FROSTY DREW OBSERVATORY & SKY THEATRE

Frosty Drew Observatory Life List

http://frostydrew.org

Bird watchers long ago developed the idea of Life Lists to record all their observations of various species. We are extending this idea to the skies above us. This is not a competition or a race. However, if you like, we will record your progress at Frosty Drew Observatory.

As with any such list, the greatest problem is not what to include but deciding what to exclude. We could easily justify a whole encyclopedia. Our initial Life List can only be a starting point. Your Life List will soon have many additional objects.

We strongly considered EXCLUDING the Sun because of the real danger of eye damage - particularly to young viewers. However our day star is simply too important to be ignored. Please use extreme caution if you attempt to view it. Don't let children tackle the Sun without strict supervision. Never allow children to view it by eye or worse yet through binoculars or telescopes. Lifelong damage can occur almost instantly. Only specially designed filters in the hands of trained adults should ever be used for direct viewing. Talk with us about safe viewing techniques.

Some objects are near the North Pole are visible every clear night. Solar system objects move, changing their positions over the span of a few weeks. Other objects have a best season for viewing in the earlier hours of the evening. Objects can be viewed before their season by waiting until later in the night. For example in Summer, the constellations in our Summer map are up in the early evening. If you wait to the middle of this same night the Fall stars will be overhead. Before dawn, the Winter stars begin to rise. To help you find these objects, we have color coded them.

- ✓ **Black objects are near the North Pole and always visible.**
- ✓ **Lavender objects are best viewed in the Spring evenings.**
- ✓ **Green objects are best viewed in the Summer evenings.**
- ✓ **Brown objects are best viewed in the Fall evenings.**
- ✓ **Blue objects are best viewed in the Winter evenings.**
- ✓ **Gray objects depend on where they are in the Solar System.**

There are more than 200 objects in our list. By the time you have checked off about half of them, the might sky will become your own personal domain forever. There are literally thousands of worthy objects to be viewed. We hope you will expand your life list far beyond these initial suggestions.

Astronomy is one of the few sciences where amateurs still make major contributions. Novae and comets are usually discovered by amateurs. If you are interested in making serious observations there are special amateur organizations who do important work that could not be done without their dedicated free labor.

If you find yourself drawn to astronomy in more than a passing way, consider joining us at Frosty Drew Observatory. We welcome astronomers at all levels who love sharing our skies with the general public. The very best way to build your life list into the thousands is to join with others who spend starry night after starry night learning from each other.

FROSTY DREW OBSERVATORY & SKY THEATRE

Life List

- ☐ **The Sun**[1]
- ☐ Solar Eclipse
- ☐ Sunspots

- ☐ **The Moon**
- ☐ Lunar Eclipse
- ☐ Alphonsus
- ☐ Archimedes
- ☐ Aristarchus
- ☐ Aristeles
- ☐ Aristillus
- ☐ Arzachel
- ☐ Copernicus
- ☐ Clavius
- ☐ Eratosthenes
- ☐ Grimaldi
- ☐ Kepler
- ☐ Longomontanus
- ☐ Plato
- ☐ Ptolemaeus
- ☐ Purbach
- ☐ Stevinus
- ☐ Tycho
- ☐ Oceanus Procellarum
- ☐ Mare Humorum
- ☐ Mare Crisium
- ☐ Mare Fecunditatis
- ☐ Mare Imbrium
- ☐ Mare Nectaris
- ☐ Mare Nubium
- ☐ Mare Serenitatis
- ☐ Mare Tranquilitatis

- ☐ **Mercury**

- ☐ **Venus**
- ☐ Gibbous
- ☐ Crescent

- ☐ **Mars**
- ☐ Polar cap
- ☐ Syrtis major
- ☐ Isidris Basin
- ☐ Hellas Basin

Asteroids
- ☐ Ceres
- ☐ Juno
- ☐ Vesta
- ☐ Pallas

- ☐ **Jupiter**
- ☐ Storm bands and details
- ☐ The Great Red Spot
  - ⌖ Io
  - ⌖ Europa
  - ⌖ Ganymede
  - ⌖ Callisto

- ☐ **Saturn**
- ☐ The Rings
- ☐ Cassini Division
- ☐ Shadows planet/rings
  - ⌖ Mimas
  - ⌖ Enceledus
  - ⌖ Dione
  - ⌖ Titan
  - ⌖ Hyperion
  - ⌖ Iapetus
  - ⌖ Tethys

