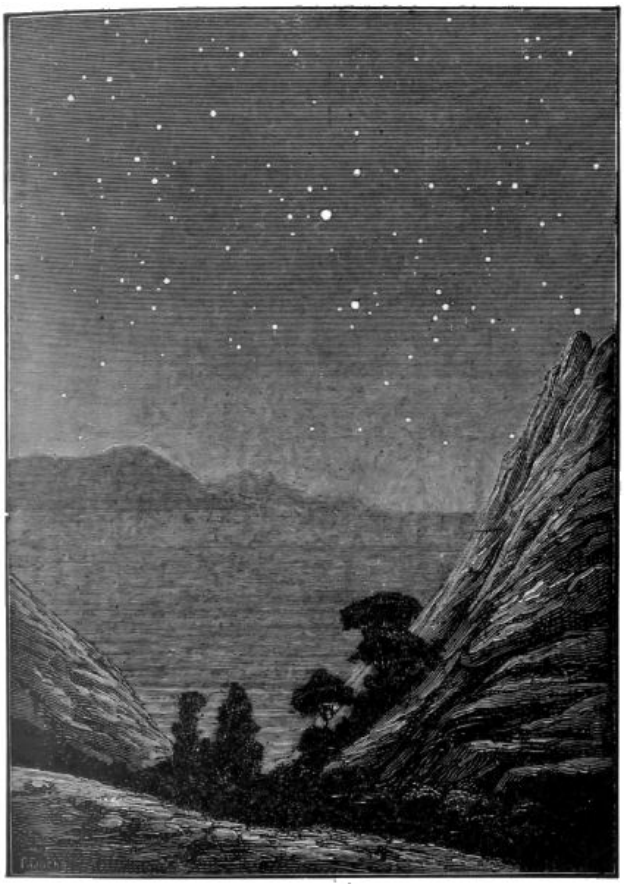
John O'Hanley

LEARN THE CONSTELLATIONS



Ho, bold Orion! What news of the chase?

May 18, 2020

Overview

These charts are designed specifically to help you learn the constellations. There are two goals: that you learn the constellations quickly, and that you learn them well.

Large size
Almost all star charts intended for beginners share a common defect: they are too small. Small charts make it very hard to translate what you see on the chart into what you see in the sky, because of the difference in scale. In addition, small charts can't contain the number of stars that you would typically see from a location with a reasonably dark sky.

Easy to read
At night, in low light conditions, you need to be able to read the chart easily. These charts are black-on-white, with the highest possible contrast.

Show what's needed, but no more
The number of stars shown by these charts match what you usually see at a site with a reasonably dark sky. These charts show stars that are brighter than the fifth magnitude.

Planispheres
Many beginners use a planisphere to learn the constellations. Planispheres are well suited for showing you what constellations are currently above the horizon. But they suffer from the defects mentioned above: they are too small, usually have low contrast, and don't show what you typically see from a reasonably dark sky.

Devices
Many beginners use an app on a tablet or phone to learn the constellations. In this context, there are two problems with such devices. First, the screens tend to be bright, which is bad for your night-vision. Second, the scale is usually too small (especially on phones).

Basic facts about the sky

Objects in the sky rise in the east, and set in the west. To an observer in the northern (southern) hemisphere, when an object is due south (north), it's at its highest point in the sky.

The sky has two celestial poles, and a celestial equator. You can visualize the celestial poles as projections of the Earth's north pole and south pole out into infinite space. From the point of view of an observer, the celestial poles are points on the sky. The north celestial pole is near Polaris (the north star), but the south celestial pole is not near a bright star. You can also visualize the celestial equator as being a projection of the Earth's equator out into infinite space. From the viewpoint of an observer, the celestial equator forms a great circle in the sky. The celestial equator intersects the horizon at two places: due east and due west.

Because the Earth rotates, the stars appear to slowly turn around the celestial poles. This apparent motion is slower for stars near the celestial poles, and faster for stars near the celestial equator.

To state the direction of objects in the sky, astronomers use two coordinates, which are both angles. The system is similar to how latitude and longitude are used on the surface of the Earth (which are also both angles). The coordinates used by astronomers have special names: declination and right ascension.

Declination is like latitude

Declination measures the angle of an object from the celestial equator, in the direction of one of the celestial poles. The celestial equator has declination of 0°. North of the celestial equator, declination increases to a maximum of +90° at the north celestial pole. South of the celestial equator, declination decreases to a minimum of -90° at the south celestial pole.

Right ascension is like longitude

On the surface of the Earth, longitude is measured from the Greenwich meridian. On the sky, right ascension measures an angle from a point on the celestial equator called the vernal equinox, in the constellation Pisces. (When spring begins, the Sun crosses the celestial equator at the vernal equinox, moving from south to north.) The right ascension angle is measured perpendicular to the declination angle. Somewhat confusingly, the right ascension angle is not measured in degrees, but in time: hours, minutes, and seconds. Right ascension increases eastward across the sky. The full circle of 360° corresponds to 24 hours of right ascension. So, 1 hour of right ascension corresponds to 15°.

Ecliptic

The solar system is fairly flat. Most objects in the solar system stay relatively close to the same plane. The plane of the Earth's orbit around the Sun is called the ecliptic. On the charts, the ecliptic is indicated by a dashed line. It's a great circle that goes all the way around the sky. The ecliptic intersects the celestial equator at an angle of about 23.4°. The 12 constellations of the zodiac are found all along the ecliptic. The Sun is always exactly on the ecliptic, while the Moon and the planets are never far from it.

Stellar magnitude

Astronomers describe the brightness of objects using a number called magnitude. It works in reverse, however: the brighter the object, the smaller the magnitude. For example, the magnitude of the bright star Vega is 0.0. A slightly fainter star would have magnitude 1.0. The faintest stars you can see are about magnitude 6.0. With fainter magnitude, the number of stars starts to increase very rapidly. These charts show stars down to magnitude 5.0.

Constellations

For thousands of years, different cultures have identified certain arbitrary patterns in the sky, and given them names. These named patterns of stars are called constellations. They simply help you memorize the geography of the sky. For historical reasons, the constellations used by cultures of the Middle East, the Mediterranean, and Europe have more or less been been adopted by astronomers worldwide. The International Astronomical Union (IAU), a world-wide organization of professional astronomers, has defined a standard list of 88 constellations. This list defines both the names and boundaries of all the

constellations. (The 88 constellations cover the whole sky, with no gaps.) The lines drawn to join the stars in a constellation are arbitrary, and aren't standardized.

Star designations

Stars can be designated in various ways. The brightest stars have traditional names. For fainter stars, catalog designations are used instead of names. For example, the brightest star in the constellation Taurus has the traditional name of Aldebaran. It is also referred to as "α Tau" or "α Tauri": this is called the Bayer designation. The Bayer designation has two parts: a letter from the Greek alphabet, followed by the constellation (either its abbreviation or its genitive form; the genitive form means "of" or "from"). Another designation is called the Flamsteed number. The Flamsteed number also has two parts, a simple number followed by the constellation name. For example, 87 Tau is the Flamsteed designation of Aldebaran.

Asterisms

An asterism is an easily recognized pattern of stars, that has a traditional name outside the defined list of 88 constellations. The main asterisms are:

- Orion's belt
- the Hyades, a cluster in Taurus
- the Pleiades, another cluster in Taurus
- the Summer Triangle of three bright stars: Deneb, Vega, and Altair
- the Big Dipper (known as the Plough in the United Kingdom) in Ursa Major
- the Southern Cross in Crux
- the Northern Cross in Cygnus
- the Great Square of Pegasus
- the keystone in Hercules
- the teapot in Sagittarius
- the circlet in Pisces

Deep sky objects

Deep sky object is a generic word for various kinds of objects other than regular stars. These charts show the positions of some of the brighter and more well-known deep sky objects. You usually need binoculars or a telescope to see deep sky objects, but a few are visible to the naked eye, such as the Orion Nebula (M42), and the Andromeda Galaxy (M31). They are classified here into four types:

- open cluster - a cluster of tens to thousands of stars.
- globular cluster - a concentrated spherical cluster of up to millions of stars.
- galaxy - a large, distant collection of billions of stars.
- nebula - an interstellar cloud of gas and/or dust.

The deep sky objects on these charts come from two catalogs. Messier's catalog (for example, M42 for the Orion Nebula), and the New General Catalog (for example, N2903 is a galaxy in Leo).

How to use the charts

Go to a reasonably dark site
If you live in a city, you will almost always need to travel some distance away from the city, in order to have a reasonably dark sky. Unfortunately, with modern light pollution, most cities are too bright at night to see the constellations clearly. It's best to go to a site that is dark, but not profoundly dark. If the sky is profoundly dark, then it's easy to get overwhelmed with the number of stars you see, and the sky won't match the charts very closely. It's often better to go south of your city, if you can, because astronomers observe the sky towards the south/east/west more often than towards the north.

Find the cardinal directions
The cardinal directions are north, south, east, and west. Remember that things rise in the east, and set in the west. At noon, the Sun is in the south. When you face north, east is on your right, west to your left, and south is directly behind you. At night, in the northern hemisphere, you can orient yourself by using Polaris, the north star. Most people are able to recognize the Big Dipper (or the Plough). To find Polaris, you use the two "pointer" stars on the end of the Big Dipper (the Plough): they point nearly exactly to Polaris, a little under 30° away.

Let your eyes become dark-adapted
Your eyes need about 20 minutes or so to become fully dark-adapted. Be careful to preserve your night vision! If your eyes see a bright light, then most of your night vision will be lost in an instant, and you will have to wait again in the dark to regain it. Frustrating!

Use averted vision for dim objects
You can also see dim objects more clearly by using averted vision. If you look slightly off to the side of a dim object, you can see it a bit better. When your eyes are in that position, the light from the "off-center" object hits the part of your retina which is most sensitive to dim light.

Use a dim red (or amber) flashlight
To read the charts, you will usually need to illuminate them, typically with a small flashlight. Two things are critical: the light should be dim, just strong enough to let you read the chart. The light should be red or amber, to best preserve your precious night-vision.

Use the date scale to know which stars are south
The charts include a date scale, to help you get oriented. The date scale lets you see which right ascension is due south, at a given date and time.

Let's take an example, using the date of November 20. On Chart 2, the date scale for November 20 is lined up close to right ascension of 0 hours (the vernal equinox). At 8pm, 0h00m right ascension is due south (in the southern hemisphere, switch this to due north). One hour later, at 9pm, the right ascension of 1h00m will be due south, and so on. You don't need to be exact about this. As long as you have an approximate idea of what part of the sky is due south, you will be fine. If you have a summer hour,

you'll need to subtract it first, in order to use standard time, not summer time.

The date scale is for Local Mean Time (LMT), not standard time. There's a small difference between the two. It depends on how many degrees east/west you are from the central meridian of your time zone. If you feel like being exact about it, you can calculate what that small difference is. This is done once only, for each observing location.

Item	Value	Description
Eastern Standard Time	5h from UT	Difference from Universal Time (GMT)
EST central meridian	75° W	5h x 15°/h
Longitude of Bobcaygeon	78.54° W	From Google Maps
Diff from central meridian	+3.54° W	78.54° - 75°
Time diff from central meridian	+00:14	+3.54° x 00:60 / 15° (+West/-East)

Example: Bobcaygeon is a small town in Ontario, Canada. It's in the Eastern Time Zone. That time zone has a difference of 5 hours from Universal Time (UT). The central meridian of the Eastern Time Zone is longitude 75° west. The longitude of Bobcaygeon itself is 78.54° west. So, Bobcaygeon is 3.54° west of its time zone's central meridian. That corresponds to 14 minutes of time difference. If you are to the west (east) of your time zone's central meridian, then you add (subtract) this difference to the date-scale on the chart. That converts Local Mean Time to Standard Time. In the case of Bobcaygeon, the 14 minutes is added to the date-scale on the chart, to move from LMT to standard time. So, at Bobcaygeon, on November 20, at 8:14 pm Eastern Standard Time, the right ascension which is due south is close to 0h00m.

Helpful hints

Here are some hints to help you get started:

- It's tiring to look up for long periods while standing. Use a reclining chair, or lay down.
- If insects are a problem, use bug spray.
- A human guide is best! Find a friend who already knows the constellations.
- Try starting with what you know, or starting with the brightest stars.
- Try putting red nail polish on an old flashlight, to have a source of dim red light.
- The planets and the Moon can help you identify things, as they pass through different constellations.
- Remember "the pointers": the stars on the end of the Big Dipper point to Polaris, the north star.
- "Follow the arc to Arcturus": the arc of the Big Dipper's handle, when extended, leads to the star Arcturus.

