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**IDENTIFICATIONS FOR WACHMANN'S VARIABLES
IN THE SOUTHERN CYGNUS STARCLOUD**

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As part of general work aimed at improvement of the coordinates for variable stars and of bibliographic databases, I have identified the 310 objects studied by Wachmann (1961, 1963, 1964, 1966) in the region of the southern Cygnus starcloud. His work included both new and known variables. The few brightest stars naturally appear in traditional astrometric catalogues, but the great majority have not been hitherto identified with accurate coordinates.

I made use of Wachmann's very clear charts together with plots of the GSC or USNO-A2.0 star catalogues to identify most of the stars. This was done with a program that plots either catalogue on a computer screen in a Mongo or IDL window, allowing the user to click with a mouse cursor on a star, whose ID and coordinates are then written out to a file. Nearly all the stars were unambiguously identified this way. In a number of cases—all involving red variables—I made use of the POSS-I red- and blue-light prints to identify the reddest object at the location indicated on Wachmann's charts. For a few difficult cases, it was found that the more recent POSS-II IIIa-J (blue-light) and IV-N (far-red) film copies made identification trivial for the faint red stars, despite their having been taken at different epochs.

The variables are listed in four tables corresponding to the four parts in which Wachmann published his results. The first column shows the HBV number assigned to new variables; the second shows the GCVS name. The positions are given to 1" precision, mostly from the GSC v1.1 and USNO-A2.0 (Monet *et al.* 1998). A few extremely faint and/or crowded stars do not appear in any catalogue. For these I estimated positions ($\pm 2''$) using large-scale Digitized Sky Survey frames from the Goddard SkyView facility (McGlynn *et al.* 1996). For a few bright stars, Hipparcos (Perryman *et al.* 1997) or ACT (Urban *et al.* 1998) positions were available. The source of the position is coded in column 's' as follows: A = USNO-A2.0, G = GSC v1.1, H = Hipparcos, S = SkyView, T = ACT. The Remarks column shows identifications with other surveys. Longer comments are given in the Notes at the end of each table. The identifications are 'new' in the sense that they were either not present or not linked in the same entry in the SIMBAD database as of mid-February 1999. If Wachmann has given a preliminary "Kiel" name (e.g. AN 92.1906) or another for known but undesignated variables, these are also listed in the Remarks or Notes.

This work was made significantly easier thanks to a number of excellent on-line tools, including SIMBAD, the ‘VizieR’ catalogue-server from the CDS-Strasbourg, and the Goddard SkyView utility. The POSS-II film sets have been provided to the Lowell Observatory library by the Friends of Lowell Observatory.

