

BAA VSS CCD PROGRAMME

DATA FOR STARS BRIGHTER THAN MAG ~11

All positions are for J2000.0

(Photometric data are Tycho Vj unless otherwise stated).

VZ Cam (SR) Range: 4.80-4.96V Period: 23.7 days (2004-5-12)

Position: 07 31 04.48 +82 24 41.6

(Magnitude V=4.92, B-V 1.633 ±0.018, V-I 2.66 ± 0.05)

Hipparcos #36547, GSC 4539 1189 Spectral type M4IIIa

Comparison star sequence

RA (2000)	DEC	V	ERR	B-V	ERR	V-I	ERR	Hip	GSC	Sp	Comp
08 24 33.11	+82 25 51.0	6.276	0.018	0.035	0.004	0.05	0.00	41208	4546 1243	A2Vn	C
06 44 30.38	+82 06 55.0	6.621	0.018	0.182	0.005	0.20	0.01	32296	4538 713	A5V	K
07 34 39.79	+80 53 48.12	6.533	0.018	0.965	0.006	0.95	0.01	36858	4539 194	G7III	L

GO Cnc (EA) Range: 8.4-8.66Hp Period: 3.65 days (2004-5-12)

Position 09 17 38.13 +16 42 18.2

(Magnitude: V=8.37, B-V 0.079 ± 0.015, V-I 0.09 ± 0.02)

Hipparcos #45597, GSC 1402 527 Spectral type A0

Comparison star sequence

RA (2000)	DEC	V	ERR	B-V	ERR	V-I	ERR	Hip	GSC	Sp	Comp
09 20 38.19	+17 07 38.39	7.759	0.019	0.370	0.015	0.43	0.02	45827	1402 97	F2	C
09 21 25.50	+16 35 54.3	6.978	0.018	0.280	0.009	0.32	0.01	45894	1402 844	A5	K
09 20 39.61	+16 09 06.09	9.017	0.025	1.073	0.031	-	-	-	1402 1027	K0	L

AT Dra (Lb Range: 6.8-7.5p) (2004-5-12)

Position: 16 17 15.34 +59 45 17.9

(Magnitude: V=5.37, B-V ~1.551 ± 0.008, V-I 2.60 ± 0.03)

Hipparcos #79804, GSC 3883 1542 Spectral type M4IIIa

Comparison star sequence

RA (2000)	DEC	V	ERR	B-V	ERR	V-I	ERR	Hip	GSC	Sp	Comp
16 20 19.67	+59 46 14.9	7.54	0.019	1.044	0.011	1.01	0.01	80045	3884 23	G5	C
16 09 56.33	+59 52 18.4	6.763	0.018	0.069	0.006	0.08	0.01	79204	3883 219	A0	K
16 03 41.51	+59 05 22.7	6.811	0.018	0.990	0.008	0.97	0.01	78676	3883 625	K0	L

NSV04031 Lyn (EA) Range: 8.0 - 8.8V Period: ? Chart [CCD 001.01](#) (2002-10-13)

Position 08 22 58.6 +45 27 24

(Magnitude: 9.209, B-V 0.362 +/-0.026)

Comparison star sequence

RA (2000)	DEC	V	ERR	B-V	ERR	V-I	ERR	Hip	GSC	Sp	Comp
08 22 34.87	+45 21 04.7	8.001	0.021	1.090	0.015	1.05	0.02	41045	3415 175	K0	C
08 27 36.80	+45 39 13.8	6.319	0.018	0.624	0.004	0.69	0.00	41484	3415 2484	G5V	K
08 24 08.61	+44 44 32.0	8.540	0.023	0.878	0.024	0.92	0.02	41176	2980 2163	G0	L

CO UMa (Lb? Range: 5.74-5.95V) (2004-5-12)

Position 11 09 19.11 +36 18 34.0

(Magnitude V=5.71, B-V 1.400 ± 0.008, V-I 2.69 ± 0.03)

Hipparcos #54522, GSC 2522 2244 Spectral type M3.5III

Comparison star sequence

RA (2000)	DEC	V	ERR	B-V	ERR	V-I	ERR	Hip	GSC	Sp	Comp
11 08 35.75	+36 00 39.02	7.325	0.018	0.941	0.008	0.93	0.01	54465	2522 1873	K0	C
11 08 14.58	+36 27 16.67	8.254	0.020	0.666	0.015	0.73	0.01	54428	2522 705	G0	K
11 12 14.80	+36 53 33.7	7.452	0.019	1.005	0.009	0.98	0.01	54726	2522 995	G5	L

DATA FOR STARS Fainter THAN MAG ~11

All positions are for J2000.0

(Photometric data are from A Henden unless otherwise stated).

(TVj = Tycho-2 Catalogue Johnson V mag)

Note: The GCVS positions are often rather poor and great care must be undertaken to ensure the variable has been identified when at minimum.

