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BVI photometry of the symbiotic star C-1 in the Draco dwarf galaxy

The carbon giant C-1 in the Draco dwarf galaxy was discovered by Aaronson et al. (1982) to show emission lines of H I, He I and He II. It has been classified among symbiotic stars by Allen (1984). The symbiotic nature has been confirmed by Munari (1991) who observed marked spectroscopic changes in the emission spectrum and strong variability of H_{α} radial velocity and shape which suggested orbital motion.

A number of plates have been exposed on C-1 with the 67/92 cm Schmidt telescope of the Asiago Astrophysical Observatory in the period 1987-1990. The magnitude of C-1 has been estimated by comparison with a set of reference stars derived from the photometry of Baade & Swope (1961), Stetson (1979) and Carney & Seitzer (1986). A journal of the observations and resulting magnitudes are given in the table.

BVI photographic photometry of C-1

date	J.D.	plate	filter	В	V	I
24 July 1987	2447001.425	103a-O	GG 13	18.6		
26 July 1987	2447003.506	I-N	RG 8			15.4
7 July 1988	2447350.533	103a-O	GG 13	> 17.9		
14 Aug. 1988	2447388.426	103a-O	GG 13	> 18.8		
5 May 1989	2447652.528	I-N	RG 8			15.7
28 May 1989	2447675.555	I-N	RG 8			15.0
9 June 1989	2447687.586	I-N	RG 8			14.5
	2447687.549	103a-O	GG 13	18.6		
3 Aug. 1989	2447742.417	I-N	RG 8			14.7
9 Aug. 1989	2447748.398	103a-O	GG 13	> 19.2		
	2447748.445	I-N	RG 8			::14.7
4 Sept. 1989	2447774.386	I-N	RG 8			15.6
	2447774.423	1 03a -O	GG 13	> 18.6		
20 July 1990	2448093.480	103a-O	GG 13	18.9		
	2448093.506	103a-D	GG 14		16.8	
28 July 1990	2448101.400	103a-O	GG 13	> 16.5		
18 Aug. 1990	2448122.409	103a-O	GG 13	18.4		
	2448122.439	I-N	RG 8			15.6
14 Oct. 1990	2448179.291	I-N	RG 8			15.5
	2448179.324	103a-O	GG 13	>18.5		

C-1 appears faint on many of the plates. Consequently, appreciable errors are to be expected in the reported photometry, which can be considered accurate on the average to 0.35 mag in I, to 0.25 in B and to 0.15 mag in V. Together with the photoelectric data reported by Aaronson et al. (1982) there are in all 12 mag estimates in B, 10 in I and 3 in V. In view of the involved large errors and paucity of data it is hazardous to derive any firm conclusion about the variability of C-1. Anyway some variability seems established in the B band if the observations on JD 2447748.398 and 2448122.409 are compared. The data in the table could support a ~1.0 mag variability in the I band which could be described as a bright phase in the summer of 1989.

In any case the data in table show a quiet photometric evolution during 1981-90 with no outburst recorded in the period 1987-90.

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