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Skywatch  
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# Skywatch

## State Line

**Rod Mollise**

Ah, for the good old days of the Mobile Astronomical Society! Those well-remembered times when every new Moon meant an expedition to the club's dark site in Hurley, Mississippi at the Alabama-Mississippi state line. "Well-remembered" if you're an MAS old timer. The truth is, the club has not had a dark observing location since 1995. The old Hurley site, land belonging to an area farmer, had been arranged for us by former club President, David Switzer. When David left the club in 1995, we gradually stopped using "Hurley." The Summer of '95's very poor weather prevented us from even *thinking* about observing for months and months. By the time viewing conditions improved, no one had been to Hurley in 6 months. We had lost touch with the owner and, sadly, wound up never going back.

Sure, going out to the ESC for monthly observing sessions is fun. But, while OK, the skies in west Mobile are *far* from dark. Those of us who are interested in deep sky observing have been seeking a secure club observing site for the last several years. A couple of leads have turned up in recent times. But there was always a problem: ambient light from streetlights, not secure, too far, no good open space, etc. But things are looking up. MAS member Pfil Hunt has

located a site for us near, of all places, Hurley, Mississippi!

This new location, on the Alabama side of the line this time, is a very easy drive out Airport Boulevard--within 45 minutes of downtown--and is a secure, fenced-in area belonging to a local landowner. A couple of weeks back, Pfil arranged for us to give the site a test run. There'd be a Moon in the sky for much of the evening, but we figured we'd be able to give the location a good preliminary evaluation.

Foremost in my mind, was the question of how dark it would be at the state line these days. This area has never been perfect—its proximity to the Mobile metro area sees to that. Even on exceptional nights the sky sports a light dome in the east that extends about 30 degrees high. But, nevertheless, our old site was better than any other easily accessible location in the area—including the Eastern Shore. The Milky Way was prominent, even on hazy Summer evenings, and the brighter Messiers—even galaxies—gave up a wealth of details. There is no denying, though, that west Mobile has grown exponentially in the last five years, beginning to extend tendrils to the airport and beyond. Would the state line skies still be worthwhile?

Yes, to get to the point, they certainly are! The Mobile light dome is very noticeable, of course, but it appears to be no worse than it was five years ago. Despite the development of the Mississippi Gulf Coast, there was still no evidence of casino lights in the western skies. I heaved a sigh of relief at this. Hurley has always been one of my favorite viewing locations, and I was very

glad to get back. I think dark site observing as a group is also one of the best possible activities for the club. It strengthens bonds between members, rapidly turning your fellows from barely-recognized faces you see once a month at club meetings to old friends.

To give you some sense of what this site is like, here are some brief observing notes on the objects I looked at during this test run. Keep in mind the haze we've had this Summer and the fact that there was a crescent Moon in the sky, and I think you'll agree we ought to have some good viewing opportunities come the clear, dark skies of Winter!

M17: The Swan/Omega Nebula. In my 12.5" with and without an OIII filter this object was *striking*. Not only were the body and neck of the Swan clearly visible, errant patches of nebulosity apart from the main cloud were easily visible.

M16: The Eagle Nebula. The star cluster involved in this faint nebulosity was beautiful, and, with the addition of the OIII filter, the Eagle itself spread its wings and soared into view!

M13: What can you say? Dazzling and resolved to the core.

M94: This "also ran" globular was also looking good, as good, really, as I've ever seen it from our area.

NGC 7331: Famous as the "mini M31" in Pegasus, this galaxy was bright and obvious. Nearby Stephan's Quintet was dim but visible in the hazy conditions.

M20: The Trifid Nebula's "four leaf clover" shape was easy.

M8: The Lagoon, it's dark passage prominent, seemed to tower above me in the field of view.

And I could go on. Suffice to say, I'm very happy to be able to desert my light polluted backyard for the

wonders of deep space once a month. If you'd like to join us at the state line next time, send me an email or enquire at the next club meeting. We'd love to have you, and if you like the deep sky, you're in for a treat!

# Nob Rule!

Rod Mollise

## Bob's Knobs

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\$15.95 per set

An issue or two ago, when I was reviewing the Lenspen optics cleaning device, I observed that every once in a while the "perfect" astronomy accessory comes along. Something so simple and *right* that it makes you scratch your head and wonder, "Now, why didn't I think of that?" Well, I found another one.

As most of you know, I'm a big fan of Schmidt Cassegrain Telescopes. I think they're the telescope that comes closest to being all things to all amateurs, featuring generous aperture, portability, and an ability to adapt to the most demanding astronomical tasks. But there is a cloud on the outside of this silver lining. SCTs are VERY sensitive to miscollimation. If your scope's optics are not in near-perfect alignment, they cannot deliver the sharp images you crave. Unfortunately, a lot of folks don't collimate their SCTs. This is the main reason Schmidt Cassegrains have gotten a bad reputation as planetary telescopes. Some say that they are simply not capable of delivering fine detail on the Moon and planets. But

a well-collimated SCT can actually equal or even *better* other telescope designs in this demanding application. A *well-collimated* SCT, that is.

Why *don't* SCT owners collimate their scopes if it's so important? Two reasons: confusion about the SCT collimation process and perceived difficulty. At one time, SCT adjustment was admittedly a somewhat arcane art. The collimation directions in the users' manuals that accompany most SCTs leave a lot to be desired! But there are now many resources available providing clear instructions for SCT optical adjustment, especially on the Internet. In fact, I have a collimation primer posted on my sct-user group home page at <http://members.aol.com/RMOLLISE/index4.html> that should answer most questions.

But what about the difficulty factor? You've probably heard some SCT owners going on about how "hard" adjusting SCT optics is. I've got news for you: it is *much* easier to collimate an SCT than a Newtonian. An SCT owner only has to worry about adjusting *one* optical element, the secondary mirror. The poor Newt user has to worry about *two*, a secondary *and* a primary. And that secondary mirror has to be adjusted in several axes. No, SCT collimation *isn't* hard. Or at least it *shouldn't* be. But there's a catch.

Truth is, Celestron and Meade have long made this task more difficult than need be. Unfortunately, both manufacturers use either phillips or allen screws to adjust their scope secondaries. This is that "catch," it's what makes a *simple* task so daunting. While observing a collimation star at high power, you must reach around to the front of your scope and turn a tiny allen wrench. If you have a larger than 8 inch SCT, you may find *can't* watch the collimation target and adjust the secondary at the same time—you are unable to reach the allen

wrenches stuck in the secondary adjustment screws. If you have a recent Celestron SCT, watching the star and adjusting at the same time is not even an option. Celestron has thoughtlessly replaced the allen screws with phillips head screws ("crosspoint screws") in its new telescopes. At least you can temporarily lodge an allen wrench in a screw. With the phillips setup, you have to leave the eyepiece, carefully insert a screwdriver into the chosen screw, move it, and then return to the eyepiece to see what effect moving the screw has had. Not exactly an efficient way to perform collimation.

But now there's a solution. That simple, perfect product I was talking about is here: Bob's Knobs. Let's listen to what the "inventor," Bob Morrow, has to say about his product...

