



JCET NEWS

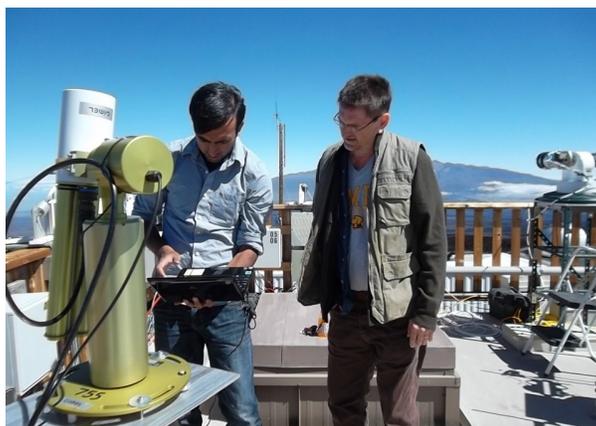
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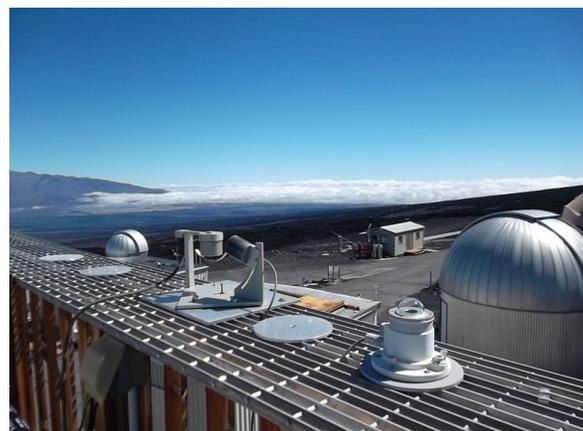
Remote Science

Two JCET researchers recently journeyed to the top of a Hawaiian mountaintop to calibrate a new instrument that will collect information on Earth's aerosols – or tiny particles suspended in the air – at night.

Tim Berkoff, a JCET Research Assistant Engineer, along with Asam Tasaddaq, a senior at UMBC majoring in Mechanical Engineering, spent the week of September 19-25, 2012 at the Mauna Loa Observa-



Assam Tasaddaq and Tim Berkoff prep setup in Mauna Loa, Hawaii, Photo: T. Berkoff



Mauna Loa Observatory, Hawaii, Photo: T. Berkoff

tory (MLO) setting up their system and working out the bugs in the software.

Aerosol research is important in air quality forecasting and to better understand climate change. Very little data has been collected on aerosols during the night since most earth observing systems rely on sunlight to obtain a measurement.

Scientists know a lot about the distribution of aerosols in the daytime but very little about them at

(Continued on page 2)

Ray Hoff receives prestigious NASA Award

Dr. Raymond Hoff, JCET's Science Advisor and Professor of Physics, was an honoree of NASA's 2012 Agency Awards.

The Distinguished Public Service Medal was presented at a ceremony on August 12, 2012, and represents NASA's "highest form of recognition that is awarded to any non-Government individual whose distinguished service, ability, or vision has personally contributed to NASA's advance-



ment of United States' interests," according to the agency's website. Congratulations Dr. Hoff!

(Continued from page 1)

night. “We do expect it [aerosols] to be different at night” says Berkoff.

Calibrating the instrument atop Mauna Loa provides for a “pollution free” environment.

Prior to their trip, Tasaddaq developed the software that would allow them to remotely operate the sensor. This enabled the system to operate “unattended” in order for data to be automatically collected over the long-term to understand atmospheric trends.

Tasaddaq’s software successfully pointed the instrument toward the Moon (a light source in which to see atmospheric aerosols pass through), and enables the calibration and operation at other locations around the globe.

The instrument collected data at MLO for a 2-month time period. The team reports that their overall results are very good and in line with the Robotic Lunar Observatory (ROLO) model.

Now the instrument is back at UMBC and both Berkoff and Tasaddaq have begun collecting data on the Baltimore Washington area from the UMBC Physics roof-top.

This project is possible through support and funding from NASA. Special thanks goes to: NASA GSFC's AERONET project -- Principal Investigator Brent Holben, and the MPLNET project -- Principal Investigator, Judd Welton.

News

- **In Memory: Mr. Scott Hannon** passed away on November 1, 2012. Mr. Hannon was Research Assistant in the Physics Department and worked closely with the AIRS Project Office at NASA JPL. Among his many accomplishments, Mr. Hannon helped to develop a new generation of high-spectral resolution infrared satellite instruments that provide input for daily weather forecasts

around the world, and are now being used for climate trending. Mr. Hannon worked with many UMBC students. He will be missed by many.

- **JCET Research Faculty, Dr. Chris Shuman**, presented polar science on NASA’s Hyperwall at the AGU Meeting in San Francisco



(December 5, 2012). Dr. Shuman explained the extensive ice area and mass change over the last decade in the Antarctic Peninsula. Dr. Shuman and colleagues are monitoring the changes as additional satellite data becomes available.

- **JCET brings NASA to kids after school.** JCET hosted the Maryland Out-of-School Time (MOST) network's STEMposium (August 12, 2012), bringing over 100 informal educators together at UMBC to inspire students in NASA careers.

On the Move



Dr. Abuhassan in the field, Bakersfield Regional Airport, California, January 2013

JCET welcomes new faculty member **Dr. Nader Abuhassan**, Associate Research Engineer working with the

Pandora spectrometers network in the Atmospheric Chemistry and Dynamics Lab at GSFC.

Moving on:

- **Dr. Shin-Chan Han** has recently taken a Civil Service Position in the Planetary and Geodynamics Laboratory at GSFC.
- **Dr. Thomas Hilker** has a new position at Oregon State University as of August 2012.

- **Dr. Michael Studinger** has taken a Civil Service position at GSFC as of August 2012.
- **Dr. Juying Warner** has taken a position with College Park in July 2012.
- **Dr. Zigang Wei** has taken a position with College Park in October 2012.
- We wish **Dr. Hai Zhang** well as he moves on to a new position in 2013.



Joint Center for Earth Systems
Technology (JCET)
5523 Research Park Drive
Suite 320
Baltimore, MD 21228
410-455-8812

Inquiries/comments, contact:
Valerie Casasanto
vcasa@umbc.edu
Jcet.umbc.edu