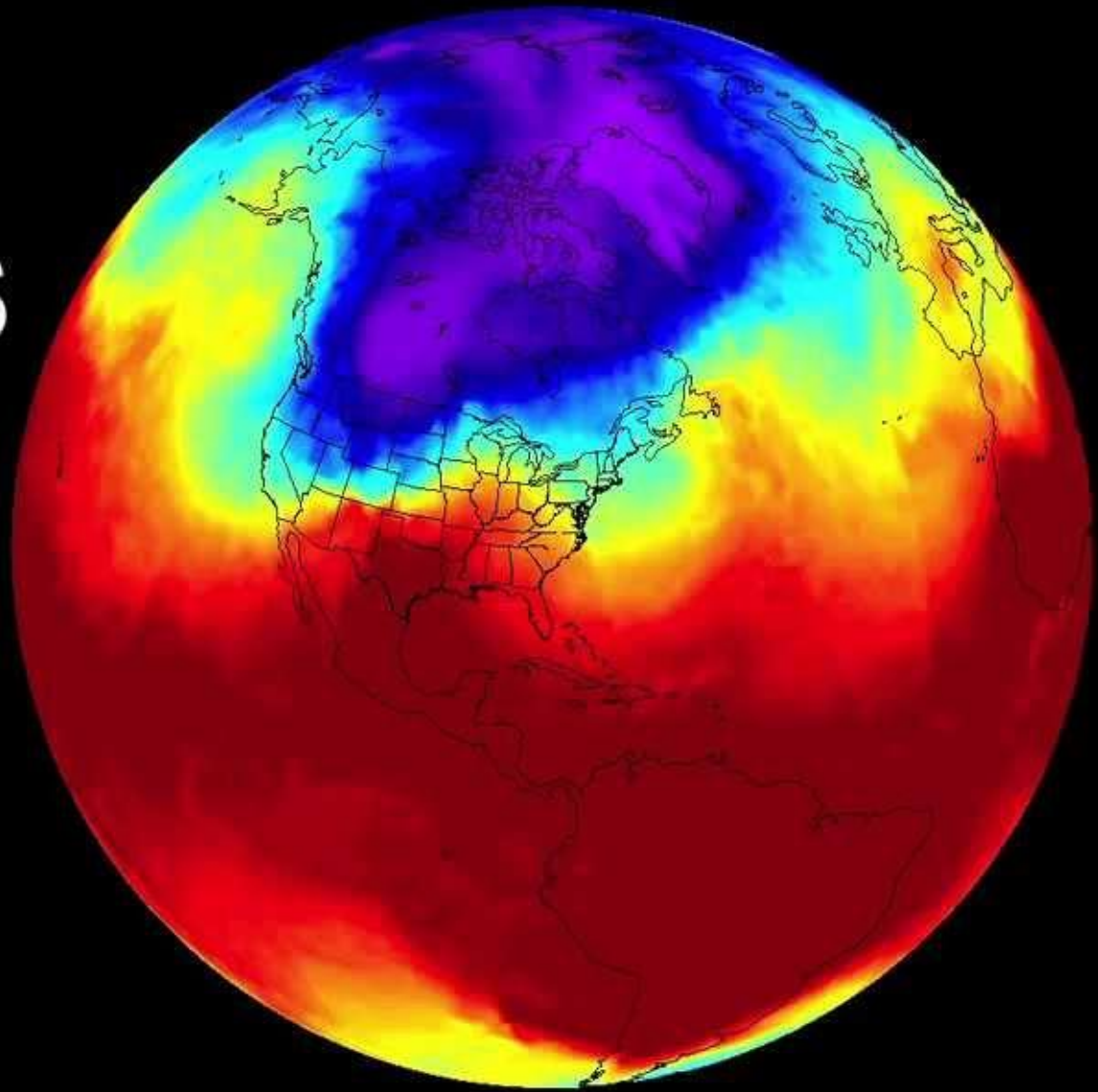


**NASA's AIRS
Sees
Polar Vortex
Behind
U.S. Big Chill**



1
00:00:06,660 --> 00:00:04,950
Aires is an instrument that flies on a

2
00:00:08,520 --> 00:00:06,670
NASA satellite in Earth orbit and

3
00:00:11,129 --> 00:00:08,530
collects data about Earth's atmosphere

4
00:00:12,660 --> 00:00:11,139
what we're seeing in this animation made

5
00:00:15,629 --> 00:00:12,670
with real data from the aires instrument

6
00:00:18,450 --> 00:00:15,639
is temperature at about 3,000 feet above

7
00:00:21,179 --> 00:00:18,460
the surface of the earth dark purple are

8
00:00:24,419 --> 00:00:21,189
coalesced and red is warmest the

9
00:00:27,989 --> 00:00:24,429
animation runs from early December 2013

10
00:00:30,089 --> 00:00:27,999
through the first week of 2014 the polar

11
00:00:31,829 --> 00:00:30,099
vortex is a region of very cold air that

12
00:00:34,560 --> 00:00:31,839
forms in the northern hemisphere over

13
00:00:36,060 --> 00:00:34,570

the Arctic in wintertime the reason it's

14

00:00:38,070 --> 00:00:36,070

so cold is that this is a region that

15

00:00:40,680 --> 00:00:38,080

gets no sunlight at all for the entire

16

00:00:42,090 --> 00:00:40,690

winter season a similar vortex forms in

17

00:00:44,640 --> 00:00:42,100

the southern hemisphere in their winter

18

00:00:47,190 --> 00:00:44,650

then polar vortex is normally a

19

00:00:49,560 --> 00:00:47,200

distorted doughnut of cold around the

20

00:00:51,660 --> 00:00:49,570

poles yet more or less forms a circle

21

00:00:53,430 --> 00:00:51,670

though not perfectly in fact a northern

22

00:00:55,710 --> 00:00:53,440

hemisphere tends to be more distorted

23

00:00:58,800 --> 00:00:55,720

than in a southern hemisphere this movie

24

00:01:01,290 --> 00:00:58,810

starts with a fairly normal polar vortex

25

00:01:03,390 --> 00:01:01,300

concentrated mostly over Canada and the

26
00:01:06,840 --> 00:01:03,400
Arctic

27
00:01:10,310 --> 00:01:06,850
but quickly that vortex moves south over

28
00:01:13,940 --> 00:01:11,660
