The NDACC and its data handling

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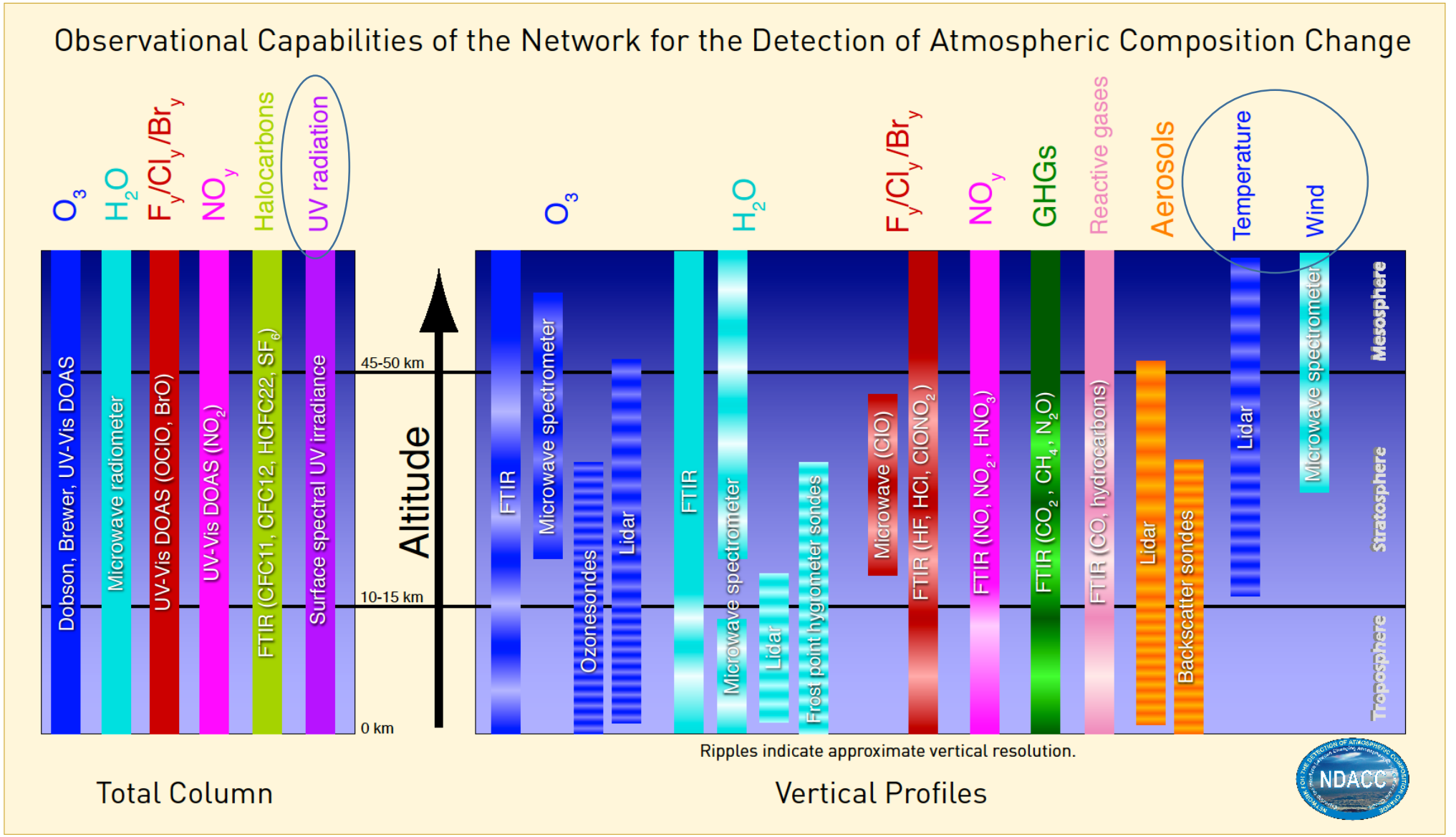
***Co-chair* and datamanager of NDACC**

Today's NDACC capabilities

Techniques covered:

- Brewer & Dobson
- FTIR
- Lidar (DIAL, Rayleigh, Raman)
- Microwave radiometry
- Sondes (O_3, aerosol, H_2O)
- UV-Vis (MAX)DOAS
- Spectral UV

⇒ NDACC data are
- ✓ atmospheric species' concentrations (columns/profiles)
- ✓ T profiles
- ✓ spectral UV data

