

Mallincam Xtreme

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An early morning lightning strike in August cut short my astronomy for a while. My CGE got cooked, some things around the house, but also my Mallincam VSS+. I had been using the camera almost exclusively since March and now it was off to Canada for repairs. I received an email from Rock Mallin, there was quite a bit of damage to the VSS+, but he wanted to know if I would prefer upgrading the VSS+ to the new Xtreme. After the wonderful experiences I had with the VSS+, the answer was a no-brainer, YES! Please!

What is video Astronomy?

Before I go into the Mallincam Xtreme let me give a little background with this strange but growing world of video astronomy. This is a relatively new field starting about a decade ago. The initial grainy, black and white images that was pretty much limited to the moon, planets and a handful of bright DSOs. In the last decade video astronomy has evolved into full color, deep sky imaging capability and the Mallincam Xtreme is at the cutting edge.

I got into video astronomy last spring with the Mallincam VSS+. It arrived in March just as Orion was setting in the west after dusk. The first night I hooked up the VSS+ and I plugged M42 into the CGE. I started noodling around with the software settings. "Gee, I wonder what this Hyper setting does?" The nebula *exploded* into color. (The "wow factor" is right up there with seeing Saturn for the first time). From that moment on I was hooked on video astronomy. This was the niche I was looking for, being able to see much more detail and in color than visual observing without all the stacking and processing time of traditional imaging.

Over the following months I came to find many advantages to video astronomy that weren't readily apparent at first. The most significant is of course COLOR! I've messed with image intensifiers like the BIPH and I3, they are great units, but there is just something about seeing a target *in* color that just can't be beat. There are some good monochrome video products out there as well but to me anyway, they just can't compare to real-time color.

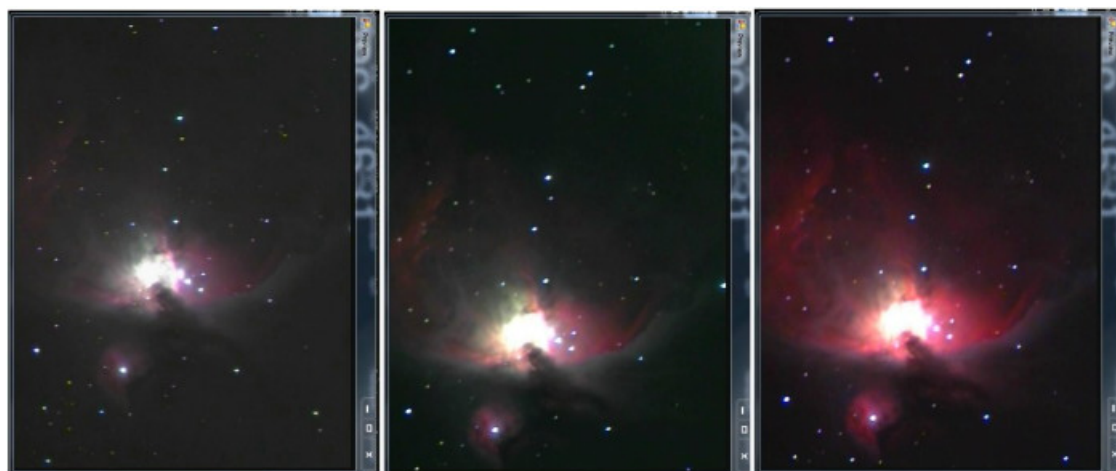
The second surprise was no need to dark adapt. I used to sit in my observatory, lights off, eye closed for a few moments before straining at the eyepiece to see some faint fuzzy thought our skyglow. At first I thought viewing a bright screen or monitor would be a problem. Then I realized it was an advantage. I could actually keep the lights up in the observatory and be able to see what I was doing. At the same time I was able to see targets better than I ever could visually and in color.

The third advantage of the Mallincam is the ability to seemingly cut through light pollution and moon glow with a good light pollution filter. This is truly amazing. You'll find the Mallincam is definitely hazardous to your desire to trek hundreds of miles to your favorite dark site.



This is a six second image with my original VSS+ and IDAS filter. It was taken from home with a full Moon about 30 degrees away. This view is roughly comparable to what I can see visually with the C14 on the darkest of dark nights at our very dark site.

The Mallincam with an IDAS filter will go about three magnitudes deeper into our light polluted skies than by visual. In our Bortle 5.5 skies about 13th magnitude is the C14's visual limit. With the Mallincam I've picked out 16th magnitude galaxies.



This is a good comparison with the Mallincam Xtreme, filter and color usage. These are 30 second exposures using a Canon 600mm f4 camera lens on a CGE. The left image is unfiltered, the center image is with the IDAS filter and the right image is with the color levels enhanced.

Another advantage over visual observing is no need to chase an eyepiece all over the observatory. Now the camera does the moving and I sit comfortably in one spot. The observatory actually seems roomier since I basically stay in one place. I joke about adding an easy chair so I can just kick back and enjoy the show.

The Mallincam is also an outstanding tool for outreach. One external monitor is worth a thousand words of explaining how to focus the telescope and asking people to turn their baseball caps around before they bonk it into the eyepiece. Of course video astronomy also opens up internet broadcasting which is an outstanding outreach tool, but more on this later in the review.

Video astronomy is a netherworld between visual observing and imaging. Technologically, video astronomy is closing the gap between the two. I doubt it will ever be possible to get true real-time images that are CCD quality but the Mallincam Xtreme is definitely pushing the boundaries in that area.

What is the Mallincam Xtreme?

The Mallincam Xtreme is the latest video astronomy product from Rock Mallin of PRO-COM Electronics, Ottawa Ontario. Mallincams are dedicated video astronomy cameras. They are literally hand crafted from the ground up for this specific purpose. The short answer is the camera is capable of doing it all, from lunar and planetary imaging through deep sky faint fuzzies, all the way to actually downloading CCD images suitable for stacking and post processing.

As a vendor I can't say enough for Rock Mallin. Like many specialized vendors, Rock's interest in developing products spawns more from an enthusiasm for astronomy than pushing a business bottom line. Between Rock in Canada and his American sales representative Jack Huerkamp, their product support and personalized service are some of the best I've experienced in the industry.



