> 00:00:08,880
resident crew

5
00:00:14,150 --> 00:00:11,679
expedition 26 may bid bon voyage to the

6
00:00:16,550 --> 00:00:14,160
last flight of space shuttle endeavour

7
00:00:18,470 --> 00:00:16,560
but even with all that on the agenda the

8
00:00:20,870 --> 00:00:18,480
station commander is excited to be

9
00:00:22,070 --> 00:00:20,880
advancing the station's use as a science

10
00:00:23,830 --> 00:00:22,080
laboratory

11
00:00:26,070 --> 00:00:23,840
so i see my role as

12
00:00:28,710 --> 00:00:26,080
with my background as a test pilot

13
00:00:31,750 --> 00:00:28,720

and an engineer is to uh is to

14
00:00:34,790 --> 00:00:31,760
is to keep the laboratories operating

15
00:00:37,190 --> 00:00:34,800
empower the crew to all of us to do

16
00:00:39,750 --> 00:00:37,200
great science and bring it back

17
00:00:41,350 --> 00:00:39,760
to our scientists here on earth to make

18
00:00:43,590 --> 00:00:41,360
life better here and

19
00:00:46,310 --> 00:00:43,600
and make our flying machines even better

20
00:00:48,549 --> 00:00:46,320
so we can go beyond earth orbit

21
00:00:50,549 --> 00:00:48,559
like all their predecessors these

22
00:00:52,709 --> 00:00:50,559
station crew members are the subjects

23
00:00:55,110 --> 00:00:52,719
for research into how the human body

24
00:00:57,430 --> 00:00:55,120
behaves in the absence of gravity

25
00:00:59,990 --> 00:00:57,440
particularly investigations into the

26
00:01:02,470 --> 00:01:00,000
mechanisms responsible for the losses in

27
00:01:04,229 --> 00:01:02,480
bone and muscle mass that long-duration

28
00:01:05,189 --> 00:01:04,239
crews experience

29
00:01:08,550 --> 00:01:05,199
it will be

30
00:01:10,950 --> 00:01:08,560
mostly biomed experiments so when when

31
00:01:14,070 --> 00:01:10,960
my body will be under in my brains will

32
00:01:20,149 --> 00:01:17,670
uh honestly speaking i i don't like very

33
00:01:22,230 --> 00:01:20,159
much these experiments but i understand

34
00:01:24,149 --> 00:01:22,240
that this is necessity to

35
00:01:26,789 --> 00:01:24,159
to to go

36
00:01:28,310 --> 00:01:26,799
further and further in space flights

37
00:01:30,870 --> 00:01:28,320
if we're going to spend several months

38
00:01:32,870 --> 00:01:30,880

going to another planet or somewhere

39
00:01:34,789 --> 00:01:32,880
else in the solar system the last thing

40
00:01:37,270 --> 00:01:34,799
we want to have happen is not to be able

41
00:01:38,789 --> 00:01:37,280
to function once we get there

42
00:01:40,630 --> 00:01:38,799
or even worse break your leg because

43
00:01:42,230 --> 00:01:40,640
you've lost so much bone density

44
00:01:43,830 --> 00:01:42,240
but the crew members have another

45
00:01:45,590 --> 00:01:43,840
scientific role

46
00:01:48,069 --> 00:01:45,600
they are the lab assistants for the

47
00:01:50,870 --> 00:01:48,079
earthbound researchers conducting dozens

48
00:01:52,710 --> 00:01:50,880
of experiments in a range of disciplines

49
00:01:54,789 --> 00:01:52,720
astronauts and cosmonauts carry out

50
00:01:57,030 --> 00:01:54,799
protocols for scientists from around the

51
00:01:59,429 --> 00:01:57,040
world on experiments running in lab

52
00:02:02,630 --> 00:01:59,439
facilities provided by the united states

53
00:02:04,870 --> 00:02:02,640
europe japan and russia and they operate

54
00:02:07,670 --> 00:02:04,880
instruments aimed at the earth to learn

55
00:02:10,309 --> 00:02:07,680
more about the planet

56
00:02:14,309 --> 00:02:10,319
experiments related to geophysics

57
00:02:17,830 --> 00:02:14,319
researching and observing the earth the

58
00:02:22,869 --> 00:02:20,229
the earthquakes

59
00:02:25,670 --> 00:02:22,879
we are learning how we can predict

60
00:02:27,670 --> 00:02:25,680
earthquakes the diamond location

61
00:02:29,350 --> 00:02:27,680
earth observations have been conducted

62
00:02:31,350 --> 00:02:29,360
from the station since the first

63
00:02:33,670 --> 00:02:31,360

long-duration crew came on board on

64
00:02:36,390 --> 00:02:33,680
november 2nd 2000.

