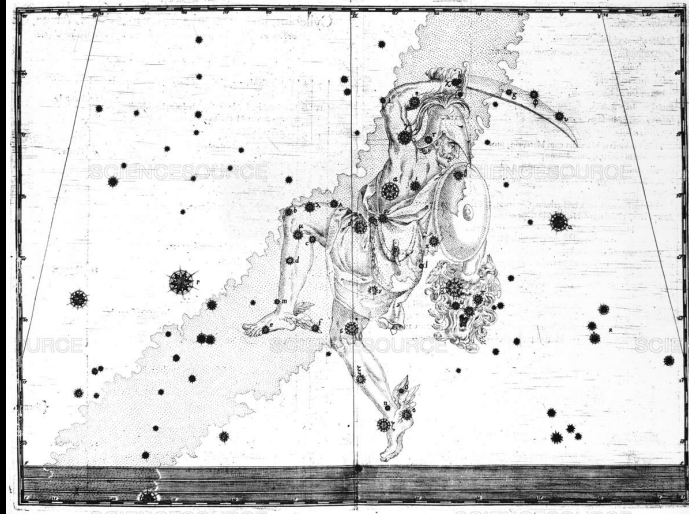


# Constellations & Asterisms



Peterborough Astronomical Association  
Novice Astronomy Class # 8  
November 4, 2022  
Brett Hardy

## Constellations

- A constellation is a recognizable pattern of stars in the night sky
- International Astronomical Union
- 1922, 88 constellations
- Mythological figures, animals and objects
- Many constellations are hemisphere specific
- Move from east to west



**Asterisms**

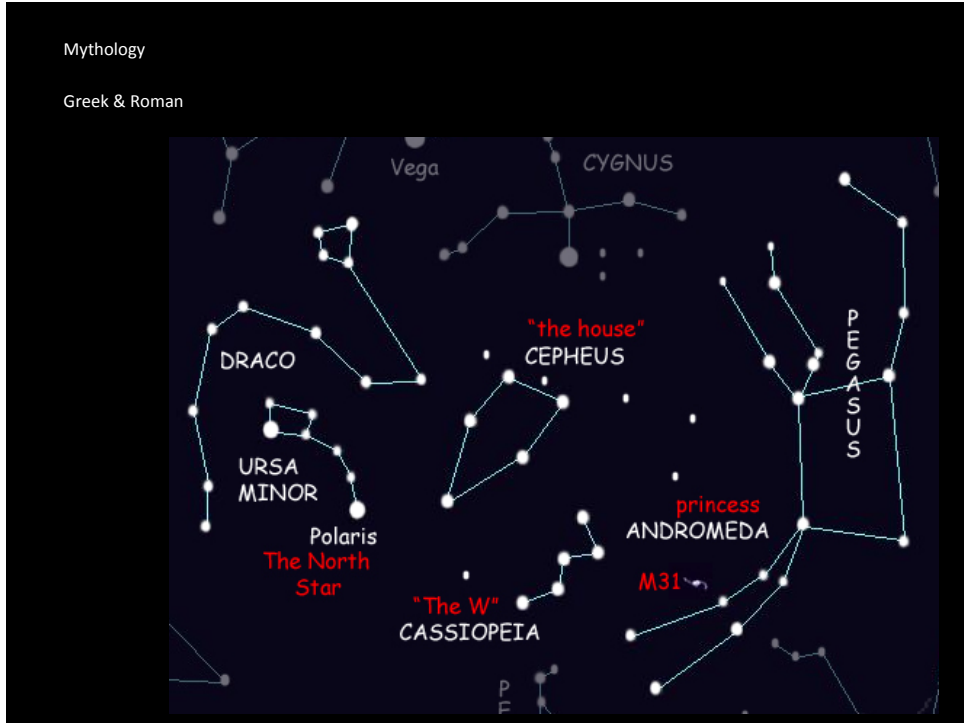
- An asterism is a portion of one or multiple constellations
- Big Dipper
- The Sickle
- Winter Hexagon
- The Teapot

