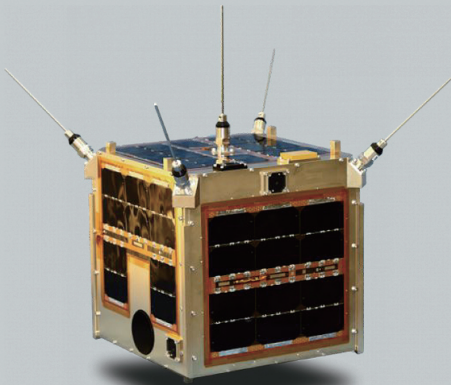


# WNISAT-1

The World's First Commercial  
Microsatellite Owned by a  
Private Company



WNISAT-1 is a 10 Kg microsatellite built with the purpose of monitoring sea ice in the Arctic Sea. It is equipped with cameras with the spectral bands of blue, green, red and near infrared; it also carries a laser to study the density variations of greenhouse gases.

The missions based on optical and laser observations have now been substituted with another mission. Using WNISAT-1's onboard magnetometer, Weathernews observes the effects of solar weather on the Earth's magnetic field. This is in support of aircraft flying in the arctic region, the part of the world most sensitive to these effects. Together with weather data, this information can help improve the efficiency and safety of such flights.

WNISAT-1 is equipped with optical cameras to monitor sea ice. By assembling using consumer products instead of the conventional parts dedicated to space, we have reduced the cost and miniaturization. We confirmed the tolerance against space environment through various environmental tests.

The camera for near-infrared band will be used to distinguish clouds from ice, both of which look the same in the visible wavelengths

It also carries a laser module for conducting a secondary experimental mission. The module consists of two different lasers: the energy of one of the lasers is absorbed by CO<sub>2</sub> in the atmosphere, while that of the other is not. By measuring two lights on the ground and comparing their signal intensity, we can estimate the density of CO<sub>2</sub> in the atmosphere. Although those data are not accurate enough to be analyzed scientifically, they will encourage general public to have interest in satellite and climate change.

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Client	: Weathernews Inc.
Dimensions	: 270 × 270 × 270 mm (Excluding Protrusions)
Mass	: 10.1 Kg
Generated Power	: 12.6 W
Launch Date	: November 21, 2013 4:10:11 PM (Japan Standard Time)
Launch Vehicle	: Dnepr Rocket
Orbit	: Sun-Synchronous 600 Km Altitude 10:30 LTDN
Current State	: End of Operation

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Corporate Outline

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