Newsletter No. 15 2013

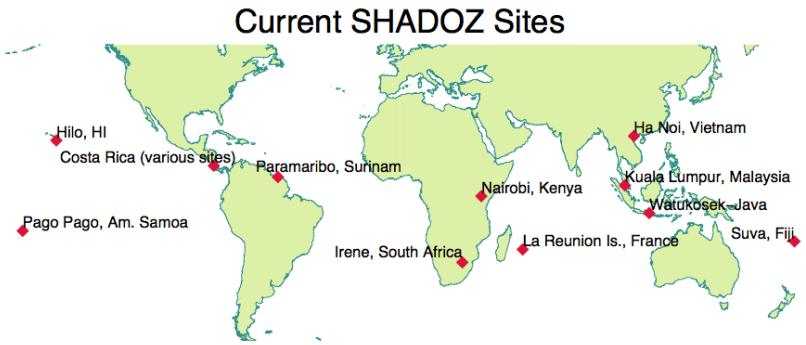
SHADOZ Notes

Southern Hemisphere Additional Ozonesondes

A NASA public archive of tropical ozonesonde profile data for remote sensing research, model studies and education

Data are public <http://croc.gsfc.nasa.gov/shadoz>

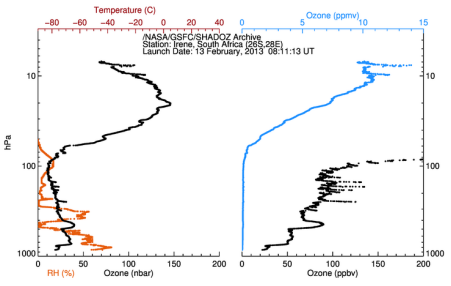
SHADOZ is a NASA project to augment and archive balloon-borne ozonesonde launches and to archive data from tropical and sub-tropical operational sites. The project was initiated in 1998 by NASA/Goddard Space Flight Center with other US and international co-investigators. There are currently eleven stations launching ozonesondes in the SHADOZ network. The collective data set provides the first 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 to students, especially in participating countries.



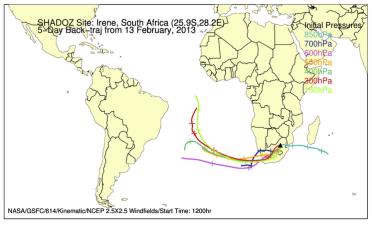
Irene, So. Africa sonde launches resume !

Left image of Irene, SA launch by Dr. Gert Coetzee of South African Weather Service (SAWS).

Since the new Digicora MW 31 system was installed at the Irene, SA station, bi-monthly have resumed since October 2012. Profiles images and data can be found at the SHADOZ archive.



A recent sonde launch (Feb. 13, 2013) and associated back-trajectories taken from the Irene archive on SHADOZ



Latest SHADOZ update paper: Thompson, A. M. et al., Southern Hemisphere Additional Ozonesondes (SHADOZ) ozone climatology (2005-2009): Tropospheric and tropical tropopause layer (TTL) profiles with comparisons to OMI-based ozone products, A. M. Thompson, et al., J. Geophys. Res., 117, D23301, 10.1029/2011JD016911, 2012

In March 2013, Anne Thompson visited the ozonesonde groups at Kuala Lumpur, Malaysia and Ha Noi, Vietnam. Both stations participate in the SHADOZ network and have a long record of sonde launches. Much of that data have been generously submitted to the SHADOZ archive. Both stations benefit from strong historical collaborations with research agencies in Japan who share our passion for tropical ozone research with a focus on Asia. Anne took lots of photos and spent time with the local sonde group agencies and the Japan researchers who met her there learning about the history of their ozonesonde systems and technique. The staff is dedicated, well informed and sonde launches proceed on schedule and without issue. There sonde project is given high priority and attention. Below are some of the photos Anne took during her visits. Anne also was hosted by Dr N. X Anh at the Vietnam Academy of Science and Technology in Hanoi. Dr. Anh is a partner in a number of NASA initiatives, including AERONET.