The Mallincam Xtreme. The camera is surprisingly small and light weight. The little scrawl on the lower side of the camera is actually Rock Mallin's signature. It says something about a product, about the care and pride that goes into it, when someone is willing to literally sign their name on it.

The Mallincam Xtreme signal output is s-video and composite. Both outputs are on two separate channels so both can be run simultaneously without signal degradation. Both formats allow much longer cable runs that is allowed with USB output. This is especially useful for large dobs, or running a video cable in from outside to the house TV or outreach viewing area. Either video signal can be converted to a digital signal for direct computer use with a frame grabber (a video to USB conversion device).

I find the dual feeds very helpful. I typically run the composite output to a 12" flat panel TV in my observatory for monitoring the image and feeding higher quality s-video through a Dazzle 100 frame grabber and DVE (Digital Video Enhancer explained later) into my computer for processing/broadcasting. When guests are over, I can run the composite to a flat panel on the deck during the summer or to the house TV in the winter. My guests don't even have to bundle up or dark adapt.

Mallincam Xtreme Control Inputs

There are three input methods to control the camera, the button menu system, computer serial control or via a control box and wireless integration control.

On the back side of the camera there are five push buttons that allow navigation and control of an on-screen menu. The menu system is very intuitive and can control most of the functions of the camera. For exposures over 2 seconds the serial cable/software, control box or wireless control will be used. I have always used the serial computer interface and will cover the software later in this review.



This is the interface end of the camera. The composite output is on the top left and the s-video on the upper right. In the center is the serial interface for camera control which can be either via computer or control box. The buttons in the lower left enable an onscreen menu system to control various camera functions and the 12 volt power lead and lights are on the lower right. Not shown is the wireless serial port on the side of the unit. If a user wishes to avoid using a computer in the field, all camera functions can be controlled with the optional wireless integration control and control box.

The wireless interface for long exposure control would be ideal for big dob users that do not wish to use the computer interface. Once the basic settings for imaging are set on the camera (either by the menu buttons or control box) about the only thing that is changed throughout the night is the integration (exposure time). Basically a large dob owner only needs to set up the camera at the beginning of the night and can control the integration time and then view from the comfort and safety of the ground. No ladders to trounce up and down for every view!



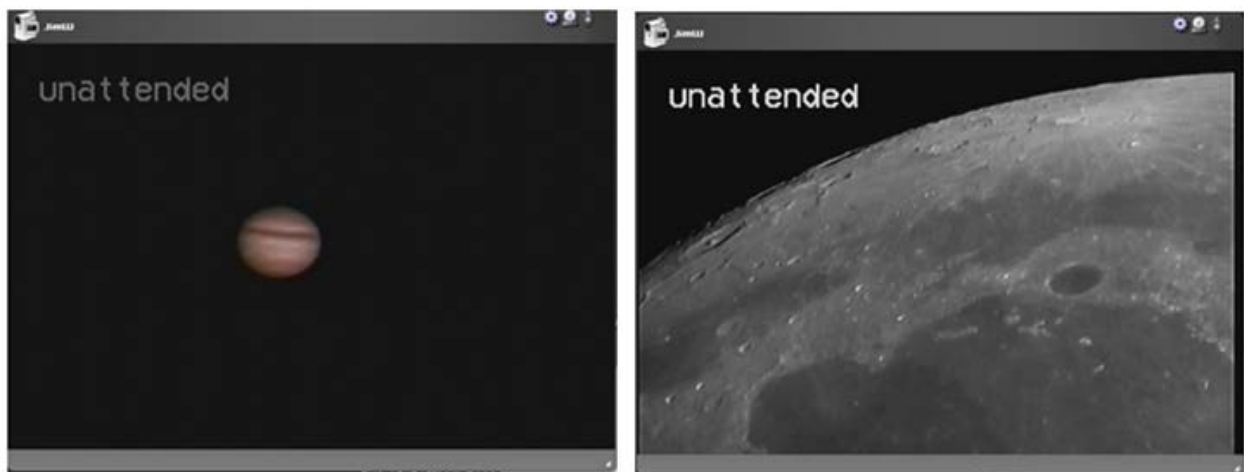
I don't use the wireless control so this is a stock photo of the Mallincam Xtreme with the optional wireless integration control. Also shown is the option heat dissipater with fans.

Imaging with the Mallincam Xtreme

From a technical perspective, the Mallincam Xtreme can image from $1/12,000^{\text{th}}$ of a second to 100 minutes. The shutter and integration times of course will vary depending on the target, filters used, telescope aperture and focal ratio. This allows the camera to run the gamut from terrestrial to lunar to planetary to DSOs. There are additional camera settings such as gamma and gain that will influence the exposure times but this will be covered in the software interface section.

Lunar and Planetary

I primarily use the camera for deep space imaging but the camera is quite capable of doing terrestrial, lunar and planetary imaging. I don't have a lot of examples of lunar and planetary images but did I couple for the review.



These are shots at f4 through a GEG (Giant Easy Guider) on the C14. In the Jupiter image at the upper left, Europa is just emerging from the right side of the limb and the shadow of Ganymede is just

touching the left limb. The GRS is just starting to become visible on the lower left limb below and to the right of the moon's shadow. The camera also has a 12 character title bar. These are screen grabs from internet broadcasts where I was letting the audience know it was unmonitored.

A nice feature of the Mallincam is the ability to flip images horizontally or vertically to match lunar atlases designed for dobbs or to match correct planetary sky orientation.