HU Aqr (X-ray reflr+magnetic variatns+EB) Range: 15.3-19.8V (2004-5-12)

Position: 21 07 58.2 -05 17 39

Comparison star sequence

ID	RA	Dec	V	ERR	B-V	ERR	V-R	ERR	R-I	ERR	Comp
-	21 07 52.2	- 5 19 15	13.669	0.023	0.685	0.018	0.390	0.007	0.371	0.005	C
-	21 08 16.7	- 5 19 48	13.928	0.021	0.721	0.021	0.440	0.008	0.429	0.008	K
-	21 08 07.1	- 5 15 38	13.423	0.025	0.952	0.019	0.539	0.009	0.520	0.007	L

C = GSC 5201 926

K = GSC 5201 1215

L = GSC 5201 1266

GY Cnc (UGSU) Range: 12.0-18.0V (2004-5-12) (see also visual chart 268.01)

Position: 09 09 50.54 +18 49 47.6

(Magnitude: V=16.274 B-V=0.289)

Comparison star sequence

ID	RA (2000)	DEC	V	ERR	B-V	ERR	Comp	GSC No.
10	09 09 57.8	+18 49 03	13.740	0.005	0.538	0.015	C	1404 1815
5	09 09 56.6	+18 55 38	11.516	0.006	0.821	0.006	K	1404 1716
8	09 09 27.1	+18 46 58	12.837	0.006	0.841	0.006	L	1404 759

HT Cas (UGSU + EA) Range: 12.6-19.3V Period ~70 days [Chart CCD 005.01](#)

(2004-5-12)

Position: 01 10 13.1 +60 04 36

(Magnitude: V=16.548 B-V=0.242)

Comparison star sequence

ID	RA (2000)	DEC	V	ERR	B-V	ERR	Comp	GSC No.
7	01 09 33.2	+60 04 09	12.820	0.008	0.593	0.008	C	-
-	01 10 58.1	+60 03 28	13.337	0.00	0.451	0.004	K	-
-	01 10 46.1	+60 04 02	14.614	0.005	1.06	0.01	L	-

KU Cas (UGSS) Range: 13.3-18.9V B-V=0.415 (2004-5-12)

Position: 01 31 02.4 +57 54 13

(Magnitude: V=18.888 B-V=0.415)

Comparison star sequence

ID	RA	Dec	V	ERR	B-V	ERR	V-R	ERR	R-I	ERR	Comp
3	01 31 11.4	+57 50 50	13.116	0.002	0.758	0.001	0.444	-	0.454	-	C
2	01 31 34.0	+57 51 45	12.510	0.004	0.787	0.003	0.483	-	0.479	-	K
5	01 30 50.1	+57 53 31	13.976	0.009	1.002	0.013	0.558	-	0.508	-	L

C = GSC 3678 1147

K = GSC 3678 239

L = GSC 3678 607

SS Cyg (UGSS) Range: 7.7-12.4V (2004-5-12)

Position: 21 42 42.8 +43 35 10

(Magnitude V=10.698 B-V=1.190)

Comparison star sequence

ID	RA (2000)	DEC	V	ERR	B-V	ERR	V-R	ERR	R-I	ERR	Comp
3	21 42 27.2	+43 33 44.7	10.895	0.035	0.522	0.027	0.312	0.009	0.270	0.028	C
2	21 42 20.3	+43 34 03.4	9.749	0.030	0.404	0.037	0.47	0.04	(0.167	0.021)	K (TVj)
4	21 42 35.0	+43 39 17.1	11.864	0.016	0.620	0.011	0.358	0.008	0.328	0.03	L

C = GSC 3196 857

K = GSC 3196 785

L = GSC 3196 829

V1363 Cyg (UGZ) Range: 13.0p-16.7V Chart [CCD 002.01](#) (2004-5-12) (see also visual chart 176.02)

Position: 20 06 11.54 +33 42 37.8

(Magnitude V=16.652 B-V=0.556)

Comparison star sequence

ID	RA (2000)	DEC	V	ERR	B-V	ERR	Comp	GSC No.
-	20 06 37.2	+33 43 01.8	12.680	0.023	0.437	0.000	C	2675 3129
6	20 06 11.2	+33 44 45.4	13.871	0.012	0.597	0.016	K	-
4	20 06 17.2	+33 44 37.3	12.809	0.022	0.763	0.012	L	2675 2972

V1454 Cyg (UGSS) Range: 13.9-20.5V Chart [CCD 004.01](#) (2004-5-12)

Position: 19 53 38.38 +35 21 45.3

(Magnitude V= \sim 20.5 B-V \sim 0.3 - at minimum)

Comparison star sequence

ID	RA (2000)	DEC	V	ERR	B-V	ERR	Comp	GSC No.
6	19 53 37.6	+35 22 05	13.113	0.005	0.704	0.011	C	2677 1756
7	19 53 51.5	+35 21 43	13.684	0.009	0.439	0.007	K	2677 1618

5 19 53 35.4 +35 20 09 12.595 0.005 1.142 0.004 L 2677 915

CG Dra (UG) Range: 15.0p-17.5p Chart [CCD 006.01](#) (2004-5-12)

(see also visual chart 262.01)

Position: 19 07 32.78 +52 58 28.9

(Magnitude: V=16.968 B-V=0.915)

Comparison star sequence

ID	RA (2000)	DEC	V	ERR	B-V	ERR	Comp	GSC No.
5	19 07 24.9	+52 56 36	14.393	0.021	0.747	0.009	C	3920 1262
6	19 07 09.8	+53 00 33	14.674	0.017	0.779	0.010	K	-
4	19 07 24.1	+52 54 09	13.837	0.014	0.956	0.011	L	3920 1241

ES Dra (UG) Range: 13.4-15.8V Nova-like object (2004-5-12)

