

Re: Furthering the doom of astro CCDs...

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- *From:* Davoud <star@xxxxxxx>
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Chris L Peterson:

I expect astronomical CCDs will be around for a long time yet. Controlled temperature is critical for many astronomical uses, and advanced imagers need B&W sensors, which I don't think any manufacturer will include in a DSLR.

No doubt, however, many imagers will use DSLRs as they continue to improve. Just because they are not the best choice for astroimaging doesn't mean they are a bad choice.

When you say "advanced imagers" are you talking about researchers whose needs are quite different to those of an amateur who wishes to make pretty pictures?

I believe that whatever an amateur has decided is the best choice for her/himself is the best choice. In amateur astronomy the DSLR will continue to grow in popularity over the CCD because of its perceived ease of use and because the cost of a high-quality DSLR has not yet bottomed out, while—in spite of the occasional clearance sale—CCD prices are pretty much static. Alan Holmes, president of SBIG, is a forthright person, and recognized the popularity of the DSLR at a NEAIC presentation a couple of years back and said that SBIG hopes to compete against the DSLR. As one who uses both a modified Canon 40D and an SBIG STL-11000 monochrome camera (choice is good), it is my perception that the Canon is somewhat easier to use for certain objects.

I often try the Canon first. If a three-minute (or so) exposure produces an image that can be processed into something that looks halfway decent (disregarding noise), then I will take as many pictures as sky conditions permit, with exposure times as long as sky conditions permit (10 min or so). Align and stack them, and with some luck I get something like this

<http://www.primordial-light.com/deepsky1.html#horsehead>. (Warning: referenced photo not suitable for research purposes.) The noise level in the finished photo will not be worse than that in a photo made with

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a high-end, cooled CCD camera. There will be no bad pixels, no column defects, fewer cosmic-ray hits to deal with.

Conversely, if I don't like the looks of the Canon photo I will go to the SBIG, which is already attached to a second 'scope on the same mount. The image linked above required nine exposures of 10 minutes each with the Canon. Now, with the SBIG, it will require maybe 30 or more exposures as well as more processing time. I'm not lazy, but bad skies limit the time I can spend collecting photons. If I get 90 minutes of exposure time in one night I consider that night to be a huge success. If I get three nights in a 30-day period, that's cause for celebration. Typically I can photograph one or two objects per month with the CCD camera, and more than twice that many if the objects are suitable subjects for the Canon.

The SBIG Yahoo group has 6245 members as this is written. The digital_astro (DSLR) group has 10629. I believe those numbers are meaningful usage indicators.

Already there are many astronomical cameras that aren't much more expensive than digital cameras using similar sensors.

The low-end astro cameras are one-shot color cameras like the DSLR's. Yes, they are cooled, but I don't see that they offer an advantage over the DSLR. For one thing, they aren't dual use. That's one of the things I like about my modified 40D. With its calibrated white balance I can remove it from the 'scope, pop on a lens, and photograph the birds and the bees and the birthdays without having to change any settings.

Davoud

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Sell GM for scrap metal. The country will recover and be better in the long run without an anti-technology lobby to drag us down.

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