**Greek Letters & Magnitude**

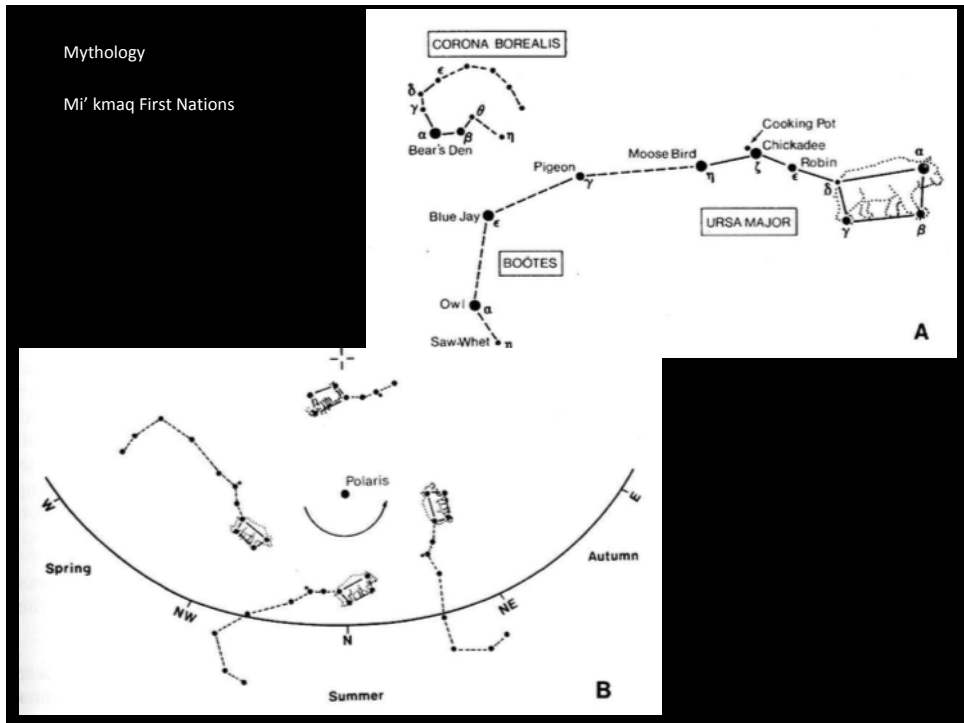
- Johann Bayer's 1603 star atlas Uranometria
- Introduced Greek letter designation
- John Flamsteed numerical designation: 51 Pegasi

$\alpha$	alpha	$\iota$	iota	$\rho$	rho
$\beta$	beta	$\kappa$	kappa	$\sigma$	sigma
$\gamma$	gamma	$\lambda$	lambda	$\tau$	tau
$\delta$	delta	$\mu$	mu	$\upsilon$	upsilon
$\epsilon$	epsilon	$\nu$	nu	$\phi$	phi
$\zeta$	zeta	$\xi$	xi	$\chi$	chi
$\eta$	eta	$\omicron$	omicron	$\psi$	psi
$\theta$	theta	$\pi$	pi	$\omega$	omega

