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ADJUSTMENT OF PREDICTION ELEMENTS FOR EM AURIGAE

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Abstract

A decade of visual observations shows that the eclipsing binary EM Aurigae has consistently run hours ahead of schedule relative to the published elements. Our data are used to determine new prediction elements.

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LOW-AMPLITUDE LONG-TERM MODULATIONS RESEMBLING SOLAR CYCLES  
IN SS CYGNI

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Abstract

The AAVSO data on SS Cygni from its discovery in 1896 to 1984 have been digitized, and consist of approximately 28,000 one-day mean data points, which are being analyzed. One analysis has been of the quiescence level of SS Cygni. The outbursts were removed, and Fourier analyses were done on the remaining minimum light observations. Results show low-level modulations, probably related to modulations in the mass-transfer rate from the secondary cool star onto the disk around the white dwarf. Power spectra show a peak with a 0.15-magnitude amplitude peak-to-peak and a 7.2-year period which may be related to solar-type cycles in the secondary, late-type star.

This result was first reported by Kiplinger on July 18, 1987, at the Astrophysics Colloquium at the NASA Goddard Space Flight Center Laboratory for Astronomy and Solar Physics. Bianchini (*Inf. Bull. Var. Stars* No. 3136, 1988) has recently independently reported findings of a 7.3-year cycle in the SS Cygni minimum level after analyzing all of the AAVSO data from 1966 to 1986.

These results are significant as they could shine light on poorly-understood long-term behavior of cataclysmic variables and contribute to understanding of the so-called solar-stellar connection. We are in the process of finalizing the study on SS Cygni and preparing the data for publication.

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**A NEWLY DISCOVERED ECLIPSING BINARY**

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**Abstract**

A nova search effort by Dan Kaiser results in the discovery of a bright eclipsing binary with a deep minimum of long duration. Special circumstances permit some justified speculation as to when the next eclipse may be observed.

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**DG HYDRAE, A NEGLECTED RR LYRAE TYPE VARIABLE**

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**Abstract**

Most RR Lyrae type variables listed in the Krakow Ephemeris are observed frequently with prediction elements adjusted to reflect current status. DG Hydrae is an exception. Unobserved for several years, the star has changed period and now reaches maximum well ahead of the predicted time. A powerful Blashko effect also seems evident.

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**PHOTOELECTRIC MONITORING OF BRIGHT Be STARS**

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**Abstract**

We describe and summarize our BV photoelectric observations of 34 bright, active Be stars, made at various times between 1981 and 1987 with a 0.4m telescope at the University of Toronto. These observations demonstrate the photometric variability of Be stars on time scales of hours to years. They were made as part of an international UBV photometric campaign on bright Be stars, organized by Dr. P. Harmanec of the Ondrejov Observatory in Czechoslovakia.

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