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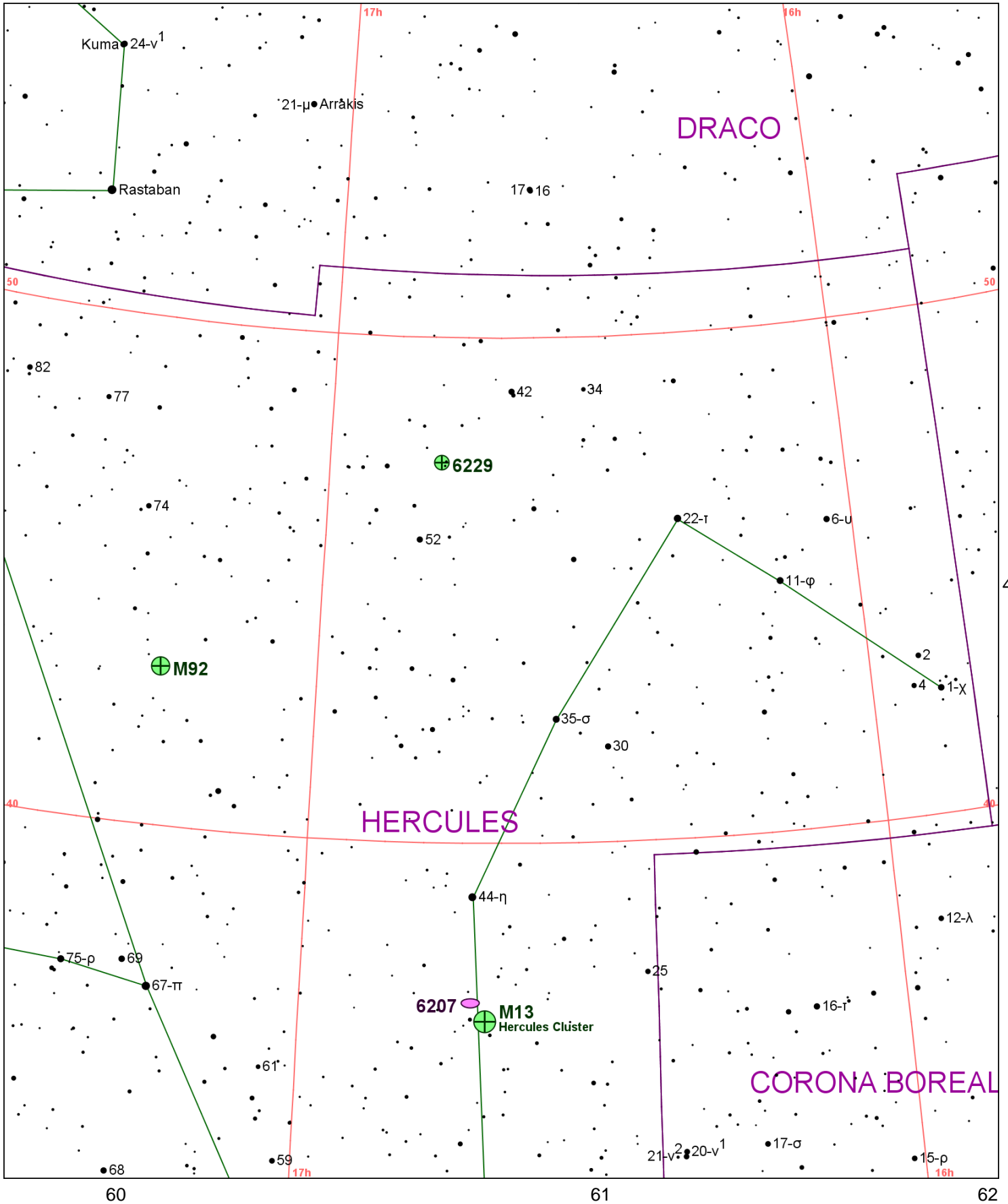


Chart 41													
Name	M	Const.	Mag.	Type	Size	R.A.	Decl.	C	R	S	O	# Stars	B
Common					Notes								
NGC 6205	M13	HER	5.9	GC	23.2m	16h 41.7m	36° 28.0'				O		B
Hercules Cluster					!!eB,vRi,vgeCM,*11... - Messier said round nebula contains no star								
NGC 6207		HER	11.6	GAL	3m x 1.2m	16h 43.1m	36° 50.0'			S55			
					pB,pL,E45,vgmbM - H II 701;No def nucleus;B * nr center;30' NE from M 13								
NGC 6229		HER	9.4	GC	3.8m	16h 47.0m	47° 32.0'				O		
					vB,L,R,disc,r - H IV 50;Wm. Herschel placed in Planetary category by mistake								
NGC 6341	M92	HER	6.5	GC	11.2m	17h 17.1m	43° 08.0'				O		B
					vB,vL,eCM,st 12... - Lord Rosse saw spiral structure								