at the end of the movie you see that it

29
00:01:16,850 --> 00:01:13,950
becomes very elongated with a big purple

30
00:01:19,130 --> 00:01:16,860
slash across the entire North Pole with

31
00:01:21,080 --> 00:01:19,140
that pool of coal they are now sitting

32
00:01:22,880 --> 00:01:21,090
throughout these two United States and

33
00:01:24,770 --> 00:01:22,890
you can see unusually low temperatures

34
00:01:26,719 --> 00:01:24,780
down into northern Florida what's

35
00:01:29,120 --> 00:01:26,729
unusual here was that a low pressure

36
00:01:31,940 --> 00:01:29,130
system developed around Hudson Bay and

37
00:01:34,130 --> 00:01:31,950
as with all low pressure systems in the

38
00:01:36,020 --> 00:01:34,140

northern hemisphere the air moved

39

00:01:38,270 --> 00:01:36,030

counterclockwise around it and that

40

00:01:40,730 --> 00:01:38,280

counterclockwise movement brought very

41

00:01:42,380 --> 00:01:40,740

cold air from the Arctic all the way

42

00:01:44,660 --> 00:01:42,390

down into the East Coast the United

43

00:01:47,150 --> 00:01:44,670

States the polar vortex doesn't act

44

00:01:49,040 --> 00:01:47,160

alone the Jetstream is actually closely

45

00:01:51,410 --> 00:01:49,050

associated with it in the northern

46

00:01:54,320 --> 00:01:51,420

hemisphere the Jetstream is a band of

47

00:01:55,940 --> 00:01:54,330

very strong winds that move from west to

48

00:01:59,060 --> 00:01:55,950

east and extend around the entire globe

49

00:02:01,340 --> 00:01:59,070

at middle latitudes and the jet stream

50

00:02:03,560 --> 00:02:01,350

always bounds the polar vortex to the

51
00:02:05,270 --> 00:02:03,570
south what was unusual here obviously is

52
00:02:07,219 --> 00:02:05,280
that the jet moved so far southward and

53
00:02:08,840 --> 00:02:07,229
brought with it that air as cold air

54
00:02:10,940 --> 00:02:08,850
moves south that broke records

55
00:02:13,759 --> 00:02:10,950
throughout the eastern United States as

56
00:02:15,979 --> 00:02:13,769
much as 40 degrees below normal and cold