



Solar Imaging

CAA

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by

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www.astronomylog.co.uk

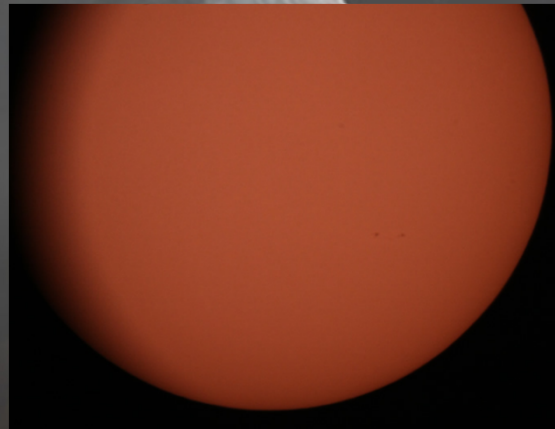
Solar Imaging

Astronomy in the daytime !!

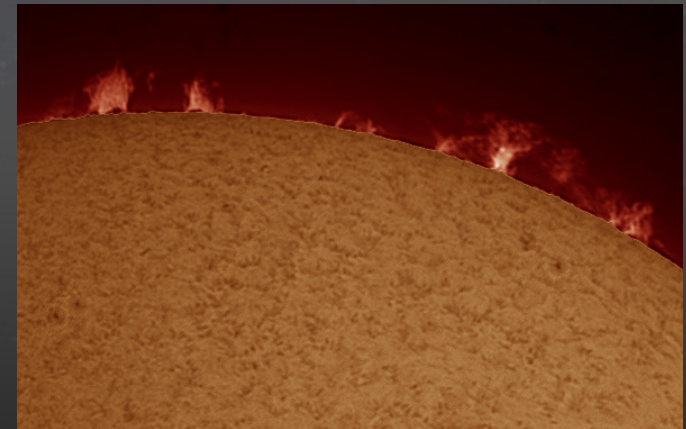


**White Light
AstroSolar/Mylar
Film**

**Sunspots,
Faculae and
Granulation**



**White Light
Glass Filter**



Hydrogen Alpha

**Prominences -
luminous hot
hydrogen gas**

White Light Solar Imaging

AstroSolar Film - (CAA Newsletter Sep 2013)

- £20 an A4 sheet (Baader) or buy pre-made filters
- Easy to damage with fingerprints, rips, tears, pinholes etc
- Many uses, use it with Telescopes, DSLR, Glasses, Binoculars, etc.



White Light Solar Imaging

Glass Filters

- More costly than AstroSolar film
- Gives an orange hue when imaging
- Does not bring out the solar filaments as well as AstroSolar film



White Light Solar Imaging

Herschel Wedge

Optical prism used in solar observation to refract most of the light out of the optical path (95%), allowing safe visual observation, a secondary neutral density filter is used to further dim the light to a safe level.

- Better contrast and sharpness than AstroSolar film
- More expensive than AstroSolar film and Glass filters.

Herschel wedges
cost around £175-£400

- For refractor telescopes
up to 120mm



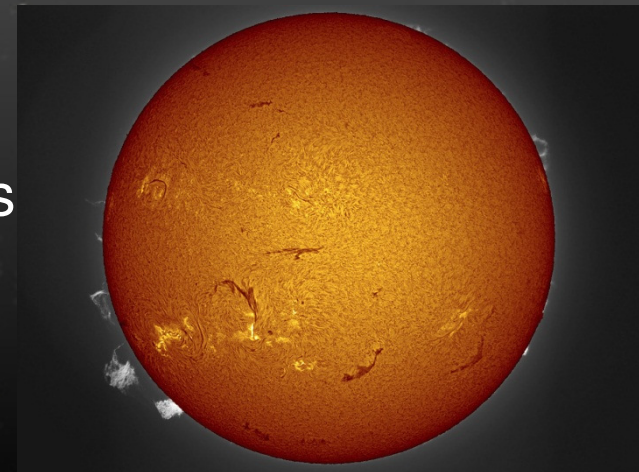
White Light Solar Imaging

Hydrogen Alpha (Ha)

Hydrogen Alpha is the name of the visible red part of the spectrum at wave length of 656 angstroms. It is also the line of atomic hydrogen.

To observe in H-alpha you need a special type of telescope with Etalon and blocking filters these filter only allow light to pass at 656.3nm

- View Sunspots, Filaments and Prominences
- Most expensive (£600-£££)
- Lunt or Coronado



Solar Imaging Tips

Why not do both white light and Ha imaging at the same time, with 2 telescopes and 2 imaging cameras/webcams?



The background of the slide features a large, detailed view of the Moon's surface on the left side, showing various craters and lunar maria. In the upper right corner, the Sun is visible as a bright, glowing orb with a visible corona, set against a dark, star-filled space background.

Solar Imaging Tips

Mono or Colour?

- High frame rate cameras come in Mono and Colour versions
- You can use either a colour or a mono camera
- Best captured with a mono device due to the narrow bandwidth of colours, and the mono camera should be more sensitive
- The mono image can have a false colour added later
- Mono cameras are best for solar H-alpha imaging because they use all their pixels to record the image, with a colour camera only the red pixel and some Green are activated

Solar Imaging Tips

- Set your mount to the 'Solar' tracking rate
- Use webcam software (AmCap/SharpCap)
- Use solar finder or GoTo to help locate the Sun.
- Play with the focus and get it as precise as possible
- When imaging in white light, lower the gain and exposure as much as possible to enhance the surface detail
- In Ha you may need to get one video of the surface and one of the edge of the solar disc
- Save video as an uncompressed AVI file type. Use Registax to create the final image



A space-themed background featuring a large, detailed moon on the left side, a bright sun in the upper right corner, and a field of stars against a dark black sky. A semi-transparent grey rectangular area is overlaid on the center of the image, containing white text.

Demo Time

Processing a white light video

Play the solar video!



The End

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