Mythology  
Greek & Roman

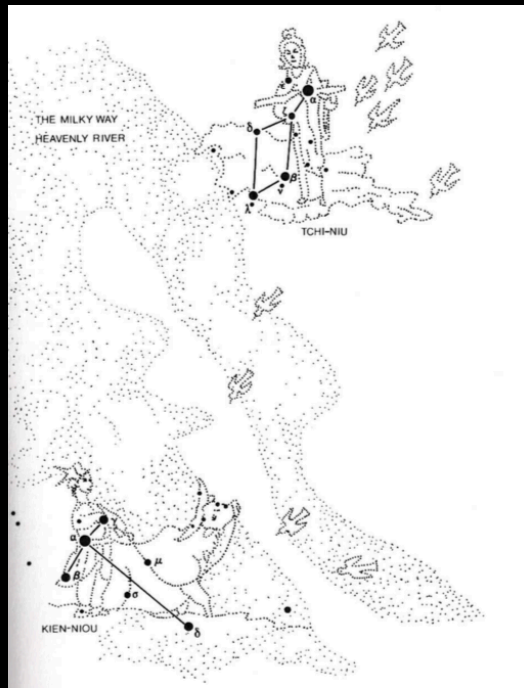


Mythology  
Mi' kmaq First Nations



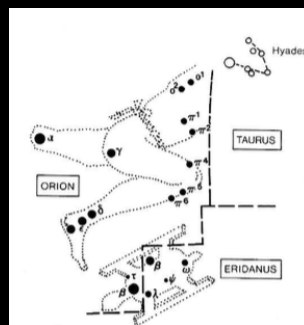
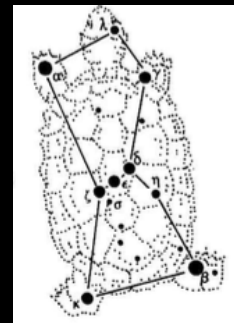
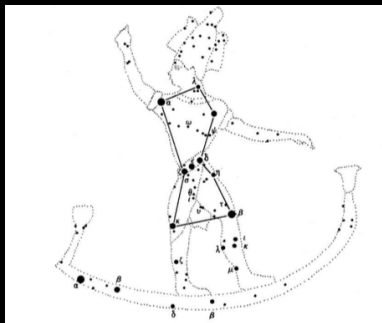
Mythology

Chinese



Mythology

- Egyptian: Osiris
- Bororo (Brazil): Jabuti
- Taulipang (Brazil): Zilikawai
- Chimu (Peru): Criminal



Historical Significance

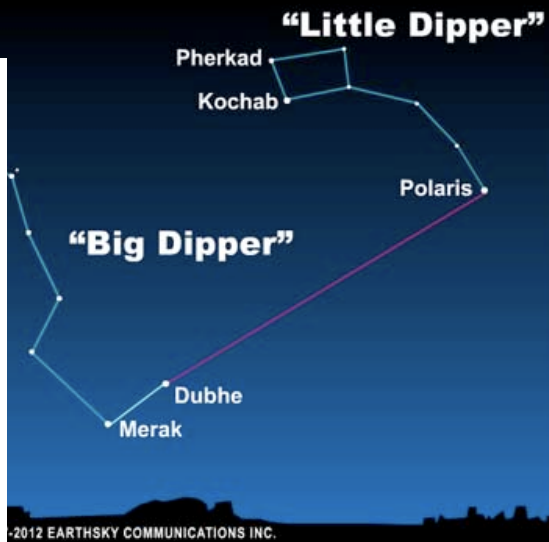
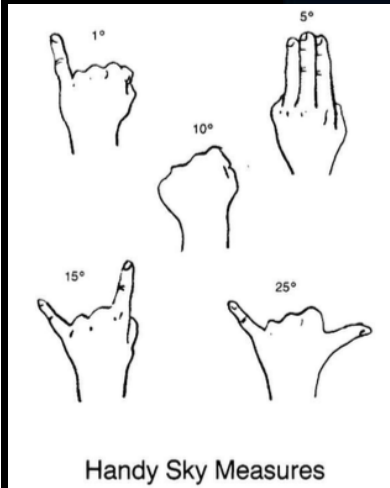
Agriculture

- Visibility of stars is seasonal
- Dawn rising of Pleiades, Hyades & Orion
- Dawn rising of Sirius



