1
00:00:06,240 --> 00:00:04,800
we're here in the International Space

2
00:00:07,829 --> 00:00:06,250
Station flight control room here at the

3
00:00:09,960 --> 00:00:07,839
Johnson Space Center and it's my

4
00:00:11,880 --> 00:00:09,970
privilege today to have European Space

5
00:00:13,470 --> 00:00:11,890
Agency astronaut Luca parmitano joining

6
00:00:14,790 --> 00:00:13,480
us thank you so much for making the time

7
00:00:16,620 --> 00:00:14,800
with us this morning thank you for

8
00:00:19,079 --> 00:00:16,630
having me it's a pleasure to be here so

9
00:00:20,310 --> 00:00:19,089
it's an exciting weekend even the tempo

10
00:00:22,050 --> 00:00:20,320
here in the flight control room is a

11
00:00:24,239 --> 00:00:22,060
little up everybody's getting ready

12
00:00:26,970 --> 00:00:24,249
turning their focus for the departure

13
00:00:28,980 --> 00:00:26,980

and re-entry of the ATV vehicle one is a

14
00:00:30,929 --> 00:00:28,990
Capcom I find that this room is always

15
00:00:33,210 --> 00:00:30,939
exciting but of course today there is a

16
00:00:35,400 --> 00:00:33,220
heightened sense of happening because of

17
00:00:38,340 --> 00:00:35,410
all the operations going on on station

18
00:00:39,840 --> 00:00:38,350
it's a been a hallmark program for the

19
00:00:41,610 --> 00:00:39,850
European Space Agency can you tell us

20
00:00:46,710 --> 00:00:41,620
some of the highlights for the ATV from

21
00:00:49,860 --> 00:00:46,720
your standpoint well c5 absolutely

22
00:00:52,320 --> 00:00:49,870
flawless missions and it I call the ATV

23
00:00:54,450 --> 00:00:52,330
the flagship of the International Space

24
00:00:56,250 --> 00:00:54,460
Station Cargo Fleet because it is the

25
00:01:00,890 --> 00:00:56,260
biggest it's the one with the most cargo

26
00:01:03,450 --> 00:01:00,900
and on on the European western side of

27
00:01:06,630 --> 00:01:03,460
the station is the only one that is

28
00:01:09,690 --> 00:01:06,640
completely automated and I like to

29
00:01:11,880 --> 00:01:09,700
remind how it launches from kourou in

30
00:01:14,609 --> 00:01:11,890
French keenya it travels for little

31
00:01:17,130 --> 00:01:14,619
millions of miles or kilometers and it

32
00:01:20,010 --> 00:01:17,140
docks with a precision of about one

33
00:01:21,989 --> 00:01:20,020
centimeter or half an inch completely

34
00:01:23,940 --> 00:01:21,999
automated it's it's a fantastic

35
00:01:26,969 --> 00:01:23,950
demonstration of Technology European

36
00:01:29,789 --> 00:01:26,979
technology there is a lot of of Italy in

37
00:01:31,709 --> 00:01:29,799
an ATV and as an Italian astronaut I'm

38
00:01:34,709 --> 00:01:31,719

almost obviously very proud of it too so

39
00:01:36,300 --> 00:01:34,719
it's been a fantastic program and it's

40
00:01:38,849 --> 00:01:36,310
been a little bit of sadness that I see

41
00:01:40,649 --> 00:01:38,859
it coming to a conclusion we can

42
00:01:42,239 --> 00:01:40,659
understand one thing that I found

43
00:01:44,309 --> 00:01:42,249
fascinating is we all tend to think of a

44
00:01:47,010 --> 00:01:44,319
TV is just a cargo craft but really it's

45
00:01:49,679 --> 00:01:47,020
capable of a lot more and this ATV 5

46
00:01:51,330 --> 00:01:49,689
especially has done a few more extra

47
00:01:52,760 --> 00:01:51,340
special things can you talk us through a

48
00:01:56,749 --> 00:01:52,770
little bit more about those capabilities

49
00:01:59,639 --> 00:01:56,759
absolutely first of all the the

50
00:02:00,989 --> 00:01:59,649
pressurized volume of the ATV is really

51
00:02:03,719 --> 00:02:00,999
is really being is really nice so

52
00:02:05,609 --> 00:02:03,729
