

**DOWN HOME gumbo astronomy  
from Chaos Manor South!**

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Outbound!”**

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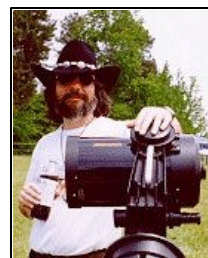
**“WATERLOGGED  
BUT UNBOWED!”**



Skywatch  
1207 Selma Street  
Mobile, AL 36604  
U.S.A.

**Uncle Rod Mollise's**

# **Skywatch**



## **Grand Post Katrina Issue!**

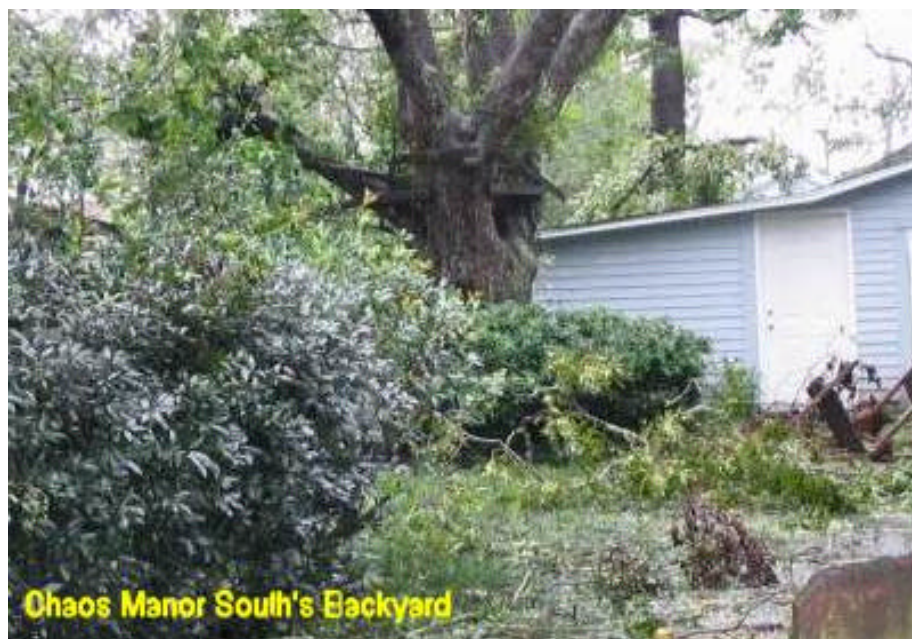
### **A Letter from the Gulf Coast**

#### **Dear Friends (“Howdy Y’all”):**

Some of you may have been wondering what happened to *Skywatch*. I'll confess that my little newsletter has developed a small following over the years; with each issue being read by several thousand amateurs during the time it's current. And I *have* gotten some “whatever happened to *Skywatch*” emails recently. Bottom line? It's been a wild ride for several months, starting on the morning when Hurricane Katrina came ashore on Uncle Rod's beloved Gulf Coast.

Luckily, we here in Mobile, Alabama were spared the worst, not experiencing anything like the devastating winds and water visited upon our brothers and sisters just to the west of us. “Near miss” is more than bad enough when you're talking a storm as huge and deadly as Katrina, but Mobile was back to something resembling normalcy in a few weeks. There are there are still *plenty* of signs of Bitch Katrina's passing even four months down the line, though, and plenty of people in the coastal areas of the county are still hurting *bad*.

The main thing standing in the way of *Skywatch*? Uncle Rod earns the largest part of his livelihood as an engineer at Northrop Grumman Ship Systems in Pascagoula, Mississippi (no, unfortunately, astronomy writers don't get paid like Stephen Kings, so most of us must hustle along doing day jobs). If you saw *any* of the video of the aftermath of the storm, you don't have to be told that Pascagoula and the shipyard were absolutely WRECKED. Much



**Chaos Manor South's Backyard**

of your old Uncle's time has been spent helping his colleagues get their homes back in order (where possible), and putting things back together at work so we can proceed with the testing of DDG 100, the Navy's newest AEGIS Class Destroyer (she took quite a pounding). What was it like immediately following Katrina's passage? The following paragraphs were written not long after the winds finally died down...

"Dorothy and I are still at home and doing well. For the last two days I've been checking my email once a day, nursing the laptop along to conserve that power-hungry P4's waning battery. Frankly, two days after the storm, we've decided we've had enough; decided to leave Chaos Manor South and the Garden District for at least a while. It's just pain miserable in this heat--90F in the shade; don't even ask about the humidity. There's no power. No gasoline to be had save what's in the tanks of our vehicles. Grub? The food is whatever's still good as the refrigerator assumes room temperature, and those cans of Vienna sausage (pronounced vye-enna) and Chef Boyardee Rod laid-in as Katrina approached."

"Our minor discomfort is really nothing, of course. It PALES in comparison to what our neighbors in Pascagoula, Ocean Springs, Biloxi, and, of course, New Orleans are suffering. We do have the opportunity to setup temporary housekeeping at Dorothy's office at the University of South Alabama, however, so, guilty as we might feel doing so, it's hard to resist the lure of the air-conditioning, hot food, and Internet connectivity that, we're told awaits us there."

"What have the nights been like? Long. Quiet. Very quiet indeed. Except for the passing of an occasional police or National Guard vehicle, the streets are silent and deserted; a curfew is in effect from dusk until dawn. Very dark out

there, too. There are no lights here in the Garden District, and I don't believe that anybody's got lights across most of the Mobile metro area (save those folks prescient enough to buy generators before the storm). Perhaps you'll forgive me, then, if, in the midst of all this trouble and suffering, I started thinking about the night sky."

"Heat is not something that bothers me too much. I've lived the balance of my life down here on the coast where summer nights are rarely cooler than 80F. Yes, we've got plenty of air-conditioning (two massive heat pumps serve Chaos Manor South), but I grew up mostly without it, and can still tolerate the occasional Mobile summer night without it. To a certain point. "Toleration" involves an electric fan or at least open windows. Unfortunately, neither of those things is currently an option. I'm not going to waste the waning batteries that power the PC and the radio for a few hours of an inverter-run fan. Open windows? We've installed storm windows to keep the power bills down, and, apparently, something has swollen in the incredible humidity. I found there was ONE upstairs window that could be opened without doing major damage."

"The night after Katrina I tried to sleep. Tossed and turned, turned and tossed. Just too gull-derned-consarned hot to doze off, even with the aid of a shot or three of Rebel Yell Whiskey. Decided I might as well get up. What to do? Listen to the same reports on the radio I'd listed to all day (the media didn't know much more than we did anyway...for the most part we and they were cut off from what the wider world was seeing of the devastation)? And I really couldn't bear to hear another word about how bad things were. Well, let's see. What happens after a major hurricane? The power goes out. And the cloudy skies usually clear dramatically..."

"Well, what the hell. I grabbed a pair of Burgess 15x70s and the Orion StarBlast richfield Newtonian scope and headed for the backyard. Very carefully. As you can see from the picture, out back was mostly mud and downed tree limbs. Once I found a relatively clear spot, I looked up. What did I see? The Cygnus-Cepheus stretch of Milky Way just 'bout put my pore ol' peepers out. I mean blazing, folks, preternaturally bright. TSP bright. Maybe it was just my fevered brain's imagination kickin' into four-wheel-drive, or maybe the powerful winds of Katrina *did* bore a hole in our area's usually hazy late-summer skies."

"Whatever. I spent the next several hours traveling up and down the Milky Way in style. I could have wrestled a C8 into the yard, but there was really no need to. Hell, the little 4 inch StarBlast returned views that reminded me of what a 12 inch can do from Prude Ranch on a good evenin'. For example, The North America Nebula was as prominent as I've ever seen it in a four inch scope. Were those wisps the Pelican? Folks, this was without an OIII filter."

"The scope view was nice, and the 15x70s delivered a 3D panorama of the celestial Swan, but almost more impressive was the view with my unaided eyes. What was that to the northeast? The Double Cluster, looking as good without any optical aid as it does from any dark site, and—no lie—seeming to easily compete with the 10x50 binoc views I usually have from the suburbs. I stayed with the magic sky until dawn began, and, with the rising Sun, it began to resemble what I usually see on an average night from my backyard. With day, the friendly stars fled and depressing reality returned."

"The best description I've heard of the condition of our Gulf Coast came from a nurse who was trying to treat patients with few resources

of ANY kind at her disposal: "We are now a third world country."

"Experiencing post storm conditions, even in relatively lightly damaged Mobile (as such things go), leads me to reflect upon the INSANE hubris of the people, who, in the 50s, 60s, 70s, and even the 80s, proposed that the U.S. could survive (or win) a thermonuclear war. Tonight, with only a relatively small part of the nation devastated, men, women, and children are dying and the survivors, most of them, still haven't received any aid of any kind. There are bodies floating in the water, and, in the case of some areas, we have no idea what the conditions are. Mississippi's Governor, Haley Barber, took one look at Waveland, Mississippi and declared that he now knew "exactly what Hiroshima looked like."

"Those of us who lived through Camille in 1969 thought we'd survived the worst that the storming Gulf could throw at us. We knew *nothing*. Where Camille left the empty and gutted shells of buildings, Katrina left...NOTHING."

I know above makes for painful reading, but at the time I wrote it we on the Coast had plenty of pain to spare and precious little hope. Even now, as Christmas approaches, while things are incalculably better, there are still plenty of people suffering all across the Coast. What do we want y'all to do? Above all, just lend us a kindly ear or two. We know our "hurricane stories" are depressing, and, after four months, are beginning to bore. But please just *listen to us*. That helps almost as much as a FEMA trailer. In fact, that helps more than almost anything you can do for us.

Uncle Rod

## How Uncle Rod Survived the

## Chiefland Star Party with Only Two Eyepieces

Multiply Your Observing Pleasure with Denkmeier Power X Switch

Rod Mollise

And I could probably have done it with one. No, you *can't* have the rest of my collection of Naglers and Panoptics, but I'll admit that, thanks to the Denk "Power x Switch" diagonal, I could probably live without most of them now.

I'm getting way ahead of the story, though, something I seem to do when I'm excited about a new astro-product. Before talking about this new creation from the Denkmeier gang, we need to discuss a subject that's caused plenty of arguments among amateur astronomers in the virtual astronomy hangouts, Yahoo and sci.astro.amateur, and down at non-virtual local astronomy clubs: *diagonals*. You know, the little devices that bend the light coming out the back of your scope in a 90

degree angle so you can view in comfort. There are plenty of questions and controversies surrounding these seemingly simple accessories: How important is optical quality in diagonals? Do you need those new-fangled enhanced coatings? Why would anybody in her right mind pay 400 bucks for a diagonal to stick in the back of a 1500 dollar Meade or Celestron Cat?

Before I attempt to answer the above questions in my typical feeble and wrongheaded fashion, I should say that this article is aimed *mainly* at SCT owners. While diagonals are an issue for refractor and MCT users too, I don't have too much interest in those scopes or an abundance of knowledge about them. I'm just a simple (minded?) country boy havin' a ball with the inexpensive—but effective—Schmidt Cassegrain Telescope. And there are certainly a lot of folks who love SCTs as much as I do. A quick trot across a club or star party observin' field shows that. It reveals something else too: there are many of us who seem content to stick with the cheap, plastic Chinese diagonals Meade and Celestron now throw in the boxes with their telescopes.