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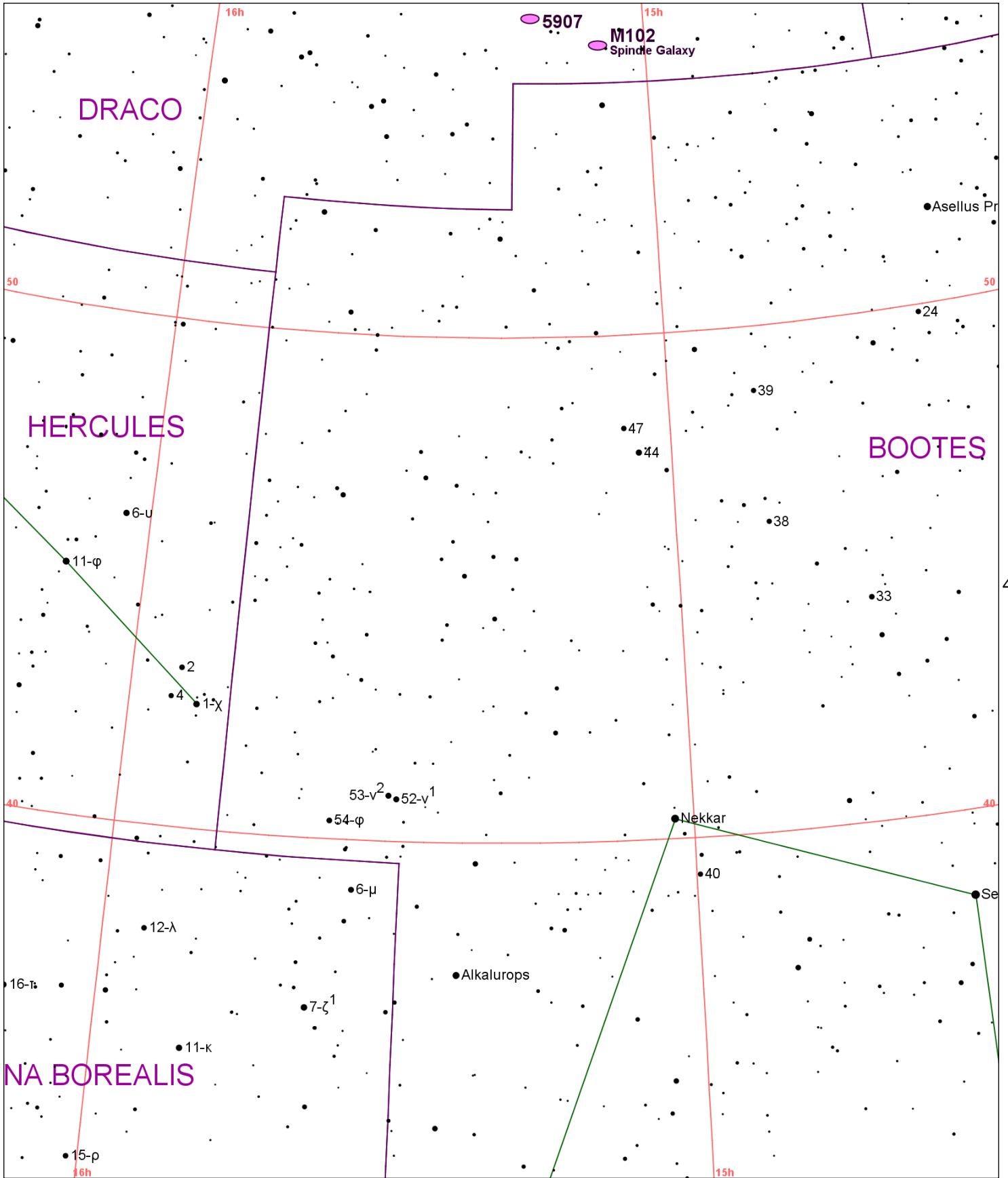


Chart 42													
Name	M	Const.	Mag.	Type	Size	R.A.	Decl.	C	R	S	O	# Stars	B
Common					Notes								
NGC 5866	M102	DRA	9.9	GAL	6.5m x 3.1m	15h 06.5m	55° 46.0'				O		B
Spindle Galaxy					vB,cL,pME146,gbM - vBN w dk lane and ansae;NGC 5867 small E neb;H I 215								
NGC 5907		DRA	10.3	GAL	11.8m x 1.3m	15h 15.9m	56° 20.0'		R87	S48	O		
					cB,vL,vmE155,vgBMN - H II 759;vs bulge nearly hidden by strong dk lane; SN 1940a								

Chart 43													
Name	M	Const.	Mag.	Type	Size	R.A.	Decl.	C	R	S	O	# Stars	B
Common					Notes								
NGC 5005		CVN	9.8	GAL	5.8m x 2.9m	13h 10.9m	37° 03.0'	C29	R66	S40	O		
					vB,vL,vmE66,vsbMN - H I 96;P w NGC 5033;eBN in B lens;sev knotty arms								
NGC 5033		CVN	10.2	GAL	9.8m x 3.6m	13h 13.5m	36° 36.0'		R67	S41	O		
					vB,pL,E167,smbM,vBN - H I 97;P w NGC 5005;svBN in B bulge w spir patt of dk lanes								
NGC 5055	M63	CVN	8.6	GAL	12.6m x 7.5m	13h 15.8m	42° 02.0'				O		B
Sunflower Galaxy					vB,L,pME120,vsmbM,BN - vsvB stell. N in B inner lens;many filam								
NGC 5194	M51	CVN	8.4	GAL	10.8m x 6.6m	13h 29.9m	47° 12.0'				O		B
Whirlpool Galaxy					!!!,Great spiral nebula - interacting pair;classic spiral								
NGC 5195		CVN	9.6	GAL	5.9m x 4.6m	13h 30.0m	47° 16.0'						
					B,pS,IE,vgbM,inv M51 - H I 186;Interacting P w M 51;peculiar								
NGC 5353		CVN	11.0	GAL	2.8m x 1.9m	13h 53.4m	40° 17.0'				O		
					pB,S,R,2nd of 4 - H II 714;P w NGC 5354 at 1.3' n;vsBN;lens: diamond shaped								
NGC 5371		CVN	10.6	GAL	4.2m x 3.4m	13h 55.7m	40° 28.0'				O		
					pB,L,R,bMFN - vsB diff N;weak bar;sev knotty filam reg arms								
NGC 5448		UMA	11.0	GAL	3.8m x 2m	14h 02.8m	49° 10.0'						
					pB,cL,vmE90,smbMN - H II 691;vBN w F bar								
NGC 5457	M101	UMA	7.9	GAL	28.5m x 28.3m	14h 03.2m	54° 21.0'				O		B
Pinwheel Galaxy					pB,vL,iR,g,vsmbM,BSN - P w NGC 5474;SN 1909;spir galax w one heavy arm:B knot E								
NGC 5474		UMA	10.8	GAL	5m x 4.5m	14h 05.0m	53° 40.0'				O		
					pB,L,bM,P w M101 - H I 214;low surf. bright;smooth part res cent w vsFN;strongly asym								
NGC 5557		BOO	11.0	GAL	2.4m x 1.9m	14h 18.4m	36° 30.0'						
					cB,S,R,vsbM* - H I 99;BN;no struct								