Magnitude

0.0
1.0
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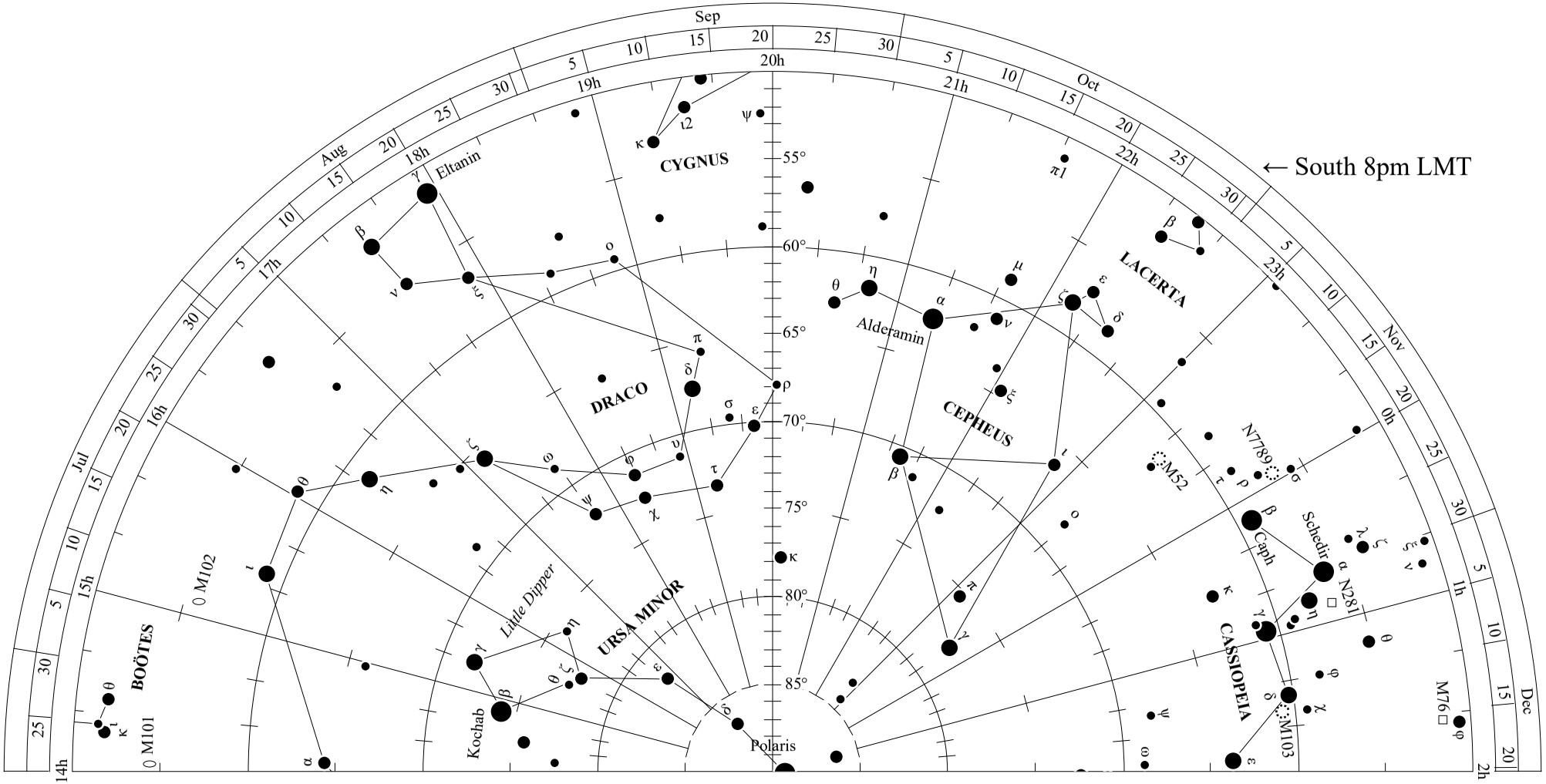
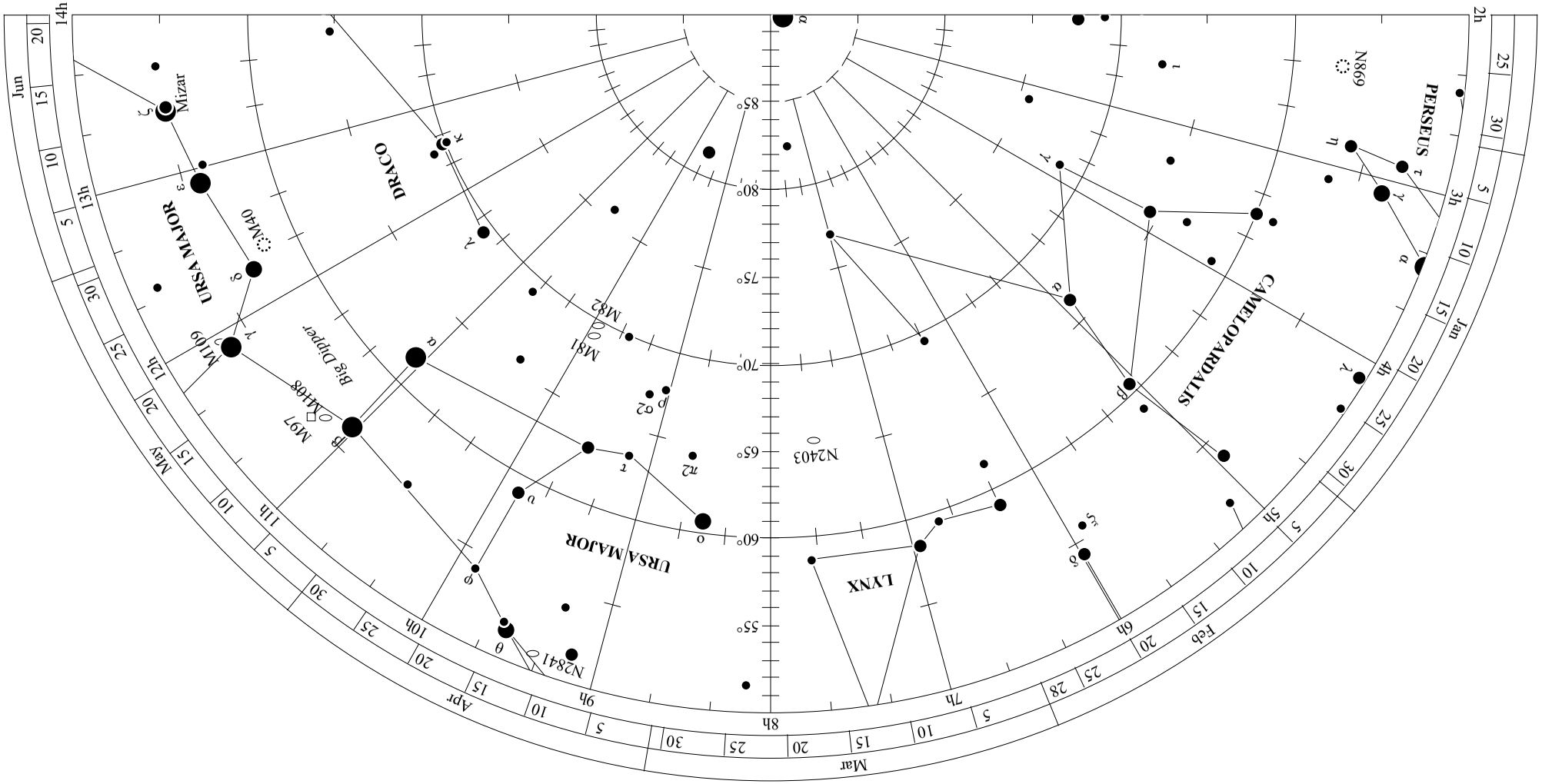
5.0