Position: 15 25 31.84 +62 01 00.1

(Magnitude: V=15.841 B-V=0.114)

Comparison star sequence

ID	RA (2000)	DEC	V	ERR	B-V	ERR	Comp	GSC No.
5	15 25 27.9	+62 00 57	13.158	0.008	0.998	0.010	C	4181 980
6	15 25 00.9	+62 04 59	13.341	0.010	0.696	0.010	K	4181 1338
2	15 26 04.8	+62 02 00	11.511	0.210	0.527	0.030	L	4181 792

LL Lyr (UG) Range: 12.8-17.1P (2004-5-12)

Position: 18 35 12.9 +38 20 04

Comparison star sequence (V=GSC data, R, J and H=2UCAC data)

RA (2000)	DEC	V	R	J	H	2UCAC	Comp	GSC No.
18 35 14.6	+38 18 57	13.3	12.79	11.52	11.10	4519 1179	C	3105 1337
18 35 01.0	+38 20 29	14.3	13.83	12.88	12.5	4519 1152	K	3105 1283
18 35 33.4	+38 16 08	13.7	13.41	12.85	12.74	4519 1222	L	3105 1444

V650 Ori (UG) Range: 15.5-19.2V Chart [CCD 003.01](#) (2004-5-12) (see also visual chart 256.01)

Position: 05 31 08.32 +09 45 09.7

(Magnitude V=19.242 B-V=0.507)

Comparison star sequence

ID	RA (2000)	DEC	V	ERR	B-V	ERR	V-R	ERR	Comp	GSC No.
8	05 31 05.3	+09 45 05	14.401	0.005	0.648	0.004	0.307	-	C	705 2169
6	05 31 23.0	+09 47 41	13.560	0.005	0.715	0.007	0.332	-	K	705 2095
7	05 31 29.7	+09 49 07	13.854	0.008	0.803	0.006	0.403	-	L	705 2238

TZ Per (UGZ) Range: 12.0-15.6V (2004-5-12)

Position: 02 13 50.97 +58 22 52.4

(Magnitude V=14.570 B-V=0.401)

Comparison star sequence

ID	RA (2000)	DEC	V	ERR	B-V	ERR	Comp	GSC No.
----	-----------	-----	---	-----	-----	-----	------	---------

-	02 13 14.5	+58 18 52.8	12.716	0.020	0.520	0.026	C	3697 1378
4	02 13 35.3	+58 19 41.0	12.754	0.021	0.407	0.027	K	3698 2951
-	02 13 42.5	+58 27 09.1	13.453	0.011	0.756	0.020	L	3698 1654

NSV 2249 Tau M? Range: 10.7v-16.4p (2004-5-12)

Position 05 35 30.0 +23 52 59

(Magnitude: V=12.035 B-V=2.029 V-R=2.560 R-I=2.488)

Comparison star sequence

ID	RA (2000)	DEC	V	ERR	B-V	ERR	V-R	ERR	R-I	ERR	Comp
-	05 35 34.2	+23 50 33.4	12.066	0.023	0.503	0.004	0.269	0.011	0.327	0.009	C
-	05 35 42.3	+23 56 32.7	13.070	0.023	0.796	0.010	0.499	0.016	0.456	0.046	K
-	05 35 10.8	+23 57 14.1	13.562	0.029	0.906	0.006	0.586	0.018	0.538	0.013	L