Ha Noi, Vietnam Ozonesonde Station

Hanoi sonde group conditioning a sonde at the Aero-Meteorological Observatory (AMO, Dong Da). Dr. Shin-Ya Ogino (left) from the Japan Agency for Marine-Earth Science and Technology (JAMSTEC) leads the collaboration with the AMO group, Dr Hoang Gia Hiep, Director, to maintain sonde launches and data quality efforts.

Dr. Ogino (center) with sonde operators on the rooftop of Hanoi AMO.

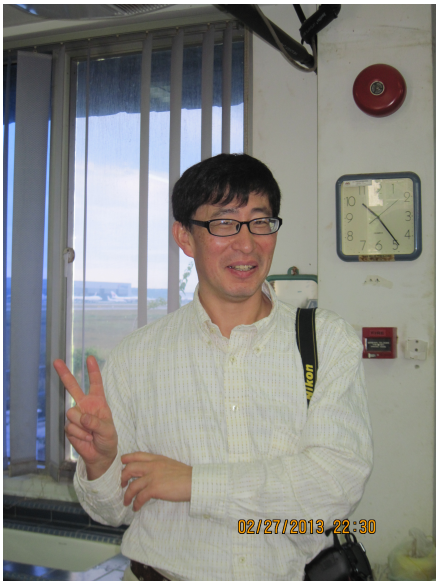
Drs. Anne Thompson and Ogino with Hanoi operator. Mr. Tran Van Thang with a brewer spectrophotometer on the AMO rooftop in Hanoi.

Kuala Lumpur Ozonesonde Station (at the International Airport)

Anne Thompson with the launch and data team at the Kuala Lumpur Intl Airport weather station.

At the Malaysian Met Dept (MMD) at Petaling Jaya. Ms Maznorian Mohamed (far right) heads the MMD environmental division at MMD; Ms Ying-Ying Toh (left) is the sonde data archiver.

A sonde launch demonstration at the upper-air station. Mr. Ramzin (left) has been running the ozonesonde launches since 1992, and has a staff of three to assist for each launch.



Dr. Seiichiro Yonemura from the National Institute for Agro-Environmental Sciences at the University of Japan leads the collaboration with MMD and on-going efforts to maintain sonde launches at the Kuala Lumpur station.

Recent 2013 Publications using SHADOZ data

Recent tropospheric ozone changes - A pattern dominated by slow or no growth, S. J. Oltmans et al., Atmospheric Environment, 67, 331-351, 2013.

Multi-site tropospheric ozone measurements across the North Tropical Atlantic during the summer of 2010, G. S. Jenkins et al., Atmospheric Environment, 70, 131-148, 2013.

Study of tropospheric CO and O3 enhancement episode over Indonesia during Autumn 2006 using the Model for Ozone and Related chemical Tracers (MOZART-4), S. Srivastava and V. Sheel, Atmospheric Environment, 67, 53-62, 2013.

Global tropospheric ozone column retrievals from OMI data by means of neural networks, A. Di Noia, P. Sellitto, F. Del Frate, and J. de Laat, Atmos. Meas. Tech., 6, 895-915, 10.5194/amt-6-895-2013, 2013.

Interrelated variations of O3, CO and deep convection in the tropical/subtropical upper troposphere observed by the Aura Microwave Limb Sounder (MLS) during 2004-2011, N. J. Livesey et al., Atmos. Chem. Phys., 13, 579-598, 10.5194/acp-13-579-2013, 2013.

Pre-industrial to end 21st century projections of tropospheric ozone from the Atmospheric Chemistry and Climate Model Intercomparison Project (ACCMIP), P. J. Young et al., Atmos. Chem. Phys, 13, 2063-2090,10.5194/acp-13-2063-2013, 2013.

Interactive ozone and methane chemistry in GISS-E2 historical and future climate simulations, D. T. Shindell et al., Atmos. Chem. Phys., 13, 2653-2689, 10.5194/acp-13-2653-2013, 2013.

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The SHADOZ homepage provides technical information for each station and contact information. The station managers are responsible for the original data processing and should be consulted for details of their methods and appropriates references to their work.