*Have you ever been frustrated trying to collimate your SCT? Probing for that little screw hole with an Allen wrench or Phillips screwdriver in the dark isn't much fun. Then there's the problem of walking to the front of the scope, making a little tweak, then walking back around to the eyepiece and discovering that you made things worse by adjusting the wrong screw in the wrong direction.*

*After working for an hour trying to collimate his C11, Bob Morrow of Centerville, Indiana, became so exasperated that he was determined to find a better way. Upon extracting one of the collimation screws, he realized that he could use a substitute thumbscrew of the same length that would allow him to just grab the thing and turn it without tools. Bob discovered that his numerous component catalogs contained several candidate screws, so he ordered samples of each and found a clear winner. Now Bob can do a collimation on his C11 in about a minute, which was a good thing since the scope needed it every time it was moved.*

*Bob kept people on the sct-user e-mail list informed on his progress, and before long he had several requests for Bob's Nobs, not only for the C11, but for other Meade and Celestron scopes as well. Naturally, every scope had different Nob requirements, so Bob was kept busy for several weeks obtaining suitable Nobs and sending them out to owners of the various scopes on the sct-user list who were kind enough to be "beta testers." As a result, Bob's Nobs became a reality for most of the Meade and Celestron SCT line.*

Sounds like a fine idea. But how is it in execution? And isn't removing your current secondary adjustment screws *difficult and scary*? The first thing I noticed about Bob's product was the well written, clearly printed, illustrated instructions. This is where many amateur entrepreneurs fall down. They have a good product, but the instructions look like something scrawled on scratch paper with crayons by a four-year-old. In contrast, Bob's instruction sheet makes installing the Nobs a minor matter. If followed precisely, there's no need to fear anything bad happening to your telescope. All you do is point your telescope tube downward (as insurance against anything falling out and hitting your primary mirror—something not likely to happen if the instructions are followed), loosen all screws a bit, and remove and replace the screws with Nobs *one at a time*. Remove screw, replace with Nob. Repeat until all three are done. Tighten the Nobs per instructions. You're done.

No fuss. No muss. This took me all of 15 minutes (if that) to accomplish. And this included removing that dratted orange secondary cover that many earlier Celestron telescopes are equipped with. With the Nobs in place, you cannot use the cover, but who cares? It looks pretty and gives my Ultima 8 the look of a "classic," but I'm more interested in precise collimation than looks. You *should* retain the original screws and cover

(if you have one) in case you need to return the scope to its original condition for resale, etc. Bob's instruction sheet includes simple collimation instructions, and the accompanying clear photos should allow you to get your scope's collimation in the ballpark indoors. Naturally, as always, the only truly precise way to collimate an SCT is outside with a real or artificial star. By the way, the Nobs are black in color and blend-in nicely with the secondary assembly, making them look like "original" equipment. My plastic dust cover still fit fine after Nob installation.

But looks ain't everything. How did this product work? How did my first collimation session with the Nobs go?



The actual use of my Nobs turned out to be, well, rather anticlimactic. Despite a heat index of 96 degrees Fahrenheit an hour after sundown on a hot August night, I set my Ultima C8 up in the backyard. Couldn't wait to see if these Nobs would really work. And I figured if I waited for cooler, more pleasant weather I might be waiting a *long* time! Since we seemed to be sitting under a high pressure weather system, I also suspected I might get some pretty decent seeing for my collimation attempt. I popped in an eyepiece yielding about 200x and took a look at the slightly defocused image of a medium bright star (Enif). One look at the Fraunhofer rings and I new I had some twiddling to do. Installing the Nobs had

inevitably left collimation pretty far out.

“Hmmm...let’s see, I’ll try this screw first. Nope. Not that one. Sure is easy to do this when you can look and tweak at the same time. Yeah...*that* one. Little bit more. Move this one a bit too. Yeah, that’ll do it!”

I took care, just as I would with regular SCT collimation screws, not to over-tighten any one of the Nobs. But I also followed the cardinal rule for SCT adjustment: never loosen a screw until its opposite number can’t be turned easily. The process seemed to go well, but to make *sure*, I moved the telescope to a different target star with a radically different RA and declination to make sure the collimation held. It did, no problem.

The above had taken me all of about 10 minutes to perform. Probably a record for me. Since I like to play with my new toys, I wasn’t ready to stop tweaking yet, though. The seeing was very stable, so I bumped the magnification up to 600x and took a look at the in-focus diffraction rings of my star. Good. Not perfect, but good. The prominent first diffraction ring was just slightly “broken” for part of its circumference. A very slight adjustment of one of the Nobs made it whole. These new collimation screws really provided the fine control needed to get an *in-focus* collimation just right!

