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**IDENTIFICATIONS FOR BAADE’S VARIABLES  
IN SAGITTA AND CYGNUS**

The tables below show identifications and precise positions for a group of variables found by Walter Baade (1928) during his Bergedorfer days. The stars reported in this survey are of some historical interest because it was as a result of this work that Baade conceived ideas that led to his later recognition of the two stellar populations among Galactic stars (*cf.* Osterbrock 1995).

The paper is one of the few variable-star surveys where precise positions are supplied (for equinox 1925), so checks and identifications were easy to make in modern catalogues. I examined each star on the digitized sky survey using the Goddard SkyView facility (Scollick 1997). Baade’s original positions in his Table 1 are very good, all less than 2'' from FK5-system positions, and often within 1''. In the Cygnus field (Table 2), they are somewhat less good, but still within about 3''.5. In either case, making identifications on the sky is unambiguous despite the absence of finder charts. Follow-up lightcurves and photometry of comparison stars with finding charts for several of Baade’s short-period variables can be found in Henden (1996) and Schmidt & Seth (1996).

The stars are listed in the same order as in Baade’s tables. The first column shows the provisional “Kiel” designation used in the *Astronomische Nachrichten* (Baade did not give all of these). Next comes the proper variable-star name, taken directly from the machine-readable version of volume 4 of the GCVS4 available from the Strasbourg CDS ftp service. N.B. the mix of O’s and Q’s among the names in Table 2. Since few of the stars appear in the GSC, I have by preference extracted positions from the U. S. Naval Observatory UJ1.0 star catalogue (Monet *et al.* 1996a), or the more comprehensive A1.0 catalogue (Monet *et al.* 1996b). The few remaining positions were taken directly from Baade, or estimated to  $\pm 2''$  using SkyView. The source of the position is coded as follows: A = A1.0, B = Baade, S = SkyView, U = UJ1.0.

Table 1. Baade’s variables in Sagitta

Provis. desig.	Name	RA (2000)	Dec	s	GSC	IRAS	n
AN 135.1905	SZ Sge	19 54 59.2	+19 20 29	U			
AN 9.1928	NSV 12613	19 57 43.6	+18 21 23	U			
AN 10.1928	NSV 12582	19 56 24.5	+19 49 39	U	1624-1733		
AN 11.1928	EI Sge	19 59 07.5	+19 27 53	U			
AN 12.1928	NSV 12554	19 54 54.1	+19 12 24	U			
AN 13.1928	NSV 12589	19 56 42.4	+19 16 51	U			
AN 14.1928	FX Sge	19 54 20.2	+18 46 39	U			
AN 156.1905	TX Sge	20 03 04.4	+19 15 58	U		20008+1907	
AN 15.1928	NSV 12654	19 59 16.3	+18 44 47	U			
AN 138.1905	TU Sge	19 55 21.8	+19 16 46	U	1624-2400		
AN 16.1928	NSV 12570	19 55 41.4	+18 47 01	U			
AN 129.1905	Y Sge	19 53 30.9	+18 14 29	U		19512+1806	
AN 17.1928	NSV 12732	20 02 48.6	+18 28 14	U	1621-1800		
AN 18.1928	NSV 12571	19 55 41.7	+19 38 39	U			
AN 19.1928	NSV 12546	19 54 34.8	+18 51 54	U			
AN 20.1928	NSV 12639	19 58 48.3	+18 58 50	U			

Table 1. Baade's variables in Sagitta (cont'd.)