If you've been working with SCTs for a while, you've probably heard two diametrically opposed opinions when it comes to star diagonals, "A good diagonal is almost as critical to SCT performance as a good eyepiece," and, on the other side, "Look a *really* lousy diagonal might make a *little* difference in image quality, but having an optically perfect star diagonal is not nearly as critical for good images as having an excellent secondary mirror is for a Newtonian telescope." The truth, thirty years of SCT using tells me, probably lies somewhere between these two extremes.

The SCT's diagonal may not be *quite* as critical to the quality of the final image as the diagonal/secondary mirror of a Newtonian, sure (that's what optical experts tell me, anyway), but there's no doubt that an optically excellent diagonal *can* improve any SCT's performance. If you're still using the star diagonal that shipped with your Celestron or Meade, you may be amazed at just how much better Mars—or M13—looks in your scope after you dig into your pockets and pony up for a super-premium 2 inch star diagonal. Not only is the wave front error on these diagonals better, the mechanical alignment of their mirrors is also usually superior, meaning that rotating the diagonal for a comfortable viewing angle doesn't shoot your collimation all to hell.

How about high reflectivity coatings? That's another selling point of the high-priced jobs. Only you can decide whether it's worth it to part with the 300 or more George Washingtons the high-reflectivity coating equipped 2 inch diagonals cost. The fact of the matter is this, however: stock diagonals shipped with telescopes (or the el cheapos you can buy in the 75 – 150 dollar range) have coatings that, *at best*, reflect about 80% (maybe 85% with

a tailwind) of the light that strikes them. The Fancy Dans, on the other hand, feature coatings that can pass as much as 99% of the light that enters them on to the eyepiece. That means that, contrary to what some old-timers may have told you, you *will* notice a difference in image brightness. It won't necessarily blow your socks off, but it will be there.

You've probably noticed that I've been talking "2 inch" diagonals mostly. That's because other than a little additional weight on the scope rear end, there's no downside to a 2 inch. A 2 inch opens up the entire world of wide field eyepieces to your Cat. Do be aware, however, that a 2 inch diagonal won't produce images that are any better than a 1.25 inch of equal optical quality.

Since I'm mainly addressing the SCT ranks, can I speak freely about a couple of our dirty little secrets? Hey, wait! Is that a dobsonian owner lurking in the back row of the audience? "Hall monitors, throw him out!" OK, anyway, you and I know that as much as we love our telescopes, they do have a couple of liabilities. First, compared to the bigdobs sprouting on star party observing fields, our aperture is limited. Heck, even if you own a C14, that person set up next to you with a 30 inch truss tube job will be constantly referring to your "little scope." Yes, we're aperture challenged, and that means every photon we can squeeze out of our telescopes is vital. Also, because of the SCT design, what light our "little" mirrors can collect is reduced by having to pass through the corrector and be reflected by the surfaces of three mirrors—primary, secondary, and diagonal. What this all means is that, for us, anything that can help our scopes deliver *more light* is vital. Sometimes the boost from a high reflectivity diagonal is enough to make the difference between seeing a little sprite of an NGC galaxy and not seeing it.

Have I convinced you to spend the 300 dollar fare required to get a good diagonal? If I have, let me urge you to go just one, wee step further. Consider spending less than 100 dollars *more* than that for a diagonal that's so revolutionary it may not only improve your images, but also change your eyepiece buying habits and bolster your deep sky observing skills. I'm talking about the Denkmeier Power x Switch diagonal (that's a distinctive name, but I hope the Denk crew will pardon me if I refer to it more simply as the "Powerswitch" for the rest of this article...that rolls off my lazy Southern tongue a little easier).

What's a "Powerswitch?" The story began quite some time back with a phone call from Russ at Denkmeier. He wanted my opinion on the appeal of a diagonal that would allow SCT owners to switch in a reducer or Barlow without removing the eyepiece. Mindful of similar gadgets that have come and gone over the years, I told Russ that I *thought* the idea would fly if the quality were there. Now, I really didn't think I'd have anything to worry about in that regard. As most of y'all know, I'm mightily impressed by the quality of the Denkmeier binoviewers (I've gotten in Dutch with the folks moderating at least one online venue for saying that the Denks beat anything else out there—but that's how I honestly feel). Still, as I said, gadgets come and go in amateur astronomy, and it's hard to tell what will be genuinely useful and what will be just a gimmick until you get the thing out into the field. Sometimes, what sounds like a good idea ain't one after all. You don't, for example, see anybody bringing back the Unitron Unihex diagonal, do you (young sprouts: ask an old timer what I'm talking about)?



Some time and several hurricanes intervened after my conversation with Russ. Then, one day, one of those white Denkmeier boxes arrived at the doorstep of Chaos Manor South. You can bet I didn't waste any time tearin' it open to see what lurked inside, which was the beautiful Powerswitch diagonal shown below. Man, oh, man, I couldn't wait to give it a try. Which didn't happen for a long time. A little storm called "Katrina" blew through town, you see. Gulf Coast folk are hardy souls, though, and we amateurs down here were not about to let a little thing like a hurricane spoil the fall star party season. That being the case, I took a few days—wish it could have been more—and headed for the dark skies of the Chiefland (Florida) Astronomy Village and the 2005 edition of the Chiefland Star Party to give the Powerswitch a good evaluation.

But I'm getting ahead of myself again. What's this diagonal like? What's in the box? As you can see from the picture, it's a beautifully executed thing with the diagonal portion being finished a glossy black. It's got that typical Denkmeier appeal, with fine machining, brass compression rings, and beautiful metal aperture plugs rather than smarmy plastic caps. Forward of the diagonal is the Powerswitch assembly itself, which is composed of two slides that can be pushed in or pulled out. The slide on the right introduces a .66 reducer into the focal train, while the one on the left puts a 2x Barlow in the light path. With both slides out, things are normal, without anything between eyepiece and secondary. The way it works seemed easy enough to understand, but Uncle Rod's backwoods cousin, Elmer, asked,

"But wut happens if you push BOTH slides in, Unk Rod?" It was all I could do to keep from slappin' the boy—I keep tellin' his mama he ain't right in the head. At any rate, you *can't* push both slides in at the same time, and it wouldn't make any sense to do so if you could.

This is one big, pretty sucker. Like a Denk binoviewer, it's a handful weight-wise (don't worry; it didn't overload even a lightly mounted C8)

the Intes included a generous helping of hyperbole.

Chiefland time! In the car went the Celestron Nexstar 11, my laptop, and (only) two eyepieces, a 12mm TeleVue Nagler Type II and a 27mm TeleVue Panoptic. Yes, I own a pretty good collection of TeleVue oculars, but I left 'em at home on purpose. I figured that the true test of the Powerswitch Diagonal would be whether I missed my other focal



and quite impressive in the daytime as well as at night. The diagonal's mirror is available in one of two varieties. You can get it with 97% reflectivity silver coatings or, for some extra moola, with 99.7% (!) dielectric coatings. I reviewed the 97% version. Optics? Denk claims 1/10<sup>th</sup> wave, which seems accurate based on my observations. If you're smart, you'll let your eyeballs and maybe a planet be the judge of these things. I've been using a 2 inch Intes diagonal for several years that claimed to be 1/10 wave too, but when it was compared to the optically excellent Denk, it became clear that the advertising claims for

lengths. Oh, *of course* a bottle of fine Rebel Yell Bourbon went into the trunk, too, though I vowed not to break the seal till I was done testing the Powerswitch. Tent? Sleeping bag? Are you *kiddin'*? Uncle Rod "camps" at Chiefland's Holiday Inn these days.

Arriving on the final Thursday of this weeklong star party, a look at the sky revealed what looked like typical Chiefland weather: scudding clouds during the day that would clear away and reveal the dark reaches of space after sunset. Hate to bring you Yanks down, but we hit 85F during the daytime during this first week of November. Cool enough at

night, though. Perfect deep sky weather if you ask me.

The Nexstar and the laptop were booted and ready. Where to first? The initial entry in the observing list the planning program running on the computer had generated was M13. Why not? Bit low, but, *hail*, how can you pass up Hercules any time he's above the horizon? In went the Powerswitch and the 27 Pan. I didn't use the nicely machined SCT rear port adapter/2 inch visual back that's included with the Powerswitch, as I use one of the big Eyeopener visual backs on the C11. All I had to do was slide the Powerswitch into the Eyeopener. Since I do mostly visual observing with the NS11 with it set up in alt-az mode, I was a little concerned that the Powerswitch's "reducer switch" would get in the way of the focus knob and prove irritating (see image). Not only did it not impede the focus knob, it wasn't a bit irritating. In fact, it actually helped. When it's late, late, late and Old Rod gets a case of the *stupid*s, he

often has to fumble around to find the focus knob. When the reducer switch was extended, it helped me easily locate that that elusive control.

OK, click on M13. "Telescope slewing," says Skytools. "Slew complete." Eye goes to eyepiece. Beautiful, as always. Little teeny stars spilling out of the Pan's field. But *how* beautiful? While I longed to try the reducer and Barlow/multiplier switches, I restrained myself. I wanted to check the optical quality of the diagonal first. Out with the Powerswitch. In with the Intes 2 inch. Back in with the Powerswitch. Vice versa. One more time. Verdict. The Denk was *noticeably* superior to my "enhanced" Intes. The image was brighter and, I felt, slightly sharper and "snappier." Yes, this hardly quantifies the Powerswitch's optical quality, but I've looked through enough eyepieces over the last 40 years to be able to tell when one setup is better than another, even if I can't quantify squat. *The Denk was better*

*than the Intes.*

OK, back in went the Powerswitch. Now I'd have some fun. Pushed in the reducer slide. Some folks have asked me whether using these slides gives the scope the shimmies. It doesn't. Not with the NS11 or—even—with my C8 mounted on its light CG5 mount. The action of the Powerswitch slides is not *overly* easy. It can't be; you don't want things rattling around and going out of alignment. But the action is far from "too tight," either. I was somewhat concerned about the action of the switches introducing vibration, and checked carefully, leaving the Nexstar 11's vibration suppression pads in the scope case. Any shaking caused by sliding the switches in and out was minor and was less than that which would be incurred by inserting or removing a big, honkin' 2 inch eyepiece.

What was the image quality like with the reducer in the light path? Very good. It seemed pretty much identical to Denk's standalone Starsweeper reducer—that is, similar to Celestron's f/6.3 reducer/corrector at the edges and a lot easier to use. Vignetting? There was a *little* with the 27 Pan, but that was, I'm quite sure, due to the baffle tube in the scope and not because of any failing in the Powerswitch (it boasts 37mm of clear aperture). At any rate, this vignetting was very minor indeed and did not detract from the view one iota. The 27 Pan did so well, in fact, that I was a little sorry I'd left its 35mm sister at home.

But, heck, I could have gotten good image quality with the Starsweeper or a





cheap Celestron or Meade reducer/corrector. The *real* beauty of this system was not that it delivered good images, but that I could remove and reinsert the reducer at will in just a couple of seconds. This allowed me to easily compare views and determine "optimum" magnifications for difficult deep sky objects. With a standard diagonal, the fact that I'd have had to remove the diagonal to switch out

Barlow system is, but it must be a good one. Running the 27 Pan up to 200x didn't stress it out at all. OK, then, bring on the 12 Nagler. Sure, the sky was dark and steady and that helped, but a poor Barlow would not have delivered the crisp 466x images that I was seeing with the Denk Barlow switched in. Small, crisp stars and good contrast were the rule. Yes, my TV Big Barlow will do that too. But I don't use it often,

of your scope. Nothing more, nothing less. *Sure* you have to refocus. But it ain't that hard, troops. Especially when you realize that all you have to do is remember to turn the SCT's focus knob (R)ight when you (R)aise the magnification with the Barlow and (L)eft when you (L)ower it with the reducer.

