

Canon EOS 300D digital SLR

by Tony Virgo

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For those who are interested in venturing into astrophotography, you are in luck. There are a huge number of choices currently available for digital imaging to suit almost any budget, with costs varying from as little as \$100 all the way up to \$10,000. Last year I bought myself a Canon EOS 300D and have been so impressed that I wanted to share some information and results I've had with this camera.

The EOS 300D is a 6.3 megapixel digital SLR. It is available for around \$1,400 for the body only, and slightly more with a 18mm to 55mm lens.

The camera performs exceptionally well for day-time photography. However, what I was interested in was its ability to take good, low noise, long exposures, which are very helpful for astrophotography. This camera meets these requirements.

What's more, the 300D supports 'firmware' upgrades. This allows you to upgrade the software that is embedded in the camera. Fortunately for me, a Russian enthusiast was able to provide mirror lock up and ISO 3200 with his version of the firmware. Loading this

(which is not endorsed by Canon) was very simple and took about four minutes to complete. Other features are gained with this firmware but the two important ones are the mirror lock up and the 3200 ISO.

After loading this update it was time to test out the camera. The mirror lock up ensures that images are vibration free and the increased sensitivity allows faint emission nebula to be imaged in as little as 15 seconds with a Canon 50mm 1.8 lens. The resultant images are low in noise given the high ISO. For the long exposures, lower ISO settings can be used, if you wish to reduce the noise even further. One of the nice features of this camera is that the cable release is only \$20. For those that like tinkering, you can make your own for about \$4. In contrast, a Nikon cable release can cost upwards of \$120.

The other nice feature is that you can add a battery grip, which takes two of the batteries, doubling the excellent battery life of the camera.

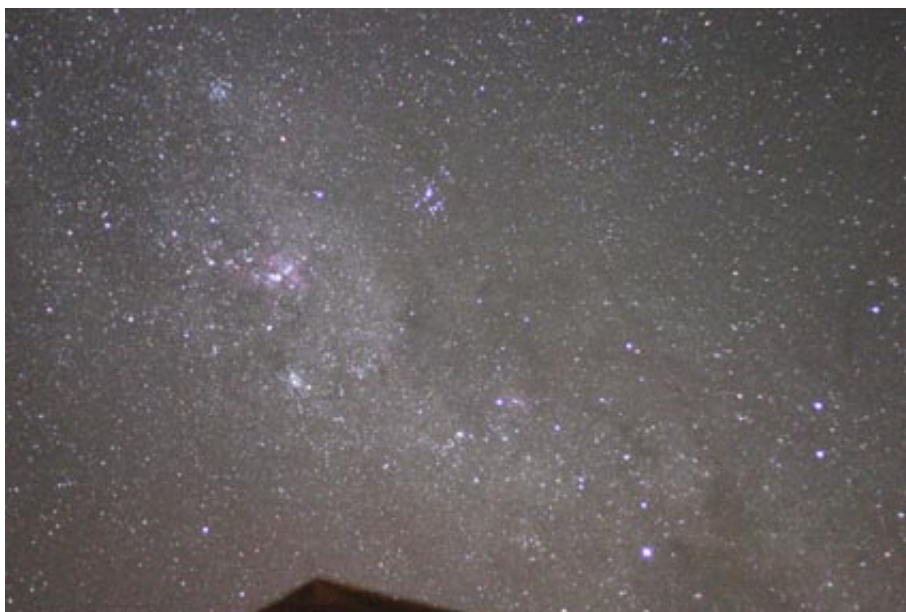
When it comes to taking photographs of the night sky, you can use the camera with traditional lenses for wider



views or you can mount the camera to a telescope using a simple adapter to give you higher resolution views. However, you need to be aware that once you go this route, you need to have a very accurate tracking telescope if you are to obtain quality images that are free of star trailing. This is true of any imaging platform, regardless of brand or type.

As you can see by the specifications on the next page, the resultant picture is large enough to print out at A3 size without loss of detail. These make for impressive displays. The real advantage comes from the fact that the camera is digital, meaning your on costs are going to be very small compared to film based systems.

You can preview your result as soon as the image has been taken. This allows



Left: 15 second exposure of the Milky Way & Eta Carina taken from McLaren Flat.

Right: 30 second exposure of Omega Centauri through the 20-inch telescope at Stockport Observatory in Newtonian configuration.

Both images taken by Tony Virgo with a Canon EOS 300D and are unprocessed.

you to check focus (this can be tricky at first but you get the hang of it quickly) and the exposure. You are also able to make sure that the tracking is working well and that you are actually imaging what you are trying to target.

When your imaging session has finished you can then spend as much or as little time as you want post-processing your results.

Nearly all of the resulting images can be improved with image manipulation software by adjusting the curves and levels, or by stacking two or more images together to improve the signal to noise ratio. Most of the images are quite impressive straight out of the camera and would please all beginners. Once you have been doing this for a while, you may want to try and push the boundaries and see how impressive you can make your images. This takes time, not money, as all the software you need to accomplish this comes supplied with the camera or is available to download for free off the Internet.

So in summary, I would buy this camera again (although the new model 20D is out, so buy that instead!) and enjoy using it for daytime and nighttime photography. I have four lenses for it, and I also shoot with the camera attached to telescopes. I have owned my camera since July 2004 and have taken over 8000 images with it. They are very impressive for their price and with a little dedication, you will be able to achieve excellent results. ★

EOS 300D Specifications

- Resolution:** 3072 x 2048 (6.3 megapixels)
- ISO rating:** 100, 200, 400, 800, 1600
- Shutter speed:** 1/4000 sec. – 30 secs. plus Bulb setting
- Sensor size:** 22.7 x 15.1mm
- Storage media:** CompactFlash (CF) card (Type I or II)
- File formats:** RAW or JPEG
- Outputs:** USB & video (NTSC/PAL)
- Weight:** Approx. 560g

For full product specifications, visit <http://www.canon.com.au>



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Big bucks!

Now that you've decided go out and purchase a new beaut digital SLR and take up astrophotography, what could be better than complementing it with a brand new 'scope? The two big brands loved by go-to astronomers have recently made some rather exotic additions to their product ranges targeted at the serious astrophotographer.

In early January, Meade announced their new RX400 Ritchey-Crétien series, which aim to eliminate coma and mirror shift issues found in Schmidt-Cassegrain telescopes. The Swiss army knife of telescopes includes a built-in dew heater, computer-controlled collimation system, preset focus memory for your different eyepieces, cooling fan and USB hub. These are in addition to Meade's more humble offerings of a GPS, automated levelling and alignment and periodic error correction. The RX400 is available in four sizes between a 10-inch and 16-inch, costing between US\$5,000 and US\$16,000 respectively.

Perhaps you're looking for something a little larger to compete with the telescopes at Stockport? No worries! The new C20 from Celestron is a 20-inch (½ metre) Dall-Kirkham with a focal ratio of f/6.3. However, you'll likely need a really fat wallet to afford one. ★

Below: The Celestron C20 in all its glory.

