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NEW VARIABLE STARS IN THE REGION OF IC 1396

For a search for young variable stars in the region of the galactic cluster IC 1396, which is associated with a diffuse emission nebula, a total of 104 blue patrol plates of a 6 x 6 square degrees field centered on μ Cep have been obtained with the astrograph of Hoher List Observatory (F/5; F = 1500 mm). The exposures on Kodak 103a-0, covering a time interval between June 1969 and October 1971, have in most cases limiting magnitudes of 17^m0 to 17^m5.

The comparison of 21 plate pairs with a blink microscope yielded the discovery of 32 variable objects. 13 of them are known variables named in the GCVS and Supplements (1969 to 1976), 2 of them are the suspected variables K3E 5485 and K3E 8684, designated here as No 25 and No 19, respectively, and 17 of them are new variable stars.

The light variation of these 19 unnamed variables were estimated on several plates with a number of comparison stars around each variable, which were calibrated with a secondary standard sequence. This sequence itself was derived by a photographic transfer of a UBV-sequence in the nearby galactic cluster NGC 7128 (Hoag et al. 1961, Publ. US Naval Obs. Vol.17 part 7). Because of the small angular distance of NGC 7128 this transfer could fortunately be done simply by a set of overlapping exposures.

As a result of these estimates the range of variability and the first preliminary classification of the light curves are given in columns 4,5 and 6 of the table. In column 6 "l" means slow, "s" rapid and "E" eclipsing light variations. The numbering of the variables is in continuation of an earlier work by Geyer and Giesekeing (IBVS, No. 967). The position of each variable relative to 3 surrounding AGK₂-stars was measured with a Zeiss coordinate measuring machine. With these positions the corresponding coordinates were calculated by application of the dependences method. Finally, the last column of the table contains

information about the colour of the variables, estimated by inspection of the blue and red prints of the Palomar Sky Survey. Here "r" and "b" means, that the star is brighter on the red or blue print, respectively, and "r=b" means, that the star has roughly the same brightness on both prints.

The identification charts of the variables, which have north up and west to the right, are enlargements from three plates and have a limiting magnitude of about 17^m.

No.	RA(1950)	D(1950)	Max	Min	type	colour
10	21 ^h 24 ^m 10. ^s 0	+60°38'43"	15. ^m 5	17. ^m 0	s	r=b
11	21 28 06.1	+57 46 14	16.2	(17.5)	s+l	r=b
12	21 28 37.2	+55 39 20	15.6	16.6	E?	r=b
13	21 29 47.5	+58 14 36	17.2	(17.5)	?	(r)
14	21 30 00.7	+60 56 42	16.4	17.0	s	r=b
15	21 33 47.7	+57 23 15	14.4	15.4	s	b
16	21 34 05.7	+59 43 21	16.7	17.5	l	(r)
17	21 36 38.7	+57 07 41	16.3	17.1	s	r=b
18	21 39 05.0	+56 52 07	16.6	17.2	s	(r)
19	21 41 16.4	+58 43 34	14.8	(17.5)	l	r!
20	21 41 59.0	+57 28 09	16.7	17.4	E?	(r)
21	21 42 55.4	+55 45 05	16.5	17.5	s	r
22	21 48 49.0	+59 22 51	14.9	16.2	E?	r=b
23	21 49 57.9	+58 32 32	16.6	17.4	E?	(b)
24	21 50 19.9	+56 24 45	15.4	17.1	s	(r)
25	21 52 14.1	+60 18 01	15.7	(17.5)	l	r!
26	21 52 58.8	+58 53 04	16.0	17.1	s	r
27	22 01 02.1	+59 12 36	15.2	16.7	s	r
28	22 01 54.1	+59 55 00	15.8	(17.5)	l	r!

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