Table 1: Positions and identifications – I

HBV	GCVS	RA (2000)	Dec	s	GSC	Remarks
232	PX Lyr	19 19 53.2	+29 52 29	G	2136-2174	
233	PY Lyr	19 20 26.0	+28 56 44	G	2136-3365	
234	V846 Cyg	19 24 13.7	+30 08 30	G	2654-2052	
235	V865 Cyg	19 27 24.8	+33 03 09	A		
236	V867 Cyg	19 28 37.0	+32 59 18	A		
237	V880 Cyg	19 31 25.9	+33 39 17	A		
238	V886 Cyg	19 32 45.2	+32 40 38	A		
239	V901 Cyg	19 34 19.6	+31 12 44	A		
240	V903 Cyg	19 34 44.1	+31 15 19	A		IRAS 19327+3108
241	FO Vul	19 35 03.4	+26 34 57	A		
242	FQ Vul	19 35 36.6	+26 17 02	G	2146-2906	
243	V912 Cyg	19 35 52.7	+31 31 52	G	2655-1873	
244	FR Vul	19 36 24.8	+26 45 57	T	2146-4509	HD 338614
245	FT Vul	19 36 23.5	+27 09 35	A	2146-1843	IRAS 19343+2702
246	V916 Cyg	19 37 03.7	+31 10 34	A		
247	V917 Cyg	19 37 34.6	+29 56 04	A	2150-0477	IRAS 19355+2949
248	V921 Cyg	19 37 58.7	+33 39 28	A		
249	V923 Cyg	19 38 10.8	+31 34 57	A	2655-0133	
250	FV Vul	19 38 40.8	+27 35 58	A	2146-0243	
251	V928 Cyg	19 38 55.3	+29 29 59	A		
252	V929 Cyg	19 38 49.5	+32 24 09	A		IRAS 19368+3217
253	V931 Cyg	19 39 14.1	+29 46 09	A		
254	V937 Cyg	19 39 30.7	+33 01 38	A	2660-3389	
255	V938 Cyg	19 39 42.3	+32 12 14	G	2660-1920	IRAS 19377+3205
256	V952 Cyg	19 42 50.3	+33 22 22	A		
257	V960 Cyg	19 43 52.4	+33 55 00	A		
258	V961 Cyg	19 43 58.3	+32 52 14	G	2660-3699	
259	V962 Cyg	19 44 00.0	+33 16 39	A		
260	V963 Cyg	19 44 04.9	+31 41 50	G	2656-1995	
261	V964 Cyg	19 44 01.8	+33 26 24	A		
262	V977 Cyg	19 45 47.1	+31 13 22	T	2656-1815	
263	V999 Cyg	19 49 53.3	+31 07 03	G	2669-4992	IRAS 19479+3059
264	V1001 Cyg	19 50 15.1	+29 29 39	G	2152-0227	
265	V1008 Cyg	19 50 48.3	+31 56 26	A	2673-2954	
266	HH Vul	19 52 10.1	+29 14 09	T	2152-2750	HD 332856
267	HI Vul	19 53 47.6	+28 44 17	G	2152-6136	
268	V1011 Cyg	19 55 14.9	+34 12 30	G	2677-1203	
269	V1013 Cyg	19 56 58.2	+33 46 33	G	2677-1585	
270	V1018 Cyg	19 57 59.9	+33 20 28	T	2674-3450	HD 226829
271	V1019 Cyg	19 58 37.7	+30 23 19	G	2670-1841	
272	V1021 Cyg	19 59 21.0	+33 11 01	A	2674-4054	
273	V1023 Cyg	19 59 53.2	+30 24 21	A	2670-2251	
274	V1027 Cyg	20 02 27.4	+30 04 26	G	2670-4475	
	PW Lyr	19 19 38.3	+29 06 44	A		AN 92.1906
	AV Cyg	19 20 41.1	+29 30 21	G	2136-2142	
	BF Cyg	19 23 53.5	+29 40 29	T	2137-0234	[NM51] 8
	DX Cyg	19 16 04.5	+29 22 56	A		
	EI Cyg	19 36 58.5	+32 11 58	A		IRAS 19350+3205
	EM Cyg	19 38 40.1	+30 30 28	G	2655-3329	
	EN Cyg	19 40 09.5	+29 16 23	G	2150-4264	

Table 1: Positions and identifications – I (cont'd.)

HBV	GCVS	RA (2000)	Dec	s	GSC	Remarks
	V941 Cyg	19 41 04.4	+30 50 09	G	2656-0904	AN 372.1928
	V463 Cyg	19 42 14.0	+31 18 02	G	2656-3251	
	V541 Cyg	19 42 29.5	+31 19 40	G	2656-3703	
	V805 Cyg	19 43 15.5	+33 33 42	A		AN 978.1935
	V370 Cyg	19 43 38.1	+32 47 35	G	2660-2075	
	EP Cyg	19 45 03.7	+31 19 51	G	2656-1255	
	V974 Cyg	19 45 18.6	+32 31 53	G	2660-3690	AN 425.1934
	V976 Cyg	19 45 28.2	+31 28 30	G	2656-1369	IRAS 19435+3121
	EQ Cyg	19 45 29.0	+31 26 54	A		
	SY Cyg	19 46 34.3	+32 42 18	T	2660-0978	
	IV Cyg	19 50 12.3	+34 19 27	A		
	IY Cyg	19 55 33.8	+31 45 50	A	2669-1116	
	GI Cyg	19 59 33.7	+33 44 47	A	2674-5704	

