1
00:00:13,120 --> 00:00:32,709
do

2
00:00:36,310 --> 00:00:35,430
we have main engine start three

3
00:00:37,670 --> 00:00:36,320
two

4
00:00:40,470 --> 00:00:37,680
one

5
00:00:42,229 --> 00:00:40,480
we have srb ignition and we have liftoff

6
00:00:48,549 --> 00:00:42,239
of mission 41

7
00:00:53,189 --> 00:00:51,029
over the last quarter century space

8
00:00:55,830 --> 00:00:53,199
shuttle discovery possibly the most

9
00:00:58,069 --> 00:00:55,840
historic vehicle in nasa's shuttle fleet

10
00:01:32,469 --> 00:00:58,079
has been the most flown spacecraft in

11
00:01:36,630 --> 00:01:34,390
nasa is preparing for the final

12
00:01:38,310 --> 00:01:36,640
scheduled flight of discovery

13
00:01:40,550 --> 00:01:38,320

a trip to the international space

14
00:01:42,789 --> 00:01:40,560
station that marks the anniversary of a

15
00:01:46,069 --> 00:01:42,799
decade of continuous human presence

16
00:01:48,149 --> 00:01:46,079
aboard the orbiting outpost

17
00:01:50,550 --> 00:01:48,159
this historic flight will include the

18
00:01:52,950 --> 00:01:50,560
delivery of the last room to be attached

19
00:01:55,190 --> 00:01:52,960
to the u.s segment of the complex as

20
00:02:05,429 --> 00:01:55,200
well as the first humanoid robot in

21
00:02:12,070 --> 00:02:08,229
when discovery launches on nasa's 35th

22
00:02:14,229 --> 00:02:12,080
mission to the iss the sts-133 crew of

23
00:02:16,309 --> 00:02:14,239
six astronauts will begin an 11-day

24
00:02:18,229 --> 00:02:16,319
mission to deliver one of the shuttle's

25
00:02:20,710 --> 00:02:18,239
last loads of spare parts for the

26
00:02:22,550 --> 00:02:20,720
orbiting outpost

27
00:02:25,190 --> 00:02:22,560
this flight will deliver the express

28
00:02:27,430 --> 00:02:25,200
logistics carrier 4 the leonardo

29
00:02:31,270 --> 00:02:27,440
permanent multipurpose module full of

30
00:02:33,430 --> 00:02:31,280
supplies for the iss and also robonaut 2

31
00:02:36,070 --> 00:02:33,440
a novel component that will reside in

32
00:02:38,309 --> 00:02:36,080
the destiny laboratory

33
00:02:40,229 --> 00:02:38,319
during two scheduled spacewalks the

34
00:02:42,869 --> 00:02:40,239
shuttle crew will work through a variety

35
00:02:44,869 --> 00:02:42,879
of tasks including some resulting from

36
00:02:52,949 --> 00:02:44,879
the replacement of a failed pump on the

37
00:02:55,910 --> 00:02:54,470
we're all experienced we've all flown in

38
00:02:56,949 --> 00:02:55,920

space before

39
00:02:58,869 --> 00:02:56,959
three of us

40
00:03:00,790 --> 00:02:58,879
mike nicole and tim have done long

41
00:03:02,470 --> 00:03:00,800
duration flights on space station so

42
00:03:05,030 --> 00:03:02,480
they're intimately familiar with space

43
00:03:07,270 --> 00:03:05,040
station retired air force colonel steve

44
00:03:09,589 --> 00:03:07,280
lindsey is the commander of discovery's

45
00:03:12,070 --> 00:03:09,599
crew of six astronauts

46
00:03:14,390 --> 00:03:12,080
a veteran of four space flights he last

47
00:03:17,830 --> 00:03:14,400
commanded sts-121

48
00:03:20,070 --> 00:03:17,840
also flown aboard discovery

49
00:03:21,350 --> 00:03:20,080
pilot of discovery is air force colonel

50
00:03:23,589 --> 00:03:21,360
eric boe

51
00:03:25,430 --> 00:03:23,599
he will be at the controls as discovery

52
00:03:28,390 --> 00:03:25,440
undocks from the station for its

53
00:03:30,630 --> 00:03:28,400
farewell lap around the complex

54
00:03:32,390 --> 00:03:30,640
he first flew on orbit as the pilot of

55
00:03:34,630 --> 00:03:32,400
sts-126

56
00:03:37,110 --> 00:03:34,640
in 2008

57
00:03:39,030 --> 00:03:37,120
air force colonel alvin drew is mission

58
00:03:43,830 --> 00:03:39,040
specialist one

59
00:03:45,910 --> 00:03:43,840
he first rode uphill on sts-118 in 2007.