Provis. desig.	Name	RA (2000)	Dec	s	GSC	IRAS	n
AN 21.1928	NSV 12640	19 58 47.9	+19 57 05	U			
AN 22.1928	NSV 12699	20 01 29.2	+18 37 56	U	1621-0052		
AN 23.1928	NSV 12631	19 58 31.9	+19 29 01	U			
AN 143.1905	RR Sge	19 56 53.3	+19 37 02	U		19546+1928	
AN 24.1928	NSV 12677	20 00 24.2	+19 02 10	U			
AN 25.1928	DO Vul	19 52 10.6	+19 34 44	B			*
AN 33.1926	SY Sge	19 54 53.5	+18 14 02	U	1620-0472		*
AN 144.1905	RX Sge	19 56 56.2	+18 56 06	U	1624-1910	19547+1848	
AN 26.1928	DW Sge	19 55 54.3	+19 32 36	U			
AN 145.1905	RS Sge	19 57 06.4	+19 59 44	U	1624-2141	19548+1951	
AN 27.1928	NSV 12567	19 55 26.0	+19 01 02	A			
AN 28.1928	NSV 12648	19 59 07.8	+18 07 26	U	1620-2194	19568+1759	
AN 29.1912	Z Sge	19 53 56.1	+18 47 17	U	1624-2120	19516+1839	
AN 29.1928	NSV 12628	19 58 17.1	+18 33 38	U	1620-0828	19560+1825	
AN 30.1928	NSV 12545	19 54 31.4	+19 21 24	U			
AN 31.1928	NSV 12544	19 54 28.1	+18 19 49	U	1620-2328		
AN 32.1928	NSV 12480	19 51 34.1	+20 02 16	U			
AN 33.1928	NSV 12504	19 52 29.4	+19 06 38	U			
AN 34.1928	NSV 12528	19 53 49.0	+18 53 06	U	1624-2957		*
AN 35.1928	NSV 12713	20 01 52.1	+19 25 51	U	1625-2044		
AN 36.1928	NSV 12517	19 53 08.7	+18 08 17	U	1620-2016		
AN 37.1928	NSV 12641	19 58 56.8	+18 06 16	U			
AN 38.1928	NSV 12491	19 51 57.8	+19 20 34	U		19497+1912	
AN 39.1928	NSV 12478	19 51 24.3	+18 41 10	U	1619-0843		
AN 40.1928	NSV 12622	19 57 55.1	+18 54 51	U			
AN 152.1905	TW Sge	19 58 55.6	+18 13 03	A			
AN 41.1928	NSV 12610	19 57 38.5	+18 28 58	U			
AN 42.1928	AP Sge	19 54 20.8	+19 21 57	U	1624-1184		
AN 43.1928	DP Vul	19 52 18.1	+19 39 27	U			
AN 44.1928	NSV 12578	19 56 05.4	+19 20 31	A			
AN 45.1928	NSV 12602	19 57 13.4	+18 20 06	U			
AN 46.1928	NSV 12645	19 58 59.7	+17 58 33	U			
AN 47.1928	NSV 12715	20 01 52.7	+20 03 53	U			
AN 48.1928		19 53 49.4	+18 44 27	U	1620-0122		*
AN 49.1928	NSV 12663	19 59 39.2	+19 29 07	A			
AN 50.1928	NSV 12675	20 00 15.3	+19 21 39	U			*
AN 51.1928	NSV 12666	20 00 06.2	+18 37 15	U			
AN 52.1928	NSV 12594	19 56 53.4	+19 40 08	U			
AN 53.1928	NSV 12561	19 55 09.3	+18 42 29	U			
AN 54.1928	NSV 12660	19 59 32.2	+19 00 30	B		19573+1852	
AN 55.1928	NSV 12590	19 56 43.9	+18 50 17	U			
AN 56.1928	VW Sge	19 57 31.4	+19 48 36	U			
AN 57.1928	NSV 12485	19 51 48.6	+19 22 52	U	1623-2167		
AN 58.1928	NSV 12543	19 54 22.0	+18 52 05	U	1624-0924		
AN 59.1928	NSV 12597	19 57 01.2	+20 05 43	B			*
AN 60.1928	NSV 12633	19 58 35.5	+19 10 06	U			
AN 127.1905	RW Sge	19 52 33.2	+19 06 23	U	1624-3188	19503+1858	
AN 61.1928	VV Sge	19 55 34.4	+19 21 13	U		19533+1913	
AN 137.1905	TT Sge	19 55 13.6	+19 07 04	U			
AN 62.1928	NSV 12606	19 57 29.2	+19 17 29	U	1624-1258	19552+1909	*
AN 63.1928	NSV 12599	19 57 04.1	+19 32 19	U			
AN 64.1928	NSV 12649	19 59 07.0	+18 44 18	U			
AN 65.1928	NSV 12514	19 53 02.2	+18 25 35	U			
AN 66.1928	NSV 12625	19 58 05.2	+19 14 09	U			
AN 131.1905	SX Sge	19 53 49.1	+18 22 03	A		19515+1814	

Notes to Table 1:

SY Sge HD 350944 = LS II +18°17.