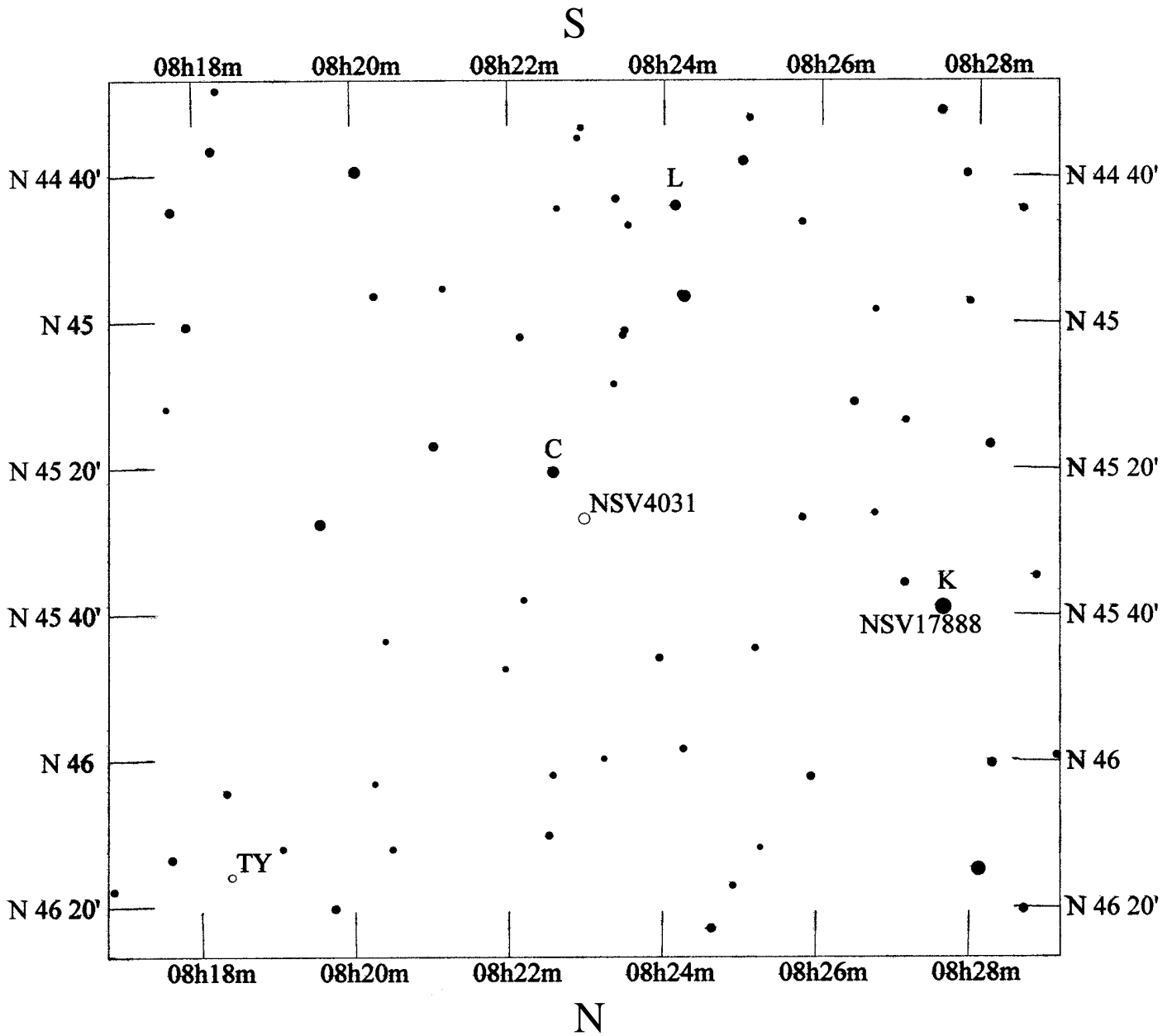
C = GSC 1861 571

K = GSC 1861 248

L = GSC 1861 404

NSV 04031 (Lyn)
 08h 22m 58.6s +45° 27' 24" (2000)

Type: Eclipsing Binary (Algol-type)
 Mag range: 8.0 - 8.8 V Colour index range: ?



Star	Designation	V	B-V	V-I	Spec	Ref.
Comp C	GSC 3415 175	8.00(±0.02)	+1.09(0.02)	+1.05(0.02)	K0	1
Check K	GSC 3415 2484	6.32(±0.02)	+0.62(0.00)	+0.69(0.00)	G5V	1
Check L	GSC 2980 2163	8.54(±0.02)	+0.88(0.02)	+0.92(0.02)	G0	1

Ref.1 = Hipparcos/Tycho-2

CHART:
 GUIDE 8.0, Limiting V mag = 11.0

BAA VSS CCD GROUP
 EPOCH: 2000
 DRAWN: RM 2002-10-13
 APPROVED: RDP

V1363 CYG

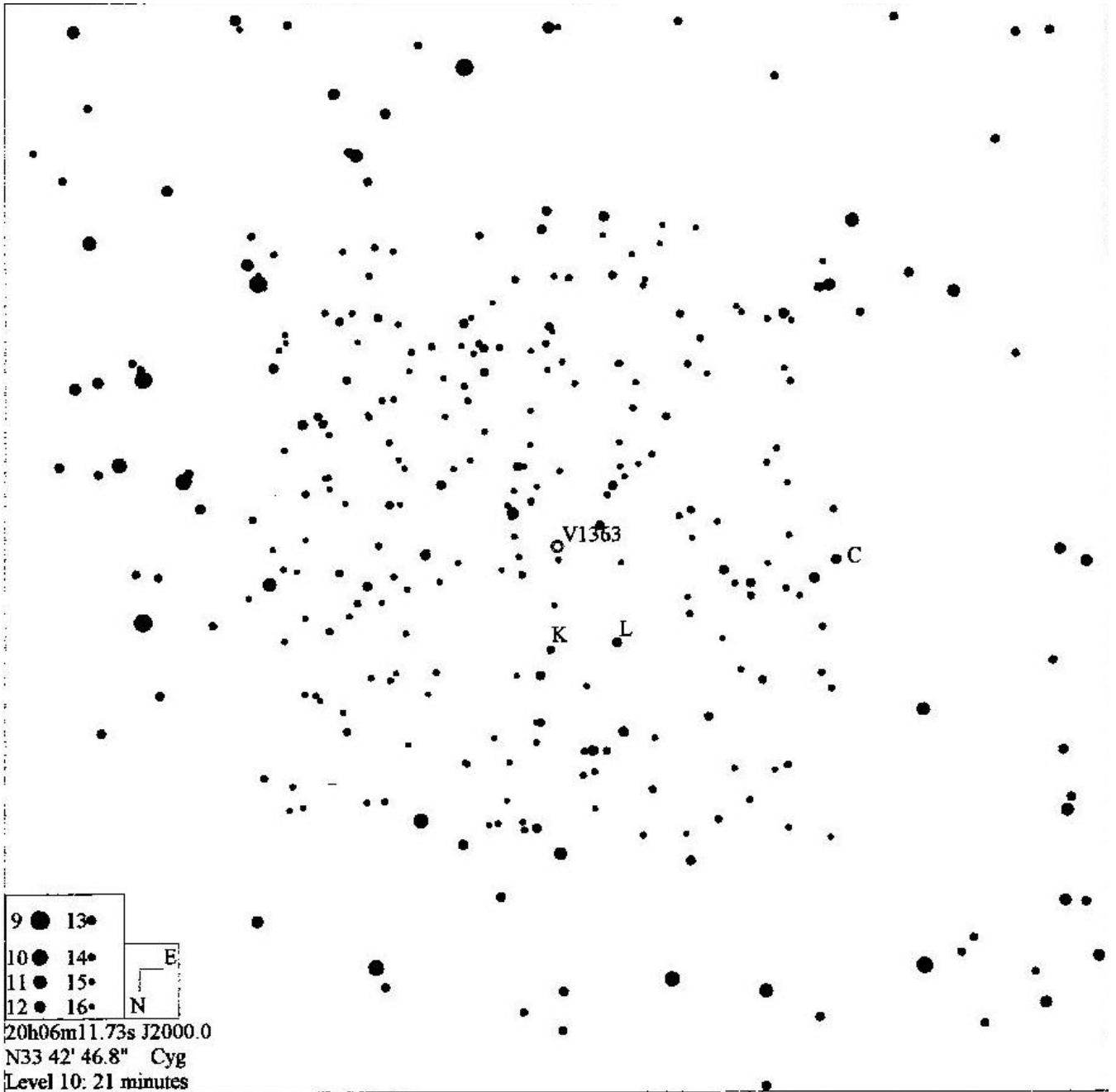
20h 06m 11.5s +33° 42' 38" (2000)