What really makes the Denkmeier a worthy addition to your setup? Well, the optical quality is a factor. So is the convenience and novelty of being able to slide a reducer or Barlow into the path of your eyepiece at will. But that's not what makes this such a revolutionary tool for the SCT user. What makes this a groundbreaker is the way it changes your observing routine for the better. Yes, I love my eyepieces, but not having to hunt for them or go thorough the motions of trading them in and out of the diagonal has improved my visual deep sky results a lot, even with just a couple of Powerswitch observing runs under



the reducer or, at least, remove the eyepiece and replace it with something else, would have discouraged me from fooling around with a lot of different powers. When you've got one of Fornax's dim little ghosts of a galaxy in the eyepiece, you don't want to remove your eye from the eyepiece for fear of losing that elusive DSO. And that was the thing; I didn't *have* to remove my eye to switch the reducer in and out, just slide the smooth slide back and forth.

The Barlow/amplifier on the Powerswitch? Worked just as well. I don't know what the design of the

as it's a hassle to pull the eyepiece out, put the Barlow in, replace the eyepiece, and wonder if I've bumped the scope off target as I focus.

That last brings us to a curious reaction a few people have had to the Denkmeier Powerswitch. They are surprised that you have to refocus when you switch the Barlow and reducer in and out. Don't ask me why they are surprised. It's clear from the instructions that come with the diagonal (they are provided on a CD, by the way) that what you're doing with the 'Switch is inserting a Barlow or reducer into the light path

my belt. With the Powerswitch, my eye stays on the object in the field except for a brief interlude for focusing, and I am much more inclined to experiment with higher and lower powers on difficult deep sky objects that I would otherwise be. Yes, I have been enjoying the deep sky for 40 plus years, but I have no doubt that this thing has the power to make me a better observer—it seems as if you can indeed teach an old dog new tricks.

Did I say I could have gotten away with bringing just one eyepiece? In truth, I could have. The 27mm Panoptic provided, roughly, 50x,

100x, and 200x, a reasonable range for general deep sky observing. It was nice having the added top end of the 12mm at hand, however, as I was intent on doing all those tiny planetaries hiding in Aquila and Cygnus. No, as I said, I'm not getting rid of the rest of my eyepieces, but I doubt they'll get much use anymore.

Oh, and I should also mention that Power x Switch diagonal is available in a couple of other models, too, which are suitable for use with refractors and binoviewers (the model I reviewed, the S1, is intended for single eyepiece viewing, mainly with SCTs). Verdict? If you're ready to get rid of that Synta 1.25" diagonal you've been using for so long, think carefully about the Powerswitch. Even if my claims regarding how it can help your observing technique don't impress, consider the fact that the images it produces are good enough to make spending lots of money on large sets of expensive eyepieces unnecessary and—frankly—a little bit silly. Yep, you can easily “save” yourself enough bread for a week's visit to deep sky wonderland in Chiefland, even if you throw in a couple o' bottles of good, ol' Rebel Yell.

## The Dummy's Guide to Deepsky Part II

### A Deep Sky User's Guide for the Rest of Us...

#### Rod Mollise

*Last time, in the Summer 2005 issue, we installed and configured Deepsky (DAS, “Deepsky Astronomy Software”). This time, we'll actually start using it.*

Dismissing the “help” window allows you to see what it's been covering up, the main program screen, a spreadsheet full of objects, the Messier objects, to be exact. No matter what you set your filters to, you'll always be greeted by these familiar Ms in spreadsheet number one (you'll notice, by the way, that there are tabs for five different spreadsheets (see **Plate 8**)). Frankly, I really don't like this. I'd much rather the program start up with my last-used spreadsheet, but it only takes one button push to retrieve the previous sheet of objects, so this is not a tremendous annoyance.

Remember: this is a *spreadsheet*, not an observing list. You'll use spreadsheets to build an observing list, which is called a “Plan” in *Deepsky* parlance. If you understand that, you've basically got *Deepsky* licked, and everything else is mere mechanics. Before you can create the observing list for the evening, you'll have to have a set of objects to choose targets from; the spreadsheet is that set of objects. Where does the spreadsheet come from? You'll retrieve spreadsheet objects from *Deepsky*'s massive database. That is your first task in planning tonight's observing run.

Before you begin using spreadsheets, though, it's a good idea to set up the columns you want to display. Not showing things like “galactic longitude” will mean you don't have to scroll horizontally to view all the data in a spreadsheet. Set this up by using the “Spreadsheet” submenu under the same Prefs menu we visited earlier. Select the “Formatting” tab in the window that appears and click

“Select Columns to Display” to arrange things to your liking.

You've got a spreadsheet full of Messier objects, but these likely don't contain the objects or all the objects you're interested in observing. How do you get candidate DSOs out of *Deepsky*'s databases and onto the spreadsheet so you can work with them? You can do this the easy way with “Preferences and Filters,” or the hard way (for some of us computerphobes, anyway) with *queries*.

To use Preferences and Filters to retrieve objects, begin by selecting the “Filters” tab at bottom of spreadsheet. The first time you use *Deepsky*, you might want to set “minimum altitude” here (See **Plate 9**). Entering a figure of “30,” for example, will exclude all objects that are not at 30 degrees of altitude at the current time. Remember, of course, to reset the program to the time you'll be making your observations (in the Prefs date/time menu) if you've previously told *Deepsky* to use your PC's system date and time. There are several other entries you can make in this window, but Altitude is the most important. I normally also check “include altitude/azimuth” and “include rise/set times.” You can leave everything else alone for now.

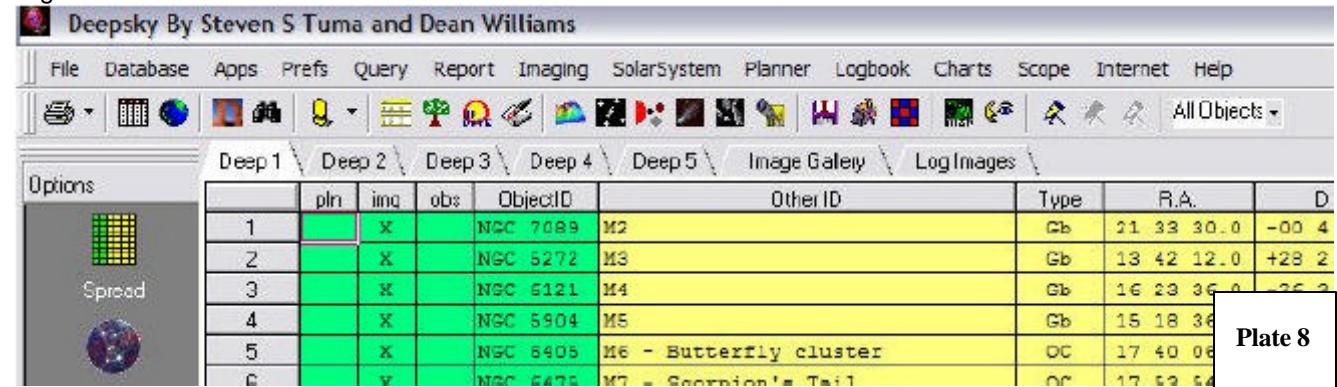
Next, you'll begin selecting the *range* of objects that will go into your spreadsheet and onto the screen. Click the “Select” tab, which is just to the right of Filters, and you'll be allowed to choose “constellation,” “catalog” (of objects, NGC, for example), and “type” (as in type of deep sky object) via buttons and drop-down menus. For our example, let's select Scorpius, NGC 2000, and “all types.” One slight oddity here is that if you've used Select previously, you must hit clear to enter a new constellation, catalog, or type. For example, if you've entered “Ursa Major” in the constellation field in a previous



session, you'll have to hit clear before you enter "Scorpius," or you'll wind up with both Scorpius AND Ursa Major in your search/retrieval range.

lookup. It's less confusing, at first, however, just to click on spreadsheet columns to sort the objects after they're displayed.

doing that returns *all* the visible Messiers from *all* constellations, and there's no way to modify What's Up Messier.



You're almost ready to hit the "go" button, but not quite. If you're using a 4 inch refractor from suburban skies, you may not want ALL the NGCs that Scorpius/NGC/all types will deliver to your spreadsheet; some will be so dim they will surely elude your little scope. You need to *filter magnitudes*. To do that, select the next tab over from Select, "Ranges 1." The fields you mostly need to worry about are those associated with "Magnitude 1" (**Plate 10**). Let's set "upper limit" (dimmiest) to 10 (999, the default, will retrieve *all* magnitudes). The lower limit (brightest) setting is -1, and you can leave that as it is. Also, be sure to leave the "Include Blank" boxes in the Magnitude 2 and Size fields checked. You should *uncheck* this same box for Magnitude 1. Doing these things will ensure that objects for which size and/or magnitude is uncertain (many nebulae) will be included in the spreadsheet, normally a good thing.

The tab to the right, "Ranges 2," lets you set separations and position angles (for double stars) as well as search parameters for object type. You can leave this alone unless you're going after doubles on your first *Deepsky*run.

The next tab, "Sort," can also be bypassed at the moment. This, as you'd guess, sorts object during

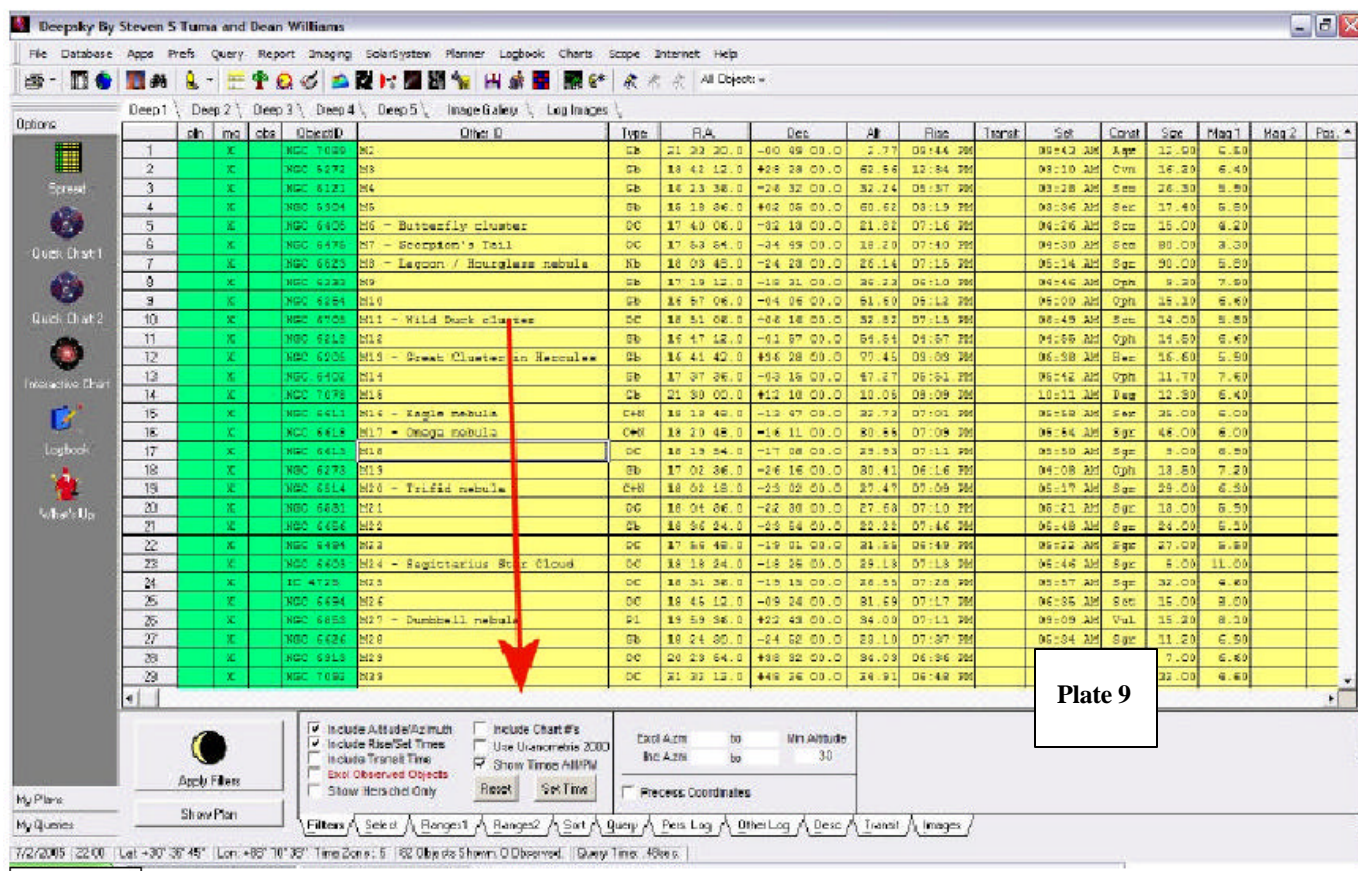
Now, you're ready to light the fuse. I know it seems as if we've had to do a lot of work to get here, but, normally, the only tab in this area you'll come back to again and again is Select, when you want to specify different constellations and object types and catalogs.

OK. Click the "Apply Filters" button to the left of the tabs we've been working with (the button showing the current Moon phase...cool, huh?). When you do, the program will think for a while—a progress bar will appear at the bottom of the screen--and your spreadsheet display will eventually change and should show all the NGC objects in Scorpius brighter than magnitude 10 and higher than 30 degrees in altitude for the time you've specified.

Purty simple. But what if you want to narrow things down a little? That's fairly easy to do by altering your Ranges and Select choices. *Unless* you want to include *only* the Messiers in Scorpius (or any other constellation). This is one of the few areas where *Deepsky* offers no immediately obvious solutions—not using Filters/Ranges, anyway. Oddly, there's no "Messier" choice in Select or in any of the program's catalogs menus. You can easily display visible Messiers by clicking "Whats Up Messier" from the Query menu (to the right of Prefs in the top of screen menu bar). Unfortunately,

At first I was stymied and unhappy over this seeming limitation. I wanted *just* the Scorpius Messiers, dangit. I cooled off for a minute, did some looking around and manual reading (horrors), and found that there *is* an easy way to show a single constellation's Messier objects, but it involves using the Search function, which we'll talk about in a minute, rather than filters or wizards or queries.

And what *about* the Query function mentioned above. You can access this tool either by clicking on the tab next to "Sort" at the bottom of the spreadsheet or by choosing "Query Builder" from the Query menu at the top of the screen. If you're used to using databases and, in particular, SQL databases, you'll find these query tools quite powerful, and I'm sure they will allow you to select out Messiers or anything else you choose from any constellation. *If you know how to to use them.* Unfortunately, if you're as computer-ignorant as Unk Rod, you'll find this whole query business a little scary and will stick to "select," "What's Up Messier," and the more powerful, but still easy, "What's Up Wizard." That's OK. You can do anything you want using Filters and the What's Up features along with *Deepsky*'s very powerful search function. You may not achieve power-geek status by doing things the easy way, but



your blood pressure will stay down  
and your hairline will stay intact.

The “What’s Up Wizard” is one of the best features of the program, and really makes thinking in SQL unnecessary for most of us. Just click on this Wizard in the Query menu (**see Plate 11**), answer the questions it asks you, and you should have no trouble filling a spreadsheet with the objects of your desire. No, it won’t pick out the Messiers, but it will pick out anything else.

So, let's say you've pushed the Filter button and you've now got a spreadsheet on screen. What the aitch-E double-L can you do with this list of (let's say) Scorpius NGCs? The first thing you'll want to

do is sort them to suit your preferences. Maybe by object number, maybe by rise time, maybe by magnitude. It's up to you. To sort the chart by a particular column value, just click on the column heading you're interested in. Rise (time) for example. By clicking a second time, you can reverse the order ascending/descending. One annoyance here is that when you sort by M number, M100 comes after M10, and you don't get M11 until after M109. M2? After M19. Ah, well.

You've got bunches of objects displayed, and you've sorted them into some kind of order that's meaningful to you. If you're happy with what's onscreen, you *could* just click the li'l printer icon at the screen

top left (it's a member of a horizontal row of mostly useful and identifiable toolbar icons) and print the spreadsheet you've got in front of you. If that's what you want, that's fine. *Deepsky* does a fine job of printing, allowing you to specify just how you want the finished hardcopy to look. But I think you'll find that the spreadsheet isn't *quite* right. It either shows too many objects (the whole NGC bunch from Scorpius, for example, some of which are not overly interesting visually) or not enough (maybe you're also interested in viewing objects in Sagittarius). What you really want is not a *spreadsheet*, but the aforementioned *Plan*, an Observing



How do you move choice objects from the spreadsheet and into this hypothetical Plan? Not so fast, not so fast. You may need help deciding if you really *want* a particular object to go into your plan before you put it there. Is it suitable for you, your site and your scope? To get this help, double click on an object's ID. Let's do that to M7, for example. Place your cursor on this object's ID field (NGC 6475) or its "Other ID" field (M7 – Scorpion's Tail), and double-click. In a few moments, you'll be presented with a window *full* of data,

Williams chart for your object, which can be zoomed in and out (only the Williams charts are available here; you can't show a Cartes du Ciel chart in this window, apparently--unfortunately). Once you've made up your mind whether M7 is an appropriate object to view on this evening, close the info window, and look for a spreadsheet column called "pln" (this should normally be the leftmost spreadsheet column). Click this block for M7, and it will be added to an Observing Plan. The

beneath "Apply Filters" at the bottom left of the screen. When you do that, the original spreadsheet will be replaced with one containing a single object, M7. This is your plan, which can be sorted, saved and printed. Once you've looked at the plan, you'll probably want to go back to your original spreadsheet to choose more objects for inclusion. Here we run into another of the program's minor peculiarities. The Observing Plan now occupies the Spreadsheet

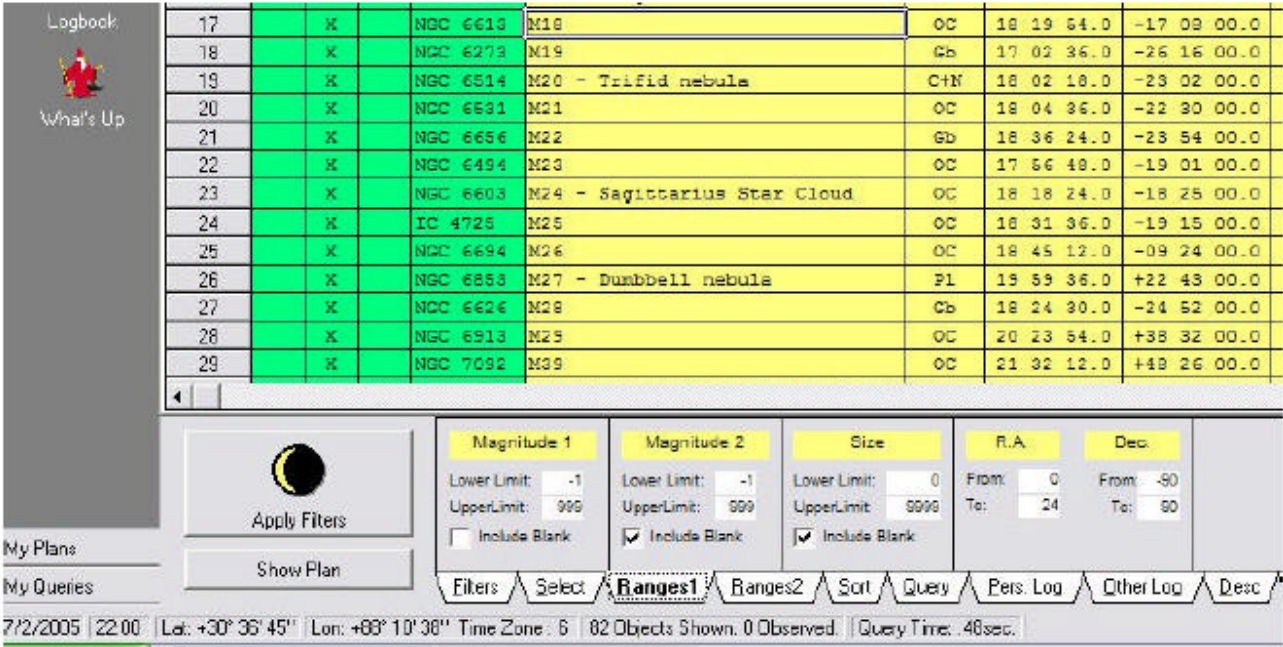


Plate 10

including a picture if one's available as shown in **Plate 12**. Running along the left are the cluster's vital stats like magnitude, type, size, etc. While I wish Mr. Tuma had included the Dreyer NGC "codes" in this data, what's here, along with the copious observer's notes available for many objects by clicking the "notes" button of this window (**Plate 13**), usually gives you more than enough information to decide whether a particular DSO is something you *really* want to view. Clicking the "charts" button in this window creates an attractive Dean

Plan is identical to a spreadsheet, but it will only contain objects you select from other spreadsheets for inclusion in this manner. Actually, clicking "pln" for M7, first delivers an informational window asking you which "tab" you want to add the object to. This refers to the spreadsheet tabs. If you click the "Spreadsheet 1" button, an acknowledgment window will appear briefly, and you'll be returned to your original spreadsheet, which will appear unchanged except for an "X" that's been placed in M7's "pln" column. To see your Plan, you must click "Show Plan," the button directly

1 tab. To get the original spreadsheet back, you'll need to either apply your filters again with a click of the button or, if you're working with the Messier list, click "What's Up Messier" again. You can avoid this need to restore your spreadsheet by placing your Plan on one of the other tabs, 2, 3, or 4 if you've got your working spreadsheet in tab 1, as you normally will have. If you place the plan in one of the other tabs, you'll be able to toggle back and forth between it and tab 1 without clicking filters or anything else to restore the





Plate 11

spreadsheet. Oddly, though, if you do things this way, the program does not place an X in the pln column on your spreadsheet, even though it places selected objects in the Plan. Keep in mind that every time you add a new object to your Plan, you'll have to click "Show Plan" again to make the new object appear, no matter which tab you've placed the Plan in.