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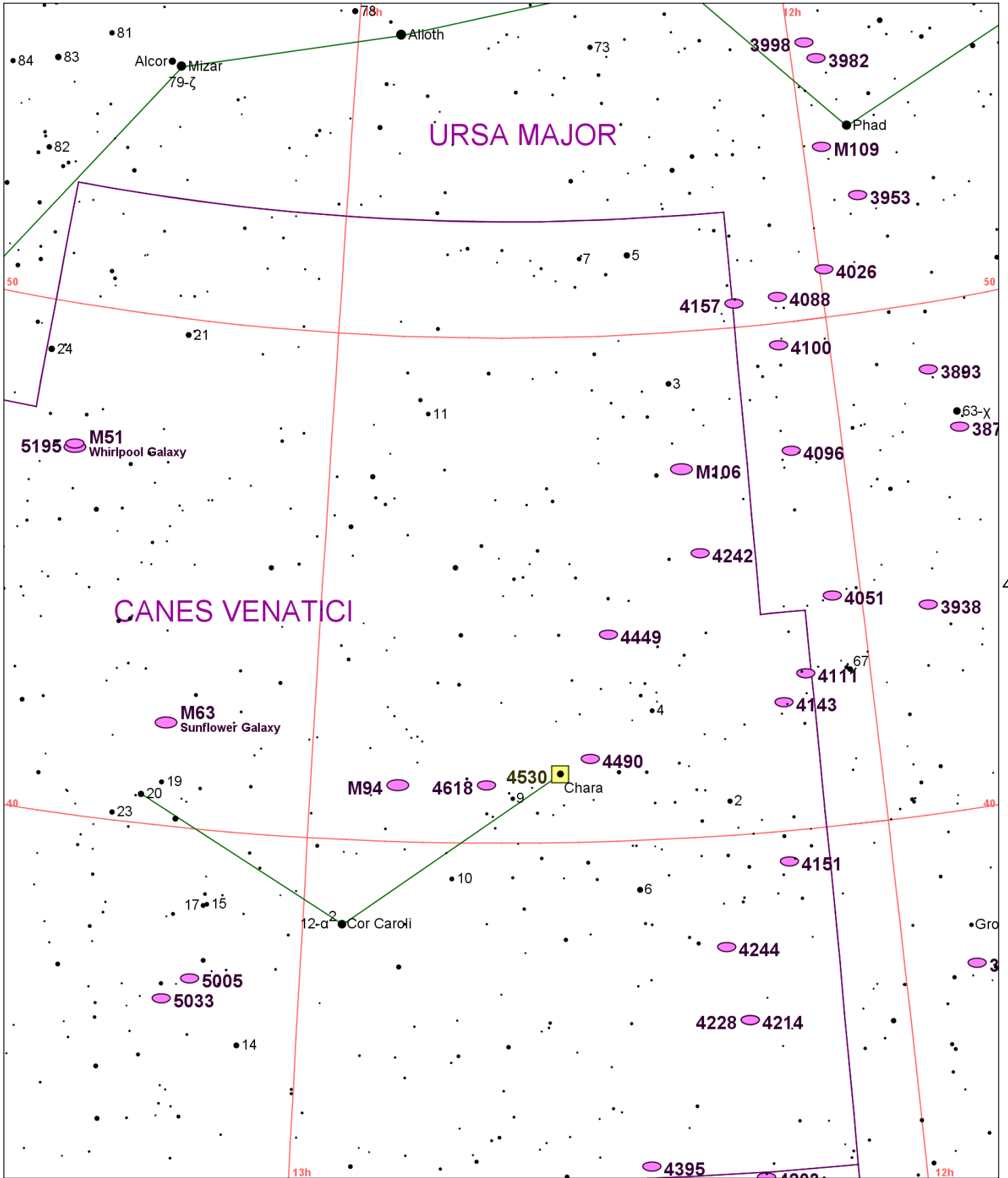


