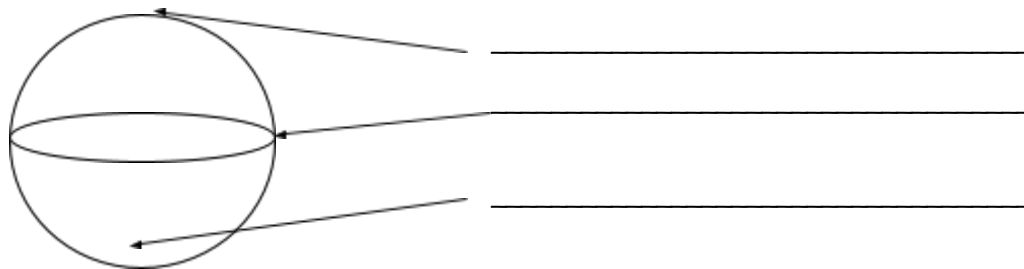


Materials: ruler and highlighter



The star _____, in the constellation Ursa Minor, is very close to the North Celestial Pole. _____ is called the _____ Star.

Meridian- _____ line that divides the celestial _____ into East and West hemispheres

Constellations= _____

*Sky is divided into ____ constellations

Ecliptic= _____ = curved line on star chart

1. Chart 2: Look under the **ecliptic** for August 2nd. What constellation is the sun in on that day? _____
2. Chart 2: Look under the **ecliptic** for April 10th. What constellation is the sun in on that day? _____
3. Chart 3: Look under the **ecliptic** for November 12th. What constellation is the sun in on that day? _____

Declination - North South coordinate system measured in **degrees** relative to the celestial equator. Celestial equator = 0 degrees / 0°

4. Use Chart 2. On left side above ecliptic, find the constellation LEO. Now find the star Denebola. Use a ruler to draw an imaginary line from Denebola to the side of the map. What is the **declination**? _____
5. Use Chart 2. Find the largest star, Sirius. What is the **declination**? _____
6. Use Chart 3, find Vega. What is the **declination**? _____

Right Ascension - is measured from the celestial meridian in hours and minutes. The celestial meridian is at 0 hours. Look at the middle and bottom horizontal lines on the star chart. This is Right Ascension. Do NOT use the scale at the top of the chart.

7. Every larger line is 1 hour. How many minutes would each of the smallest lines be? Hint: 60 divided by 12 _____
8. Chart 2: What is the Right Ascension of Regulus in LEO? _____
9. Chart 2: What is the Right Ascension of γ (gamma) in LEO? _____
10. Chart 3: What is the Right Ascension of **Arcturus** in **BOOTES** (above the ecliptic)? _____

Which constellation is found at the given coordinates?

0^h - 12^h = Chart 2

12^h - 24^h = Chart 3

	Right Ascension	Declination	CONSTELLATION (ALL CAPS)
11.	7 ^h 00 ^m	25°	
12.	5 ^h 20 ^m	40°	
13.	17 ^h	30°	
14.	21 ^h	-25°	

Lowercase Greek Letters

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

Which star and constellation is found at the given coordinates?

0^h - 12^h = Chart 2

12^h - 24^h = Chart 3

	Right Ascension	Declination	Star name	CONSTELLATION (ALL CAPS)
15.	6 ^h 43 ^m	-17°		
16.	10 ^h 10 ^m	12°		
17.	13 ^h 25 ^m	-11°		
18.	19 ^h 50 ^m	9°		

19. Use different colors and color 8 constellations their own color (1 constellation = 1color), 4 for each side. **The constellations must have at least 6 stars in it.**

Chart #	CONSTELLATION (ALL CAPS)	Color	Brightest Star	Right Ascension of brightest STAR	Declination of brightest STAR
2	Example:	Pencil/black			
2					
2					
2					
2					
3					
3					
3					
3					

For each chart:

20. **Chart 2:** Highlight all the **clusters** you can find.

Color=_____ How many?_____

Highlight all the **galaxies** you can find.

Color=_____ How many?_____

21. **Chart 3:** Highlight all the **clusters** you can find.

Color=_____ How many?_____

Highlight all the **galaxies** you can find.

Color=_____ How many?_____

§ Galaxies

✧ Nebula

* Globular Cluster

☼ Open Cluster

● Visual Binary Star