Table 2: Positions and identifications – II

HBV	GCVS	RA (2000)	Dec	s	GSC	Remarks
291	OV Lyr	19 16 13.3	+29 20 34	G	2136-1930	IRC +30365
292	OX Lyr	19 16 42.6	+29 07 10	A	2136-1441	
293	OY Lyr	19 17 01.9	+29 00 25	A	2136-1363	
294	OZ Lyr	19 17 03.2	+28 51 03	A		
295	QQ Lyr	19 21 02.0	+31 44 00	A		
296	QR Lyr	19 21 26.0	+32 59 27	G	2658-0965	
297	QS Lyr	19 22 07.4	+31 00 20	A		IRAS 19201+3054
298	V841 Cyg	19 22 18.4	+28 41 08	G	2136-0494	
299	V843 Cyg	19 22 57.1	+29 41 08	A		
300	V847 Cyg	19 24 28.6	+28 30 50	G	2137-0375	
301	V849 Cyg	19 24 56.0	+27 51 53	A	2133-0391	IRAS 19229+2745
302	V853 Cyg	19 26 37.7	+32 13 21	A		
303	V856 Cyg	19 26 53.7	+29 10 26	A		
304	V857 Cyg	19 26 53.9	+32 51 04	A		
305	V859 Cyg	19 27 12.7	+28 56 50	G	2137-0744	
306	V863 Cyg	19 27 28.9	+29 11 23	A		
307	V872 Cyg	19 29 20.7	+30 29 50	G	2654-0629	IRAS 19273+3023
308	V869 Cyg	19 29 11.8	+31 11 17	A		
309	V871 Cyg	19 29 13.2	+33 06 02	A	2658-0815	
310	V873 Cyg	19 29 20.8	+31 46 52	A		
311	FM Vul	19 31 47.0	+27 08 05	G	2133-1304	
312	V883 Cyg	19 32 05.7	+28 48 24	A		
313	V891 Cyg	19 33 38.4	+29 16 22	T	2150-3272	BD+28 3385
314	V895 Cyg	19 33 46.9	+32 43 06	G	2659-2047	BD+32 3477
315	V897 Cyg	19 33 59.5	+29 47 42	G	2150-3096	
316	FP Vul	19 35 19.9	+27 24 55	A		
317	V910 Cyg	19 35 53.3	+28 12 40	A		
318	V909 Cyg	19 35 53.2	+28 16 44	T	2150-2128	
319	V919 Cyg	19 37 55.4	+28 34 11	G	2150-4075	
320	V918 Cyg	19 37 42.0	+30 13 11	G	2655-1745	
321	V934 Cyg	19 39 29.3	+30 16 35	A		
322	V943 Cyg	19 41 23.4	+28 34 57	A	2151-3541	see note
323	V945 Cyg	19 41 51.3	+31 08 52	A		IRAS 19399+3101
324	V954 Cyg	19 43 09.1	+34 10 37	A		
325	V957 Cyg	19 43 45.6	+29 31 41	G	2151-4762	
326	V959 Cyg	19 43 54.0	+30 19 34	G	2656-3828	
327	GO Vul	19 46 35.4	+27 53 59	A	2147-0989	
328	GP Vul	19 46 56.9	+28 51 08	T	2151-2818	
329	GR Vul	19 48 06.0	+27 37 00	A		

Table 2: Positions and identifications – II (cont'd)

