An Overview of White Light Sources in the 15th February 2011 Solar Flare

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White light flares (WLFs) are observational rarities, making them understudied events. However, optical emission is a significant contribution to flare energy budgets and the emission mechanisms responsible could have important implications for flare models. Using Hinode SOT optical continuum data taken in broadband red, green and blue filters, we investigate white-light emission from the X2.2 flare SOL2011-02-15T01:56:00. We develop a technique to robustly identify enhanced flare pixels and, using a knowledge of the RGB filter transmissions, determined the source color temperature and effective temperature. We investigated two idealized models of WL emission - an optically thick photospheric source, and an optically thin chromospheric slab. Under the optically thick assumption, the color temperature and effective temperature of flare sources in sunspot umbra and penumbra were determined as a function of time and position. Values in the range of 5000-6000K were found, corresponding to a blackbody temperature increase of a few hundred kelvin. The power emitted in the optical was estimated at ~10^26 ergs/s. In some of the white-light sources the color and blackbody temperatures are the same within uncertainties, consistent with a blackbody emitter. In other regions this is not the case, suggesting that some other continuum emission process is contributing. An optically thin slab model producing hydrogen recombination radiation is also discussed as a potential source of WL emission; it requires temperatures in the range 5,500 - 25,000K, and total energies of ~10^27 ergs/s. Work is also underway to characterize the spectral energy distribution of the flare as a whole, placing the narrow SOT WL passbands in context with observations from SDO/EVE and AIA, and from RHESSI HXRs.