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**IDENTIFICATIONS FOR WACHMANN'S VARIABLES IN SA 98**

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This report contains accurate coordinates and identifications for some 160 new and known variables studied by Wachmann (1964a, 1964b, 1966, 1968) in a broad region near the low-galactic-latitude Selected Area 98 along the celestial Equator. The brightest stars naturally appear in traditional astrometric catalogues, but the majority of the fainter ones have not been hitherto identified with accurate coordinates.

The methods used to obtain the coordinates were the same as those used for a group of variables in the Cygnus starcloud also observed by Wachmann (Skiff 1999). Since the present list lacks extremely faint stars, no heroic efforts were needed to identify them.

The stars are shown in two tables. The first gives results from the first three brief papers of the series, while the last gives a longer list of known variables that Wachmann summarized in the final paper. In Table 1, the first column shows the HBV number assigned to new variables; the second shows the GCVS name. The positions are mostly from the GSC v1.1 and USNO-A2.0 (Monet *et al.* 1998) given to 1'' precision, entirely adequate for these mostly bright stars. I have adopted high-accuracy coordinates from the 'FASTT' transit circle for several of the variables published by Henden & Stone (1998). For additional bright stars, Hipparcos (Perryman *et al.* 1997) or ACT (Urban *et al.* 1998b) positions were readily available. The source of the position is coded in column 's' as follows: A = USNO-A2.0, F = FASTT, G = GSC v1.1, H = Hipparcos, T = ACT. The Remarks column shows identifications with other lists. Longer comments are given in the Notes at the end of the 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 name (e.g. CSV 841) for known but undesignated variables, these are also listed in the Remarks. Table 2 is arranged similarly, but without the HBV column.

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.

Table 1: Positions and identifications – I

HBV	GCVS	RA (2000)	Dec	s	GSC	Remarks
376	V393 Mon	6 35 10.1	-0 49 11	A		
377	V394 Mon	6 36 49.1	-3 52 19	G	4806-3060	
378	V395 Mon	6 37 05.5	+2 21 13	G	0150-1888	
379	V396 Mon	6 38 36.5	+3 36 18	G	0151-0244	
380	V397 Mon	6 38 30.7	-4 21 50	G	4807-1059	LS VI -04°4
381	V404 Mon	6 39 29.0	-0 44 32	G	4799-2035	
382	V442 Mon	6 42 19.5	+3 48 23	G	0155-1743	HD 262416
383	V445 Mon	6 43 08.3	-1 46 44	G	4799-1408	HD 292242
384	V448 Mon	6 47 45.0	+1 22 17	G	0148-2301	HD 289110
385	V450 Mon	6 49 19.3	+0 19 50	G	0148-2346	
386	V451 Mon	6 49 38.6	+1 16 03	G	0148-0058	middle of three
387	V452 Mon	6 49 55.9	-4 10 20	G	4808-0714	
388	V453 Mon	6 50 39.0	-2 22 07	G	4804-1104	
389	V454 Mon	6 53 56.1	+1 35 09	G	0149-0307	LS VI +01°17
390	V455 Mon	6 55 00.9	+0 07 19	A		
391	V456 Mon	6 56 04.7	+1 22 21	G	0149-2430	
392	V457 Mon	6 56 55.3	-1 54 51	G	4805-3495	CCDM J06569-0155A
393	V458 Mon	6 57 49.3	+2 11 53	G	0153-1004	LF 11 57
394	V459 Mon	6 58 20.0	+1 19 00	A		
395	V460 Mon	7 00 16.6	+2 02 12	G	0166-0353	HD 289471
396	V461 Mon	7 03 10.6	+2 33 17	A		
397	V462 Mon	7 04 30.2	+3 23 39	A		
398	V463 Mon	7 05 32.7	+2 56 08	G	0166-0536	
399	V464 Mon	7 05 43.7	-3 09 32	G	4818-1667	
400	AN CMi	7 09 09.2	+1 42 11	G	0163-2532	
401	AO CMi	7 10 04.3	+1 58 29	G	0167-1770	
402	V484 Mon	6 31 05.4	-2 08 49	A	4802-1327	
	CU Mon	6 32 46.8	+0 02 35	A	0146-1103	
	CV Mon	6 37 04.8	+3 03 50	H	0150-0121	
	V446 Mon	6 43 17.4	+1 09 39	A		CSV 841
403	V508 Mon	6 47 09.4	+3 58 02	G	0156-0044	
	TX Mon	6 50 52.2	-1 25 46	G	4800-1874	
	SZ Mon	6 51 27.8	-1 22 16	C	4800-1700	see note
	XX Mon	6 52 12.1	-2 48 25	G	4804-1167	
	EK Mon	6 52 46.1	-2 27 30	G	4805-0467	
	TY Mon	6 56 39.7	+0 11 23	G	0149-3097	
	TZ Mon	6 58 00.9	-0 22 35	G	4801-2693	
	AA Mon	6 57 23.7	-3 50 36	G	4809-0644	
404	V465 Mon	7 08 09.3	-0 03 57	F	4815-2284	see note
	V376 Mon	6 48 48.0	-3 36 17	A	4804-2990	CSV 879
	TW Mon	6 50 32.3	+0 00 24	G	0148-0483	
405	V518 Mon	6 51 09.0	+0 37 28	A		
	HL Mon	7 02 52.0	-1 44 26	A		
	UV Mon	7 02 59.9	+0 37 18	G	0162-3042	
	UW Mon	7 03 39.7	-0 11 31	F	4814-1567	FASTT 268
406	V535 Mon	7 10 48.7	+1 16 56	G	0163-1482	HD 289713