65
00:02:39,270 --> 00:02:36,400
expedition 25 will be there to recognize

66
00:02:43,509 --> 00:02:39,280
the 10th anniversary of continuous crude

67
00:02:45,830 --> 00:02:43,519
operations it's a 35th anniversary from

68
00:02:49,910 --> 00:02:45,840
sayus apollo program

69
00:02:53,910 --> 00:02:49,920
this year yeah 10 years how we

70
00:02:55,350 --> 00:02:53,920
launched from baccano and yes how we

71
00:02:59,910 --> 00:02:55,360
began a

72
00:03:01,190 --> 00:02:59,920
minute fly main flight on iss station

73
00:03:02,830 --> 00:03:01,200
it's great

74
00:03:05,430 --> 00:03:02,840
some

75
00:03:07,430 --> 00:03:05,440
anniversary shuttle discovery is due

76
00:03:09,110 --> 00:03:07,440
right after that anniversary

77
00:03:11,190 --> 00:03:09,120
commander steve lindsey's crew will

78
00:03:13,350 --> 00:03:11,200
deliver the permanent multipurpose

79
00:03:15,990 --> 00:03:13,360
module which is the cargo module

80
00:03:19,110 --> 00:03:16,000
leonardo retrofitted for permanent

81
00:03:20,550 --> 00:03:19,120
installation on the nader side of unity

82
00:03:22,550 --> 00:03:20,560
it seems like the space station is

83
00:03:24,309 --> 00:03:22,560
really big but when you need all the

84
00:03:26,550 --> 00:03:24,319
stuff you need to live there for six

85
00:03:28,789 --> 00:03:26,560
months it gets pretty full and having

86
00:03:33,190 --> 00:03:28,799
another module to help with

87
00:03:35,910 --> 00:03:33,200
stowage is is critically important to

88
00:03:38,949 --> 00:03:35,920

improving our efficiency and just doing

89
00:03:41,910 --> 00:03:38,959
our you know daily work on board

90
00:03:46,309 --> 00:03:41,920
among the cargo inside the pmm is

91
00:03:48,630 --> 00:03:46,319
robonaut 2 a 330 pound humanoid robot

92
00:03:50,869 --> 00:03:48,640
programmed to perform repetitive tasks

93
00:03:52,949 --> 00:03:50,879
on the station and free the human crew

94
00:03:55,509 --> 00:03:52,959
members for more complicated work

95
00:03:57,350 --> 00:03:55,519
including spacewalk preparation

96
00:03:59,670 --> 00:03:57,360
skripochka and yurchikhin are on the

97
00:04:01,670 --> 00:03:59,680
plan for a spacewalk in november to

98
00:04:03,350 --> 00:04:01,680
install new hardware on the russian

99
00:04:05,429 --> 00:04:03,360
segment of the station

100
00:04:07,990 --> 00:04:05,439
that will come just before yurchikhin

101
00:04:10,149 --> 00:04:08,000
wheelock and walker return home and

102
00:04:11,509 --> 00:04:10,159
kelly becomes commander of expedition

103
00:04:14,229 --> 00:04:11,519
26.

