

# Stellar Astronomy

Earth Science

## Characteristics of Stars (p. 547-554, p. 14-16)

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Hr: \_\_\_\_\_

3.01 What is a "star"?

Complete Table 27-1

<b>Color</b>							
<b>Temperature (°C)</b>							

**Coollest** → **Hotttest**

**SIZE:** are all stars equal in volume? \_\_\_\_\_ **MASS:** are all stars equally massive? \_\_\_\_\_

"Stars **also** differ in their \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ & \_\_\_\_\_"

3.02 Explain what a spectrometer does.

*(In class)* "A star's spectrum is like its \_\_\_\_\_."

Most stars are composed of \_\_\_\_\_ and \_\_\_\_\_, with the remaining mass of stars mostly made of : \_\_\_\_\_.

*(Textbook p. 14-16)* Sketch the spectra for the following elements:

Helium

Hydrogen

3.03 (p. 14-16, p. 549) Describe the concept of **Doppler Effect**.

**Blue Shifts** indicate:

**Red Shifts** indicate:

3.04 (p. 552-553) Describe how a star's brightness is measured:  
(see Fig 27-5) Numbering System:

- **Apparent** Magnitude

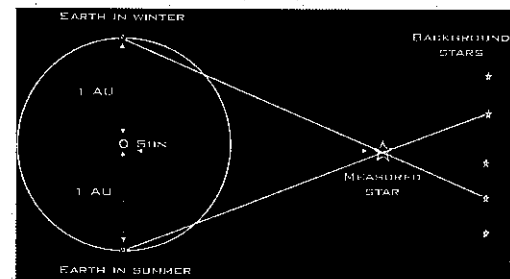
- **Absolute** Magnitude

3.05 (p. 550-551) Distance to the Stars:

Light Year = \_\_\_\_\_ km

Describe parallax and how it is used:

"The \_\_\_\_\_ the parallax, the \_\_\_\_\_ the star is from Earth."



# Stellar Astronomy


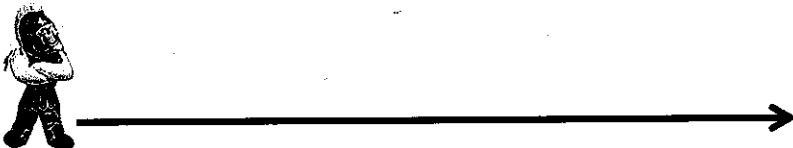
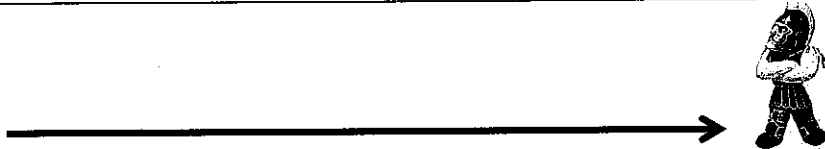
Earth Science

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Hr: \_\_\_\_\_

## VISIBLE LIGHT GRAPHIC ORGANIZER

Visible Spectrum

<b>Visible Light Spectrum</b>	 <p>Red    Orange    Yellow    Green    Blue    Indigo    Violet</p>
<b>Temperature</b> (Relative & Absolute)	
<b>Wavelength</b> (sketch)	
<b>Wavelength</b> (nm)	
<b>Frequency</b> (Intensity)	
<b>Doppler Shift (RED)</b>	
<b>Sample Spectrum</b>	
<b>Sample Spectrum RED SHIFTED</b>	
<b>Doppler Shift (BLUE)</b>	
<b>Sample Spectrum BLUE SHIFTED</b>	

# Stellar Astronomy Notes

Earth Science

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Hr: \_\_\_\_\_

## Ancient → Modern Astronomy

3.06 (Use Class Website) Describe the basic design of 3 optical telescopes:

- Refractor
- Reflector
- Catadioptric

List challenges with using visible light astronomy in today's night sky (+ best viewing locations)

3.07 (p. 463-465) Label the parts of the **electromagnetic (EM) spectrum**.  
Include wavelength and frequency trends.

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Wavelength

Frequency/Intensity

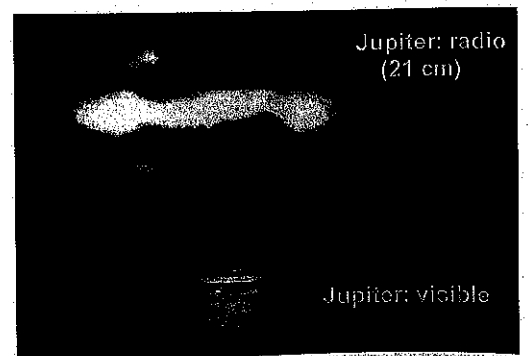
### EM Spectrum Background Info

Wavelength	Description/Characteristics	Wavelength	Description/Characteristics
Radio		UV	
Micro		X-ray	
IR		Gamma	
VIS			

Of these wavelengths, only \_\_\_\_\_ easily reach Earth's surface  
The others don't because...

3.08 Describe how a radio telescope is used to produce "images".

Explain the advantages of using radio telescopes.



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