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A SEARCH FOR LONG PERIOD CEPHEIDS IN NORMA

According to radioastronomical data (e.g. Kerr, 1969) a spiral arm may be running tangentially along the line of sight near $l = 328^\circ$, in the Norma section of the Milky Way. Thus, one would expect to find several long period cepheids belonging to this arm but, in fact, few are known at present. The lack of cepheids might be an observational effect, however, (see McCarthy and Havlen, 1975) so that it is important to extend to fainter magnitudes the search for variable stars near $l = 328^\circ$.

We undertook a search for variable stars in a $2^\circ \times 2^\circ$ region centered at R.A. (1950) = $15^h 51^m 3$, Decl. (1950) = $-54^\circ 19'$ ($l = 327.62$, $b = -0.65$), using B and V plates obtained with the Yale-Columbia astrograph at El Leoncito (San Juan, Argentina) and with the Curtis Schmidt-telescope at Cerro Tololo Inter-American Observatory (CTIO). Ten pairs of B plates from El Leoncito and two pairs of B plates from CTIO were used for the search with the blink microscope of La Plata Observatory. Eight new variables were discovered together with the two previously known variables GN Normae and SY Normae and the suspected variable 2515 = HV 8812 (Kukarkin et al., 1951, Luyten, 1934, 1938).

Table I

Positions and magnitude ranges of the variable stars found.

Star	R.A. (1950)	Decl. (1950)	B range
1	$15^h 46^m 00.54$	$-54^\circ 07' 18''$	$16^m.7 - >18^m.0$
2	15 46 44.2	-53 36 45	14.2 - 15.3
3	15 51 48.7	-54 43 11	16.2 - 17.5
4	15 48 38.8	-55 08 37	13.9 - 14.4
5	15 48 07.0	-53 46 27	15.6 - 16.6
6	15 49 17.6	-53 26 37	15.2 - 16.5
7	15 55 54.0	-54 02 22	15.2 - 16.0
8	15 53 25.0	-55 08 29	16.3 - >18.0

Finding charts

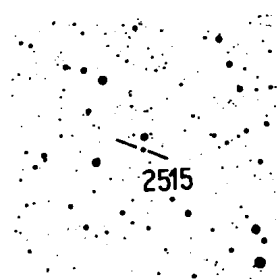
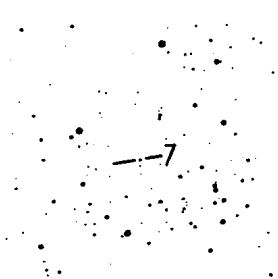
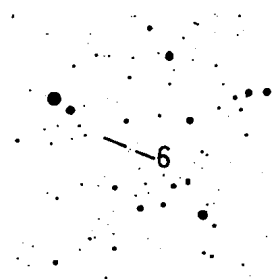
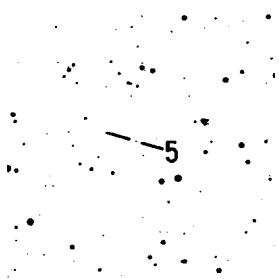
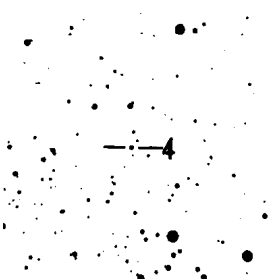
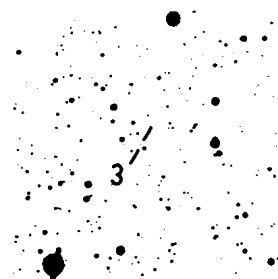
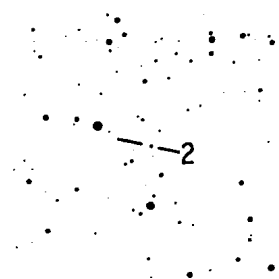


Table I gives 1950 positions and estimated magnitude ranges for the new variables; charts for the new variables and also for the suspected variable 2515, for which no published chart is known to us, are also provided. Chart size is about 10' x 10'; North is up, East to the left.

A study of these variables by means of photographic BV photometry is under way at present at La Plata Observatory to decide what kind of variables they are.

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