North Celestial Pole

Charts 1-6 are for observers in the northern hemisphere

1





Symbols

- ◌ Open Cluster
- ⊕ Globular Cluster
- ⬭ Galaxy
- ▫ Nebula

α	β	γ	δ	ε	ζ	η	θ	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	τ	υ	φ	χ	ψ	ω
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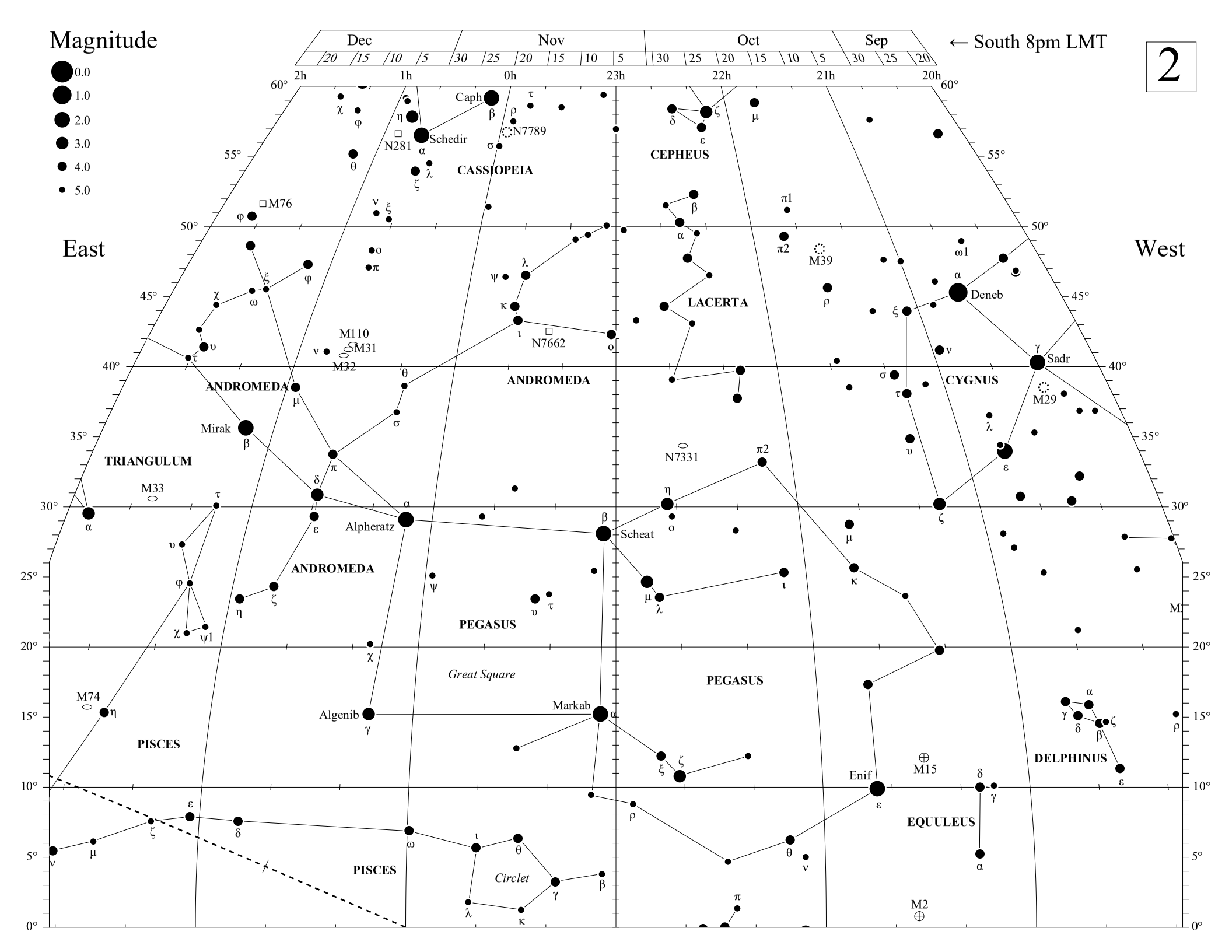
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Deneb
Sadr
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CYGNUS
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Mirak
TRIANGULUM
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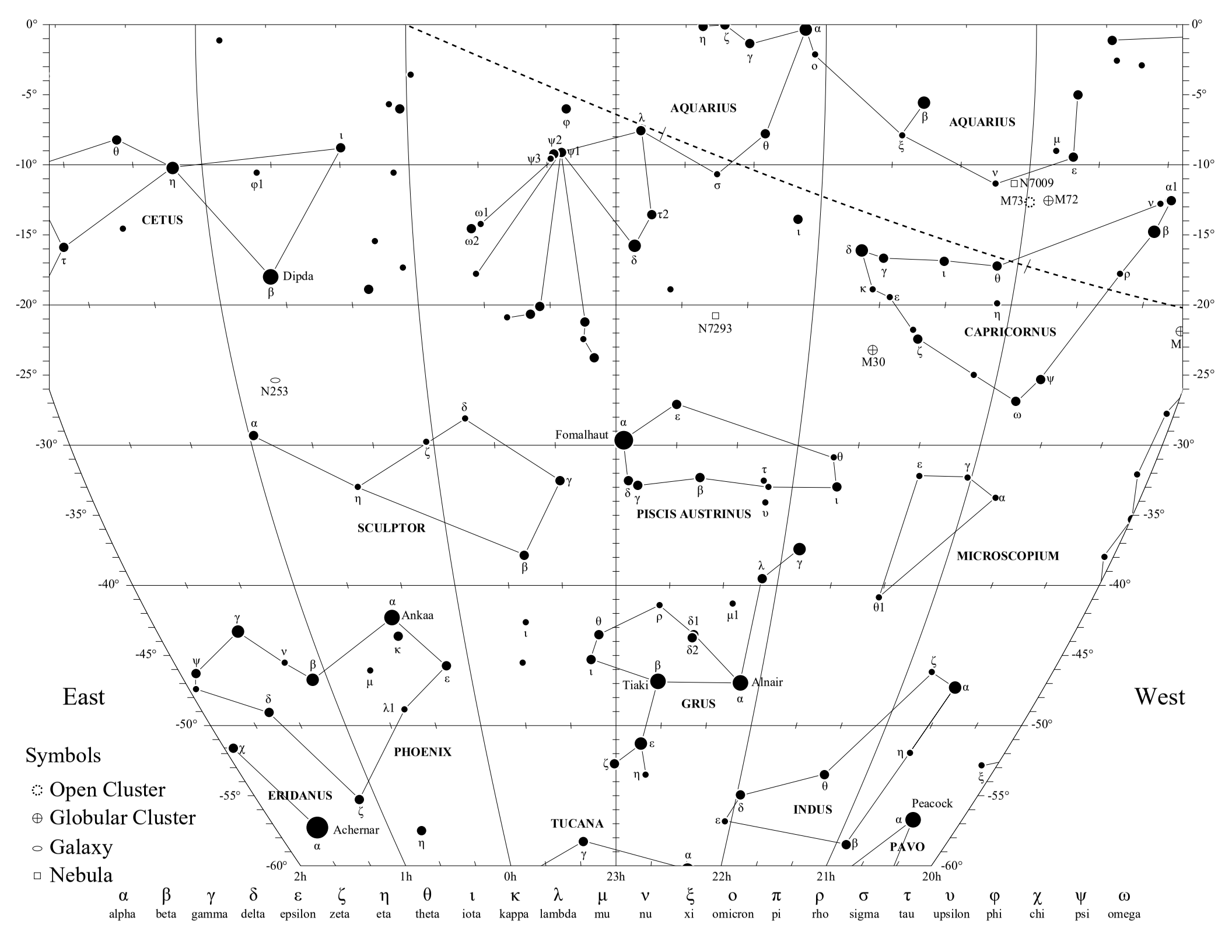
M2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ERIDANUS
TUCANA
INDUS
PAVO
Dipda
Fomalhaut
Ankaa
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Symbols
Open Cluster
Globular Cluster
Galaxy
Nebula
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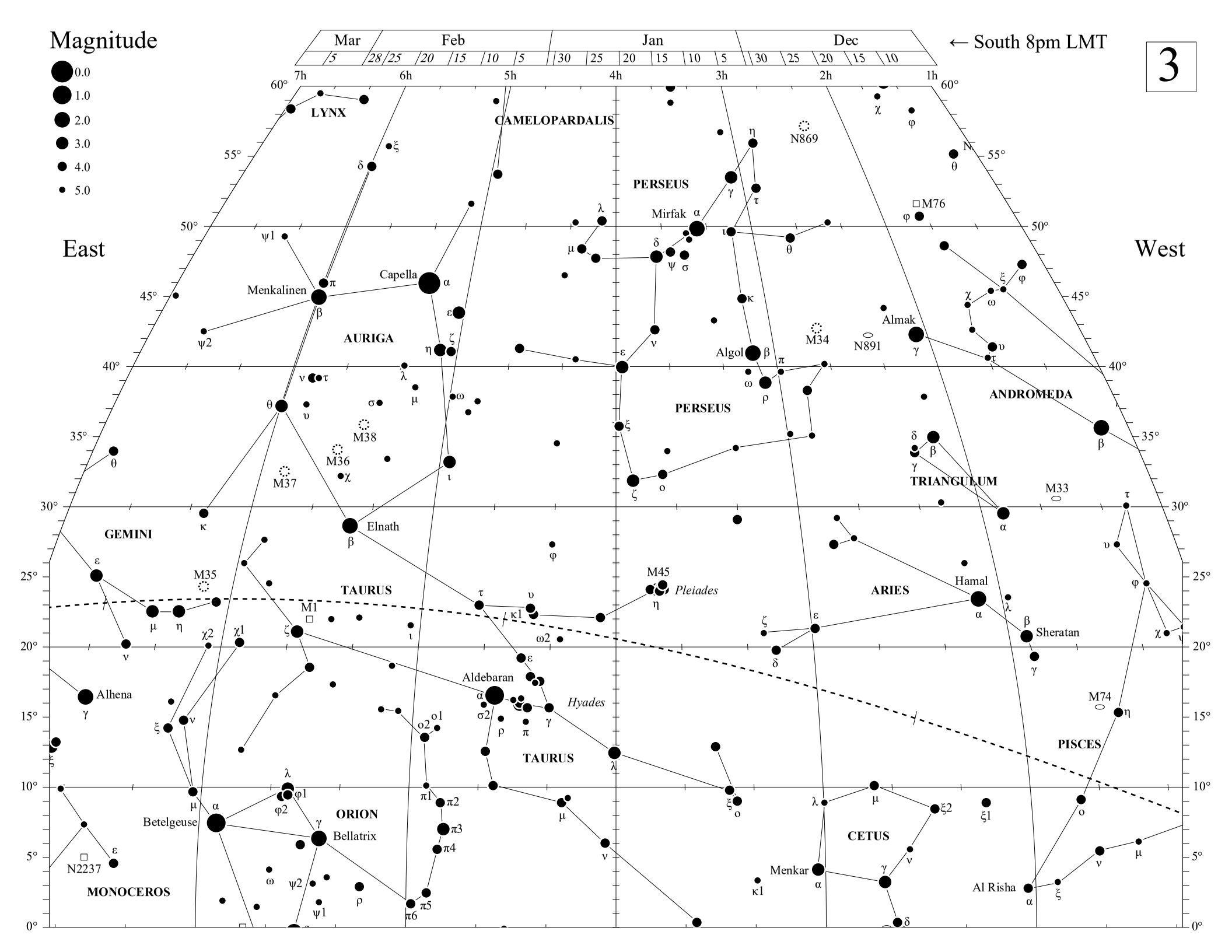
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AURIGA
GEMINI
TAURUS
ORION
MONOCEROS
ARIES
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PISCES
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Mirfak
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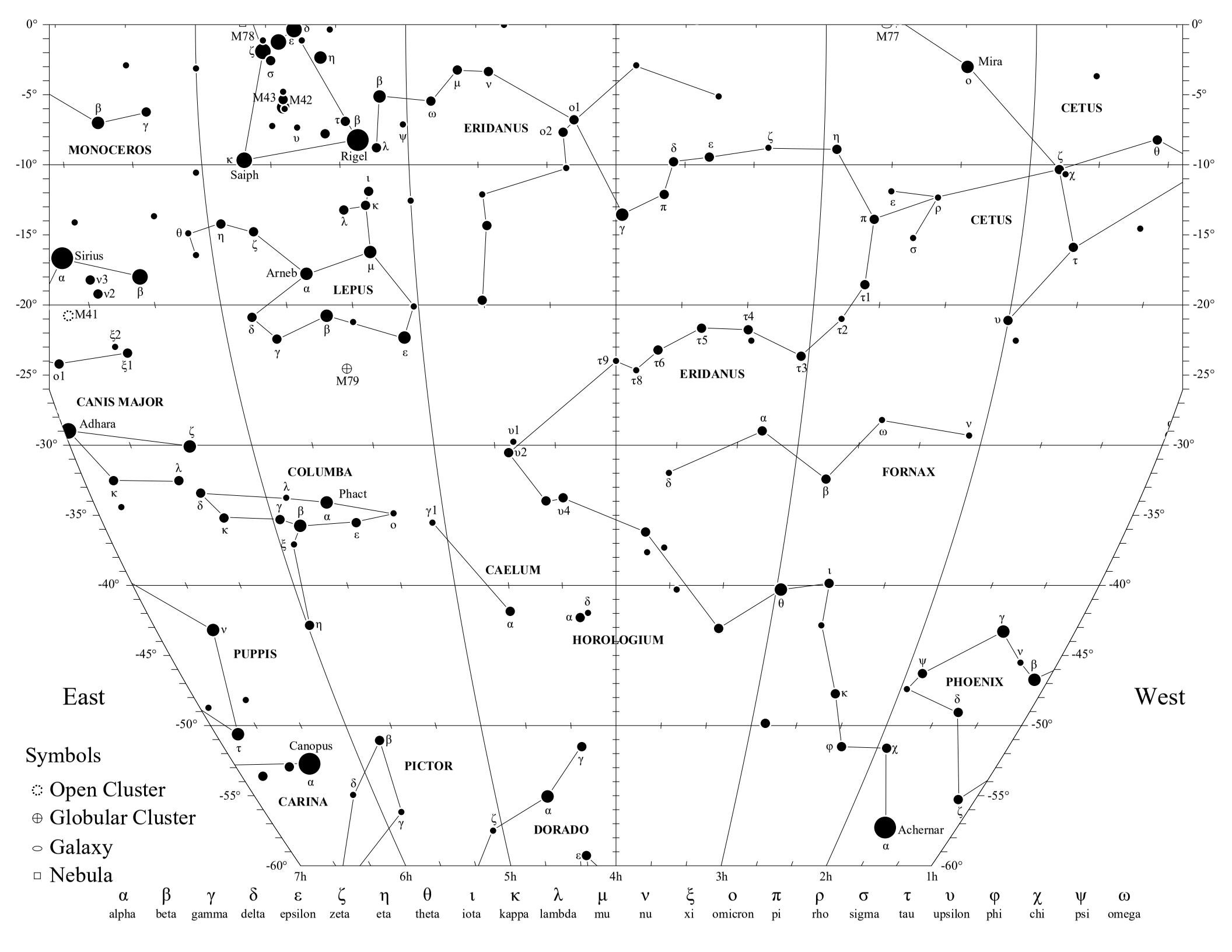
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DORADO
Sirius
Adhara
Arneb
Rigel
Saiph
Phact
Canopus
Achernar
Mira
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M42
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M78
M79
Symbols
Open Cluster
Globular Cluster
Galaxy
Nebula
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β beta
