COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
Number 3337

Konkoly Observatory
Budapest
13 June 1989
HU ISSN 0374 - 0676

SAO 139 174 IS AN ECLIPSING BINARY STAR

SAO 139 174 (BD -1° 2777 = HD 114 125) was used as a check star during the observations performed on 18 and 19 March 1988 at Sierra Nevada Observatory in Spain. The star showed brightness variations which suggested that it might be an eclipsing binary (Rodriguez et al., 1988).

During 18 nights, from March 21 to April 22, 1989, SAO 139 174 was observed using a solid state photometer attached to the Cassegrain focus of the 0.5 m Mons telescope at Observatorio del Teide (Instituto de Astrofisica de Canarias Canary Islands, Spain).

SAO 139 171 was used as comparison 1, and SAO 139 131 (48 Vir) as comparison 2, while SAO 139 086 (44 Vir), SAO 139 139, SAO 139 186, and SAO 139 196 as check

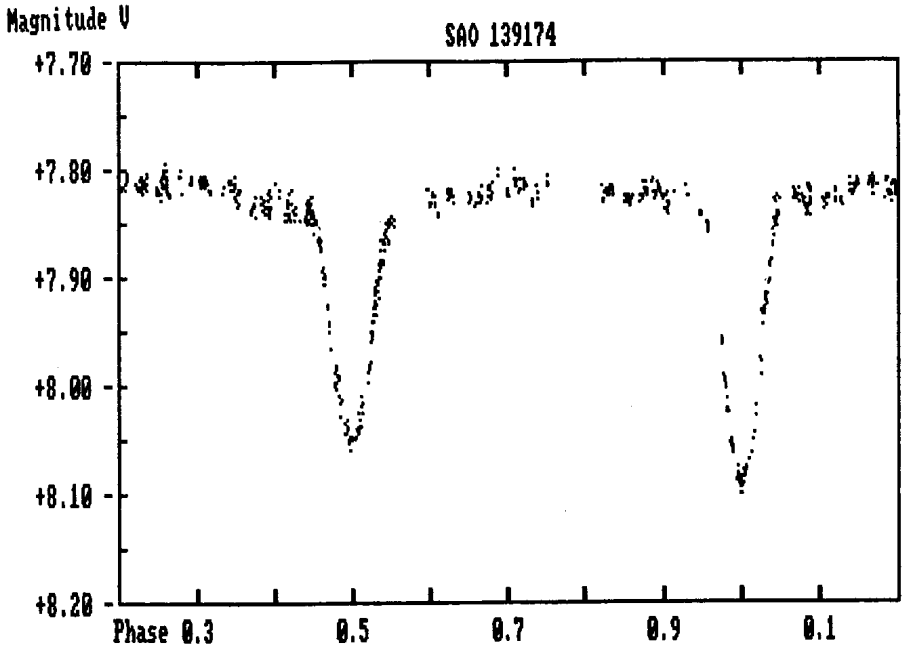

Figure 1

stars.

The results of this surveillance program proved that SAO 139 174 is an eclipsing binary star with a period close to 2.73 days. The star is a 7.81 magnitude (V) object at the maximum light that fades to 8.10 and 8.05 at the primary and secondary minima respectively. The eclipses last about 6.3 hours. Figure 1 shows the light curve obtained.

From our set of data we computed the tentative ephemeris for the primary minimum:

$$\begin{array}{l} \text{HJD} = 2\,447\,240.97128 + 2^{d}.73236\ E \\ \qquad\qquad\quad \pm.00006 \quad\ \pm.00002 \end{array}$$

After a quick first analysis of the light curve using the Russell-Merrill model according to Irwin (1962) we obtained the following elements:

$$R_s = 0.15 \qquad L_s = 0.423$$
$$R_g = 0.19 \qquad L_g = 0.577$$
$$i = 80^{o}.1$$

Additional photometric data are needed in order to compute more precise elements and ephemeris for this new binary system.

We would like to acknowledge the Instituto de Astrofisica de Canarias for allowing us to utilize their facilities. We would like to acknowledge also C. Gallart for her assistance in the observation during some nights, and E. Garcia-Melendo for his help in computing the elements of the system.

R. CASAS[1,2] and J.M. GOMEZ-FORRELLAD[1]

[1] Grup d'Estudis Astronomics
Apartat 9481
08080 Barcelona, Spain

[2] Instituto de Astrofisica de Canarias
38200 La Laguna, Tenerife, Spain

References:

Rodriguez, E., Sedano, J.L., Lopez de Coca, P., and Rolland, A. 1988, Inf. Bull. Var. Stars, No. 3174.
Irwin, J.B. 1962, in "Astronomical Techniques", Univ. of Chicago Press, p.584.