For further information:

This document and other information are available on the NDACC Website: http://www.ndacc.org

In particular, the NDACC Newsletter, available on the website, provides detailed information on a broad range of Network activities.

2016

NDACC (formerly NDSC) focuses largely on observations of atmospheric changes in the altitude range from 0-50 km, their causes, and their effects

CONTACTS

NDACC Co-Chairs:

Dr. Martine De Mazière
Royal Belgian Institute for Space Aeronomy (BIRA-IASB)
Avenue Circulaire 3
B-1180 Brussels, Belgium
E-Mail: martine.demaziere@aeronomie.be

Dr. Anne M. Thompson
Code 614
Goddard Space Flight Center
National Aeronautics and Space Administration
Greenbelt Road
Greenbelt, MD 20771-0001, USA
E-Mail: Anne.M.Thompson@nasa.gov

For data access, contact:

Dr. Jeannette D. Wild
(NDACC Data Host Facility Manager and Webmaster)
W/NP53, Suite 3017
Climate Prediction Center
NOAA Center for Weather and Climate Prediction
5830 University Research Court
College Park, MD 20740, USA
E-Mail: Jeannette.Wild@noaa.gov

Endorsement: NDACC is a major component of the international atmospheric research effort and has been endorsed by national and international scientific agencies, including the United Nations Environment Programme (UNEP) and the International Ozone Commission of the International Association of Meteorology and Atmospheric Sciences. Since its inception in the early nineties, NDACC (formerly NDSC) is a major contribution to the Global Atmosphere Watch (GAW) Programme of the World Meteorological Organization (WMO) .

NDACC: NETWORK FOR THE DETECTION OF ATMOSPHERIC COMPOSITION CHANGE

TRACKING CHANGES IN THE EARTH'S ATMOSPHERE

CONNECTING SURFACE AND SPACE BASED OBSERVATIONS

The Earth's atmosphere is changing rapidly

Space-based measurements of the spectrum of the Sun as it sets and rises are analyzed to provide information about pollutants in the atmosphere.

These changes began in the 19th century and are due mainly to human activities. Major examples of these changes include long-term declines in stratospheric ozone, and the resulting increases in UV radiation, increases in carbon dioxide and other greenhouse gases, acid rain, degradation of air quality and changes in the self-cleansing capacity of the atmosphere. Environmental and health issues arising from these developments have led to the emergence of international agreements and protocols, such as the Montreal Protocol on Substances that Deplete the Ozone Layer and the Kyoto Protocol on greenhouse gases.

Understanding and quantifying atmospheric processes is essential to improve climate predictions, to mitigate detrimental impacts, and to continue developing and verifying environmental treaties.

NDACC addresses these fundamental issues with essential atmospheric observations and research, and through active participation in international scientific assessments that supply guidance to policy-makers.

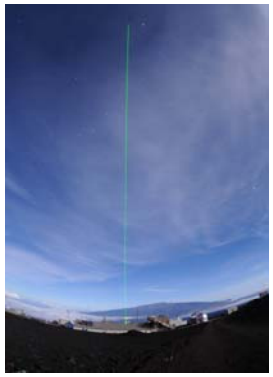
The Network for the Detection of Atmospheric Composition Change (NDACC)

NDACC is a major contributor to the worldwide atmospheric research effort. It consists of a set of globally distributed research stations providing consistent, quality-assured, long-term measurements of atmospheric trace gases, particles, spectral UV radiation reaching the Earth's surface, and physical parameters, centred around the following priorities:

- Detecting changes and trends in atmospheric composition and understanding their impact on the stratosphere and troposphere.
- Investigating scientific links and feedbacks between climate change and atmospheric composition.
- Validating satellite data and model-based atmosphere analyses and forecasts.
- Supporting process-focused scientific field campaigns.
- Testing and improving theoretical models of the atmosphere.

For further information: see website

The Mauna Loa lidar observation set is the longest record of atmospheric aerosol altitude profiles available.



Space-based measurements are crucial for tracking changes in our atmosphere. NDACC surface-based measurements ensure space-based instruments are

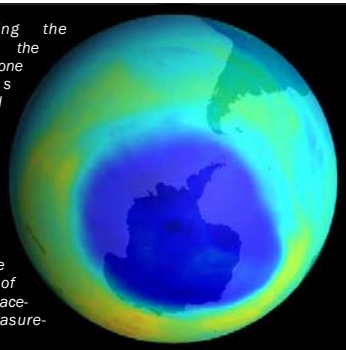
Comprehensive, coordinated, and sustained global atmospheric observations

The establishment of a global long-term atmospheric measurement and analysis capability requires the use of complementary satellite, airborne and surface-based (in situ and remote sounding) systems.

Some atmospheric constituent data series from the Junfaujoch station in Switzerland are the longest and most accurate records available.

The Integrated Global Atmospheric Chemistry Observation (IGACO) theme report aims at establishing an integrated observing system to insure improvement, continuity and integration of global atmospheric observations. As such, IGACO integrates major terrestrial and space-based measurement systems to assess environmental concerns

NDACC, a key component of the IGACO initiative, is a surface-based measurement network with a long-term heritage of conducting essential and quality assured atmospheric observations, and providing correlative and validation data for satellite missions and model-based atmosphere analyses and forecasts.



Understanding the changes in the Antarctic ozone hole (as visualized with satellite data) depends on NDACC surface-based observations which ensure the accuracy of long-term space-based measurements.

Outreach & Education

NDACC provides comprehensive atmospheric measurements and databases to support scientific research, to provide information to national and international decision-makers, and to increase public awareness of key issues affecting the atmosphere.

Who are NDACC data users and stakeholders?

- The scientific community (i.e. satellite experiment and validation teams, data assimilation and modelling teams, and field campaign teams).
- National and international organizations, governments, and research programmes.
- Decision-makers.
- The media and the general public.