Type: U Gem, Z Cam (UGZ)

Mag range: 13.0p – 16.7V

Colour index: B-V~0.556

S



N

Comparison star sequence

ID	RA (2000)	DEC	V	ERR	B-V	ERR	Comp	GSC No.
-	20 06 37.2	+33 43 01.8	12.680	0.023	0.437	0.000	C	2675 3129
6	20 06 11.2	+33 44 45.4	13.871	0.012	0.597	0.016	K	-
4	20 06 17.2	+33 44 37.3	12.809	0.022	0.763	0.012	L	2675 2972

CHART:

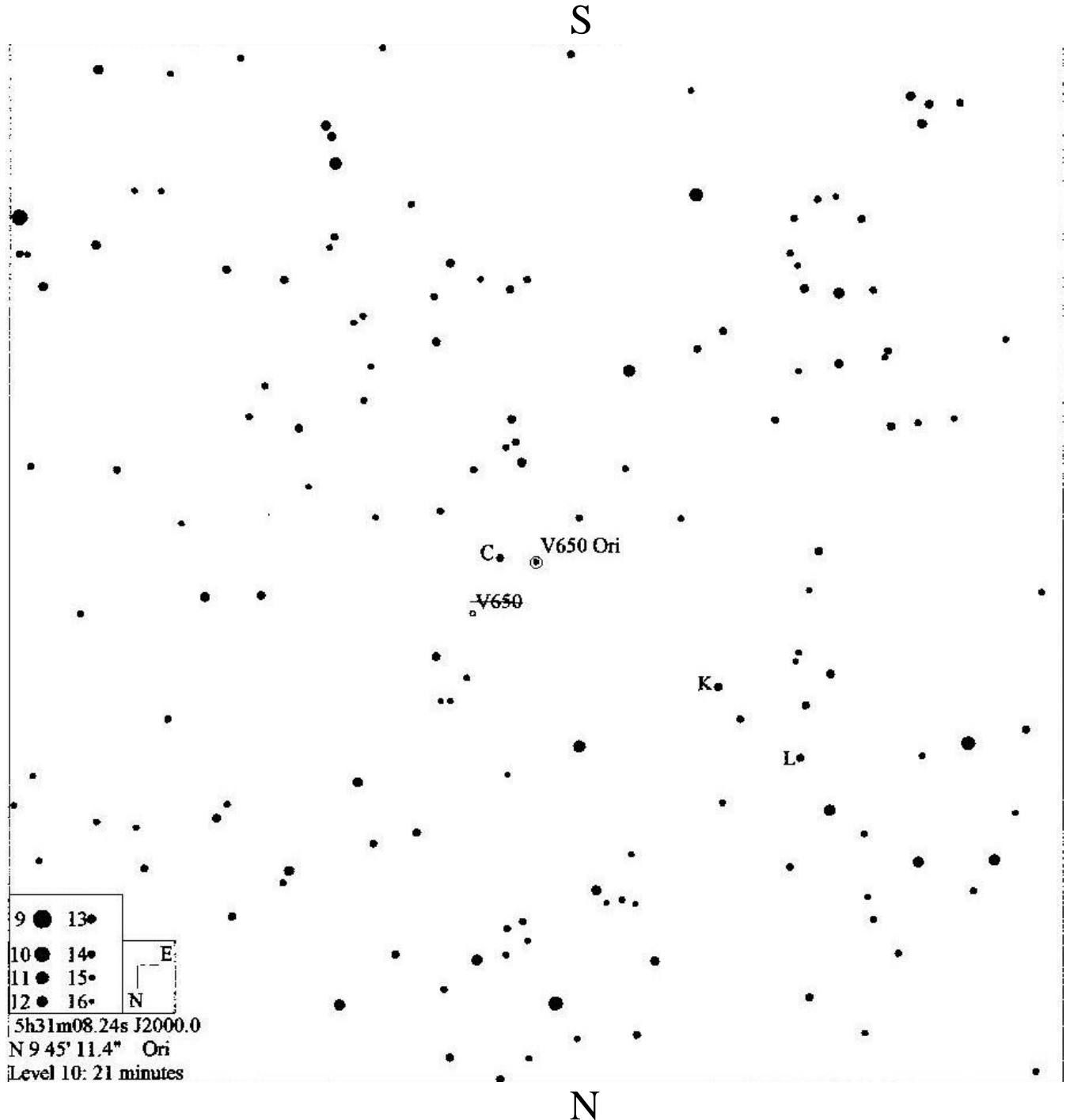
GUIDE 8.0, Limiting V mag = 16.0
 Sequence: Henden

