



**Stephen Saber**

## CONCORDIEM BOREALIS

A collection of DSOs and double stars unifies the Astronomical League's Messier, Bino Deepsky, Caldwell (the 70 most northern), and Double Star targets as well as the RASC's 110 Finest NGC Objects (of which 90 are H400s. The remainder also appears in other AL projects). Three doubles I couldn't live without are also included.

Designed with those tackling the Observe Programs in mind, the overlapping entries have been omitted- leaving a treasure chest of 409 gems for northern observers.

Grouped by constellation, the basic data and corresponding Pocket Sky Atlas chart follow each entry.

### ANDROMEDA type/mag/radec/psa

M31 GX 3.5 0043+4119 03  
M32 GX 8.2 0043+4055 03  
M110 GX 8.0 0041+4144 03  
NGC752 OC 5.7 0158+3743 02  
NGC891 GX 10.0 0223+4223 02  
NGC7662 PN 9.0 2326+4236 03  
gammaAnd DS 2.3 0204+4222 02

### AQUARIUS

M2 GC 6.5 2134-0047 77  
M72 GC 9.4 2054-1230 77  
M73 AS 9.0 2059-1236 77  
NGC7009 PN 8.0 2105-1120 77  
NGC7293 PN 7.5 2230-2046 76  
zetaAqr DS 4.3 2229-0001 77  
94 Aqr DS 5.3 2319-1328 76

### AQUILA

NGC6709 OC 6.7 1852+1022 65  
NGC6781 PN 12.0 1919+0634 65  
57 Aql DS 5.8 1955-0814 66

### ARIES

NGC772 GX 10.3 0200+1903 04  
gammaAri DS 4.8 0154+1918 04  
lambdaAri DS 4.9 0158+2336 04

### AURIGA

M36 OC 6.0 0537+3408 12  
M37 OC 5.6 0553+3233 12  
M38 OC 6.4 0529+3550 12  
NGC1893 OC 7.5 0523+3324 12  
NGC1907 OC 8.2 0529+3519 12  
NGC1931 CN 11.3 0532+3415 12  
NGC2281 OC 5.4 0650+4103 23  
IC405 EN -- 0517+3416 12  
thetaAur DS 2.7 0600+3713 12

### BOOTES

NGC5248 GX 10.2 1338+0851 44  
NGC5466 GC 9.1 1406+2830 44  
deltaBoo DS 3.5 1516+3319 42  
iotaBoo DS 4.9 1416+5122 42  
kappaBoo DS 4.6 1414+5147 42  
epsilonBoo DS 2.5 1445+2704 44  
muBoo DS 4.3 1525+3723 42  
piBoo DS 4.9 1441+1625 44  
xiBoo DS 4.7 1451+1906 44

### CAMELOPARDALIS

NGC1501 PN 13.0 0408+6056 13  
NGC2403 GX 8.4 0738+6535 21  
NGC2655 GX 10.1 0857+7811 21  
IC342 GX 9.1 0348+6807 11  
Stock23 OC 6.5 0316+6002 11  
Kemble1 OC 4.0 0358+6306 11  
1 Cam DS 5.7 0432+5355 12  
32 Cam DS 5.3 1249+8325 21

## CANCER

M44 OC 3.1 0841+1957 24  
M67 OC 6.9 0851+1147 24  
NGC2775 GX 10.3 0911+0700 24  
iotaCnc DS 4.2 0847+2846 24  
zetaCnc DS 5.5 0812+1739 24

