

Preface

This report is one of a series of operations reports written for the United States National Science Foundation (NSF) Office of Polar Programs, Ultraviolet Spectroradiometer Network, now in its 13th year of operation. The report is intended to complement Volume 9 network data that have been measured in 1999 and 2000. Like the Operations Reports of Volume 7 and 8, also this report is made available in pdf-format on our website www.biospherical.com.

The methods used for data processing were essentially the same as implemented for Volume 8. However, the contents of Database 4 have been changed and its structure is now identical to the format of the databases updated weekly on our website. In addition, daily dose databases have been added to the suite of standard data products. Daily doses were calculated by integrating spectral integrals and dose-rates over 24-hour time periods. Doses published on the Volume 9 CD-ROM also include data from previous years. This allows analyzing the variation of UV radiation observed during several years by opening only one database.

Quality control methods were further refined, which helped to further improve data accuracy. All data at Biospherical Instruments is organized in Microsoft[®] ACCESS database. Database tools are under constant development and allow identifying problematic data sets more efficiently.

For all sites, UV levels observed during the period of Volume 9 were generally comparable to levels measured in previous years. A detailed discussion on the variation of UV in 1999 and 2000 can be found in Chapter 7.

Column ozone data measured by Earth Probe/TOMS is again provided on our CD-ROMs, courtesy of Dr. Richard McPeters, NASA. Weather data was obtained from the National Climactic Data Center (NCDC), a division of NOAA, and is also included on the CD-ROMs.

We would again like to express our appreciation to all researchers that have utilized and published data from the NSF UV Network (see Appendix Section A2. "References"). We are always looking for publication references in which the network's data have been used.

We are especially grateful to those who offered feedback on methods, algorithms, and data products. We continue to encourage this input and welcome suggestions on how we can further meet the needs of the scientific community. An easy-to-use feedback form can be found on our website.

To contact Biospherical Instruments Inc.:

5340 Riley Street
San Diego, CA 92110-2621
Phone: (619) 686-1888
Fax: (619) 686-1887
www.biospherical.com

For project data inquiries, please send an e-mail to nsfdata@biospherical.com

Acknowledgements

The need for the rapid establishment of the UV monitoring program was identified by Dr. Peter Wilkniss, Director, Division of Polar Programs, National Science Foundation in 1987. Dr. Polly Penhale (NSF) and Dr. Sue Weiler (NSF/OPP Consultant) have guided this project.

Garry Harris from Research Instrument Systems was commissioned by NSF/OPP in the fall of 1987 to design and build the precursor to the SUV-100. Four instruments were manufactured between October 1987 and January 1988, and two were deployed at McMurdo Station and the South Pole in February 1988. In the original configuration no publishable data were produced by the two instruments, and both were substantially redesigned by Biospherical Instruments during the following season.

Key Contributors

This activity was funded by NSF/OPP prime contract OPP-89-22832; and subcontracts M49439-01 and M57858-01 to Antarctic Support Associates (ASA) and Raytheon Polar Services (RPSC). Special thanks to J. Alcorta, Jean Morrow, M. Moyher, R. Koger, S. Kottmeier, R. Rainbow, D.C. Shepherd, D. Trujillo, and J. Zanetell of ASA and RPSC who worked with us on a daily basis in making our accomplishments possible in Antarctica.

We gratefully acknowledge the operators who keep our instruments running under the most adverse of conditions on Earth – without them, this project would not be possible. McMurdo operators for this period include Joe Pettit and Gary Miller. The installation at Palmer Station was operated by Jeff Otten and John Booth. South Pole operators for the period of this report include Curt Trimble and Daren Blythe. All operators were affiliated with ASA and/or RPSC.

Susana Díaz of CONICET manages Ushuaia's operation, with assistance of G. Deferrari. Dr. E. Olivero, the current director of CADIC, provides facilities and personnel support. Former director Dr. J. Rabassa made this installation possible.

NOAA/CMDL personnel Malcolm Gaylord and Dan Endres generously provide assistance in the operation of the Barrow system. Dale Stotts of the Ukpogvik Inupiat Corporation (UIC), and Dr. J. Kelly and J. Sonderup of PICO aided in the original establishment of the system.

We extend our gratitude to Patrick Disterhoft of NOAA's Central Ultraviolet Calibration Facility (CUCF) and the University of Colorado, Boulder, for bringing CUCF's "Field Calibrator" to San Diego for a comparison of Standards of Spectral Irradiance provided by CUCF/NIST and those used for our network.

Dr. R. McPeters and Dr. J. Herman of NASA/GSFC provided TOMS Total Ozone data for comparison purposes.

We express our thanks to Dr. H. Slaper from the National Institute of Public Health and the Environment (RIVM), The Netherlands, for providing software for the Fraunhofer correlation method.

Personnel at Biospherical Instruments

The Principal Investigator for the project is C.R. ("Rocky") Booth, the Chief Executive Officer and Research Director of Biospherical Instruments Inc. The Co-Principal Investigator is Dr. Germar Bernhard, an Atmospheric Physicist and UV researcher who joined us from the Fraunhofer Institute for Atmospheric Environmental Research (IFU) of Garmisch-Partenkirchen, Germany. The Project Manager is James ("Jim") C. Ebrahimian, and he is responsible for the project's operational activities. Vi Quang and Stuart Lynch joined the group in 1999 as Data Analysts/Database Administrators performing data analysis, database development, programming, and website development.