BAA VSS CCD GROUP
 EPOCH: 2000
 DRAWN: RP 2004-05-12

V650 Ori

05h 31m 08.3 +09° 45' 10" (2000)

Type: U Gem (UG)
 Mag range: 15.5 – 19.2V Colour index: B-V~0.507



Comparison star sequence

ID	RA (2000)	DEC	V	ERR	B-V	ERR	V-R	ERR	Comp	GSC No.
8	05 31 05.3	+09 45 05	14.401	0.005	0.648	0.004	0.307	-	C	705 2169
6	05 31 23.0	+09 47 41	13.560	0.005	0.715	0.007	0.332	-	K	705 2095
7	05 31 29.7	+09 49 07	13.854	0.008	0.803	0.006	0.403	-	L	705 2238

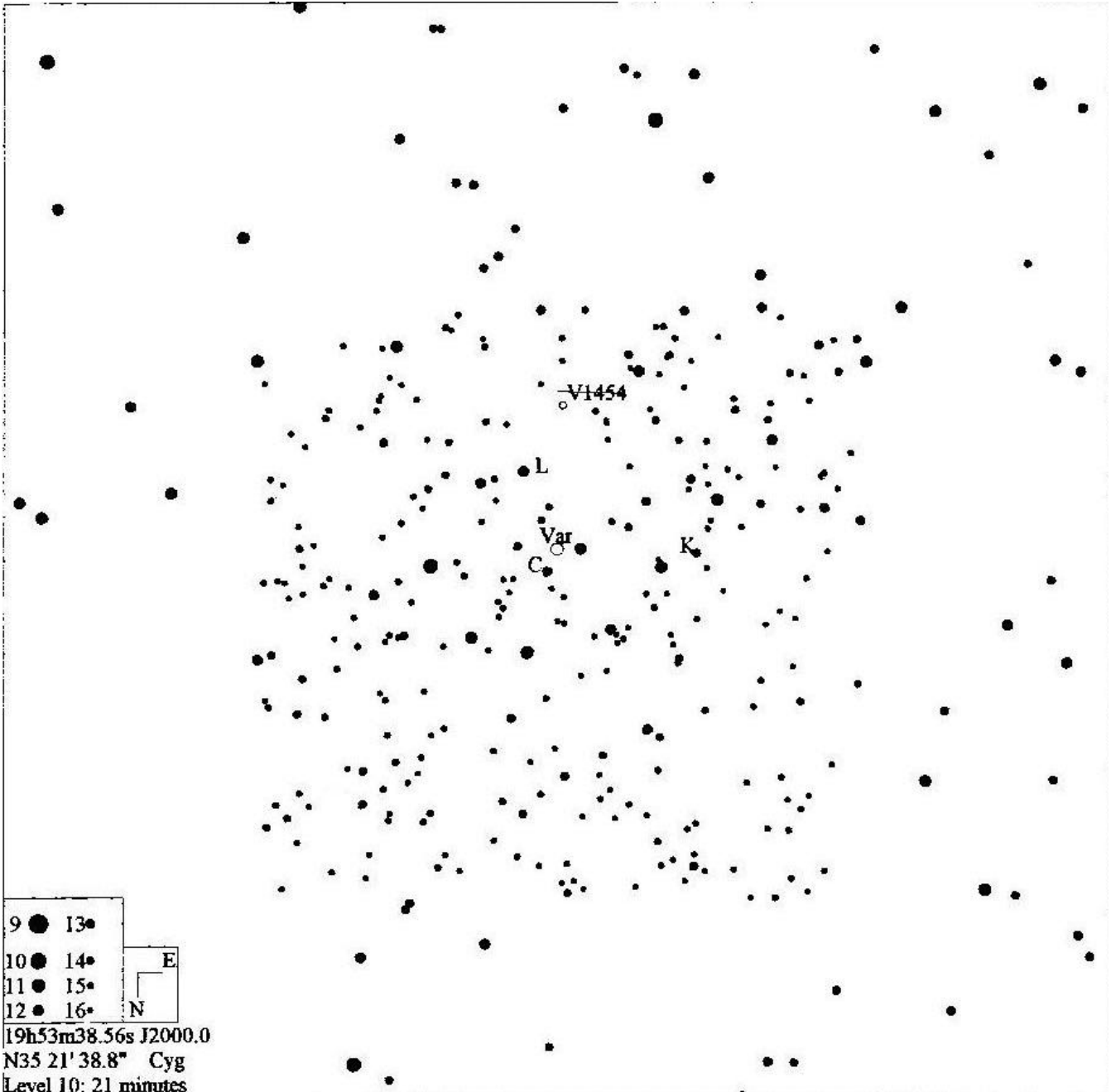
CHART:
 GUIDE 8.0, Limiting V mag = 16.0
 Sequence: Henden