I’m sold. This is just what you need if you care about keeping your SCT in perfect adjustment. A guitarist wouldn’t think of playing his instrument without tuning first, and you shouldn’t think of observing with your scope without a little tuning via collimation (most SCTs hold collimation a lot better than guitars hold tune, thankfully). Bob’s Knobs make this tuning process painless—even *pleasurable*.

## Why Amateur Astronomers are Like Salmon...

Pat Rochford

August 2000 - I am currently building an addition to Stargate (my observatory) which will accommodate its newest instrument, a CCD equipped C8. And I am once again reminded of just how difficult it is to explain to those who don’t know and understand us, what it is we do under the stars on clear, dark nights. And how even more difficult it is to explain the concept of an observatory.

It would be so easy if we could just drive to the local Do-It-Yourself Observatory Store and pick up the needed materials and advice. But alas, such a store exists only in the imagination of that rare species, the stargazer in search of a home for her or his telescope. Instead, one must choose the local Home Depot/Lowes and suffer the agony of explaining to the guy on aisle three, what must appear to be very bizarre concepts in construction.

This is the fourth observatory I’ve built since 1988 and whereas Stargate has a fixed roof structure (with attached observing deck), this new addition has a roll-off roof. Therefore, the first idea I have to get across to the guy at the service desk is that I’m attempting to build a ROLL-OFF ROOF OBSERVATORY.

“A what?” An OBSERVATORY ... to look at the stars. “Oh, you mean with a microscope?” Yes, something like that. I’m looking for some casters and channel to roll the roof on. (Extremely perplexed facial expression) “Roll the roof?” Yes, I need to be able to roll the roof away from part of the observatory in order to expose the micro, uh telescope to the sky. “I’m not really following you sir.” That’s okay, just point me to the aisle you keep casters on.

I’m in the hardware area of the store now looking at casters. “Find what you’re lookin’ for?” Yes, I think this

will do (2” caster rated at 125 pounds), but I only see six in the box. “How many do you need? Fourteen. “Fourteen! What are you makin’?” (Oh God, here we go again.) An observatory with a roll-off roof. (Extremely perplexed facial expression) “Roll-off roof? Yes, I need to be able to temporarily remove the roof so the telescope can see the stars. “Oh, so you’re an astrologer!” Yes, I’m an astrologer. Now, do you have any more of these 2” casters? “Sorry, I don’t work in this department”.

In this 6’ by 12’ structure, the roof will roll only half way off. This will leave half of it covered at all times to maintain a climate controlled area for the computer and other electronics. In order to seal this 6’ by 6’ area, the roof will incorporate exterior door thresholds on the ends ... turned upside down. (The soft neoprene gasket of the threshold will compress slightly when it comes to rest on top of the end walls. The side walls will seal using a strip of foam insulation riding on aluminum flat bar.) “Now let me get this straight, you want to use door thresholds for the roof ... turned upside down.” Yes. “You’re not jokin’? No. “You’re serious?” Yes.

Once again I have swam against the swift currents and sharp rocks. I have been driven to do it over and over again by urges I don’t fully understand. And though it’s always difficult, the rewards are more than worth it. Soon this new addition will be complete and as I sit there imaging countless dozens of galaxies I will smile remembering all the trips to Home Depot.

As I’m walking to the checkout counter with all my goodies, the gentleman who helped me has one more question. “I been thinkin’ ... if that telescope sits in a room six foot by six foot, that ain’t gonna leave you much room to stand there and look through it.” I won’t be looking through it. “Huh?” I’ll be watching the computer. At that point he just turned and walked away.