## CANES VENATICI

M3 GC 6.3 1343+2821 44  
M51 GX 8.4 1330+4710 43  
M63 GX 8.6 1316+4159 43  
M94 GX 8.2 1251+4104 43  
M106 GX 8.3 1219+4715 43  
NGC4111 GX 10.8 1208+4301 43  
NGC4214 GX 9.7 1216+3617 43  
NGC4244 GX 10.2 1218+3746 43  
NGC4449 GX 9.4 1229+4403 43  
NGC4490 GX 9.8 1231+4135 43  
NGC4631 GX 9.3 1242+3229 43  
NGC4656/7 GX 10.4 1244+3207 43  
NGC5005 GX 9.8 1311+3700 43  
NGC5033 GX 10.1 1314+3633 43  
alphaCVn DS 2.9 1256+3819 43

## CANIS MAJOR

M41 OC 4.5 0646-2045 27  
NGC2359 EN 11.0 0719-1313 27  
NGC2360 OC 7.2 0718-1538 27  
NGC2362 OC 4.1 0719-2457 27  
epsilonCMa DS 1.5 0659-2858 27  
h3945 DS 5.0 0717-2318 27

## CAPRICORNUS

M30 GC 7.5 2141-2309 77  
alphaCap DS 3.6 2018-1233 66  
betaCap DS 3.4 2021-1447 66

## CASSIOPEIA

M52 OC 6.9 2325+6138 03  
M103 OC 7.4 0134+6044 03  
NGC129 OC 6.5 0030+6017 03  
NGC147 GX 9.3 0034+4833 03  
NGC185 GX 9.2 0039+4823 03  
NGC281 EN 7.0 0053+5640 03  
NGC457 OC 6.4 0120+5823 03  
NGC559 OC 9.5 0130+6320 01  
NGC663 OC 7.1 0147+6117 01

NGC7635 EN -- 2321+6115 71  
NGC7789 OC 6.7 2357+5647 03  
IC289 PN 13.1 0311+6121 02  
Cr463 OC 5.7 0148+7157 01  
Stock2 OC 4.4 0215+5916 01  
Mark6 OC 7.1 0230+6039 01  
Mel15 OC 6.5 0233+6127 01  
Tr3 OC 7.0 0312+6315 01  
etaCas DS 3.4 0049+5749 03  
iotaCas DS 4.0 0229+6724 01  
sigmaCas DS 5.0 2359+5545 03

## CEPHEUS

NGC40 PN 11.0 0013+7235 71  
NGC188 OC 8.1 0045+8523 71  
NGC6939 OC 7.8 2032+6040 61  
NGC6946 GX 8.9 2035+6011 61  
NGC7023 CN 7.0 2101+6812 71  
NGC7129 RN 12.0 2141+6608 71  
NGC7160 OC 6.1 2154+6238 71  
NGC7235 OC 7.7 2213+5719 71  
Sh2-155 DN -- 2257+6237 71  
betaCep DS 3.2 2129+7034 71  
deltaCep DS 3.9 2229+5825 71  
xiCep DS 4.4 2204+6438 71  
Struve 2816 DS 5.6 2139+5729 73

## CETUS

M77 GX 8.8 0243+0001 04  
NGC246 PN 8.0 0047-1150 07  
NGC247 GX 8.9 0047-2043 07  
NGC936 GX 10.1 0228-0107 04  
IC1613 GX 9.3 0105+0207 05  
gammaCet DS 3.5 0243+0314 04

## COMA BERENICES

M53 GC 7.7 1313+1807 45  
M64 GX 8.5 1257+2138 45  
M85 GX 9.2 1226+1808 C  
M88 GX 9.5 1232+1422 C  
M91 GX 10.2 1236+1427 C  
M98 GX 10.1 1214+1451 C  
M99 GX 9.8 1219+1422 C  
M100 GX 9.4 1223+1546 C  
NGC4274 GX 10.4 1220+2934 45  
NGC4414 GX 10.3 1227+3110 45  
NGC4494 GX 9.9 1232+2544 45  
NGC4559 GX 9.9 1236+2755 45  
NGC4565 GX 9.6 1237+2556 45  
NGC4725 GX 9.2 1251+2527 45