60
00:03:48,710 --> 00:03:45,920
he will perform two spacewalks during

61
00:03:51,190 --> 00:03:48,720
sts-133

62
00:03:52,470 --> 00:03:51,200
mission specialist 2 is army colonel tim

63
00:03:55,030 --> 00:03:52,480

kopra

64
00:03:56,869 --> 00:03:55,040
a former iss resident he lived and

65
00:03:59,429 --> 00:03:56,879
worked on the station for two months

66
00:04:02,630 --> 00:03:59,439
during expedition 20. he will conduct

67
00:04:05,350 --> 00:04:02,640
two spacewalks on this shuttle flight

68
00:04:07,190 --> 00:04:05,360
dr mike barrett mission specialist 3 is

69
00:04:09,589 --> 00:04:07,200
a nasa flight surgeon who became an

70
00:04:12,229 --> 00:04:09,599
astronaut

71
00:04:14,149 --> 00:04:12,239
this is his second voyage to the iss

72
00:04:18,069 --> 00:04:14,159
after flying aboard the station for over

73
00:04:20,870 --> 00:04:18,079
six months during expeditions 19 and 20.

74
00:04:22,469 --> 00:04:20,880
mission specialist four is nicole stott

75
00:04:24,230 --> 00:04:22,479
launching for the second time on

76
00:04:26,550 --> 00:04:24,240
discovery

77
00:04:28,790 --> 00:04:26,560
he served as an iss flight engineer for

78
00:04:36,150 --> 00:04:28,800
three months during expeditions 20 and

79
00:04:41,110 --> 00:04:39,189
the key objectives for sts-133 are

80
00:04:42,950 --> 00:04:41,120
primarily

81
00:04:45,189 --> 00:04:42,960
positioning the station for

82
00:04:47,430 --> 00:04:45,199
the future years to come both inside and

83
00:04:50,150 --> 00:04:47,440
outside we have supplies that we're

84
00:04:52,469 --> 00:04:50,160
bringing for the crew to live and work

85
00:04:55,990 --> 00:04:52,479
continuously for the next few years

86
00:04:57,590 --> 00:04:56,000
inside the station as well as some large

87
00:04:59,270 --> 00:04:57,600
spares or replacement units that we'll

88
00:05:01,430 --> 00:04:59,280

put on the outside of the station the

89
00:05:03,710 --> 00:05:01,440
first of two components that discovery's

90
00:05:06,710 --> 00:05:03,720
crew will attach to the station is the

91
00:05:08,070 --> 00:05:06,720
elc-4 pallet the express logistics

92
00:05:10,710 --> 00:05:08,080
carrier for

93
00:05:13,350 --> 00:05:10,720
one item stored on the elc is a spare

94
00:05:15,189 --> 00:05:13,360
ammonia radiator the radiator helps

95
00:05:18,070 --> 00:05:15,199
reject heat from all the electrical

96
00:05:21,110 --> 00:05:18,080
boxes on the outside of the iss

97
00:05:23,749 --> 00:05:21,120
eric and al will be back on the shuttle

98
00:05:25,510 --> 00:05:23,759
working the shuttle robotic arm

99
00:05:26,310 --> 00:05:25,520
and with the station arm tim and i are

100
00:05:29,350 --> 00:05:26,320
gonna

101
00:05:31,830 --> 00:05:29,360
pull the elc out of the payload bay

102
00:05:33,990 --> 00:05:31,840
and then we'll position it so that the

103
00:05:35,909 --> 00:05:34,000
shuttle robotic arm can grab it then

104
00:05:39,189 --> 00:05:35,919
kopra and stott will reposition the

105
00:05:41,670 --> 00:05:39,199
station arm grapple the elc again and

106
00:05:43,990 --> 00:05:41,680
attach the pallet to the s3 truss on the

107
00:05:45,909 --> 00:05:44,000
station's nader's side in our payload

108
00:05:48,070 --> 00:05:45,919
bay we have a

109
00:05:49,749 --> 00:05:48,080
pmm which is a stands for permanent

110
00:05:52,790 --> 00:05:49,759
multi-purpose module

111
00:05:54,150 --> 00:05:52,800
it's essentially an mplm which is the

112
00:05:56,550 --> 00:05:54,160
pressurized cargo carrier that we've

113
