"Peremennye Zvezdy",
Prilozhenie,
vol. 7, N 30 **(2007)**

V435 Cas Observed by INTEGRAL/OMC

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Received: 4.10.2007; accepted: 16.11.2007
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Star Name:	V435 Cas, GSC 4011-01257,		
Coordinates (J2000):	23 31 27.4, +59 24 24		
Variability type:	EA;	**Limits, System:**	13.8 - 15.2 (V);
Period:	4.156074 d;	**Epoch(min):**	JD 2453404.887

Remarks:

V435 Cas was discovered as a variable star by Hoffmeister (1967). He classified it as an eclipsing binary of Algol type and listed two times of minima (see the table below). Six more times of minima were published by Rosino, Bianchini & di Martino (1976); despite that, the period of V435 Cas could not be determined.

About 50 years after its discovery, V435 Cas was observed by the Optical Monitoring Camera (Mas-Hesse et al., 2003) on board the INTEGRAL satellite (Winkler et al., 2003). These observations are available via the OMC Data Server (Gutierrez et al., 2004). INTEGRAL/OMC data are presented in the form of FITS tables which were converted to ASCII format, used by our period-search software, by means of a custom-made convertor (its source code is available atftp://scan.sai.msu.ru/pub/software/OMC2ASCII).

The well-sampled (1025 data points) V-band light curve combined with information on times of minima observed in the 20th century lead to the following linear light elements:

HJDmin = 2453404.887 + 4.156074 x E.

Times of minima of V435 Cas

Min	Primary/Secondary	Source
2429079.46	p	Hoffmeister, 1967
2429985.41	p	Hoffmeister, 1967
2440153.291	s	Rosino, Bianchini, di Martino, 1976
2440554.301	p	Rosino, Bianchini, di Martino, 1976
2441244.348	p	Rosino, Bianchini, di Martino, 1976
2441626.416	p	Rosino, Bianchini, di Martino, 1976
2442071.319	p	Rosino, Bianchini, di Martino, 1976
2442073.290	s	Rosino, Bianchini, di Martino, 1976
2453404.887	p	INTEGRAL/OMC data

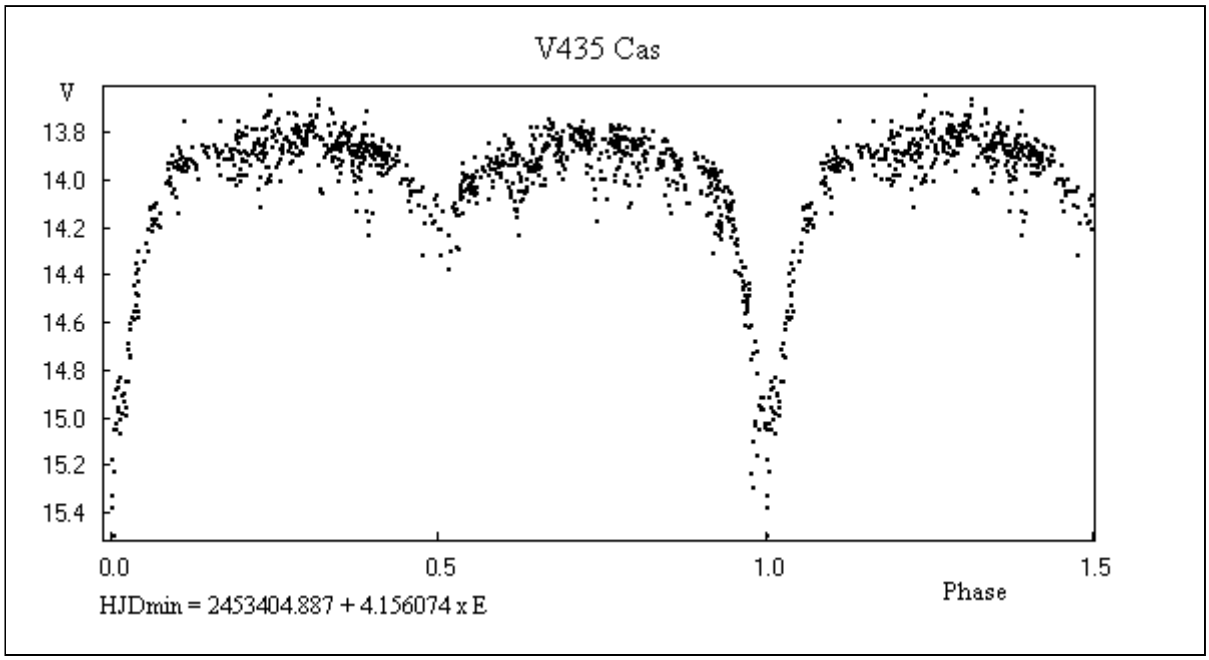
Note that the Simbad database, as of November, 2007, returns a wrong position for V435 Cas, based on the identification by Kato (1999). The correct position, in agreement with the discoverer's finding chart (Hoffmeister, 1967), was given by Skiff (1997) and can be found through the GCVS website. The position of the source IOMC 4011000047 (= V435 Cas), observed by INTEGRAL, confirms the GCVS identification.

