

# **BOREAS RSS-12 Airborne Tracking Sunphotometer Measurements (C-130)**

## **Summary:**

The BOREAS RSS-12 team collected both ground and airborne sunphotometer measurements for use in characterizing the aerosol optical properties of the atmosphere during the BOREAS data collection activities. These measurements are to be used to: 1) measure the magnitude and variability of the aerosol optical depth in both time and space; 2) determine the optical properties of the boreal aerosols; and 3) atmospherically correct remotely sensed data acquired during BOREAS. This data set contains airborne tracking sunphotometer data that were acquired from the C-130 aircraft during its flights over the BOREAS study areas. The data cover selected days and times from May to September 1994.

A guide document which includes more information about this data set can be found at [http://daac.ornl.gov/boreas/RSS/sunphair/comp/RSS12\\_Air\\_Sunphoto.txt](http://daac.ornl.gov/boreas/RSS/sunphair/comp/RSS12_Air_Sunphoto.txt).

ORNL DAAC maintains information on the entire [BOREAS Project](#).

## **Data Citation**

Cite this data set as follows:

Wrigley, R. C., 1998. BOREAS RSS-12 Airborne Tracking Sunphotometer Measurements (C-130). Data set. Available on-line [<http://www.daac.ornl.gov>] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A.  
[doi:10.3334/ORNLDAAC/298](https://doi.org/10.3334/ORNLDAAC/298).

## **References:**

- Bruegge, C.J., R.N. Halthore, B. Markham, M. Spanner, and R. Wrigley. 1992. Aerosol optical depth retrievals over the Konza prairie. *Journal of Geophysical Research* 97(D17):18743-18758.
- King, M., D. Bryne, B. Herman, and J. Reagan. 1978. Aerosol size distributions obtained by inversion of spectral optical depth measurements. *J. Atmos. Sci.* 35:2153-2167.
- Noxon, J. 1979. Stratospheric NO<sub>2</sub>, 2, Global behavior, *J. Geophys. Res.* 84:5067-5076.
- Penney, C.M. 1979. Study of temperature dependence of the Chappuis band absorption of ozone, NASA Contract Rep. 158977, General Electric Company, Schenectady, N.Y.
- Russell, P., J. Livingston, E. Dutton, R. Pueschel, J. Reagan, T. DeFoor, M. Box, D. Allen, P. Pilewskie, B. Herman, S. Kinne, and D. Hofmann. 1994. Pinatubo and pre-Pinatubo optical

depth spectra: Mauna Loa measurements, comparisons, inferred particle size distributions, radiative effects, and relationship to lidar data. *J. Geophys. Res.* 98:22,969-22,985.

Sellers, P. and F. Hall. 1994. Boreal Ecosystem-Atmosphere Study: Experiment Plan. Version 1994-3.0, NASA BOREAS Report (EXPLAN 94).

Sellers, P. and F. Hall. 1996. Boreal Ecosystem-Atmosphere Study: Experiment Plan. Version 1996-2.0, NASA BOREAS Report (EXPLAN 96).

Sellers, P. and F. Hall and K.F. Huemmrich. 1996. Boreal Ecosystem-Atmosphere Study: 1994 Operations. NASA BOREAS Report (OPS DOC 94).

Sellers, P., F. Hall and K.F. Huemmrich. 1997. Boreal Ecosystem-Atmosphere Study: 1996 Operations. NASA BOREAS Report (OPS DOC 96).

Sellers, P., F. Hall, H. Margolis, B. Kelly, D. Baldocchi, G. den Hartog, J. Cihlar, M.G. Ryan, B. Goodison, P. Crill, K.J. Ranson, D. Lettenmaier, and D.E. Wickland. 1995. The boreal ecosystem-atmosphere study (BOREAS): an overview and early results from the 1994 field year. *Bulletin of the American Meteorological Society*. 76(9):1549-1577.

Sellers, P. and F. Hall. 1997. BOREAS Overview Paper. *JGR Special Issue* (in press).

Spanner, M., R. Wrigley, R. Pueschel, J. Livingston, and D. Colburn. 1990. Determination of atmospheric optical properties for the First ISLSCP Field Experiment (FIFE). *Journal of Spacecraft and Rockets* 27:373-379.

Wrigley, R.C., M.A. Spanner, R.E. Slye, R.F. Pueschel, and H.R. Aggarwal. 1992. Atmospheric correction of remotely sensed image data by a simplified model. *Journal of Geophysical Research* 97(D17):18797-18814.

Young, A. 1980. Revised depolarization corrections for atmospheric extinction. *Applied Optics* 19:3427-3428.

## Data Format:

For information on Parameter/Variable Names, Variable Description/Definition, Units of Measurement, and Data File Format see this companion file  
<http://daac.ornl.gov/boreas/RSS/sunphair/comp/sunphair.def>

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