**COMA BERENICES (continued)**

NGC4889 GX 11.4 1300+2755 45  
Mel 111 OC 1.8 1225+2600 45  
24 Com DS 5.2 1235+1823 45

**CORONA AUSTRALIS**

NGC6729 EN 9.7 1902-3657 69

**CORONA BOREALIS**

zetaCrB DS 5.1 1539+3638 53  
sigmaCrB DS 5.6 1615+3352 53

**CORVUS**

NGC4038 GX 10.7 1202-1855 47  
NGC4039 GX 13.0 1202-1856 47  
NGC4361 PN 10.0 1225-1851 47  
deltaCrv DS 3.0 1230-1631 47

**CYGNUS**

M29 OC 6.6 2024+3834 62  
M39 OC 4.6 2132+4828 62  
NGC6819 OC 7.3 1942+4012 62  
NGC6826 PN 10.0 1945+5032 62  
NGC6888 EN 7.5 2012+3822 62  
NGC6910 OC 7.4 2023+4049 62  
NGC6960 SN -- 2046+3045 62  
NGC6992/5 SN -- 2057+3145 62  
NGC7000 EN 6.0 2059+4422 62  
NGC7027 PN 10.0 2107+4216 62  
NGC7063 OC 7.0 2125+3632 62  
IC5146 CN 10.0 2154+4718 73  
betaCyg DS 3.1 1931+2758 62  
31 Cyg DS 3.8 2014+4644 62  
61 Cyg DS 5.2 2107+3845 62

**DELPHINUS**

NGC6934 GC 8.7 2034+0724 64  
NGC7006 GC 10.6 2102+1611 64  
gammaDel DS 4.5 2047+1607 64

**DRACO**

M102 GX 10.0 1507+5544 42  
NGC4236 GX 9.7 1217+6928 41  
NGC5907 GX 10.4 1516+5619 42  
NGC6503 GX 10.2 1749+7009 61  
NGC6543 PN 8.8 1759+6638 51  
muDra DS 5.7 1705+5428 52  
nuDra DS 4.9 1732+5511 52  
psiDra DS 4.9 1742+7209 51  
16/17 Dra DS 5.4 1636+5255 52  
40/41 Dra DS 5.7 1800+8000 51

**ERIDANIS**

NGC1232 GX 9.9 0310-2035 17  
NGC1535 PN 10.4 0414-1244 17  
32 Eri DS 4.8 0354-0257 17  
55 Eri DS 6.7 0444-0848 16

**FORNAX**

NGC1097 GX 9.2 0246-3017 06

**GEMINI**

M35 OC 5.1 0609+2420 25  
NGC2158 OC 8.6 0608+2406 25  
NGC2371 PN 11.0 0726+2929 25  
NGC2372 PN 11.5 0726+2930 25  
NGC2392 PN 9.9 0729+2055 25  
alphaGem DS 1.9 0735+3153 25  
deltaGem DS 3.5 0720+2159 25

**HERCULES**

M13 GC 5.9 1642+3627 52  
M92 GC 6.5 1717+4307 52  
NGC6210 PN 9.0 1645+2348 54  
alphaHer DS 3.5 1715+1423 52  
deltaHer DS 3.1 1715+2450 54  
kappaHer DS 5.3 1608+1703 55  
rhoHer DS 4.6 1724+3709 52  
95 Her DS 5.0 1802+2136 54

## HYDRA

M48 OC 5.8 0814-0549 26  
M68 GC 8.2 1240-2648 47  
M83 GX 7.6 1337-2954 47  
NGC3242 PN 8.6 1025-1838 37  
NGC5694 GC 10.2 1440-2632 46  
N Hya DS 5.8 1132-2916 36