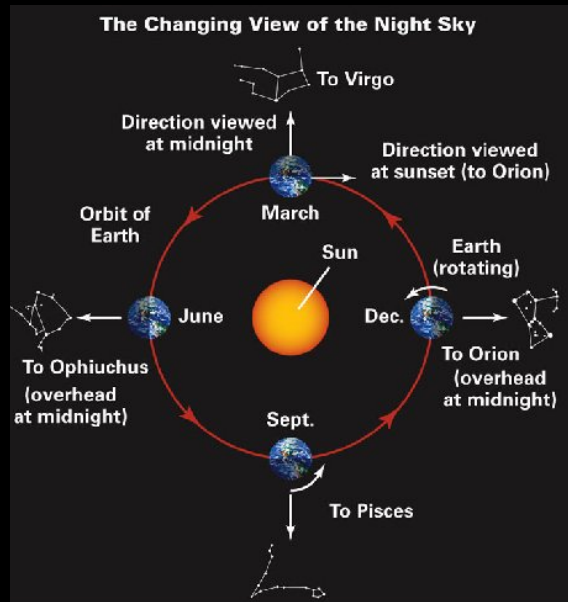
Historical Significance

Navigation & Seafaring



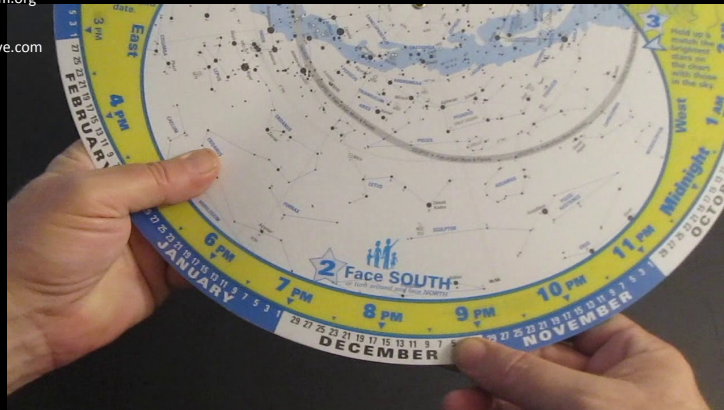
Seasonal Change

