Name: Michael Loewenstein

Code: 662

Home institution: University of Maryland, College Park

Name of tasks: XRISM Science Data Center and NICER Guest Observer Facility

Role in tasks / What do you do for CRESST:

As XRISM Science Data Center Lead I direct and participate in the creation of tools that researchers will use to analyze data from the joint Japan-U.S.-Europe XRISM (X-Ray Imaging and Spectroscopy Mission) satellite. XRISM is scheduled for launch in 2022 and will investigate the flow of matter and energy in the universe using a new generation high-resolution X-ray spectrometer. I also help provide technical support to NICER, the Neutron Star Interior Composition Explorer Mission), NICER was launched aboard a Space-X Falcon 9 in June 2017 with a primary goal of understanding the interior structure and composition of neutron stars by deploying a novel X-ray timing and spectroscopy instrument on the International Space Station. NICER studies other objects as well, and I have been working with teams studying what happens when a star wanders too close to a supermassive black hole and is torn apart.

What is your background:

I am from California and attended UCLA as an undergraduate and UC-Santa Cruz for my Ph.D. studies. I then did two-year stints at the University of Cambridge Institute of Astronomy and the University of Colorado studying X-ray emission from galaxies and giant cluster of galaxies before coming to NASA/GSFC to do similar science in 1990 (yes, my 30th anniversary at Goddard is imminent!).

Favorite part of being a CRESST Scientist:

I am fortunate to be able to work on two tasks that complement each other very well – one (NICER) relatively small, locally-based, and in the prime part of its operating lifetime; the other (XRISM) larger, multi-national, and still a couple of years away from launch. I work as part of teams of various sizes and scopes, and am privileged to collaborate with an amazing array of talented scientists, software developers, and technicians.

Highlight of research as a CRESST Scientist:

XRISM is a recovery mission for another satellite, Hitomi, that was lost in orbit after about one month of operation. Contributing to extracting a significant number of excellent science results from the tragically short mission was very challenging, but also gratifying - and was key to the realization of the XRISM project.

Representative sample of papers:

"The Destruction and Recreation of the X-Ray Corona in a Changing-look Active Galactic Nucleus," Ricci, C., Kara, E., **Loewenstein, M.** et al., The Astrophysical Journal, 898, L1 (2020)

"Solar abundance ratios of the iron-peak elements in the Perseus cluster," Hitomi collaboration, Nature, 551, 478, 2017

"Perspectives on Intracluster Enrichment and the Stellar Initial Mass Function in Elliptical Galaxies," **Loewenstein, M.** et al., The Astrophysical Journal, 773, 52 (2013)

List of NASA awards: [2016] Special Act Award (NICER Team), [2019] Special Act – TEAM (NICER Operations and GOF Teams), [2019] Group Achievement Award (NICER Instrument Development Team), [2017] Special Act – TEAM (GSFC Hitomi Science Team), [2017] RHG Exceptional Achievement for Science Team (ASTRO-H Science Data Center Team), [2017] RHG Exceptional Achievement for Science Team (Hitomi Soft X-ray Spectrometer and Telescope Team_, [2019] Special Act – TEAM (AXIS Team)

To Contact Mike to learn more about his work or collaboration, he can be reached at:
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