ROAD TEST: MallinCam Jr Pro

Set up your scope, a monitor, and this video camera, and you'll be a hit at star parties.

text and images by Craig and Tammy Temple

Having been in the hobby of astrophotography for several years now, we have owned many different brands and types of equipment. And although we'd heard about the MallinCam Jr PRO Video CCD Observational System, we had never used one. Well, thanks to this review, we can add this little gem to our list — and so should you.

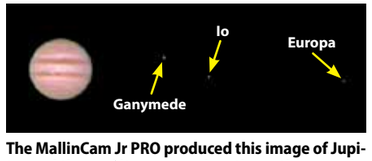
To image the Sun, the authors coupled the MallinCam Jr PRO to their Lunt LS60THa Hydrogen-alpha solar telescope.

Inspection

When the package arrived, as is typical in this hobby, clouds covered the sky day and night — nothing but clouds! Despite this, we eager beavers just had to see the new toy. Upon opening the box, we pulled out the camera, a 25-foot (7.6 meters) video/power cable, a 120-volt AC to 12-volt DC regulated power supply, a 1¼" adapter, an RCA-to-BNC adapter, and a Pixel Wireless Exposure Controller complete with batteries; all come standard with purchase.

Also included in our package were several optional components: a MallinCam 0.5x focal reducer (which we did not use), a 25-foot Pro Grade S-video cable, and an Astro HD Frame Grabber video capture device complete with capture software. This last accessory is handy for those who don't have a monitor to view video or for those who want to capture still images.

The video capture device also will record audio via your computer's microphone — a nice way to document a video or explain what you're broadcasting while streaming to the Web. We installed the video capture software on our laptop and spent time learning how to hook things up and how to use the software, all of which was simple and straightforward.



The MallinCam Jr PRO produced this image of Jupiter and three of its moons when the authors used it with their 8-inch Celestron EdgeHD Schmidt-Cassegrain telescope. To increase the image size, they also incorporated a Tele Vue 2.5x Powermate into the system.

First light

Many nights passed before clear skies arrived. After seeing all the great images of Supernova 2014J, which had exploded in the Cigar Galaxy (M82) in early 2014, we had no trouble making this our initial target. We coupled the camera to a 4-inch refractor and eagerly slewed to M82. Not surprisingly, we could see nothing on the laptop screen. But with a few adjustments to focus and camera settings, *voilà*! The Cigar Galaxy came to life before our eyes.

We were in awe to see this wonderful galaxy, complete with Supernova 2014J, in real time and even more thrilled to know that a mere 45-second exposure revealed it. We quickly saw the value of what this great little camera had to offer — the ability to capture an astronomical image with the click of a button.

Simply tweak the setting within the on-camera menu and the color settings in the video capture software to taste. Then click the "Snapshot" button in the video capture software, and bada-bing, you have just created a nice JPEG image to show off to friends and family.

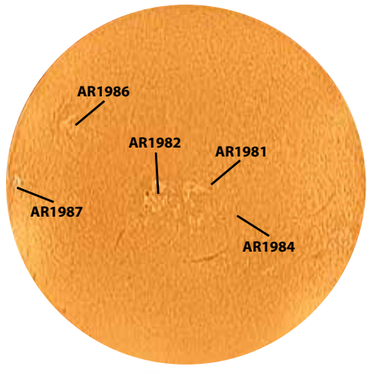
Although these JPEGs are not as deep and detailed as images containing many hours of integration time, they are definitely much simpler to capture. Also, you don't need to spend lots of time processing them — or even know how. And while it is really fun and rewarding to look at such astronomical wonders through an eyepiece, the MallinCam Jr PRO lets the eyes "see" what they cannot through an eyepiece.

For days after our first test, all we could talk about was how awesome this camera would be for public outreach. While there is no substitute for someone putting their eye to an eyepiece and peering into the great offerings of the heavens, this process limits viewing to one person at a time. With this camera sending video to a monitor or laptop screen, however, objects come to life for many viewers at once.