- Constellations change due to the Earth's orbit around the Sun
- Latitude influences visibility

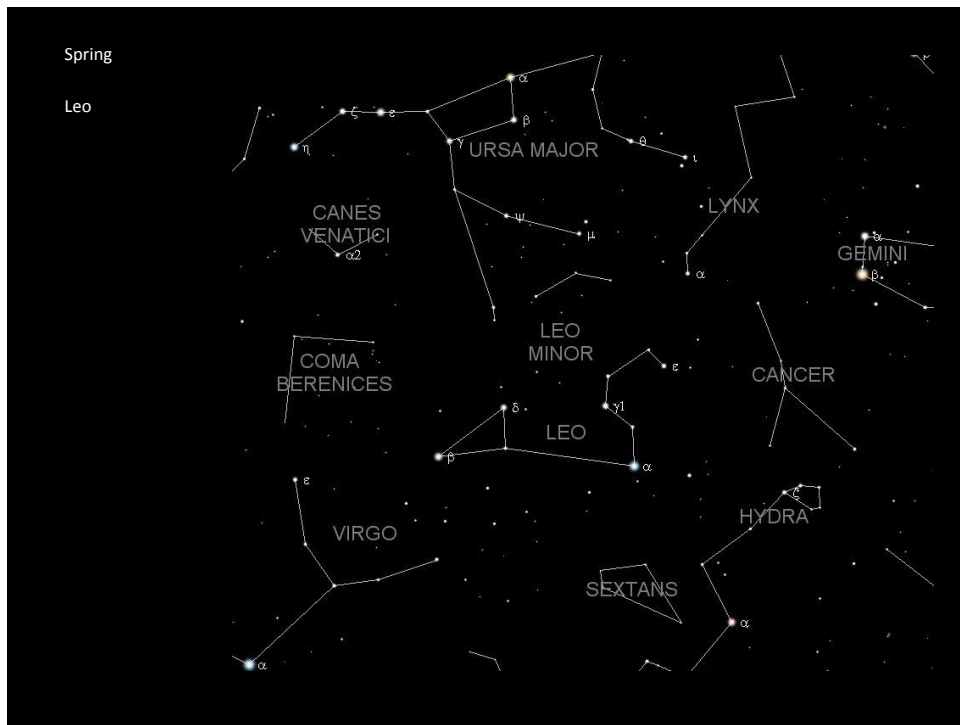
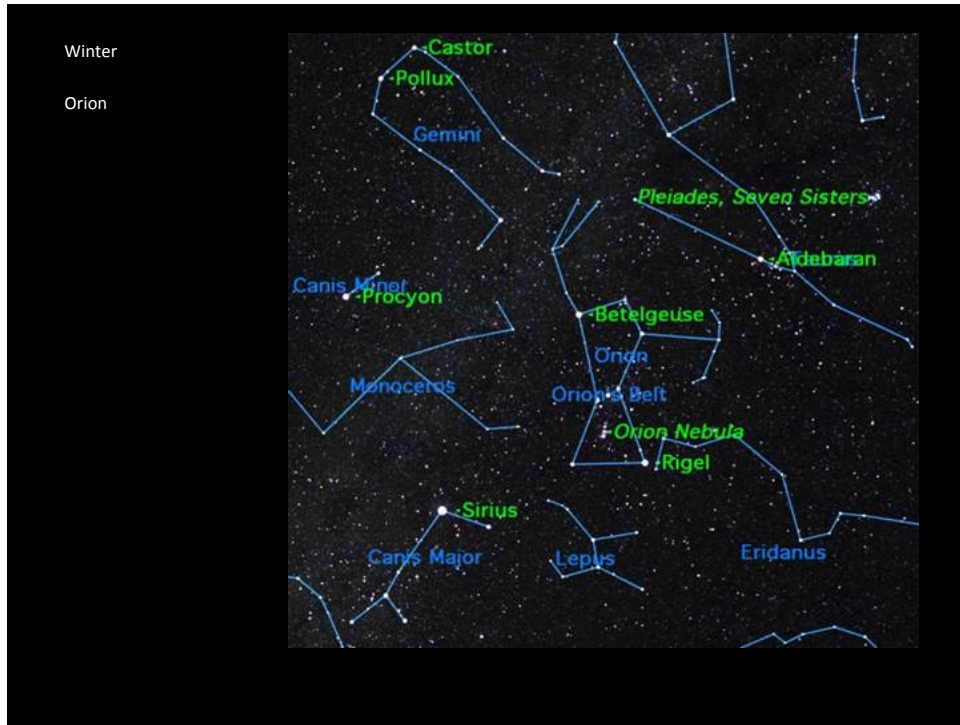