Chart 44													
Name	M	Const.	Mag.	Type	Size	R.A.	Decl.	C	R	S	O	# Stars	B
Common					Notes								
NGC 3877		UMA	11.0	GAL	5.3m x 1.2m	11h 46.1m	47° 30.0'		R43	S97			
					B,L,mE 37 - H I 201;edge on spiral;16' south from Chi UMA								
NGC 3893		UMA	10.5	GAL	4.5m x 2.4m	11h 48.6m	48° 43.0'						
					B,pL,R,mbM - H II 738;P w NGC 3896 at 3.9';PA125								
NGC 3938		UMA	10.4	GAL	5.1m x 5m	11h 52.8m	44° 07.0'						
					B,vL,R,bM,pBN,er - H I 203;Fine face on spiral								
NGC 3941		UMA	10.3	GAL	3.5m x 2.5m	11h 52.9m	36° 59.0'		R44	S98	O		
					vB,pL,R,smbM *9 - H I 173								
NGC 3953		UMA	10.1	GAL	6.9m x 3.6m	11h 53.8m	52° 19.0'				O		
					cB,L,E 0,vsbM,fine spiral - H V 45;comps 3.9';PA190;0.3'X0.1';4.6';PA156;0.4'X0.4'								
NGC 3982		UMA	11.0	GAL	2.3m x 2m	11h 56.5m	55° 07.0'						
					B,pL,R,g,sbM,disc - H IV 62								
NGC 3992	M109	UMA	9.8	GAL	7.5m x 4.4m	11h 57.6m	53° 22.0'				O		
					cB,vL,pmE,sbM,BN - H IV 61;theta struc barred sp;Gamma UMA 40' NW								
NGC 3998		UMA	10.7	GAL	2.7m x 2.3m	11h 57.9m	55° 27.0'				O		
					cB,pS,R,vq,smbM - H I 229;comp 4.7';PA145;0.3'X0.3'								
NGC 4026		UMA	10.8	GAL	4.7m x 1.2m	11h 59.4m	50° 58.0'		R45	S99	O		
					vB,cL,mE176,vsmbM,BN - H I 223;edge on lens shape								
NGC 4051		UMA	10.2	GAL	5.3m x 4.4m	12h 03.2m	44° 32.0'						
					B,vL,E,vqvsmbM*11,vseBN or * - H IV 56;thick spiral arms								
NGC 4088		UMA	10.6	GAL	5.6m x 2.1m	12h 05.6m	50° 32.0'		R46	S100	O		
					B,cL,E55,lbM - H I 206;P w NGC 4085 11' to south;distorted spir arms;UGC 7081								
NGC 4096		UMA	10.9	GAL	6.5m x 1.8m	12h 06.0m	47° 29.0'				O		
					pB,vL,mE32,sBN or bar - H I 207;nearly edge on								
NGC 4100		UMA	11.2	GAL	5.4m x 1.7m	12h 06.1m	49° 35.0'				O		
					pB,vL,vmE161,vqvlbM,vsBN - H III 717;nearly edge on spiral								
NGC 4111		CVN	10.7	GAL	4.6m x 1m	12h 07.0m	43° 04.0'		R59	S33	O		
					vB,pS,mE151,vsvBN - H I 195;NGC 4109 @ 4.8';UGC 7103;Ho 333a								
NGC 4143		CVN	10.6	GAL	2.9m x 1.9m	12h 09.6m	42° 32.0'						
					cB,R,vq,vsbMN - H IV 54								
NGC 4151		CVN	10.8	GAL	6.8m x 5.3m	12h 10.5m	39° 24.0'				O		
					vB,S,R,vsmbMBN,p of 2 - H I 165;P w NGC 4145;NGC 4156 @ 5.2';Ho 345c @ 8.8'								
NGC 4157		UMA	11.4	GAL	6.7m x 1.2m	12h 11.1m	50° 29.0'		R47				
					pF,cL,vmE60 - H I 208;SN 1937a;1955a;edge on narrow streak								
NGC 4203		COM	10.9	GAL	3.5m x 3.2m	12h 15.1m	33° 12.0'				O		
					vB,S,R,psmbM - H I 175								
NGC 4214		CVN	9.8	GAL	8.4m x 7.2m	12h 15.6m	36° 20.0'		R60	S34	O		
					cB,cL,iE,biN,=NGC 4208 - H I 95								
NGC 4228		CVN	10.2	GAL	8.4m x 7.2m	12h 15.6m	36° 20.0'						
					vF,L,R,gbM,(=4214?)								
NGC 4242		CVN	10.8	GAL	5.2m x 4m	12h 17.5m	45° 37.0'						
					vF,cL,iR,vgbM,r - H III 725								
NGC 4244		CVN	10.4	GAL	15.9m x 1.8m	12h 17.5m	37° 48.0'	C26	R61	S35	O		
					pB,vL,eE43,vgbM,vsBN or *? - H V 41								
NGC 4258	M106	CVN	8.4	GAL	17.4m x 6.6m	12h 19.0m	47° 18.0'				O		B
					!,vB,vL,vmE0,sbMBN - H V 43								
NGC 4395		CVN	10.2	GAL	12.3m x 10m	12h 25.8m	33° 33.0'						
					eF,vL,np of Dneb - H V 29								
NGC 4449		CVN	9.6	GAL	6.2m x 4.9m	12h 28.2m	44° 06.0'	C21	R62	S36	O		
					vB,cL,mE,D or bifid,rrr,*F,B center w N or * - H I 213								
NGC 4490		CVN	9.8	GAL	6.4m x 3.2m	12h 30.6m	41° 39.0'		R63	S37	O		
					vB,vL,mE130,r,sf of 2 - H I 198;disrupted;P w NGC 4485 @ 3.5'								
NGC 4530		CVN	4.3	MISC		12h 33.8m	41° 21.0'						
					neb * 4mag (8 CVn)								
NGC 4618		CVN	10.8	GAL	4.2m x 3.4m	12h 41.6m	41° 09.0'						
					B,L,E,mbM,curved branch n - H I 178;P w NGC 4625 @ 8.3'								
NGC 4736	M94	CVN	8.2	GAL	12.3m x 10.8m	12h 50.9m	41° 07.0'				O		B

Chart 44													
Name	M	Const.	Mag.	Type	Size	R.A.	Decl.	C	R	S	O	# Stars	B
Common					Notes								
					vB,L,iR,vsvmbM,BN,r								
NGC 5005		CVN	9.8	GAL	5.8m x 2.9m	13h 10.9m	37° 03.0'	C29	R66	S40	O		
					vB,vL,vmE66,vsbMN - H I 96;P w NGC 5033;eBN in B lens;sev knotty arms								
NGC 5033		CVN	10.2	GAL	9.8m x 3.6m	13h 13.5m	36° 36.0'		R67	S41	O		
					vB,pL,E167,smbM,vBN - H I 97;P w NGC 5005;svBN in B bulge w spir patt of dk lanes								
NGC 5055	M63	CVN	8.6	GAL	12.6m x 7.5m	13h 15.8m	42° 02.0'				O		B
Sunflower Galaxy					vB,L,pME120,vsmB,M,BN - vsvB stell. N in B inner lens;many filam								
NGC 5194	M51	CVN	8.4	GAL	10.8m x 6.6m	13h 29.9m	47° 12.0'				O		B
Whirlpool Galaxy					!!!,Great spiral nebula - interacting pair;classic spiral								
NGC 5195		CVN	9.6	GAL	5.9m x 4.6m	13h 30.0m	47° 16.0'						
					B,pS,IE,vgbM,inv M51 - H I 186;Interacting P w M 51;peculiar								