Deep Space Imaging

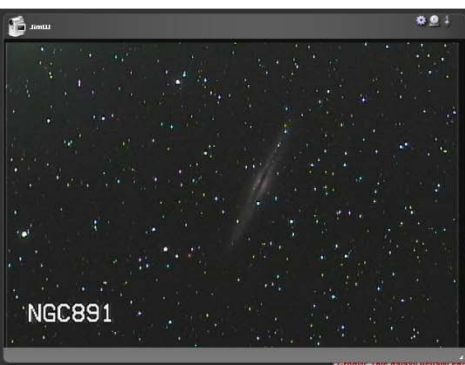
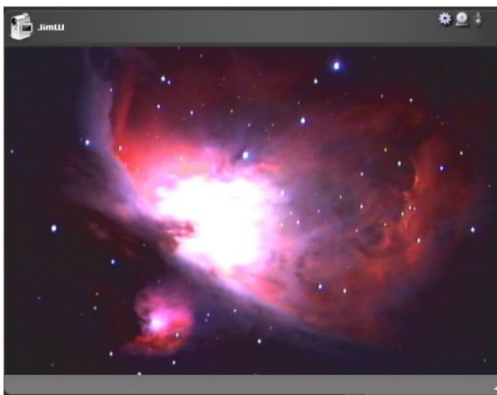
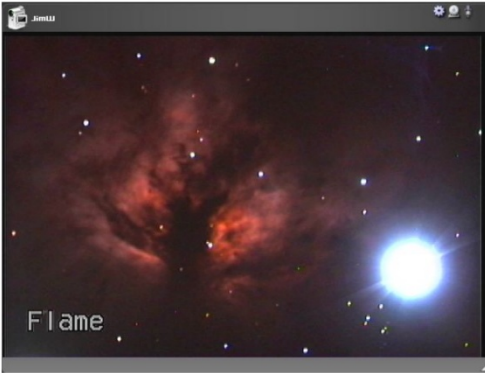
DSO imaging is where the Mallincam Xtreme excels. The camera is very versatile and can be used with a variety of telescopes and telephoto lenses (with the proper adapters). The Xtreme comes with a standard video c-thread which can be attached to a 1.25" nose piece. The custom nose piece is made out of aluminum and designed as a heatsink.

For DSOs I usually have the Xtreme mounted on a Hyperstar lens. This is a special lens designed to replace the secondary mirror on SCT telescopes. This allows a fast f1.9 focal ratio on the C14. The width of the Mallincam is smaller than the 4.5 inch secondary obstruction of the C14 which makes it an ideal camera for this arrangement.



Mallincam mounted on the Hyperstar lens. The image on the right shows the Hyperstar and Xtreme in place on the C14. The cables don't cause any noticeable defraction spikes.

The following are a sample of DSO objects taken with a variety of telescopes, camera lenses and focal ratios. All of the images are simple screen grabs from a clipping tool, most during internet broadcasts on NightSkiesNetwork. The exposure times were not recorded but vary from 30 seconds to 6 minutes.





The above Mallincam Xtreme images were taken with the C14-Hyperstar.

The following images were provided by Chris Appleton in Toronto using a C9.25 and TMB 80mm refractor.





Images by Chris Appleton using a TMB 80mm triplet Apo refractor @F3.5 using the MFR-5 with no spacers and his C9.25 @ F3.2 using the MFR-5 with a 5mm spacers.



With a c-thread to camera adapter the Mallincam can also work effectively with regular telephoto camera lenses. These are some shots taken with a Canon 300mm f2.8 or a Canon 600mm f4 lens.

Mallincam Xtreme as an imager

I found the Mallincam Xtreme can also do a respectable job as a CCD imager. The software has the capability of saving the shots in JPG, BMP or TIFF format. I just selected JPG for the smaller file size and ease of processing and grabbed ten, two minute shots of the Horsehead. I didn't take any darks, flats or biased frames. It's been a while since I did any stacking and post processing so I sent the 10 sample shots to Chris Appleton for stacking and processing.



The image on the left is one of ten, two minute JPG exposures using the software download. The image on the right is the stacked result, processed by Chris Appleton. Although CCD imaging is not the primary function of the Mallincam Xtreme it does a very respectable job with only 20 minutes of signal.

Mallincam Xtreme Software

The Mallincam software was written by Stephan Lalonde and is a free download from the Mallincam website.

It allows full camera control from a computer. The software runs on Windows operating systems.

I have used it with Windows XP on a netbook and Windows 7 on a dual core machine. Later I layered it on a Windows i7 quad core machine and it would continually lock up the camera. All the drivers, cables software and operating systems, were the same between the machines, the only difference was the hardware. It does not seem to be specific to the i7 or quad core architectures as I know others that use i7 quads successfully. The reason I mention this is because it took me better than two weeks to troubleshoot and narrow the problem down to a hardware issue. If you experience camera communication issues (especially if it is an i7 quad core) I would recommend trying a different computer early on in the troubleshooting.

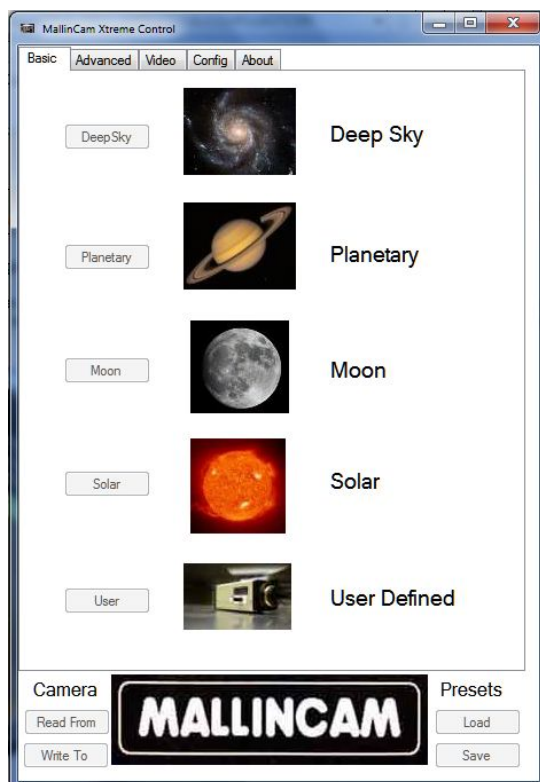
While I was troubleshooting the software/computer issues the camera would “lock up” and I would have to reboot it. If the computer is exhibiting strange behavior it should be rebooted rather than leaving it in an indeterminate mode. The camera can be rebooted after a 15 second wait, I usually give it a little more.

