

# HOW AIRCRAFT CONTRAILS FORM MAN-MADE CLOUDS

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This series of satellite images analysed by the UK's Met Office reveals how condensation trails (contrails) from aircraft can turn into clouds.



The strange coil-like feature on the right of the image is a contrail left by a military aircraft flying in a circular holding pattern.



Dr Jim Haywood and his colleagues from the Met Office and Reading and Leeds universities studied the contrails, which were blown southwards by the prevailing wind and transformed into "contrail-induced" cirrus clouds.



Eventually, these became indistinguishable from clouds that arise naturally.



Dr Haywood and his colleagues investigated the impact of these man-made clouds. In an article published in the Journal of Geophysical Research, they describe how it had both a cooling and a warming effect.



Firstly, the researchers said the cloud reflected sunlight back to space leading to a cooling effect on the climate. Secondly, it prevented heat from leaving the Earth.



The scientists compared two weather forecasting models, one that included contrail-induced clouds and one that did not. Their comparison showed that the clouds may have a net warming effect on the planet.

<http://news.bbc.co.uk/2/hi/science/nature/8309629.stm>

## NEGATIVE IMPACTS OF MAN-MADE CLOUDS & HAZE

- 1) Reduction of Direct Sunlight Reaching the Earth
- 2) Reduced Photosynthesis
- 3) Lower Crop Production
- 4) Decline in Tree and Plant Health
- 5) Artificial Changes in the Weather + Climate
- 6) Reduced Solar Panel Power Generation
- 7) Lack of Vitamin D + Related Health Problems
- 8) Exacerbates Global Warming  
(Water Vapor is a Greenhouse Gas)
- 9) Jet Emissions = Health Problems+Crop Damage
- 10) Negative Affects on Biodiversity
- 11) Negative Affects on Telecommunications

## Persistent Jet Contrails & Man-Made Clouds May 12, 2010 . Redwood Valley, Mendocino County, CA



NASA research studies show that increasingly persistent jet contrails may turn into man-made clouds (or white haze), that are "...trapping warmth in the atmosphere and exacerbating global warming..." NASA (2005), goes on to state that "...Any change in global cloud cover may contribute to long-term changes in the Earth's climate. Contrails, especially persistent contrails, represent a human-caused increase in the Earth's cloudiness, and are likely to be affecting climate and ultimately our natural resources..."

NASA Study on Persistent Jet Contrails - April 28, 2004: <http://earthobservatory.nasa.gov/IOTD/view.php?id=4435>

Nature News - How Aircraft Contrails Contribute to Global Warming - Dec 21, 2009 - New Study: <http://www.nature.com/news/2009/091221/full/news.2009.1157.html>