BAA VSS CCD GROUP
 EPOCH: 2000
 DRAWN: RP 2004-05-12

V1454 Cyg
 19h 53m 38.4 +35° 21' 45" (2000)

Type: U Gem, SS Cyg (UGSS)
 Mag range: 13.9 – 20.5V Colour index: B-V~0.3

S



N

Comparison star sequence

ID	RA (2000)	DEC	V	ERR	B-V	ERR	Comp	GSC No.
6	19 53 37.6	+35 22 05	13.113	0.005	0.704	0.011	C	2677 1756
7	19 53 51.5	+35 21 43	13.684	0.009	0.439	0.007	K	2677 1618
5	19 53 35.4	+35 20 09	12.595	0.005	1.142	0.004	L	2677 915

CHART:
 GUIDE 8.0, Limiting V mag = 16.0
 Sequence: Henden

BAA VSS CCD GROUP
 EPOCH: 2000
 DRAWN: RP 2004-05-12

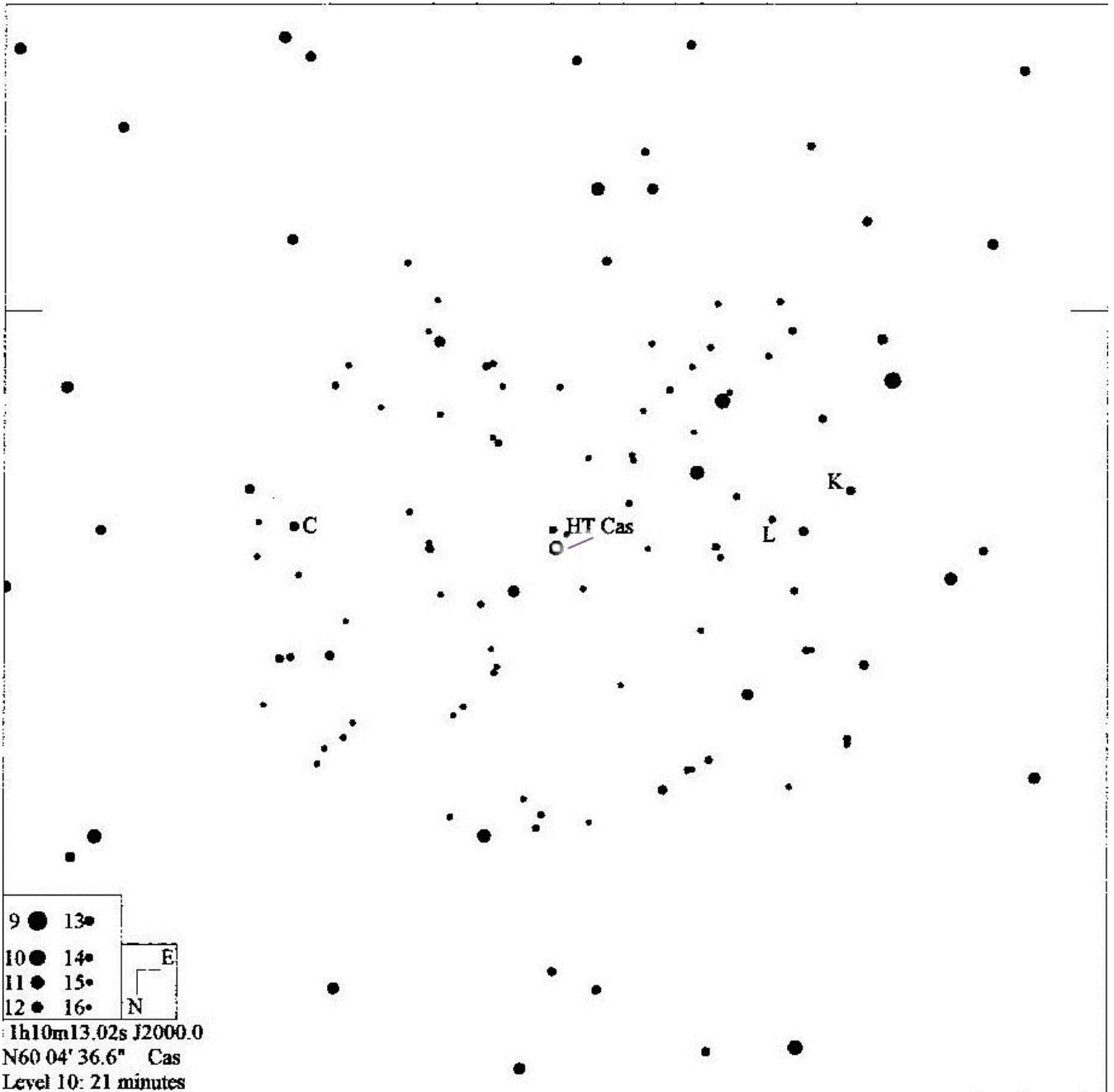
HT Cas

01h 10m 13.1 +60° 04' 36" (2000)