The Startup screen

I normally hook up the camera, computer and cables. I start the camera and usually let it run a few minutes to stabilize, then start the software. The computer must be set to use the appropriate serial port for communication. If this needs to be changed, the port setting is changed on the configuration screen. Use the computer Device Manager screen to locate the appropriate comm port to use. Once set, the computer usually finds the correct comm port in the future.

The MallinCam software's startup screen has "presets" for Deep Sky, Planetary, Lunar and solar modes. There is also standard profile that is user defined. When the software is initially started the safety timer (explained in the next section on the advance screen) is triggered. This provides a three minute waiting period to make sure the camera has the required stabilization time. The safety timer can be aborted if the user knows the camera has had the appropriate warm-up time.

I start the camera a few minutes before I start the software. I monitor a 12" flat panel screen in the observatory to ensure the camera is delivering an image. Then I start the software. If necessary I wait the three minutes and the Xtreme is ready to go.



The software start-up screen. The new version (v2.5) has a 3 minute safety timer built in that endures that camera commands are sequenced correctly. The safety timer countdown is initiated at software startup. If the camera has been previously warmed up, the safety timer can be aborted.

The Advanced Screen

Once a user begins to gather experience with the camera they want to branch out using the custom settings. This is where a learning curve begins. Some settings can be changed immediately while others

require time for the camera to stabilize. The learning curve is fairly fast but can be frustrating at first. As an example, a change in gain will require a three minute wait while the chip sensitivity is built up. If additional commands are sent to the camera before it has fully stabilized, the camera may exhibit strange behavior, non integrated images or pulsing images.

The new “safety timer” keeps software inputs from overloading the camera. If the user initiates any camera control settings that require stabilization time, the software disables and incompatible options and displays the countdown timer on the advanced page. The safety timer can be aborted if the user is certain it is safe to do so. The safety timer is a really nice feature for first time users and should speed the learning curve and lower any frustration level.



The new safety timer feature in the software. Note the yellow “caution” light in the upper left and three minute countdown timer enduring the stability of the camera. Also note all controls that could overload the camera are disabled. The safety timer is initiated when the software starts, if sense, ACG or priority are changed. Double-clicking on the yellow warning light initiates aborting the safety timer.

One of the new features of this screen is the “Cross Box” for alignment. Earlier versions of the software had a wide “Crosshair”, which was wide enough to blot out the star you were trying to align on. The “Cross Box” is a welcome improvement, allowing a star to be framed by the box.

The “Hyper Mode” section on the earlier versions of the software has been replaced by “Preset” and “Custom” tabs to control integration time and number of frames. Before using longer integration times, Sense Up must be built up to 128X which takes 3 minutes.

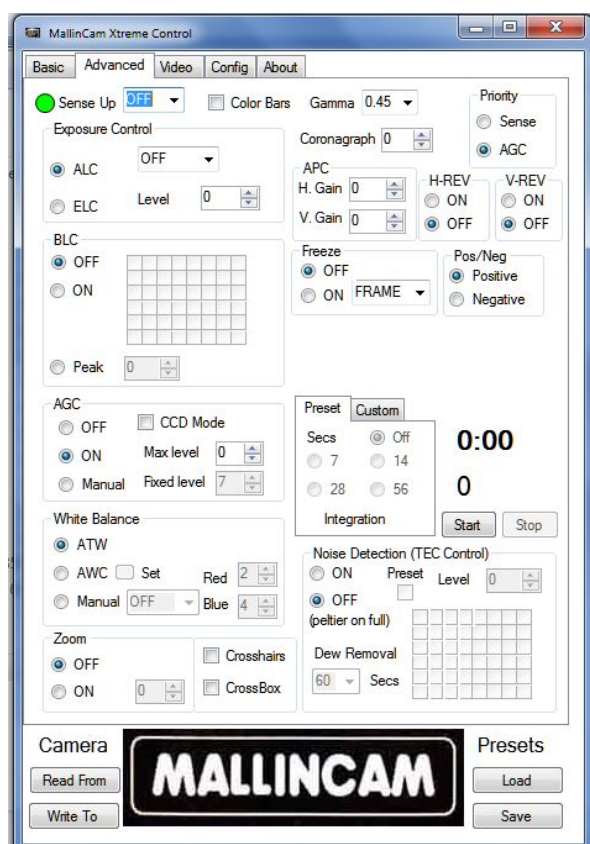
The preset integration times match the integration times allowed for earlier Mallincam units where the custom tab allows the integration time and number of integrations to be selected. The Custom tab is a nice feature for using with the Xtreme. It allows varying the integration time on the fly from one integration to the next. As an example I may start with a 15 second integration to frame a target, bump it up in 30 second intervals until I have the amount of detail I like, then bring it back down before slewing to the next target. When one integration completes I’ll assess whether to move the spinbox integration value higher or lower time value. The change will take place after the current integration completes.

When an integration is being performed, a countdown timer displays the time left for the integration to complete. While an integration is being performed options that are incompatible with the mode are grayed out.

CCD Mode is also new with the Xtreme. It sets AGC and ALC off and APC to zero, at which time the Xtreme is functioning as a true CCD imager.

The rest of the screen is basically unchanged from earlier versions of the software.

There is one important thing to note on the Advanced Screen. When the camera is booted, “Sense Up” (chip sensitivity) is off. The default setting for the software shows it at 128X rather than “Off”. To ensure that the camera is in synch with the software and that the software is communicating with the camera I usually perform a “Read from Camera” operation just prior to initial camera operations.



The “Advanced” screen.

The following is an overview of the Advanced Screen camera controls.

TEC On/Off	I’m starting with the Thermal Electric Cooler because its operation can be misunderstood. On or Off refers to whether noise detection is turned on or not, not really the cooler itself. When noise detect is turned on, the current frame is analyzed for noise. If noise is detected the Peltier cooler is turned on during the next frame. If noise is detected on that frame, then the cooler stays on, if not the
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	<p>cooler is turned off. For short duration lunar and planetary integrations, the TEC should be turned ON (actually noise detect) and the preset used. I usually set the dew removal to 60 seconds and the level to 8 which is the most sensitive noise detection setting.</p> <p>For longer integrations like DSOs, the noise detect should be turned off, (which means the cooler runs continually for every frame). Any integration over 14 seconds should have the TEC turned off so the cooler runs continuously for every frame.</p>
Sense Up	<p>This is where the sensitivity of the chip is increased for DSO imaging. Sense is increased by a power of two until it reaches 128. Each sense increment takes two seconds. This is why it takes 3 minutes for the sensitivity to come all the way up for DSO imaging. While sense is coming up, <u>no other camera operations should be attempted</u> until sense up is fully complete. While sense is up, ALC should be turned off.</p>
AGC	<p>This is Auto Gain Control. Changing the gain to anything but “Off” requires the 3 minute safety timers while Sense Up rebuilds. The higher the gain, the shorter the imaging time but also the less dynamic range the image will have. With AGC (and APC) turned off the sensor will be straight CCD. Images will appear smoother and stars will be more uniformly round. Increasing gain causes shorter exposure times but makes the stars more blocky and the image flat while increasing noise.</p> <p>If you want to change the gain setting, type the new value into the number desired rather than using the spin boxes, otherwise each number change increment using the spin boxes will trigger the safety timer. It will take some experimenting to find what gain settings and integration time works best for your particular application. Usually an AGC of “4” is a good starting point for DSO objects. ACG is turned off when the CCD mode checkbox is selected.</p>
Priority	<p>This is one of those controls that pretty much is left in AGC mode. About the only time Priority may have an advantage is under very dark sky conditions. I have never changed this feature.</p>
Exposure Control ALC and ELC	<p>This is basically the shutter control for terrestrial, lunar and planetary imaging. ELC mode is for specialized camera control and I am unfamiliar with it. Everything I have done is in ALC mode. The dropdown box is where the shutter speed is set for bright terrestrial, lunar or planetary targets. The shutter speed is selectable from 1/12,000th to 1/100th of a second. Pick a shutter speed to best fit your image. When using Exposure Control, Sense Up has to be OFF. When using Sense Up for longer DSO type exposures, ALC must be OFF.</p>
Gamma	<p>Gamma can be set to .45 or 1 depending on the target. A gamma of 1 darkens the image increasing contrast on brighter targets by darkening the background. A gamma setting of .45 will give the best detail but also brightens the background. It tends to wash out faint targets in light polluted skies. Usually a setting of 1 is best with sky glow. This is one of the settings that can be changed in real-time to find which setting is best.</p>
APC	<p>This sets the level of horizontal and vertical signal processing that is performed. The higher the level the more “blocky” stars look but the higher settings can tease details out of faint galaxies and nebula. Generally higher settings are best used for</p>

	lunar and planetary targets, medium levels for galaxies or nebula with structures and APC off on stellar targets like open or globular clusters. APC can be changed on the fly. When using CCD more, APC is disabled.
BLC	This is “backlight compensation”. The checkboxes indicate the areas where the background will be darkened. This is supposed to be useful for lowering amp glow for long duration images.
White Balance	Most of the time I just leave this at AWB (Auto White Balance) and it does a fairly good job. On some targets that have faint color I sometimes select “Manual” and play with the red and blue spin boxes. White balance is a setting that can be changed real-time so it is safe to experiment with until you color the image to your liking.
Freeze Frame	Does what you would expect. It is useful while broadcasting to “freeze” and broadcast the last image you had while slewing to another target. It gives the viewers something to look at rather than streaking stars as the telescope slews.
Color Bars, Crosshair or Cross Box	These are pretty straight forward. If I want to quickly check whether the computer is communicating with the camera I will select the color bar test pattern checkbox. This is the fastest way to make sure the computer is communicating with the camera. If Sense Up is off, the color bars should come on instantaneously. If Sense Up is at 128 the color bars will come on in 2-3 seconds. If the color bars do not come up, then it is a good indicator that there is a communication issue with the camera. These options should only be operated when the camera is not doing a long exposure image
Zoom	This allows a digital zoom up to 2X in 1/8 th increments. If you are planning to zoom in on a small target, set the zoom factor before you begin a long integration so the zoom can complete while the image integration time is short.
Read and Write to the Camera	Most setting changes on the Advanced screen send the setting changes to the camera immediately. Any settings that require Sense Up to be rebuilt will trigger the safety timer. For this reason the “Write Camera” option is rarely used and takes a while to complete. I do use the “Read Camera” option to verify the camera and software are in sync. Read and Write should be performed at a ‘quiet point’ where the camera is not occupied with an integration. If a read or write operation seems to hang for more than 10-15 seconds the camera is either busy and unable to communicate or there is a communication error.
Load/Save Presets	After a period of time and familiarity with the camera you will find what settings work best for a particular equipment configuration. This allows you to save these configurations. A standard startup configuration can also be saved and used from the main screen, (remember to give the camera sufficient warm up time first).
Hrev/Vrev/Pos/Neg	These manipulate the image. Reversing it horizontally or vertically allows the celestial targets to reflect layouts in star charts or books. Going to negative reverses bright and dark and sometimes more faint detail can be picked up on dim targets like galaxies.

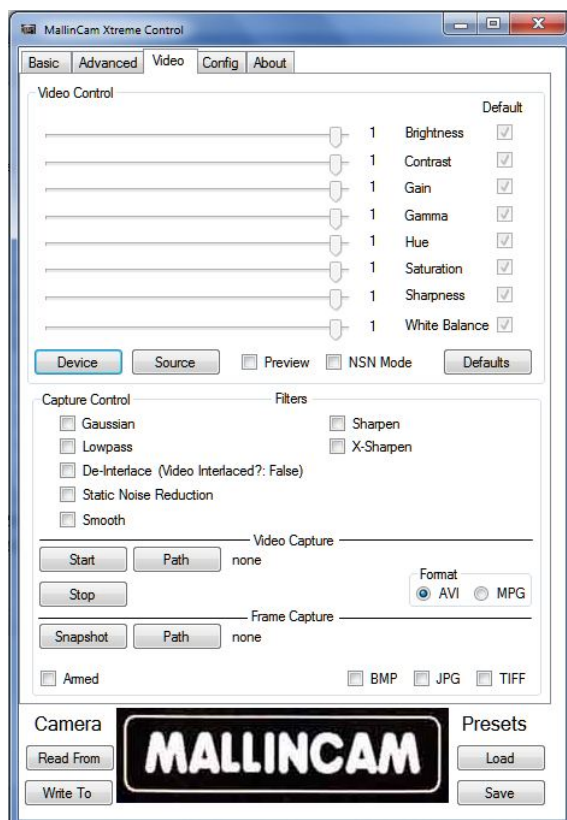
There is more to the main settings and I certainly don’t understand all of them, but as a rough survival guide that will be helpful to new Mallincam users.

