1
00:00:04,789 --> 00:00:03,030
the international space station is

2
00:00:06,789 --> 00:00:04,799
always looking at cost-effective ways of

3
00:00:08,470 --> 00:00:06,799
performing research in space

4
00:00:11,430 --> 00:00:08,480
and a new payload that arrived at the

5
00:00:12,549 --> 00:00:11,440
station on spacex4 is proving that

6
00:00:14,870 --> 00:00:12,559
we're going to head out next to the

7
00:00:17,189 --> 00:00:14,880
payload operations integration center at

8
00:00:19,590 --> 00:00:17,199
the marshall space flight center in

9
00:00:21,109 --> 00:00:19,600
huntsville alabama where lori meigs

10
00:00:23,269 --> 00:00:21,119
is on hand to tell us more about that

11
00:00:25,109 --> 00:00:23,279
lori

12
00:00:27,589 --> 00:00:25,119
rabbit scat is an instrument that will

13
00:00:30,070 --> 00:00:27,599

measure ocean wind speed and direction

14
00:00:31,750 --> 00:00:30,080
and could help with weather forecasting

15
00:00:33,990 --> 00:00:31,760
and improve that and hurricane

16
00:00:35,510 --> 00:00:34,000
monitoring it was installed on the iss

17
00:00:37,750 --> 00:00:35,520
just this week and will undergo

18
00:00:40,069 --> 00:00:37,760
checkouts later today prior to its

19
00:00:41,670 --> 00:00:40,079
launch on spacex4 i caught up with the

20
00:00:45,990 --> 00:00:41,680
project systems engineer from the jet

21
00:00:51,270 --> 00:00:49,510
rapid scat is a very unique mission we

22
00:00:53,430 --> 00:00:51,280
are taking engineering model and flight

23
00:00:56,229 --> 00:00:53,440
spare parts that were from a mission

24
00:00:58,869 --> 00:00:56,239
that launched in 1999 we took them out

25
00:01:01,510 --> 00:00:58,879
of storage we put a commercial interface

26
00:01:04,070 --> 00:01:01,520
onto those parts and tested it and we

27
00:01:06,310 --> 00:01:04,080
are able to then provide big mission

28
00:01:07,990 --> 00:01:06,320
science at a very small fraction of what

29
00:01:10,469 --> 00:01:08,000
it usually costs to do that type of

30
00:01:12,390 --> 00:01:10,479
mission we have a small team a very

31
00:01:14,710 --> 00:01:12,400
short schedule a very small amount of

32
00:01:16,390 --> 00:01:14,720
money and we're getting really big

33
00:01:18,310 --> 00:01:16,400
science out of this and we're going to

34
00:01:20,149 --> 00:01:18,320
be the first payload put on the space

35
00:01:22,789 --> 00:01:20,159
station that's actually assembled in two

36
00:01:24,630 --> 00:01:22,799
pieces and once we're installed we'll

37
00:01:26,630 --> 00:01:24,640
start to rotate our antenna so we're the

38
00:01:28,789 --> 00:01:26,640

first rotating

39
00:01:30,630 --> 00:01:28,799
rotating radar on the outside of the

40
00:01:32,469 --> 00:01:30,640
space station right so when you say

41
00:01:35,109 --> 00:01:32,479
installed you're installing outside the

42
00:01:37,510 --> 00:01:35,119
station yes we are installed outside on

43
00:01:40,069 --> 00:01:37,520
the columbus module it's called the sdx

44
00:01:42,389 --> 00:01:40,079
location and it's a site that faces

45
00:01:44,310 --> 00:01:42,399
basically out to space and since we're

46
00:01:46,069 --> 00:01:44,320
trying to measure ocean wind speed and

47
00:01:47,429 --> 00:01:46,079
direction we need to look down and so

48
00:01:48,870 --> 00:01:47,439
one of the first things we had to figure

49
00:01:51,190 --> 00:01:48,880
out is how to see the oceans from that

50
00:01:53,590 --> 00:01:51,200
spot and so we basically built a

51
00:01:55,590 --> 00:01:53,600
two-part payload and so the first part

52
00:01:58,149 --> 00:01:55,600
installs on the columbus module and that

53
00:02:00,550 --> 00:01:58,159
gives us a base to install our second

54
00:02:03,109 --> 00:02:00,560
part of the payload to look downward

55
00:02:06,389 --> 00:02:03,119
towards we call it nader why do we need

56
00:02:07,590 --> 00:02:06,399
to use the platform of the iss to study

57
00:02:09,109 --> 00:02:07,600
ocean winds

58
00:02:11,430 --> 00:02:09,119
well there are a few reasons that we use

59
00:02:13,510 --> 00:02:11,440
the space station one is practicality we

60
00:02:15,589 --> 00:02:13,520
were given a free launch a free ride to

61
00:02:16,790 --> 00:02:15,599
space we were given a platform that gave

62
00:02:18,710 --> 00:02:16,800
us power

63
00:02:20,550 --> 00:02:18,720

that gave us a stable place from which

64
00:02:22,390 --> 00:02:20,560
we can make the measurements and we have

65
00:02:23,990 --> 00:02:22,400
that location for two years

66
00:02:25,589 --> 00:02:24,000
and so it really is saving us quite a

67
00:02:27,750 --> 00:02:25,599
bit of money and it's allowing us to

68
00:02:29,510 --> 00:02:27,760
actually do this science but there are

69
00:02:31,350 --> 00:02:29,520
also great science benefits to using the

70
00:02:33,190 --> 00:02:31,360
space station orbit most of the

71
00:02:34,790 --> 00:02:33,200
scatterometers that have been put into

72
00:02:36,630 --> 00:02:34,800