HBV	GCVS	RA (2000)	Dec	s	GSC	Remarks
330	V1010 Cyg	19 53 45.9	+29 34 26	A		
	PP Lyr	19 17 43.9	+28 07 30	A		AN 89.1906
	DV Cyg	19 21 44.7	+29 45 30	A	2136-0808	
	V687 Cyg	19 26 11.6	+29 59 12	T	2137-0689	
	DZ Cyg	19 27 09.0	+31 57 37	A		
	FM Cyg	19 30 07.4	+29 55 16	A	2137-0461	
	BG Cyg	19 38 57.7	+28 30 47	T	2150-4887	
	HW Cyg	19 40 18.1	+32 46 02	G	2660-2881	
	EU Cyg	19 51 17.3	+32 40 32	A		
	GY Vul	19 51 55.3	+29 03 00	G	2152-3124	see note
	IX Cyg	19 53 14.0	+32 10 44	A	2673-0624	
	AB Vul	19 53 47.0	+28 56 56	G	2152-4146	
	EW Cyg	19 53 52.4	+31 32 04	G	2669-3433	
	GG Cyg	19 54 18.7	+32 40 46	G	2673-3269	
	EX Cyg	19 54 23.4	+31 13 38	A	2669-3471	
	EY Cyg	19 54 36.7	+32 21 55	A		
	V466 Cyg	19 54 33.5	+33 00 05	T	2673-2051	
	EZ Cyg	19 57 49.0	+30 15 57	G	2670-4043	
	GH Cyg	19 59 10.8	+29 27 03	T	2153-2761	
	V1022 Cyg	19 59 47.0	+30 06 05	G	2670-4680	see note
	V483 Cyg	20 00 45.9	+31 50 03	G	2670-0004	

Notes to Table 2:

- HBV 322 = V943 Cyg IRAS 19393+2827; mislabelled on Wachmann chart, variable is nearby star to east.
 GY Vul AN 979.1935 = IRAS 19498+2855.
 V1022 Cyg AN 981.1935 = IRAS 19577+2957.

Table 3: Positions and identifications – III

HBV	GCVS	RA (2000)	Dec	s	GSC	Remarks
336	PR Lyr	19 18 13.6	+26 43 03	A		IRAS 19162+2637
337	PS Lyr	19 18 22.7	+27 17 01	G	2132-2021	HD 338070
338	PV Lyr	19 19 02.6	+31 36 37	G	2653-2016	
339	V840 Cyg	19 22 07.0	+28 40 06	T	2136-0341	see note
340	QT Lyr	19 22 20.5	+30 39 02	A	2654-2705	
341	V842 Cyg	19 22 57.9	+27 45 59	A	2132-3422	
342	V855 Cyg	19 26 42.8	+31 46 53	A		
343	V858 Cyg	19 27 08.8	+29 50 19	A		IRAS 19251+2944
344	V874 Cyg	19 29 59.8	+28 21 55	A	2137-2491	
345	V875 Cyg	19 30 25.8	+30 14 29	S		see note
346	V876 Cyg	19 30 46.4	+30 53 48	G	2655-1737	
347	V877 Cyg	19 30 51.7	+32 12 09	G	2659-2240	
348	V879 Cyg	19 31 06.5	+32 04 39	G	2659-2171	IRAS 19291+3158
349	V885 Cyg	19 32 49.9	+30 01 17	T	2655-1877	BD+29 3637
350	V889 Cyg	19 33 32.1	+28 29 00	T	2150-4751	
351	V890 Cyg	19 33 27.3	+32 10 24	G	2659-0935	
352	FN Vul	19 33 45.7	+27 11 27	A	2146-1241	
353	V898 Cyg	19 34 00.1	+30 52 57	S		see note
354	V902 Cyg	19 34 35.5	+29 06 28	A		
355	V907 Cyg	19 35 30.4	+29 45 46	A		
356	FS Vul	19 36 23.7	+27 10 09	S		
357	V914 Cyg	19 36 38.4	+31 39 10	A		
358	V930 Cyg	19 39 06.8	+30 28 51	G	2656-4142	
359	V933 Cyg	19 39 16.7	+29 50 11	G	2150-1601	IRAS 19373+2943
360	FW Vul	19 40 51.2	+27 13 02	G	2147-1068	
361	V947 Cyg	19 42 14.0	+31 35 38	A		

Table 3: Positions and identifications – III (cont'd)