The Video Screen

The video screen has some very nice additions to it. The most interesting is a built in "Preview mode". Using AmCap or ManyCam is no longer necessary to see the image. To be able to use preview mode, first select the appropriate device (your frame grabber like the Dazzle 100) and source (s-video or composite), then select the "Preview" checkbox. A second window will open with the camera image. After a few seconds the sliders for the video control will start to match up with the current cam settings. Once they're set you can adjust them for best image on the preview screen. Not all the sliders will be functional, some of the settings like gain and gamma will need to be changed from the Advanced screen.

There is also an NSN mode for internet broadcasting on NightSkiesNetwork. It disables some of the features that are not compatible with broadcasting.

Capture control allows some very interesting real-time processing on the live image. They do work but are very CPU intensive. The capture controls are not compatible with broadcasting and are disabled when in NSN mode. Since most of the time I'm broadcasting with the Mallincam I have not experimented extensively with the capture controls. One night I did play with them and cleaned up a fairly nice image and did a screen grab with a clipping tool. The resulting image I saved appeared to have strange artifacts in it, so I don't know that they can be saved with the image file.

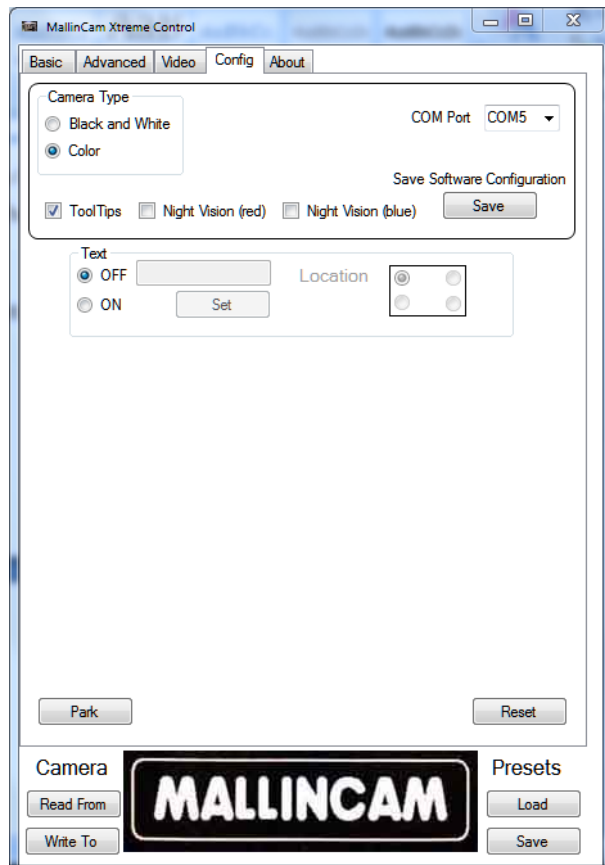


The Video Screen layout. This is a welcome addition because it is no longer necessary to run multiple software programs to control and view the camera output while broadcasting. The record and download functions are a welcome addition.

The video and frame capture are pretty self explanatory. Obviously video capture is going to take a lot of disk space and probably only practical for generating a short loop of the Sun or planets.

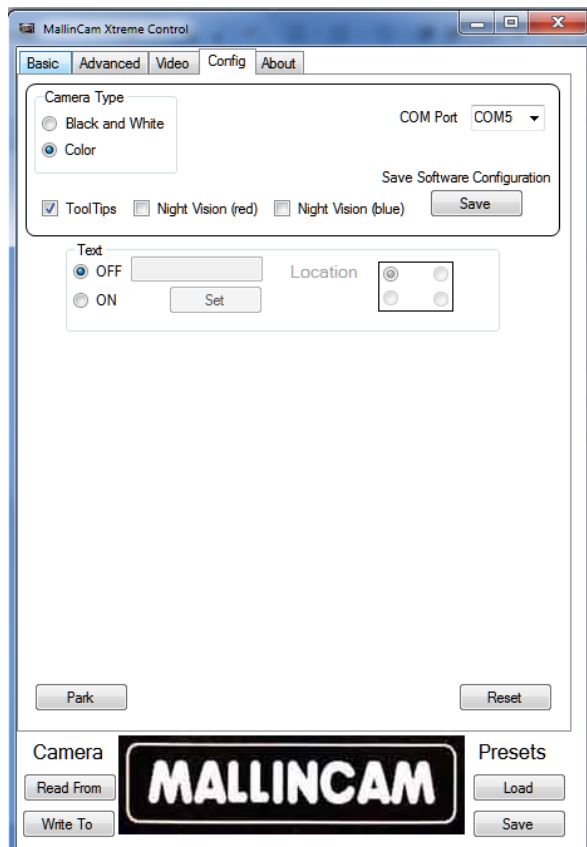
The frame capture is a really neat feature turning the video camera into a CCD imager. The user can either select individual images using the “Snapshot” button, or by using the “Armed” checkbox, capture each image. Images can be downloaded in multiple formats, JPG, Tiff and BMP. More than one format can be selected at the same time.

I have not used the frame and video capture extensively. Again, these features are disabled while broadcasting on NSN.



The Configuration Screen

The configuration screen sports a couple of new features including a blue night vision mode and a “Park” utility. Selecting “park” initiates a camera shutdown. It puts the camera into a safe shutdown mode and starts the 3 minute safety timer. When the timer expires a message will appear saying the camera is then ready to safely be powered down.