basically it becomes an extra module one

53
00:02:08,490 --> 00:02:05,619
sea dogs on the space station and it's

54
00:02:11,490 --> 00:02:08,500
nice to have the storage area to have

55
00:02:13,230 --> 00:02:11,500
that it also very quiet too so it it's a

56
00:02:15,420 --> 00:02:13,240
nice environment to be in

57
00:02:17,700 --> 00:02:15,430
to start with also because of its

58
00:02:19,170 --> 00:02:17,710
powerful engines and the way it docks to

59
00:02:22,410 --> 00:02:19,180
the other part of the space station it's

60
00:02:26,540 --> 00:02:22,420
been used several times through its five

61
00:02:30,330 --> 00:02:26,550
missions for PM's maneuvers they are the

62
00:02:33,780 --> 00:02:30,340
two avoidance maneuver in order to

63
00:02:36,090 --> 00:02:33,790

change the orbit of the space station in

64
00:02:38,820 --> 00:02:36,100
case there is any chance of a collision

65
00:02:41,660 --> 00:02:38,830
with one of those space debris or other

66
00:02:47,130 --> 00:02:41,670
things coming in so that is a fantastic

67
00:02:52,190 --> 00:02:47,140
way to employ it also it because it

68
00:02:55,680 --> 00:02:52,200
brings it brings cargo but also fuel

69
00:02:58,590 --> 00:02:55,690
water all kind all kinds of different

70
00:03:01,170 --> 00:02:58,600
gases it's it's also a way to keep the

71
00:03:03,330 --> 00:03:01,180
station pressurize it's a it's a good so

72
00:03:06,570 --> 00:03:03,340
it's a great source of all resources and

73
00:03:10,010 --> 00:03:06,580
then it also obviously it's used to

74
00:03:12,570 --> 00:03:10,020
dispose of trash which is a incredibly

75
00:03:15,060 --> 00:03:12,580
incredibly big problem the space station

76
00:03:16,950 --> 00:03:15,070
get getting rid of the trash show that

77
00:03:18,390 --> 00:03:16,960
big volume of the other activity really

78
00:03:19,830 --> 00:03:18,400
helps in that sense yeah absolutely

79
00:03:21,690 --> 00:03:19,840
that's probably something people don't

80
00:03:23,010 --> 00:03:21,700
think about so much is everything that

81
00:03:24,510 --> 00:03:23,020
we're bringing up you know there's only

82
00:03:26,640 --> 00:03:24,520
so much room in the space station and

83
00:03:28,530 --> 00:03:26,650
managing all of that stowage and getting

84
00:03:30,600 --> 00:03:28,540
rid of unneeded items is a big priority

85
00:03:33,330 --> 00:03:30,610
and a big logistical issue so this is

86
00:03:36,180 --> 00:03:33,340
key for that it is I like to remind the

87
00:03:38,010 --> 00:03:36,190
ATV that when we see it compared to the

88
00:03:40,350 --> 00:03:38,020

space station we don't get a sense of

89
00:03:41,820 --> 00:03:40,360
the size but for people on the ground I

90
00:03:44,340 --> 00:03:41,830
like to remind them it's as big as a

91
00:03:46,560 --> 00:03:44,350
double-decker from London one of those

92
00:03:49,040 --> 00:03:46,570
big buses that deter around and that's

93
00:03:52,080 --> 00:03:49,050
how big the ATV is it's really a big

94
00:03:53,730 --> 00:03:52,090
spacecraft so you touched on this a

95
00:03:55,110 --> 00:03:53,740
little bit earlier in the interview but

96
00:03:57,240 --> 00:03:55,120
can you talk to us a little bit about

97
00:03:58,230 --> 00:03:57,250
what this program has meant for ISA and

98
00:03:59,610 --> 00:03:58,240
the European countries and especially

99
00:04:01,680 --> 00:03:59,620
you were talking before an interview

100
00:04:02,850 --> 00:04:01,690
about coming from Italy and what that

101
00:04:06,720 --> 00:04:02,860
means because they've had a role with a

102
00:04:09,570 --> 00:04:06,730
TV well certainly first of all a TV has

103
00:04:12,270 --> 00:04:09,580
been a very successful program and it

