

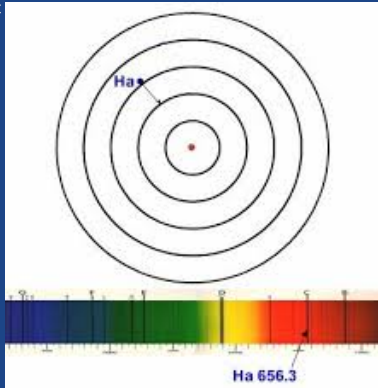
Introduction- h-alpha

-Different colors of light propagate on different wavelengths. Everything you can see right now, every object, every beam of light is either reflecting or emitting some wavelength in the visible spectrum.

- I paid particular attention to a very specific wavelength, often called hydrogen II, or h-alpha.

-H-alpha gets its name from the deep red spectral line created when the hydrogen electron falls from its third to second lowest energy level. It poses the easiest method for tracing ionized hydrogen content in far-away objects.

-High-energy regions tend to be abundant in ionized hydrogen. Using an H-alpha filter can allow us to detect energetic regions in faraway objects; in my case, galaxies.



The h-alpha Filter

-Filters block out light above and below a specific wavelength in the visible spectrum, only allowing light in from a certain wavelength.

-High energy regions of galaxies tend to be star forming regions! These regions are what I seek out!



-I hope/used a more qualitative approach on this project. Instead of using software to analyze the brightness of certain regions, I seek to take a step back, and take a broader look at the stellar forming regions in different types of galaxies.

-Long exposure times and good seeing have to come together for this sort of imaging.



H-alpha filter are commonly used to observe features in the sun's atmosphere

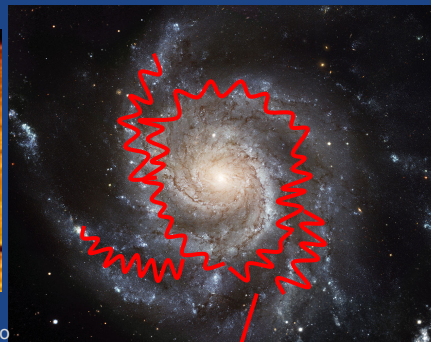
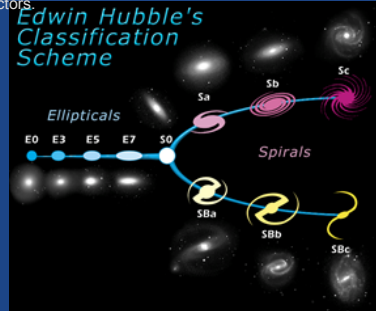
Detecting Star Forming Regions with H-alpha

Liam Fortin

The benefit of an h-alpha filter:

It can slice through atmospheric distortion and light pollution. Exposure time for galactic imaging is quite long, somewhere in the vicinity of 12-15 minutes. For this reason, the guiding has to be great, as well as the planning that goes into each galaxy photographed.

The areas of interest: the spiral arms of galaxies, areas where star formation is far more common for a variety of factors.



Areas more likely to have star formation

The H-alpha Images

Acknowledgments

Unfortunately, with backups on the filter, I have not been able to a large quantity of images thus far. I remain optimistic that this endeavor will continue to be a learning process, and provide me with new surprises and astronomical experience. Thank you to Mrs. Odden and Laurent, without whom none of this would be possible.