The Configuration Screen. This is where the comm port is selected. This version of the software sports a new “blue” nightvision mode and a “park” feature for safely powering down the camera.

Equipment and Options

The Mallincam Xtreme comes with the camera, a 12 volt AC power supply, special 1.25” nosepiece to c-thread adapter, and a 25 foot section of composite cable/power cord. An s-video cable is not included but is easily purchased in various electronics stores.

A separate heat dissipater is also an option for warm climates where noise due to camera heat may be an issue.

Normally the power supply is plugged into the 25 foot power cord which plugs into the camera. In cold weather operations the camera can behave sluggishly due to voltage drop and the power supply can be plugged directly into the camera if necessary.

For field use without AC power, a cigarette lighter power adapter is also offered.

As explained earlier the Mallincam Xtreme can be controlled via a computer or a wireless serial interface. If computer control is desired, there is a 25 foot DB-9 to PS2 serial cable option. Since most computers no longer have serial ports, a USB to serial converter will be required along with the serial cable.



Some of the product options for the Mallincam; the heat dissipater, the DVE and various focal reducing lens solutions.

Optional equipment includes various reducer lenses, cable lengths, 2" nose pieces and special cable connectors.

One optional piece of equipment is a DVE, (Digital Video Enhancer). This is a small box that goes inline between the camera and monitor/computer. The DVE has a button that allows six different signal enhancements normal mode, enhanced 1, enhanced 2, dark mode, black and white and color bars. The enhanced modes are useful for teasing out additional detail on faint objects or when using lower integration settings. I've found the dark mode very helpful with the C14-Hyperstar combination. It allows the longest integration time with the best dynamic range without enhancing the background sky glow. Black and white mode is useful for 'colorless' targets like the moon and smaller galaxies, enhancing contrast. I've found the color bar option useful for software testing, to generate an incoming image to the computer without having to have the camera powered up. The Mallincam Xtreme by itself is fairly flexible but the DVE offers that little bit of tweaking to turn a good image into a super one. The DVE takes a small AC power supply and can be used to enhance either composite or s-video input.



The DVE (Digital Video Enhancer) has several modes that reduce noise and increase contrast. The button on the lower right of the top selects s-video or composite and the button on the bottom side switches between the six different modes.

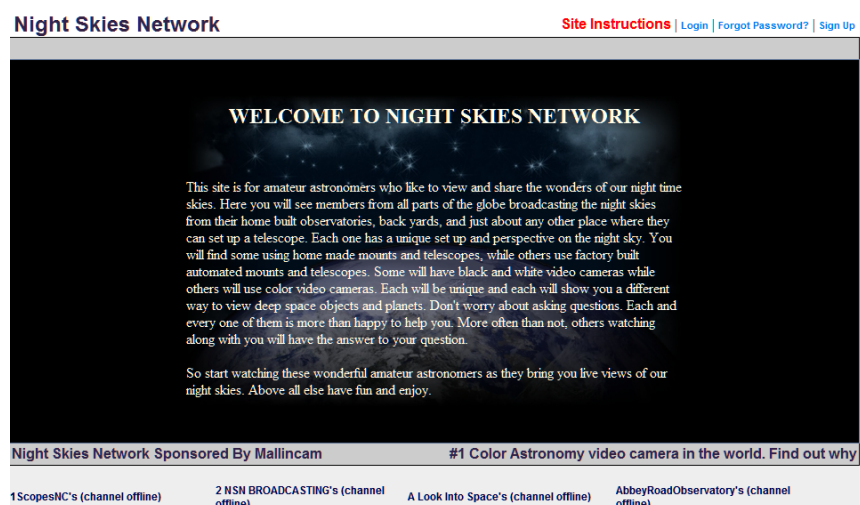
Aftermarket Support

How many times have you bought the latest and greatest of something only to find out weeks later there is a newer model that does twice as much for half the price? One thing that is kind of unheard of in the era of “planned obsolescence” is that Rock offers camera upgrades. I’m not sure of all the models that can be upgraded but this is a really nice option. I know the VSS+ can be upgraded to the Xtreme for a very reasonable price. This shows the level of customer care and support that goes into a Mallincam product.

There are several different Mallincam camera models to choose from ranging from the entry level Mallincam Junior for (at the time of this writing) \$500 dollars to the flagship \$1500 dollar Xtreme. If desired the serial wireless control is another \$250.

Be forewarned that since the units are not mass produced but custom crafted there usually is a wait time of a couple months before delivery.

Broadcasting on NightSkiesNetwork



No discussion of the Mallincam would be complete without a mention of NighSkiesNetwork.com, kind of the “You Tube” of astronomy. Since the Mallincam is basically a super-sensitive video camera, its image capture can be sent to a video server and viewed by others. Jim Turner created a site specifically dedicated to astronomy video image broadcasting.

Using an Adobe Flash interface, the telescope video image and voice output can be sent to Jim Turner’s server and viewed by anyone in the world with a browser and internet connection in real-time. (Actually there is about a 20 second delay but it’s about as real-time as it can get). Any video camera can be used to broadcast, it doesn’t have to be a Mallincam but they are far and above the most numerous.

If you are thinking of purchasing a Mallincam or haven’t discovered NightSkiesNetwork, viewing the live video images is completely free, you don’t even need any kind of an account. Simply go to the website, look through the list of channels, and if one or more is listed in red, a live broadcast is going on. Simply click on the channel link and wait about 10 seconds until an image appears. There is also a chat-line box

where you can communicate to the broadcaster via typing. They in turn can communicate back to you via voice if so equipped or by chat box.

If you have a Mallincam or similar camera and wish to broadcast, you only need to contact Jim Turner and request a broadcast channel to be created for you.

My wife and I really enjoy the broadcasting aspect the Mallincam provides. When we're broadcasting we often have 20-40 people on the channel. With special sound mixing software I often broadcast music as well as voice. I've even been able to broadcast Skype conversations with other astronomers to the viewers as well. Half the fun is the Mallincam, the other half is the broadcasting. In short, it is an instant virtual star party right from your own back yard with folks from around the country and around the world.