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ε epsilon
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η eta
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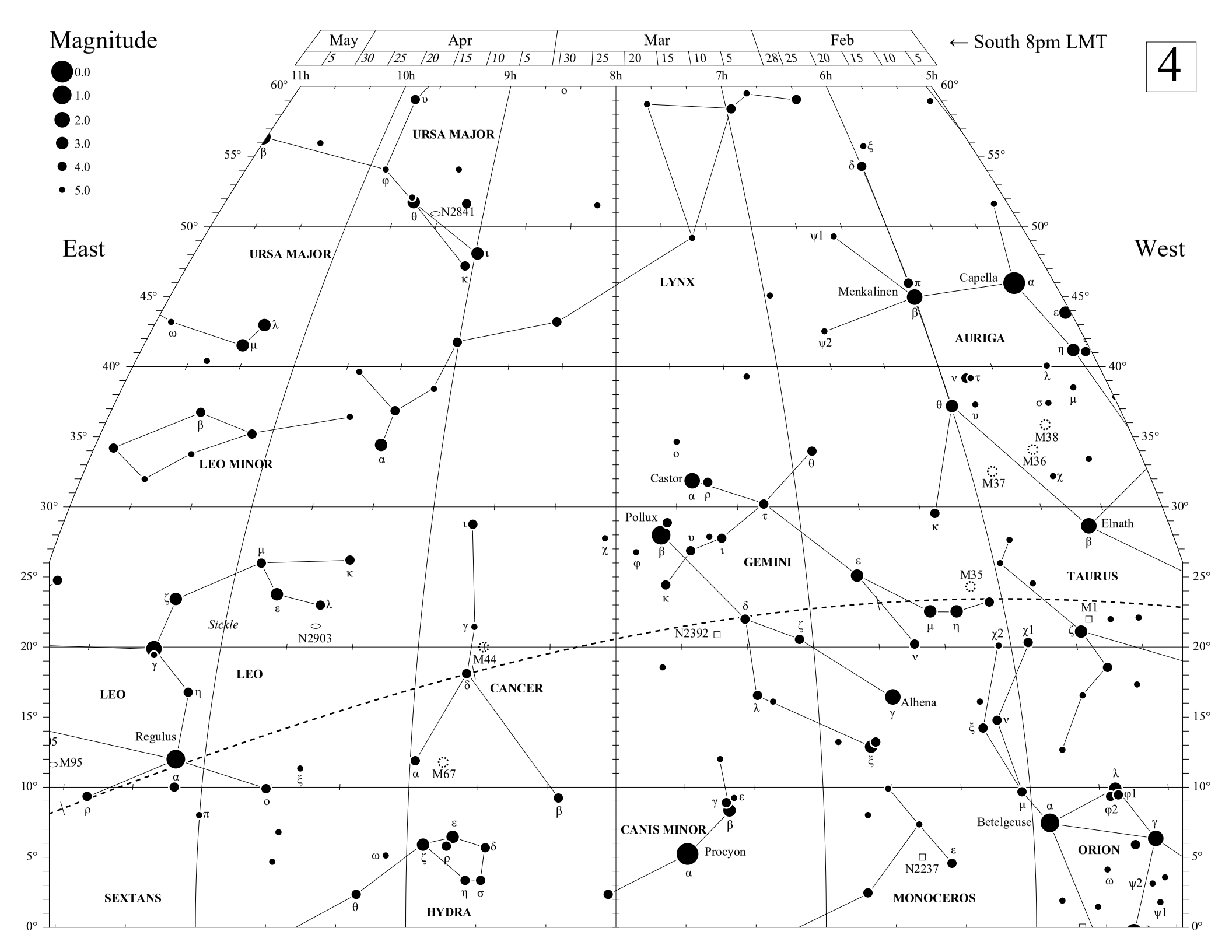
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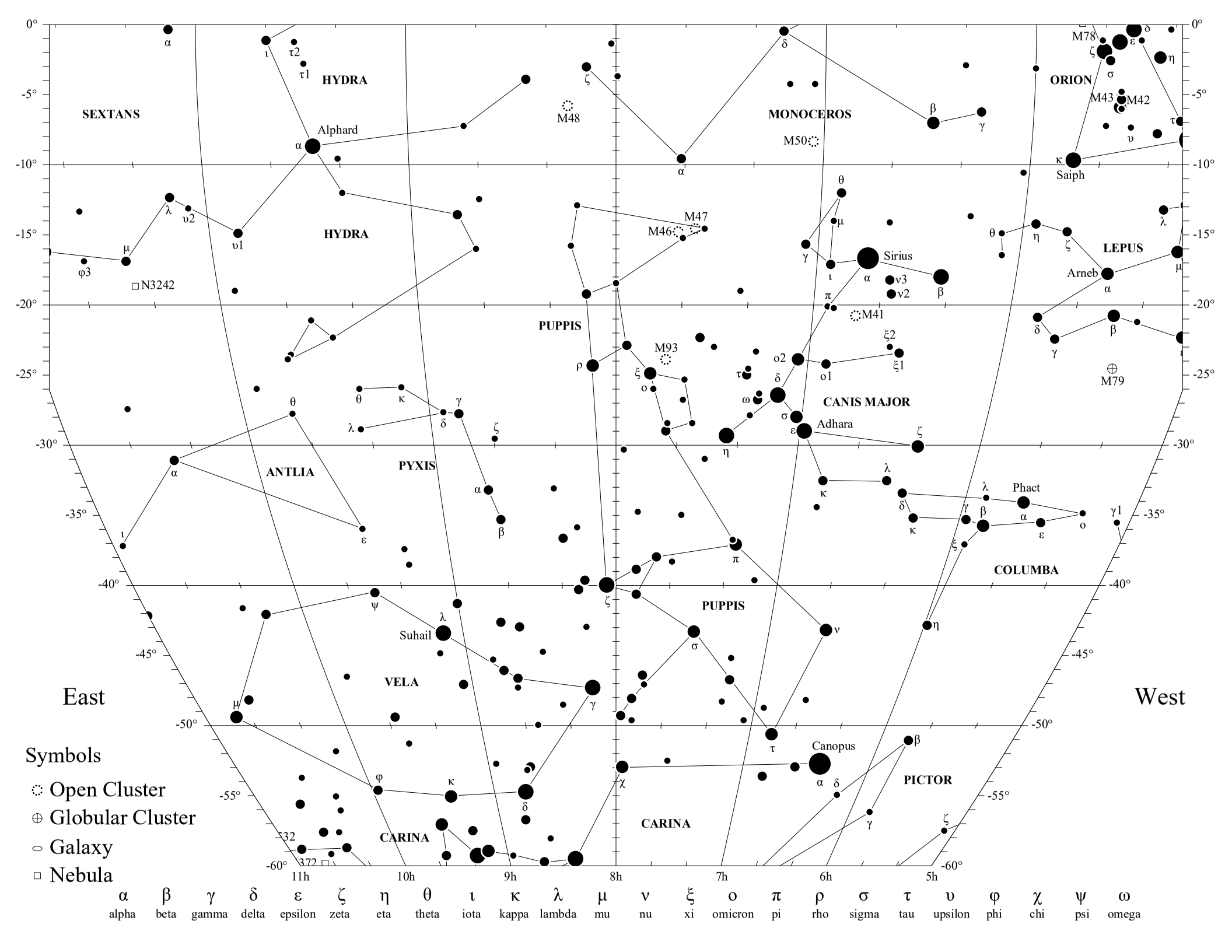
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PICTOR
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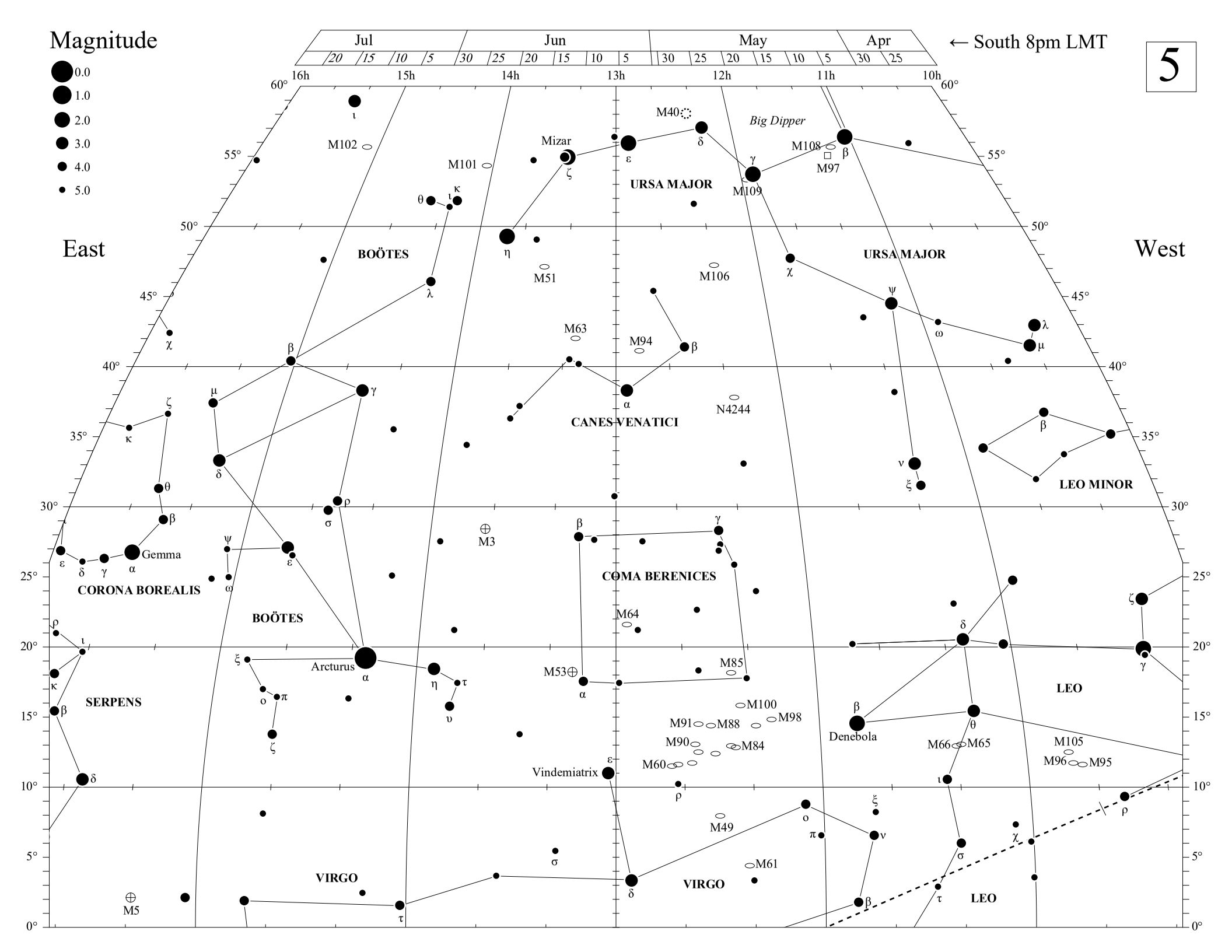
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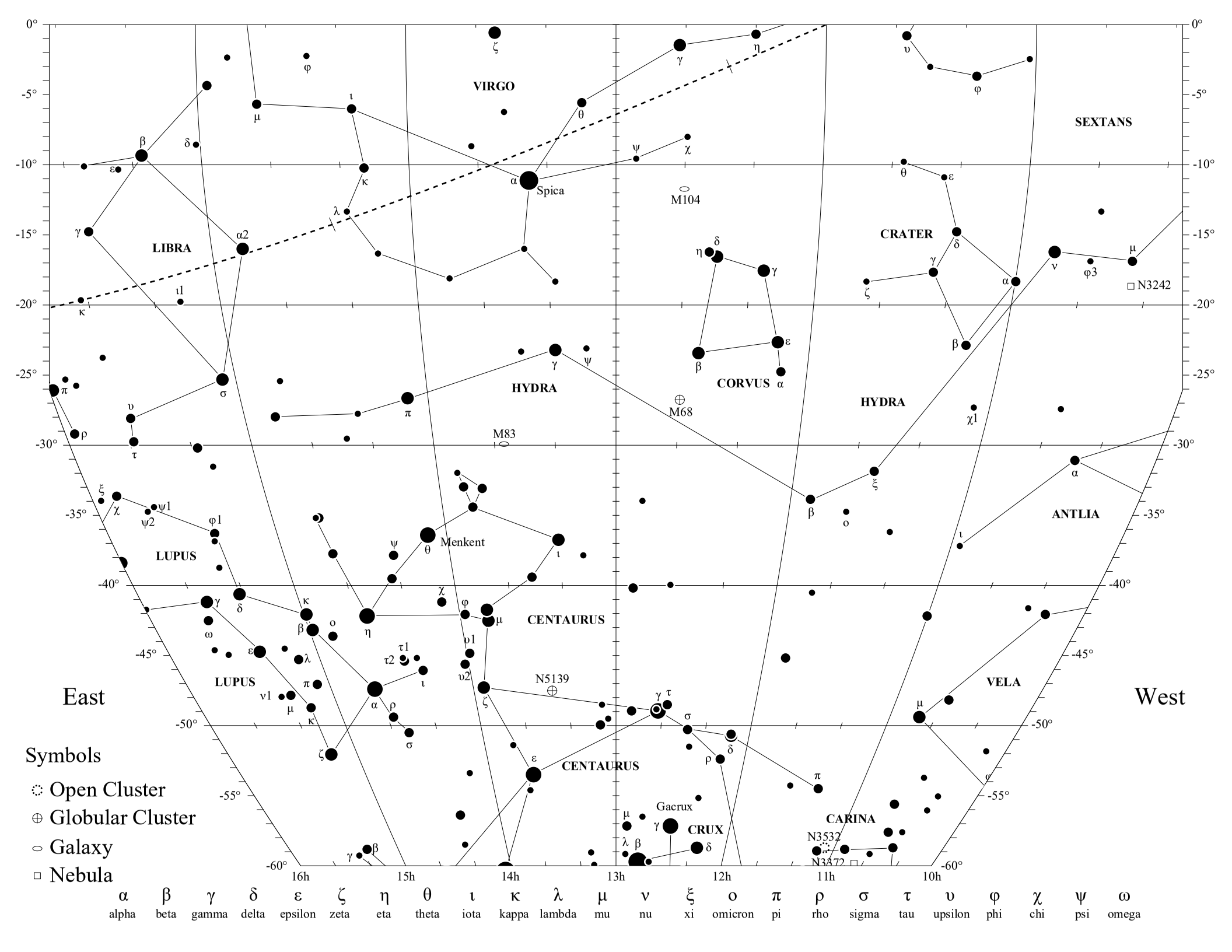
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Globular Cluster
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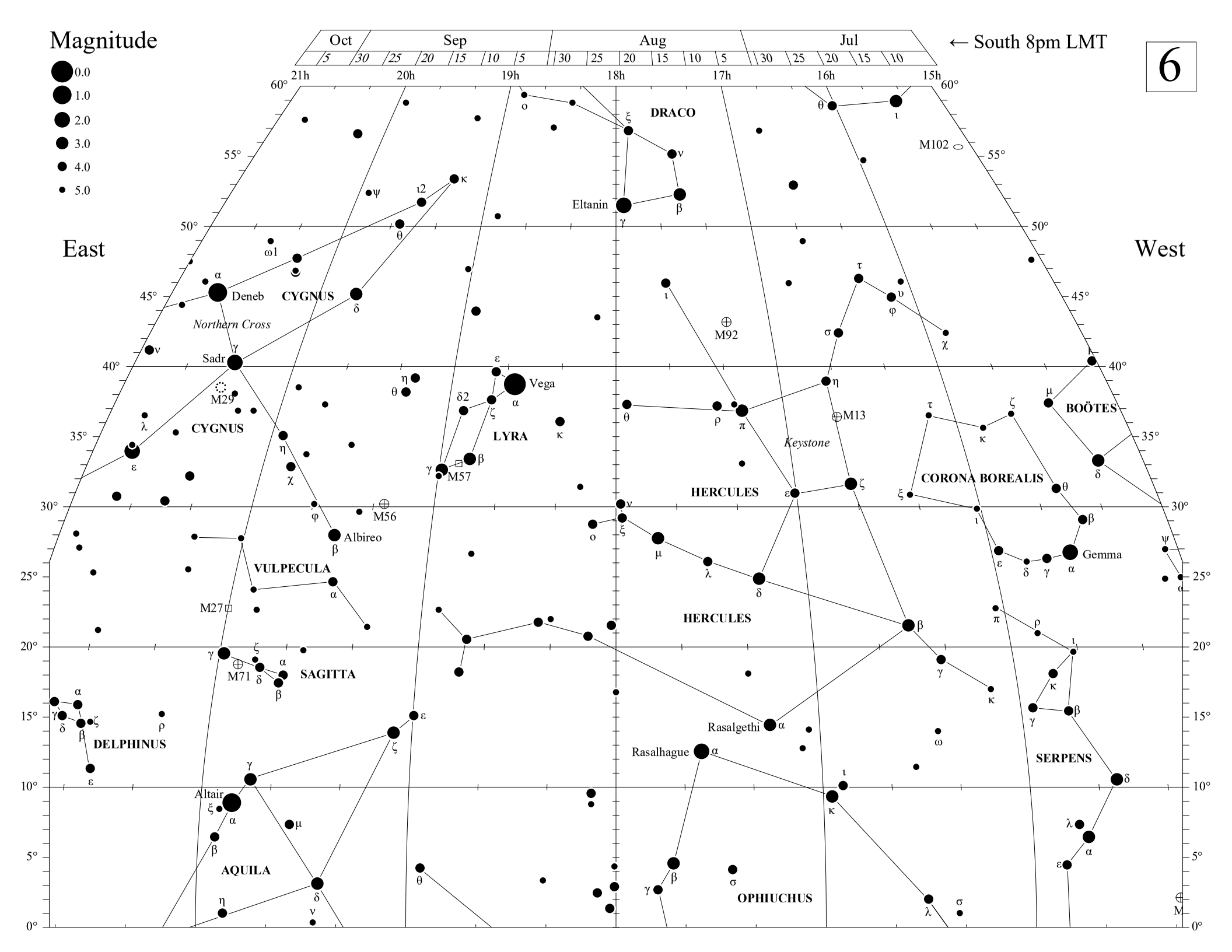
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CYGNUS
Deneb
Northern Cross
Sadr
M29
M92
M13
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BOÖTES
LYRA
Vega
M57
HERCULES
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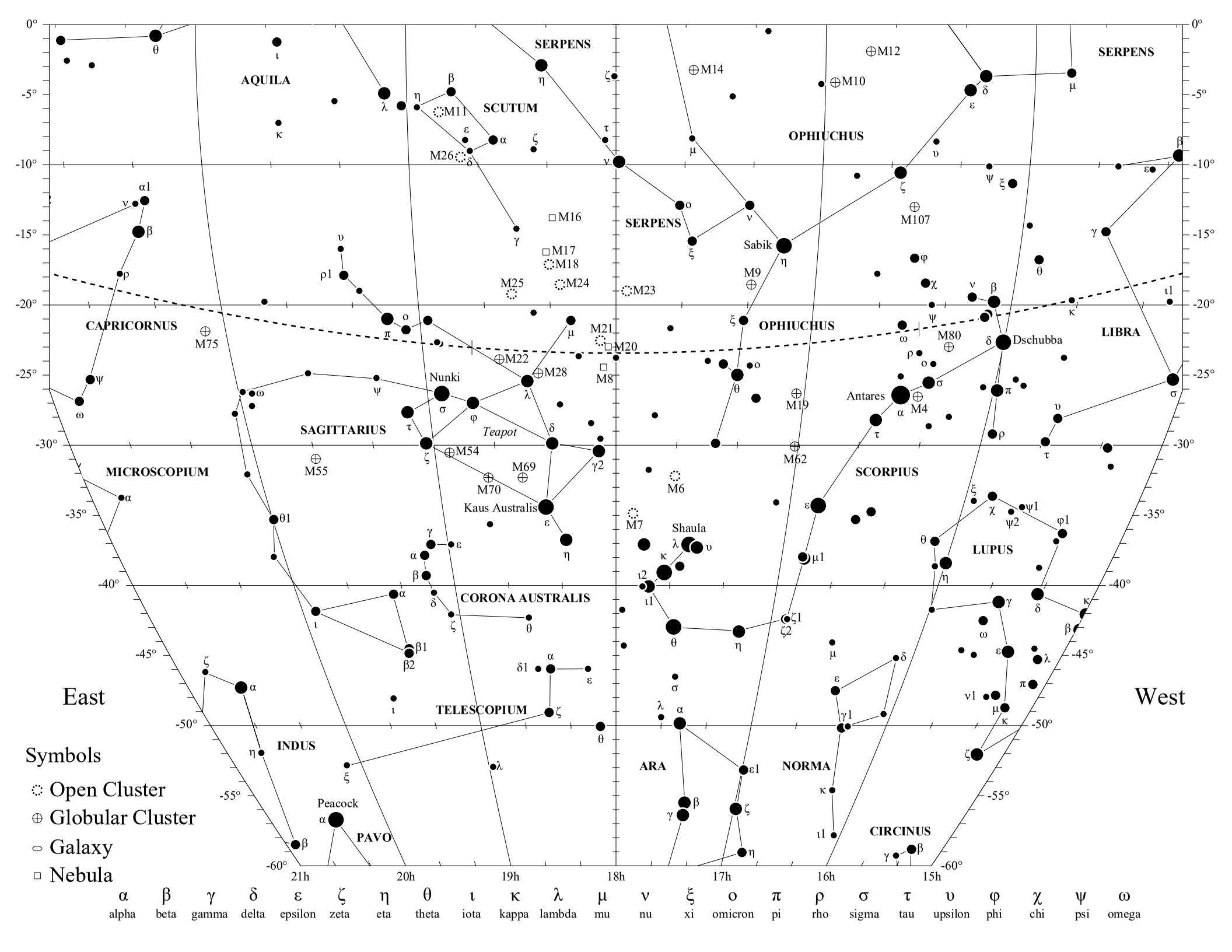
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CIRCINUS
Nunki
Sabik
Dschubba
Antares
Kaus Australis
Shaula
Peacock
M75
M55
M54
M70
M69
M22
M28
M8
M20
M21
M23
M25
M24
M16
M17
M18
M11
M26
M14
M12
M10
M107
M9
M80
M19
M62
M6
M7
M4
0°
-5°
-10°
-15°
-20°
-25°
-30°
-35°
-40°
-45°
-50°
-55°
-60°
21h
20h
19h
18h
17h
16h
15h
East
West
Symbols
Open Cluster
Globular Cluster
Galaxy
Nebula
α alpha
β beta
γ gamma
δ delta
ε epsilon
ζ zeta
η eta
θ theta
ι iota
κ kappa
λ lambda
μ mu
ν nu
ξ xi
ο omicron
π pi
ρ rho
σ sigma
τ tau
υ upsilon
φ phi
χ chi
ψ psi
ω omega