orbit so far have been in what's called

73
00:02:39,110 --> 00:02:36,640
a sun synchronous orbit and that means

74
00:02:41,430 --> 00:02:39,120
that they see the same spot on earth at

75
00:02:43,270 --> 00:02:41,440
the same time each time they visit it so

76
00:02:45,350 --> 00:02:43,280
they'll be measuring ocean vector winds

77
00:02:46,229 --> 00:02:45,360
but only at one particular local time of

78
00:02:48,550 --> 00:02:46,239
day

79
00:02:50,869 --> 00:02:48,560
on the space station orbit we actually

80
00:02:52,949 --> 00:02:50,879
sample many different times of day and

81
00:02:55,190 --> 00:02:52,959
so over a period of about two months

82
00:02:56,710 --> 00:02:55,200
we'll fully sample all of the times of

83
00:02:58,710 --> 00:02:56,720
day so we'll be able to say something

84
00:03:00,869 --> 00:02:58,720
not just about ocean winds but how ocean

85
00:03:03,110 --> 00:03:00,879
winds vary over the course of a day and

86
00:03:04,949 --> 00:03:03,120
that's really exciting and one more

87
00:03:07,190 --> 00:03:04,959
thing we get to do from a science uh

88
00:03:09,190 --> 00:03:07,200

standpoint is because we're flying at a

89
00:03:11,910 --> 00:03:09,200
lower altitude and at all of these

90
00:03:13,509 --> 00:03:11,920
different times of day we will under fly

91
00:03:15,190 --> 00:03:13,519
the other scatterometers that are in

92
00:03:17,190 --> 00:03:15,200
orbit that are each measuring at their

93
00:03:18,949 --> 00:03:17,200
own single time of day so that we can

94
00:03:20,869 --> 00:03:18,959
for the first time better compare them

95
00:03:22,869 --> 00:03:20,879
to each other because we'll measure the

96
00:03:24,869 --> 00:03:22,879
same place at the same time as each of

97
00:03:26,070 --> 00:03:24,879
the other scatterometers in space which

98
00:03:27,430 --> 00:03:26,080
will let us see

99
00:03:28,309 --> 00:03:27,440
if they get different measurements is it

100
00:03:29,750 --> 00:03:28,319
because they're looking at different

101
00:03:31,750 --> 00:03:29,760
times of day or is it because the

102
00:03:33,030 --> 00:03:31,760
instruments are different and so by

103
00:03:34,789 --> 00:03:33,040
being able to we call it cross

104
00:03:36,630 --> 00:03:34,799
calibrating those instruments we're

105
00:03:38,630 --> 00:03:36,640
adding value to the entire constellation

106
00:03:40,309 --> 00:03:38,640
of scatterometers in space what will we

107
00:03:41,990 --> 00:03:40,319
use this data for

108
00:03:43,910 --> 00:03:42,000
rapidscat data is going to be used for

109
00:03:46,630 --> 00:03:43,920
quite a few things will be used to help

110
00:03:47,830 --> 00:03:46,640
improve weather forecasting will also be

111
00:03:50,149 --> 00:03:47,840
used to help

112
00:03:52,789 --> 00:03:50,159
monitor and track severe storms like

113
00:03:54,309 --> 00:03:52,799

hurricanes and so getting the space

114
00:03:56,149 --> 00:03:54,319
station's orbit which gives us great

115
00:03:57,990 --> 00:03:56,159
coverage over the tropics in fact we can

116
00:04:01,190 --> 00:03:58,000
cover everything between plus and minus

117
00:04:03,190 --> 00:04:01,200
57 degrees latitude we'll be able to get

118
00:04:04,949 --> 00:04:03,200
coverage of that region about every two

119
00:04:06,390 --> 00:04:04,959
days which will give us a lot of extra

120
00:04:07,910 --> 00:04:06,400
data points which will help us improve

121
00:04:10,550 --> 00:04:07,920
the weather forecast it'll help us

122
00:04:11,750 --> 00:04:10,560
improve severe storm tracking and it's

123
00:04:13,350 --> 00:04:11,760
also going to help us understand about

124
00:04:15,350 --> 00:04:13,360
the ocean atmosphere interface so

125
00:04:18,550 --> 00:04:15,360
there's a great wealth of science and

126
00:04:20,870 --> 00:04:18,560
applications to come from rapid scat

127
00:04:22,790 --> 00:04:20,880
and taking a live look into the payload

128
00:04:25,189 --> 00:04:22,800
operations integration center you see a

129
00:04:26,469 --> 00:04:25,199
little pink in there the signs are lit

130
00:04:29,030 --> 00:04:26,479
up pink it's

131
00:04:31,670 --> 00:04:29,040
pink it up msfc day and they're picking

132
00:04:33,510 --> 00:04:31,680
it up in the poic we are encouraging

133
00:04:35,749 --> 00:04:33,520
everyone to wear pink and increase

134
00:04:38,230 --> 00:04:35,759
awareness of the importance of early

135
00:04:39,749 --> 00:04:38,240
breast cancer detection and we're taking

136
00:04:41,510 --> 00:04:39,759
selfies and taking photographs and

137
00:04:43,189 --> 00:04:41,520
posting them on our marshall twitter

138
00:04:45,590 --> 00:04:43,199

site so you might want to check that out

139
00:04:47,830 --> 00:04:45,600
remember awareness plus early detection

140
00:04:49,590 --> 00:04:47,840
equals saved lives and we thank the

141
00:04:51,030 --> 00:04:49,600
folks in there for showing their support

142
00:04:53,110 --> 00:04:51,040
today and the hard work that they're