From a review perspective, NSN is the best advertising tool to show prospective buyers what the camera is capable of. It is also one of the best tools to shorten the learning curve with the camera by allowing a new camera owner to ask questions and get tips on operation from experienced owners. Quite frequently Rock and Jack are broadcasting on NSN, offering tutorials or sneak peeks at new equipment and software enhancements.

NightSkiesNetwork also dovetails nicely with a very active Yahoo Users Group and community of camera users and broadcasters. The files section has documents, tutorials and general information that is very useful.

Closing Thoughts

I'll be honest, after 30+ years in the hobby I get 'bored'. Let's face it, how many times can you look at the same fuzzy smudges that never change? You upgrade to a larger aperture, or a different type of scope, or find a better dark site and that fuzzy smudge looks a little different. I ended up getting into DSLR imaging as an affordable way to "see more" but all the post processing just wasn't my bag. Some folks like it but to me it was only a necessary evil.

Then my wife told me to get a Mallincam. She is active in astronomy and had discovered NightSkiesNetwork. She thought video astronomy would be something I'd really enjoy. I joke about, "I hate it when my wife forces me to buy astronomy equipment but what is a fella to do, gotta keep her happy, right?", but I honestly didn't have a clue what I was getting into when I ordered the VSS+. In short I found it to be the astronomy niche I was looking for, being able to get near real-time color images out of light polluted skies without having to head 100+ miles to a dark site and without the muss and fuss of post processing all the next day.

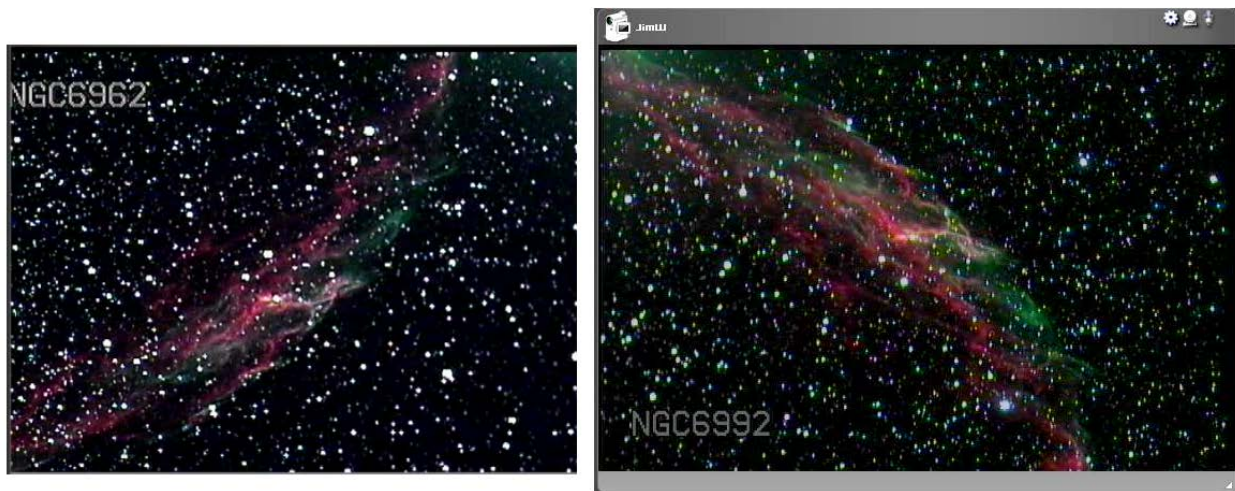
Doing the internet broadcasts on NightSkiesNetwork is just the icing on the cake, being able to share the sky from my own back yard.

Over the spring I joked around with, "So many galaxies, so little time," as I wandered around Virgo and Leo. With the VSS+ and planetarium software controlling the CGE, I would click on galaxy after galaxy. In 30 seconds I would have a view. I'd tweak the DVE or adjust the APC, messing to get the best view and

detail. If it was “interesting” I might up the integration time, study it for awhile, maybe take a screen grab or two, all the while sharing the view with the friends watching the broadcast. Then off to the next target. In one night I might view 20 or 30 obscure galaxies or nebula that I would never have a prayer of seeing visually in the light polluted skies and would certainly never waste a night imaging.

The VSS+ delivered very pleasing images but to tease out the detail and color the resulting image looked like it was video. The Mallincam Xtreme blurs the boundary between video and CCD imaging. The VSS was no slouch and I would probably still be happily using it if the Xtreme hadn’t come along, but I’m glad it did ;)

Since I had the VSS+ over the spring and summer and Xtreme over the winter I have very few targets to be able to do a direct comparison. The best example I have is the Vale Nebula below.



The image of the Vale on the left is from the VSS+ and the image on the right is the Xtreme. Both are screen grabs with approximately two minutes of integration time.

I’ve seen a couple people say, “You’ll find the Mallincam will be the last eyepiece you ever own”, and I understand where they are coming from. This really hit home the other day when I pulled the Mallincam and Hyperstar from the C14 to set it up for some planetary shots for the review. I needed to recollimate the secondary and dug out my diagonal and 17mm Ethos that has been gathering dust for a year. I got the scope collimated and thought I would “look around” for a while. Oh my, what a disappointment! I stopped on all the typical “bright” winter targets. I could hardly see M1 with or without the UHC filter. Outside of looking for the E and F stars in the trap, M42 was disappointing. The Horsehead? From home? Forget it, not even worth the try. I had to chuckle to myself, “and I used to do this visual stuff on purpose?”

With our ever increasingly light polluted skies, video astronomy is quietly and quickly growing in popularity. Rock Mallin continues to set the benchmarks and the Mallincam Xtreme is the cutting edge.



A couple more C14 and Hyperstar shots.

Links:

Rock Mallin and Pro-Com Electronics: <http://mallincam.tripod.com/index.html>

Jack Huerkamp and Jack's Astro Accessories: <http://www.mallincamusa.com>

Jim Turner and Night Skies Network: <http://www.nightskiesnetwork.com>

Mallincam Yahoo users group: <http://tech.groups.yahoo.com/group/mallincam/>