HBV	GCVS	RA (2000)	Dec	s	GSC	Remarks
362	V948 Cyg	19 42 20.7	+30 39 56	A		
363	GI Vul	19 42 37.6	+26 38 28	G	2147-2646	
364	V950 Cyg	19 42 37.8	+30 04 00	S		see note
365	V965 Cyg	19 44 09.3	+31 42 37	A		
366	V968 Cyg	19 44 34.0	+28 49 36	G	2151-2602	
367	V969 Cyg	19 44 23.4	+33 24 48	G	2660-2171	IRAS 19424+3317
368	V970 Cyg	19 44 56.4	+28 15 22	A		
369	GN Vul	19 46 24.6	+27 23 25	G	2147-1110	
370	V989 Cyg	19 48 38.5	+30 02 42	A	2669-4954	
371	GU Vul	19 48 57.1	+26 23 23	G	2148-0479	[MS98] 16-12052
372	V990 Cyg	19 49 09.4	+30 09 51	A	2669-0225	IRAS 19471+3002
373	V998 Cyg	19 49 44.4	+30 47 39	G	2669-2409	
374	V1004 Cyg	19 50 29.5	+33 08 32	G	2673-0578	
375	HP Vul	19 59 01.0	+26 42 14	A	2149-0441	
	NU Lyr	19 14 34.1	+29 12 38	G	2135-0920	IRAS 19125+2907
	AK Lyr	19 15 19.5	+27 01 00	A		
	EO Lyr	19 15 05.8	+32 32 12	G	2657-1485	
	NV Lyr	19 15 02.7	+33 50 48	G	2661-2019	
	BV Lyr	19 17 40.5	+32 58 07	G	2657-1530	
	EP Lyr	19 18 19.6	+27 51 03	T	2132-3812	
	AL Lyr	19 19 29.6	+27 33 45	G	2132-3884	
	IO Vul	19 21 01.2	+27 01 03	A	2132-1281	AN 95.1906
	V1254 Cyg	19 22 03.4	+29 19 50	A	2136-2802	AN 96.1906
	V1110 Cyg	19 22 08.8	+30 07 34	A		see note
	DW Cyg	19 23 16.8	+28 11 51	A		
	IQ Vul	19 23 29.8	+26 58 37	A		AN 101.1906
	V1114 Cyg	19 24 36.4	+28 26 11			see note
	XY Vul	19 25 59.3	+26 24 35	A		
	XZ Vul	19 29 24.3	+27 26 05	G	2133-1449	
	V401 Cyg	19 29 20.3	+30 24 29	T	2654-2502	
	IU Vul	19 29 41.2	+27 05 29	G	2133-1327	AN 106.1906
	EE Cyg	19 30 32.4	+28 32 19	A		
	V1126 Cyg	19 32 38.4	+29 35 26	A		see note
	HL Cyg	19 33 16.0	+28 11 34	A		
	V1965 Cyg	19 34 10.1	+28 04 08			see note
	TY Cyg	19 33 51.9	+28 19 44	A		IRAS 19318+2813
	FQ Cyg	19 33 48.4	+30 54 55	A		IRAS 19318+3048
	FR Cyg	19 35 01.3	+28 13 41	A		
	EH Cyg	19 36 48.8	+28 07 43	G	2150-1292	
	AG Vul	19 40 28.1	+27 36 00	A		IRAS 19384+2728
	HY Cyg	19 40 53.8	+29 02 51	A	2151-4800	
	FV Cyg	19 43 03.2	+28 42 14	A	2151-3601	
	FW Cyg	19 43 20.8	+31 30 14	G	2656-3323	IRAS 19413+3122
	NSV 12351	19 43 46.3	+28 07 44	S		see note
	YZ Vul	19 44 02.1	+27 46 06	A		IRAS 19420+2738
	AH Vul	19 45 19.5	+27 35 34	A	2147-1821	IRAS 19433+2728
	AI Vul	19 46 47.5	+28 08 34	G	2151-5679	
	ZZ Vul	19 47 49.9	+29 09 15	A	2151-1388	IRAS 19458+2901
	AA Vul	19 50 26.1	+28 11 21	S		see note
	EV Cyg	19 53 00.0	+29 38 46	G	2152-0596	IRAS 19509+2930
	V468 Cyg	19 55 38.1	+32 45 34	G	2673-4122	[PCC93] 400
	KL Cyg	19 57 53.5	+33 09 36	A	2674-4901	
	X Vul	19 57 28.6	+26 33 23	H	2149-0741	
	DG Vul	19 58 40.2	+27 41 01	G	2149-1732	