Once you've got a Plan going, you can continue to add objects to it, either from your original spreadsheet, or from new spreadsheets you generate with the What's Up Wizard, Filters, or queries. Once your Plan is complete, be SURE to save it. If you don't, it will go bye-bye into Never-Neverland when you exit the program. To save it or bring it back, go to the Plan menu in the top of the screen menu bar and choose "save" or "open existing plan." Normally, you'll save into the Deepsky Astronomy Software directory on your hard drive. In here, by the way, are MANY wonderful ready-made observing plans for your use. Use "open

existing plan" to load these useful Plans.

Once you've got a Plan ready, the next step is, guess what? *Get out and observe.* A look out the window on this summer afternoon, though, shows there are still a few hours to go before astronomical twilight arrives. While waiting, let's explore a few of *Deepsky's* other useful

features.

Just to the right of the "pln" column on your spreadsheet, you'll find one titled "img." If there's an "X" in this column, there's a picture of this object available. Clicking on the X for the object of your choice will bring up *Deepsky's* built-in and rather full-featured *image processor* (yes, this program *does* do almost *anything*) and display that image. If your images are on a DVD or CD, be sure that disk is in the drive or nothing much will happen, obviously.

What else? Highlight an object by clicking *once* on its ID field. Then right click. You'll be presented with a large menu of choices that includes selections for creating large scale charts. You'll have a choice of using the built in Williams charting module or *Cartes du Ciel*, and also of displaying all the objects in your spreadsheet on the chart, or just the selected object. Remember, please, that the charts, whether *Deepsky* or *CdC* generated, will *only* display the objects *contained in your spreadsheet*. Which do I prefer Williams or *CdC*? Both have their strengths. The Williams charts (see **Plate 14**) are pretty, and give you access to the observing notes for objects (the latest version of

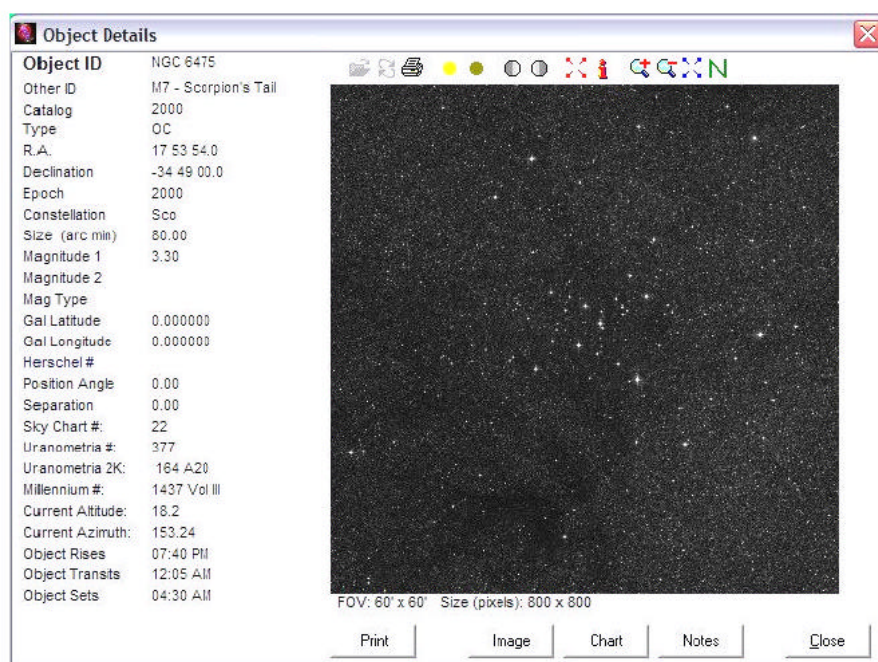
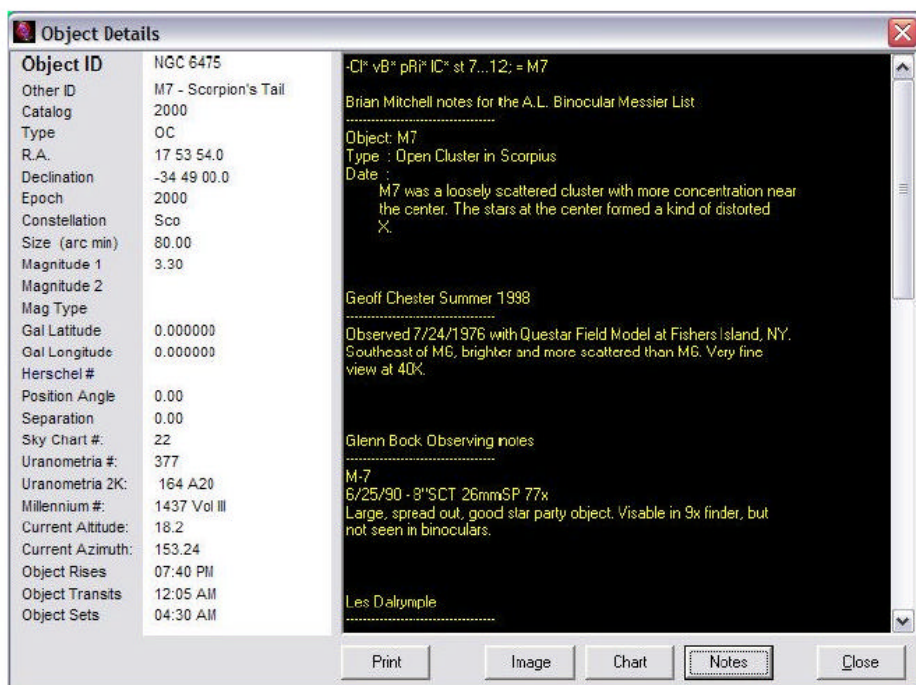


Plate 12



*Deepsky* includes over 8,000 notes from experienced observers) in a larger, easier to read format than in *CdC*. You can access this useful data, whether in the Williams charts or *CdC* by clicking on the object of interest. On the downside, the Dean Williams charts are comparatively slow, not terribly interactive, and only the bright stars are clickable for information. *CdC* is a wonderful and full-featured planetarium program and goes together with *Deepsky* like ham and eggs, love and marriage, or a horse and a carriage. The right click menu also includes numerous other tasks and options, the most important of which concern controlling a goto scope, something we'll take up later.

Returning back to the main spreadsheet screen, you'll find a vertical row of attractive toolbar buttons arrayed down the left side:

*Spreadsheet* takes you back to the spreadsheet from other functions.

The *Quick Chart 1 and 2* buttons display the Williams charts with the first object on the spreadsheet in view. This is just what the button

says, a "quick chart." While you can move around and zoom in and out, you can't click on objects or perform other "interactive" operations. These buttons are occasionally useful, but never operated in an intuitive manner it seemed to me. Yes, as above, they *seemed* to sometimes center the chart on the first object in a spreadsheet. But several new spreadsheets later, they still took me to this initial spot. Never did get these buttons quite figured out. When I wanted a quick chart, I found it more efficacious just to go to the chart in the object information window by double clicking on one of the DSOs in my spreadsheet. Course, you're probably a lot smarter than Old Uncle Rod and may be able to figure out what the program does with these buttons. I couldn't, though.

*Interactive Charts* is a lot more useful. It will display either *clickable* Williams charts, or, if you change the default chart type in Prefs to *Cartes du Ciel*, it will bring up that fine program. Like the Quick Chart buttons, it will center you on the first object in your spreadsheet. Unlike Quick Chart, I was always placed at

the first object of my current spreadsheet.

The next "leftside" toolbar button is *Logbook*, which, as you might expect, brings up your logbook, which we'll get to after we get in some telescope time.

The last button, *What's Up*, gives you quick access to that particular wizard.

Does your spreadsheet or plan contain every single object you want to observe tonight? Anything left out? If you've got an object or two you need to add to the Plan, but which you didn't retrieve by using *What's Up* or *Filters* or *Queries*, you'll find the *Deepsky* search function (**Plate 15**) to be a life saver, as it allows you to retrieve single objects from that humongous database. Clicking on the cute binoculars icon in the toolbar brings up this slightly daunting dialog. Don't be afraid, though, it's easy to use once you get it figured out. The Predefined Searches buttons at the bottom of the window are your friends, boys and girls.

Want to show all Messiers? Just click the Messier pre-defined search button and the "Begin Search" button. Curiously, unlike a spreadsheet sort, they are arrayed in correct numerical order, with M11 coming after M10, and so forth. Want to look for a *particular* Messier? Change the operator from > to = and from 0 to the M number of your choice on the first line of the criteria field. Need an NGC? Click the NGC predefined search and type an NGC number in the criteria field (you'll have to type "NGC <space> number"). Changing catalog numbers and clicking on the other predefined searches should make it easy to find the objects of your desire. The search function can be frustrating at first, but is an incredibly powerful tool.

After a little practice, I was also able to use Search to do the single thing

I had not been able to do with *Deepsky* previously, and which had been bugging me. I was, with a little fiddling, able to display Messiers from the single constellation of my choice by clicking the Messier button and changing “catalog” to constellation,” and “NGC 2000” to the constellation of my choice (**Plate 16**). For many tasks, Search is actually a better tool than the wizards and queries.

Now it's fun time. If you don't own a goto scope and/or a laptop computer, go ahead and print your completed plan (Which you have saved under a unique name, right?) and head outside. Hold on just a sec, though. Those of us into goto will be talking about logging in just a few minutes, but since you're intent on doing things the old fashioned way, you'll need some paper log sheets to record your observations for input into the *Deepsky* logging

system later. If you have a pre-designed sheet you use, fine, use that. But if you don't have one or don't have one you like, *Deepsky* has you covered. Go to the Logbook menu at the top of the screen, and click “Print Blank Logsheet.” Your printer soon will spit out a nice page just right for an old-fashioned hard-copy logbook or for temporarily recording observation data for entry into *Deepsky*. Want to get even fancier? Instead of clicking “Print Blank Logsheet,” click “Print Logsheet for All Objects in Spreadsheet.” When you do that, *Deepsky* produces log pages for all the objects in your Plan with pertinent information like object names and positions already filled in.

If you're like me, though, you've had enough of paper log pages, analog setting circles, TELRADs and dim finder scopes. You've decided to go

whole hog with computerized amateur astronomy. In that case, get the scope outside, grab your laptop, and let's click our way to deep sky nirvana. Since *Deepsky* uses the stable and well-designed ASCOM interface to talk to goto scopes, much of the pain of getting a goto instrument working with *Deepsky* has been eliminated. In fact, the main problem is not configuring your scope or configuring your computer. It's hooking the two together.

