Webcam Imaging

CAA
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Webcam Imaging

Webcams used

- Logitech Pro 4000/5000
- Philips SPC900/SPC880
- Imaging Source DMK21 (Mono)
- Imaging Source DFK21 (Colour)

- The higher the frame rate (Frames Per Second) the better, most home webcams will manage 15fps but high frame rate cameras like the DMK21 will go to 60fps.
- The more frames we capture the greater chance we have of capturing a frame that is in focus and has perfect seeing.
- A higher frame rate also gives us a brighter image, meaning we can turn down the gain of the camera and produce less noise in our images.
Webcam Imaging

What is seeing?

- It refers to the blurring and twinkling of astronomical objects such as stars caused by turbulence in the atmosphere.
- But we also see this effect when looking at planets or the moon.

Video!
Webcam Imaging

Logitech Pro 4000

Philips SPC900
Desktop Webcams

- Logitech Pro 4000/5000
- Philips TouCam Pro
- Philips SPC900NC (£50)

- Celestron NexImage
- Meade LPI (£50) /
  (Orion StarShoot Eyepiece II)

- www.eBay.co.uk
- www.AstroBuySell.com/uk
High Frame Rate Cameras

- Can do from 30fps to 200fps
- Mono and Colour available

- Orion StarShoot (£80+)
- ZWO ASI120MM/MC (£250)
- QHY5-II (£199)
- QHY IMG132E (£250)
- Imaging Source DMK21 (£390)
Lunar Imaging Tips

- Capture video with software that came with webcam or try AmCap, FireCapture (firecapture.wonderplanets.de/) or SharpCap (www.sharpcap.co.uk)
- Add a UV/IR rejection filter
- Try a Green or OIII filter to aid with Lunar ‘seeing’
- Set your mount to the Lunar Tracking Rate
- The moon is bright, so lower the gain and exposure times or use ND filter
Lunar Imaging Tips

• Don’t image a full moon, image the moon through the phases. There are lots of detail along the terminator line
• Take video at the highest frame rates you can
• 500-1000 frames should be enough
• Save your video as an uncompressed AVI
• Process video in Registax – it’s FREE
Processing Lunar Video

Registax 6

• Select Video
• Choose Reference Frame
• Set Alignpoints
• Align
• Limit the frames
• Stack the best frames
• Use Wavelets to sharpen

Move to image editing program to tweak brightness, contrast, sharpening etc.
Demo Time

Play the lunar video!
Lunar Mosaic

Most webcams have a small chip, so a small field of view. To get the whole moon you will need to make a mosaic by taking several videos.

- Keep the webcam settings the same throughout all videos.
- Make sure you overlap your videos.
- Process the videos in Registax using the same settings, including Wavelets.
- Don’t manually align the image frames - use Photomerge in Photoshop and Photoshop Elements (8+). Alternatively use the FREE Microsoft ICE program.
Lunar Mosaic Demo
The End

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