16th European Solar Physics Meeting



Contribution ID: 186

Type: Poster

NuSTAR observations of a repeatedly microflaring active region

Tuesday, 7 September 2021 11:13 (13 minutes)

The Nuclear Spectroscopic Telescope Array (NuSTAR) is an astrophysical X-ray telescope capable of observing the Sun with direct imaging spectroscopy providing a unique sensitivity above 2.5 keV. We use NuSTAR to investigate highly frequent and weak flares thought to contribute to heating the Sun's atmosphere particularly in active regions. I will present several X-ray microflares from a recently emerged active region, AR12721, that were observed on 2018 September 9-10 with NuSTAR. In combination with SDO/AIA, I describe the temporal, spatial, and spectral evolution of these GOES sub-A class microflares that reach temperatures above those of the surrounding active region (>5 MK). One of the microflares presented is the faintest non-thermal microflare so far observed with NuSTAR with an equivalent GOES class of A0.1. Using SDO/HMI, I also present evidence of photospheric magnetic flux cancellation/emergence at the footpoints in 8 of the NuSTAR microflares.

Primary author: COOPER, Kristopher (University of Glasgow)

Co-authors: Dr HANNAH, Iain (University of Glasgow); Dr GREFENSTETTE, Brian (California Institute of Technology); GLESENER, Lindsay (University of Minnesota Twin Cities); KRUCKER, Säm (FHNW/University of California Berkeley); Dr HUDSON, Hugh (University of Glasgow/University of California Berkeley); Dr WHITE, Stephen (Air Force Research Laboratory); Dr SMITH, David (Santa Cruz Institute of Particle Physics and Department of Physics); Ms DUNCAN, Jessie (University of Minnesota Twin Cities)

Presenter: COOPER, Kristopher (University of Glasgow)

Session Classification: Poster Session 4.4

Track Classification: Session 3 - Fundamental Plasma Processes in the Solar Atmosphere: Magnetic Reconnection, Waves, Emission, Particle Acceleration