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NEW VARIABLE STARS IN CYGNUS, LACERTA AND ANDROMEDA

The following is an evaluation of an area of 20° × 15° centered at 20^h40^m, +45°(1950) in my series of 32 fields in the Milky Way. Three fields have been previously described. (Dahlmark 1982, 1986, 1993).

Eighteen plate pairs (Kodak 103aD+GG 11 and 103aO) were exposed between 1967 and 1982 and 42 were exposed on Kodak TechPan 4415 + Schott 495 filter in the years 1987 to 1995. All exposures were made with f=305 mm optics. They are examined in the same way as described by Dahlmark (1982, 1993). Magnitude estimations of comparison stars were transferred from the sequences in NGC 7209 and 7243 published by Hoag et al. (1961).

In this survey 35 stars are published of which 32 are new variables. The results are based on about 65 magnitude estimates for each star. The lightcurves have been used to determine the provisional variability type, epoch and period for 20 long-period variable stars.

The finding charts are based on 200/210/300 mm Schmidt camera photographs obtained in August 1987.

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References:

Dahlmark, L., 1982, *I.B.V.S.*, No. 2157
Dahlmark, L., 1986, *I.B.V.S.*, No. 2878
Dahlmark, L., 1993, *I.B.V.S.*, No. 3855
Hoag, A. et al., 1961, *Publ. U.S. Naval Obs.*, **17**, 7

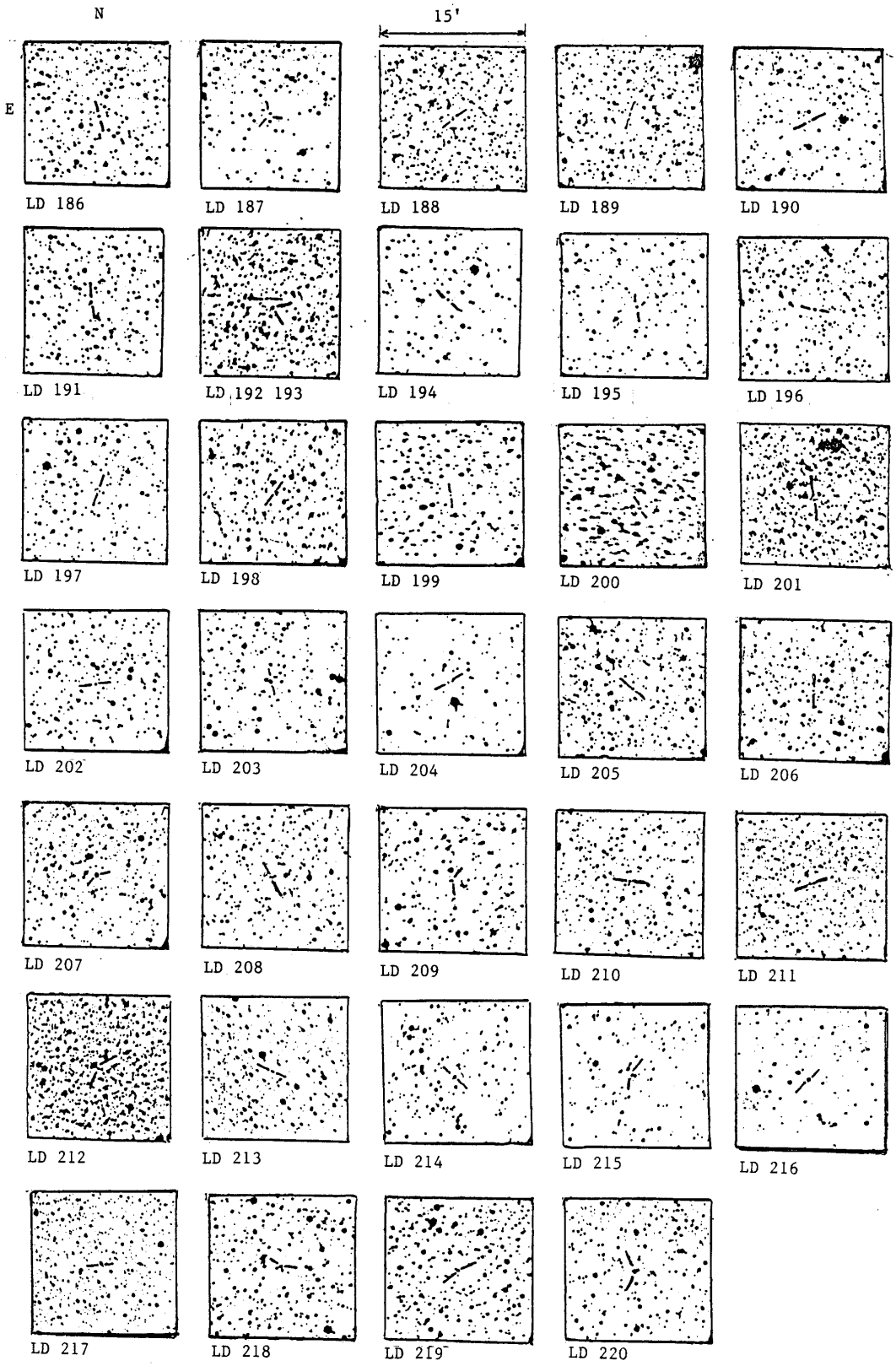
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Figure 1