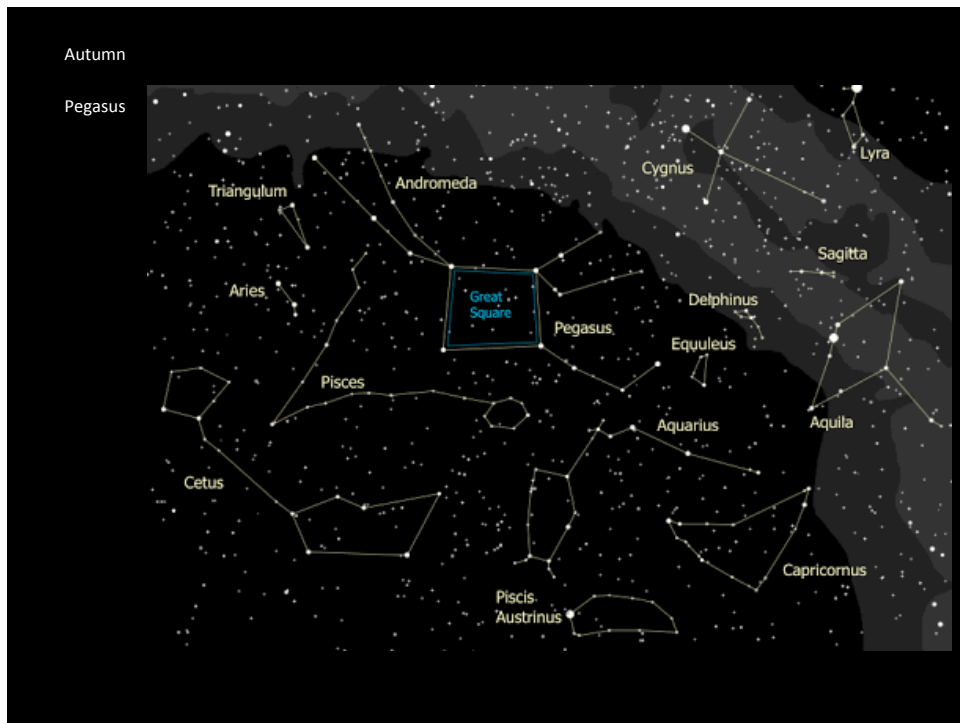
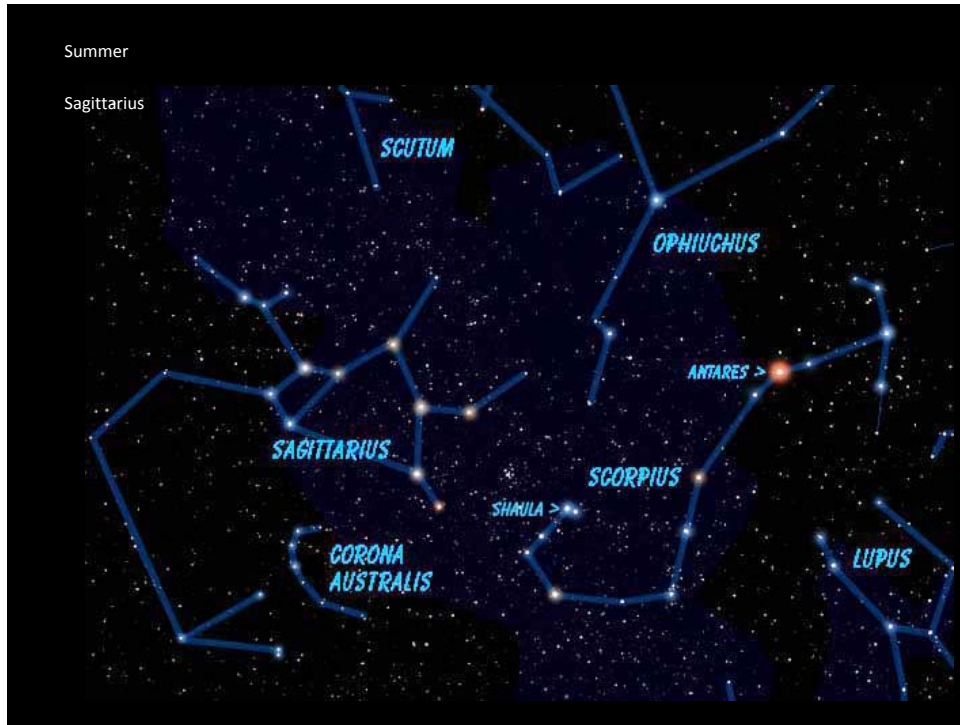
Instructional Tools