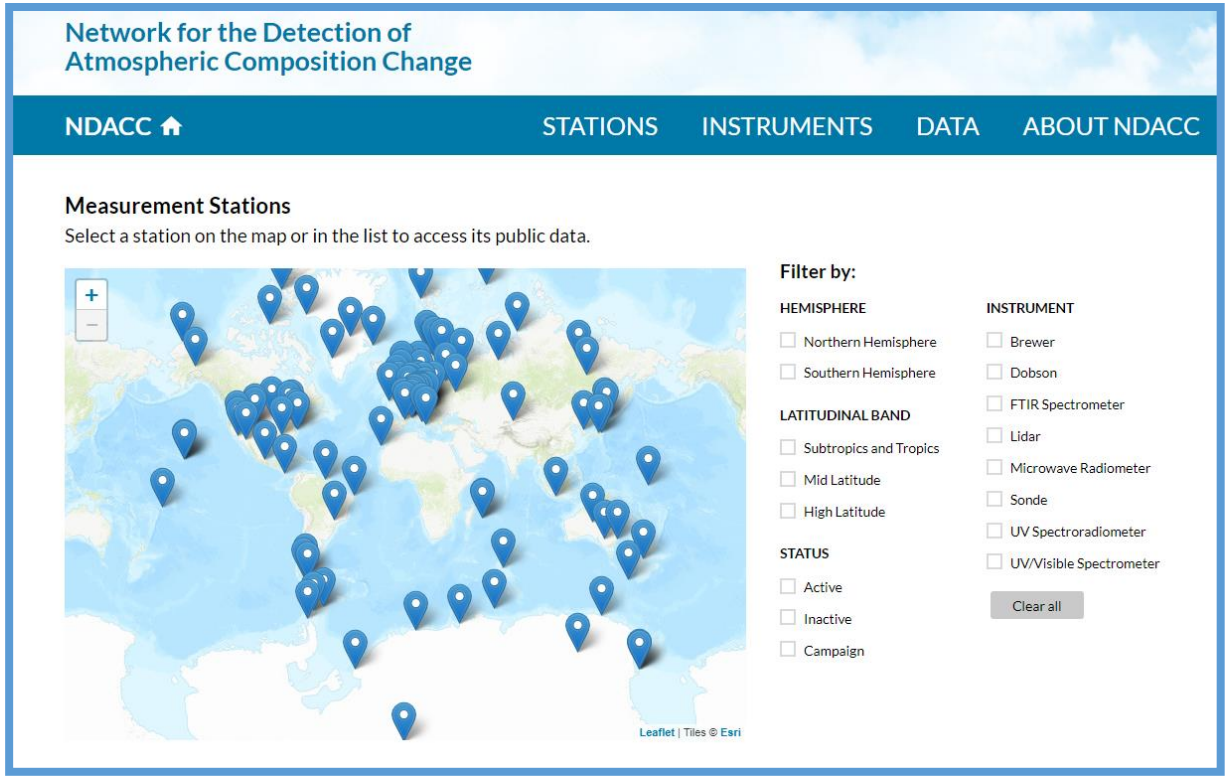


(MAXDOAS capabilities to be added)

NDACC's operational start: 1991

2016: **Twenty-five years** of operations of the Network for the Detection of Atmospheric Composition Change (NDACC) (AMT/ACP/ESSD inter-journal SI), *Editor(s): V.-H. Peuch, G. Brasseur, C. Zehner, N. Harris, H. Maring, W. Lahoz, and G. Stiller, https://www.atmos-chem-phys.net/special_issue400_819.html*

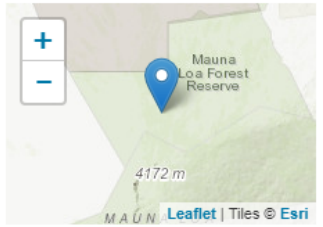
New NDACC website : www.ndacc.org



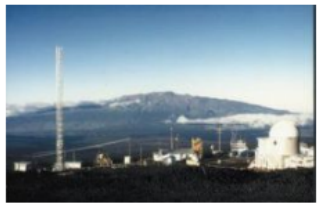
Mauna Loa, HI, United States

Latitude: 19.54° N
Longitude: 155.58° W
Elevation: 3397 m asl

Status: Active



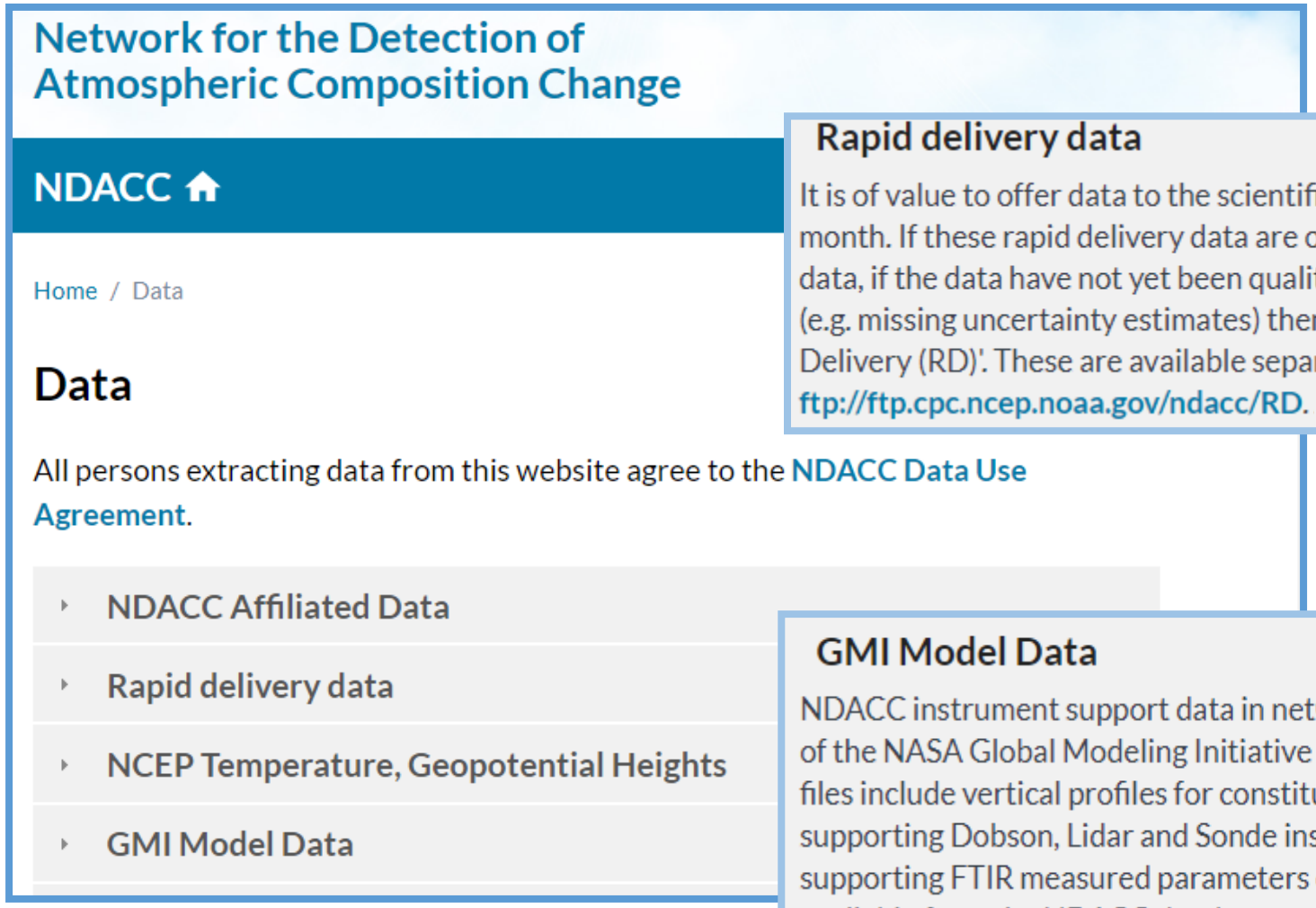
Website(s):
Station Page
GMD Dobsons
NRL Water Vapor Microwave Instrument Group



Station Representative(s):
Dr. Russell C. Schnell
Global Monitoring Division
NOAA Earth System Research Laboratory
Colorado, USA

NDACC Measurements at the Mauna Loa, HI, United States Station

Instrument	Period	Parameter	Cooperating Institutions	Comments	Data link	Metadata link
Dobson D076	1963–present	Ozone	NOAA/ESRL, USA	20 retrievals per month	Ames	Metadata, Summary
FTIR Spectrometer Bruker 125HR	1995–present	Column - multiple species, Profile - multiple species	NCAR, USA		Ames, HDF	Metadata, Summary
FTIR Spectrometer Bomem DA3	1991–1995	Column - multiple species	U. Denver, USA		Ames	Summary



Rapid delivery data

It is of value to offer data to the scientific community with a maximum delay of one month. If these rapid delivery data are of less quality of traditional NDACC certified data, if the data have not yet been quality controlled, or if the data is less complete (e.g. missing uncertainty estimates) then these data must be identified as 'Rapid Delivery (RD)'. These are available separately on the NDACC public website at ftp://ftp.cpc.ncep.noaa.gov/ndacc/RD.

