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1981 UBVR PHOTOMETRY OF II Peg

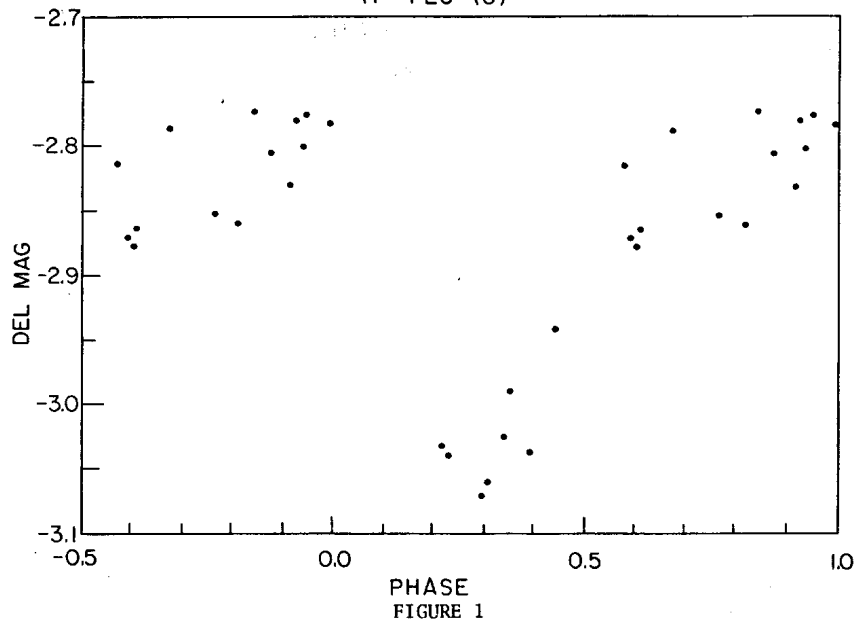
Our long-term program of photometry of RS CVn stars includes the non-eclipsing system II Peg (27°4642, HD224085), whose large light variations began in 1945 (Hartmann, Lõndono and Phillips, 1979). The primary star is K2 IV-V; the secondary is not yet known.

Our observations were made in October-December 1981 with the 61-cm telescope at Capilla Peak Observatory. The photometer, which is computer controlled, is a single-channel, photon-counting design with a cooled (-20° C) EMR 641A tube. The comparison star was +27°4649 for all observations. Phases were calculated from Rucinski's (1979) epoch and period of $MJD = 43033.10 + 6.724183E$. Figures 1-4 give the magnitude differences (comparison-source) in the UBVR instrumental system. The data has been folded to show phases 0.0 and 0.5 clearly.

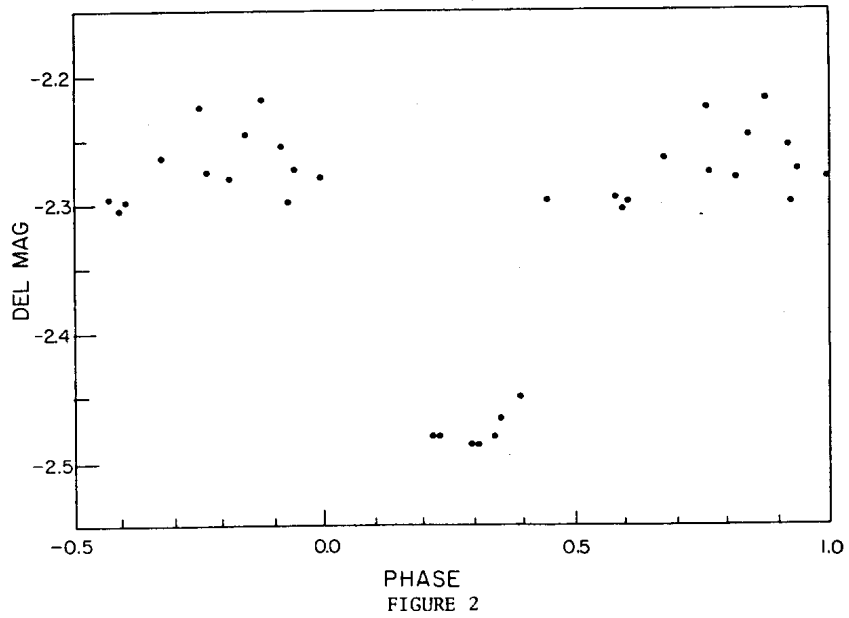
From the V-band curve, we note that the minimum in the distortion wave occurs at about phase 0.3 and that the wave amplitude (peak to peak) is approximately 0.2 mag. Compared to the 1977 data reported by Vogt (1981), the distortion wave has decreased in size (from 0.43 mag) and increase in phase (0.0). Even more curious, the light curve no longer shows the two maxima (at phases 0.45 and 0.85) visible in the 1979 observations of Nations