Magnitude

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1.0
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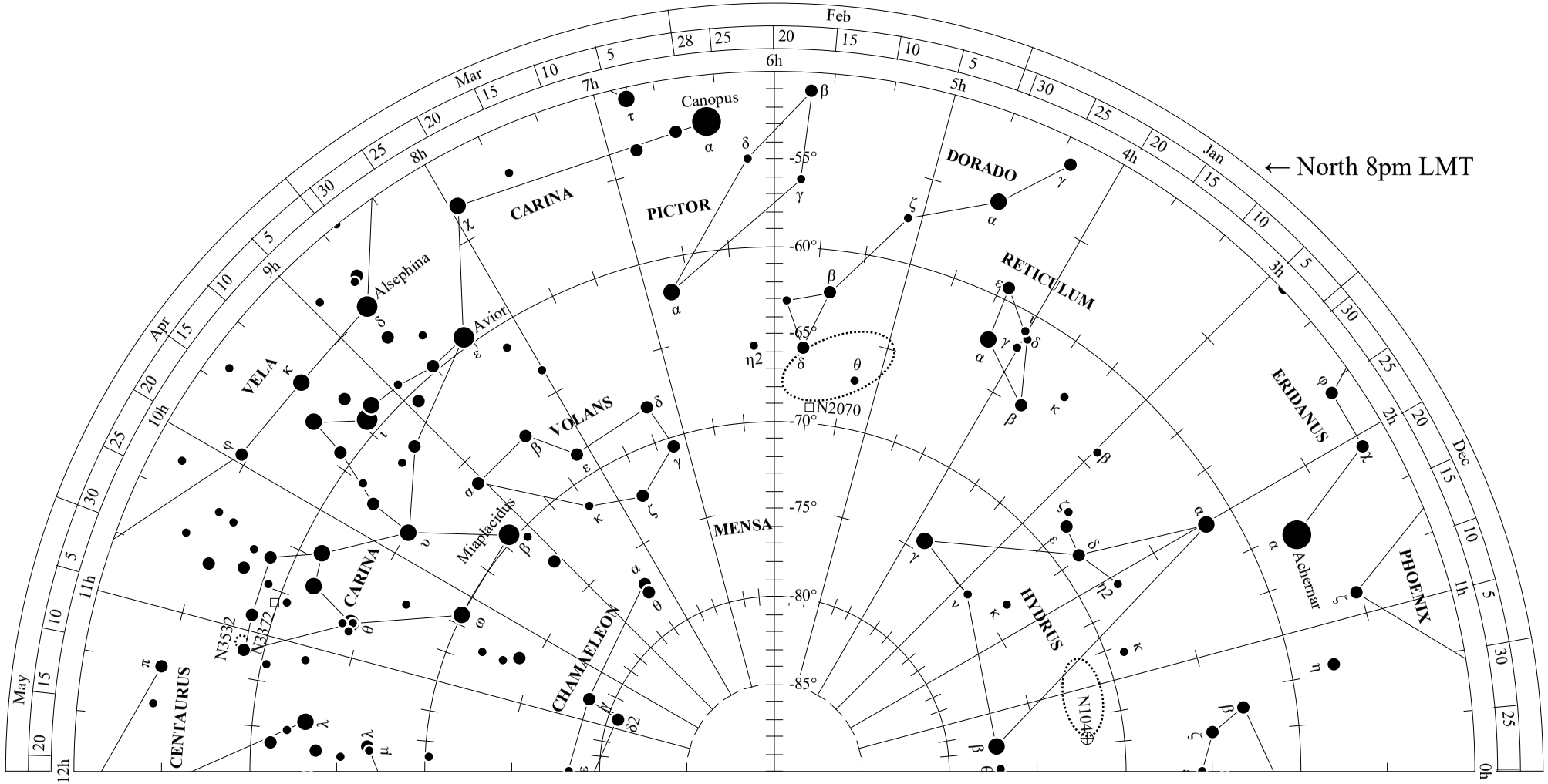
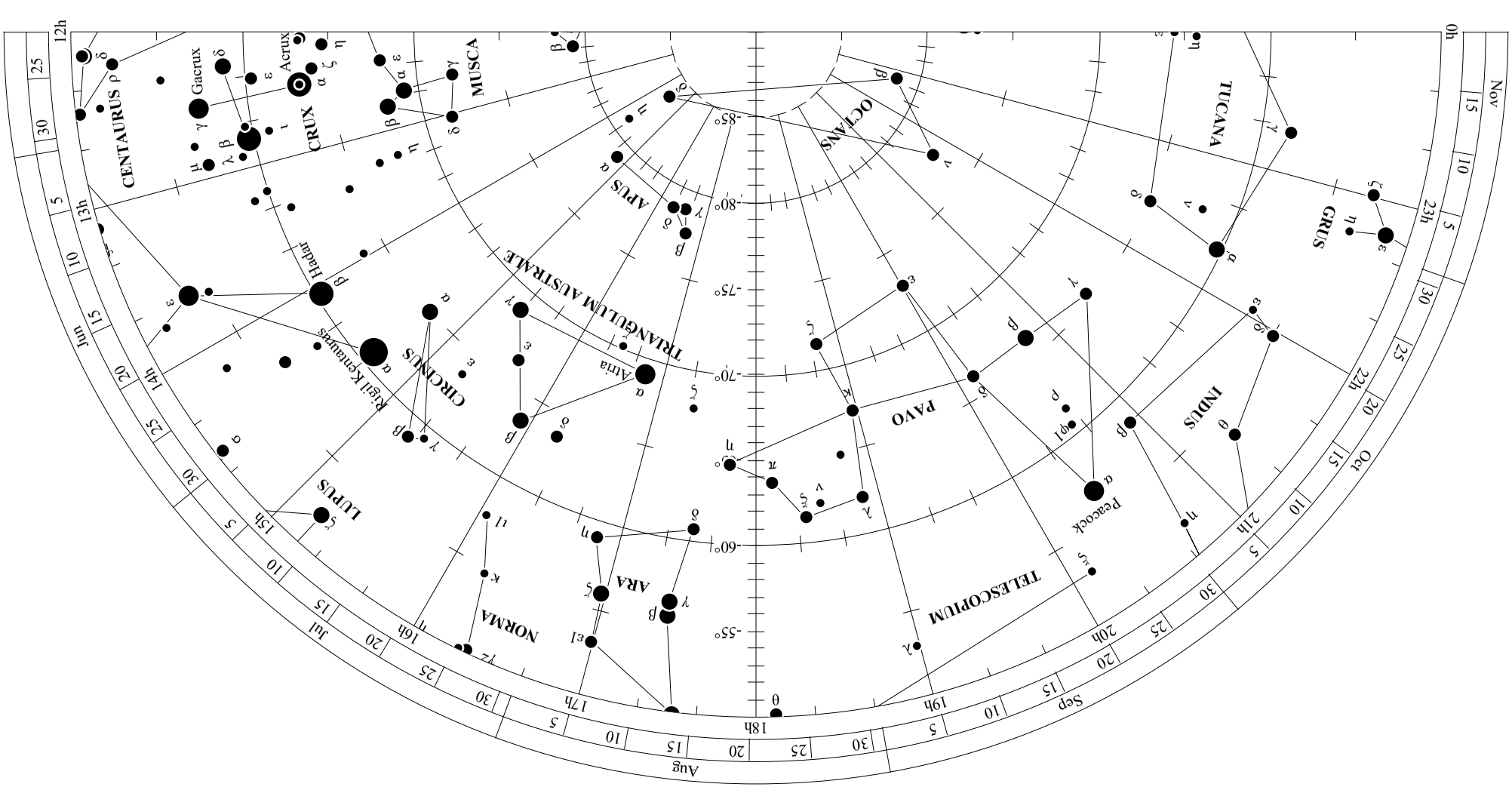
3.0
4.0
5.0

South Celestial Pole

Charts 7-12 are for observers in the southern hemisphere





Symbols

- ◌ Open Cluster
- ⊕ Globular Cluster
- ⬭ Galaxy
- ▫ Nebula

α	β	γ	δ	ε	ζ	η	θ	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	τ	υ	φ	χ	ψ	ω
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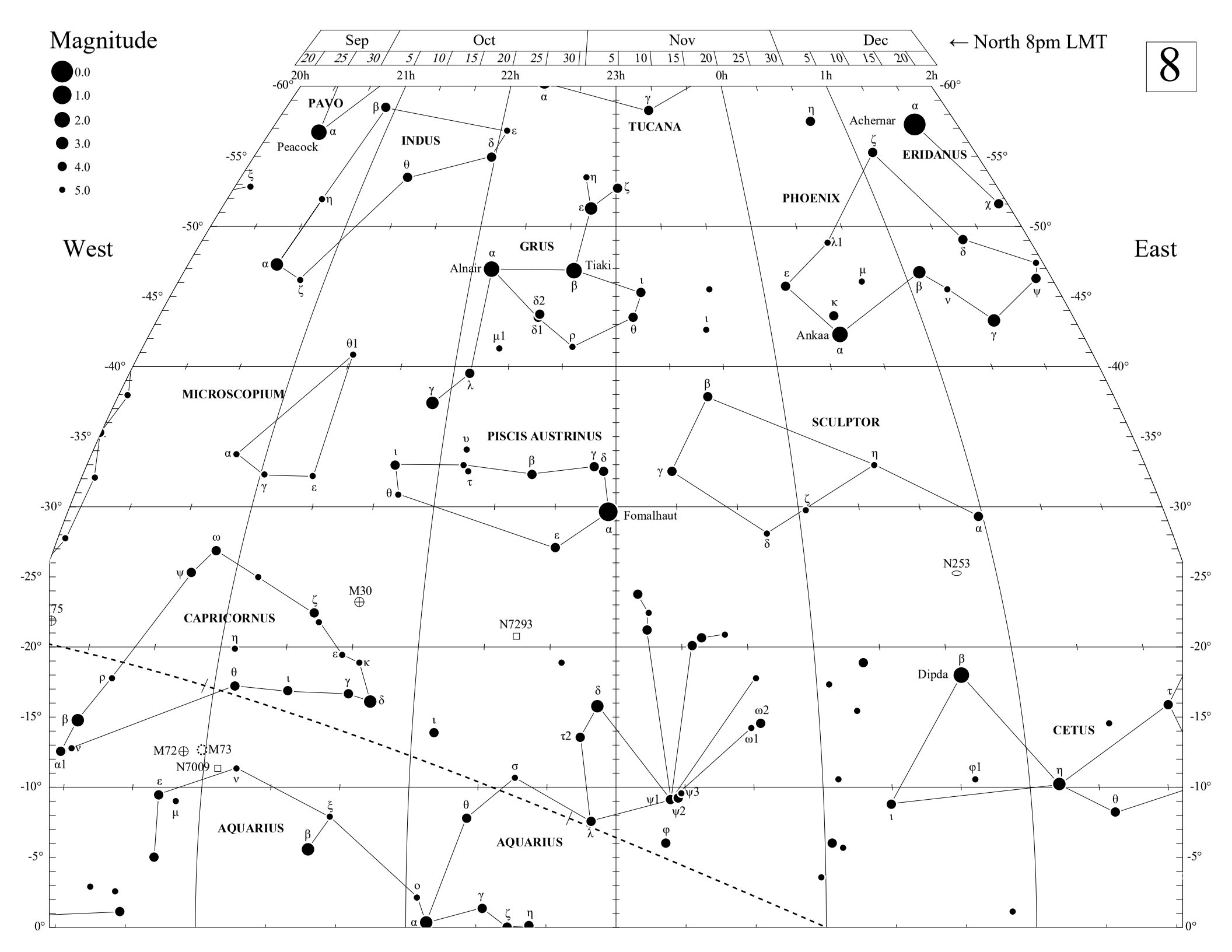
Magnitude
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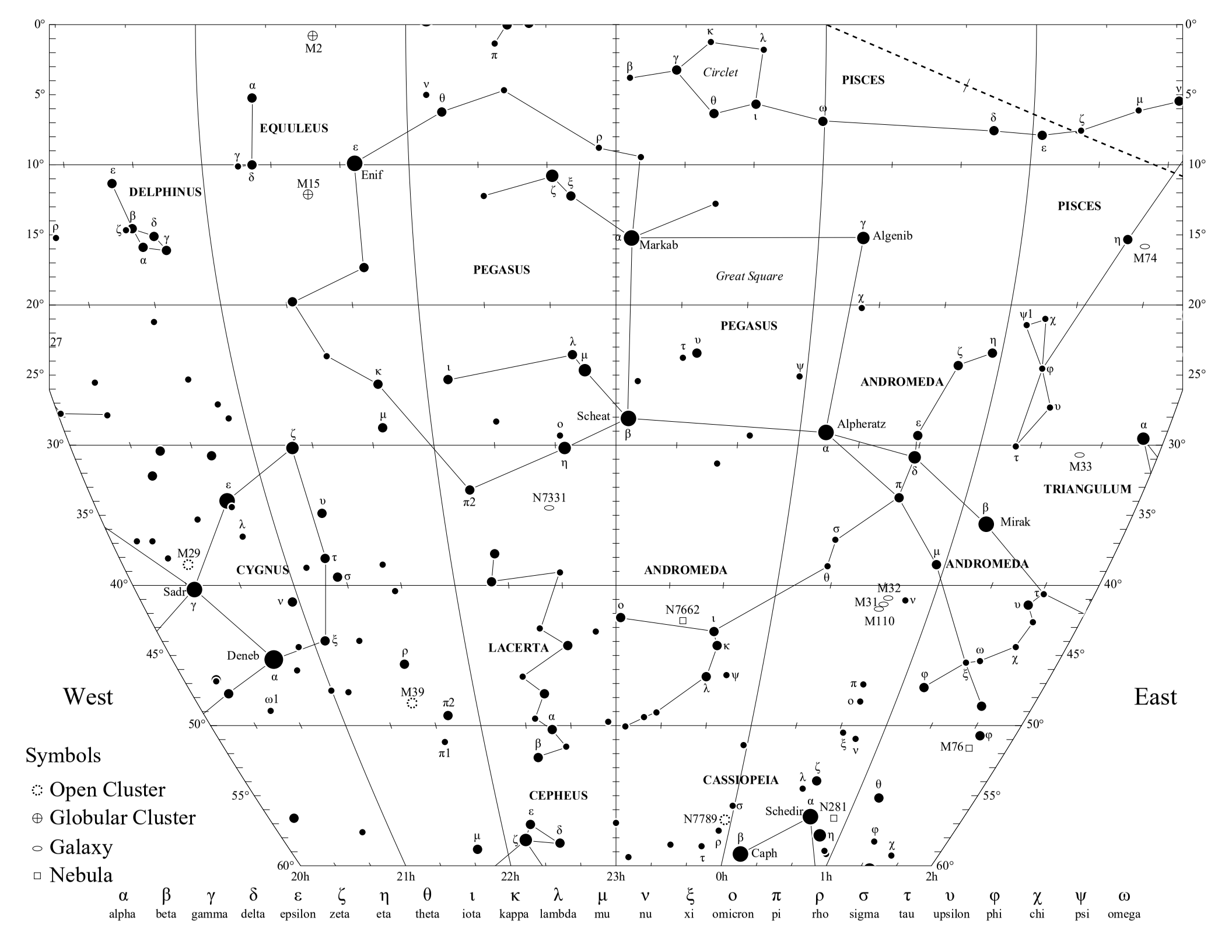
4.0
5.0
Sep
Oct
Nov
Dec
20 25 30 5 10 15 20 25 30 5 10 15 20 25 30 5 10 15 20
← North 8pm LMT
8
20h
21h
22h
23h
0h
1h
2h
West
East
-60°
-55°
-50°
-45°
-40°
-35°
-30°
-25°
-20°
-15°
-10°
-5°
0°
PAVO
Peacock
INDUS
TUCANA
GRUS
Alnair
Tiaki
PHOENIX
Achernar
ERIDANUS
Ankaa
MICROSCOPIUM
PISCIS AUSTRINUS
SCULPTOR
Fomalhaut
CAPRICORNUS
M30
N7293
N253
M72
M73
N7009
AQUARIUS
AQUARIUS
Dipda
CETUS


