

## Project Details

**ROSES ID:** NNH08ZDA001N

**Selection Year:** 2009

**Program Element:** Focused Science Topic

**Topic:** Determine the possible role of galactic cosmic ray particles as a source for cloud condensation nuclei in the troposphere and lower stratosphere.

**Project Title:**

The Effects of Solar Activity on the Middle and Low-Latitude Ionosphere

**PI Name:** Elsayed Talaat

**PI Email:** elsayed.talaat@jhuapl.edu

**Affiliation:** The Johns Hopkins University Applied Physics Laboratory

**Project Member(s):**

- Zhu, Xun ; Co-I; Johns Hopkins University
- Paxton, Larry J; Co-I; Johns Hopkins University
- Hsieh, Syau-Yun W; Co-I; Johns Hopkins University Applied Physics Laboratory
- Smith, Daniel C.; Co-I; Johns Hopkins University Applied Physics Laboratory

**Summary:**

This proposed work will use existing multi-year satellite observations of ionospheric density, middle and upper atmosphere temperatures and a 3D nonlinear general circulation model to address the following outstanding science questions:

1. What are the relative inter-annual and solar cycle effects on the mid- and low-latitude ionosphere?
2. How far do solar rotational effects penetrate in the mid- and low-latitude ionosphere?
3. What are the quantitative effects of flares on ionospheric heating?

## Publication References:

no references