



# SHADOZ Notes

Southern Hemisphere Additional OZonesondes:

A Data Set for Remote Sensing Research,  
Global Models, and Education.



## The Archive



SHADOZ is a project to augment balloon-borne ozonesonde launches and to archive data from tropical and subtropical operational sites. The project was initiated in 1998 by NASA/Goddard Space Flight Center with other US and international co-investigators. There are currently thirteen stations in the SHADOZ network. The collective data set provides the first profile climatology of tropical ozone in the equatorial

region, enhances validation studies aimed at improving satellite remote sensing techniques for tropical ozone estimations, and serves as an educational tool for students, especially in the participating countries.

Data is publicly available at:

<http://croc.gsfc.nasa.gov/shadoz>



## SHADOZ CD-ROM

To increase the access of SHADOZ profiles beyond the boundaries of the internet, a cd-rom is now available which mimics the website and provides data from 1998-2006. Contact SHADOZ PI Anne Thompson at [anne@met.psu.edu](mailto:anne@met.psu.edu) for a copy.



## SHADOZ Enters Aura Era

Since 1998, SHADOZ has undergone several transformations. As a flexible archive SHADOZ has grown and evolved as scientific needs and research questions change. As part of NASA's Aura validation, including the Ozone Monitoring Instrument (OMI) and Tropospheric Emission Spectrometer (TES), SHADOZ stations are coordinating their launch schedules to satellite overpasses. Profiles are submitted in a timely manner to the SHADOZ and Aura Validation Data Center (AVDC) archives as launches and quality control checks are completed.

SHADOZ: <http://croc.gsfc.nasa.gov/shadoz>  
 Aura Homepage: <http://aura.gsfc.nasa.gov>  
 AVDC Homepage: <http://avdc.gsfc.nasa.gov>

## La Réunion Island International Symposium on " Tropical Stratosphere and Upper Troposphere

La Réunion Island, France, November 4 - 9, 2007

Coordinators : Hassan Bencherif, La Réunion University - CNRS, Reunion Island, France  
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Group photography on November 7, 2007, courtesy of Hassan Bencherif

The tropical "Stratosphere - Upper Troposphere" is a region where significant changes are expected to occur. Since dynamical activity is closely linked to the chemical composition including ozone and other trace gases distributions, any chemical or/and dynamical change may have a significant effect on mass and energy transport, including stratosphere-troposphere exchanges as well as tropic / mid-latitude exchanges.

The Réunion Island International Symposium (RiiS) had been planned to discuss important issues related to:

- transport processes nearby dynamical barriers, i.e., the tropical tropopause and the subtropical barriers,
- collect, networking, validation and distribution of reliable data from ground-based and satellite measurements
- recent developments in the fields of data assimilation and modelling.

It consisted of six sessions:

S1 - Clouds, cirrus and dehydration processes

S2 - Dynamical barriers & isentropic transport

S3 - Tropics, mid- and high-latitude interaction mechanisms

S4 - Effects and mechanisms of the stratosphere - troposphere exchange

S5 - Data, measurements, campaigns in the tropical Stratosphere - UT region

S6 - Variability and trend assessment in the tropical Stratosphere - UT region

The RiiS was hosted by the Réunion University under SPARC, SCOUT-O3, NDACC, WRCP and INSU/CNRS sponsorship. A total of 84 scientists participated, from 15 countries. The symposium included 13 invited papers among more than 40 oral presentations, and 25 posters.

La Réunion Island (20.8°S, 55.5°E) is an overseas French Island. It has been operating continuous atmospheric measurements under the NDACC and the SHADOZ projects, since 1994 and 1998, respectively.

## SHADOZ at 10 Years: A Note from the PI

As 2008 approaches, SHADOZ marks 10 years of operations, an event worthy of celebration. I wish to acknowledge, first and foremost, Archiver and Webmaster Jacquie Witte, who has made SHADOZ the record-breaking success it is. Jacquie keeps SHADOZ timely and attractive. She gracefully navigates changing requirements of archives, formats and sponsors. Since 1998, NASA moved into the Aura era; successful launches of Canada's ACE and ESA's GOME II and SCIAMACHY have demanded sondes too! The *Journal of Geophysical Research* will soon feature an Aura Validation Special Issue in which SHADOZ data are used in many studies of ozone algorithms and products from the new sensors.

SHADOZ rests on an amazing level of energy, dedication and commitment of dozens of Co-Investigators, Station Managers, operators, technicians, and sponsors in about 20 countries. Some of them labor under very hard conditions and in-country funding is never taken for granted. We are grateful for NASA support and Program Manager M. J. Kurylo's efforts to keep us engaged in the larger ozone community. Other vital SHADOZ sponsors are NOAA (special thanks to S. J. Oltmans and his group), KNMI (Netherlands), Meteoswiss, South African Weather Service, CNRS, MeteoFrance, MMD (Malaysia), KMD (Kenya), Surinam Meteorological Department, Space agencies in Brazil and Indonesia, and university colleagues in France, Japan, and Fiji.

The WMO (World Meteorological Organization; [www.wmo.int](http://www.wmo.int)) has provided excellent support to SHADOZ by co-sponsoring sonde intercomparison activities and Dobson calibration exercises, and through visibility for SHADOZ in the Global Atmospheric Watch project and IGACO. As a consequence, the accuracy and precision of the ozonesonde measurement has increased. Two papers based on the JOSIE-2000 sonde comparison with SHADOZ participation were published in 2007:

A. M. Thompson et al., Southern Hemisphere Additional Ozonesondes (SHADOZ) 1998-2004 tropical ozone climatology. 3. Instrumentation, station variability, evaluation with simulated flight profiles, *J. Geophys. Res.*, **112**, D03304, doi: 10.1029/2005JD007042, 2007.

H. G. J. Smit et al., Assessment of the performance of ECC-ozonesondes under quasi-flight conditions in the environmental simulation chamber: Insights from the Jülich Ozone Sonde Intercomparison Experiment (JOSIE), *J. Geophys. Res.*, **112**, D19306, doi: 10.1029/2006JD007308, 2007.

To note scientific achievements of SHADOZ a new CD has been issued. Special SHADOZ Sessions are being featured at the December American Geophysical Union Meeting ([www.agu.org](http://www.agu.org)) and April 2008 European Geophysical Union Meeting in Vienna <<http://meetings.copernicus.org/egu2008/>>. Abstracts on all aspects of the use of SHADOZ data are welcome for the Vienna meeting. Contact Anne Thompson ([anne@met.psu.edu](mailto:anne@met.psu.edu)) or Herman Smit ([h.smit@fz-juelich.de](mailto:h.smit@fz-juelich.de)) for further information. Hope to see you there!

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The SHADOZ homepage also 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.