

Surprise meteor shower on New Year's Eve

24 February 2016, by Peter Jenniskens



New Year's Eve meteor shower. Credit: Danielle Futselaar/SETI Institute.

A new network of video surveillance cameras in New Zealand has detected a surprise meteor shower on New Year's Eve. The shower is called the Volantids, named after the constellation Volans, the flying fish, from which the meteoroids appear to stream towards us.

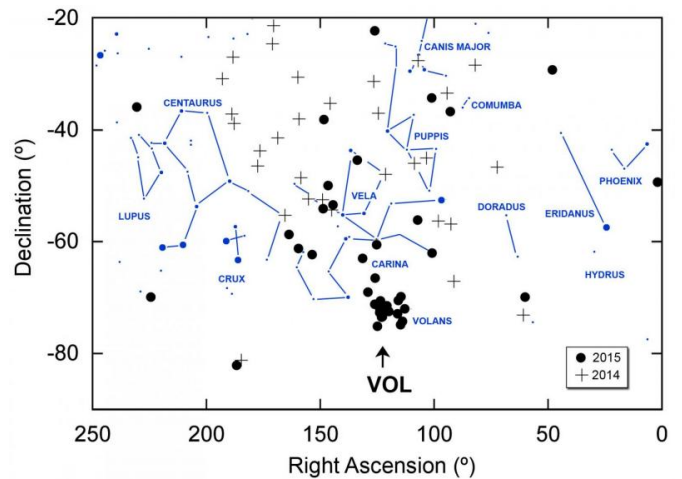
"In a way, the shower helped chase bad spirits away," says SETI Institute meteor astronomer Peter Jenniskens. "Now we have an early warning that we should be looking for a potentially hazardous comet in that orbit."

In September of 2014, Jenniskens teamed up with Professor Jack Baggaley of the University of Canterbury in Christchurch, New Zealand, to establish a meteor video surveillance project in the southern hemisphere to find such warning signs of dangerous comets. This project was similar to the existing Cameras for Allsky Meteor Surveillance network (CAMS) in northern California. The CAMS network is sponsored by, and supports the goals of, the NASA Near Earth Object Observation program.

Now, 32 video cameras are spread over two

stations on New Zealand's South Island. Amateur meteor astronomers Peter Aldous at Geraldine and Ian Crumpton at West Melton are operating the stations. Data are submitted to the SETI Institute where Jenniskens calculates the meteoroid trajectories.

"New Zealand, lying between 35 and 47 degrees southern latitude, has a long tradition of meteor studies," says Baggaley. "While radar observations in the past were efficient at observing sporadic [meteors](#), the [video cameras](#) can see the [meteor showers](#) really well."



Direction from which meteors approached us on December 31 (and next night). Credit: Peter Jenniskens/SETI Institute

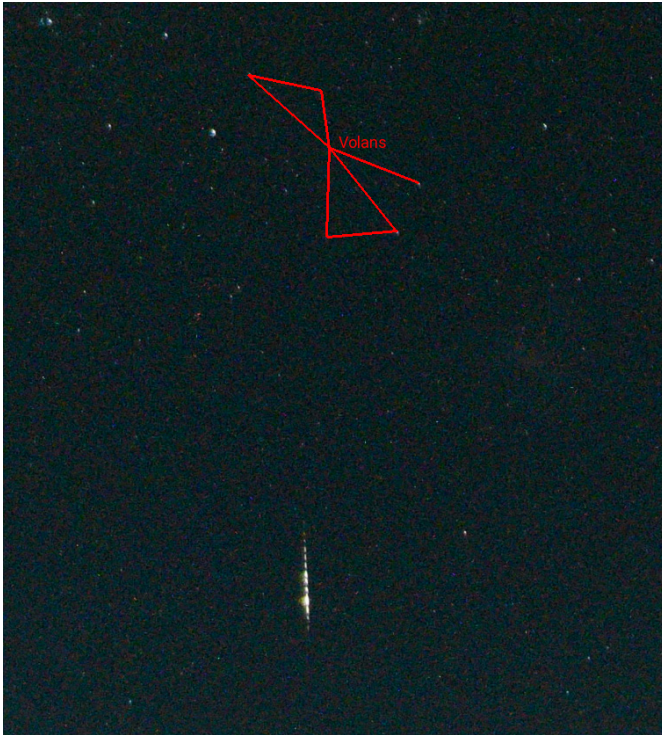
Jenniskens and Baggaley describe the network and report on the new result in a paper submitted for publication in the Journal of the International Meteor Organization. The paper characterizes the trajectories of 21 Volantids measured on December 31, and two more on January 1.

"These were naked-eye meteors and rates peaked at the time of the local New Year's Eve celebrations," notes Jenniskens. "One out of three

meteors that night came from this shower."

Provided by SETI Institute

The shower was not seen the year before and is not known from past radar observations.



A likely Volantid meteor captured by the Desert Fireball Network in Australia, courtesy of Hadrien Devillepoix and Phil Bland. Credit: Desert Fireball Network/Curtin University.

"A confined stream of dust particles must have been steered into Earth's path for a brief moment," says co-author and meteoroid stream dynamicist Rachel Soja of the University of Stuttgart, Germany, who calculated that the Earth will be safe from the comet and its debris in the near future.

The meteoroids move in a fairly steeply inclined orbit similar to that of some Jupiter-family type comets.

"The parent body of this stream still eludes us," says Soja. "It may not be active now and the high inclination may make it difficult to spot."

APA citation: Surprise meteor shower on New Year's Eve (2016, February 24) retrieved 16 October 2021 from <https://phys.org/news/2016-02-meteor-shower-year-eve.html>

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