

MULTIWAVELENGTH OBSERVATIONS OF A SOLAR FLARE

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Extended Abstract

During the solar campaign of 1992 January, a GOES-class C9 flare in the active-region complex AR 6693/6694 at S16W18 was seen by many observatories. This flare was rather complex in morphology, but still represents one of the best-observed flares ever in terms of wavelength coverage: SXT soft-X-ray images, HXT hard-X-ray images and BCS data on velocities from the *Yohkoh* satellite, high-spatial-resolution radio images from the *Very Large Array* at 3 frequencies, high-spectral-resolution microwave images from the *Caltech/Owens Valley* frequency-agile interferometer, millimeter-wavelength data from the *Berkeley-Illinois-Maryland* interferometer, and H α images and vector magnetograms from MSFC.

The flare has a gradual rise in soft X-rays. The pre-flare heating takes place at a location quite different from the main energy release site in the ensuing flare, which appears to be a single compact loop connecting two opposite-polarity spots in a common penumbra. But both the soft X-ray images and the VLA images show evidence for a connection from the main flare site in AR 6994 to the trailing spot in AR 6993, some 80" to the north. The morphology of the soft-X-ray loops in the rise phase of the flare, before the soft-X-ray emission becomes dominated by the main flare loop, is puzzling: it has a "wishbone" shape which corresponds neither to footpoints of a compact arcade of loops on either side of a neutral line, nor to the footpoints of large-scale loops. The radio images in the rise phase, however, show the presence of nonthermal electrons not at the site of the preflare heating, but rather at the footpoints of the main soft-X-ray flare loops, before the soft-X-ray emission there brightens.

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