## LACERTA

NGC7209 OC 7.7 2205+4630 73  
NGC7243 OC 6.4 2215+4953 73  
8 Lac DS 5.7 2236+3938 72

## LEO

M65 GX 9.3 1119+1302 34  
M66 GX 9.0 1121+1256 34  
M95 GX 9.7 1044+1139 34  
M96 GX 9.2 1047+1146 34  
M105 GX 9.3 1048+1232 34  
NGC2903 GX 8.9 0933+2128 35  
NGC3384 GX 10.0 1049+1235 34  
NGC3521 GX 8.9 1106-0005 34  
NGC3607 GX 10.0 1117+1800 34  
NGC3626 GX 10.9 1121+1818 34  
NGC3628 GX 9.5 1121+1333 34  
alphaLeo DS 1.4 1008+1158 35  
gammaLeo DS 2.2 1020+1951 35  
54 Leo DS 4.5 1056+2445 34

## LEO MINOR

NGC3003 GX 11.7 0949+3323 33  
NGC3344 GX 10.0 1044+2452 35  
NGC3432 GX 11.3 1023+3634 33

## LEPUS

M79 GC 8.0 0525-2433 16  
HR1944 DS 6.4 0539-1751 16  
gammaLep DS 3.8 0545-2227 16

## LIBRA

alphaLib DS 2.8 1451-1602 46

## LYNX

NGC2419 GC 10.4 0739+3852 23  
NGC2683 GX 9.7 0853+3323 22  
12 Lyn DS 5.4 0646+5927 23  
19 Lyn DS 5.6 0723+5517 23  
38 Lyn DS 3.9 0919+3648 22

## LYRA

M56 GC 8.3 1917+3012 63  
M57 PN 9.0 1854+3303 63  
betaLyr DS 3.4 1850+3322 63  
zetaLyr DS 4.3 1845+3736 63  
epsilonLyr DS 5.0 1844+3940 63  
Struve 2404 DS 6.9 1851+1059 63  
O.Struve 525 DS 6.0 1855+3358 63

## MONOCEROS

M50 OC 5.9 0704-0821 27  
NGC2232 OC 3.9 0627-0445 27  
NGC2244 OC 4.8 0633+0452 25  
NGC2251 OC 7.3 0635+0822 25  
NGC2261 EN 10.0 0639+0844 25  
NGC2264 CN 3.9 0642+0952 25  
NGC2237+ EN -- 0631+0503 25  
NGC2301 OC 6.0 0652+0027 25  
NGC2343 OC 6.7 0709-1040 27  
NGC2506 OC 7.6 0801-1048 26  
betaMon DS 4.7 0629-0702 27  
epsilonMon DS 4.5 0624+0436 25

## OPHIUCHUS

M9 GC 7.9 1720-1831 56  
M10 GC 6.6 1658-0126 56  
M12 GC 6.6 1648-0158 56  
M14 GC 7.6 1738-0315 56  
M19 GC 7.2 1703-2617 56  
M62 GC 6.6 1702-3008 56  
M107 GC 8.1 1633-1304 56  
NGC6369 PN 13.0 1730-2346 56  
NGC6572 PN 9.0 1812+0651 65  
NGC6633 OC 4.6 1828+0634 65  
IC4665 OC 4.2 1746+0543 54  
omicronOph DS 5.4 1718-2417 56  
36 Oph DS 5.1 1715-2636 56  
70 Oph DS 4.2 1806+0230 65

## ORION

M42 EN 3.9 0536-0527 16  
M43 EN 9.0 0536-0516 16  
M78 RN 8.0 0547+0003 16  
NGC1662 OC 6.4 0449+1057 14  
NGC1788 RN -- 0507-0320 16  
NGC1973+ EN -- 0535-0444 B  
NGC1981 OC 4.6 0536-0426 16  
NGC2022 PN 12.0 0543+0905 14  
NGC2024 EN -- 0542-0151 14  
NGC2169 OC 5.9 0609+1357 14  
NGC2194 OC 8.5 0614+1248 14  
betaOri DS 0.1 0515-0812 16  
deltaOri DS 2.2 0532-0018 16  
theta1 Ori DS 5.4 0536-0523 B  
theta2 Ori DS 5.2 0536-0525 B  
iotaOri DS 2.8 0535-0555 B  
lambdaOri DS 3.6 0535+0956 14  
sigmaOri DS 4.0 0539-0236 16  
zetaOri DS 1.9 0541-0157 16  
Struve 747 DS 4.8 0535-0600 B