GMI Model Data

NDACC instrument support data in netCDF are created from a Hindcast simulation of the NASA Global Modeling Initiative (GMI) chemistry transport model (CTM). The files include vertical profiles for constituents and meteorological fields. Files supporting Dobson, Lidar and Sonde instruments contain hourly data. The files supporting FTIR measured parameters contain monthly data. The model data are available from the NDACC database at ftp://ftp.cpc.ncep.noaa.gov/ndacc/gmi_model_data/.

Network for the Detection of Atmospheric Composition Change

NDACC STATIONS INSTRUMENT

Home / Data / Data Use Agreement

Data Use Agreement

Whenever NDACC data is used in a publication the authors agree to acknowledge both the NDACC data center and the data provider as follows:

> "The data used in this publication were obtained from *institute or PI name* as part of the Network for the Detection of Atmospheric Composition Change (NDACC) and are publicly available (see http://www.ndacc.org)."

If substantial use is made of NDACC data in a publication an offer of co-authorship will be made through personal contact with the data providers or owners.

Users of NDACC data are expected to consult the online documentation and reference articles to fully understand the scope and limitations of the instruments and resulting data and are encouraged to contact the appropriate NDACC PI (listed in the data documentation on the web page) to ensure the proper use of specific data sets.

Data Citation requirements:

Public data (supported by taxpayers in many cases) BUT:

- Science is best supported if data users and originators work together
- Continued funding is best supported if proper acknowledgement is given. For many PIs # publications count.

Facts & Perspectives about NDACC Data Handling Facility (DHF):

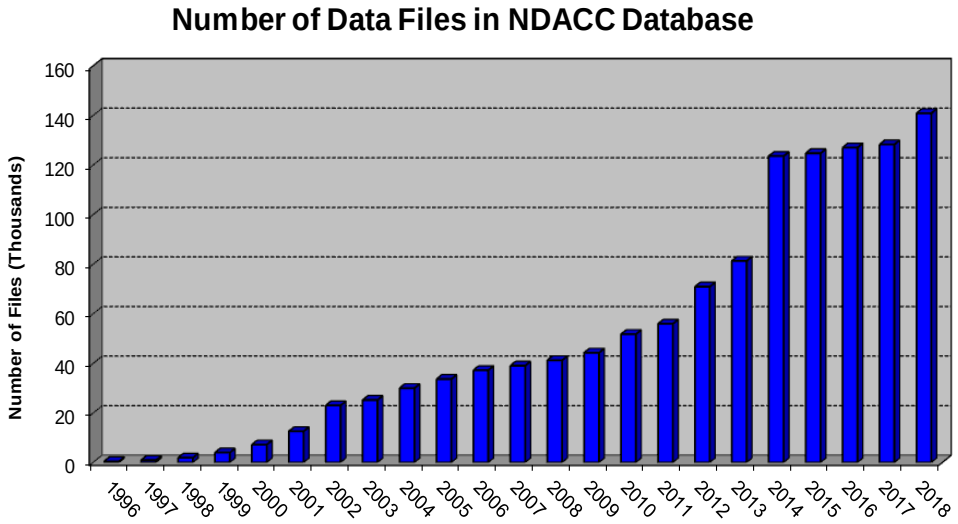
Oldest data record in the NDACC archive: Sept, 1966: Boulder Dobson #091

Currently > 140,000 files in the NDACC data archive

Over 1 million file downloads so far in 2018

Files may be in NASA Ames or GEOMS HDF format, or both
See

Agreement with WOUDC for synchronisation of ozone data



Perspectives

DHF is moving from NOAA to Nasa Langley

Data will get a DOI (via NILU/EVDC), a data license, and data policy will be revised correspondingly

- data licenses envisaged are CC0
  CC-BY-SA (4.0)
  CC-BY-NC-SA

- Move towards FAIR data

Data Formats

NDACC accepts data in ASCII Ames or GEOMS compliant HDF4 formats depending on instrument type as follows:

Format Type	Relevant Instruments	Documentation
ASCII Ames	Dobson/Brewer FTIR (total column only) Lidar Microwave Ozonesonde Spectral UV UVVis (total column only)	File Reading Software Format Checking Software Gaines & Hipskind: Format Specifications NDACC Header line NDACC Data Quality Flag NDACC Filenaming NDACC Variable Recommendations Ozonesonde Guidelines
GEOMS/HDF	FTIR Lidar Microwave UVVis DOAS	Generic Earth Observation Metadata Standard (GEOMS) HDF to netCDF Conversion Tools Network of Remote Sensing (NORS) NORS Data User Guide NORS Uncertainty Budgets Additional NORS Documents