

## **Cloud spotters help 'wave-like' formation secure official recognition**

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Credit: University of Reading

A new cloud formation first spotted by citizen scientists and verified by University of Reading weather experts is set to join the official register of cloud types.

The asperitas cloud, recognisable due to its dramatic, roughened base, is among a group of the first new <u>clouds</u> to be classified by the World Meteorological Organization (WMO) since 1951. It will be announced at a WMO event in Geneva for World Meteorological Day (Thursday 23 March).

The official recognition of asperitas follows a 10-year campaign led by Gavin Pretor-Pinney, a visiting fellow at Reading. He is the author of The Cloudspotter's Guide and founder of the Cloud Appreciation Society.



He worked a science team led by Professor Giles Harrison, from the University of Reading's Meteorology department, to analyse photos sent in by members of the public and understand the scientific origin of the unusual formation.

## Shape caused by waves in atmosphere

Work by Professor Harrison on weather models and meteorological measurements shows for the first time that asperitas is a low-level water cloud, with unusual shape caused by waves in the atmosphere. The new findings are shortly due to be published in the Royal Meteorological Society journal Weather.

Mr Pretor-Pinney, who will give a talk at the WMO event in Geneva today, said: "Asperitas was first identified with the help of citizen science, enabled by modern technology.

"When Cloud Appreciation Society members send us photographs of dramatic skies from around the world, it is possible to spot patterns. This is how the proposal for a new classification came about, and we are delighted the WMO has chosen to include it in their definitive reference work for cloud classification."

Professor Harrison said: "We have shown that the characteristic roughened, wave-like appearance of asperitas probably arises from local sources of atmospheric waves, such as weather fronts and thunderclouds.

"Being able to read the sky is a key part of meteorological education, and can warn aviators and others outdoors of potentially hazardous weather. Asperitas is now a cloud to watch out for too."

## Understand clouds, understand weather



Understanding Clouds is the theme of this year's World Meteorological Day, and the WMO will also release its new online <u>International Cloud</u> <u>Atlas</u>. It is a global reference for observing and identifying clouds, which are an essential part of weather, the climate system and the water cycle. It includes new classifications, including asperitas, and contains hundreds of images submitted by meteorologists, photographers and cloud spotters worldwide.

Professor Harrison's work follows research on electrically charging clouds to make it rain in the Middle East, for which he was awarded a share of US \$5m in the United Arab Emirates Research Programme for Rain Enhancement Science in January.

Petteri Taalas, WMO Secretary-General, said: "Throughout the centuries, few natural phenomena have inspired as much scientific thought and artistic reflection as clouds.

"More than two millennia ago, Aristotle studied clouds and wrote a treatise addressing their role in the hydrological cycle. And today, scientists understand that clouds play a vital role in the Earth's energy balance, climate and weather.

"If we want to forecast <u>weather</u> we have to understand clouds. If we want to model the climate system we have to understand clouds. And if we want to predict the availability of water resources, we have to understand clouds."

Provided by University of Reading

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