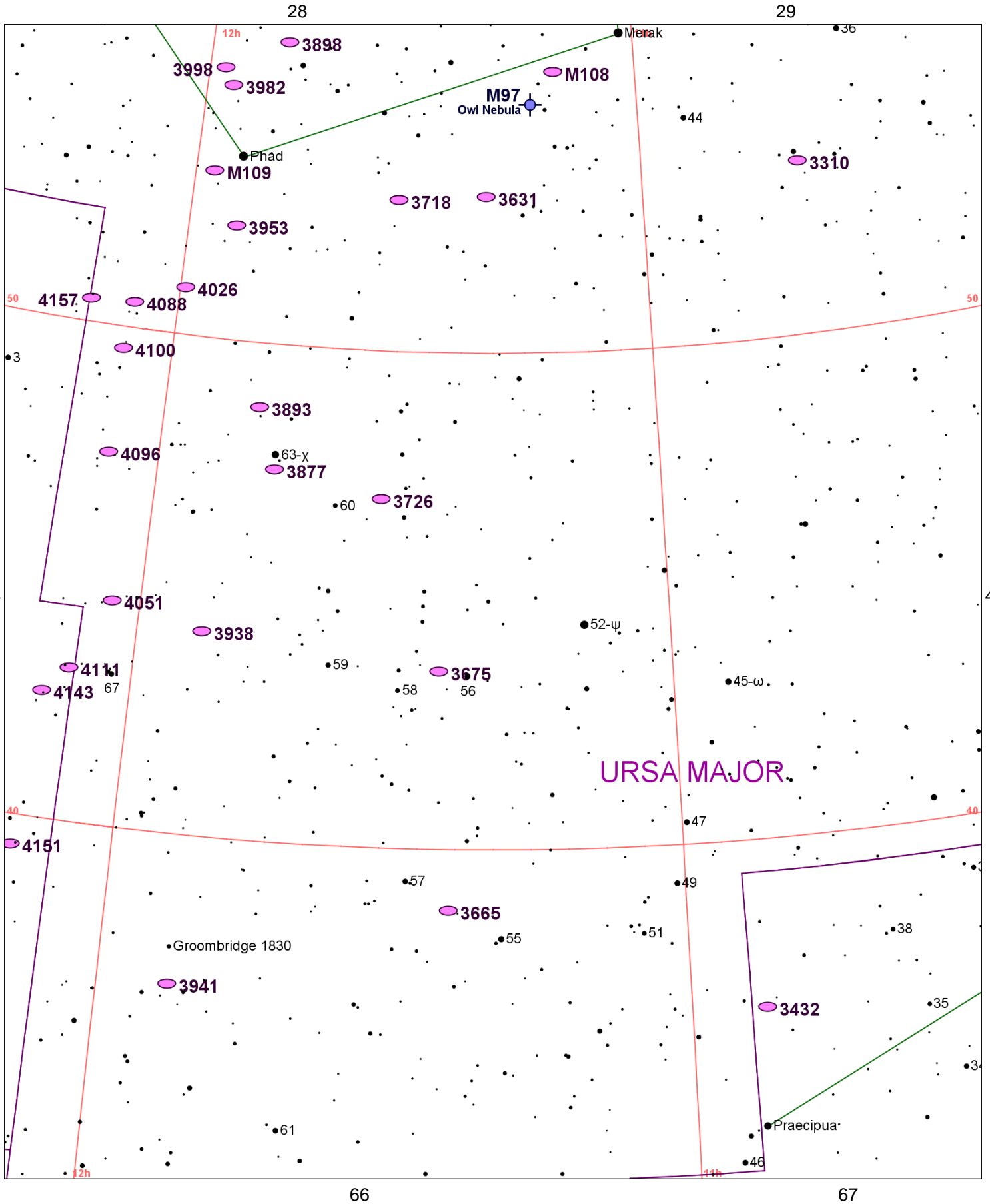


Chart 45													
Name	M	Const.	Mag.	Type	Size	R.A.	Decl.	C	R	S	O	# Stars	B
Common					Notes								
NGC 3310		UMA	10.8	GAL	2.8m x 2.6m	10h 38.8m	53° 30.0'				O		
					cB,pL,R,vg,vsmbMN 15' - H IV 60;UGC 5786								
NGC 3432		LMI	11.3	GAL	6.6m x 1.6m	10h 52.5m	36° 37.0'		R53	S66			
					pB,pL,vmE 40,** close sp - H I 172;P w UGC 5983;mag 17;1.2'X1.0'								
NGC 3556	M108	UMA	10.0	GAL	8.6m x 2.4m	11h 11.5m	55° 40.0'				O		
					cB,vL,vmE 79,pBM - H V 46;M 97 is 48' SE;nearly edge-on								
NGC 3587	M97	UMA	11.0	PN	202s x 196s	11h 14.8m	55° 01.0'				O		B
Owl Nebula					!! vB,vL,R,vvg,vsbM - PK148+57.1								
NGC 3631		UMA	10.4	GAL	5m x 4.8m	11h 21.0m	53° 10.0'						
					pB,L,R,svmbMrN - H I 226;SN 1964a;UGC 6360;Arp 27								
NGC 3665		UMA	10.8	GAL	3.5m x 3m	11h 24.7m	38° 46.0'				O		
					cB,cL,iR,pgmbM - H I 219;P w NGC 3658								
NGC 3675		UMA	10.2	GAL	6.2m x 3.6m	11h 26.1m	43° 35.0'			S96	O		
					vB,cL,vmE 0,vsmbMN,many st p - H I 194;in field of 56 UMa								
NGC 3718		UMA	10.8	GAL	8.2m x 3.5m	11h 32.6m	53° 04.0'						
					pB,vL,R,vglbM - H I 221;P w NGC 3729 at 11.5'ENE;cent dust lane sprl arms								
NGC 3726		UMA	10.4	GAL	6m x 4.1m	11h 33.3m	47° 02.0'						
					pB,vL,IE 0,vsmbM *15,*11 n - H II 730;well defined spiral pattern								
NGC 3877		UMA	11.0	GAL	5.3m x 1.2m	11h 46.1m	47° 30.0'		R43	S97			
					B,L,mE 37 - H I 201;edge on spiral;16' south from Chi UMa								
NGC 3893		UMA	10.5	GAL	4.5m x 2.4m	11h 48.6m	48° 43.0'						
					B,pL,R,mbM - H II 738;P w NGC 3896 at 3.9';PA125								
NGC 3898		UMA	10.7	GAL	3.8m x 2.6m	11h 49.3m	56° 05.0'				O		
					B,pL,IE,svmbM - H I 228;comp 5.0';PA60;0.7'X0.12';NGC 3888 15' south								
NGC 3938		UMA	10.4	GAL	5.1m x 5m	11h 52.8m	44° 07.0'						
					B,vL,R,bM,pBN,er - H I 203;Fine face on spiral								