West
East
EQUULEUS
DELPHINUS
PEGASUS
PISCES
ANDROMEDA
TRIANGULUM
CYGNUS
LACERTA
CEPHEUS
CASSIOPEIA
Great Square
Circlet
Enif
Markab
Algenib
Scheat
Alpheratz
Mirak
Sadr
Deneb
Schedir
Caph
M2
M15
M74
M33
M29
M39
M31
M32
M110
M76
N7331
N7662
N7789
N281
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5°
10°
15°
20°
25°
27
30°
35°
40°
45°
50°
55°
60°
20h
21h
22h
23h
0h
1h
2h
Symbols
Open Cluster
Globular Cluster
Galaxy
Nebula
α alpha
β beta
γ gamma
δ delta
ε epsilon
ζ zeta
η eta
θ theta
ι iota
κ kappa
λ lambda
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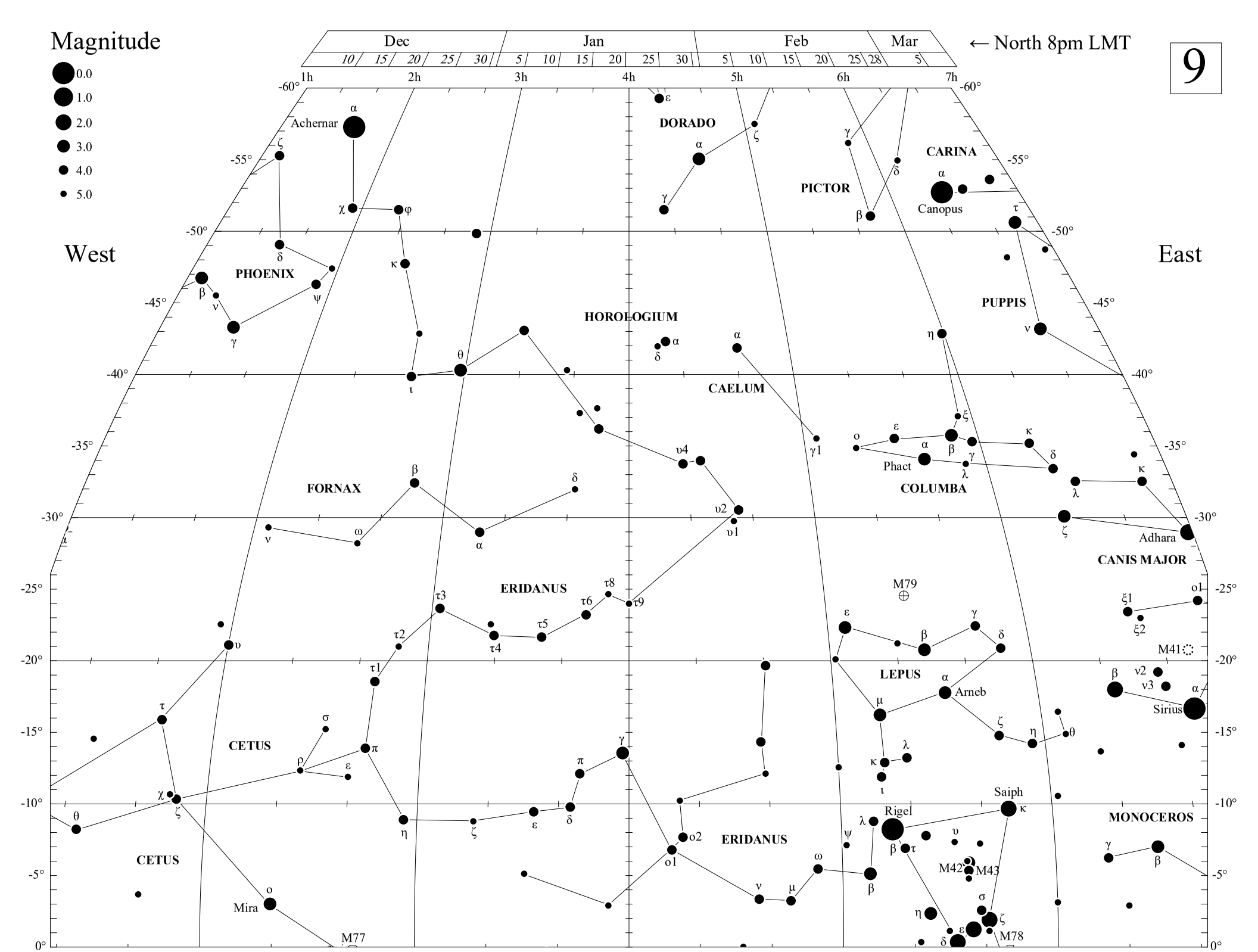
ν nu
ξ xi
ο omicron
π pi
ρ rho
σ sigma
τ tau
υ upsilon
φ phi
χ chi
ψ psi
ω omega


Magnitude
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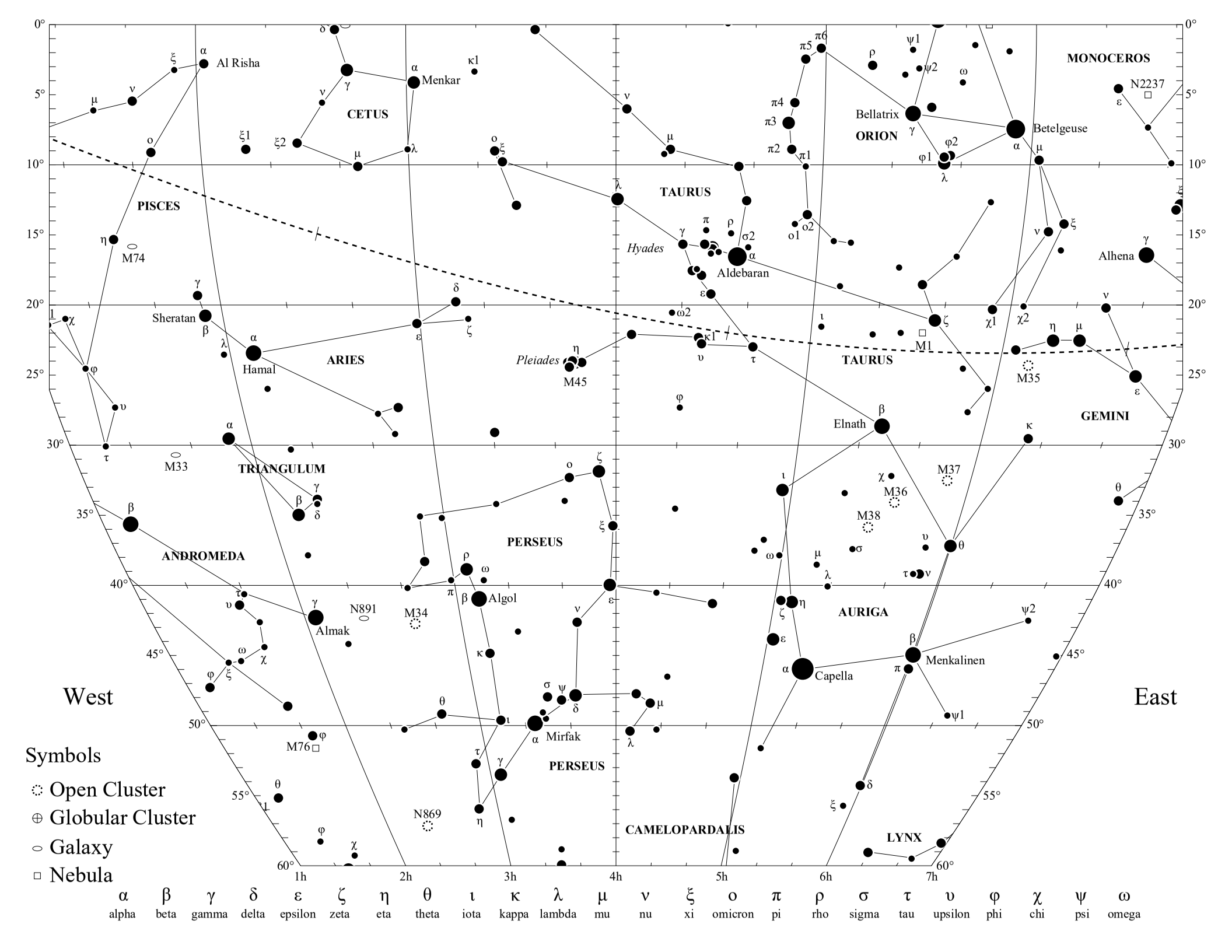
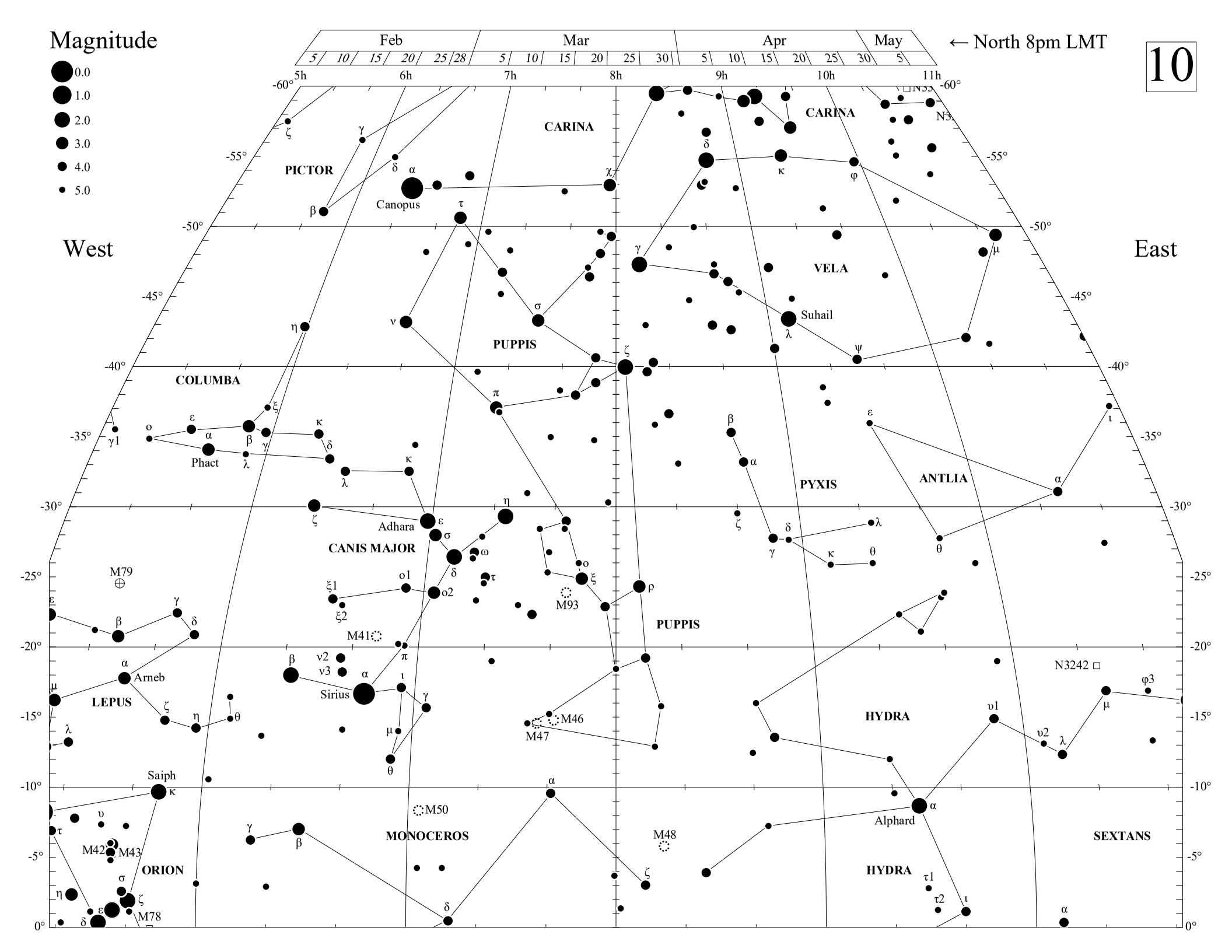
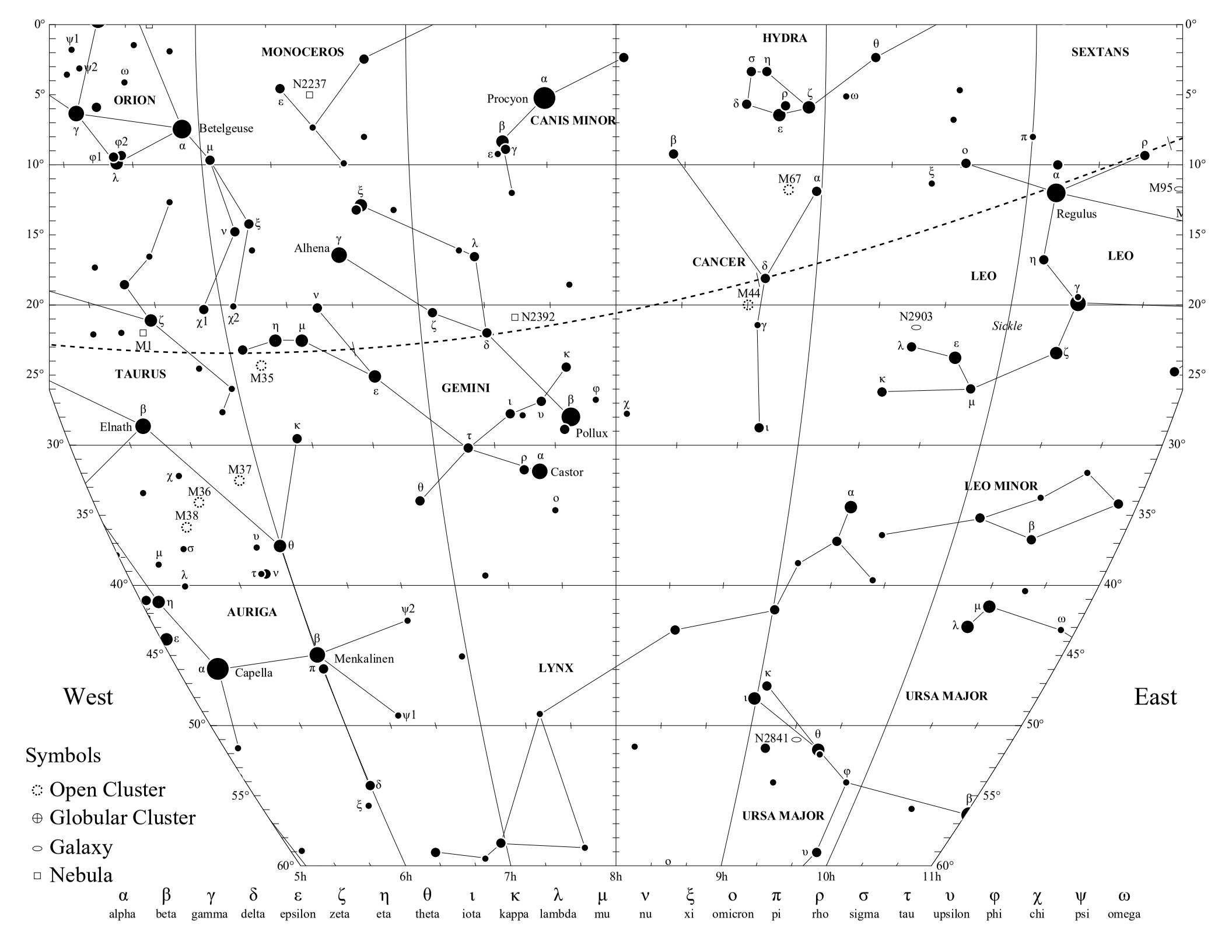
4.0
5.0
Dec
Jan
Feb
Mar
10 15 20 25 30 5 10 15 20 25 30 5 10 15 20 25 28 5
← North 8pm LMT
9
1h 2h 3h 4h 5h 6h 7h
-60° -55° -50° -45° -40° -35° -30° -25° -20° -15° -10° -5° 0°
West
East
Achernar
DORADO
CARINA
PICTOR
Canopus
PHOENIX
HOROLOGIUM
PUPPIS
CAELUM
FORNAX
COLUMBA
Phact
Adhara
CANIS MAJOR
ERIDANUS
M79
M41
LEPUS
Arneb
Sirius
CETUS
Mira
M77
Rigel
Saiph
MONOCEROS
M42
M43
M78


