|  |  |
| --- | --- |
| **Cornell Notes**  **Topic: Stellar Properties and classification**\_\_\_\_\_\_\_\_\_\_  **Essential Question:** How do we measure distances in space?  What are the major properties of stars that astronomers use to classify them? How do we use the HR diagram to classify stars?  **Questions/Main Ideas:** | **Name:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**Block:** \_\_\_\_\_\_\_\_  **Date:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **Notes:** |
| **Triangulation** | 1. |
|  |  |
|  | 2. |
|  |  |
|  | 3. |
|  |  |
| **Calculating Distance using Parallax** |  |
|  | 1. |
|  | 2. |
|  | 3. |
| **The Parsec (Parallax-second)** | 1. |
|  |  |
|  | 2. |
|  |  |
|  | 3. |
|  |  |
|  | 4. |
|  |  |
| **Example: Distance to Sirius** |  |
| **Light: The Astro Tool** | 1. |
|  | 2. |
|  | 3. |
| **Temperature** | 1. |
|  | 2. |
| **Luminosity** | 1. |
|  |  |
|  | 2. |
|  |  |
|  | 3. |
|  |  |
|  |  |
|  | 4. |
|  |  |
|  | 5. |
|  |  |
|  | 6. |
|  |  |
| **Brightness** |  |
| **Inferring Luminosity** |  |
| **The Standard Candle Method** | 1. |
|  | 2. |
|  | 3. |
| **Method of Standard Candles** |  |
| **The Magnitude Scale** | 1. |
|  | 2. |
|  | 3. |
|  | 4. |
| **Magnitude Differences** | 1. |
|  |  |
|  | 2. |
|  |  |
|  | 3. |
|  |  |
|  | 4. |
|  |  |
| **Absolute Magnitude** | 1. |
|  | 2. |
|  | 3. |
| **Stefen Boltzman Law** | 1. |
|  |  |
|  | 2. |
|  |  |
|  | 3. |
|  |  |
| **Finding Luminosity** |  |
| **Stellar Radii** | 1. |
|  |  |
|  | 2. |
|  | 3. |
| **Spectra of Stars** | 1. |
|  | 2. |
|  |  |
|  | 3. |
| **Early Classification** | 1. |
|  |  |
| **Modern Classification** | 1. |
|  |  |
| **Spectral Types** | 1. |
|  |  |
|  | 2. |
|  |  |
|  | 3. |
|  |  |
| **Spectral Classification** | 1. |
|  | 2. |
|  | 3. |
| **New Spectral Types** | 1. |
|  |  |
|  | 2. |
|  |  |
|  | 3. |
|  |  |
| **Stellar Motion** |  |
|  |  |
| **Binary Stars** | 1. |
|  | 2. |
|  | 3. |
|  | 4. |
|  | 5. |
| **Stellar Transits** |  |
|  |  |
| **Summary of Stellar Properties** | Distance |
|  |  |
|  | Temperature |
|  |  |
|  | Luminosity |
|  |  |
|  | Composition |
|  |  |
|  | Radius |
|  | Mass |
|  |  |
|  | Radial Velocity |
|  |  |
| **Hertzberg Russel Diagram** | 1. |
|  | 2. |
|  |  |
|  |  |
|  | 3. |
|  |  |
|  |  |
| **Main Sequence** | 1. |
|  | 2. |
|  |  |
|  |  |
| **Understanding HR Diagram** | 1. |
|  | 2. |
|  | 3. |
|  | 4. |
|  | 5. |
|  | 6. |
| **Giants and Dwarfs** | 1. |
|  | 2. |
|  | 3. |
| **Mass and Density** | 1. |
|  | 2. |
| **Mass-Luminosity** | 1. |
|  | 2. |
|  | 3. |
| **Classes of Stars** | 1. |
|  | 2. |
|  |  |
|  |  |
| **Summary of HR** | 1 |
|  |  |
|  | 2. |
|  |  |
|  | 3. |
|  |  |
| Populating an HR diagram takes a lot of work, but it really boils down to a couple of observations and a few calculations.  We can get the mass of a star if it is in a binary system.  The temperature is found by looking at the star's spectrum.  If we happen to know the luminosity of the star, perhaps by its spectrum or other means, we can easiltly get the distance to the star. | |
| **Summary:** | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |