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CAMPAIGN OF SIMULTANEOUS, MULTIWAVELENGTH OBSERVATIONS OF THE FLARE/SPOTTED VARIABLE, CC ERI

A multiwavelength campaign is being mounted on 2 and 3 November 1989 to observe the 1.56 day period spectroscopic binary and flare/spotted variable, CC Eri (K7Ve + ≈dM4), continuously over its complete orbital period in order to locate and measure the ultraviolet and optical line emission from it's active regions, as well as its quiescent chromosphere and transition region, and to study flares which are likely to occur occur during the observing run. CC Eri is the second brightest member of the BY Draconis class of spotted cool dwarfs and, with its short orbital and rotational period is one of the fastest rotating. For these reasons it is a very active BY Dra/flare star and probably has one of the brightest ultraviolet line spectra of its class. Only one LW LORES IUE spectrum has so far been obtained of this important object and a very small number of optical spectra. We therefore propose to carry out a detailed study of its quiescent and flaring emission properties and request collaborative, simultaneous ground-based observations from as geographically widely spaced sites as possible.

With IUE we will obtain a continuous series of SWP-LO and LWP-LO spectra over the full orbital (= rotational) period in order to identify bright active regions (from the rotational modulation of emission line fluxes) and to correlate the location of these active regions with dark starspots obtained from contemporaneous optical photometry and spectroscopy. We will also study the time behavior of flares in different spectral lines with coordinated optical photometry and microwave observations. Flares with optical U-band enhancements greater than 1 magnitude are known to occur on average once per 12 hours. We plan to model the quiescent, active, and flaring atmospheres separately using emission measure diagnostics.

Observers interested in collaborating in this campaign should contact the undersigned.

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