

## Project Details

**ROSES ID:** NNH11ZDA001N

**Selection Year:** 2012

**Program Element:** Cross-Discipline Infrastructure Building Programs

**Project Title:**

Workshop Support: International AGU Chapman Conference on Longitude and Hemispheric Dependence of Space Weather

**PI Name:** Tim Fuller-Rowell

**PI Email:** tim.fuller-rowell@noaa.gov

**Affiliation:** University of Colorado, Boulder

**Project Member(s):**

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**Summary:**

Proposal Summary

This proposal request support for an International AGU Chapman Conference on:

Longitude and Hemispheric Dependence of Space Weather

The meeting will be held in Addis Ababa, Ethiopia, on November 12-16th, 2012.

The International AGU Chapman Conference will have three primary objectives:

" Determine the nature and cause of the longitudinal and hemispheric dependence of the ionosphere and thermosphere response to major solar events.

" Expand the study of space weather by examining the Earth system response during times when solar and geomagnetic activity are not so extreme; for instance plasma irregularities can occur on any night even when geomagnetic activity is benign, and can have a severe impact on satellite communication and GPS navigation.

" Quantify the impact of forcing from the lower atmosphere on space weather.

The conference will have at least two broader objectives:

" Assemble an international group of heliophysics scientists to target current and needed observations at mid and low latitudes in the African longitude sector, a region that has yet to be explored in detail using ground-based instruments. In order to have a complete global understanding of space weather and advance the global modeling effort, deployment of ground-based instruments in Africa is essential. Therefore, strong interaction between scientists from instrument suppliers and host institutes is crucial in order to have successful instrument deployment and continuous data retrieval process.

" Enhance the space science education and research interest in the continent. The interaction between African and other international scientists will significantly spark interest in space science education and research throughout Africa. It will facilitate international collaborations, gain exposure in African universities, and encourage the next generation of African scientists to become inspired by space science. The conference will also provide ideal opportunities for African scientists and graduate students to communicate their scientific results to the international scientific community.

The conference will focus on six main science themes, all of which strongly support the objectives of the NASA Living With a Star Program. These science themes are:

" Hemispherical dependence of magnetospheric energy injection and the thermosphere-ionosphere response

" Longitude and hemispheric dependence of storm-enhanced densities (SED)

" Response of the thermosphere and ionosphere to X-Ray and EUV time-history during flares

" Quiet-time longitude spatial structure in total electron content and electrodynamics

" Temporal response to the lower-atmosphere disturbances

" Ionospheric irregularities and scintillation

## **Publication References:**

no references