

## Project Details

**ROSES ID:** NRA-02-OSS-01

**Selection Year:** 2003

**Program Element:** Independent Investigation: LWS

**Project Title:**

A Neutron Spectrometer for Solar Sentinel

**PI Name:** James Ryan

**PI Email:** james.ryan@unh.edu

**Affiliation:** University of New Hampshire

**Project Member(s):**

- Macri, John Rocco; COI; University of New Hampshire
- Miller, Richard Scott; COI; University of New Hampshire
- Sosa, Victor G; Authorizing Official; University of New Hampshire
- Flueckiger, Erwin O.; Collaborator; University of Bern

**Summary:**

We propose to develop a solar neutron spectrometer/telescope for deployment on a Solar Sentinel. Measuring neutrons below 10 MeV from solar activity requires a platform much closer to the Sun than 1 AU. These neutrons carry information about the spectrum and composition of energetic particle populations on the Sun. To effectively use these neutrons, one must measure them rather than simply detect them. To that end, we propose to develop an instrument that performs the necessary spectroscopy to remove the neutron spectrum velocity dispersion. It also is designed to image a neutron source as a means to minimize the count rate from directions other than the Sun.

## Publication References:

**Summary:** "

**Reference:** Ryan, James UNH - A Neutron Spectrometer for Solar Sentinel

**Summary:** no summary

**Reference:**

Bravar, Ulisse; Bruillard, Paul J.; Flueckiger, Erwin O.; MacKinnon, Alec L.; Macri, John R.; Mallik, Procheta C.; McConnell, Mark L.; Moser, Michael R.; Ryan, James M.; (2005), Imaging solar neutrons below 10 MeV in the inner heliosphere, Solar Physics and Space Weather Instrumentation. Edited by Fineschi, Silvano; Viereck, Rodney A. Proceedings of the SPIE, Volume 5901, pp. 141-150, doi: 10.1117/12.617392

**Summary:** no summary

**Reference:**

Ryan, James M.; Bravar, Ulisse; Flückiger, Erwin O.; Macri, John R.; McConnell, Mark L.; Pirard, Benoit; Woolf, Richard S.; (2008), Development and performance of the Fast Neutron Imaging Telescope for SNM detection, Optics and Photonics in Global Homeland Security IV. Edited by Halvorson, Craig S.; Lehrfeld, Daniel; Saito, Theodore T. Proceedings of the SPIE, Volume 6945, article id. 694509, 8 pp, doi: 10.1117/12.777699