104
00:04:14,690 --> 00:04:12,280
has given us an opportunity to cooperate

105
00:04:17,610 --> 00:04:14,700
with NASA and the other space agency and

106
00:04:22,260 --> 00:04:17,620
to be part of the International Space

107
00:04:25,320 --> 00:04:22,270
Station program it is let us develop

108
00:04:27,210 --> 00:04:25,330
engines navigation systems again I

109
00:04:29,580 --> 00:04:27,220
reminded earlier how precise a

110
00:04:31,670 --> 00:04:29,590
navigation system is and this will help

111
00:04:35,309 --> 00:04:31,680
us in the future without a spacecraft

112
00:04:36,960 --> 00:04:35,319
the legacy of the ATV doesn't disappear

113
00:04:40,430 --> 00:04:36,970

with the conclusion of the program

114
00:04:44,189 --> 00:04:40,440
because the evolution of the ATV will be

115
00:04:46,320 --> 00:04:44,199
the service module for or I on the next

116
00:04:48,180 --> 00:04:46,330
great cooperation between the European

117
00:04:51,540 --> 00:04:48,190
Space Agency Europe and the United

118
00:04:54,719 --> 00:04:51,550
States and NASA and so what we learned

119
00:04:57,149 --> 00:04:54,729
in this f and this amazing years of

120
00:05:01,649 --> 00:04:57,159
using the spacecraft will be will be

121
00:05:04,920 --> 00:05:01,659
really come useful when we develop the

122
00:05:06,540 --> 00:05:04,930
new service module that's a very good

123
00:05:08,040 --> 00:05:06,550
point you know as you said this might be

124
00:05:09,450 --> 00:05:08,050
a little sad for some people who've

125
00:05:11,520 --> 00:05:09,460
supported a TV through all these

126
00:05:12,839 --> 00:05:11,530
missions but what a great testament to

127
00:05:15,499 --> 00:05:12,849
the capabilities that it's going to be

128
00:05:19,860 --> 00:05:15,509
part of Orion and continuing forward

129
00:05:21,629 --> 00:05:19,870
absolutely and again this is a little

130
00:05:24,570 --> 00:05:21,639
bit comparable to what happened with the

131
00:05:26,850 --> 00:05:24,580
shuttle programs the shuttle program ATV

132
00:05:29,249 --> 00:05:26,860
these are great programs they helped us

133
00:05:31,589 --> 00:05:29,259
a lot during the years that we have

134
00:05:33,450 --> 00:05:31,599
employed them but everything comes to an

135
00:05:35,670 --> 00:05:33,460
end and it doesn't it doesn't end there

136
00:05:38,670 --> 00:05:35,680
it continues into the evolution of the

137
00:05:39,959 --> 00:05:38,680
program and I think it's great that the

138
00:05:44,370 --> 00:05:39,969

evolution of both the shuttle program

139
00:05:47,370 --> 00:05:44,380
and an ATV comes together in a common

140
00:05:51,330 --> 00:05:47,380
ground which is the Orion during program

141
00:05:53,370 --> 00:05:51,340
for to go beyond low-earth orbit and I'm

142
00:05:54,870 --> 00:05:53,380
sure that the people and the different

143
00:06:00,990 --> 00:05:54,880
control centers are thinking about that

144
00:06:03,050 --> 00:06:01,000
right now as a tv5 the orbit and comes

145
00:06:04,769 --> 00:06:03,060
to find these final resting place

146
00:06:06,600 --> 00:06:04,779
absolutely well that's something the

147
00:06:07,709 --> 00:06:06,610
teams here now as well and like you said

148
00:06:09,499 --> 00:06:07,719
it just leads to bigger and better

149
00:06:11,640 --> 00:06:09,509
things for future space exploration

150
00:06:13,080 --> 00:06:11,650
speaking of the control center i'm

151
00:06:15,719 --> 00:06:13,090
assuming that you've been to the control

152
00:06:17,189 --> 00:06:15,729
center for a TV and what do you think

153
00:06:18,360 --> 00:06:17,199
that they're doing today and you've

154
00:06:19,740 --> 00:06:18,370
spoken a little bit about how they might