- ☐ **Uranus**
  - ⌖ Ariel
  - ⌖ Umbriel
  - ⌖ Titania
  - ⌖ Oberon

- ☐ **Neptune**
  - ⌖ Triton

- ☐ **Pluto**

Comets
- ☐ #1_____
- ☐ #2_____
- ☐ #3_____
- ☐ #4_____
- ☐ #5_____

Constellations
- ☐ **Andromeda**
- ☐ **Aquarius**
- ☐ **Aquilia**
- ☐ **Aries**
- ☐ **Auriga**
- ☐ **Bootes**
- ☐ **Cancer**
- ☐ **Canis Major**
- ☐ **Canis Minor**
- ☐ **Canes Venatici**
- ☐ **Capricornus** *(Smile)*
- ☐ **Cassiopeia**
- ☐ **Coma Bernices**
- ☐ **Corona Borealis**
- ☐ **Cephus**
- ☐ **Cetus**
- ☐ **Cygnus** *(Northern Cross)*
- ☐ **Draco**
- ☐ **Gemini**
- ☐ **Hercules**
- ☐ **Leo**
- ☐ **Libra**
- ☐ **Lyra** *(Summer Triangle)*
- ☐ **Ophiuchus**
- ☐ **Orion**
- ☐ **Pegasus** *(Great Square)*
- ☐ **Perseus**
- ☐ **Pisces**
- ☐ **Sagittarius** *(Teapot)*
- ☐ **Scorpius**
- ☐ **Taurus**
- ☐ **Ursa Major** *(Big Dipper)*
- ☐ **Ursa Minor**
- ☐ **Virgo**

Bright Stars
- ☐ **80 UMa** **Alcor**
- ☐ **α Tau** **Aldebaran**
- ☐ **α And** **Alpheratz**
- ☐ **α Aql** **Altair**
- ☐ **α Sco** **Antares**
- ☐ **α Boo** **Arcturus**

[1] **Please view with extreme care! Only trained adults with approved equipment should view the Sun!!!!**

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Life List

- ☐ γ Ori Bellatrix
- ☐ α Ori Betelgeuse
- ☐ α Aur Capella
- ☐ α Gem Castor
- ☐ α Cyg Deneb
- ☐ β Leo Denebola
- ☐ β Tau [El] Nath
- ☐ β Gem Pollux
- ☐ α CMi Procyon
- ☐ α Leo Regulus
- ☐ κ Ori Saiph
- ☐ α Vir Spica
- ☐ α Lyr Vega

Globular Clusters

- ☐ M2
- ☐ M3
- ☐ M4
- ☐ M5
- ☐ M10
- ☐ M12
- ☐ M13 Hercules Cluster
- ☐ M15
- ☐ M19
- ☐ M22
- ☐ M49
- ☐ M55
- ☐ M62
- ☐ M92

Galaxies

- ☐ M31 Great Spiral
- ☐ M32
- ☐ M33
- ☐ M51 Whirlpool
- ☐ M63
- ☐ M64
- ☐ M81
- ☐ M82
- ☐ M83
- ☐ M101

Diffuse Nebulae

- ☐ M1 Crab (SN 1054)
- ☐ M8 Lagoon
- ☐ M16 Eagle
- ☐ M17 Omega
- ☐ M20 Triffid
- ☐ IC434 Horsehead[2]
- ☐ M42 Great Orion
- ☐ NGC1499 California[2]
- ☐ NGC2237 Rosette

Open Clusters

- ☐ Hyades
- ☐ M44 Praesepe/Beehive
- ☐ M45 Pleiades
- ☐ NGC6281
- ☐ IC1396
- ☐ M23
- ☐ M25
- ☐ M34
- ☐ M35
- ☐ M36
- ☐ M37
- ☐ M38
- ☐ M39
- ☐ M47

Planetary Nebulae

- ☐ M27 Dumbbell
- ☐ M97 Owl
- ☐ M57 Ring
- ☐ NGC7009 Saturn Nebula
- ☐ NGC7293 Helix

