

Abstract Submitted
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HaloSat Observations of Solar Wind Charge Exchange¹ REBECCA RINGUETTE, The University of Iowa, DIMITRA KOUTROUMPA, LATMOS, K. D. KUNTZ, John Hopkins University, PHILIP KAARET, The University of Iowa, ANA ZAJCZYK, NASA's Goddard Space Flight Center, DANIEL LAROCCA, JESSE BLUEM, The University of Iowa, KEITH JAHODA, NASA's Goddard Space Flight Center, HALOSAT COLLABORATION — The main science goal of HaloSat, the first CubeSat mission funded by NASA's Astrophysical Division, is to help determine if gravitationally bound hot gas in galactic halos makes a significant contribution to the missing cosmological baryons. The instrument is designed to map the oxygen line emission from hot gas across the sky in the 0.4 to 2 keV band. However, solar wind charge exchange (SWCX) emission may also contribute at these energies, confusing the measurements. To minimize SWCX contributions, HaloSat strategically observes the Milky Way's halo within 70° of the anti-Sun direction and away from the interplanetary He-focusing cone. Some SWCX contribution is still possible regardless of the observing strategy, so HaloSat also conducts a series of observations to study both heliospheric and magnetospheric SWCX emission. These observations aim to improve the accuracy of SWCX emission models – the secondary science goal of HaloSat – and thus improve the accuracy of HaloSat's ongoing measurement of the Milky Way's halo. The observational strategy and analysis method for the dedicated SWCX observations are discussed, and preliminary results are presented for a selection of the SWCX data set.

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