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IDENTIFICATION OF VARIABLE STARS IN GRUS

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Following with a program conducted to improve the coordinates of southern variable and suspected variable stars (López and Girard 1990, López and Lépez 1993), identifications of confirmed variables in the Grus area are herein presented.

Considering the charts recommended by the GCVS (Kholopov et al. 1985), we identified the variable stars on the USNO A2.0 catalogue (Monet et al. 1998), which was read and displayed on the computer screen using a program developed by Manek (1999).

The results are presented in two tables. Table 1 lists those variables included in catalogues such as HIPPARCOS (HIP), TYCHO (TYC) (ESA, 1997) or PPM (Röser and Bastian, 1991). For these stars we only list the identification number in the respective catalogues. We also added, in the AC column, the AC2000 (Urban et al. 1998) catalogue number.

Table 2 lists the positions of the variables we were able to successfully identify in the USNO A2.0. The first column gives the variable star name while the positions, as extracted from the USNO A2.0, are listed in the second and third columns. The Guide Star Catalogue (Lasker et al. 1990) number is listed in the GSC column. In the fifth column we included an alternative designation; in general it is the preliminary name used in the finding chart recommended by the GCVS. Those variables which were also identified in the AC2000 catalogue are marked with an asterisk (*) and the AC2000 number is given in the Notes to Table 2.

VW Gru and AI Gru deserve a special comment: these stars are not included in the USNO A1.0, USNO A2.0 or the GSC. Therefore, in order to report a better position, we extracted a 15 by 15 arcmin area from the CD-ROM set of the Space Telescope Science Institute Digitized Sky Survey (DSS) centered on VW Gru and AI Gru, respectively. The identification of VW Gru was not easy since it is immersed in the glare of the very bright nearby star δ^1 Gru. Both frames were reduced using standard astrometric procedures taking 8 (for VW Gru) and 9 (for AI Gru) USNO A2.0 stars as reference frame.

The coordinate improvement may be considered complete since all of the confirmed variables in this constellation (listed in the GCVS) were identified on some of the modern and standard astrometric catalogues.

We would like to express our gratitude to Dr. Jan Manek for making his program available to display both the USNO A1.0 and USNO A2.0 catalogues. Our thanks also go to Dr. Dave Monet for providing a copy of the USNO A1.0 as well as the USNO A2.0 and to Dr. Nikolai Samus for many helpful comments and suggestions.

Table 1: Variables in HIP, TYC, PPM, and AC catalogues

GCVS	HIP	TYC	PPM	AC
S	110736			
T	110697	7996 0175	302580	
U		8423 0607	327300	3968201
V		7990 0646	327647	3971736
W	112009	8010 1452	328513	3978615
X		8834 0986	350978	4392562
RS	107231	8428 0217	327486	3970199
RU		7503 0171	302597	3352943
RV		8446 0662		3978372
RX		8008 0397		3980665
XZ	112532	8004 0149	303003	3466138
AS		8008 1290	328839	3980945
AW	110188	8442 0285	328121	3975757
AX	112750	8827 0872	350561	4389343
AY		8451 1005	328896	3981287
BC		8449 0210		3979005
BK	110624	7996 0016	302553	3465256
β	112122	8446 1644	328536	
δ^2	111043	8003 1373	328309	3977116
π^1	110478	8439 0392	328190	3976182

Table 2: Positions and Identifications of Variables in Grus

GCVS	RA (2000)	Dec	GSC	Other ID	Note
R	21 48 31.725	−46 54 50.53	8437.0206	HD 207192	
Y	22 47 20.060	−47 54 57.67	8450.0420	COD −48°14311	*
Z	21 34 37.177	−49 07 28.20	8432.0080	S 5125	*
RR	21 38 03.568	−44 41 12.23	7992.0369	S 5127	*
RT	21 51 58.402	−45 59 06.48	8437.1538	S 5133	*
RW	22 42 06.933	−44 09 11.62	8010.1153	S 5148	*
RY	23 19 25.561	−40 17 26.40	8009.0054	COD −47°14285	*
RZ	22 47 11.923	−42 44 38.65	8010.0064	S 5150	*
SS	21 28 06.273	−37 09 35.62	7486.0124	AN 331.1933	
ST	21 50 58.327	−46 11 46.24		S 7472	
SU	21 58 42.128	−42 55 16.37	7990.1136	S 7474	
SV	21 58 49.409	−44 19 29.84	7994.0210	S 7701	*
SW	21 59 11.047	−44 21 03.62	7994.0302	S 7475	
SX	22 04 21.423	−45 25 05.65	8438.1332	S 7476	
SY	22 04 45.801	−43 42 35.38		S 7477	
SZ	22 08 17.848	−42 36 33.22		S 7479	
TT	22 10 25.635	−43 41 36.41		S 5379	
TU	22 13 36.519	−41 58 15.34		S 7482	
TV	22 14 05.715	−43 37 47.14		S 7483	
TW	22 15 07.145	−44 50 12.88	8002.1612	S 7484	

Table 2 (cont'd.)