Notes to Table 3:

HBV 339 = V840 Cyg	BD+28 3304 = IRAS 19201+2834.
HBV 345 = V875 Cyg	not in USNO-A2.0; verified on POSS-I prints.
HBV 353 = V898 Cyg	verified using POSS-II J/N films; is the northern star of a close ($\sim 2''$) pair.
HBV 364 = V950 Cyg	IRAS 19406+2956, close double.
V1110 Cyg	AN 97.1906 = IRAS 19202+3001.
V1114 Cyg	AN 103.1906; position from Downes <i>et al.</i> (1997) verified on DSS and adopted position from Bruch <i>et al.</i> (1987) slightly in error.
V1126 Cyg	AN 111.1906 = IRAS 19306+2928.
V1965 Cyg	AN 112.1906; position from Alksnis <i>et al.</i> (1990) verified on DSS and adopted; variable is southeastern star of close pair.
NSV 12351	AN 215.1935, constant.
YZ Vul	SV* R 75.
AA Vul	northern star of merged pair; verified on POSS-I prints.

Table 4: Positions and identifications – IV

HBV	GCVS	RA (2000)	Dec	s	GSC	Remarks
407	V371 Lyr	19 16 59.1	+26 58 03	G	2132-1424	
408	V377 Lyr	19 20 51.2	+33 32 40	G	2657-0676	
409	V378 Lyr	19 21 52.5	+31 21 31	G	2654-2377	see note
410	V379 Lyr	19 22 28.6	+31 18 24	G	2654-1515	
411	IR Vul	19 23 38.2	+26 39 37	G	2132-0569	
413	V1117 Cyg	19 25 55.6	+29 11 49	G	2137-2301	
414	IS Vul	19 27 45.7	+26 19 51	G	2133-2610	
415	IV Vul	19 30 29.2	+27 45 30	G	2133-1361	
416	V1124 Cyg	19 31 39.8	+30 09 34	A		
417	V1125 Cyg	19 31 48.4	+31 52 03	T	2655-2300	
418	V1128 Cyg	19 33 28.6	+30 29 56	A		see note
419	IW Vul	19 35 33.5	+26 38 58	G	2146-2566	
420	V1135 Cyg	19 36 29.8	+29 53 54	G	2150-0025	
421	V1136 Cyg	19 37 50.0	+28 50 36	G	2150-3565	
422	IX Vul	19 38 56.0	+26 24 51	G	2146-4148	
423	IY Vul	19 40 10.6	+26 01 51	G	2142-1402	
424	V1142 Cyg	19 39 58.0	+33 55 30	G	2664-0032	
425	V1145 Cyg	19 42 27.4	+28 14 29	G	2151-4731	
426	V1147 Cyg	19 45 52.5	+32 15 40	G	2660-2608	
427	IZ Vul	19 47 16.5	+27 19 57	G	2147-1126	see note
428	KK Vul	19 47 21.1	+28 28 42	G	2151-1105	not IRAS 19453+2821
429	V1151 Cyg	19 47 51.1	+29 51 35	G	2151-0598	
430	V1156 Cyg	19 50 37.1	+29 21 17	G	2152-2405	
431	V1157 Cyg	19 51 09.8	+31 20 13	G	2669-2695	
432	V1158 Cyg	19 51 30.7	+31 06 35	A		
433	KN Vul	19 55 34.6	+27 42 21	G	2148-3403	
434	V1171 Cyg	19 57 57.4	+33 53 02	G	2678-1498	** Couteau 1805
435	V1172 Cyg	19 58 12.5	+33 12 30	G	2674-3816	
	EL Lyr	19 13 20.8	+32 03 18	G	2657-1946	
	EM Lyr	19 14 06.3	+29 04 55	A		
	AI Lyr	19 14 35.6	+27 49 46	A		SV* R 60
	NSV 11870	19 16 35.8	+26 53 43	G	2132-1974	CSV 4592, constant
	RV Lyr	19 16 18.0	+32 25 15	A		
	CSV 4593	19 25 19.5	+32 32 56	G	2658-1433	constant
	MU Lyr	19 16 31.1	+30 39 20	A		
	NSV 11882	19 17 33.3	+30 08 00	G	2653-2297	CSV 4600, constant
	FO Lyr	19 18 02.6	+27 01 14	A		
	V458 Lyr	19 19 28.3	+27 15 13	S		CSV 4616, see note
	AM Lyr	19 19 26.4	+32 25 48	A		IRAS 19175+3220

