This brief review of a QSI 532ws camera was posted to the Yahoo! Group "QSI-ccd" by Richard Berry.

I have been working with a QSI 532ws (the model with the KAF3200ME chip in it) for about two months. The filter wheel has Astronomik Type IIc red, green, blue, and clear filters, plus one empty slot. **Bottom line is that the camera performs extremely well**.

To begin with, the manual is extremely clear and well done, and the camera works perfectly with MaxIm DL… you'll *really* appreciate the well written manual and software that works.

Since the camera arrived during a lengthy spell of rain, I set out to characterize it fully using some of the techniques described in the *Handbook of Astronomical Image Processing*. I shot hundreds of bias frames and dark frames, as well as some light-box flats. The camera gain is 0.88 e/ADU and the readout noise is 6.8 electrons RMS, which is really good. At -15C, the mean dark current is 0.03 e/pix/sec, which is also really good.

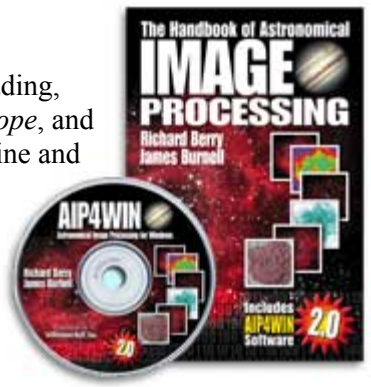
What impressed me in looking over the mass of data I collected is that its images are exceptionally clean and free of readout artifacts such as periodic noise. I was also impressed how stable the chip temperature control is – after the camera gets down to operating temperature, the temperature stays right on the set point. **I've looked at calibration frames from a lot of cameras, and truly clean bias and dark frames are the exception**. In other words, you don't need to fight to get good images – ***this camera works for you***.

Although my primary focus in the last couple years has been scientific imaging (I have gigabytes of pictures of extracted teeth with dental caries fluorescing under ultraviolet light), I couldn't resist making some pretty pictures. When the jet stream finally brought good weather, I shot a bunch of LRGB color images of the standard pretty deep-sky objects and sent them to QSI. A couple nights ago I did a five-hour photometry run on BL Cam, and got a really nice dataset.

At this point, I'm in the middle of upgrading the mounting for my telescope, so my images were not guided, but my old faithful Byers 812 mount does track quite well. So I stacked 10 to 20 60-second exposures in L, R, G, and B each. I know that with longer exposures and active guiding my pictures would have been better, but **the camera's low readout noise let me stack the short exposures and come away with pretty good shots anyway**.

Although it's not relevant to science uses, **the 532ws has an aesthetically pleasing design. The camera is compact, rounded, and feels solid and good when you handle it**. I've recommended that QSI include a 1/4-20 threaded hole for mounting the camera on a tripod. I shot some tracked images of the Milky Way with a 60mm f/2.8 Nikon lens, and the QSI cameras beat the pants off my DSLR camera.

My feeling is that – hooray! – QSI is offering amateur astronomers a versatile laboratory-quality CCD camera at a very reasonable price.

– Richard Berry

Richard Berry has written or co-authored numerous astronomy books including, *The Handbook of Astronomical Image Processing*, *Build Your Own Telescope*, and *Discover the Stars*. Richard was also a former Editor of Astronomy magazine and helped popularize amateur CCD astronomy in the 1990's with *The CCD Camera Cookbook*.