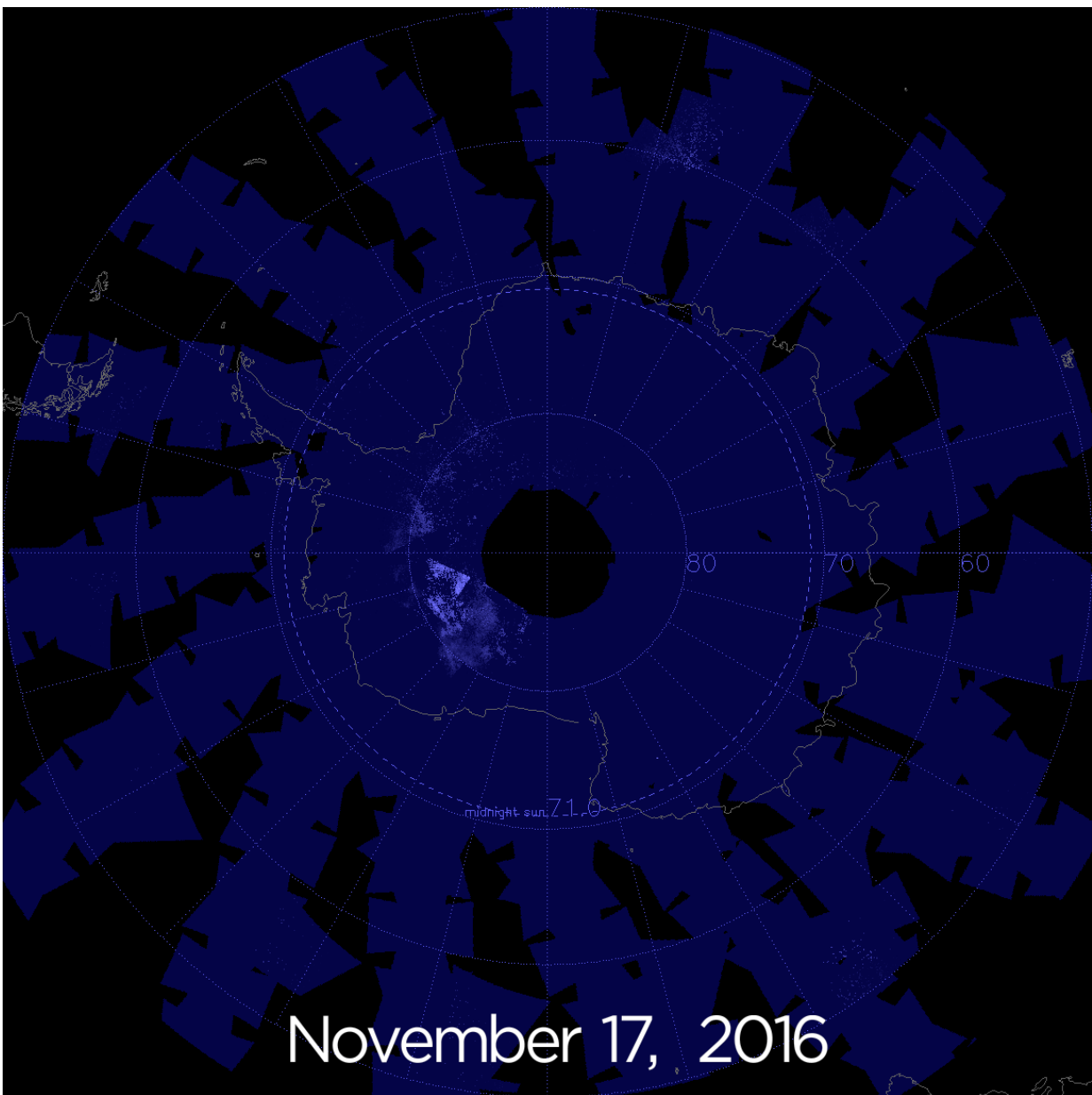


NASA's AIM observes early noctilucent ice clouds over Antarctica

December 2 2016, by Lina Tran



Data from NASA's Aeronomy of Ice in the Mesosphere, or AIM, spacecraft shows the sky over Antarctica is glowing electric blue due to the start of noctilucent, or night-shining, cloud season in the Southern Hemisphere. This data was collected from Nov. 17-28, 2016. Credit: NASA/HU/VT/CU-LASP/AIM/Joy Ng, producer

