

ASTRO TECH 10" RC ASTROGRAPH

By John O'Neill

Seeing Hale Bop illuminating the Western sky was the catalyst that brought me back into amateur astronomy. Soon after I answered an ad in the newspaper and bought an 8" orange tube Celestron. It was a great little scope but as my knowledge grew and after attending a presentation by Jack Newton, one of the real pioneers of astro imaging, I wanted to replicate the images I saw that night. What I didn't realize at the time was that I was about to embark on a long journey in search of the Holy Grail of imaging scopes. Sure I could spend \$30,000 and get a nice RC scope and comparable mount but I love my wife and didn't want to lose her.

I am fortunate to live in Florida and close enough to the Chiefland Astronomy Village with its great facilities and very dark skies. Every new moon, I packed the car and headed up north. Not to bore you but I need to mention my earlier imaging experiences because I look back now and wonder why! I spent the first years with an Olympus 35mm film camera mounted on a 10" Meade and a 201xt auto guider. After numerous trips to the Winn Dixie in Chiefland to develop the film, I was always disappointed to see star trails or out of round stars. In all that time, I may have gotten one shot that you could recognize. Needless to say I was not happy. I soon tired of film and bought an SBIG-7 CCD camera. Now I'm back to black and white but at least

I'm starting to get better images. I was able to move up to a bigger mount (a must) and a TEC mak-cass scope. Great optically but as I found out, not ideal for imaging. Next, a quick stint with a Vixen then on to a Tak Mewlon 250, close but still no cigar. I tried refractors and a custom astrograph and liked the wide field and no sweat tracking but I like to get in close, so back to the big scopes and all the problems associated with them.

While reading Astronomy and looking at an ad by Astronomics about a new true RC scope, with quartz mirrors, carbon fiber tube, baffling and Feather Touch focuser all for under \$4,000. I couldn't believe my eyes. Could this be? There has to be something wrong with these scopes to go for that price. Happily I can state without reservation that I have found what I was searching for. I need not look any further (unless I win the lottery).

First, I bought the AT6RC and it was love at first sight. The scope is extremely well made and optically a marvel, not to mention the great price. A perfect fit for my Olympus Evolt.

I finally got to see the AT10RC at NEAF. It was the pre-production model (no baffles and the 2.5" focuser) I asked Michael at Astronomics if he would sell it to me and he agreed. I mounted the RC on my EM-400, attached my ST-10XME and knew from the very first images I was going to be very happy with this scope. (photo insert)



The rest of this review will be on the production model Astor Tech 10"RC Astrograph; a f/8 true Ritchey-Chrétien hyperbolic mirror optical design, carbon fiber tube (aluminum tube is also available) with nine knife edge baffles, low thermal expansion quartz mirrors with dielectric mirror coatings (primary and secondary), 3" Feather Touch focuser, 3 cooling fans, a more robust mirror cell and Losmandy "D" mounting plates top and bottom. The RC's have fast optics. At f/8, the 10" scope is a very desirable 2000mm, add a .75x reducer/flattener you can get the scope down to a very fast f/6 at 1500mm. Even at f/6 the limited tests I did using my Evolt showed a sharp field right to the edges.

The Astro Tech scopes are made in Taiwan to exacting standards. I found the workmanship to be top notch in fact the scope made Sky and Telescopes hot product list for 2010. The carbon fiber and back plate with cooling fans looks terrific. I recommend the carbon fiber over the aluminum tube because of temperature stability (focus and forget) and ease of disassembly, if ever needed. (photo insert)



The Feather Touch not only looks great it is also a fantastic performer. I elected to get the wireless electric focus option, which I highly recommend. The imaging train on the RC's is longer than most but if you ever decide to use a reducer (I use the AP 27TVPH) the extra range of back focus comes in handy, especially if the scope has the Feather Touch. Astronomics is working on a dedicated reducer/flattener for the RC to replace the first reducers, which fell short of expectations.

Initially when the scope first came out there was a buzz about the collimation of the scope. The truth is the RC is NOT hard to collimate but the RC design does demand that you have near perfect collimation. There has also been an issue for those using large chip cameras with strange flat fields and

troublesome internal reflections. Wayne at Starlight got on the problem right away and found a solution. Others needed to add flat black to their extension rings and adapters, etc. to solve the problem. The central obstruction is big but a necessary evil of the RC design. The scope is also heavy. At 33 lbs it needs a good-sized mount. The baffling (see pic) really works well. Imaging a galaxy 40 deg away from a waxing moon would usually cause unacceptable gradients in your image. I did have a touch of a gradient but that may have been caused by sky glow.



The RC scope is primarily aimed at the astro imaging community but observing through the scope is also a joy. At f/8 the field is bright and stars are pinpoints to the edge.

Almost all of my previous scopes had inherent problems such as mirror flop, major focus problems, dew on the meniscus, etc. The AT RC's have a fixed primary, thermally stable carbon tubes, open tube design and a top of the line focuser. Since there is no meniscus there is one less piece of glass to degrade the image.

The scope is not perfect but for the price, it has to be the best value out there. Most RC's have a cost per inch of \$1,000 or more. Then you have to purchase expensive accessories to bring it up to full working order. No so with the Astro Tech scopes. They work great right out of the box. You can pay \$10,000 for a 10" RC or you can pay \$3,800 for an Astro Tech RC. I have included some of the images I have taken with this scope since the proof is in the pudding.



IC434



M21



M31



M16



M100