SHADOZ is a NASA project to augment and archive balloon-borne ozonesonde launches and to archive data from tropical and remote operational sites. The project was initiated in 1998 by NASA/Goddard Space Flight Center, the NOAA/Global Monitoring Division, and international co-investigators. There are currently fourteen 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.

❖ San Cristobal Station Restarts Launches in 2021 ❖

On 11 December 2021, Professor María Cazorla and her team (Figure right) at the University of San Francisco Quito (USFQ) in Ecuador launched their first ozonesonde at San Cristóbal campus in the Galapagos, after a nearly 6-year hiatus of operations (Figure top left). Early 2021, NASA Headquarters funded the reactivation of the San Cristóbal station and inclusion of the Quito, Ecuador, station into SHADOZ through a new arrangement with Professor Carzola and USFQ. Training began in October 2021 at the USFQ Atmospheric Measurement Station (EMA) in Quito, where Cazorla’s team has launched ozonesondes since 2014. On 12 December, Cazorla organized synchronized launches of the two Ecuador stations, starting a new era of valuable tropical ozonesonde profiles in SHADOZ.

Figure: (top right) Carlos Mena (Galapagos Science Center), Edgar Herrera (EMA Quito operator), María Cazorla (Station PI) and Ariel Pila (EMA San Cristobal operator) at the San Cristóbal station before the balloon release on 12 December. (bottom right) María Cazorla and Ariel Pila preparing an ozonesonde in the lab on 11 December. (bottom left) Shelter / laboratory at USFQ San Cristobal campus. (top left) María Cazorla, Edgar Herrera and Ariel Pila prepare the balloon for the launch on 11 December (EMA; https://www.usfq.edu.ec/en/institute/instituto-de-investigaciones-atmosfericas-usfq-ia-usfq). Photo credit: María Cazorla.
• In October 2021, the Quadrennial Ozone Symposium (QOS; http://qos2021.yonsei.ac.kr) was hosted entirely online by South Korea and SHADOZ had a strong presence with almost 30 talks and posters demonstrating the importance of the network’s data for ozone science. The presentation topics ranged from recent SHADOZ ozone trends (Thompson et al., 2021; published recently, listed below), satellite tropical ozone product evaluation (e.g. TROPOMI from Hubert et al., 2021; listed below), SHADOZ station reports on their long-term measurements and ozonesonde data quality assurance efforts including: (1) a summary on the newly published WMO/ GAW Report No. 268 (listed below) on the Assessment of Standard Operating Procedures for OzoneSondes (ASOPOS 2.0) from D. Kollonige and (2) an update on the post-2013 ozonesonde total column drop-off from R. Stauffer.

• December 13-17, 2021, the American Geophysical Union (AGU) held a hybrid (online and in-person) version of the annual Fall Meeting located in New Orleans, LA, USA. The SHADOZ NASA Goddard Space Flight Center (GSFC) team participated both online only (A. Thompson and D. Kollonige) and in-person (R. Stauffer; pictured in photo on right). Their presentations as well as Holger Vömel’s e-lightning poster provided summaries of results from recent publications (below).

Figure: Ryan Stauffer gives an in-person presentation on SHADOZ ozone trends at the hybrid 2021 AGU Fall Meeting in New Orleans, LA, USA on 15 December. Photo credit: Natasha Dacic.

Recent noteworthy ozonesonde publications


SHADOZ Newsletter No. 32

Upcoming Relevant Meetings
SHADOZ will be represented at the following:

January 2021:
Tropospheric Ozone Assessment Report (TOAR-II) Meeting

January 2021:
American Meteorological Society 21st Conference on Middle Atmosphere

May 2021:
NOAA GML Global Monitoring Annual Conference

Attention Data Users:
➢ Questions about SHADOZ should be directed to PI, Ryan Stauffer. SHADOZ data sets are products of evolving research by the site Co-Investigators (Co-Is) and ongoing community collaboration.
➢ The SHADOZ homepage gives technical and contact information for each station and their Co-Is responsible for the original data processing. Co-Is should be consulted for details of their methods & appropriate references to their work.
➢ Questions about the final data and any news updates should be directed to the Archiver: Debra Kollonige.

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