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

HBV	GCVS	RA (2000)	Dec	s	GSC	Remarks
437	V485 Mon	6 31 45.3	+1 20 18	G	0146-0767	IRC +00114
438	V492 Mon	6 34 29.9	+0 12 14	G	0146-0924	HD 291794, see note
439	V494 Mon	6 36 44.2	-2 51 44	G	4802-1534	
440	V495 Mon	6 37 03.3	-2 49 27	G	4802-1622	
441	V496 Mon	6 37 44.7	+3 18 02	G	0151-1066	
442	V498 Mon	6 39 44.2	+1 57 45	G	0151-2262	see note
443	V499 Mon	6 40 05.1	+3 41 07	G	0151-0101	
444	V501 Mon	6 40 41.7	-1 06 41	G	4799-1943	
445	V502 Mon	6 43 26.1	-2 29 49	G	4803-0463	
446	V504 Mon	6 44 43.9	-3 57 09	G	4807-0671	
447	V505 Mon	6 45 50.0	+2 29 57	H	0152-0591	
448	V506 Mon	6 46 36.5	-3 50 12	G	4808-2439	
449	V507 Mon	6 46 58.8	+1 19 34	G	0148-0804	[HLL97] 328
450	V509 Mon	6 47 10.7	-1 02 15	A		
451	V510 Mon	6 47 26.9	+2 31 01	G	0152-0220	
452	V511 Mon	6 47 34.5	+1 55 13	G	0152-1309	IRAS 06449+0158
453	V513 Mon	6 47 45.9	+1 06 40	A		
454	V377 Mon	6 49 02.0	-1 39 37	G	4800-2535	IRAS 06465-0136
455	V514 Mon	6 49 18.5	-0 03 33	G	4800-0856	
456	V515 Mon	6 49 21.1	-2 06 49	G	4804-2031	
457	V517 Mon	6 50 52.4	-0 04 24	G	4800-0457	
458	V516 Mon	6 50 41.5	+1 51 54	G	0148-0358	IRAS 06480+0155
459	V519 Mon	6 51 28.8	-0 01 58	G	4800-0313	
460	V520 Mon	6 55 12.4	-1 28 54	G	4801-3720	
461	V521 Mon	6 55 53.5	-0 14 25	G	4801-2799	
462	V522 Mon	6 56 40.8	-2 43 56	G	4805-2172	
463	V524 Mon	6 59 01.2	+2 12 51	G	0153-1410	
464	V525 Mon	6 59 20.5	+1 20 42	G	0149-1508	
465	V526 Mon	7 01 53.6	-1 07 53	G	4814-3228	
466	V527 Mon	7 02 05.6	-1 54 24	G	4818-4231	
467	V529 Mon	7 02 59.4	+1 09 54	F	0162-1092	see note
468	V528 Mon	7 02 36.3	+1 59 58	G	0166-1467	
469	V530 Mon	7 03 15.8	+3 14 54	G	0166-2648	
470	V531 Mon	7 03 13.8	+1 58 15	G	0166-1856	IRAS 07006+0202
471	V532 Mon	7 04 30.6	-0 21 06	F	4814-1849	FASTT 269
472	V533 Mon	7 06 38.7	+2 00 28	G	0166-1773	
473	V534 Mon	7 07 12.7	+1 52 38	A		IRAS 07046+0157
474	V536 Mon	7 13 55.5	-2 54 29	G	4819-0262	