The next day, we targeted the Sun. We attached the MallinCam Jr PRO to our Hydrogen-alpha solar telescope and began streaming video to the laptop. The views were nice, and they resembled the views we get through our equipment. They weren't as crisp as we had hoped, but still pleasing. With the MallinCam Jr PRO being a color camera, it affords the flexibility to adjust settings to taste on the spot, to capture screen shots, or to use the video capture software's settings to desaturate the color for a sharp black-and-white image.

The powers that be smiled upon us by providing a clear night following a clear day, so we decided to point this camera at a planet. We chose Jupiter. With the MallinCam Jr PRO imaging through our 8-inch Schmidt-Cassegrain telescope and a 2.5x Barlow lens attached, the views were candy for the eyes. We could easily see the bands on Jupiter as well as its Galilean moons: Io, Europa, Ganymede, and Callisto.

After enjoying great views of the Cigar Galaxy, the Sun, and Jupiter, we just had to see what details and features we could bring to life on the Moon. We were a bit concerned that, taking into account the quality of the sky, the long focal length of our scope, and the chip size of the camera, the shots of Luna would be disappointing. Not so. Instead, we were elated! The views were absolutely fantastic — so much so that we spent hours wandering around the waxing gibbous Moon's surface, taking in all the breathtaking lunar features that were so clear and detailed.



Using their Lunt LS60THa Hydrogen-alpha solar telescope, the authors produced this full-disk image of the Sun on February 22, 2014. "AR" signifies an active region on our star's surface.

For faint objects, the authors hooked up the MallinCam Jr PRO to their 8-inch Celestron EdgeHD Schmidt-Cassegrain telescope.

One of the imaging setups the authors used connected the MallinCam Jr PRO to their Stellarvue SVR105-3SV apochromatic refractor.

A suggested accessory

While the included instructions for using the on-camera menu left something to be desired for the first-time user, we were able to find resources on the Internet to help us better understand how to make adjustments to exposure, gain, white balance, video mode, and more. In learning to make these changes, we realized that a key accessory for full computer control was not a standard component with this camera.

You can purchase the Red Control Cable directly from MallinCam. It allows for control of the on-camera menu via your computer with the free downloadable software the company offers. This is not a big deal if you have a laptop or a monitor at the telescope, but if you want to be remote — away from the telescope and camera — this accessory is a must-have.

One other feature that the MallinCam Jr PRO lacks is cooling, which may worry some photographers. This omission isn't a concern if you use the camera for live viewing, and it's easy to remedy for imaging by taking and using dark frames, which is a process that lets you eliminate electronic noise from the camera.

A fun experience

This camera is small and lightweight, and it has an exposure range from 1/12,000 second to 99 minutes. With such versatility, viewing and imaging all types of astronomical objects, from distant galaxies to the Moon and anything in between, is possible.

Aside from having to make on-camera adjustments manually, with one of us at the camera and the other inside at the laptop giving commands via telephone, our experience with the MallinCam Jr PRO was definitely fun and exciting.

While it doesn't have the capability to produce the spectacular images that come from stacking hours of exposures from a CCD camera, it is a great little all-in-one color camera that excels at bringing celestial beauties to life in real time.

Craig and Tammy Temple *are a husband-wife team who have enjoyed the great hobby of astrophotography since 2007.*

PRODUCT INFORMATION

MallinCam Jr PRO Video CCD Observational System

Sensor: ½" ICX418AKL color CCD or ICX428ALL monochrome CCD
Video outputs: S-video and 75 Ohm Composite
Image selection: Positive and negative
Weight: 10.5 ounces (298 grams)
Exposure times: 1/12,000 second to 1/100 second; long-exposure modes up to 2.1 seconds; Pixel control allows exposures from 3 seconds to 99 minutes
Includes: regulated power supply, 25-foot (7.6 meters) power/video cable, 1¼" adapter, RCA-to-BNC adapter, Pixel Wireless Exposure Controller
Price: $599.99
Contact: Pro-Com Electronics
5450 Canotek Road, Unit 56
Ottawa, Ontario
Canada, K1J-9G4
[t] 613.749.7592
[w] www.mallincam.net