West
East
PISCES
CETUS
ARIES
TAURUS
ORION
MONOCEROS
GEMINI
TRIANGULUM
ANDROMEDA
PERSEUS
AURIGA
CAMELOPARDALIS
LYNX
Al Risha
Menkar
Sheratan
Hamal
Aldebaran
Hyades
Pleiades
Bellatrix
Betelgeuse
Alhena
Elnath
Algol
Almak
Mirfak
Capella
Menkalinen
M74
M33
M45
M1
M35
M36
M37
M38
N2237
N891
M34
M76
N869
Symbols
Open Cluster
Globular Cluster
Galaxy
Nebula
α alpha
β beta
γ gamma
δ delta
ε epsilon
ζ zeta
η eta
θ theta
ι iota
κ kappa
λ lambda
μ mu
ν nu
ξ xi
ο omicron
π pi
ρ rho
σ sigma
τ tau
υ upsilon
φ phi
χ chi
ψ psi
ω omega
0°
5°
10°
15°
20°
25°
30°
35°
40°
45°
50°
55°
60°
1h
2h
3h
4h
5h
6h
7h

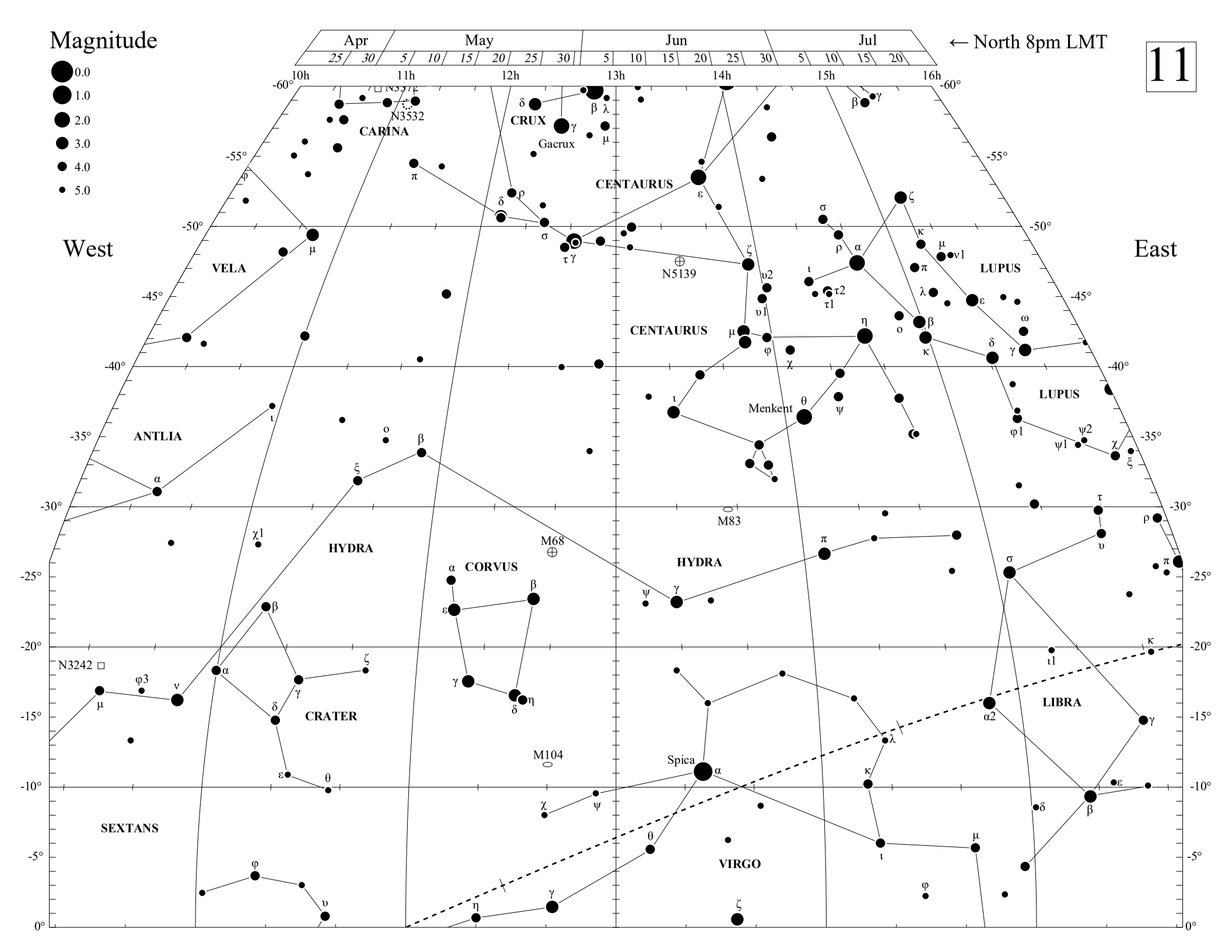

Magnitude
0.0
1.0
2.0
3.0
4.0
5.0
Feb
Mar
Apr
May
5 10 15 20 25 28
5 10 15 20 25 30
5 10 15 20 25 30
5
← North 8pm LMT
10
5h
6h
7h
8h
9h
10h
11h
West
East
-60°
-55°
-50°
-45°
-40°
-35°
-30°
-25°
-20°
-15°
-10°
-5°
0°
CARINA
PICTOR
Canopus
VELA
Suhail
PUPPIS
COLUMBA
Phact
PYXIS
ANTLIA
Adhara
CANIS MAJOR
M79
M93
M41
PUPPIS
LEPUS
Arneb
Sirius
M46
M47
HYDRA
N3242
Saiph
M50
MONOCEROS
M48
Alphard
SEXTANS
M42
M43
ORION
M78
HYDRA

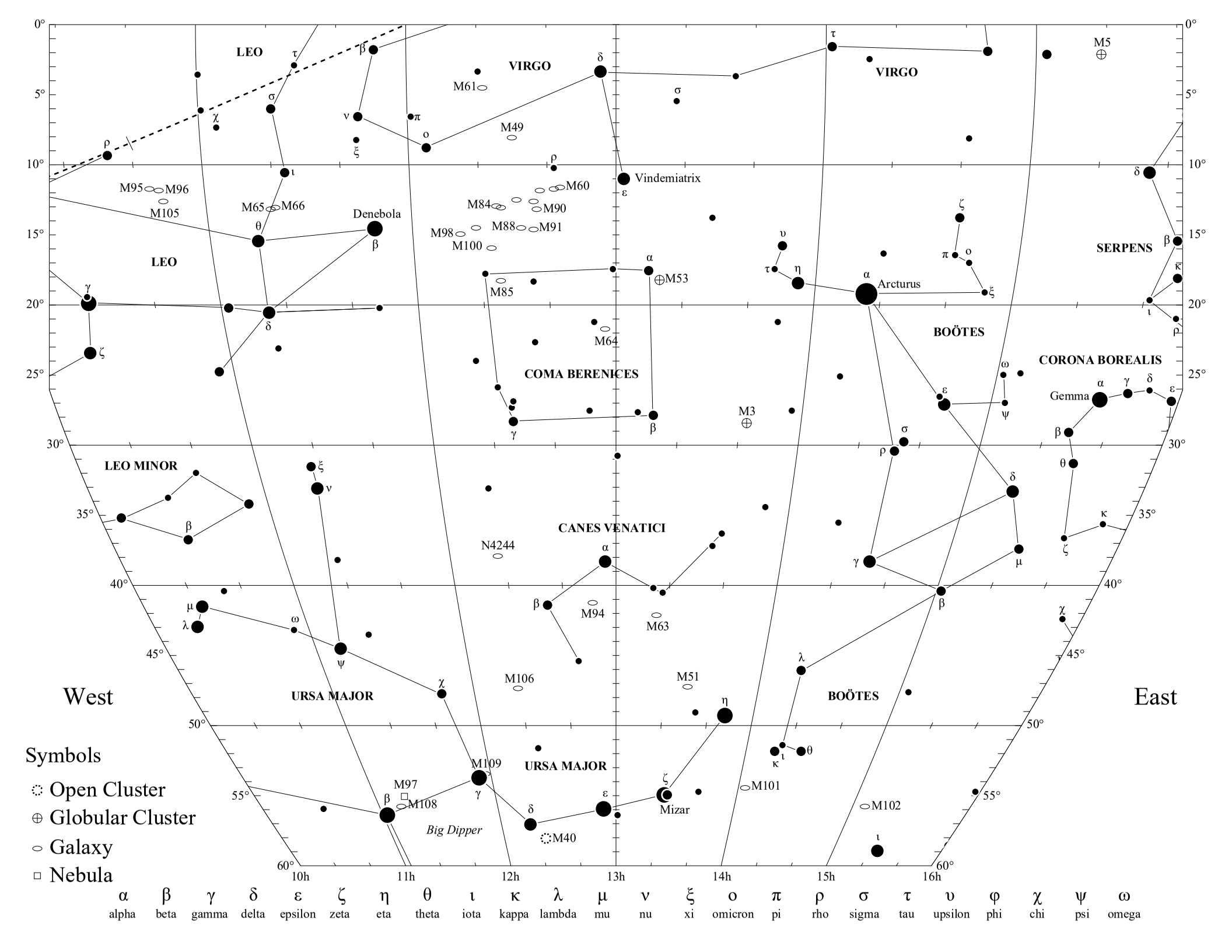


Symbols

- Open Cluster
- ⊕ Globular Cluster
- ⬭ Galaxy
- □ Nebula

α alpha β beta γ gamma δ delta ε epsilon ζ zeta η eta θ theta ι iota κ kappa λ lambda μ mu ν nu ξ xi ο omicron π pi ρ rho σ sigma τ tau υ upsilon φ phi χ chi ψ psi ω omega


Magnitude
0.0
1.0
2.0
3.0
4.0
5.0
Apr
May
Jun
Jul
25 30 5 10 15 20 25 30 5 10 15 20 25 30 5 10 15 20
← North 8pm LMT
11
10h 11h 12h 13h 14h 15h 16h
-60° -55° -50° -45° -40° -35° -30° -25° -20° -15° -10° -5° 0°
West
East
CARINA
CRUX
Gacrux
CENTAURUS
VELA
LUPUS
ANTLIA
HYDRA
CORVUS
CRATER
SEXTANS
VIRGO
LIBRA
Menkent
Spica
N3532
N5139
M68
M83
M104
N3242


