

COMMISSIONS 27 AND 42 OF THE IAU
INFORMATION BULLETIN ON VARIABLE STARS

Number 4047

Konkoly Observatory
Budapest
7 July 1994
HU ISSN 0324 - 0676

**NEW FLARE STARS IN THE REGION OF
OPHIUCHUS AND SCORPIUS**

The first four flare stars in the recent star formation region of ρ Ophiuchi were found by Haro & Chavira (1974), based on effective observational time equal to 43 hours. The same region was observed on Tonantzintla 26" Schmidt telescope during 1975-1983. Four new flare stars were found again. Total observational time was equal to 149^h.

In Table 1 data on the new flare stars are given. Columns first to sixth give the serial number of flare star, approximate coordinates (error in R.A. $\pm 5''$, in Dec. $\pm 9''$), ultraviolet magnitude at minimum, flare amplitude and date of flare respectively.

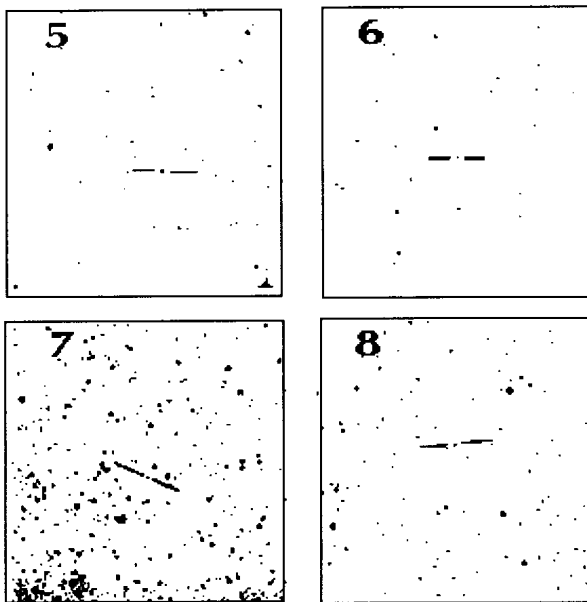


Figure 1. Identification charts for the new flare stars. North is at the top, East is to the right. The size of the charts is 12×12 arc min.

Table 1. New flare stars in Ophiuchus and Scorpius

No.	Ton.	R.A. 1950	Dec. 1950	U mag	ΔU mag	Date of flare
5		16 ^h 22 ^m 8	-23°12'	>18	>2.9	09.06.1980
6		16 23.3	-23 37	>18	>2.3	05.07.1978
7		16 25.7	-25 48	>18	>2.4	06.04.1976
8		16 33.1	-26 12	>18	>6	15.05.1975

Flare of star No.8 was probably a superposition of two fast flares occurring within a time interval of about 30 minutes. The first flare began a little earlier than 5^h22^m with amplitude $\geq 3^m$, then at 5^h54^m or a little earlier the second fast flare took place, with an amplitude of $\geq 6^m$. Another possibility is to suppose that it was a slow flare, but the shape of light curve is in favour of the first assumption. The data on flare of the star No. 8 are given in Table 2.

Table 2

UT	m_u	UT	m_u
5 ^h 22 ^m	15 ^m 0	6 ^h 41 ^m	14 ^m 5
5 38	15.5	7 00	14.8
5 54	12.0	7 16	15.6
6 10	12.5	7 32	16.0
6 25	13.5	7 48	16.5

This star has H α in emission (Wilking et al., 1987).

Thus, during 192 hours of observations, only 8 flare stars were found in the region of Ophiuchus and Scorpius. In Figure 1 the identification maps of the newly found flare stars are given.

We thank C. Escamilla for technical help.

Elma S. PARSAMIAN
Byurakan Observatory, Armenia
INAOE, Mexico
Enrique CHAVIRA
Graciela GONZÁLEZ
INAOE, Mexico

References:

- Haro, G. and Chavira, E., 1974, *Bol. Inst. Tonantzintla*, **1**, 189
Wilking, B. A., Schwartz, R. D., Blackwell, J. H., 1987, *Astron. J.*, **94**, 106