Table 1. New variables in And, Cyg and Lac. Plate centre $22^h40^m+45°$

No.	R.A.(1950)	Decl.(1950)	m_v max	m_v min	B−V	Type	Epoch 2440000+	Period d	Notes
LD 186	$21^h51^m29^s$	+43°50′7	12.5	14.2	1.0	SR	9190	239	1,3
LD 187	21 55 24	+38 10.0	12.3	15.2	0.5	SRD	9326	260?	
LD 188	21 56 58	+49 57.7	13.8	(15.1	-		–	–	1
LD 189	22 04 34	+47 52.8	13.9	14.6	0.3		–	–	
LD 190	22 05 48	+40 50.7	12.1	15.2	1.3	M	9842	380	1
LD 191	22 07 03	+45 15.6	12.9	14.6	1.0		–	–	1
LD 192	22 07 41	+51 56.3	11.8	14.0	>2		–	–	
LD 193	22 07 45	+51 57.7	13.6	14.4	−0.2		–	–	
LD 194	22 08 06	+38 01.3	11.7	15.1	1.2	M	9984	380	1
LD 195	22 11 43	+43 39.6	11.9	12.9	0.4		–	–	
LD 196	22 12 43	+46 40.0	11.8	13.5	>2		–	–	
LD 197	22 13 55	+42 08.2	12.5	(16.2	>1.3	NL	–	–	1,9
LD 198	22 17 34	+47 58.0	12.3	14.1	0.4	SR	9251	200?	1
LD 199	22 21 25	+47 29.6	13.8	15.2	>0.5	SR	9652	322	
LD 200	22 22 49	+47 34.6	13.8	14.5	0		–	–	
LD 201	22 23 41	+50 02.9	12.2	15.6	> 0.5	M	9866	500	1,2
LD 202	22 24 21	+48 09.1	13.5	14.6	1.0		–	–	
LD 203	22 26 10	+44 12.5	11.9	12.5	1.5		–	–	2
LD 204	22 27 48	+45 31.8	12.5	15.0	>1.5	M	9995	321	
LD 205	22 29 29	+48 01.3	11.0	14.6	>2	M	9480	363	1
LD 206	22 39 00	+40 19.1	10.6	15.2	3.0	M	9250	185	4
LD 207	22 41 08	+41 01.9	9.7	14.0	2.5	M	9480	258	1
LD 208	22 43 10	+50 36.3	12.8	(15.2	>0.4	M	9981	370	1,2
LD 209	22 44 21	+51 58.6	13.3	14.4	>1		–	–	2,5
LD 210	22 47 29	+52 02.1	11.8	15.2	>0.7	M	8868	344	1
LD 211	22 48 10	+53 09.0	12.2	14.3	>1.5	M:	9948	362	1,6
LD 212	22 56 50	+48 52.2	12.9	15.0	–	SR	9680	367?	2
LD 213	22 58 47	+37 35.1	13.5	15.0	1		–	–	
LD 214	22 59 45	+39 43.6	11.8	14.5	2.0	M	9540	280	1,7
LD 215	23 00 08	+41 27.7	11.6	(15.0	0?		9520	270	2
LD 216	23 04 06	+37 59.0	11.3	12.8	0.7		–	–	1
LD 217	23 14 05	+38 27.4	11.3	14.4	0.5	SRD	9820	362	1,2
LD 218	23 23 20	+45 25.6	12.0	(14.0	>2	M	9520	348	1,2
LD 219	23 28 46	+49 46.2	13.0	13.8	>0.6		–	–	2
LD 220	23 31 44	+46 02.7	11.3	(15.0	1.6	M	9981	325	2,8

Notes
1. IRAS star.
2. Close (5"-30") faint star, may influence magnitude estimates at minimum.
3. Could be V677 or V1093 Cyg.
4. Period increasing.
5. FK Lac?
6. Period variable?
7. Period increased from 271 to 280 days, 1972-95.
8. NSV 14621, period varies from 320 to 325 d.
9. Maxima only in 1968 and 1993.

(15.2 in "min." column means that star is fainter than $15^m.2$.