NGC 3941		UMA	10.3	GAL	3.5m x 2.5m	11h 52.9m	36° 59.0'		R44	S98	O		
					vB,pL,R,smbM *9 - H I 173								
NGC 3953		UMA	10.1	GAL	6.9m x 3.6m	11h 53.8m	52° 19.0'				O		
					cB,L,E 0,vsbM,fine spiral - H V 45;comps 3.9';PA190;0.3'X0.1';4.6';PA156;0.4'X0.4'								
NGC 3982		UMA	11.0	GAL	2.3m x 2m	11h 56.5m	55° 07.0'						
					B,pL,R,g,sbM,disc - H IV 62								
NGC 3992	M109	UMA	9.8	GAL	7.5m x 4.4m	11h 57.6m	53° 22.0'				O		
					cB,vL,pmE,sbM,BN - H IV 61;theta struc barred sp;Gamma UMa 40' NW								
NGC 3998		UMA	10.7	GAL	2.7m x 2.3m	11h 57.9m	55° 27.0'				O		
					cB,pS,R,vg,smbM - H I 229;comp 4.7';PA145;0.3'X0.3'								
NGC 4026		UMA	10.8	GAL	4.7m x 1.2m	11h 59.4m	50° 58.0'		R45	S99	O		
					vB,cL,mE176,vsmbM,BN - H I 223;edge on lens shape								
NGC 4051		UMA	10.2	GAL	5.3m x 4.4m	12h 03.2m	44° 32.0'						
					B,vL,E,vgvsmbM*11,vseBN or * - H IV 56;thick spiral arms								
NGC 4088		UMA	10.6	GAL	5.6m x 2.1m	12h 05.6m	50° 32.0'		R46	S100	O		
					B,cL,E55,lbM - H I 206;P w NGC 4085 11' to south;distorted spir arms;UGC 7081								
NGC 4096		UMA	10.9	GAL	6.5m x 1.8m	12h 06.0m	47° 29.0'				O		
					pB,vL,mE32,sBN or bar - H I 207;nearly edge on								
NGC 4100		UMA	11.2	GAL	5.4m x 1.7m	12h 06.1m	49° 35.0'				O		
					pB,vL,vmE161,vglbM,vsBN - H III 717;nearly edge on spiral								
NGC 4111		CVN	10.7	GAL	4.6m x 1m	12h 07.0m	43° 04.0'		R59	S33	O		
					vB,pS,mE151,vsbBN - H I 195;NGC 4109 @ 4.8';UGC 7103;Ho 333a								
NGC 4143		CVN	10.6	GAL	2.9m x 1.9m	12h 09.6m	42° 32.0'						
					cB,R,vg,vsbMN - H IV 54								
NGC 4151		CVN	10.8	GAL	6.8m x 5.3m	12h 10.5m	39° 24.0'				O		
					vB,S,R,vsmbMBN,p of 2 - H I 165;P w NGC 4145;NGC 4156 @ 5.2';Ho 345c @ 8.8'								
NGC 4157		UMA	11.4	GAL	6.7m x 1.2m	12h 11.1m	50° 29.0'		R47				
					pF,cL,vmE60 - H I 208;SN 1937a;1955a;edge on narrow streak								