# My Back Pages

*One thing I occasionally worry about at a dark site is wildlife. Oh, down here, you're not likely to run into anything more fierce than a possum, but out in the middle of nowhere those twig snaps and snorts in the darkness can be pretty spooky! I admit I was a little startled during a recent lone expedition to the club's new dark site to hear what sounded for all the world like a charging rhino breaking through the brush. A white light quickly revealed, though, that it was merely those two problem children, Beavis and Butthead, fleeing from something.*

*"Huh-huh, is it still after us you dillweed?"*

*"heh-heh...this is cool."*

*Seems the boys had tried "cow tipping" with a farmer's BULL! There was no sign of said bull, but the two still scurried off into the darkness at full speed--but not before depositing a mayo jar. A mayo jar kept on Funk and Wagnal's front porch, a hermetically sealed mayo jar containing the latest...*

## Rumours

**Throwing their weight around.** Apparently some of the new Chinese refractors, most notably the 6 inch f/8 and the 4 inch f/5, have proven to be popular enough that Celestron has decided it wants an *exclusive* as far as U.S. marketing of these scopes goes. We hear some machinations designed to prevent other dealers from selling these scopes under the **Skywatcher** label have taken place. For the nonce, these nice scopes are only available from Celestron, but there are still alternatives if this kind of big business strategy doesn't sit well with you. **Hoon** in Canada is only too happy to sell to U.S. consumers, and at least one Skywatcher dealer in the USA vows that he'll be BACK!

**A little bird chirped** that the first of the new Chinese refractors equipped with corrector elements designed to reduce chromatic aberration may not come from Europe (as we'd been told) after all. Seems Mr. Gary Hand of **Hands On Optics** plans to market a 4" f/5 with one of these correctors. Call it a "poor man's Genesis" if you will. I know *I'm* excited!

**Long time Celestron CEO Alan Hale has stepped down.** Mr. Hale brought the company through good times and bad, and we're sure he'll be missed, though we understand his involvement in day to day operations in recent times was pretty minor. Whether this is just a normal retirement or

heralds some sort of regrouping/reorganization, we have not heard.

**What about that snazzy looking Meade LX-90** now appearing in the big Meade magazine ads? A few conspiracy buffs on the Internet (where else?) are now whispering that the scope photo in the ad *looks suspiciously like a computer image* or a "cut and paste job," not a real scope. What do I say? Pshaw. I have no doubt that

the LX-90 is very real. And I expect to be proven right in about four weeks when this scope, which Meade undoubtedly hopes will be the **Nexstar Killer**, hits the shelves!

**Speaking of Nexstars...**here come some more! A Nexstar 60, 80 and 114 are being introduced by the Big C. These are smaller OTAs on the now familiar NS single arm fork mount. The 60?...well...who knows what it's good for? But the 80 and the 114 are interesting. The 80 is clearly our old friend the Synta "Short Tube 80" on a computerized mount. Some people have actually been making these *themselves* by purchasing **Meade DS60** scopes on sale, discarding their OTAs, and rigging a way to mount an 80 tube on this **Autostar** controlled mount. So there *may* be some market for a ready-made "goto 80." My question, though, is, with the wide field of the 80...why do you NEED goto? Nevertheless, it will be nice to have computerized tracking with a proven OTA in such a fun and snazzy looking package! The 114? Could be a cheap and effective alternative to the NS5 *if* the scope's 4.5 inch Newtonian optics are any good.

**'Course, Meade has their ETXes** in 125, 90, 70 and 60mm apertures. And I really do like that Autostar's bells and whistles, too! If you've been wanting one and live near one of the **Nature's Wonders** science/geegaw stores, this may be your chance. NW, which recently bought out another "science" chain, is, I understand, switching from Meade to Celestron (not clear whose idea *that* was). At any rate, the NW store in my local mall is discounting all ETXes from the 125 to the 60 15% as they clear out inventory. Check it out!

That's all for now...ain't that *enough*?!

### The Anonymous Astronomer