Table 4: Positions and identifications – IV (cont'd)

HBV	GCVS	RA (2000)	Dec	s	GSC	Remarks
	BW Lyr	19 20 35.0	+26 25 52	G	2132-2244	
	V1105 Cyg	19 20 43.1	+29 32 32	S		CSV 4628, see note
	BX Lyr	19 20 34.0	+32 43 55	A		IRAS 19186+3237
	AN Lyr	19 21 50.1	+32 00 32	A	2658-1662	
	ES Lyr	19 22 16.7	+33 24 38	G	2658-0571	
	IP Vul	19 22 53.2	+26 58 00	A		CSV 4650
	BY Lyr	19 23 58.7	+30 22 01	A		
	BZ Lyr	19 23 57.0	+31 01 09	A		
	FH Cyg	19 24 10.9	+29 54 44	G	2137-0377	IRAS 19222+2948
	FI Cyg	19 25 38.3	+29 26 50	A		IRAS 19236+2920
	NSV 12024	19 26 06.4	+27 41 28	G	2133-0527	CSV 4667, constant
	DY Cyg	19 26 39.2	+28 32 38	A		
	FK Cyg	19 26 56.7	+29 21 42	G	2137-1602	
	FL Cyg	19 26 54.2	+34 07 11	G	2662-0162	
	IT Vul	19 28 35.8	+27 07 04	A		CSV 4687
	HH Cyg	19 28 39.3	+32 53 18	A		
	NSV 12096	19 30 04.6	+30 05 36	A	2655-1064	CSV 4699
	HI Cyg	19 30 20.6	+30 54 08	S		see note
	FN Cyg	19 30 45.9	+30 06 17	A		
	FO Cyg	19 31 10.9	+30 58 46	A	2655-2459	
	HN Cyg	19 33 39.9	+28 56 14	A		see note
	EF Cyg	19 33 54.3	+30 08 26	G	2655-0668	IRAS 19319+3001
	HR Cyg	19 34 26.8	+30 39 42	A		
	EG Cyg	19 35 01.1	+30 07 33	A	2655-1532	IRAS 19330+3001
	AR Vul	19 35 43.7	+26 33 35	A	2146-3358	IRAS 19336+2626
	AF Vul	19 35 48.1	+27 39 36	A		
	NSV 12197	19 35 51.1	+30 09 01	G	2655-0770	CSV 4745, constant
	FS Cyg	19 36 15.1	+34 23 50	A		
	FT Cyg	19 36 23.6	+32 41 56	G	2659-1109	
	V368 Cyg	19 37 20.3	+29 05 58	A		constant
	NSV 12228	19 37 39.9	+30 45 28	G	2655-1875	see note
	EK Cyg	19 37 49.0	+31 50 23	A	2655-0115	
	EL Cyg	19 38 06.0	+28 36 23	A		see note
	V1485 Cyg	19 38 08.1	+29 40 43	A		see note
	NSV 12250	19 38 28.2	+30 55 55	G	2655-3043	CSV 4763, constant
	HT Cyg	19 38 39.0	+31 44 13	A		IRAS 19367+3137
	HV Cyg	19 40 15.2	+31 46 17	A	2656-2991	IRAS 19383+3139
	HX Cyg	19 40 29.7	+34 04 02	G	2664-0225	IRAS 19386+3356
	II Cyg	19 41 00.5	+30 54 36	G	2656-4951	IRAS 19390+3047
	FU Cyg	19 41 16.1	+31 56 30	A		
	EO Cyg	19 41 41.0	+32 49 04	G	2660-3135	IRAS 19397+3241
	IK Cyg	19 42 40.2	+30 07 57	G	2656-3924	IRAS 19406+3000
	IO Cyg	19 44 34.5	+32 29 09	A	2660-3916	
	SU Cyg	19 44 48.7	+29 15 53	H	2151-5896	
	FY Cyg	19 45 10.7	+32 03 10	G	2660-3350	IRAS 19432+3155
	S Vul	19 48 23.8	+27 17 10	H	2147-0133	
	IT Cyg	19 48 13.2	+33 40 06	G	2673-0013	
	ER Cyg	19 49 12.4	+30 24 43	G	2669-3670	
	V1508 Cyg	19 49 57.5	+31 51 16	G	2669-0180	CSV 4838
	ES Cyg	19 50 05.5	+31 32 02	G	2669-2939	IRAS 19481+3124
	IU Cyg	19 50 08.2	+34 09 57	A		IRAS 19482+3402
	χ Cyg	19 50 33.9	+32 54 51	H	2673-4643	
	SV Vul	19 51 30.9	+27 27 37	H	2148-4057	
	ET Cyg	19 51 19.5	+31 18 13	A		IRAS 19493+3110

