

OPTICAL AND X-RAY OBSERVATIONS OF THE D-TYPE SYMBIOTIC STAR EF AQL

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We performed high-resolution optical spectroscopy and X-ray observations of the recently identified Mira-type symbiotic star EF Aql. Based on high-resolution optical spectroscopy obtained with SALT, we determine the temperature and the luminosity of the hot component in the system. The heliocentric radial velocities of the emission lines in the spectra reveal possible stratification of the chemical elements. Our Swift observation did not detect EF Aql in X-rays. The upper limit of the X-ray observations is 10^{-12} erg cm $^{-2}$ s $^{-1}$, which means that EF Aql is consistent with the faintest X-ray systems detected so far. Otherwise we detected it with the UVOT instrument with an average UVM2 magnitude of 14.05. During the exposure, EF Aql became approximately 0.2 UVM2 magnitudes fainter. The periodogram analysis of the V-band data reveals an improved period of 320.4 ± 0.3 d caused by the pulsations of the Mira-type donor star.