LEO
VIRGO
VIRGO
LEO
SERPENS
BOÖTES
CORONA BOREALIS
LEO MINOR
COMA BERENICES
CANES VENATICI
URSA MAJOR
URSA MAJOR
BOÖTES
Denebola
Vindemiatrix
Arcturus
Gemma
Mizar
Big Dipper
M61
M49
M60
M84
M90
M98
M88
M91
M100
M53
M85
M64
M3
M5
M95
M96
M105
M65
M66
N4244
M94
M63
M106
M51
M109
M97
M108
M40
M101
M102
West
East
0°
5°
10°
15°
20°
25°
30°
35°
40°
45°
50°
55°
60°
10h
11h
12h
13h
14h
15h
16h
Symbols
Open Cluster
Globular Cluster
Galaxy
Nebula
α alpha
β beta
γ gamma
δ delta
ε epsilon
ζ zeta
η eta
θ theta
ι iota
κ kappa
λ lambda
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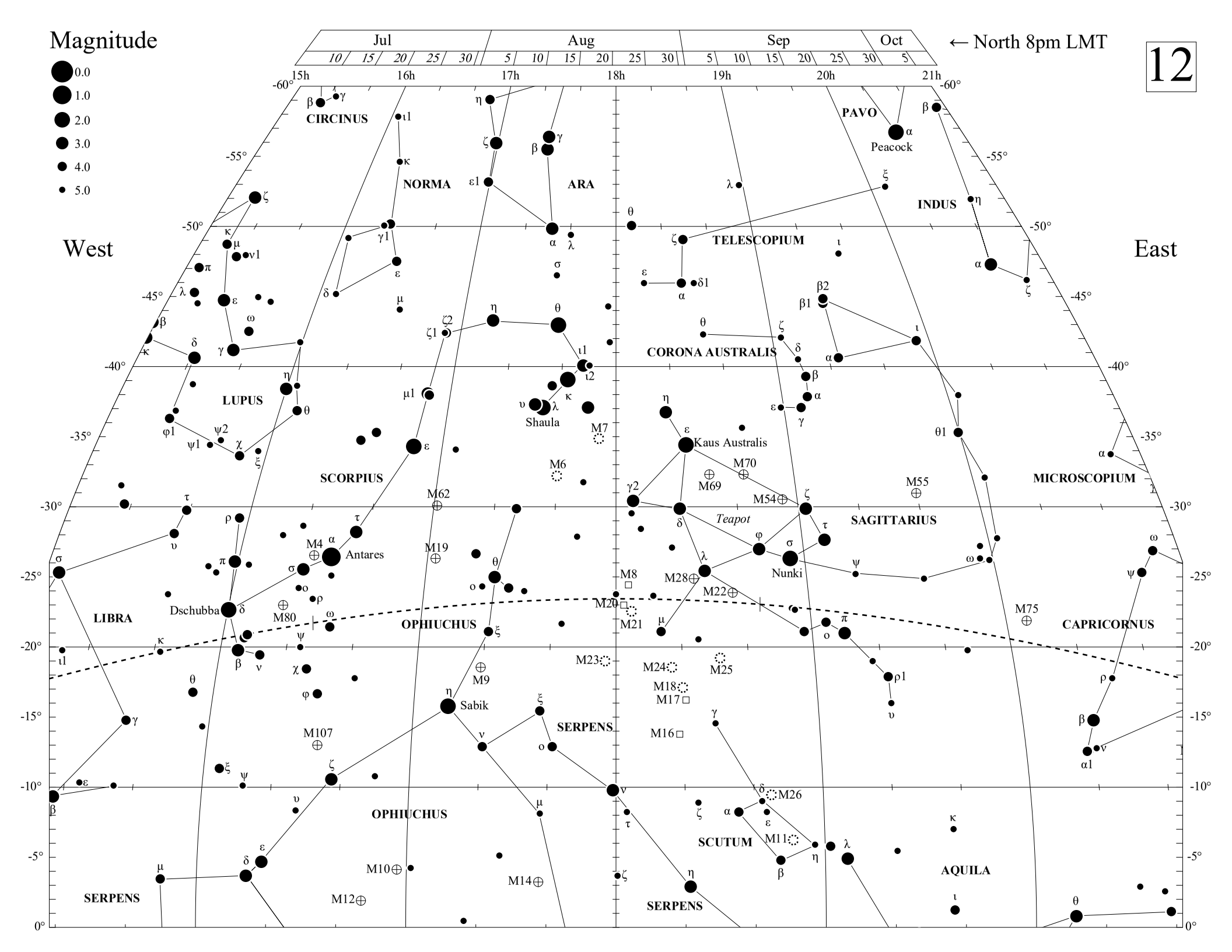
ο omicron
π pi
ρ rho
σ sigma
τ tau
υ upsilon
φ phi
χ chi
ψ psi
ω omega


Magnitude
0.0
1.0
2.0
3.0
4.0
5.0
Jul
Aug
Sep
Oct
10 15 20 25 30 5 10 15 20 25 30 5 10 15 20 25 30 5
← North 8pm LMT
12
15h 16h 17h 18h 19h 20h 21h
-60° -55° -50° -45° -40° -35° -30° -25° -20° -15° -10° -5° 0°
West
East
CIRCINUS
NORMA
ARA
PAVO
Peacock
INDUS
TELESCOPIUM
CORONA AUSTRALIS
LUPUS
Shaula
SCORPIUS
Kaus Australis
Teapot
SAGITTARIUS
MICROSCOPIUM
Antares
Nunki
LIBRA
Dschubba
OPHIUCHUS
Sabik
SERPENS
CAPRICORNUS
SCUTUM
AQUILA
M4
M6
M7
M8
M9
M10
M11
M12
M14
M16
M17
M18
M19
M20
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M22
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M26
M28
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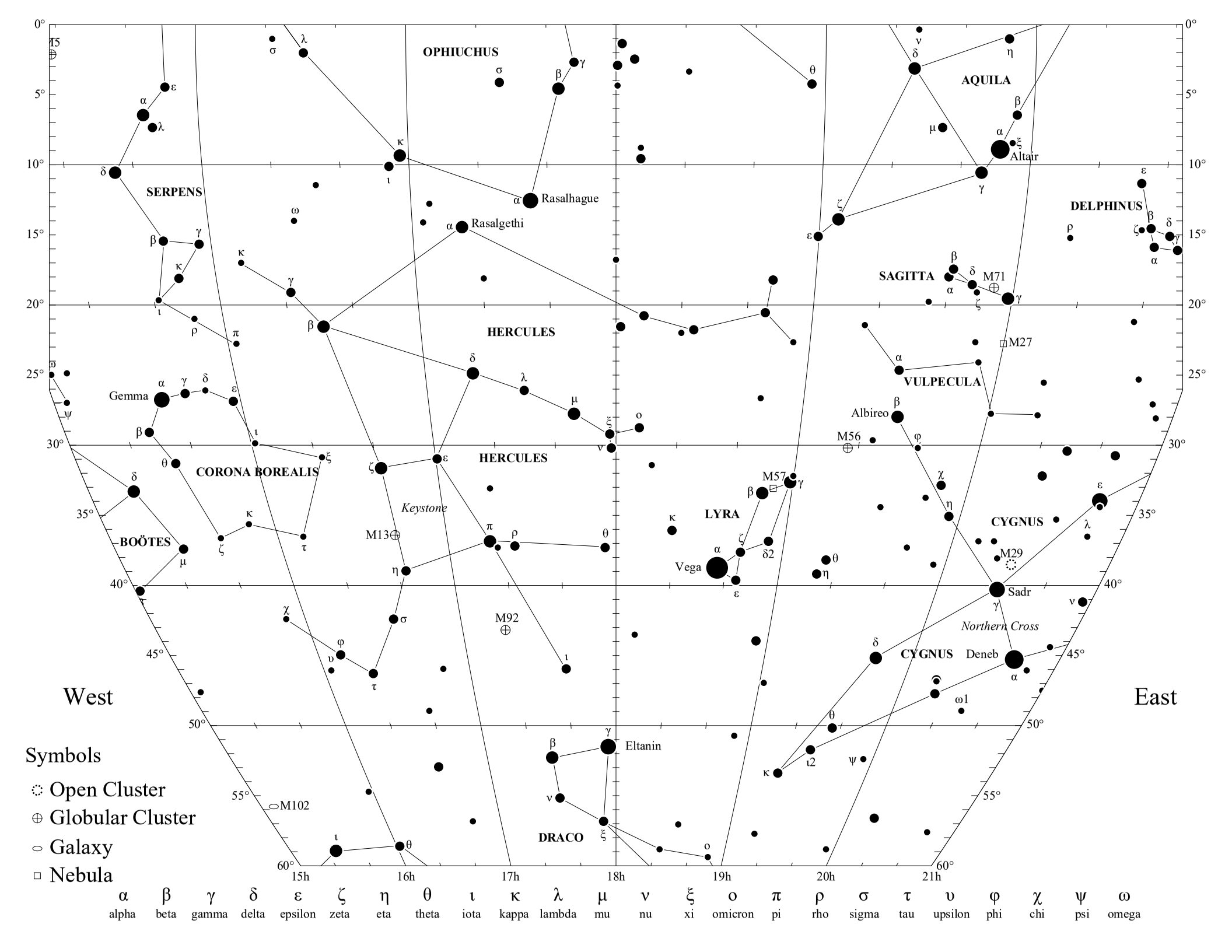
M62
M69
M70
M75
M80
M107


OPHIUCHUS
SERPENS
HERCULES
CORONA BOREALIS
BOÖTES
LYRA
AQUILA
SAGITTA
DELPHINUS
VULPECULA
CYGNUS
DRACO
Rasalhague
Rasalgethi
Gemma
Keystone
M13
M92
M56
M57
M27
M71
M29
Albireo
Vega
Altair
Sadr
Deneb
Northern Cross
Eltanin
M102
West
East
Symbols
Open Cluster
Globular Cluster
Galaxy
Nebula
0°
5°
10°
15°
20°
25°
30°
35°
40°
45°
50°
55°
60°
15h
16h
17h
18h
19h
20h
21h
α alpha
β beta
γ gamma
δ delta
ε epsilon
ζ zeta
η eta
θ theta
ι iota
κ kappa
λ lambda
μ mu
ν nu
ξ xi
ο omicron
π pi
ρ rho
σ sigma
τ tau
υ upsilon
φ phi
χ chi
ψ psi
ω omega

List of the 88 constellations

Abbr	Name	Description	Pronunciation
And	Andromeda	The chained maiden	an-DROM-eh-duh
Ant	Antlia	Air pump	ANT-leah
Aps	Apus	Bird of paradise	APE-pus
Aqr	Aquarius	Water-bearer	ah-KWAIR-ee-us
Aql	Aquila	Eagle	ACK-will-ah
Ara	Ara	Altar	AIR-rah
Ari	Aries	Ram	AIR-eez
Aur	Auriga	Charioteer	oh-RYE-guh
Boo	Boötes	Herdsman	bow-OAT-teez
Cae	Caelum	Chisel	SEE-lum
Cam	Camelopardalis	Giraffe	cam-el-oh-PAR-del-us
Cnc	Cancer	Crab	CAN-sir
CVn	Canes Venatici	Hunting dogs	CAN-eez-ven-AT-is-see
CMa	Canis Major	Greater dog	CAN-is-MAY-jer
CMi	Canis Minor	Lesser dog	CAN-is-MINE-er
Cap	Capricornus	Goat	CAP-ri-CORN-uss
Car	Carina	Keel	ka-RYE-nah
Cas	Cassiopeia	Queen	CASS-ee-oh-PEE-ah
Cen	Centaurus	Centaur	sen-TOR-us
Cep	Cepheus	King	SEE-fee-us
Cet	Cetus	Whale	SEE-tuss
Cha	Chamaeleon	Chameleon	kah-MEE-lee-un
Cir	Circinus	Compasses	SIR-sin-us
Col	Columba	Dove	koh-LUM-bah
Com	Coma Berenices	Berenice's hair	KO-mah BEAR-in-EYE-sees
CrA	Corona Australis	Southern crown	kah-RO-nah awe-STRAL-iss
CrB	Corona Borealis	Northern crown	kah-RO-nah bore-ree-AL-iss
Crv	Corvus	Crow	COR-vuss
Crt	Crater	Cup	CRAY-ter
Cru	Crux	Cross	KRUX
Cyg	Cygnus	Swan	SIG-nuss
Del	Delphinus	Dolphin	del-FINE-uss
Dor	Dorado	Swordfish	doh-RAH-doh

Abbr	Name	Description	Pronunciation
Dra	Draco	Dragon	DRAY-koh
Equ	Equuleus	Little horse	eek-KWOO-lee-uss
Eri	Eridanus	River	ee-RID-an-uss
For	Fornax	Furnace	FORE-nacks
Gem	Gemini	Twins	JEMM-in-eye
Gru	Grus	Crane	GRUSS
Her	Hercules	Son of Zeus	HER-kyou-leez
Hor	Horologium	Clock	HOR-oh-LOH-jee-um
Hya	Hydra	Water snake (female)	HIGH-druh
Hyi	Hydrus	Water snake (male)	HIGH-druss
Ind	Indus	Indian	IN-duss
Lac	Lacerta	Lizard	lah-SIR-tah
Leo	Leo	Lion	LEE-oh
LMi	Leo Minor	Lesser lion	LEE-oh MY-ner
Lep	Lepus	Hare	LEE-pus
Lib	Libra	Balance	LEE-brah
Lup	Lupus	Wolf	LOO-pus
Lyn	Lynx	Lynx	LINKS
Lyr	Lyra	Lyre	LYE-ruh
Men	Mensa	Table	MEN-sah
Mic	Microscopium	Microscope	MY-kro-SCOPE-ee-um
Mon	Monoceros	Unicorn	mon-OSS-er-us
Mus	Musca	Fly	MUSK-ah
Nor	Norma	Carpenter's level	NOR-mah
Oct	Octans	Octant	OCK-tans
Oph	Ophiuchus	Serpent-bearer	OFF-ee-YOU-kuss
Ori	Orion	Hunter	oh-RYE-on
Pav	Pavo	Peacock	PAY-voh
Peg	Pegasus	Winged horse	PEG-ah-suss
Per	Perseus	Rescuer of Andromeda	PURR-see-uss
Phe	Phoenix	Phoenix	FEE-nicks
Pic	Pictor	Painter	PICK-torr
Psc	Pisces	Fishes	PIE-sees
PsA	Piscis Austrinus	Southern fish	PIE-siss os-TRY-niss
Pup	Puppis	Stern	PUPP-iss

Abbr	Name	Description	Pronunciation
Pyx	Pyxis	Compass	PICK-siss
Ret	Reticulum	Reticule	ree-TICK-you-lum
Sge	Sagitta	Arrow	sah-JIT-ah
Sgr	Sagittarius	Archer	SAJJ-ih-TARE-ee-uss
Sco	Scorpius	Scorpion	SCORE-pee-uss
Scl	Sculptor	Sculptor	SKULLP-tor
Sct	Scutum	Shield	SKYOU-tum
Ser	Serpens	Serpent	SIR-pens
Sex	Sextans	Sextant	SEX-tanz
Tau	Taurus	Bull	TORE-russ
Tel	Telescopium	Telescope	tell-ih-SCOPE-ee-um
Tri	Triangulum	Triangle	try-ANG-gyou-lum
TrA	Triangulum Australe	Southern triangle	try-ANG-gyou-lum ah-STRAL-lay
Tuc	Tucana	Toucan	two-CAN-ah
UMa	Ursa Major	Greater bear	URR-sah MAY-jer
UMi	Ursa Minor	Lesser bear	URR-sah MY-ner
Vel	Vela	Sails	VEE-lah
Vir	Virgo	Virgin or maiden	VERR-go
Vol	Volans	Flying fish	VOLE-ans
Vul	Vulpecula	Fox	vull-PECK-you-lah

About

These star charts were created by John O'Hanley (Moncton, NB, Canada), out of admiration for the Edmund Mag 5 Star Atlas, published in the 1970s, and now long out of print. Comments and criticisms can be sent to johnohanley85@gmail.com. To print more copies of these charts, follow the instructions at https://johanley.github.io/bobcaygeon/index.html.