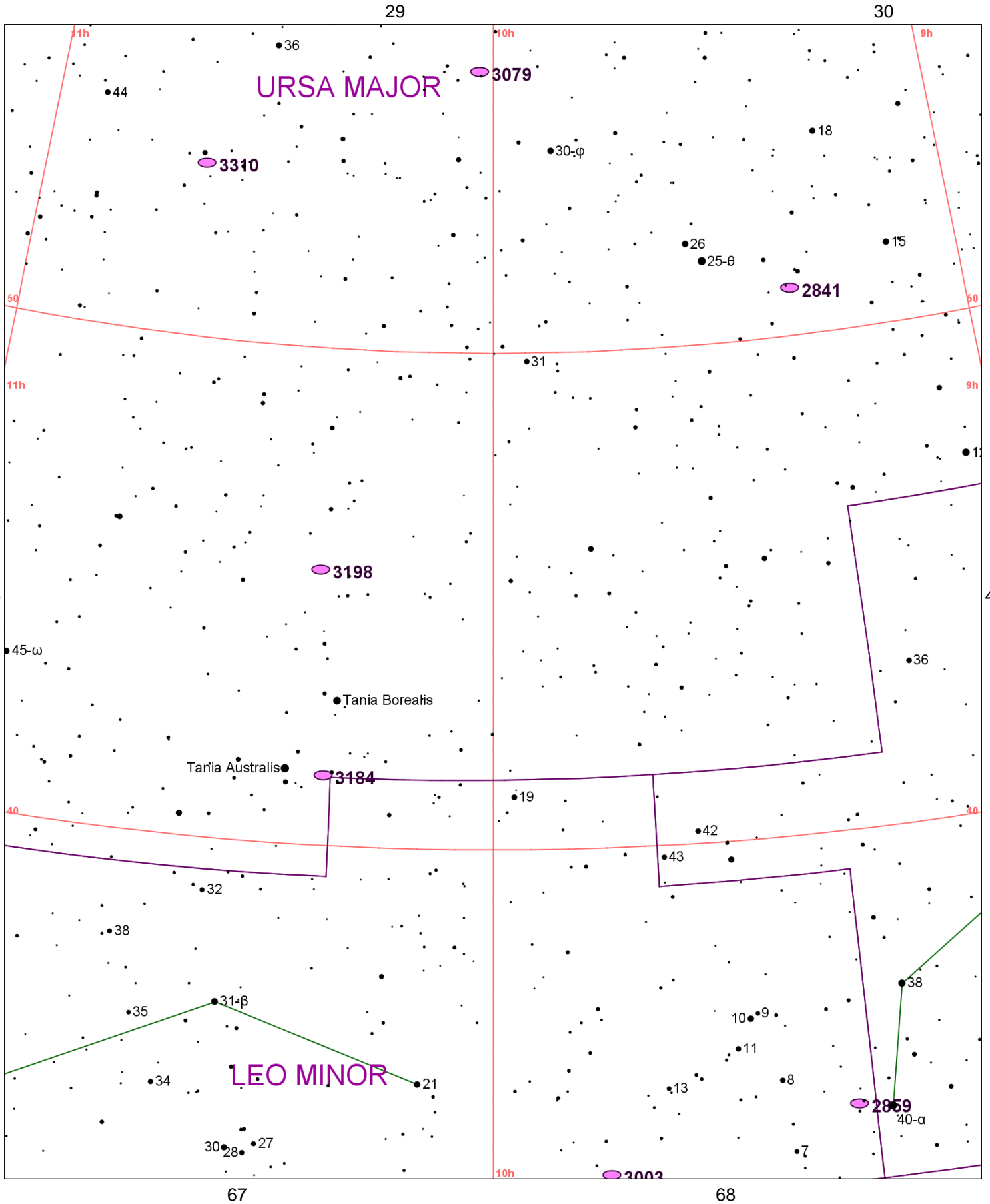


Chart 46													
Name	M	Const.	Mag.	Type	Size	R.A.	Decl.	C	R	S	O	# Stars	B
Common					Notes								
NGC 2841		UMA	9.2	GAL	7.7m x 3.6m	9h 22.0m	50° 59.0'		R40	S92	O		
					vB,L,vmE151,vsmbM = *10 - H I 205;fine spiral w symmetrical whorls								
NGC 2859		LMI	10.9	GAL	4m x 3.6m	9h 24.3m	34° 31.0'						
					vB,pL,R,smbM - H I 137;bright nucleus in diff. bar w diff. blobs								
NGC 3003		LMI	11.9	GAL	5.7m x 1.4m	9h 48.6m	33° 25.0'		R51				
					!,cB,L,vmE90 - H V 26;BM;no def N;dk mark & knots;filam arms								
NGC 3079		UMA	10.9	GAL	8.1m x 1.3m	10h 02.0m	55° 41.0'		R41	S93	O		
					vB,L,mE 135,long streak - H V 47;brightest of 3;comp 6.5 nf;0.9'X0.4';mag 14.6								
NGC 3184		UMA	9.8	GAL	7.6m x 7.4m	10h 18.3m	41° 25.0'		R42	S95	O		
					pB,vL,R,vgbM - H I 168;svBN;smooth lens w spiral pattern of dark markings								
NGC 3198		UMA	10.3	GAL	8.1m x 3m	10h 19.9m	45° 33.0'						
					pB,vL,mE 45,vgbM - H I 199;svBN in bar partly obscured on one side								
NGC 3310		UMA	10.8	GAL	2.8m x 2.6m	10h 38.8m	53° 30.0'				O		
					cB,pL,R,vg,vsmbMN 15' - H IV 60;UGC 5786								

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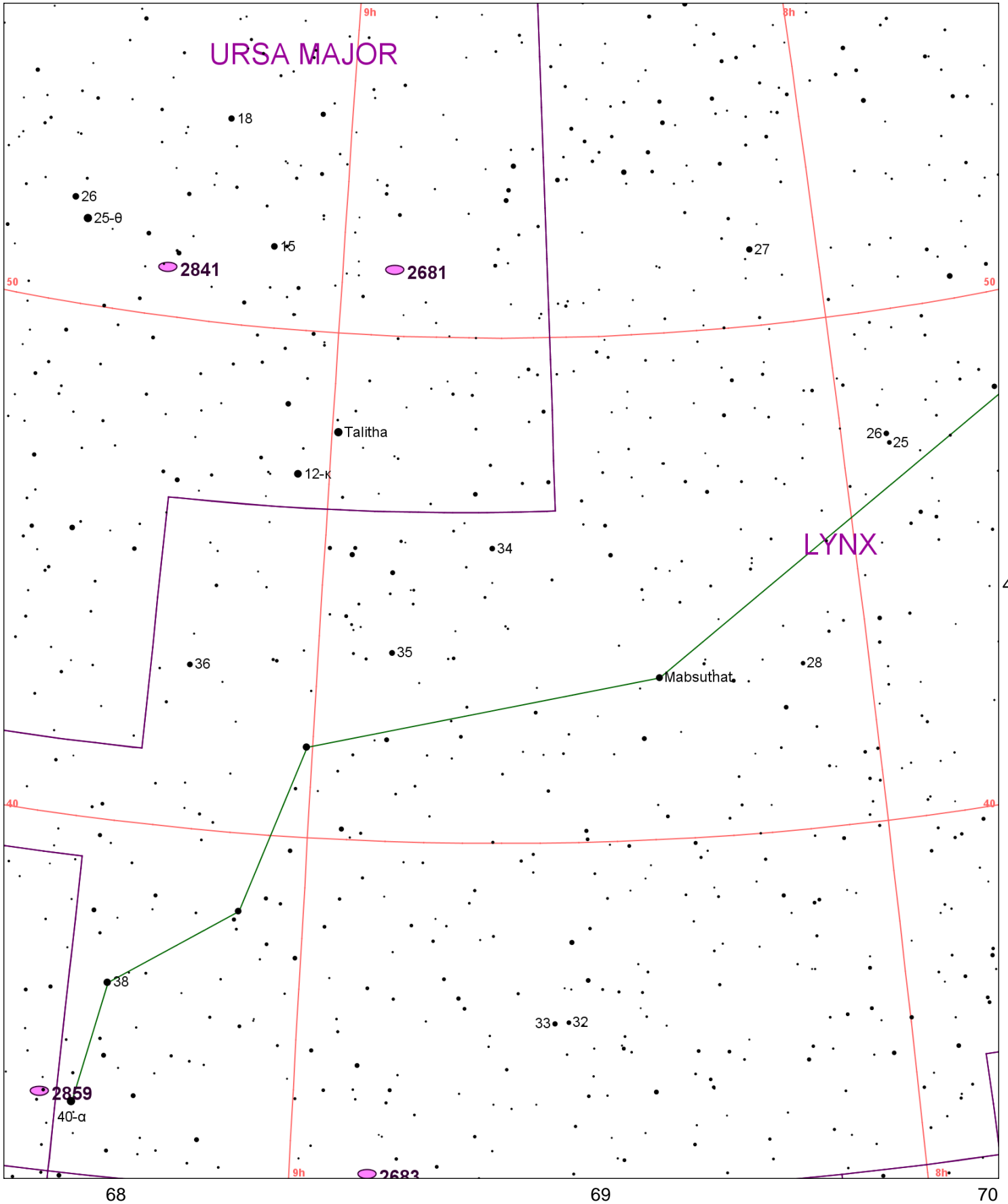


