1
00:00:00,050 --> 00:00:04,110
Narrator: Antarctica is covered by the largest piece of ice on Earth.

2
00:00:04,130 --> 00:00:08,240
How that ice moves and changes affects

3
00:00:08,260 --> 00:00:12,360
the entire planet. A NASA airborne mission

4
00:00:12,380 --> 00:00:16,560
called Operation IceBridge is now completing its eighth consecutive year

5
00:00:16,580 --> 00:00:20,740
of measuring the changes in Antarctic ice. The science team uses

6
00:00:20,760 --> 00:00:24,810
the most comprehensive suite of instruments ever flown on long range flights,

7
00:00:24,830 --> 00:00:29,000
including lasers, radars, an infrared sensor,

8
00:00:29,020 --> 00:00:33,080
digital photography, and a gravimeter.

9
00:00:33,100 --> 00:00:37,210
The mission was born out of a need to bridge the gap in observations between

10
00:00:37,230 --> 00:00:41,310
NASA’s ICESat satellite, which ended its mission in 2009, and

11
00:00:41,330 --> 00:00:45,460
ICESat-2, scheduled for launch in 2018. This year

12
00:00:45,480 --> 00:00:49,590
IceBridge was able to fly two missions around the 88th parallel,

13
00:00:49,610 --> 00:00:53,740

to provide measurements at the southernmost edge of ICESat-2’s planned orbits.

14
00:00:53,760 --> 00:00:57,850
Many of IceBridge’s 24 science flights this

15
00:00:57,870 --> 00:01:02,030
year were focused on mapping the sea floor, where the Antarctic Ice Sheet

16
00:01:02,050 --> 00:01:06,160
meets ocean waters, so that scientists can better predict how fast

17
00:01:06,180 --> 00:01:10,200
the margins of the ice might melt. The mission also flew

18
00:01:10,220 --> 00:01:14,270
extensively over Antarctic sea ice, measuring extent and thickness

19
00:01:14,290 --> 00:01:18,380
of the frozen seawater. The team found coverage to be sparse

20
00:01:18,400 --> 00:01:22,510
in the Bellingshausen Sea — and as we know from satellite observations

21
00:01:22,530 --> 00:01:26,680
, sea ice coverage around the continent is currently at a record low

22
00:01:26,700 --> 00:01:30,870
for this time of year.Several missions around the Antarctic Peninsula

23
00:01:30,890 --> 00:01:34,950
also provided a wealth of data and some beautiful images.

24
00:01:34,970 --> 00:01:39,120
Of special interest was a flight over a growing crack in the Larsen C

25
00:01:39,140 --> 00:01:43,220
ice shelf. Once this crack is fully formed, it will produce

26
00:01:43,240 --> 00:01:47,360
an iceberg roughly the size of the state of Delaware.

27
00:01:47,380 --> 00:01:51,550
All of this year's flights were based out of Punta Areas, Chile,

28
00:01:51,570 --> 00:01:55,740
but next year, IceBridge plans to fly out of McMurdo Station

29
00:01:55,760 --> 00:01:59,930
in Antarctica in order to hit a new range of important science targets

30
00:01:59,950 --> 00:02:04,030
and continue to shed light on how melting polar ice is contributing