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| **Cornell Notes**  **Topic: Telescopes**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **Essential Question:**  **Questions/Main Ideas:** | **Name:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**Block:** \_\_\_\_\_\_\_\_  **Date:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **Notes:** |
| **Tools of the Trade: Telescope**  **Powers of a Telescope**  **Collecting Power**  **Focusing Power**  **Resolving Power**  **Light Gathering Power**  **Simply put, the larger the telescope aperture you have, the brighter the image you will be able to observe. Some of the larges amateur telescopes are called "light buckets" due to their large aperture and short tube.**  **Focusing Power**  **Refraction**  **As light enters glass, water, or any other medium, its speed slows.  Like a vehicle driving from a paved surface into sand, the slower speed results in a change of direction for the beam of light.  This bend is useful, as it is the underlying phenomena in lenses.**  **Refracting Telescope**  **Disadvantage of Refracting Telescope**  **Reflecting Telescope**  **Mirrors of Reflecting Telescope**  **There are several different styles of reflecting telescopes the primary difference between them is the location of the eyepiece or focal plane.  A "Prime Focus" telescope places the cameral or observer directly at the focal point within the tube of the telescope.  A Cassegrain telescope has the eyepiece at the bottom of the tube, and a newtonian telescope has the eyepiece on the side of the tube, near the aperture.**  **Resolving Power**  **Resolving Power and Aperture**  **Increasing Aperture**  **Interferometer**  **Detecting the Light**  **Charge-Coupled Device (CCD)**  **Non-Visible Wavelengths**  **Radio Observatories**  **Radio telescopes are, infact, reflectors!  The large dish acts like a mirror, reflecting radio waves into a receiver suspended above the dish.  The detected signal is then sent off to a computer for processing.**  **Atmospheric Window**  **As discussed in a previous chapter, our atmosphere only allows certain parts of the electromagnetic spectrum to make it to the ground - it absorbs all x-rays and gamma rays, for example.  If astronomers wish to observe objects or phenomena in these wavelengths, these observations must take place on observatories in Earth orbit, above the atmosphere.**  **Space vs Earth Based Observations**  **Scintillation**  **Atmospheric Blurring** |  |
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