Atmospheric Chemistry Experiment (ACE) on SCISAT

Canada's SCISAT is studying the complex chemical processes that affect the distribution of ozone in the upper atmosphere, especially over the Artic. From its orbit 650 kilometres above the Earth, its instruments use the light from sunrises and sunsets each day to identify more than 60 gases and particles. This successful mission represents a partnership involving universities, industry, and government.

Explore this data using CSA's SCISAT micro application, available here: https://donnees-data.asc-csa.gc.ca/scisat.

Time Range

Data is from February 2004 to February 2024.

Molecules

The SCISAT open data consists of several comma-separated value (CSV) files. Each file relates to a specific molecule.

Examples:

ACEFTS_L2_v5p2_O3.csv	→ O_3 Ozone
ACEFTS_L2_v5p2_CO2.csv	→ CO_2 Carbon dioxide
ACEFTS_L2_v5p2_CH4_212.csv	→ Ch_4 Methane, isotope 212

Format of CSV Files

All CSV files have the same format.

First Columns

The first columns indicate the concentration in parts per volume from 0.5 km above Earth surface to 150 km high stepping 1 km per column.

Minimum Concentration

Minimum concentration in parts per volume.

Maximum Concentration

Maximum concentration in parts per volume.

Date

Date and time in Universal Coordinated Time (UTC) time.

Latitude

Latitude in degrees. As a convention, positive values are in the North hemisphere and negative values are in the South hemisphere. The equator is zero. The North Pole is at 90. The South Pole is at -90.

Longitude

Longitude in degrees. As a convention, positive values are East and negative values are West. Greenwich is zero.