What's the problem there? Take a look at your laptop. At the rear panel of the computer. What do you see? USB ports? Yep. A parallel port? Maybe. A serial RS-232 port? Probably not. Not if your computer is less than a year or two old. PC makers have recently chosen to eliminate serial ports, especially those on laptops, and for good reason. The serial interface is slow

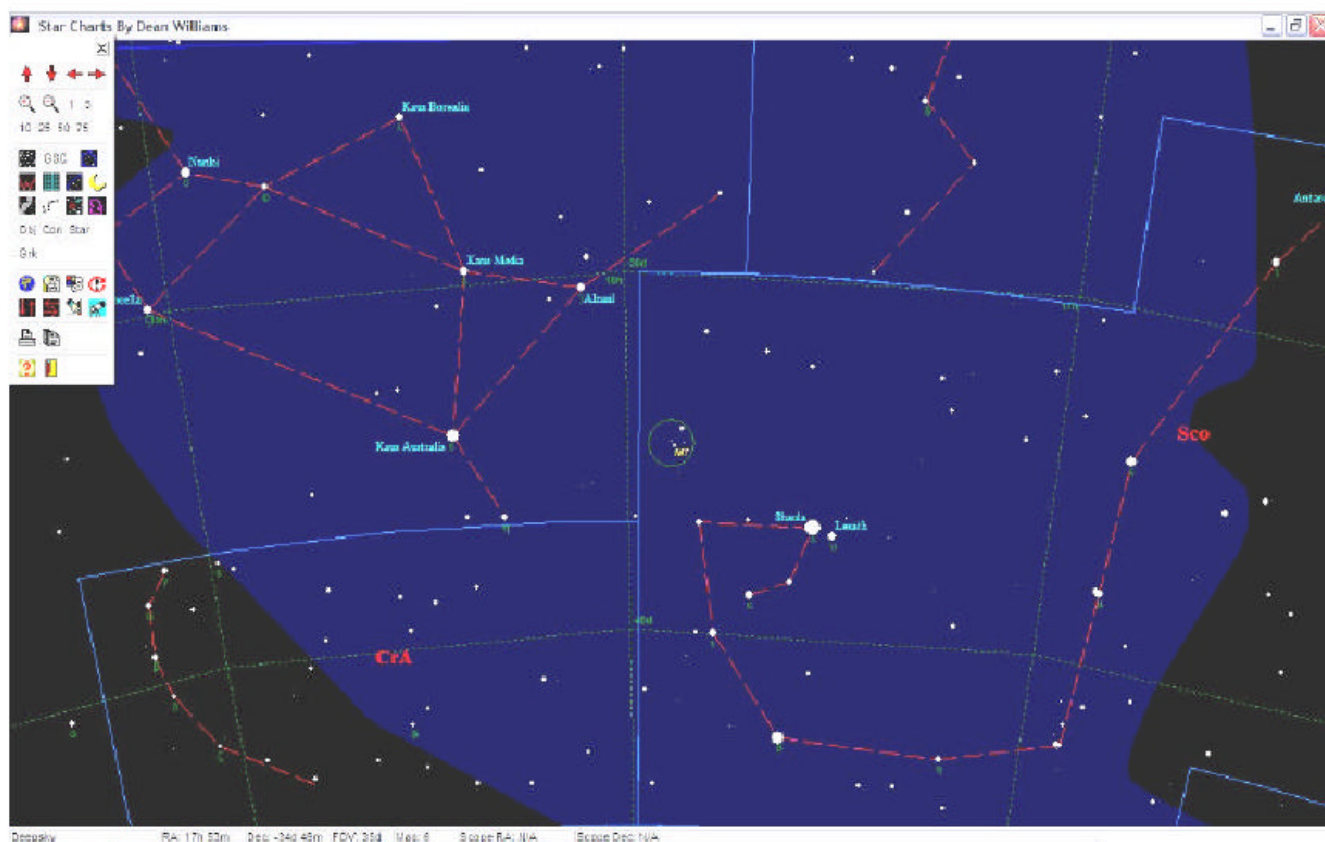


Plate 14



and very few peripherals use it anymore. Except telescopes. Unfortunately, scope makers are way behind the computer makers when it comes to i/o issues. With one exception, every commercial scope *still* uses, good, old, clunky RS-232. Unless you have invested in one of Meade's new USB equipped RCX 400s, you'll have to figure out a way to make your computer talk serial if you want to use *Deepsky* to send it to objects.

A solution, if not a perfect one, to this serial problem is a USB to serial converter cable. This is a (relatively) inexpensive little device that takes the USB your computer spits out and translates it to the serial your scope understands and vice-versa. This is not a perfect solution since not all combinations of USB – serial converters, scopes, and computers work well together. What has worked for *me* is a Belkin USB to

serial cable. It's worked reliably with my Toshiba Satellite and my Nexstar 11 and AS GT scopes, that is, but I cannot swear it will work as well for you depending on your type and vintage of gear. A little asking around on your particular goto telescope's Yahoo group should get you some answers about what works best with your equipment when it comes to serial interfacing.

Once you've got a working link between scope and computer everything else is easy. Oh, you do have to configure *ASCOT*, but this is simple. Just choose "Scope" and "Scope Setup" from the menu bar at the top of the *Deepsky* screen. You'll be presented with *ASCOT*'s "Scope Chooser." Select your brand from the long list provided (see **Plate 17**), and, once you've done, that, push the "Properties" button. Doing so brings up the configuration dialog shown in **Plate 18**, which will

allow you to set up the driver for your particular scope. Enter your scope model, position data, and the other requested information, click OK, and you're finished. If you're using a Meade scope, you'll find a few more blanks to fill in, including data concerning the Meade LX200 focuser, which can be operated from *Deepsky*.

With scope physically connected to computer (make your cable connections to both *before* you turn on the power to either, please) and *ASCOT* configured, your next step is to do a goto alignment of your scope just like you usually do. Once you've done that and the telescope is tracking, go back to the Scope menu and click "Connect Telescope." If you've got everything correctly cabled and configured, you should get a message indicating that your telescope is connected to the computer. What next? Goto some gotos. There are two basic ways to do that with *Deepsky*.

The easiest way to get the scope slewing? From the spreadsheet/Plan screen, select an object and right click. In the menu that appears, you'll see that one of the previously grayed-out options at the bottom is now clickable, namely, "Locate Object in Telescope." Click that and way she goes. Like to do things the planetarium way? Bring up a Dean Williams chart, click on your object of choice, and you'll notice that there's a goto button at the bottom of the info window that appears. Pushing that will—you guessed it—send your scope to that particular object. Once your slew is complete, a yellow cross will be superimposed on your object.

Not too hip to this GUI graphics stuff? Click the middle scope icon on the toolbar at the top of the screen, which is "Enable Telescope Control Panel" (the scope icons to the left and right of this middle one will allow you to connect the scope and slew to coordinates,

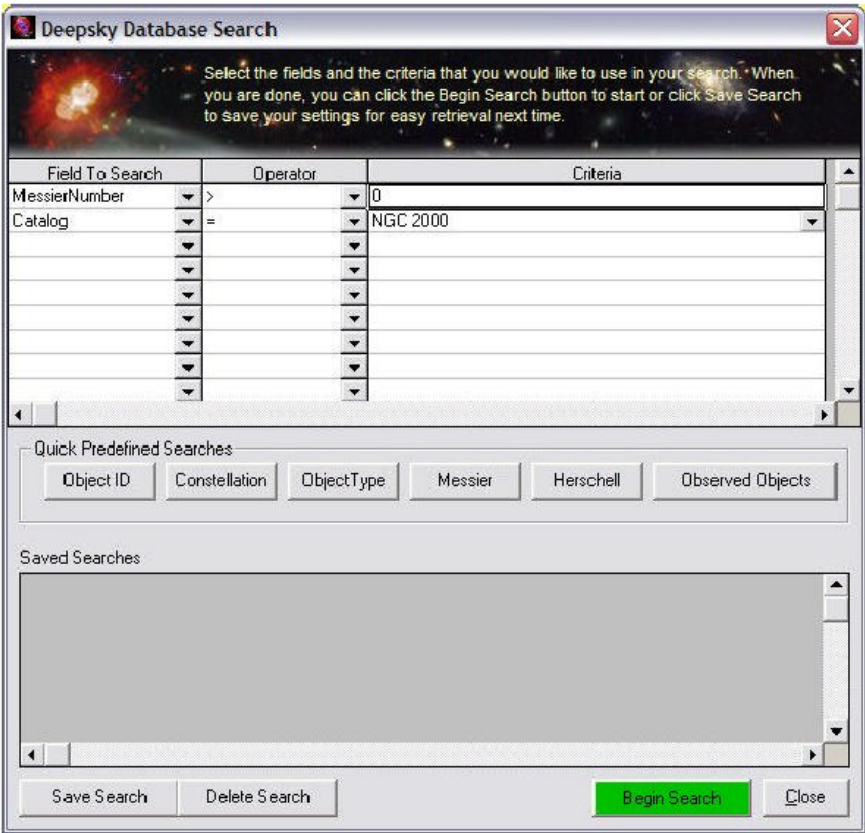


Plate 15

respectively, without fooling with the Scope pull-down menu). This enables a control panel that allows you to slew the scope manually with a virtual hand paddle or send it to typed-in coordinates. This screen, shown in **Plate 19**, does a lot more, but, unfortunately, most of this is only of interest to Meade scope users, as these other interesting functions are reserved for the Meade way of doing things.

Unfortunately, so is one of the program's most interesting functions, "Slide Show." Well, actually only in part. It works well with other scope brands, but it's really nicest under Meade protocol. If you do have a Meade or Meade compatible scope, it is really slick. Not that it isn't slick with a Celestron telescope or other brand; maybe I should say it is *super slick* with the Meades. What does slideshow do? It allows you to goto each object in a spreadsheet with just the click of a slide advance button.

Enable slide show from the Scope menu, and you'll get the window shown in **Plate 20**. When you do that, your scope will also slew to the first object in your spreadsheet (or Plan). The window will indicate your current object, show you an image of it if one is available, offer logbook fields for you to fill in for the target, and display basic object info (*including* the Dreyer NGC codes, which, you'll recall, I wished for in the object info window) with a press of the "Additional Object Info" button.

Now, all that is all quite wonderful. In my opinion, almost worth the entire cost of the program. But if you are Meade LX200 user, Steve has taken things to a whole 'nother level. A look at the manual (this section is very clear and understandable), reveals the amazing fact that Steve has figured out a way to make the LX200 hand paddle act like a slide projector remote. Normally, the scope can't tell a computer to do *anything*. But with a bit of

programming wizardry (don't ask *me* to explain it), Steve has figured a way to make the paddle send instructions to the PC, anyway. Set up the slide show as per the instructions, and, with a couple of button presses on the hand control, you can make the LX200 slew to each succeeding object in your spreadsheet/plan. Not only that, you can set it to automatically fill-in log data. If that ain't the cat's meow, I don't know what is.

Obviously, *Deepsky* has a lot of goto functionality, and, at first blush, it all seems somewhat overwhelming. Luckily, the *ASCOM* program provides a telescope "simulator," so you can figure out how the computer end of everything works inside in the daytime. Just select "Simulator" from the *ASCOM* menu of scope choices. There are a couple of gotchas here. You must "unpark" the scope by clicking on the "Park" button on the simulator control panel and you must also check the "Track" box on this same simulated hand controller. If you don't, nothing much will happen (other than the appearance of error windows when you try to slew the scope).

What now? What I like to do is just slew from object to object via Slideshow, filling in the simplified log fields (what Steve calls "generic log fields") as I go. That's more than good enough for simple little me. But if you yearn for a more formal type of log, or if you're one of those folks who eschews goto and wants to initially record observations on paper for transfer to *Deepsky's* logs later, you'll want to learn the program's more fleshed out logging features.

It's a beautiful night. One of those rare Summer evenings when the sky is dark, clear, and relatively transparent. You guide your faithful scope from deep sky wonder to deep sky wonder effortlessly, logging marvel after marvel. Ah, yes, logging. If you choose to enter

your log data as you go along rather than recording it on a piece of paper for later entry, and are not using the slideshow logging feature, you'll probably want to use *Deepsky's* "outdoor" logging system. This form, shown in **Plate 21**, is a little less comprehensive than the normal log pages, but it has one big advantage: mouse use is eliminated and keyboard use is minimized. This can be a real help in a dark, cramped observatory. You can make all the entries on this form with the exception of notes by using the tab, arrow, and enter keys. Tab from entry field to entry field, selecting menus with Enter and items to enter with the up and down arrows and the enter key. To enter logbook data for an object in your plan, just click the "obs" column and choose the "Outside" option.