Multiple Stars

- ☐ β Cyg Albireo
- ☐ α CVn Cor Coroli
- ☐ α Cap Geidi Prime
- ☐ α Per Mirfak
- ☐ β CMa Mirzam
- ☐ ζ UMa Mizar
- ☐ α UMi Polaris
- ☐ α Her RasAlgethi
- ☐ β Ori Rigil
- ☐ λ Sco Shaula
- ☐ α CMa Sirius
- ☐ θ[1] Ori Trapezium
- ☐ δ Gem Wasat 7:20+21:59
- ☐ γ Leo Algieba 0:20+19:52
- ☐ α Psc AlRisha 2:02+02:04
- ☐ β Sco Acrab 16:05-19:48
- ☐ 48 Cas 02:02+70:55
- ☐ β Cep 21:29+70:34
- ☐ η Dra 17:32+55:11
- ☐ γ Cas 00:57+60:42
- ☐ ι Cas 02:29+67:24
- ☐ ζ Aqr 22:29-00:01
- ☐ η Cas 00:49+57:49
- ☐ β Mon 06:29-07:02
- ☐ ε Boö 14:45+27:04
- ☐ μ Lib 14:49-14:09
- ☐ δ Cyg 19:45+45:08

Variable Stars

- ☐ β Per[3] 03:08+40:57
- ☐ ο Cet[4] 02:19+02:59
- ☐ δ Cep[5] 22:29+58:25
- ☐ T CrB[6] 15:57+26:04
- ☐ RR Lyr[7] 19:24+42:41

Special Objects

- ☐ Milky Way
- ☐ Star Fields in Sagittarius
- ☐ M54 Wreckage of Sagittarius Galaxy
- ☐ M31 Outer Reaches
- ☐ NGC6992 Veil Nebula
- ☐ Meteor Showers
- ☐ Earth Satellites
- ☐ Gegenshine
- ☐ Aurora Borealis

Nova

- ☐ #1_____
- ☐ #2_____
- ☐ #3_____

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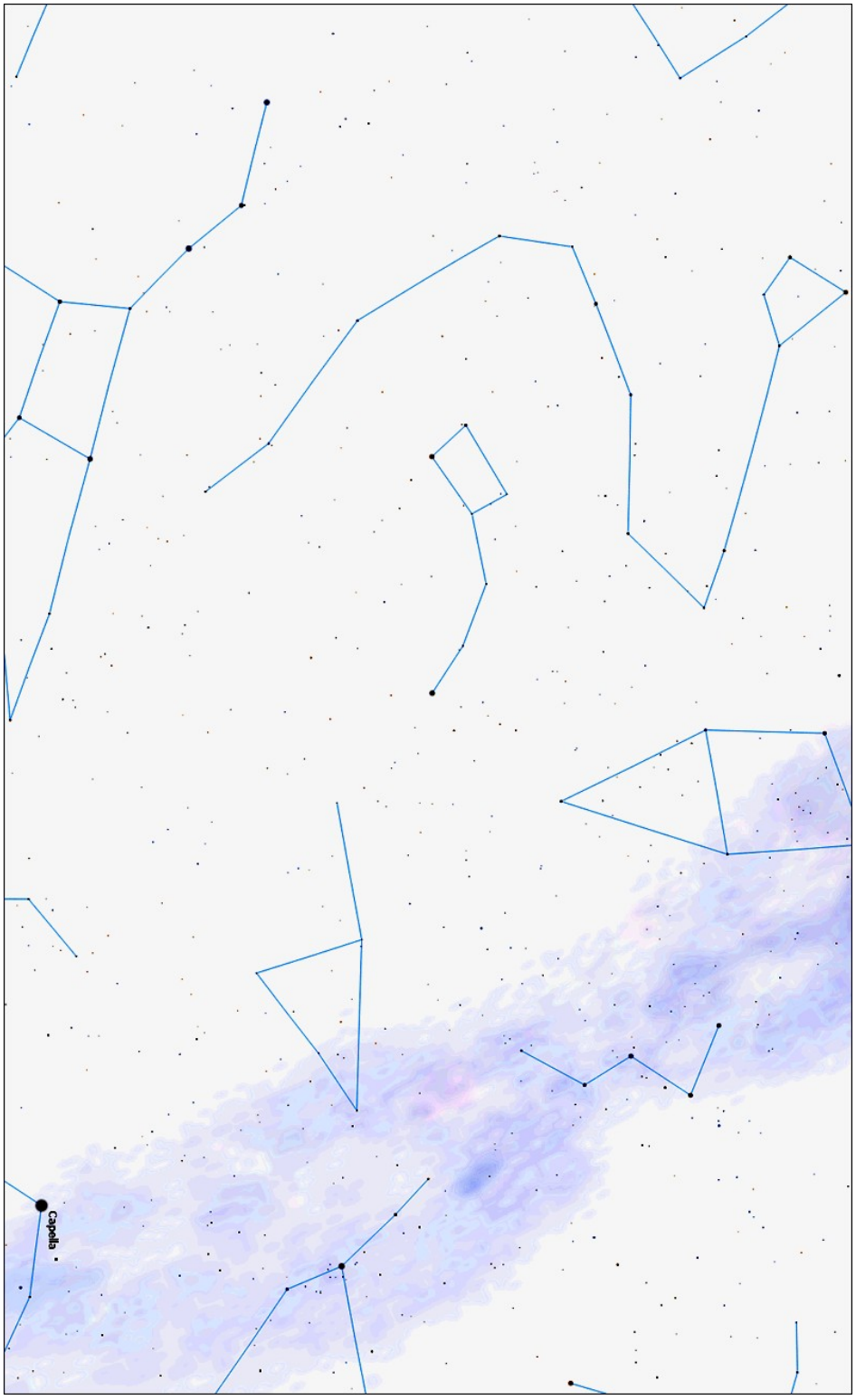
[2] Very hard to see without special filters.
[3] Algol [4] Mira [5] Cepheid Variables [6] Recurring Nova [7] RR Lyrae Variables