104
00:04:16,069 --> 00:04:14,239
then the flow of traffic accelerates

105
00:04:18,469 --> 00:04:16,079
first the crew is augmented with the

106
00:04:21,110 --> 00:04:18,479
arrival of another soyuz spacecraft

107
00:04:23,430 --> 00:04:21,120
carrying cosmonaut dmitri kondratyev

108
00:04:26,870 --> 00:04:23,440
european space agency astronaut paolo

109
00:04:28,469 --> 00:04:26,880
nespoli and nasa's katie coleman

110
00:04:30,710 --> 00:04:28,479
then the station gets supplies

111
00:04:33,510 --> 00:04:30,720
deliveries from each of the uncrewed

112
00:04:36,230 --> 00:04:33,520
cargo vehicles now serving the station

113
00:04:39,189 --> 00:04:36,240

the russian progress the european space

114
00:04:42,070 --> 00:04:39,199
agency's automated transfer vehicle and

115
00:04:44,790 --> 00:04:42,080
the japan aerospace exploration agency's

116
00:04:47,189 --> 00:04:44,800
h2 transfer vehicle

117
00:04:49,189 --> 00:04:47,199
this is a new type of vehicle the free

118
00:04:51,350 --> 00:04:49,199
flyer vehicle which means that it

119
00:04:53,510 --> 00:04:51,360
doesn't dock to the station directly

120
00:04:55,510 --> 00:04:53,520
but rather it approaches the station and

121
00:04:57,270 --> 00:04:55,520
from the station keeping close to it and

122
00:05:00,870 --> 00:04:57,280
then the operator on board of the iss

123
00:05:05,270 --> 00:05:00,880
uses the robotic arm to mate it to the

124
00:05:06,790 --> 00:05:05,280
docking mechanism progress can dock in

125
00:05:11,270 --> 00:05:06,800
any conditions

126
00:05:12,390 --> 00:05:11,280
it can be manually controlled by the

127
00:05:17,110 --> 00:05:12,400
crew

128
00:05:20,070 --> 00:05:17,120
we are only monitoring the

129
00:05:23,430 --> 00:05:20,080
automated approach and final approach

130
00:05:25,510 --> 00:05:23,440
and we can only stop it

131
00:05:27,990 --> 00:05:25,520
to be secure

132
00:05:29,990 --> 00:05:28,000
skripochka and kondratyev conduct two

133
00:05:32,629 --> 00:05:30,000
more russian segment spacewalks in

134
00:05:34,469 --> 00:05:32,639
january and february before the arrival

135
00:05:35,909 --> 00:05:34,479
of the last planned mission of space

136
00:05:38,230 --> 00:05:35,919
shuttle endeavour

137
00:05:40,070 --> 00:05:38,240
the shuttle crew will deliver supplies

138
00:05:42,390 --> 00:05:40,080

and attach the alpha magnetic

139
00:05:43,830 --> 00:05:42,400
spectrometer to the zenith side of the

140
00:05:45,830 --> 00:05:43,840
station's truss

141
00:05:47,270 --> 00:05:45,840
this long-awaited science instrument

142
00:05:49,749 --> 00:05:47,280
will search for the sources of

143
00:05:51,510 --> 00:05:49,759
antimatter and dark matter to assist

144
00:05:52,390 --> 00:05:51,520
scientists looking for a clearer

145
00:05:54,790 --> 00:05:52,400
understanding

146
00:05:56,629 --> 00:05:54,800
of the origins of the universe

147
00:05:58,550 --> 00:05:56,639
this mission will be notable too for

148
00:06:01,189 --> 00:05:58,560
bringing the station commander together

149
00:06:03,350 --> 00:06:01,199
on orbit with his twin brother shuttle

150
00:06:05,670 --> 00:06:03,360
commander mark kelly

151
00:06:07,430 --> 00:06:05,680
it's actually the first time that two

152
00:06:09,670 --> 00:06:07,440
i think blood relatives have ever been

153
00:06:11,189 --> 00:06:09,680
in space together it's exciting you know

154
00:06:13,189 --> 00:06:11,199
i've known obviously known my brother a

155
00:06:15,350 --> 00:06:13,199
really long time and

156
00:06:18,070 --> 00:06:15,360
you know we're great friends and it's a

157
00:06:20,550 --> 00:06:18,080
real privilege to share the experience

158
00:06:22,309 --> 00:06:20,560
with someone you're so close to your mom

159
00:06:24,230 --> 00:06:22,319
and dad like the idea of having two sons

160
00:06:26,070 --> 00:06:24,240
off the planet at the same time they

161
00:06:28,070 --> 00:06:26,080
don't like the idea of having one son

162
00:06:29,110 --> 00:06:28,080
off the planet at any time

163
00:06:30,710 --> 00:06:29,120

so

164
00:06:32,790 --> 00:06:30,720
you know they can this can kind of

165
00:06:35,029 --> 00:06:32,800
stress them out a little bit

166
00:06:36,790 --> 00:06:35,039
kelly kaleri and skripochka are due to

167
00:06:38,550 --> 00:06:36,800
come home shortly after that space

168
00:06:40,629 --> 00:06:38,560
shuttle mission wraps up

169
00:06:41,990 --> 00:06:40,639
leaving behind a space station at a

170
00:06:44,309 --> 00:06:42,000
turning point

171
00:06:45,830 --> 00:06:44,319
one that is all but complete after 10

172
00:06:47,990 --> 00:06:45,840
years of construction

173
00:06:50,070 --> 00:06:48,000
ready for its crews to move to full

174
00:06:52,070 --> 00:06:50,080
utilization to prepare us for the

175
00:06:52,870 --> 00:06:52,080
exploration to come

176
00:06:57,589 --> 00:06:52,880
we

177
00:06:58,710 --> 00:06:57,599
to learn a lot about how systems and

178
00:07:01,029 --> 00:06:58,720
people and

179
00:07:03,029 --> 00:07:01,039
how to operate in space for long periods