

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

Number 2958

Konkoly Observatory
Budapest
26 November 1986
HU ISSN 0374-0676

β Cas: A PROBABLE SMALL AMPLITUDE MONOPERIODIC δ Sct STAR

Recently, the bright star β Cas ($V=2.26$, $B-V=+0.35$) and some other δ Sct stars have been observed with IUE. During the same period, photometric observations of β Cas were carried out at the Merate Observatory in order to get some indications on the modal content of the pulsation of this star. 710 measurements were performed during 8 nights from September 2 to October 4, 1986 with the 50 cm reflector using a standard V filter together with a neutral filter. The comparison stars were ν^2 Cas ($V=4.63$, $B-V=+0.96$) and ν^1 Cas ($V=4.83$, $B-V=+1.21$). For the frequency analysis we adopted the least squares power spectrum technique (see Antonello et al., 1986), and we obtained the period $P=0.10101$ d, which is slightly different from that given by Millis (1966). The difference can be explained by the wrong cycle number assumed by Millis between the first and the second maximum observed by himself. Our period fits well these times of maximum.

Considering P as known constituent we searched for a second period; however we have not detected any significant peak in the power spectrum. This means that there should not be a second period with a semi-amplitude greater than 0.001 mag. The $P=0.10101$ d explains 61% of the data variance and leaves a r.m.s. residual of ± 0.008 mag, i.e. the same obtained for the two comparison stars. The full amplitude of the V-light curve of β Cas is 0.03 mag.

Our results do not confirm the amplitude variations obtained with radial velocity measurements (Yang et al., 1982). However, those observations were made during one night and covered only two cycles.

A detailed report on our observations and data analysis will be published elsewhere.

E. ANTONELLO, L. PASTORI, E. PORETTI
Osservatorio Astronomico di Brera
Via E. Bianchi, 46
22055 MERATE (CO) - Italy

Antonello, E., Mantegazza, L., Poretti, E.: 1986, *Astron. Astrophys.* 159, 269
Millis, R.L. : 1966, *Publ. Astron. Soc. Pacific* 78, 340
Yang, S., Walker, G.A.H., Fahlman, G.G.: 1982, *Publ. Astron. Soc. Pacific* 94, 317