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V1129 Cyg IS NOT AN OPTICAL COUNTERPART OF IRC+30374=AFGL 2417

In the AFGL infrared survey (Price and Walker, 1976) the source AFGL 2417 = IRC+30374 is, erroneously as shown below, identified with the Mira star V1129 Cyg. On the other hand, in the New Catalogue of Suspected Variables (NSV) the infrared source IRC+30374 is designated by a number 12165 according to the correct idea, that V1129 Cyg is not its optical counterpart (Kukarkin et al., 1982). Nevertheless, the misidentification has been repeated in several papers as well as in the Catalog of Infrared Observations (Schmitz et al., 1987).

Trying to stop such a confusion we present observational data obtained with the Baldone Schmidt telescope giving evidence that the star V1129 Cyg and the infrared source IRC+30374=AFGL 2417 are different objects.

1. On the Kodak IN infrared spectral plate taken 1986 Sept 13/14 nearly 20 arcsec SSW off the position of variable star 112.1906 (=V1129 Cyg) shown on finding chart in the paper of Wachmann (1964) is seen a spectrum of a red star with absorption features characteristic for spectral type M. Nearly 5 arcmin to the east there is another very red object (Fig.1) the spectrum of which has features typical for carbon stars. Evidently, the last one corresponds to the infrared source IRC+30374, because IRC+30374 is classified by Vogt (1973) as a carbon star. Besides, Altamore et al. (1980) identified IRC+30374 with the star No.2754 of the General Catalogue of Cool Carbon Stars (Stephenson, 1973).

2. Equatorial coordinates of both objects marked in Fig. 1 we determined from direct infrared Kodak IN plate:

V1129 Cyg	19 ^h 29 ^m 50.2 ^s :	+27°51'54.8"	(1900.0)
"	19 31 51.1	+27 58 21.8	(1950.0)
IRC+30374	19 30 7.9	+27 51 4.5	(1900.0)
"	19 32 9.0	+27 57 32.6	(1950.0)

The necessary reductions were performed by the Turner method using seven stars from AGK 3 catalogue. The rms scatter of each coordinate is not greater than 0.7.

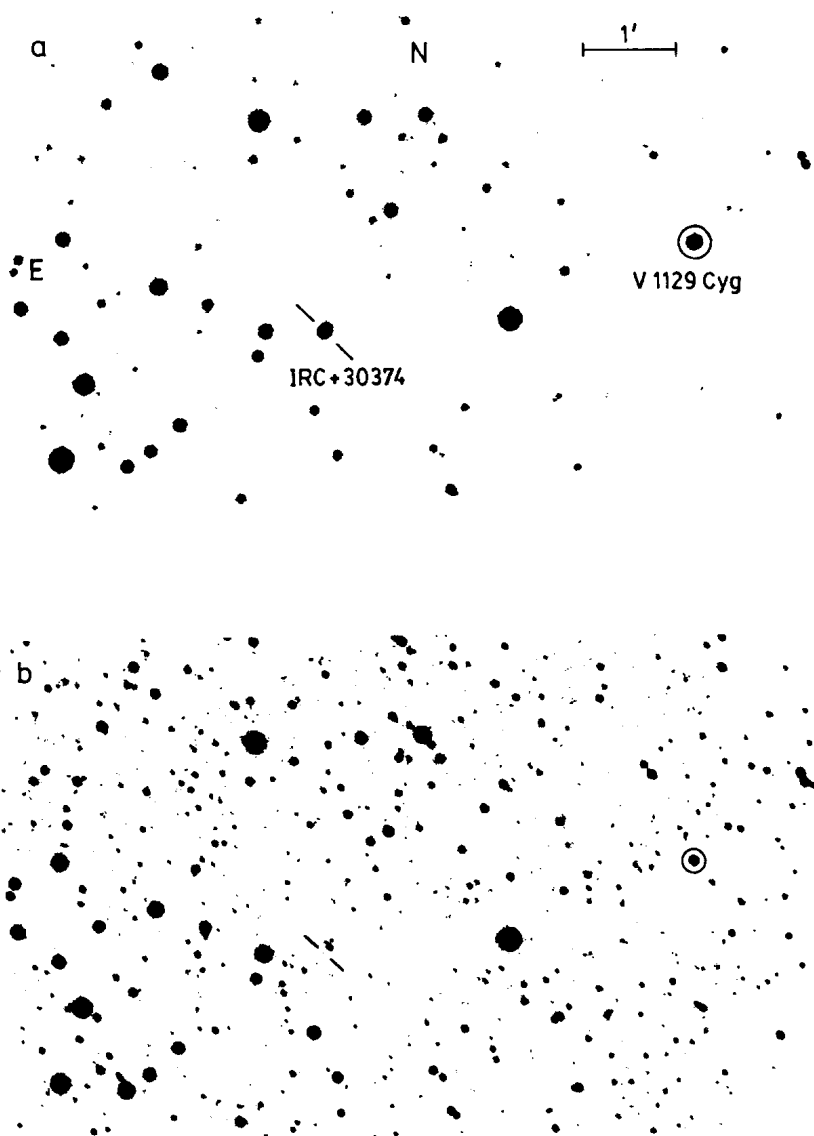


Figure 1. Finding charts of V1129 Cyg and IRC+30374 = NSV 12165 in a) infra-red and b) visual light from the negatives taken with the Baldone Schmidt telescope. On the V chart the object IRC+30374 is seen ~ 0.1 arcmin SE from a much brighter star.

The above position of V1129 Cyg is in a good agreement with the coordinates of the star given in the GCVS. In the case of IRC+30374 the difference between the above position and those given in IRC and AFGL are larger, but does not exceed one arcmin. The disagreement with the coordinates of No.2754 in GCVS (Stephenson, 1974) is larger - 1.5 arcmin, which might be attributed to lower precision of the coordinates in the GCVS. In any case we could not find another sufficiently red star near the position of IRC +30374.

3. From the brightness estimates of these two objects on a dozen of direct infrared plates and from published data on infrared photometry we can judge that the star of spectral type M is a long-period variable with a cycle length similar to that noted in the GCVS for V1129 Cyg but the other - carbon star - is a variable with a cycle length of about 430 days.

Thus, V1129 Cyg is a Mira star of spectral type M and NSV 12165 = IRC +30374=AFGL 2417 a long-period variable carbon star. NSV 12165 is also identified with the IRAS point source 19321+2757 and classified from IRAS Low Resolution Spectra as 43 or 30 like some other dust-enshrouded carbon stars (Cheeseman et al., 1989).

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