155
00:06:21,659 --> 00:06:19,750
be feeling but any other words you want

156
00:06:23,909 --> 00:06:21,669
to it's hard to say how they might be

157
00:06:27,029 --> 00:06:23,919
feeling I remember how I felt when I let

158
00:06:28,860 --> 00:06:27,039
go of a TV for a year and a half ago it

159
00:06:31,649 --> 00:06:28,870
was my privilege to be on board I

160
00:06:32,890 --> 00:06:31,659
captured and let go of a TV for Albert

161
00:06:34,600 --> 00:06:32,900
Einstein

162
00:06:37,030 --> 00:06:34,610
if felt that it would be like letting go

163
00:06:38,650 --> 00:06:37,040

of a friend because it was with us the

164
00:06:40,810 --> 00:06:38,660
whole six months on my permanency

165
00:06:43,870 --> 00:06:40,820
brought he brought our food our clothes

166
00:06:47,200 --> 00:06:43,880
so for us he was a for me was a very

167
00:06:50,409 --> 00:06:47,210
special feeling it way it was you know I

168
00:06:52,990 --> 00:06:50,419
always tend to say that it came bring he

169
00:06:54,460 --> 00:06:53,000
brought up not only our our food or

170
00:06:57,129 --> 00:06:54,470
clothes our experiment but also all the

171
00:06:59,620 --> 00:06:57,139
dreams of the people that that built the

172
00:07:01,540 --> 00:06:59,630
spacecraft that put their work and their

173
00:07:04,210 --> 00:07:01,550
hours and all their passion into what

174
00:07:07,659 --> 00:07:04,220
they do a little bit of that will be

175
00:07:10,840 --> 00:07:07,669
certainly today present in a DTV control

176
00:07:13,180 --> 00:07:10,850
center into loose but right now they are

177
00:07:15,010 --> 00:07:13,190
probably focusing on the myriad of

178
00:07:17,350 --> 00:07:15,020
operations that they need to do in order

179
00:07:18,850 --> 00:07:17,360
to the orbit the spacecraft correctly

180
00:07:21,279 --> 00:07:18,860
even though it's not automatic vehicle

181
00:07:22,629 --> 00:07:21,289
the man is always in the loop they have

182
00:07:24,430 --> 00:07:22,639
to make sure that all the all the

183
00:07:26,890 --> 00:07:24,440
progress are working correctly that the

184
00:07:29,080 --> 00:07:26,900
data they're receiving are the ones that

185
00:07:31,390 --> 00:07:29,090
are expected that the past the

186
00:07:34,240 --> 00:07:31,400
spacecraft is taking is according to the

187
00:07:36,640 --> 00:07:34,250
plan and they will be sending command at

188
00:07:39,490 --> 00:07:36,650

time from time to time allowing the

189
00:07:42,159 --> 00:07:39,500
spacecraft computers to go on to the

190
00:07:43,210 --> 00:07:42,169
next step well we will definitely be

191
00:07:45,060 --> 00:07:43,220
following along with all of those

192
00:07:47,439 --> 00:07:45,070
activities and of course covering that

193
00:07:49,300 --> 00:07:47,449
starting tomorrow on s TV so

194
00:07:51,219 --> 00:07:49,310
congratulations to you and all of the

195
00:07:52,899 --> 00:07:51,229
European Space Agency team and we'll be

196
00:07:55,300 --> 00:07:52,909
following along and looking forward to

197
00:07:56,500 --> 00:07:55,310
and things yet to come well I'll uh I

198
00:07:58,450 --> 00:07:56,510
think that right now we need to

199
00:08:01,060 --> 00:07:58,460
congratulate the crew on orbit that I

200
00:08:04,600 --> 00:08:01,070
did a great job with the unlocking and

201
00:08:07,920 --> 00:08:04,610
certainly the the European engineers and

202
00:08:10,480 --> 00:08:07,930
and throughout the space agency that

203
00:08:13,810 --> 00:08:10,490
started this program and brought it to a

204
00:08:15,730 --> 00:08:13,820
successful conclusion and it thank you

205
00:08:18,610 --> 00:08:15,740
for having me here and let me let me