Juan Camilo
Buitrago-Casas
Space Sciences Lab - UC Berkeley
Lindsay Glesener, University of Minnesota, 116 Church St SE, Minneapolis, USA

Steven Christe, NASA Goddard Space Flight Center, Greenbelt, MD, USA

Säm Krucker, Space Sciences Laboratory, University of California Berkeley, Berkeley, USA and University of Applied Sciences and Arts Northwestern Switzerland, Windisch, Switzerland

Juliana Vievering, University of Minnesota, 116 Church St SE, Minneapolis, USA and Johns Hopkins University Applied Physics Laboratory, Laurel, MD, USA

PS Athiray, University of Minnesota, 116 Church St SE, Minneapolis, USA and NASA Marshall Space Flight Center, Huntsville, AL, USA

Sophie Musset, University of Minnesota, 116 Church St SE, Minneapolis, USA and ESA, European Space Research and Technology Centre (ESTEC), The Netherlands

Daniel Ryan, University of Applied Sciences and Arts Northwestern Switzerland, Windisch, Switzerland

Shin-nosuke Ishikawa, Rikkyo University, Graduate School of Artificial Intelligence and Science, Tokyo, Japan

Noriyuki Narukage, National Astronomical Observatory of Japan, Japan

Stephen Bongiorno, NASA Marshall Space Flight Center, Huntsville, AL, USA

Brian Ramsey, NASA Marshall Space Flight Center, Huntsville, AL, USA

Sasha Courtade, Space Sciences Laboratory, University of California Berkeley, Berkeley, USA

Gregory Dalton, Space Sciences Laboratory, University of California Berkeley, Berkeley, USA

Tadayuki Takahashi, Kavli Institute for the Physics and Mathematics of the Universe (WPI), The University of Tokyo, Japan

Shin Watanabe, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency, Japan
Ikuyuki Mitsuishi, Nagoya University, Japan

Jessie Duncan, University of Minnesota, 116 Church St SE, Minneapolis, USA and

Yixian Zhang, University of Minnesota, 116 Church St SE, Minneapolis, USA

Athanasios Pantazides, University of Minnesota, 116 Church St SE, Minneapolis, USA

Stuart Bale, Space Sciences Laboratory, University of California Berkeley, Berkeley, USA
Poster
In solar and helio-physics, the coronal heating problem relates to the question of identifying and explaining the mechanism(s) causing the corona's temperatures to be a few hundred times hotter than the solar surface. Among the various plausible hypotheses proposed to explain this problem, one of the strongest candidates relates to copious low energy magnetic reconnections (nanoflares) occurring throughout the solar corona. When examined thoroughly, this mechanism implies heating that happens impulsively on individual flux tubes (strands). Emission of hard X-rays (HXRs) should be a consequence of such non-thermal phenomena, or even of purely thermal transients, if hot enough. In quiescent solar corona areas, nanoflares should manifest in HXRs via very faint signatures covering vast regions. Observing feeble HXRs demands an instrument with high sensitivity and dynamic range for energies between 4 and 15 keV. FOXSI (which stands for the Focusing Optics X-ray Solar Imager) is such an instrument. As a payload of a NASA/LCAS (low-cost access to space program) sounding rocket, FOXSI has successfully completed three launches. The two most recent flights (FOXSI-2 and -3) included quiescent areas of the Sun as part of the targets. For this presentation, we will show a full assessment of the HXR flux from the quiet Sun observed with FOXSI. We begin by presenting a thorough characterization of the stray light (ghost rays) impinging into FOXSI's detectors caused by sources outside of the field of view. We then identify areas free of ghost rays where the instrument sensitivity reaches a maximum to quiet Sun HXR detections. Finally, we implement a Bayesian (known as ON/OFF analysis) to estimate an upper detectability threshold of quiet Sun HXRs and a probability distribution for quiet-Sun HXR fluxes when sources are supposed to exist.