DO Vul no star on DSS precisely at Baade's position. The Downes & Shara (1993) dwarf-nova atlas identifies this as the northwestern star of a faint pair at position end-figures 10<sup>s</sup>9/43<sup>u</sup>.

The identification is uncertain, however, since there have been no outbursts reported in the modern literature.

NSV 12528 BSNS 32.

AN 48.1928 NGC 6838 V2 = Cl\* NGC 6838 ZDA 16.

NSV 12675 equal  $\sim 4''$  pair on DSS, resolved in UJ1.0. Baade's position is close to the mean of the two, which was adopted.

NSV 12597 evidently the southwestern star of a merged pair on DSS. The position (from Baade) given by Richter & Greiner (1996) is in error by  $+10''$ ; they identify the northeastern star of the pair as the variable.

NSV 12606 excellent IRAS position match, but the [12-25] color is relatively blue.

Table 2. Baade's variables in Cygnus

Provis. desig.	Name	RA (2000)	Dec	s	GSC	IRAS	n
AN 67.1928	PU Cyg	19 56 15.8	+37 52 06	U	3137-0124	19544+3743	
AN 68.1928	QZ Cyg	19 59 04.1	+38 15 44	U	3137-2987	19572+3807	*
AN 69.1928	QX Cyg	19 58 34.7	+38 14 35	U	3137-2869		
AN 70.1928	PR Cyg	19 55 41.1	+38 16 04	U	3137-1721	19538+3807	
AN 71.1928	OV Cyg	19 54 14.3	+38 25 27	U			
AN 72.1928	OP Cyg	19 52 48.4	+38 13 17	U			
AN 73.1928	PT Cyg	19 56 07.3	+38 44 40	A			
AN 74.1928	V341 Cyg	20 00 57.8	+38 54 45	U	3150-1417	19591+3846	
AN 75.1928	V342 Cyg	20 03 47.8	+38 57 51	A		20020+3849	
AN 76.1928	OY Cyg	19 54 43.9	+39 17 58	U	3137-1152	19529+3910	
AN 77.1928	FZ Cyg	19 51 13.0	+39 04 46	U		19494+3857	
AN 78.1928	V339 Cyg	20 00 28.9	+38 44 08	A		19586+3835	
AN 79.1928	GK Cyg	20 00 34.5	+39 36 36	U	3154-1020	19587+3928	
AN 80.1928	NQ Cyg	19 49 54.6	+38 08 24	A			
AN 81.1928	QQ Cyg	19 57 32.9	+38 05 30	U			
AN 82.1928	V336 Cyg	19 59 54.4	+38 46 42	U			
AN 83.1928	GM Cyg	20 04 15.9	+38 07 43	U	3150-2692		
AN 84.1928	V344 Cyg	20 04 15.0	+38 57 27	U			
AN 85.1928	GL Cyg	20 03 34.7	+39 09 35	U	3150-0577		
AN 86.1928	QW Cyg	19 58 30.5	+37 29 14	U			
AN 87.1928	OZ Cyg	19 55 15.7	+38 15 34	A			
AN 88.1928	NV Cyg	19 51 54.2	+38 46 04	U			
AN 89.1928	NS Cyg	19 50 42.1	+39 28 47	U	3141-1041		
AN 90.1928	NSV 12556	19 54 35.2	+39 03 49	U			
AN 91.1928	NW Cyg	19 51 58.8	+38 54 10	B		19502+3846	
AN 92.1928	NY Cyg	19 52 34.6	+37 55 44	U			
AN 93.1928	PV Cyg	19 56 29.2	+37 43 08	U	3137-3117		
AN 94.1928	OT Cyg	19 54 07.4	+38 18 39	U			
AN 95.1928	OW Cyg	19 54 30.3	+37 30 21	U			
AN 96.1928	NSV 12601	19 56 45.6	+37 42 01	U			
AN 97.1928	QU Cyg	19 58 27.9	+38 13 27	A			
AN 98.1928	V338 Cyg	20 00 03.0	+38 58 28	A		19582+3850	
AN 99.1928	OQ Cyg	19 53 32.8	+37 51 47	U	3137-1524	19517+3743	
AN 100.1928	QT Cyg	19 58 07.4	+38 49 28	U			
AN 101.1928	V337 Cyg	19 59 53.6	+39 13 55	U			
AN 102.1928	NSV 12678	20 00 00.5	+38 35 50	U	3150-2033	19582+3827	
AN 103.1928	PZ Cyg	19 57 27.6	+39 14 12	U			
AN 104.1928	PY Cyg	19 56 57.2	+38 55 05	U			
AN 105.1928	QR Cyg	19 57 31.0	+38 27 46	U	3137-2489		
AN 8.1926	CV Cyg	19 54 20.9	+38 02 50	U	3137-0824		
AN 106.1928	QS Cyg	19 57 39.5	+38 48 20	U			
AN 107.1928	OU Cyg	19 54 10.2	+38 41 34	U			