- Planisphere
- Planetarium software
  - [stellarium.org](http://stellarium.org)
- Internet
  - [theskylive.com](http://theskylive.com)



The Telescope Nerd

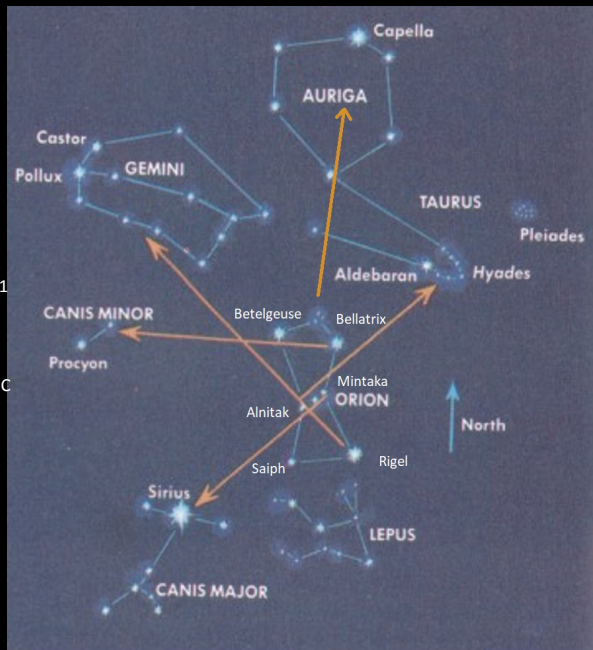






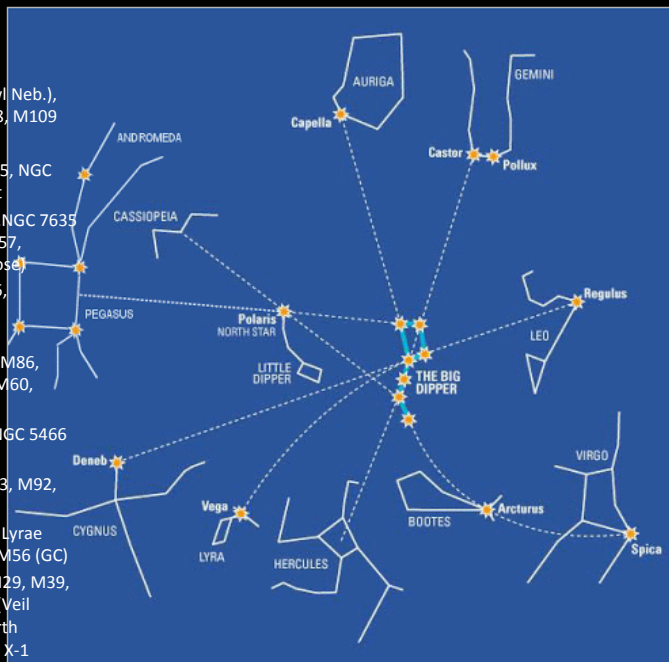
Constellations as Pointers

- Orion
- Betelgeuse (0.4 to 1.64), Rigel 0.18), Bellatrix (1.6), M42, M43, B33, NGC 2024 (Flame Nebula), NGC 1981, M78
- Canis Major: Sirius (-1.4), M41, NGC 2362
- Monoceros: M50, NGC 2244 & Rosette Nebula, NGC 2264 (Christmas Tree cluster), NGC 2261 (Hubble's Variable Nebula)
- Canis Minor: Procyon (8<sup>th</sup> brightest)
- Gemini: Castor (double), M35, NGC 2392 (Inuit Nebula)
- Auriga: Capella (6<sup>th</sup> brightest), M36, M37, M38, NGC 1931
- Taurus: Aldebaran (0.9, 13<sup>th</sup>), Elnath (1.7), M1 (SNR 1054), Hyades, M45 Pleiades, NGC 1746, NGC 1647
- Lepus: M79 (GC)



Constellations as Pointers

- Ursa Major
- Mizar & Alcor, M97 (Owl Neb.), M81, M82, M101, M108, M109
- Ursa Minor: Polaris
- Pegasus: 51 Pegasi, M15, NGC 7331, Stephan's Quintet
- Cassiopeia: M52, M103, NGC 7635 (Bubble Nebula), NGC 457, NGC 7789 (Caroline's Rose)
- Leo: Regulus, M95, M96, M105, M65, M66 & NGC 3628 (Leo Triplet)
- Virgo: M87, M49, M84, M86, M88, M89, M90, M59, M60, M58, M61, M104
- Bootes: Arcturus (3<sup>rd</sup>), NGC 5466 (GC), NGC 5248
- Hercules: Keystone, M13, M92, NGC 6210 (PN)
- Lyra: Vega (5<sup>th</sup>), Epsilon Lyrae (Double Double), M57, M56 (GC)
- Cygnus: Deneb (20<sup>th</sup>), M29, M39, NGC 6995 & NGC 6960 (Veil Nebula), NGC 7000 (North American Neb.), Cygnus X-1



Novice Astronomy Class # 9  
The Electromagnetic Spectrum  
December 2, 2022