## PEGASUS

M15 GC 6.4 2130+1212 75  
NGC7331 GX 9.5 2237+3427 72  
NGC7479 GX 11.0 2305+1222 74  
NGC7814 GX 10.5 0004+1612 74  
epsilonPeg DS 2.4 2144+0952 75

## PERSEUS

M34 OC 5.2 0243+4249 13  
M76 PN 12.0 0143+5136 13  
NGC869 OC 4.0 0220+5711 13  
NGC884 OC 4.0 0223+5709 13  
NGC1023 GX 9.5 0241+3906 13  
NGC1275 GX 11.6 0320+4133 13  
NGC1342 OC 6.7 0332+3722 13  
NGC1491 EN -- 0404+5120 13  
NGC1528 OC 6.4 0416+5115 13  
NGC1582 OC 7.0 0433+4352 12  
Tr2 OC 5.9 0237+5559 13  
Mel20 OC 1.2 0322+4900 13  
etaPer DS 3.8 0251+5554 13  
Struve 331 DS 5.3 0301+5221 13

## PISCES

M74 GX 9.2 0137+1549 04  
alphaPsc DS 4.2 0202+0246 04  
zetaPsc DS 5.6 0113+0735 05  
psi1 Psc DS 5.6 0106+2128 05  
65 Psc DS 6.3 0050+2743 05

## PUPPIS

M46 OC 6.1 0742-1450 27  
M47 OC 4.4 0737-1431 27  
M93 OC 6.2 0745-2353 26  
NGC2440 PN 11.0 0742-1814 26  
NGC2477 OC 5.8 0753-3834 28  
NGC2527 OC 6.5 0806-2811 28  
NGC2539 OC 6.5 0811-1251 26  
NGC2571 OC 7.0 0819-2946 28  
kappaPup DS 4.5 0739-2648 27

## SAGITTA

M71 GC 8.3 1954+1848 64

## SAGITTARIUS

M8 CN 5.8 1804-2423 67  
M17 EN 6.0 1821-1611 67  
M18 OC 6.9 1820-1708 67  
M20 EN 6.3 1803-2302 67  
M21 OC 5.9 1805-2635 67  
M22 GC 5.1 1837-2354 67  
M23 OC 5.5 1757-1901 67  
M24 SC 4.6 1817-1850 67  
M25 OC 4.6 1832-1915 67  
M28 GC 6.9 1825-2452 67  
M54 GC 7.7 1856-3028 67  
M55 GC 7.0 1940-3057 66  
M69 GC 7.7 1832-3221 67  
M70 GC 8.1 1844-3217 67  
M75 GC 8.6 2007-2154 66  
NGC6445 PN 13.0 1750-2001 67  
NGC6520 OC 8.0 1804-2754 67  
NGC6716 OC 6.9 1855-1952 67  
NGC6818 PN 10.0 1944-1408 66  
NGC6822 GX 9.0 1945-1447 66

## SCORPIUS

M4 GC 5.9 1624-2633 56  
M6 OC 4.2 1741-3213 58  
M7 OC 3.3 1754-3449 58  
M80 GC 7.2 1617-2300 56  
NGC6124 OC 5.8 1626-4041 58  
NGC6302 PN 13.0 1714-3707 58  
betaSco DS 2.6 1605-1948 56  
nuSco DS 4.3 1612-1928 56  
xiSco DS 4.8 1604-1122 56  
Struve 1999 DS 7.4 1604-1127 56

