

Motion Magnification of the Planets

Spring 2023

The planets are often called "wandering stars" because they move relative to the background stars. In fact, "wandering stars" translates to "*planētes asters*" in ancient Greek, from which the word "planet" is derived.

This relative motion is usually measured over the course of weeks or months. Using motion magnification, however, you should be able to show that the planets move differently than the stars even over the course of 1/2 hour or 1 hour within one night.

Take a sequence of photographs over time of the night sky with stars and one or more planets in view. A reasonable dataset will contain 200 photographs, taken 10 seconds apart. Ideally, use a camera on a tripod with a star-tracking mount. Finally, process the resulting images in a way that will exaggerate the motion of the planet(s) relative to the stars within the field of view. It would also be interesting to compare this to existing phot datasets taken over weeks or months.