NASA/GSFC/Atmospheric Chemistry and Dynamics Branch

Newsletter n°2, 2000

Southern Hemisphere ADditional OZonesondes:
A Data Set for Remote Sensing Research,
Global Models, and Education.

SHADOZ Notes

History

SHADOZ is a project to augment ozonesonde launches and archive data from ten tropical and sub-tropical southern hemisphere operational sites. The project was initialized in 1998 by NASA/Goddard Space Flight Center with other US and international co-investigators.

SHADOZ was created to:
❶ Provide the first profile climatology of tropical ozone in the equatorial zone.
❷ Validate and improve satellite remote sensing techniques for estimating tropical ozone.
❸ Supplement field project observations.
❹ Provide research topics to scientists and educate students, especially in participating countries.

The data are *preliminary* : subject to revision and re-processing. A distribution for years 1998-1999 is planned via CD-ROM near the end of 2000.

SHADOZ Related Websites

TOMS
http://toms.gsfc.nasa.gov/

Upper Air Instrumentation Research Projects at NASA/Wallops Flight Facility
http://uairp.wff.nasa.gov/

CMDL/Ozone & Water Vapor Group
http://cmdl.noaa.gov/owv/

WOUDC
http://www.tor.ec.gc.ca/woudc/

Data is available to the scientific community at the following website:
http://code916.gsfc.nasa.gov/Data_services/shadoz

Data Archive Update

As of the year 2000, the SHADOZ database holds around 800 ozonesonde profiles from a network of ten tropical sites. Year 2000 data has been forthcoming from most sites. Tahiti, having completed its 1998-1999 data record in the SHADOZ archive, will not be submitting more sonde profiles.

A new database to the archive of 27 sonde profiles launched during the Aerosols99 ship cruise has been added. Almost daily launches were made from January to mid-February 1999 on-board the NOAA *Ronald H. Brown* reserve vessel as it traveled from Norfolk, Virginia to Cape Town, South Africa and on to Saint Louis, Mauritius.

Spotlight
SHADOZ workshop

The SHADOZ team convened for a second workshop during the spring 2000 AGU (30 May - 3 June, D. C. Washington), in tandem with a special session: A11 - Analyses, Model Studies, and Satellite Comparisons with SHADOZ 1998-1999 Ozonesonde Data. Co-investigators from most sites were present to discuss their data processing history, techniques, and current site status. Also discussed were the possibilities of extending SHADOZ beyond the year 2000. The workshop report is on the SHADOZ website.

SHADOZ sites represented at the workshop included Watukosek - Java, Nairobi - Kenya, Natal - Brazil, Pacific sites, Ascension and La Réunion Islands.

Station Highlight ➔ Irene, Pretoria - South Africa Station

Latitude	- 25.90 S	Ozonesonde Type	- Science Pump ECC - 6A
Longitude	- 28.22 E	Radiosonde Type	- Väisälä RS80-15GE
Elevation	- 1524 m	KI Solution	- 1% Buffered

Ozonesondes are launched at the Agricultural Research Centre at Irene where the South African Weather Bureau (SAWB) has a met station. During a clear sky ozonesonde flight dobson measurements (no. 89) of total ozone may be made to compare with the integrate column ozone amount fro the ozonesonde. Launches are conducted twice a month. However, during the South African Validation Experiment (SAVE) 2000, launch frequency was increased to once a week during the dry and wet seasons.

One can visit the SAWB websiteat http://www.sawb.gov.za

Ozonesonde launch during a visit to the station. GPS Vaisala's are used.

Upcoming Activities

WORKSHOP ➔ SHADOZ Co-Investigators will take part in the next JOSIE (Jülich Ozone Sonde Intercomparison Experiment) whose main objective is to compare operating procedures and data processing methods for the various types of ozonesondes in use (ECC, Brewer Mast hybrids, KC79). Although all SHADOZ sites use ECC type sensors, the model, preparation techniques, and processing methods vary. Because of these differences it was agreed that SHADOZ member participation in the JOSIE activity would be mutually beneficial. JOSIE-2000 will perform intercomparison experiments to look at background signal, sensing solutions, pump efficiency and other sources of data uncertainties.

CAMPAIGN ➔ SAFARI/SAVE 2000 (Southern African Research Initiative/Southern African Validation for EOS) - A multidisciplinary, multinational, multi-site campaign to explore and study biogeophysical interactions. Intensive ground-based, airborne, and remotely sensed measurements will take place during the wet (February-March 2000) and dry seasons (August-September 2000). SHADOZ participation involves coordinated ozonesonde launches three to four times per week during both seasonal periods at the Irene, South Africa site (organized by Co-Investigator Gerrie Coetzee and group from SAWB) and during the dry season intensive at the Mongu, West Zambia site (Principal Investigator Anne Thompson, NASA/GSFC). For more information about the campaign visit the web site: http://safari.gecp.virginia.edu

➢ *Attention Data Users* ➣

The SHADOZ homepage gives technical information for each station, and addresses of the Co-Investigators. The Co-I's are responsible for the original data processing and should be consulted for details of their methods and appropriate references to their work. Questions about the data should be directed to the datakeeper and webmaster: Jacquelyn Witte: witte@gavial.gsfc.nasa.gov.

Questions about SHADOZ should be directed to Anne Thompson: thompson@gator1.gsfc.nasa.gov. SHADOZ data sets are products of evolving research by the site Co-Investigators and ongoing community collaboration. As you work with the data, please keep us posted on issues that will help us improve the value of the data.

SHADOZ Note is published for and about the data archive, tropical ozone research, remote sensing validation and education. SHADOZ is supported by NASA's ACMAP Program and the TOMS project. Individual SHADOZ sites are also supported by in-country agencies and universities, NOAA, NASDA (Japan), INPE, and the Swiss Meteorological Agency.

Editor: Jacquelyn Witte. The newsletter welcomes contributions from the Co-investigators and all data users. Send items to:
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For more information about SHADOZ or to access the data archive, visit our web site:
http://code916.gsfc.nasa.gov/Data_services/shadoz

Citation Information

An overview publication by the SHADOZ team is in preparation. In the meantime, a report in last years NASA Earth Observer Newsletter should be cited when using SHADOZ data, along with the web site: SHADOZ (Southern Hemisphere Additional Ozonesondes): A new data set for the Earth Science Community, A. M. Thompson and J. C. Witte, *Earth Observer*, **11**(4), 27-30, 1999.