## SCULPTOR

NGC55 GX 8.0 0015-3908 78  
NGC253 GX 7.1 0048-2514 07  
NGC300 GX 9.0 0055-3738 09

## SCUTUM

M11 OC 5.8 1852-0615 67  
M26 OC 8.0 1846-0923 67  
NGC6712 GC 8.2 1854-0841 67

## SERPENS CAPUT

M5 GC 5.8 1519+0203 55  
deltaSer DS 4.2 1535+1032 55

## SERPENS CAUDA

M16 CN 6.0 1819-1347 67  
IC4756 OC 4.6 1839+0527 65  
thetaSer DS 4.5 1856+0412 65

## SEXTANS

NGC3115 GX 9.2 1006-0745 37

## TAURUS

M1 SN 8.4 0535+2201 14  
M45 OC 1.2 0047+2407 15  
NGC1514 PN 10.0 0410+3048 15  
NGC1647 OC 6.4 OC 0446+1905 15  
NGC1746 OC 6.0 0504+2350 14  
NGC1807 OC 7.0 0511+1633 14  
NGC1817 OC 7.7 0513+1643 14  
Mel25 OC 1.0 0427+1600 15  
chiTau DS 5.5 0423+2538 15  
118 Tau DS 5.8 0529+2509 14

## TRIANGULUM

M33 GX 5.7 0134+3041 02  
iotaTri DS 5.3 0212+3018 02

## URSA MAJOR

M40 DS 9.0 1222+5805 32  
M81 GX 6.9 0956+6902 31

M82 GX 8.4 0956+6939 31  
M97 PN 11.2 1115+548 32  
M101 GX 7.7 1403+5419 42  
M108 GX 10.1 1112+5537 32  
M109 GX 9.8 1158+5320 32  
NGC2841 GX 9.3 0923+5056 33  
NGC3079 GX 10.6 1003+5539 33  
NGC3184 GX 9.8 1019+4123 33  
NGC3877 GX 12.0 1147+4727 32  
NGC3941 GX 11.0 1153+3656 32  
NGC4026 GX 12.0 1200+5055 32  
NGC4088 GX 10.5 1206+5030 32  
NGC4157 GX 12.0 1212+5026 32  
NGC4605 GX 11.0 1240+6134 32  
zetaUMa DS 2.3 1324+5456 32

## URSA MINOR

alphaUMi DS 2.0 0232+8916 01

## VIRGO

M49 GX 8.4 1230+0757 C  
M58 GX 9.8 1238+1146 C  
M59 GX 9.8 1242+1136 C  
M60 GX 8.8 1244+1130 C  
M61 GX 9.7 1222+0425 45  
M84 GX 9.3 1226+1250 C  
M86 GX 9.2 1227+1254 C  
M87 GX 8.6 1231+1221 C  
M89 GX 9.8 1236+1230 C  
M90 GX 9.5 1237+1307 C  
M104 GX 8.3 1240-1140 47  
NGC4216 GX 10.0 1216+1306 C  
NGC4388 GX 11.1 1226+1237 C  
NGC4438 GX 10.1 1228+1258 C  
NGC4517 GX 10.5 1233+0004 45  
NGC4526 GX 9.6 1234+0739 C  
NGC4535 GX 9.8 1235+0809 C  
NGC4567/8 GX 11.3 1237+1112 C  
NGC4697 GX 9.3 1249-0551 47  
NGC4699 GX 9.6 1249-0843 47  
NGC4762 GX 10.2 1253+1111 C  
NGC5746 GX 10.6 1445+0155 44  
gammaVir DS 3.5 1242-0127 45

## VULPECULA

M27 PN 8.1 2000+2244 64  
NGC6802 OC 8.8 1931+2017 64  
NGC6823 CN 7.1 1943+2319 64  
NGC6885 OC 6.0 2012+2630 64  
NGC6940 OC 6.3 2035+2820 64  
Cr 399 OC 3.6 1925+2011 64

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