00:05:59,029 --> 00:05:56,560

been using on space station for several

114
00:06:00,629 --> 00:05:59,039
years to haul logistics up and down

115
00:06:03,510 --> 00:06:00,639
copra and barrett will grapple the

116
00:06:05,510 --> 00:06:03,520
leonardo pmn the last component that

117
00:06:07,670 --> 00:06:05,520
will be attached to the station's u.s

118
00:06:10,469 --> 00:06:07,680
segment and they will install it on the

119
00:06:12,469 --> 00:06:10,479
nader side of node one unity

120
00:06:14,230 --> 00:06:12,479
not only will be full of supplies for

121
00:06:16,629 --> 00:06:14,240
the space station it will also serve in

122
00:06:18,550 --> 00:06:16,639
the future as a closet for space station

123
00:06:20,550 --> 00:06:18,560
for stowage which is something that they

124
00:06:23,909 --> 00:06:20,560
always need up on space station also

125
00:06:26,790 --> 00:06:23,919
flying inside the pmm is a virtual iss

126
00:06:29,749 --> 00:06:26,800
crew member named robonaut 2

127
00:06:32,550 --> 00:06:29,759
r2 is the first dextrous humanoid robot

128
00:06:34,469 --> 00:06:32,560
in space and the first us-built robot at

129
00:06:36,870 --> 00:06:34,479
the space station

130
00:06:39,590 --> 00:06:36,880
r2 will be deployed on a fixed pedestal

131
00:06:41,510 --> 00:06:39,600
inside the destiny lab

132
00:06:43,590 --> 00:06:41,520
the robonaut project is designed to

133
00:06:46,070 --> 00:06:43,600
ultimately function as the equivalent of

134
00:06:48,870 --> 00:06:46,080
a spacewalking astronaut accomplishing

135
00:06:51,110 --> 00:06:48,880
tasks that could be unsafe for a human

136
00:06:52,790 --> 00:06:51,120
robonaut is is very impressive to me as

137
00:06:54,390 --> 00:06:52,800
a medical doctor i was able to look at

138
00:06:56,950 --> 00:06:54,400

it shake hands with it one of the first

139
00:06:59,189 --> 00:06:56,960
things i noted was that the

140
00:07:00,070 --> 00:06:59,199
control actuators and the fingers are

141
00:07:04,070 --> 00:07:00,080
very

142
00:07:06,870 --> 00:07:04,080
hand

143
00:07:09,270 --> 00:07:06,880
and they can vary the sensitivity in the

144
00:07:10,629 --> 00:07:09,280
grip on this just like a human would do

145
00:07:12,230 --> 00:07:10,639
when it's doing different different

146
00:07:13,430 --> 00:07:12,240
tasks we're looking for those areas

147
00:07:15,589 --> 00:07:13,440
where we can kind of build on the

148
00:07:17,510 --> 00:07:15,599
strengths of the machine and also the

149
00:07:20,309 --> 00:07:17,520
strengths of the humans and and look for

150
00:07:21,589 --> 00:07:20,319
that synergy where we can get the most

151
00:07:32,950 --> 00:07:21,599
out of uh

152
00:07:36,790 --> 00:07:33,870
during

153
00:07:39,110 --> 00:07:36,800
sts-133 drew and copra will open the

154
00:07:41,749 --> 00:07:39,120
hatch for two scheduled spacewalks the

155
00:07:44,869 --> 00:07:41,759
objective of the spacewalks is really to

156
00:07:46,869 --> 00:07:44,879
get lots of tasks completed so that once

157
00:07:48,469 --> 00:07:46,879
the shuttle retires we're in the best

158
00:07:50,309 --> 00:07:48,479
possible situation

159
00:07:52,390 --> 00:07:50,319
for maintaining the international space

160
00:07:55,029 --> 00:07:52,400
station for the spacewalks themselves

161
00:07:56,629 --> 00:07:55,039
we're doing several tasks of outfitting

162
00:07:58,550 --> 00:07:56,639
the space station

163
00:08:00,230 --> 00:07:58,560

doing some what we call cats and dogs

164
00:08:01,749 --> 00:08:00,240
clean up work

165