Table 4: Positions and identifications – IV (cont'd)

HBV	GCVS	RA (2000)	Dec	s	GSC	Remarks
	V449 Cyg	19 53 21.0	+33 57 01	H	2677-0291	
	V467 Cyg	19 55 37.5	+32 30 01	A	2673-4489	IRAS 19536+3221
	EQ Vul	19 58 23.2	+28 01 09	G	2149-1476	HD 333188
	V482 Cyg	19 59 42.6	+33 59 28	G	2678-1186	IRAS 19577+3351
	V717 Cyg	20 01 05.0	+30 49 52	G	2670-3884	
	NSV 12703	20 01 33.6	+28 14 09	G	2153-1109	CSV 4980, see note
	V485 Cyg	20 01 15.1	+33 55 43	H	2678-0393	AN 71.1939
	V1583 Cyg	20 02 31.8	+30 46 40	G	2670-0147	CSV 4995
	V718 Cyg	20 03 05.1	+30 20 13	G	2670-3287	
	V719 Cyg	20 03 38.5	+30 28 09	G	2670-4596	
	V720 Cyg	20 04 06.0	+29 57 38	G	2153-0502	IRAS 20020+2949
	CD Cyg	20 04 26.6	+34 06 44	H	2678-0210	
	V550 Cyg	20 05 04.9	+32 21 24	A		southeastern of pair

Notes to Table 4:

- HBV 409 = V378 Lyr near to but not same as CGCS 4248 = IRAS 19199+3114.
 HBV 418 = V1128 Cyg IRAS 19315+3023; mislabelled on Wachmann chart: the variable is the star immediately west.
 HBV 427 = IZ Vul verified from description in Walker (1963) and Humason (1938).
 V458 Lyr IRAS 19174+2709; ID uncertain, but very close to IRAS position.
 V1105 Cyg IRAS 19187+2926, verified on POSS-II J/N films.
 HI Cyg verified on POSS-II J/N films.
 HN Cyg red variable, not dwarf nova.
 NSV 12228 CSV 101871 = IRAS 19356+3038; evidently not an eclipsing variable as per Wachmann.
 EL Cyg IRAS 19361+2829, close to edge of IRAS error ellipse.
 V1485 Cyg CSV 4759 = NSV 12238, double star.
 NSV 12703 1RXS J200134.0+281411; USNO-A2.0 and GSC positions differ by about 3''5 suggesting, together with the x-ray detection, that this is an active late-type dwarf star with modest proper motion.

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