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1. Data Set Description:

Several research organizations participated in the WP-3D aircraft component of the Nashville 1999 study sponsored in part by the Southern Oxidant Study. These organizations are: Aircraft Operations Center, National Oceanic and Atmospheric Administration, U.S. Dept of Commerce; Aeronomy Laboratory, National Oceanic and Atmospheric Administration, U.S. Dept of Commerce; Cooperative Institute for Research in Environmental Sciences, University of Colorado; National Center for Atmospheric Research (NCAR); Brookhaven National Laboratory; and University of Denver. There were 12 flights in the mission over the period from 06/26/99 to 07/19/99.

Data obtained by these research organizations while on board the WP-3D aircraft comprise this data set. Measurements focused on obtaining an improved understanding of the processes that control the formation and distribution of fine particles and ozone. Measurements included in the data files are: aircraft location data, aerosol particle characteristics; upper air meteorology; CO, ozone, NO, NO₂, NO_y, HNO₃, SO₂, CO₂; NMHCs; photolysis rate coefficients from Actinic flux measurements; PAN, PPN, and MPAN; and formaldehyde. Readme files accompany each set of measurements.

Three study themes were:

1. Local vs. regional contrasts- similarities/differences between regions of the country and the relative importance of local emissions versus transported pollution.
2. Ozone and PM formation in plumes- how fast and how efficiently are O₃ and fine particles produced in urban and power plant plumes.
3. Diurnal cycle in chemistry and meteorology.

The data set should be cited as follows:

U.S. Department of Commerce, National Oceanic and Atmospheric Administration. 2002. NARSTO SOS99NASH NOAA WP-3D Orion Air Chemistry Data. Available on-line via [NARSTO Data and Information](#) at the Langley DAAC, Hampton, Virginia, U.S.A.

2. Sample Data Record/Data Format:

These data files are in the NARSTO Data Exchange Standard (DES) format. The overall format, however, is a mix of several DES format versions and contains some non-standard key phrases and metadata values. The mixed-version format should cause the user only minimal inconvenience in accessing and understanding the data values because the DES files are generally self-documenting and Readme files accompany each set of measurements. However, other data providers should not use these data files as examples for formatting their data.

Please refer to the [SOS99NASH WP3D ReadMe file](#) for data file naming conventions and readme files that accompany each data type.

Important Data User Note: Aircraft flight longitude, latitude, and altitude data at 1-second resolution are only available in the respective SOS99NASH_WP3D_xx_AIRCR_V1.CSV data files. Users of other data types can determine the measurement/sampling longitude, latitude, and altitude by comparison of the other data types measurement/sampling time to the aircraft data.

The DES format uses ASCII tabular data files with structured numerical and character data and metadata fields of varying length separated by commas (i.e., *.csv). The most recent version of the DES format is described in detail in the template and instructions available on the [NARSTO QSSC Web Site](#).



3. References:

- [Nashville 1999 Field Study Science Plan](#) (PDF).
- [1999 SOS Nashville Field Campaign Quality Assurance Plan](#) (PDF).
- [SOS Nashville 1999 Measurement Plan](#) (PDF).

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Data Center:

The User and Data Services Office at the Langley Atmospheric Science Data Center is involved throughout the system to monitor the quality of data on ingest, to ensure prompt replies to user questions, to verify media orders prior to filling them, and to ensure that the needs of the users are being met.

If you have a problem finding what you need, trouble accessing the system, or need an answer to a question concerning the data or how to obtain data, please contact the Users and Data Services staff.

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E-mail: support-asdc@earthdata.nasa.gov

URL: <http://eosweb.larc.nasa.gov>.

5. Acknowledgement:

When data from the Langley Atmospheric Science Data Center are used in a publication, we request the following acknowledgment be included: "These data were obtained from the NASA Langley Research Center Atmospheric Science Data Center".

The Langley Data Center requests a reprint of any published papers or reports or a brief description of other uses (e.g., posters, oral presentations, etc.) of data that we have distributed. This will help us determine the use of data that we distribute, which is helpful in optimizing product development. It also helps us to keep our product-related references current.

Please contact us at support-asdc@earthdata.nasa.gov for instructions on mailing reprints.

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