Chart 47													
Name	M	Const.	Mag.	Type	Size	R.A.	Decl.	C	R	S	O	# Stars	B
Common					Notes								
NGC 2681		UMA	10.3	GAL	3.7m x 3.7m	8h 53.5m	51° 19.0'				O		
					vB,vL,vg,vsmbM *10 - H I 242;Compact center and distinct spiral arms								
NGC 2683		LYN	9.8	GAL	8.8m x 2.5m	8h 52.7m	33° 25.0'		R39	S67	O		
					vB,vL,vmE39,gmbM - H I 200;peanut-shaped bulge;many filam; arm w dk lanes 1 side								
NGC 2841		UMA	9.2	GAL	7.7m x 3.6m	9h 22.0m	50° 59.0'		R40	S92	O		
					vB,L,vmE151,vsmbM = *10 - H I 205;fine spiral w symmetrical whorls								
NGC 2859		LMI	10.9	GAL	4m x 3.6m	9h 24.3m	34° 31.0'						
					vB,pL,R,smbM - H I 137;bright nucleus in diff. bar w diff. blobs								

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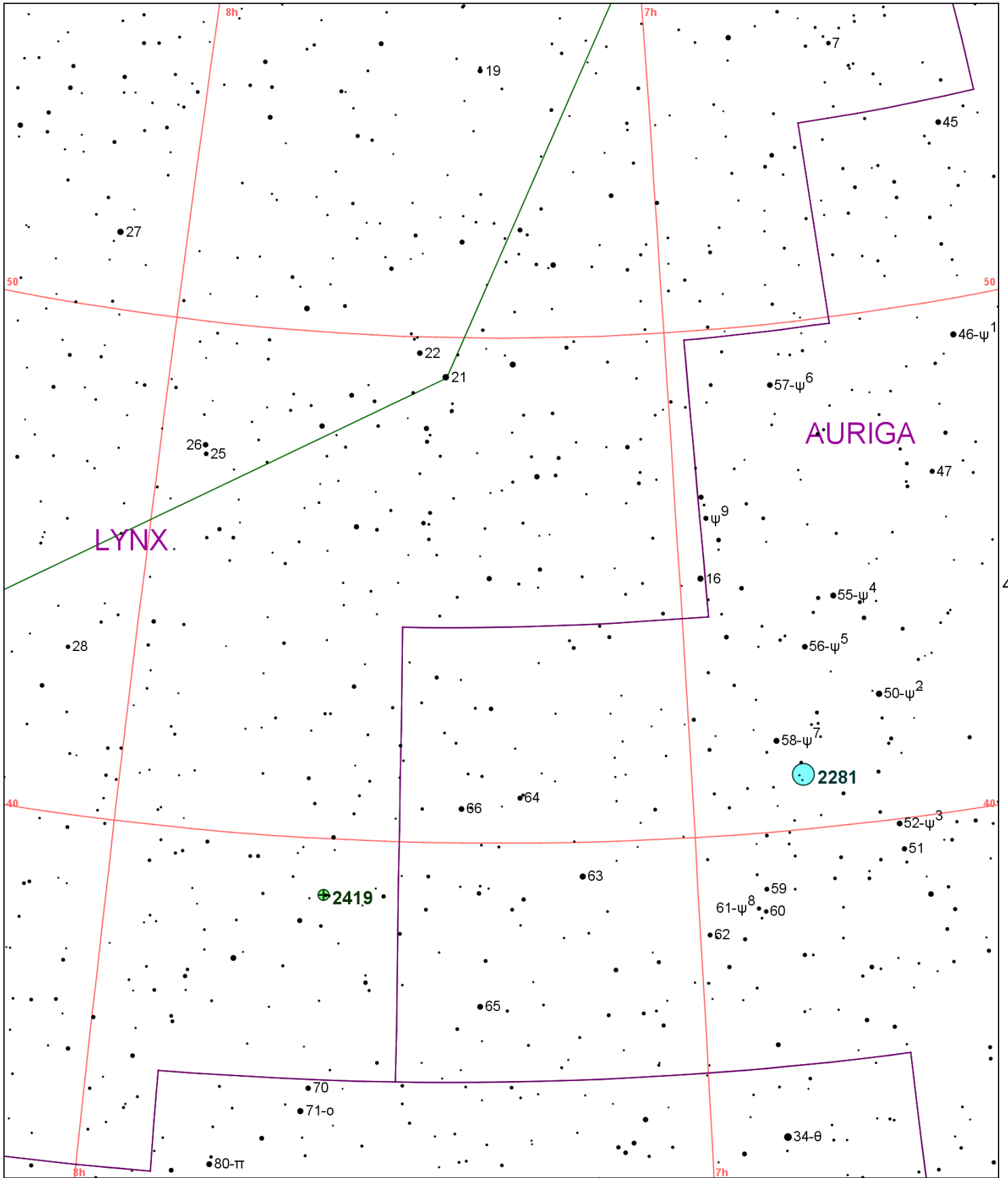


Chart 48													
Name	M	Const.	Mag.	Type	Size	R.A.	Decl.	C	R	S	O	# Stars	B
Common					Notes								
NGC 2281		AUR	5.4	OC	15.0m	6h 48.3m	41° 05.0'					30	B
					Cl,pRi,vIC,st pL - H VIII 71								
NGC 2419		LYN	10.4	GC	6.2m	7h 38.1m	38° 53.0'	C25			O		
					pB,pL,IE 90deg,vgbM,*7-8 267deg,4' dist - H I 218;Most distant globular;Brightest * 17 mag								