COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
Number 1144

Konkoly Observatory
Budapest
1976 June 22

APPEAL FOR PHOTOELECTRIC OBSERVATIONS OF UPSILON SAGITTARII

(α (1900) = $19^h\ 16^m\ 0^s$, δ(1900) = $-16^\circ\ 8.6'$, m_v = 4.58)

Upsilon Sagittarii is a remarkable spectroscopic binary. Lines of H, CaII, [CaII], FeII and [FeII] have been observed in emission in its spectrum, while Hα and perhaps two HeI lines show at certain phases a blue-shifted absorption component. The spectrum of only one component has been detected in the visible region, a spectrum which indicates an underabundance of hydrogen with respect to helium. An infra-red excess has also been observed.

Gaposchkin (1945) found this star to be an eclipsing binary, with primary and secondary eclipse depths of 0.15 and 0.08 magnitudes. This result is based on photographic measurements, and seems to have been never confirmed photoelectrically.

Observations of this star are important in the light of theories of close binary evolution. A study of far ultraviolet measurements conducted by M. Friedjung and M. Hack is in progress, and should give some information concerning the component whose spctrum is invisible in the visible region, and which is probably hotter than that seen. Photoelectric observations of colour changes during eclipses in the visible, would also be useful from this point of view. Unfortunately, this star is difficult to accurately observe from the northern hemisphere, while its relatively long period of 138 days makes it unattractive for those observatories which allocate time for short observing runs only. It is because of these difficulties that this appeal is launched.

The eclipse dates for the next 1 1/2 years are using the elements of the 1969 edition of the "General Catalogue of Variable Stars".

Primary		Secondary	
October 13	1976	August 5	1976
February 28	1977	December 21	1976
July 16	1977	May 8	1977
December 1	1977	September 23	1977
		February 8	1978

A convenient comparison star is 44ρ^1 Sagittarii ($\alpha=19^h15^m52^s$, $\delta=-18^\circ02'$, 1900, V=3.94). It should be noted that all these eclipses are not observable, because of the proximity of the Sun.

M. FRIEDJUNG
Institut d'Astrophysique
Paris, France.

Reference:
Gaposchkin, S. 1945, Astr.J., 51, 109