



Luminos Barlow
93436



X-Cel LX
93423



NexStar 8SE
11069

The Next Step

PLANETARY, LUNAR, AND SOLAR IMAGING

While the Moon can be photographed by digiscoping with just about any telescope and camera, the planets need more magnification because their apparent size is so much smaller. The full Moon is half a degree in the sky (about half the size of your pinky at arm's length), while the largest planet in our Solar System, Jupiter, is only about 2.5% the size of the Moon as seen from Earth.

The planets are bright, but they require much more magnification to see them well. It's a common practice to use a 2x or 3x (or higher) Barlow lens to further boost the power on the planets to photograph them. But adding more magnification with an eyepiece or Barlow darkens the image. Planetary imagers must be careful to avoid using too much power and creating dim and soft images.

You'll need a motorized German equatorial (EQ) or Altitude-Azimuth (AZ) mount to track your Solar System object in the sky while you image it. The NexStar Evolution and NexStar SE are great choices for planetary imaging because they contain high-powered Schmidt-Cassegrain optics and automatically track celestial objects.



◀ **OBJECT:** Jupiter
CAMERA: NexImage5

NexImage Solar System Imagers

Sometimes when you view a planet through your telescope at high magnification, it appears wavy or blurry. This is the result of poor seeing conditions caused by instability in the atmosphere. To minimize the negative effects of the atmosphere, astroimagers use dedicated planetary cameras like Celestron's NexImage, NexImage 5, and NexImage Burst. These cameras use rapid capture to record hundreds of video frames. Astroimagers then stack and align the frames of video, tossing out blurry images and enhancing overall image sharpness and detail.

NexImage cameras make this process easy by including a Windows-compatible software suite that walks beginners through stacking and assembling their images.



◀ **NexImage 5 Solar System Imager** 93711

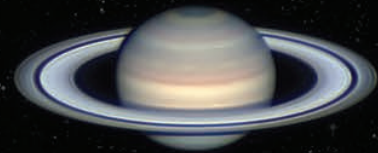
◀ **NexStar Evolution**
A motorized telescope like the NexStar Evolution combined with a NexImage camera is one of the best systems to start planetary imaging without breaking the bank.

Imaging with Skyris

Celestron's Skyris planetary cameras use the same basic method of capturing hundreds of video frames, but feature much more sensitive imaging sensors that reveal even greater detail in the planets.

When you use a high-resolution Skyris camera to capture Jupiter, you can pick up the Great Red Spot, colorful cloud belts, festoons, and even some features of the Galilean moons! Ultra-fast USB 3.0 connections combined with the best available imaging sensors allow Skyris cameras to capture more quality frames in less time, reducing the number of blurry images caused by atmospheric turbulence.

Planetary imaging benefits from lots of focal length, which makes Schmidt-Cassegrain and EdgeHD telescopes the preferred optical designs. The world's leading planetary imagers use Celestron's 14-inch EdgeHD telescopes. They offer enough aperture and focal length to deliver super high-resolution images.



▲ **Skyris 618M**
95511



▲ **IMAGER:** Christopher Go
OBJECT: Saturn
CAMERA: Skyris 618M

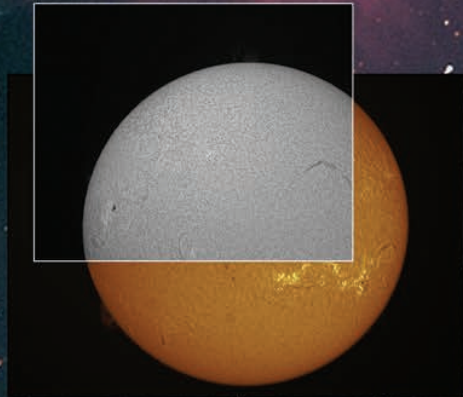


IMAGER: Wes Higgins
OBJECT: H-Alpha Sun
TELESCOPE: Lunt 100 mm
CAMERA: Skyris 274



▲ Skyris Filter Wheel Imager 93711

IMAGER: Andre Paquette
OBJECT: NGC 2264
TELESCOPE: EdgeHD 1400



◀ **IMAGER:** Thierry Legaut
OBJECT: H-alpha Sun* Monochrome
CAMERA: Skyris 445M

◀ **IMAGER:** Lance Lucero
OBJECT: H-alpha Sun Colorized
CAMERA: Skyris 274M

Color vs. Monochrome Imaging Sensors

Imaging cameras are often available in either color or monochrome configurations. Color cameras deliver instant color images using a mosaic of filters over the pixels of the sensor. They're the most convenient and cost-effective way to obtain color planetary images.

Monochrome cameras capture black and white images, but have greater sensitivity. You can create color images with a monochrome camera by adding a series of color filters. A filter wheel, such as the Skyris Filter Wheel, makes it easy to switch between multiple filters during your imaging session. After capturing your images, you can stack images taken with multiple color filters, creating natural-looking color images.

Alternatively, you can add pseudo color to your monochrome images during processing, a method commonly used when imaging the Sun.

▼ **IMAGER:** Tony Hallas
OBJECT: IC 410, The Tadpole Nebula
 Monochrome with filters
TELESCOPE: EdgeHD 11"
CAMERA: QSI583ws



▼ **IMAGER:** Andre Paquette
OBJECT: NGC 6888, Crescent Nebula
TELESCOPE: EdgeHD 1400
CAMERA: Nightscape