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II PEG (U)

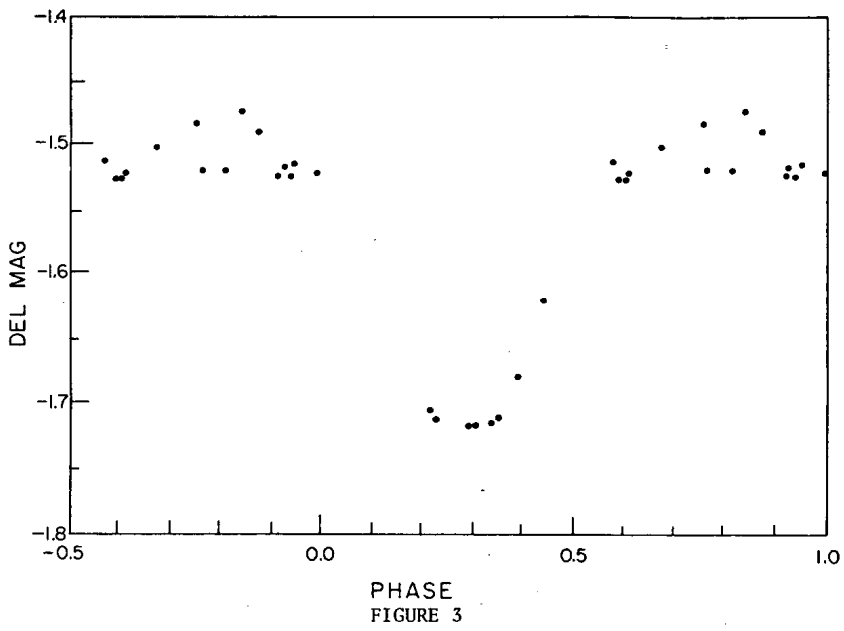


II PEG (B)

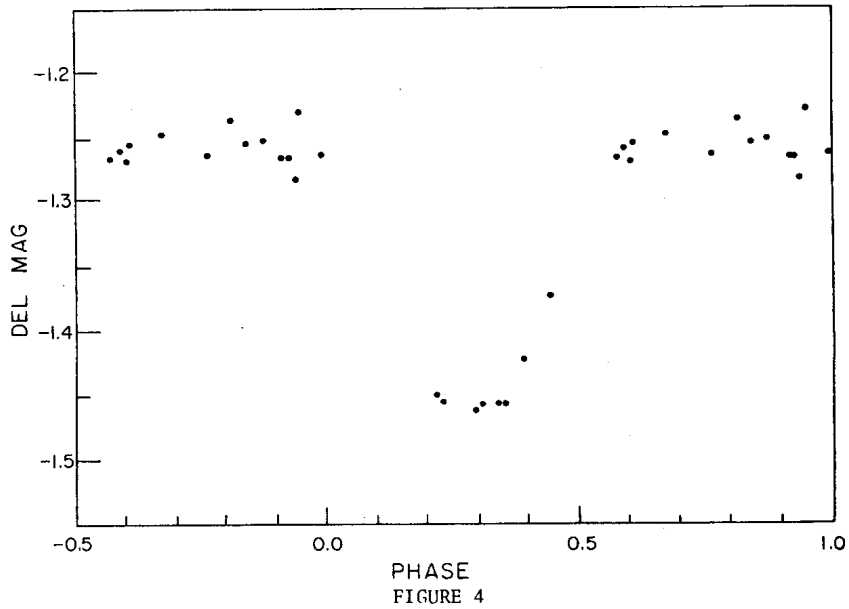


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II PEG (V)



II PEG (R)



and Ramsey (1981). By 1980 Raveendran et al. (1981) noted only one peak (0.15 mag) at phase 0.6.

It is clear that II Peg must be observed annually to track these dramatic changes in its distortion wave. Also, coordinated efforts of different observatories are needed, as changes occur in only a few cycles. This is seen in the V-band curve at phase ≈ 0.8 , where observations 20 days apart show a difference of 0.05 mag.

M. ZEILIK, R. ELSTON, G. HENSON, P. SCHMOLKE, & P. SMITH

Capilla Peak Observatory

Department of Physics and Astronomy

The University of New Mexico

Albuquerque, NM 87131

U.S.A.

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