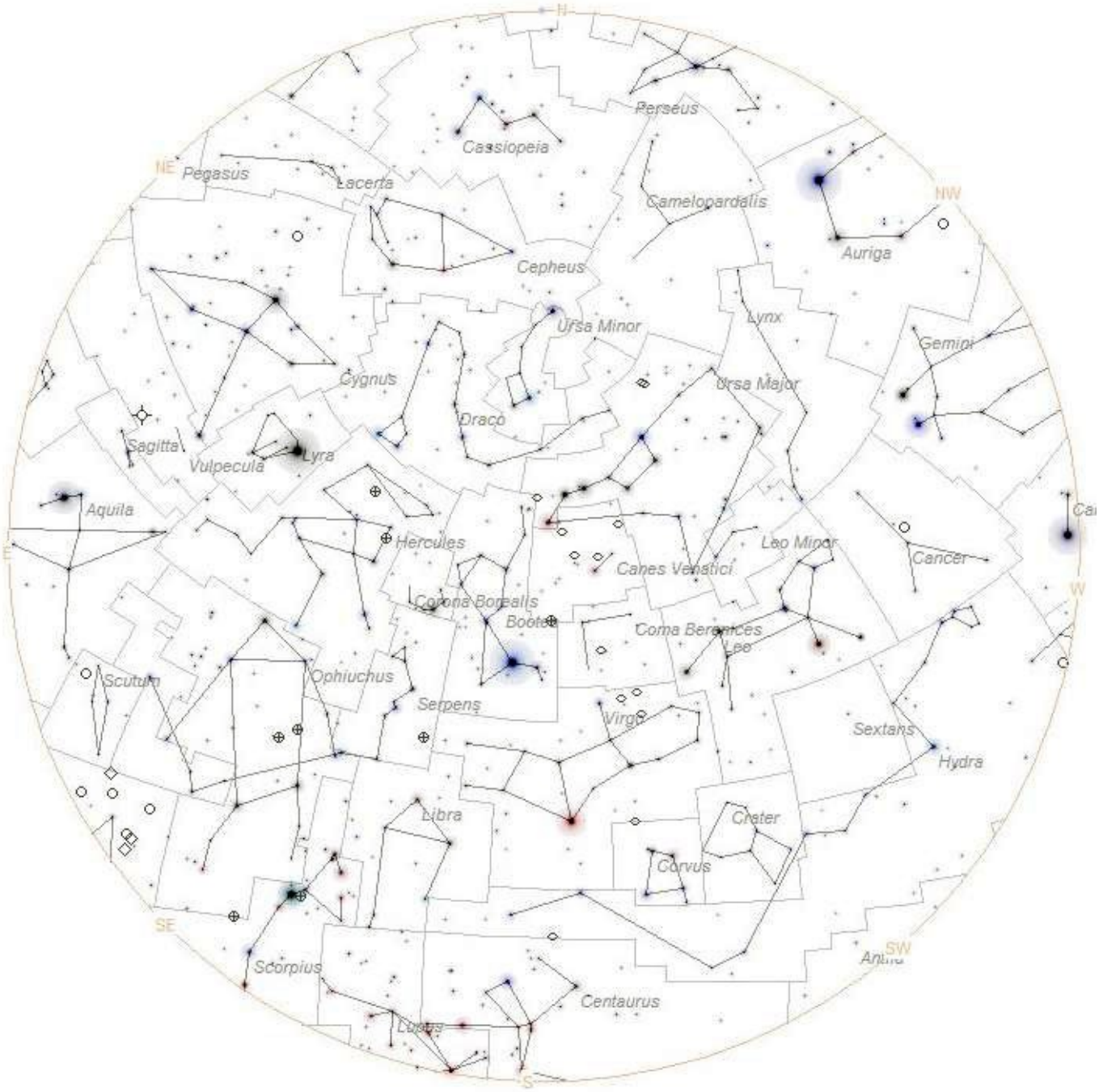
Life List

Polar Region (Circumpolar)