Notes to Table 1:

SZ Mon the infrared source IRAS 06489-0118 probably applies to the fainter companion a few arcsec east of the variable.

HBV 404 = V465 Mon HD 293336 = FASTT 274.

HBV 438 = V492 Mon IRAS 06319+0014 = IRC +00116.

HBV 442 = V498 Mon HD 288904 = CSI+02-06371.

HBV 467 = V529 Mon IRAS 07004+0114 = FASTT 166.

Table 2: Positions and identifications – II

GCVS	RA (2000)	Dec	s	GSC	Remarks
CW Mon	6 36 54.5	+0 02 18	A		see note
SY Mon	6 37 31.3	-1 23 44	G	4799-0384	
CY Mon	6 38 31.8	-1 36 39	G	4799-0105	IRAS 06359-0133
CD Mon	6 40 30.4	-1 04 45	G	4799-1815	IRAS 06379-0101
GT Mon	6 42 44.6	-1 43 32	G	4799-1482	IRAS 06402-0140
BT Mon	6 43 47.2	-2 01 13	A		
GU Mon	6 44 46.8	+0 13 17	G	0147-1822	
DT Mon	6 45 20.3	-1 42 47	A		IRAS 06428-0139
DD Mon	6 45 57.8	-0 17 32	G	4800-0372	
V560 Mon	6 46 28.8	-0 15 36	G	4800-0738	CSV 855
CE Mon	6 46 57.4	+3 03 26	A	0152-2294	
FY Mon	6 47 08.7	+3 15 34	G	0152-2179	
MR Mon	6 47 11.5	+1 31 46	H	0148-1053	
DF Mon	6 47 38.9	+0 41 28	G	0148-1664	constant
V449 Mon	6 47 56.4	+2 47 56	A		CSV 869
DW Mon	6 47 51.3	-2 41 19	G	4804-2214	
DX Mon	6 47 57.5	-2 07 25	G	4804-1809	see note
DG Mon	6 48 05.1	+0 32 17	G	0148-1457	IRAS 06455+0035
PZ Mon	6 48 21.1	+1 13 08	H	0148-0872	
CSV 869	6 48 33.5	+1 00 16	A		constant
CF Mon	6 49 22.0	-0 23 47	A		
DI Mon	6 49 36.3	+3 10 19	T	0152-2191	see note
GV Mon	6 49 41.6	+0 28 11	A		
BU Mon	6 50 33.6	+3 44 16	G	0152-1957	IRAS 06479+0347
V378 Mon	6 50 36.2	-1 29 01	A		CSV 888, see note
DK Mon	6 50 39.2	+1 43 49	G	0148-0382	
V379 Mon	6 51 27.1	-2 45 48	A		
CI Mon	6 52 19.9	+1 44 49	A		IRAS 06497+0148
V380 Mon	6 52 09.2	-1 37 23	G	4800-2481	
EG Mon	6 52 06.2	-4 01 53	G	4808-0814	IRAS 06496-0358
XY Mon	6 52 20.4	-3 28 41	G	4804-0066	IRAS 06498-0324
MS Mon	6 52 58.6	-0 06 11	A		
XZ Mon	6 53 36.4	-4 13 21	G	4809-2633	
DM Mon	6 53 51.9	+1 53 43	G	0153-0327	
QR Mon	6 54 06.3	+0 47 36	T	0149-0625	
AU Mon	6 54 54.7	-1 22 33	H	4801-1012	
HI Mon	6 55 49.1	-4 02 36	T	4809-0245	IRAS 06533-0358
MT Mon	6 55 58.3	-3 20 59	A	4805-2387	
CN Mon	6 56 35.4	-0 31 13	A		IRAS 06540-0027
AZ Mon	6 57 45.2	+3 18 09	G	0153-2310	RAFGL 1043
UU Mon	6 59 45.0	+2 12 28	G	0153-1382	
DO Mon	7 00 00.4	+2 56 06	G	0166-0280	IRAS 06573+0300
CP Mon	7 00 11.8	+4 08 25	G	0170-1144	
AE Mon	7 01 25.0	-2 20 20	G	4818-3711	
V566 Mon	7 01 41.1	+4 04 24	G	0170-2595	CSV 943
BK Mon	7 02 50.7	+3 09 24	G	0166-3084	IRAS 07002+0313
GG Mon	7 02 55.3	-1 16 14	G	4814-0250	
HM Mon	7 03 02.9	+0 13 49	F	0162-0265	FASTT 224
CSV 948	7 03 13.6	-0 33 38	A		constant
MV Mon	7 03 38.1	-3 11 11	G	4818-3022	
V383 Mon	7 04 37.9	-1 55 46	A		CSV 957