Once you're back inside, you can edit or add to these brief entries using the normal log format, which is available from the logbook menu by clicking "View Edit Logbook" or by clicking the Log button on the leftmost toolbar. The logbook entry screen is a form with four tabs. The first displays a spreadsheet type display of your logbook. Need to find a particular object? Highlight the object ID column and use the right click menu's "Enter Filter Criteria" option. Enter "NGC 6903" in the Filter Criteria field, hit enter, and only that object will be displayed. This is actually a handy tool to use with *any* spreadsheet at any time, not just the logbook spreadsheet. To edit your already existing observations, you Click, that's right, the "Edit" button at the bottom of the window.

You'll usually do initial logbook entries from the spreadsheet. When you want to make a logbook entry for an object, all you have to do is, as above, click the "obs" column for your object of choice. Assuming you're back inside, choose "Standard" rather than "Outside" to use the fullblown logbook format. You'll be taken to the form in **Plate 22**. You'll then fill-in all the

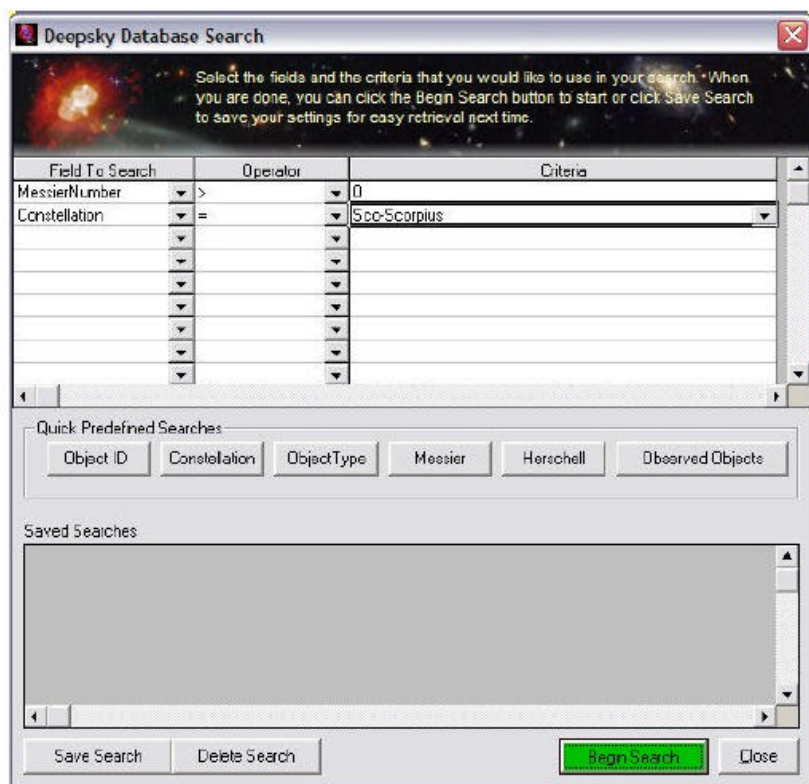


Plate 16

appropriate fields for your entry using the keyboard and drop down menus. The info in the drop down menus--sites, telescopes, etc.--is that which you entered into the program during its set up, in the Prefs menu. When you've completed all the fields you want to fill-in, be sure to click the Add or Update button at the window bottom when you're done. Luckily, if you forget to save a new entry (add), the program nags you to do so.

What if you're a CCDer or a confirmed astro-sketcher? *Deepsky* makes it easy to append image files to your log entries. Hit the "View Images" tab at the top of the logbook window, and you'll be taken to the window shown in **Plate 23**. To attach an image to an entry, just click the little folder icon and browse to its location. You'll also find buttons that will let you detach an image from an entry and perform simple image processing functions. What kinds of images? Most popular

file formats are supported, though .fits is unfortunately not among them. If your files are in this format, you'll need to convert them before placing them in your log. Naturally, if you've done a sketch, you'll have to get it onto your hard drive via a scanner before you can add it to the logbook. Once it's scanned, you'll be able to attach your drawing to an entry like any other image.

That's really all there is to logging. Open your plan, click on the obs column for the objects you've observed, and enter your notes. What's that you say, Cool Breeze? *You don't want to record your observations on a computer outside as you work, and wonder whether it's really worth the trouble to transcribe them into the computer later?* I'll say it is. The main thing that keeps amateur logs from being useful is the fact that it's just too hard to find a particular entry for a particular object in the average observer's logbook.

Sure, you can cross index entries on cards like I did for years, but that means you must add a note to an index card in addition to making an entry in your log. Every time. *Will you do it every time?* No. I didn't, anyway. *Deepsky*, on the other hand, allows you to easily find a log entry using its advanced search tools. Paranoid about letting your treasured entries exist on a hard drive? Don't be. If you're *super* paranoid, like me, you can print out each observation. Most of you will be OK with just backing up the logbook file occasionally via the "Backup Logbook" option in the top menu's "Logbook" selection (if you're forgetful, like I am, you can set the program to automatically backup your logbook).

And so we come to the end of a beautiful evening's observing run and our tour of *Deepsky*. Did I tell you all there is to know about the program? Not hardly. I didn't even *mention* the program's online/Internet functions. Barely touched on the image processing features. Skipped over the many logbook options that are available (did you know you can keep an unlimited number of different logs on your hard drive?). But it was not my goal to cover *everything*. As I said at the beginning, this little guide's purpose is to get you started using this complex program easily, doing things in an easy—but not necessarily *optimum*-way. Once you've got the hang of *Deepsky*, which shouldn't take long, you can begin to explore the many rich features this software offers. You can learn about them by exploring the User Manual, and, even better, by hanging out on the *Deepsky* User's Group at <http://www.deepsky2000.net>.



What's left to say? How about, "Thank you Steve Tuma for giving amateurs a wonderful program, one which, I'm sure, has helped many of us see far more than we ever dreamed possible." Is Deepsky perfect? Uh-uh. As I've said in every review I've written, *no program is*. But some are better than others. What separates the good from the bad in software? *The author's commitment to users*. Believe me, Mssr. Tuma, who's been steadily improving this program for 10 years, has demonstrated this commitment. It shows both in the loyalty of his users and in the usefulness of his wonderful *Deepsky Astronomy Software*.