Acknowledgments: This research is based on data from the OMC Archive at LAEFF, pre-processed by ISDC. The author has made use of the Aladin Sky Atlas (Bonnarel et al., 2000), the International Variable Star Index, the O-C gateway created by A. Paschke and L. Brat, the period search software developed by V.P. Goranskij.

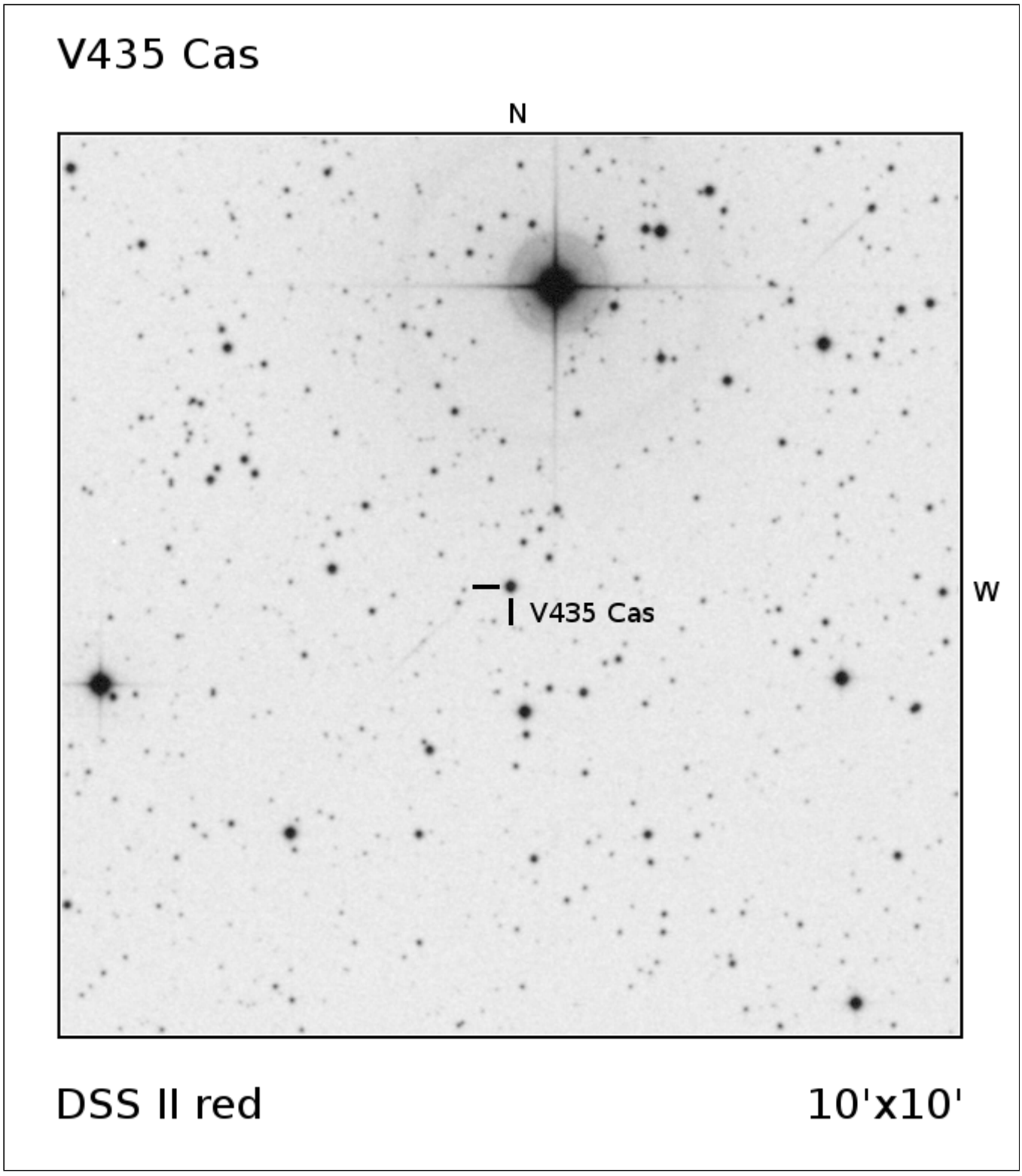
References:

Bonnarel, F., Fernique, P., Bienayme, O., et al., 2000, A&AS, 143, 33
Gutierrez, R., Solano, E., Domingo, A., Garcia, J., 2004, ASP Conference Series, 314, 153
Hoffmeister, C., 1967, AN, 290, 43
Kato, T., 1999, IBVS, No. 4789
Mas-Hesse, J. M., Gimenez, A., Culhane, J.L., et al., 2003, A&A, 411, L261
Rosino, L., Bianchini, A., di Martino, D., 1976, A&AS, 24, 1
Skiff, B.A., 1997, IBVS, No. 4441
Winkler, C., Courvoisier, T.J-L., Di Cocco, G., et al., 2003, A&A, 411, L1

Light Curve



Finding Chart



A POSS-II red image centered on V435 Cas.

Data Source

1. iomc.dat