GCVS	RA (2000)	Dec	GSC	Other ID	Note
TX	22 16 17.718	−41 40 37.09	7999.1253	S 7485	
TY	22 16 39.440	−39 56 17.79	7996.1394	S 7486	
TZ	22 17 20.538	−50 34 34.93	8445.0366	S 5139	
UU	22 17 46.080	−49 38 16.64	8442.0565	S 6481	
UV	22 19 53.864	−47 41 36.68	8442.0056	S 6483	*
UW	22 20 13.157	−54 33 28.56	8822.0225	S 7704	*
UX	22 25 26.275	−46 10 29.17	8439.0349	S 6485	
UY	22 26 20.222	−40 59 29.18	7999.0200	S 7487	
UZ	22 26 55.855	−40 31 43.23		S 7488	
VV	22 27 27.177	−49 38 34.79	8442.0881	S 6486	
VW	22 28 57.625	−43 27 24.16		S 6488	see text
VX	22 29 39.407	−49 00 30.71	8442.0949	S 6489	
VY	22 32 30.449	−46 53 13.67	8446.1221	S 6490	
VZ	22 33 50.216	−50 12 23.35		S 6492	
WW	22 37 04.227	−47 11 06.59		S 6494	
WX	22 42 01.132	−44 32 32.77		S 6496	
WY	22 42 51.276	−46 05 12.74		S 6497	
WZ	22 44 45.873	−42 21 42.47	8007.0676	S 7706	
XX	22 44 59.352	−50 05 44.04		S 6499	
XY	22 46 12.953	−50 00 27.19	8453.0294	S 6500	
YY	22 48 46.579	−50 59 28.06	8453.0634	S 6502	
YZ	22 49 06.198	−44 54 05.04		S 6503	
ZZ	22 49 58.209	−47 32 07.19	8450.0016	S 6504	
AA	22 49 55.697	−46 21 28.64	8447.1369	S 6505	
AB	22 51 05.780	−47 18 40.60		S 6507	
AC	22 51 49.358	−50 29 31.27		S 6508	
AD	22 53 01.695	−44 32 38.71		S 6510	
AE	22 55 51.756	−40 40 16.54	8008.0818	COD −41°15081	
AF	22 56 28.970	−47 21 47.92	8447.1207	S 6511	*
AG	22 58 35.331	−45 13 47.39		S 6514	
AH	22 59 11.565	−49 56 13.62		S 6515	
AI	22 59 17.462	−43 49 16.54		S 6516	see text
AK	23 05 01.847	−43 56 08.82	8011.0120	S 6520	*
AL	23 05 44.297	−48 13 45.31	8451.0492	S 6521	
AM	23 05 47.189	−46 43 37.83		S 6522	
AN	23 07 55.176	−47 25 40.52		S 6526	*
AO	23 08 10.775	−48 22 08.76	8451.1016	S 6527	
AP	23 14 12.460	−50 39 11.71	8454.0048	S 5157	
AQ	23 22 18.017	−42 05 24.26	8016.0800	S 7711	
AR	22 36 41.659	−38 18 09.09	7997.0306	COD −38°15133	*
AT	21 42 38.257	−41 39 34.26	7989.0807	S 7698	*
AU	22 10 03.821	−42 38 34.46	8001.0125	S 7480	
AV	22 16 35.803	−48 35 02.66		S 6480	
AZ	22 35 08.343	−45 17 34.79		S 6493	
BB	22 39 27.663	−45 35 29.05	8446.0058	S 6495	

Table 2 (cont'd.)

GCVS	RA (2000)	Dec	GSC	Other ID	Note
BD	22 47 27.550	−50 35 51.43		S 6501	
BE	22 50 40.197	−44 39 46.66	8010.1525	S 6506	
BF	22 56 52.296	−48 48 22.71	8450.1385	S 6512	*
BG	23 07 52.230	−49 45 48.49	8451.0619	S 6524	
BH	23 07 57.495	−49 25 21.82	8451.0988	S 6525	
BI	22 21 10.437	−44 03 52.64	8002.1544	S 6484	
BL	22 52 31.006	−49 08 32.11	8450.0749	S 6509	
BM	23 03 57.117	−48 50 22.35		S 6518	
BN	23 04 51.267	−45 11 22.69	8448.0001	S 6519	
BO	23 06 58.609	−43 54 37.93	8012.0197	S 6523	*

Notes to Table 2:

Y	AC 3979282	UW	AC 4386194
Z	AC 3968740	AF	AC 3980440
RR	AC 3969308	AK	AC 3981413
RT	AC 3971745	AN	Included in López (1985)
RW	AC 3978711	AR	AC 3465745
RY	AC 3467189	AT	AC 3970121
RZ	AC 3979267	BF	AC 3980481
SV	AC 3972840	BO	AC 3981631
UV	AC 3975848		

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