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

GCVS	RA (2000)	Dec	s	GSC	Remarks
GH Mon	7 04 41.4	-2 28 19	G	4818-2919	
CSV 905	7 05 22.8	-0 49 33	G	4814-1905	constant
FF Mon	7 06 35.5	-3 21 20	G	4818-2450	IRAS 07040-0316
V384 Mon	7 06 51.5	-0 41 02	F	4814-0367	FASTT 305
BR Mon	7 07 22.4	-1 19 25	G	4814-0434	
BM Mon	7 08 45.3	+0 41 46	F	0163-2281	FASTT 203
FH Mon	7 08 49.4	-2 32 01	G	4819-1608	
AG Mon	7 09 13.7	-2 21 32	G	4819-1532	IRAS 07067-0216
HO Mon	7 10 16.9	+0 25 28	G	0163-1337	HD 293322
WW CMi	7 11 05.9	+4 04 36	G	0171-3567	
BW Mon	7 11 22.2	-1 29 40	G	4815-1732	IRAS 07088-0124
HQ Mon	7 11 33.7	+0 52 07	F	0163-0679	FASTT 179
MW Mon	7 12 23.5	-1 24 52	F	4815-0892	see note
AH Mon	7 12 26.7	-1 52 00	G	4815-1450	IRAS 07099-0146
HR Mon	7 12 32.3	-1 10 31	G	4815-3425	
V386 Mon	7 12 31.7	-3 43 44	A		CSV 987
MX Mon	7 12 33.0	-4 27 14	T	4823-0688	
XX CMi	7 12 57.9	+2 37 32	G	0167-0213	
AK Mon	7 12 49.9	-3 03 29	A		
AI Mon	7 12 50.8	-4 28 39	A		

Notes to Table 2:

- CW Mon Downes *et al.* (1997) position differs slightly in Dec. USNO–A2.0 end figures 54°55/17"7 (epoch 1955.9, in quiescence); AC2000 (Urban *et al.* 1998a): 54°47/17"4 (epoch 1909.083, mp=12.0, in outburst).
- DX Mon IRAS 06454-0204 = [FT96] 214.5-1.8D.
- DI Mon IRAS 06469+0313 = IRC +00130.
- V378 Mon IRAS 06480-0125.
- MW Mon IRAS 07098-0119 = FASTT 344.

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