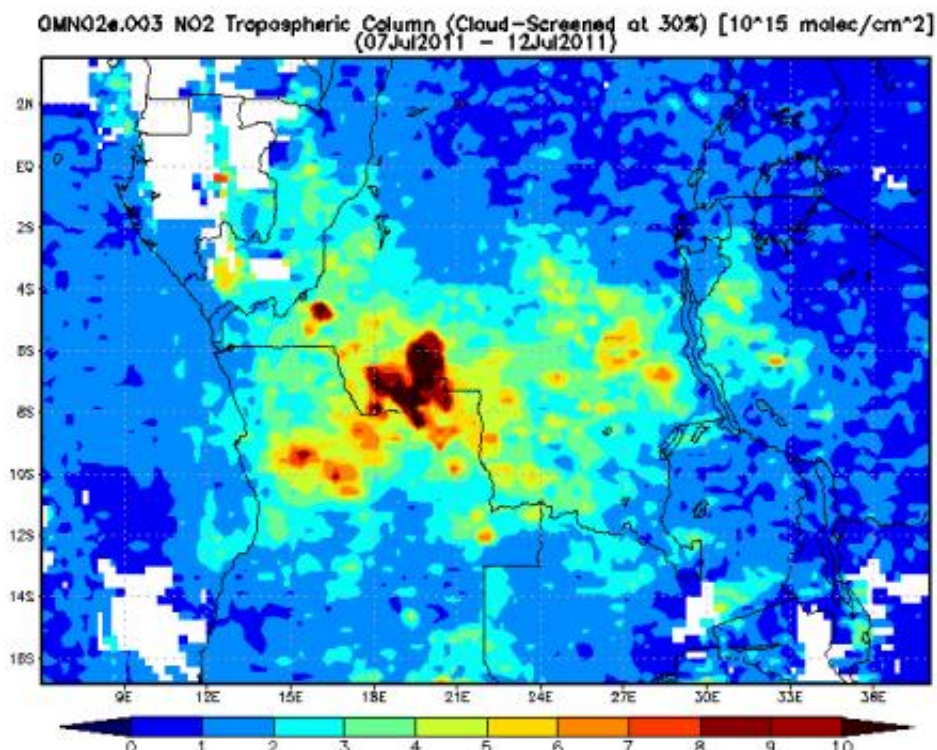


# Aura detects pollution in the Great Lakes region

July 25 2011, By Rob Gutro and Dr. James Acker



This image from the OMI instrument on NASA's Aura satellite shows nitrogen dioxide levels from July 15, 2011 to July 18, 2011 of Ontario and the Great Lakes. The highest levels of NO2 appear in red. The NO2 is measured by the number of molecules in a cubic centimeter. Credit: NASA/James Acker

(PhysOrg.com) -- Fires throughout Ontario are generating pollution that is showing up in data from NASA's Aura Satellite in the Great Lakes region.

The fires have also forced thousands of residents to evacuate to other areas in Canada, according to CBC News. About 112 fires have ravaged 81,545 acres so far, said the province's minister of natural resources, Linda Jeffrey. Because of the smoke from wildfires blowing south, the Minnesota Pollution Control Agency issued an air pollution alert, according to the Duluth News Tribune.

An image of the [pollution](#) from fires in Ontario was created from data of nitrogen dioxide (NO<sub>2</sub>) levels over the period from July 15, 2011 to July 18, 2011. It was created from [Ozone](#) Measuring Instrument (OMI) data using the NASA Giovanni system by Dr. James Acker at NASA's Goddard Space Flight Center in Greenbelt, Md.

NO<sub>2</sub> forms during fires when nitrogen reacts with oxygen. In fact, NO<sub>2</sub> is formed in any combustion process where the oxygen is provided by Earth's atmosphere.

Detection of NO<sub>2</sub> is important because it reacts with sunlight to create low-level ozone or smog and poor air quality. The OMI instrument that flies aboard NASA's Aura satellite is able to detect NO<sub>2</sub>. Low-level ozone (smog) is hazardous to the health of both plants and animals, and ozone in association with particulate matter causes respiratory problems in humans.

OMI measures NO<sub>2</sub> by the number of molecules in a cubic centimeter. The highest concentrations appear in dark red and are located at the southern tip of Lake Michigan.

OMI data is archived at the NASA Goddard Earth Sciences Data and Information Services Center (GES DISC), and is provided by KNMI, the Koninklijk Nederlands Meteorologisch Instituut (Royal Netherlands Meteorological Institute). Dr. P.F. Levelt is the Principal Investigator of OMI, Dr. J. Tamminen is the Finnish Co-PI, and Dr. P.K. Bhartia leads

the U.S. OMI science team. Dr. James Gleason (NASA) and Pepijn Veefkind (KNMI) are PIs of the OMI NO<sub>2</sub> product.

Provided by JPL/NASA

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