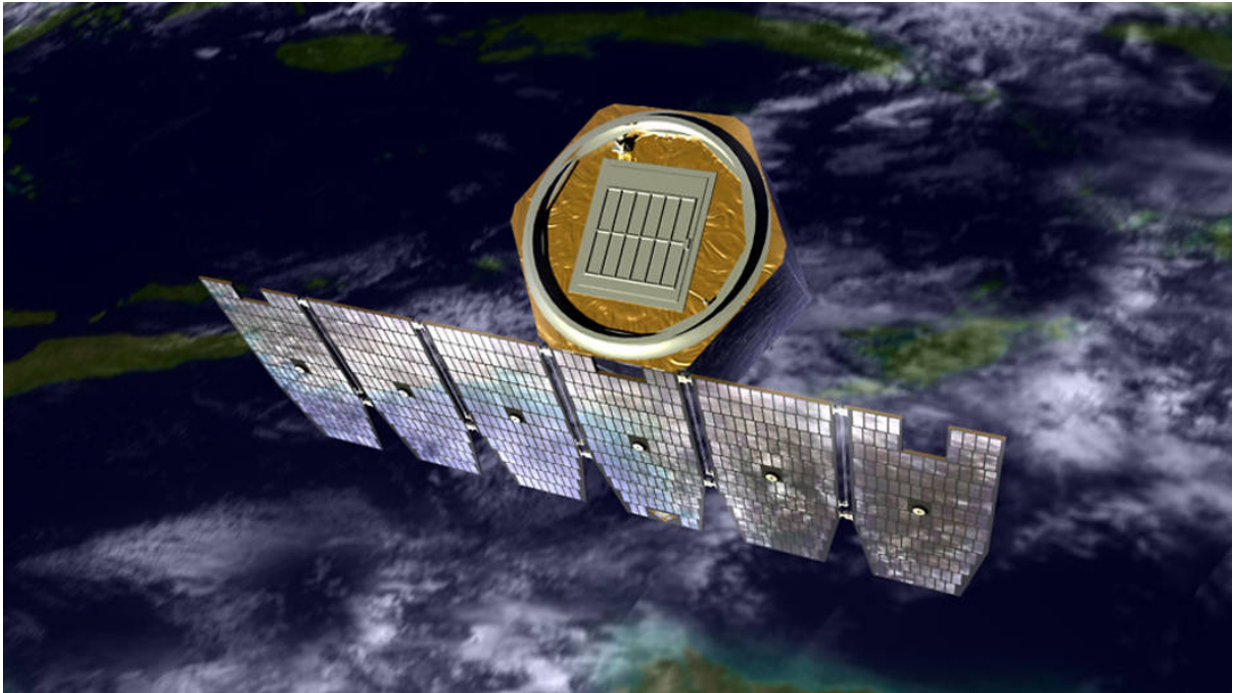
Data from NASA's Aeronomy of Ice in the Mesosphere, or AIM, spacecraft shows the sky over Antarctica is glowing electric blue due to the start of noctilucent, or night-shining, cloud season in the Southern Hemisphere - and an early one at that. Noctilucent clouds are Earth's highest clouds, sandwiched between Earth and space 50 miles above the ground in a layer of the atmosphere called the mesosphere. Seeded by fine debris from disintegrating meteors, these clouds of ice crystals glow a bright, shocking blue when they reflect sunlight.

AIM studies [noctilucent clouds](#) in order to better understand the mesosphere, and its connections to other parts of the atmosphere, weather and climate. We observe them seasonally, during summer in both the Northern and Southern hemispheres. This is when the mesosphere is most humid, with water vapor wafting up from lower altitudes. Additionally, this is also when the [mesosphere](#) is the coldest place on Earth - dropping as low as minus 210 degrees Fahrenheit - due to seasonal air flow patterns.

This year, AIM saw the start of noctilucent cloud season on Nov. 17, 2016 - tying with the earliest start yet in the AIM record of the Southern Hemisphere. Scientists say this corresponds to an earlier seasonal change at lower altitudes. Winter to summer changes in the Antarctic lower atmosphere sparked a complex series of responses throughout the atmosphere - one of which is an earlier noctilucent cloud season. In the Southern Hemisphere, AIM has observed seasons beginning anywhere

from Nov. 17 to Dec. 16.

Since its 2007 launch, AIM data has shown us that changes in one region of the [atmosphere](#) can effect responses in another distinct, and sometimes distant, region. Scientists call these relationships atmospheric teleconnections. Now, due to natural precession, the spacecraft's orbit is evolving, allowing the measurement of [atmospheric gravity waves](#) that could be contributing to the teleconnections.



An artist's rendition of the AIM spacecraft in orbit above Earth. Credit: NASA

Provided by NASA's Goddard Space Flight Center

Citation: NASA's AIM observes early noctilucent ice clouds over Antarctica (2016, December 2)
retrieved 20 April 2024 from <https://phys.org/news/2016-12-nasa-aim-early-noctilucent-ice.html>

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