Table 2. Baade's variables in Cygnus (cont'd.)

Provis. desig.	Name	RA (2000)	Dec	s	GSC	IRAS	n
AN 108.1928	OX Cyg	19 54 39.4	+39 15 00	U			
AN 109.1928	QY Cyg	19 58 51.6	+37 38 50	U	3137-3257		
AN 110.1928	NX Cyg	19 52 04.1	+37 52 41	U			
AN 111.1928	PS Cyg	19 56 06.2	+38 00 08	U			
AN 112.1928	OS Cyg	19 53 58.3	+39 12 08	U			
AN 113.1928	V340 Cyg	20 00 54.4	+39 01 44	U			
AN 114.1928	NSV 12576	19 55 30.4	+37 35 52	U	3137-3464		
AN 115.1928	PW Cyg	19 56 31.0	+39 30 32	U	3141-3532		
AN 116.1928	NT Cyg	19 51 06.4	+39 00 43	B		19493+3852	
AN 117.1928	PP Cyg	19 55 16.4	+39 27 08	A		19535+3919	
AN 118.1928	NN Cyg	19 49 27.3	+38 44 47	U			
AN 119.1928	OO Cyg	19 52 44.9	+37 58 48	U			
AN 120.1928	PQ Cyg	19 55 36.3	+37 51 20	U			
AN 121.1928	V343 Cyg	20 04 04.5	+39 06 15	U			
AN 122.1928	NSV 12420	19 47 43.3	+37 56 00	U			
AN 123.1928	NR Cyg	19 50 41.5	+37 46 33	U	3137-0303		
AN 124.1928	V1252 Cyg	19 51 48.9	+39 00 37	U		19500+3852	
AN 125.1928	V335 Cyg	19 59 54.4	+38 06 39	U	3137-2863		
AN 126.1928	NO Cyg	19 49 41.1	+38 11 38	U	3136-0455		
AN 127.1928	NP Cyg	19 49 51.4	+37 46 28	U			
AN 128.1928	QV Cyg	19 58 25.9	+38 46 42	U	3137-3036		
AN 129.1928	NZ Cyg	19 52 37.5	+38 42 58	U			
AN 130.1928	NU Cyg	19 51 37.7	+39 07 21	U			
AN 131.1928	OR Cyg	19 53 35.9	+37 58 59	U			
AN 132.1928	PX Cyg	19 56 44.1	+37 37 39	U	3137-3651		

Note to Table 2:

QZ Cyg BD+37°3710.

I used SIMBAD to look for the GSC and IRAS identifications. Additional remarks are indicated by an asterisk and given following the tables.

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