

Subject: [Coconet-update] COCONet Newsletter 9 April 2014

From: Linda Rowan <rowan@unavco.org>

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To: Coconet-alert@ls.unavco.org

News From the Continuously Operating Caribbean Observational Network (COCONet) 9 April 2014

TLALOCNET Moves Forward

The National Science Foundation has awarded a Major Research Instrumentation grant to UNAVCO, Co-Principal Investigator (Co-PI) Dennis "Chuck" DeMets, University of Wisconsin-Madison, Co-PI Glen Mattioli, University of Texas-Arlington, Co-PI Yolande Serra, University of Arizona-Tucson and Co-PI Enrique Cabral-Cano, National Autonomous University of Mexico. The grant will support the installation or enhancement of 24 continuous, real-time, low latency Global Positioning System (GPS) and collocated meteorological sensing systems (i.e. will measure temperature, barometric pressure, relative humidity and surface wind speed) in Mexico (cGPS-Met). The network is called TLALOCNet, after the Aztec God of rain, fertility and water. TLALOCNet will support advances in atmospheric dynamics, water cycle processes, earthquake dynamics, subduction zone processes, plate tectonics, volcanic processes and other Earth science processes.

Beyond support for basic research, the network offers significant societal benefits in terms of improved weather forecasts, better severe storm tracking, more information for water resource management, and enhanced infrastructure for preparedness, mitigation and response to natural hazards. All of the data from the array will be freely available via the UNAVCO web services. TLALOCNet will efficiently cooperate with the Plate Boundary Observatory in the United States and the COCONet in the Circum-Caribbean. TLALOCNet will work closely with the development of a GPS-focused network being installed in Mexico by the Mexican government with support from the World Bank.

COCONet Data Center Awards

The Continuously Operating Caribbean GPS Observational Network (COCONet) project, funded by the National Science Foundation (NSF) as a Collaborative Research project between UNAVCO and the University Corporation for Atmospheric Research (UCAR), is progressing on three awards for COCONet Mirror Data Center Sites and Regional Data Center.

UNAVCO met with the [Caribbean Institute for Meteorology and Hydrology](#) (CIMH) who will host a mirror data center, the [Nicaraguan Institute for Terrestrial Studies](#) (Instituto Nicaraguense De Estudios Territoriales, INETER) who will host a mirror data center and the [Colombian Geological Survey](#), Center for Processing and Analysis of Geodetic Data who will host a regional data center, to discuss requirements and plans. These plans are now under review at the host institutions.

COCONet Fellows Advance Research and Interactions

COCONet is supporting five graduate student fellowships for academic year 2013-2014. Roby Douilly, a doctoral student in geophysics at Purdue, Steeve Symithe, a doctoral student in geophysics at Purdue, Halldor Geirsson, a doctoral student in geophysics at Pennsylvania State University, Esteban Chavez, a doctoral student in seismology at University of California, Santa Cruz and Ophelia George, a doctoral student in geology at the University of South Florida. Several of the COCONet fellows are advancing their research efforts in the Caribbean, while others are beginning their higher education at U.S. institutions. All of the fellows attended the Geodesy section reception and UNAVCO business meeting at the Fall 2013 American Geophysical Union Meeting and two of the fellows attended the UNAVCO Science Workshop in

March of 2014. These meetings allow the fellows to interact with a broad range of researchers and share their research progress.

COCONet Fiscal Year 2014 First Quarter Report

The COCONet quarterly report to the National Science Foundation (NSF) for September to November 2013 (FY2014-Q1) has been posted online on the COCONet website ([PDF link](#)). The report describes progress in all facets of COCONet and includes the latest statistics on the network.

COCONet Station Updates Since December 2013

The construction phase of COCONet is approaching completion. To date, UNAVCO engineers have installed 49 new or refurbished stations. Five new COCONet stations were recently installed in Punta Cana, Dominican Republic (CN05), the Bahamas (CN13 and CN14) and St. Lucia (CN04 and CN47). Upgrades were completed at 2 stations in Haiti and 2 stations (CN10 and CN11) in Jamaica. Stations in Grenada (CN46), Honduras (CN18 and CN21), and Cuba (CN16) are scheduled for installation before June, 2014.

COCONet in the News and Related Publications

COCONet-related work was highlighted in many news stories in late 2013 and early 2014. Below is a summary of a few media highlights.

There were several stories about using geodetic measurements to anticipate the 5 September 2012, M7.6 Nicoya earthquake (two stories are linked below). These stories were related to a December 2013 publication, M. Protti, V. González, A.V. Newman, T.H. Dixon, S.Y. Schwartz, J.S. Marshall, L. Feng, J.I. Walter, R. Malservisi, S.E. Owen (2013), Nicoya earthquake rupture anticipated by geodetic measurement of the locked plate interface, *Nature Geoscience*, DOI: 10.1038/NGEO2038. UNAVCO prepared a [Science Snapshot](#) about these results.

Scientists Anticipated Size and Location of 2012 Costa Rica Earthquake, 22 December 2013, Brett Israel, *Science News*.

GPS Helped Forecast 2012 Earthquake, 26 December 2013, Becky Oskin, *LiveScience*.

An article in *Eos*, Transactions of the American Geophysical Union described efforts to track the North American Monsoon with 10 new GPS/meteorological stations and 7 existing SuomiNet GPS sites in the southwestern border of the United States and the northwestern edge of Mexico. The work will help to understand atmospheric processes and track climate and weather precipitated by the North American Monsoon. COCONet supports and enhances such studies while leveraging partnerships and limited resources.

Mexican GPS Tracks Convection From North American Monsoon, David K. Adams et al. , 18 February 2014, *Eos Transactions, American Geophysical Union*.

Geographers studying the interaction of science and policy in relation to the hazards of the Soufriere Hills Volcano on the Caribbean island of Montserrat published a paper on their findings in November 2013 [A. Donovan and C. Oppenheimer, (2013), Science, policy and place in volcanic disasters: Insights from Montserrat, *Environmental Science & Policy*, DOI: 10.1016/j.envsci.2013.08.009]. Although the study ended in 2010 before COCONet was fully established, the study is relevant to current and future interactions between science and policy related to the existing GPS network in Montserrat and elsewhere in the Caribbean. A link to the related news story is below.

Caribbean case study reveals how to manage volcano risk, 23 December 2013, Maria Elena Hurtado, [SciDev.Net](#).

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Linda Rowan, External Affairs Director
UNAVCO
6350 Nautilus Drive
Boulder CO 80301-5394
www.unavco.org

Office: 303-381-7571
Fax: 303-381-7501
Cell: 202-577-4460
Skype: lbifrowan
rowan@unavco.org
[Twitter](#)

coconet-alert mailing list
coconet-alert@postal.unavco.org
<http://postal.unavco.org/mailman/listinfo/coconet-alert>

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