Type: U Gem, SU UMa (UGSU) + EA

Mag range: 12.6 – 19.3V Colour index: B-V~0.242

S



N

Comparison star sequence

ID	RA (2000)	DEC	V	ERR	B-V	ERR	Comp	GSC No.
7	01 09 33.2	+60 04 09	12.820	0.008	0.593	0.008	C	-
-	01 10 58.1	+60 03 28	13.337	0.00	0.451	0.004	K	-
-	01 10 46.1	+60 04 02	14.614	0.005	1.06	0.01	L	-

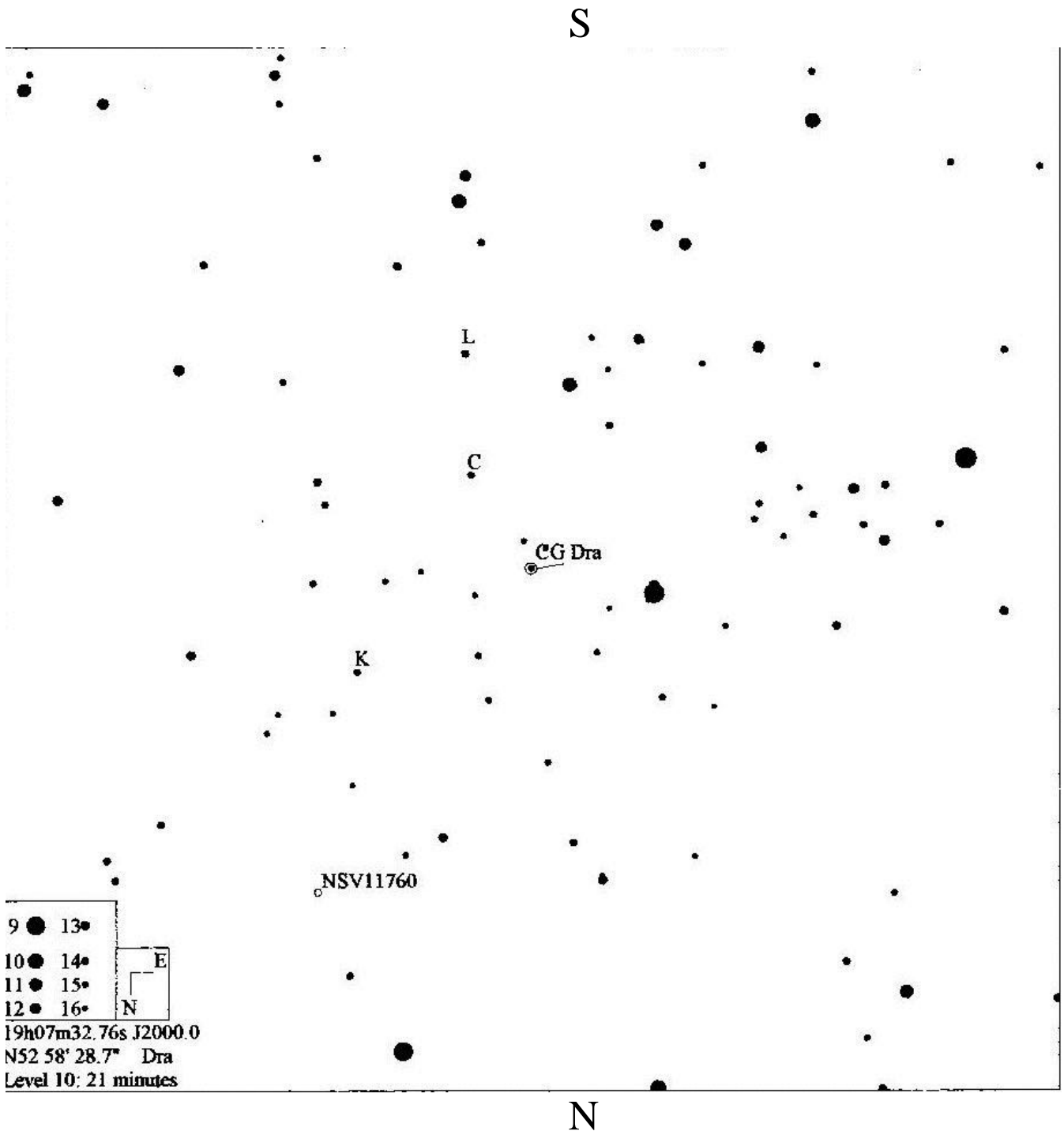
GUIDE 8.0, Limiting V mag = 16.0
Sequence: Henden

BAA VSS CCD GROUP
EPOCH: 2000
DRAWN: RP 2004-05-12

CG Dra

19h 07m 32.8 +52° 58' 29" (2000)

Type: U Gem (UG)
 Mag range: 15.0 – 17.5p Colour index: B-V~0.915



Comparison star sequence

ID	RA (2000)	DEC	V	ERR	B-V	ERR	Comp	GSC No.
5	19 07 24.9	+52 56 36	14.393	0.021	0.747	0.009	C	3920 1262
6	19 07 09.8	+53 00 33	14.674	0.017	0.779	0.010	K	-
4	19 07 24.1	+52 54 09	13.837	0.014	0.956	0.011	L	3920 1241

GUIDE 8.0, Limiting V mag = 16.0
 Sequence: Henden

BAA VSS CCD GROUP
 EPOCH: 2000
 DRAWN: RP 2004-05-12