00:08:04,629 --> 00:08:01,759
taking care of some

166
00:08:06,390 --> 00:08:04,639
insulation issues working on some

167
00:08:09,430 --> 00:08:06,400
various components that need to be doing

168
00:08:11,990 --> 00:08:09,440
on eva one drew and kopra are scheduled

169
00:08:14,950 --> 00:08:12,000
to install a 10 foot long cable between

170
00:08:17,110 --> 00:08:14,960
the quest airlock and the destiny lab

171
00:08:19,189 --> 00:08:17,120
they will also relocate the station's

172
00:08:22,950 --> 00:08:19,199
failed ammonia coolant pump module to

173
00:08:24,469 --> 00:08:22,960
esp-2 the external stowage platform too

174
00:08:26,950 --> 00:08:24,479
our first spacewalk that we're going to

175
00:08:28,790 --> 00:08:26,960
do is going to be cleaning up from the

176
00:08:29,990 --> 00:08:28,800
last spacewalk that our space station

177
00:08:32,070 --> 00:08:30,000
crew members did

178
00:08:34,149 --> 00:08:32,080
several months ago we had

179
00:08:35,670 --> 00:08:34,159
a ammonia pump

180
00:08:37,509 --> 00:08:35,680
for our cooling system

181
00:08:39,190 --> 00:08:37,519
fail on board the space station and we

182
00:08:40,870 --> 00:08:39,200
need to go and replace it so we will

183
00:08:44,310 --> 00:08:40,880
start right off

184
00:08:45,110 --> 00:08:44,320
with going out to pick up that failed

185
00:08:46,710 --> 00:08:45,120
pump

186
00:08:49,030 --> 00:08:46,720
and putting it back in the storage

187
00:08:51,750 --> 00:08:49,040
location for the replacement pump on eva

188
00:08:53,350 --> 00:08:51,760

2 after the leonardo pmm has been

189
00:08:55,430 --> 00:08:53,360
installed to station

190
00:08:59,430 --> 00:08:55,440
drew and cobra are scheduled to perform

191
00:09:01,590 --> 00:08:59,440
tasks carried over from sts-131

192
00:09:03,750 --> 00:09:01,600
they will install a camera light on and

193
00:09:06,310 --> 00:09:03,760
remove an insulation blanket from the

194
00:09:08,710 --> 00:09:06,320
special purpose dextrous manipulator the

195
00:09:10,389 --> 00:09:08,720
dexter robot hand

196
00:09:12,630 --> 00:09:10,399
they will also remove the lightweight

197
00:09:23,430 --> 00:09:12,640
adapter plate assembly from the columbus

198
00:09:28,949 --> 00:09:26,389
the space business is a team sport

199
00:09:31,350 --> 00:09:28,959
i think all of us feel pretty humbled to

200
00:09:33,829 --> 00:09:31,360
be part of any space shuttle or space

201
00:09:35,910 --> 00:09:33,839
station mission because there's so much

202
00:09:37,910 --> 00:09:35,920
work that is done to make this happen

203
00:09:39,670 --> 00:09:37,920
and all of us are very very thankful for

204
00:09:43,110 --> 00:09:39,680
their hard work when i think about

205
00:09:44,630 --> 00:09:43,120
discovery i think about my time at ksc

206
00:09:47,110 --> 00:09:44,640
and it was the first vehicle i got to

207
00:09:47,910 --> 00:09:47,120
work on there it means so much because i

208
00:09:49,750 --> 00:09:47,920
think

209
00:09:51,509 --> 00:09:49,760
it's more than just a job to people in

210
00:09:53,829 --> 00:09:51,519
the space program what i've seen on the

211
00:09:55,509 --> 00:09:53,839
shuttle and the station programs is the

212
00:09:57,750 --> 00:09:55,519
people working it it's it's a heart and

213
00:09:59,910 --> 00:09:57,760

soul thing everybody is just maintaining

214
00:10:02,150 --> 00:09:59,920
an incredibly high if not higher

215
00:10:04,870 --> 00:10:02,160
standard of professionalism

216
00:10:06,790 --> 00:10:04,880
to keep this program running so we have