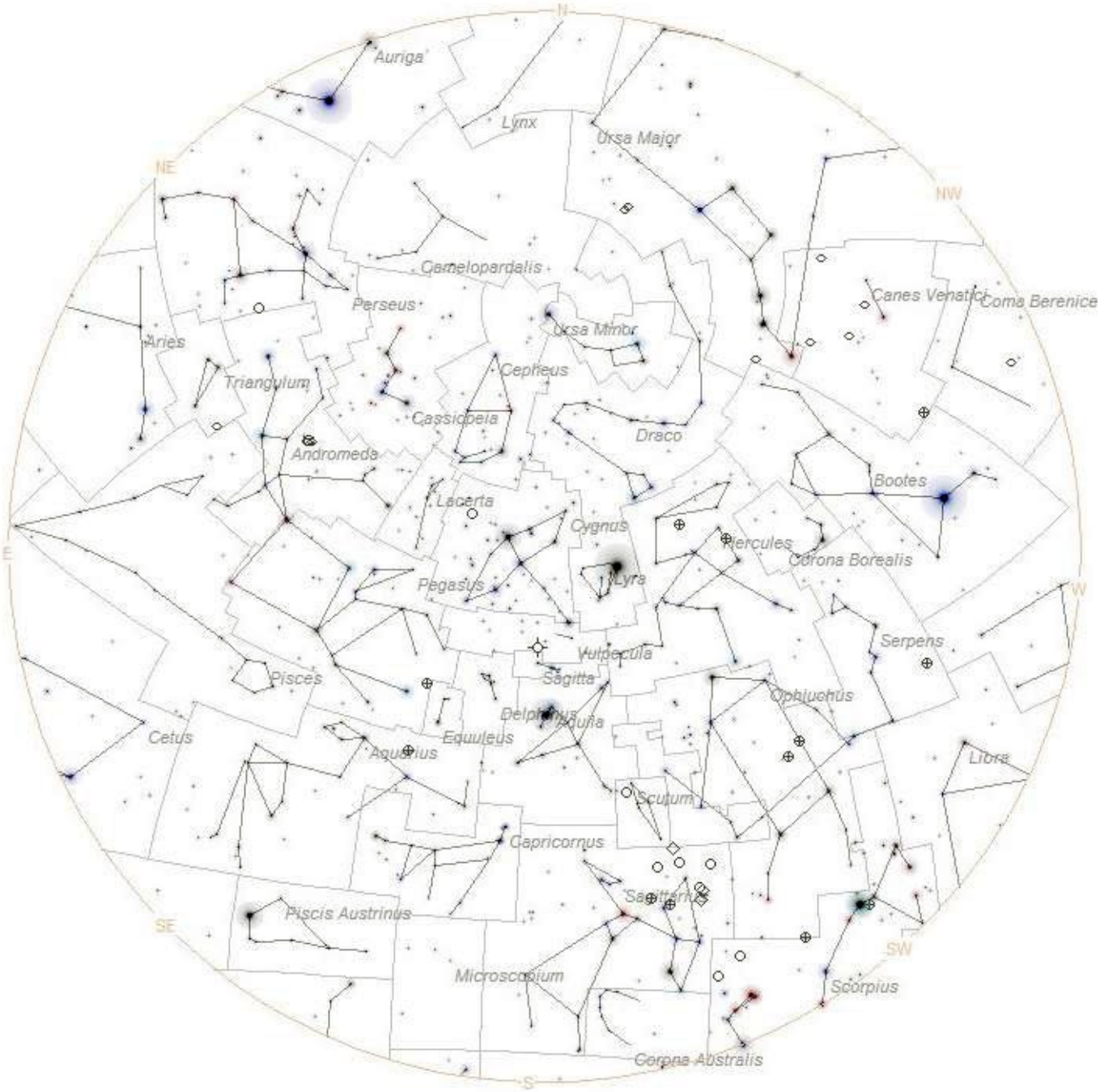
Life List

Spring Constellations



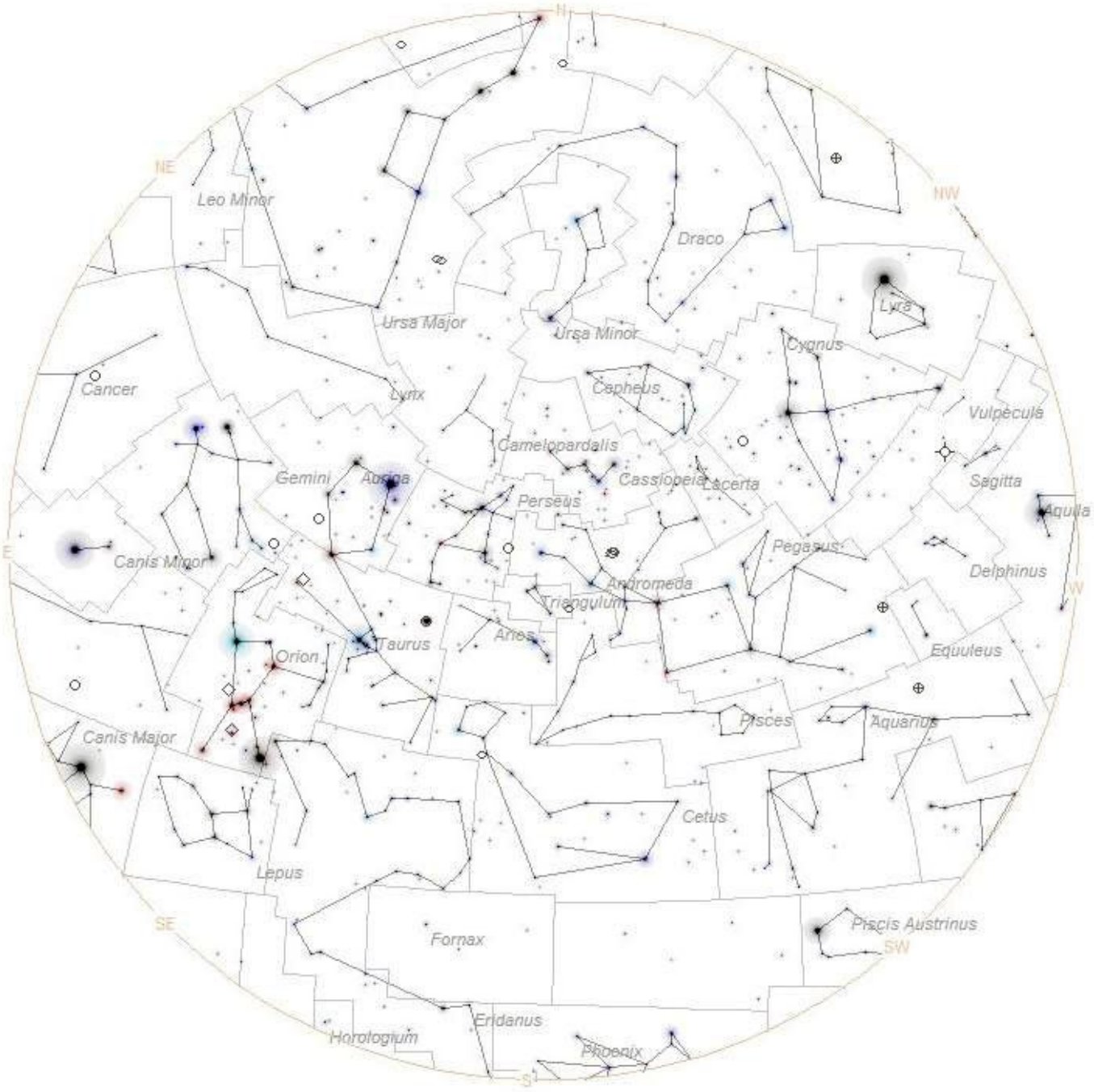
Life List

Summer Constellations



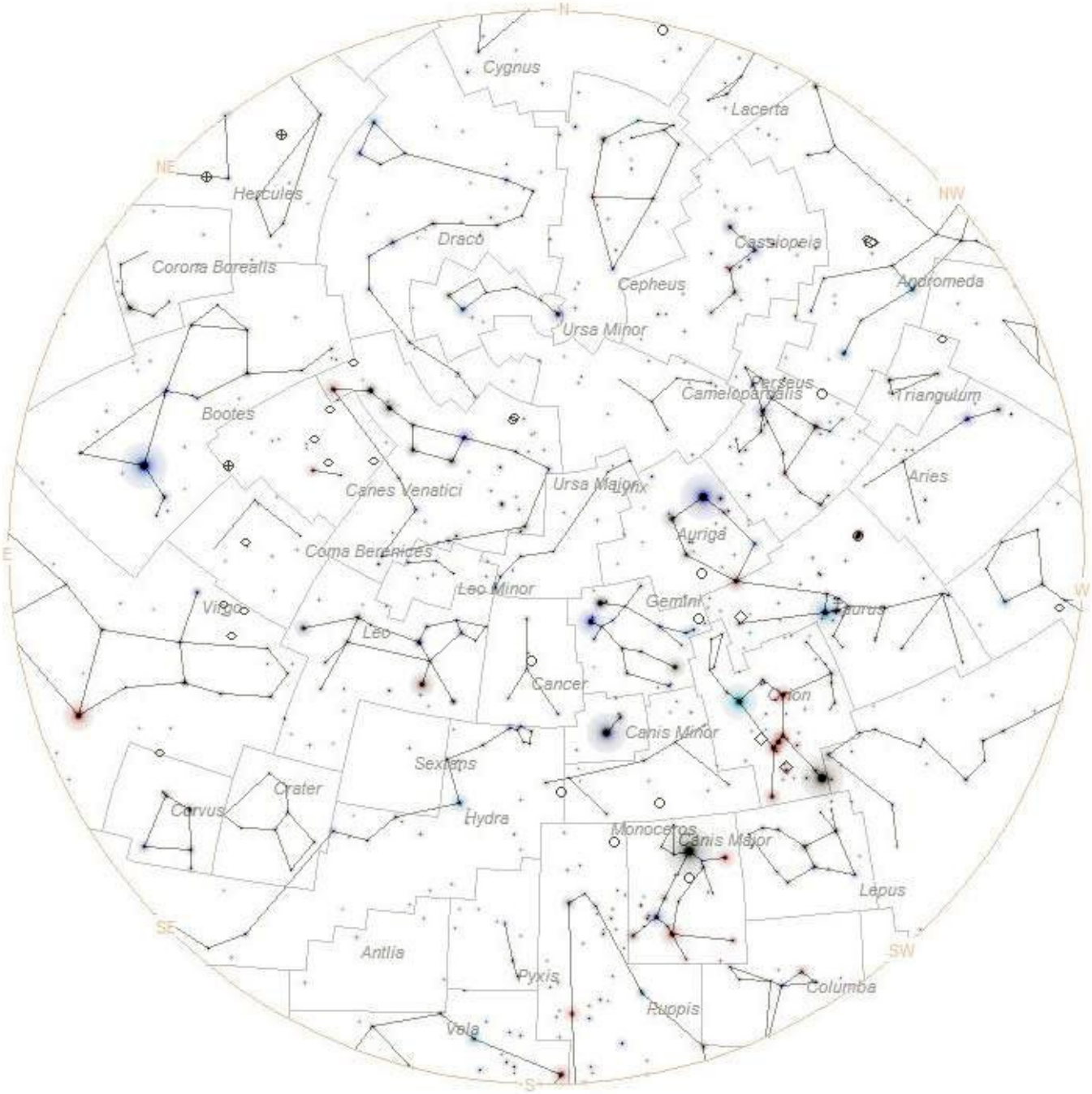
Life List

Autumn Constellations



Life List

Winter Constellations



Life List

Moon Map

These maps are waiting for you to fill them in. Don't cheat yourself of the fun by using your smart phone with Google Sky. Find these objects in the sky using star charts and a telescope.

Your friends at Frosty Drew will be glad to help you star-hop and look for places on the Moon every Friday evening (year round) when it is clear.