

VARIABLE STAR  
BULLETIN

No.13

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Photometry of 32 Cyg and Gamma Per  
around 1990 Eclipse

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Eclipse of two long period binaries, 32 Cyg and  $\gamma$  Per, were predicted to occur on September, 1990. We made photoelectric observations of these stars in  $B$  and  $V$  magnitudes with a 40-cm reflector at the Department of Astronomy, Kyoto University. Comparison stars were 31 Cyg for 32 Cyg and  $\tau$  Per for  $\gamma$  Per. We observed 32 Cyg in 5 nights and  $\gamma$  Per in 3 nights, covering only a small fraction of eclipse phase of each star. The resulting differential magnitudes in the Johnson system are listed in Tables 1 and 2. These are mean values of a few measurements for times shorter than one hour, and the errors are about  $\pm 0.03$  in magnitude.

A predicted mideclipse of 32 Cyg is September 5.45, 1990 (JD2448139.95) (Schröder 1983). Our observations in  $B$  indicate a gradual increase of light at the egress. Photometric eclipse of  $\gamma$  Per has not yet been observed but Griffin (1990) predicted an eclipse in September, 1990. Ohshima, Tokoro, and Arai (1990) could first observe a photometric eclipse with a totality of 7.70 days at mideclipse of September 16.6, 1990. September 10 and 21 in our observations correspond to phases just outside the eclipse in their light curves.

Table 1. 32 Cyg minus 31 Cyg

UT	$\Delta V$	$\Delta B$
Sept.08.581	0.29	0.54
Sept.09.464	0.22	0.42
Sept.10.496	0.25	0.42
Sept.11.471	0.19	0.36
Sept.21.476	0.25	0.46

Table 2. Gamma Per minus Tau Per

UT	$\Delta V$	$\Delta B$
Sept.10.696	-0.89	-0.91
Sept.21.688	-0.96	-1.00
Oct. 02.573	-1.01	-1.02

## References:

- Griffin, R.F. 1990, *private communication*.  
 Ohshima, O., Tokoro, T., and Arai, K. 1990, *private communication*.  
 Schröder, K.-P. 1983, *Astron. Astrophys.*, 124, L16.

VISUAL OBSERVATIONS OF NSV1020,  
NSV9887 and NSV14469

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The variability of 3 NSV stars are confirmed by the author's visual observations using 26cm reflector. Their positions and magnitudes from GSC (Guide Star Catalogue) and identification number of IRAS-PSC (IRAS Catalogue of Point Source, Version 2.0) are as follows:

	RA (2000.0)	Dec.	Mag.	
NSV1020	03h03m37.80s	+70°08'01.6"	12.2	=IRAS02588+6956
NSV9887	17h56m39.11s	+10°06'39.4"	11.2	=IRAS17542+1006
NSV14469	23h14m32.34s	+78°56'39.4"	11.8	=IRAS23131+7840

Light curve\* and finding chart of each star are shown in figures 1 to 3, respectively. Inspecting the light curves, all of them are regarded as Mira type variables. Bright appearance of NSV1020 in early April and late November 1989 have been reported by Hurst (1990). Figure 1 shows that the star is bright in late March 1991. According to these observations, period of NSV1020 is estimated as about 240 days.

Reference: Hurst, G.M., 1990, The Astronomer, Vol.27, No.313.

Fig.1 NSV1020

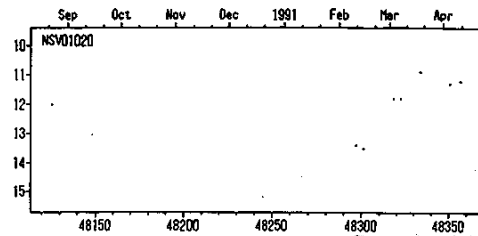
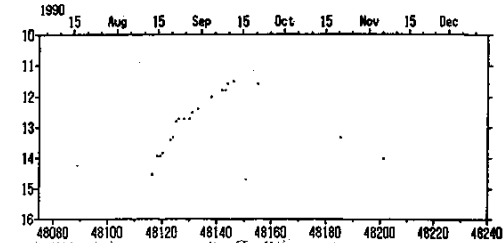


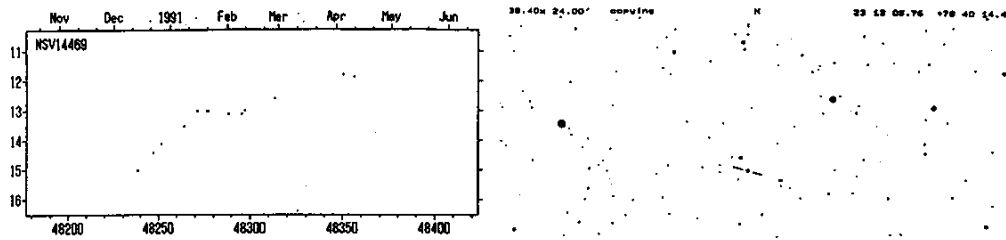
Fig.2 NSV9887



39.40x 24.00' copying . N 02 58 53.65 +59 56 13.5

39.40x 24.00' copying N 17 54 57.49 +10 06 50.

Fig.3 NSV14469



\* Magnitude was determined by comparison of GSC sequence.

### FAINT STATE OF PG0911-066

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PG0911-56 was discovered by Green et al. (1982) as a cataclysmic variable candidate. The magnitude of this object was given in the literature as  $B=14.2$  (Green et al. 1982) and photographic  $B=14.11$  by Green et al. (1986). However, no photometric variability has been known to the author. I took frames with Thomson TH7882 CCD (576x384 pixels, on chip summation of 2x2 pixels) attached to the Cassegrain focus (focal length 4.8m) of 60cm reflector at Ouda Station, Department of Astronomy, Kyoto University.

The frames were processed with the microcomputer-based aperture photometry package developed by the author. The Johnson V and Kron I magnitudes were determined using M67 standards.

This object was then found significantly fainter than above recorded magnitude. On Dec. 29, 1990, the object was fainter than  $V=17$  (not detected because of the full moon) and subsequent 48 minutes observation could not detect brightening. It was confirmed that this fading was not caused by an eclipse.

On Feb. 5, 1991, the variable was still faint. The Kron I magnitudes are given in the table.

It is not certain at this time whether this star is caught at quiescence of a dwarf nova or at a low state observed in certain nova-like systems. However, low excitation emission (hydrogen lines only) described by Green et al. (1982) prefers the first interpretation and will exclude possibility of an AM Her type object.

Table 1.

mid-exposure (UT)	exposure time (sec)	I-magnitude
1991 Feb. 5.6580	120	18.68
5.6601	180	18.50

References:

- Green, R.F., Ferguson, D.H., Liebert, J., and Schmidt, M., 1982, Publ. Astron. Soc. Pacific, 94, 560.  
 Green, R.F., Schmidt, M., and Liebert, J., 1986, Ap. J. Suppl., 61, 305.

OFFICERS and COUNCIL of VSOLJ

The second annual meeting of VSOLJ was held on February 10 and 11 at National Science Museum in Tokyo. About 40 members and several invited professional astronomers attended. In this meeting reorganization of the council and committee was also discussed and nominated officers are as follows:

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Treasurer	Masami Koshiro	
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