

Dept of Physics and Astronomy invites you to

COLLOQUIUM SPEAKER SERIES

Winter 2016

Friday · January 15

SB 144

Lecture begins at 4 PM

Refreshments provided

ALL ARE WELCOME



Dr. Elizabeth MacDonald

NASA, Goddard Space Flight Center

Geospace Physics Laboratory

Research Astrophysicist

AURORASAURUS.ORG, BRINGING TOGETHER PEOPLE AND SCIENCE IN PURSUIT OF THE NORTHERN AND SOUTHERN LIGHTS

Aurorasaurus is a mobile citizen science platform for crowd-sourcing volunteered geographic observations of the aurora. The resulting data are relevant to the space science community that lacks for such real-time observations. In turn the platform aims to improve nowcasting of the local visibility of the Northern Lights for the public through location-based notifications and an updating real-time map. This talk will highlight broad potential areas of utility and ways to get involved with the project. Validation of auroral oval models is one goal. Improving communication of understanding the aurora is another goal. Bringing together the public with a broad scientist network allows for the exchange of ideas about auroral observations, possible satellite-ground conjunctions, and further study of rare events. The frequency of aurora-related tweets also show characteristic behavior that correlates strongly with real-time geomagnetic activity. Altogether the platform provides state-of-the-art software utilizing human-computer interactions for interdisciplinary advances in scientific research.

BIOGRAPHY

Dr. Liz MacDonald first witnessed the aurora as part of her doctorate research conducted in Alaska, building instruments that fly onboard research rockets to measure the particle precipitation causing the lights. She received her PhD from the University of New Hampshire and spent 9 years at Los Alamos National Lab (LANL) as a postdoctoral researcher and staff scientist. There she primarily focused on experimental plasma mass spectrometer instruments for the Van Allen Probes NASA spacecraft and LANL payloads for geosynchronous orbit. In 2012 she founded the project Aurorasaurus to take advantage of new sources of data in this, the first solar maximum with social media. The project has received interdisciplinary funding from LANL, the US National Science Foundation, and most recently NASA. Since 2014 she has been a civil servant with the Goddard Space Flight Center and has led aspects of the Fast Plasma Investigation as part of the recently launched Magnetospheric Multiscale Mission in addition to continuing her earlier research.