Plate 17

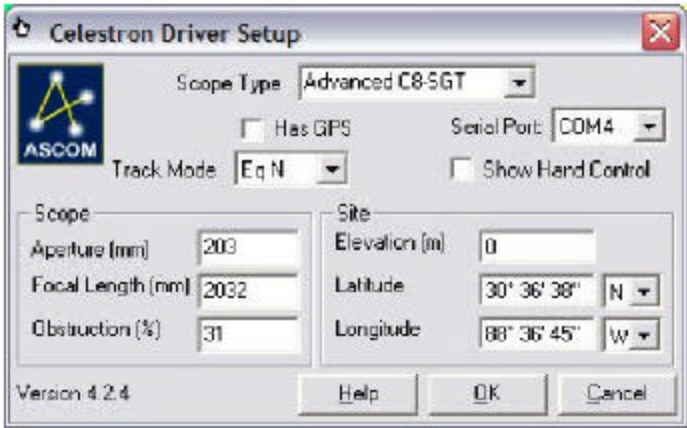


Plate 18

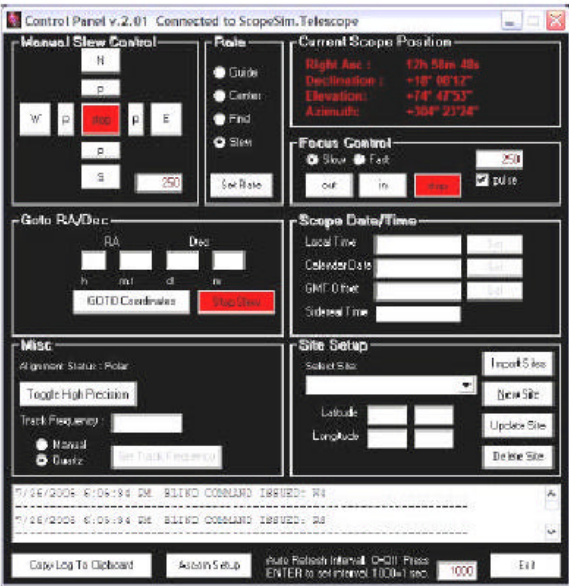


Plate 19

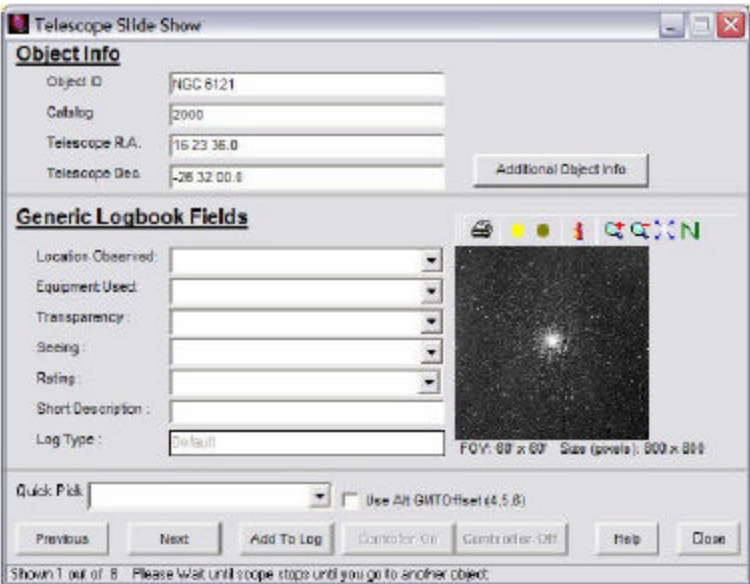


Plate 20

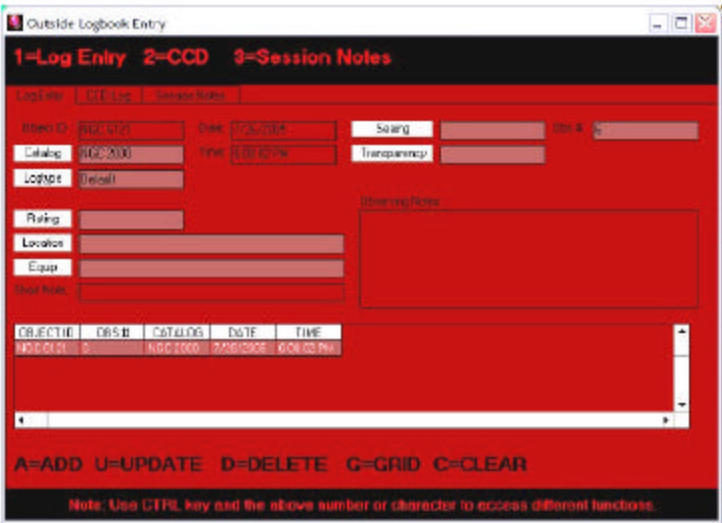


Plate 21

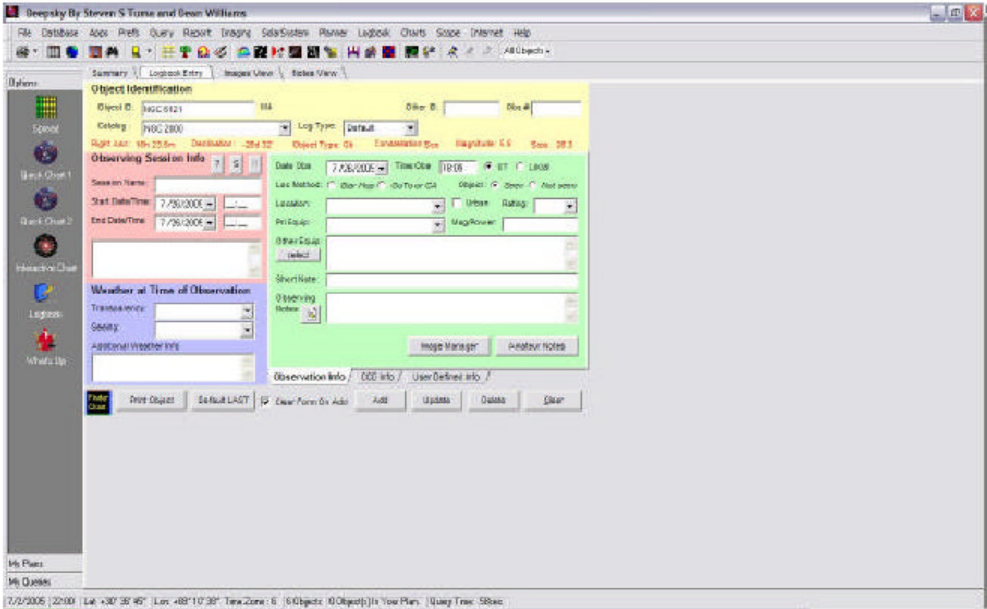


Plate 22

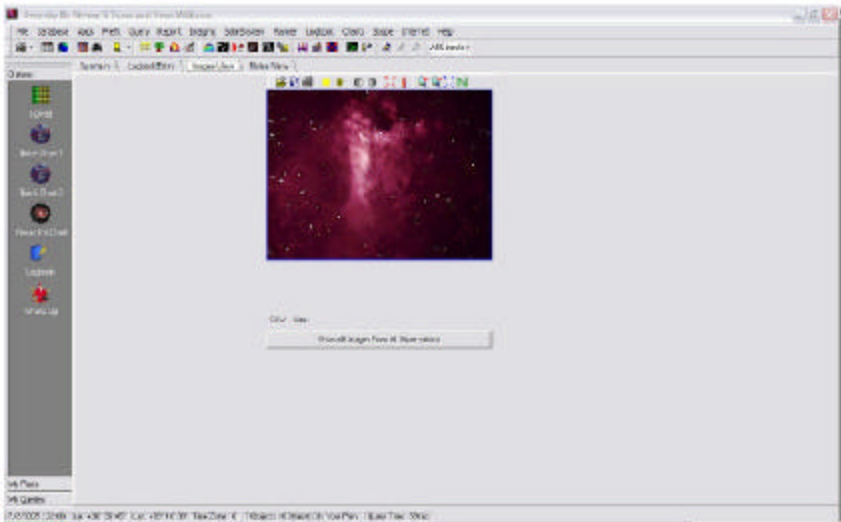


Plate 23

# In Praise of Digital Setting Circles

Don Gallian

Recently, I was forced to spend an entire observing session using my Celestron 11 (the Stray CAT) *without an optical finder!* OK, so did have a 'red-dot' and digital setting circles...

Locating faint fuzzies with a 9-foot focal length telescope can be 'interesting' to say the least even using mechanical setting circles and/or a finder. But digital setting circles make it really easy! Every object I looked for appeared in the  $\frac{1}{2}$  degree field of the 24mm TeleVue Wide Field I was using! I happen to have a JMI NGC-MAX setup, but most contemporary DSCs are similar in features and accuracy. Prices vary depending on the particular installation, the components included, the size of the database, the feature set, and the retailer/manufacturer.

JMI's 'complete installation' costs \$628 including shipping so it's not exactly cheap. But, as the name implies, everything is included, plus it's simple to install. The C11 kit consists of all required hardware; encoders, cables, a manual, a short video, and the MAX computer all neatly packed in a foam-lined box. Purchasing additional hardware would also allow the same computer to be used on multiple telescopes if one desired.

It is not necessary to polar align, or even level the tripod, to get accurate results – I know because I did neither! And of course, DSCs work with either equatorial or alt-azimuth telescopes.

There are two *critical* considerations that apply to all DSCs however – first is the initial position of the mount. You must be able to *precisely* set the declination (altitude) axis either to  $0^\circ$  or  $90^\circ$  depending on your setup. If this position is more than  $1/2^\circ$  off, you won't be able to find much of anything. While only one or two stars are used to align a DSC computer, the initial 0/90 point might be thought of as a 'third star'. The accuracy needed for this position is basically equal to what's required for the alignment stars.



The second critical consideration is that the computer assumes the mount is 'orthogonal' – the mechanical and optical axes are perfectly square and/or parallel to each other. If your mount meets this criterion and you center the alignment stars properly (extremely easy using a cross hair eyepiece!), you are almost guaranteed excellent results! On the other hand, if you or your mount don't meet these criteria, the phrase 'vastness of space' will take on a brand new meaning for you!

Once the system has been aligned, you choose a 'Catalog', and then select the particular object you want to observe from that catalog. You then enter a 'Guide' mode in which the display will show a set of numbers and arrows. The numbers represent how many degrees the

telescope is pointing from the object you've chosen. The arrows indicate the direction toward the object.

For example you might see something like  $M\ 057\ < 25^\circ\ 11'$ . This means you would move the telescope 25 degrees left and 11 degrees up to find the Ring Nebula. As you move the telescope toward the object, the numbers decrease. When you get closer than 10 degrees, the display changes to read tenths of a degree. When both sets of numbers read 0.0, the object should be in the field of a moderate power eyepiece. JMI says any eyepiece that yields between a  $\frac{1}{4}$  -  $\frac{1}{2}$  degree field is appropriate. Very simple but quite accurate too!

About the only change I'd like to see would be adding direct entry for objects, catalogs, or options. For example, the hand paddles for most current GOTO scopes have numeric keypads. If you want to locate the Orion Nebula, you press "M 0 4 2" and "ENTER" or "GOTO". On the other hand, DSCs only have a few buttons (and/or a dial), so you're required to scroll through various items to choose a Mode, a Catalog, each digit for the object, etc., etc. While it's not as bad as it sounds in actual use, I've had both GOTO and 'Push To' systems and the direct entry method is easier. Ironically though, because the GOTO scopes slew the telescope slower than you typically move it, you won't actually find objects any faster with an automated system than you will with a manual system!

My only real regret is that I waited this long to get Digital Setting Circles!



# ONE YEAR REVIEW APOGEE 25 X 100'S

Joe Rome

Well it's almost a year, and I have viewed both sides of the Milky Way now using the Apogee's mammoth 25 X 100's. This pair of binoculars can be used for terrestrial but I have only used them for astronomy.

to educate the public on astronomy. This is where I have done most of the observations with these binoculars.

First rule for this beast is, "If you buy them, you must mount them." I have tried several ways, but resorted to cheat somewhat. I used the Orion Paragon-Plus binocular mount and tripod. Part number 5347. Replaced the 4 Lb. Weight with a 16 Lb. Manufactured in a local machine shop. Also I replace the bracket that secures the binocular with ScopeStuff's cradle mount.

[http://www.scopestuff.com/ss\\_binm.htm](http://www.scopestuff.com/ss_binm.htm) I had to notch part of the cradle mount to secure it to the Orion mount. This was to prevent

transport (second picture down). The mount is surprisingly stable with this weight. The only penalty is the tripod will not raise the head, but it seems needless to have this feature while using the binoculars anyway.

The 3.5° field of view is better than most 25 X 100's. This pair supposes to have a 13mm eye relief, but I believe it is closer to 11mm. Eyeglass wearers may have somewhat of a problem, but several who have used this pair had not complained. This pair chased down comets better than the Orion 80ED and 100ED. I don't know what the exit pupil is, but if your eye is not centered in the eyepieces, you get some color on bright objects. A small yellow highlight on the moon's

rim. When the eye is centered you would be pressed to find any problems, and the images appear to be from a much more expensive pair.

Most scopes have their strong points and weak ones also. The major weak spot on these is the eyepieces. Its not that they are bad, it's the fact the objective optics are very good and interchangeable eyepieces would greatly extent the ability of the binoculars. Well, I can wish, can't I?

The strong attributes are many in observing there are objects which telescopes can not touch the view these give. The Double Cluster, M13 is very surprising, M31 shown a dust lane aside was M32 and M110. One night M51 shown better



I am part of a group in Austin called the Austin Dam Astronomers. They even have a web site where we can plan our weekly gatherings <http://groups.yahoo.com/group/Austindamastronomers/> we congregate at the Mansfield dam's public park

unwanted movement. Seen right above my hand.

The finished product looks like the following picture. Properly balanced it can be guided by a child, and have done so many times. It brakes apart in no time at all for

in these than an 11" SCT. M42 generated a lot of

Response from those who view it, NGC 2244 looked nice. Weak but M57 can be viewed, M27 real nice. M7 and M44 better seen through these than any scope I have seen through. Tr24 is unreal; M8 shows some structure, and M17 shoes the neck of the swine, M36, 37,38 and so on. A lot of double stars are accessible, and looks impressive also.

Planets are limited to Jupiter and Saturn. Of course

restaurant called "the Oasis"; you can distinguish people eating on the outside area. At five miles we watch someone across the lake set up a barbeque .

This is such a good pair, and for the money, more than likely for the price, the best bargain you can run across. These binoculars are not just a tool for the large telescope, but a companion that complements with wide views and enough aperture to reach many DSO's.

Asia, he felt the same shock and sadness over the tremendous loss of human life that most people certainly felt. Later, though, he began to wonder: were these waves big enough to see from space?

So he decided to check. At JPL, Garay analyzes data from MISR—the Multi-angle Imaging SpectroRadiometer instrument aboard NASA's Terra satellite. He scoured MISR images from the day of the tsunami, looking for signs of the waves near the coasts of India, Sri Lanka, Indonesia, and Thailand.



Looking at an image of the southern tip of Sri Lanka taken by one of MISR's angled cameras, he spotted the distinct shape of waves made visible by the glint of reflected sunlight. They look a bit like normal waves, except for their scale: These waves were more than a kilometer wide!

Most satellites have cameras that point straight down. From that angle, waves are hard to see. But MISR is unique in having nine

Jupiter shows off its four moons with the NEB/SEB clearly seen. Saturn shows off its rings (can't split them) some surface features are also seen.

The Moon, Full moons are great, and just after a new moon the earthshine shows off all of the dark side features.

To give you an idea of how sharp and powerful these things are. We set up at the Dam, and seven miles across the lake you see a

# Asian Tsunami Seen from Space

Patrick L. Barry

When JPL research scientist Michael Garay first heard the news that a tsunami had struck southern

cameras, each viewing Earth at a different angle. "We could see the waves because MISR's forward-looking camera caught the reflected sunlight just right," Garay explains.

In another set of images, MISR's cameras caught the white foam of tsunami waves breaking off the coast of India. By looking at various angles as the Terra satellite passed over the area, MISR's cameras snapped seven shots of the



#### Skywatch

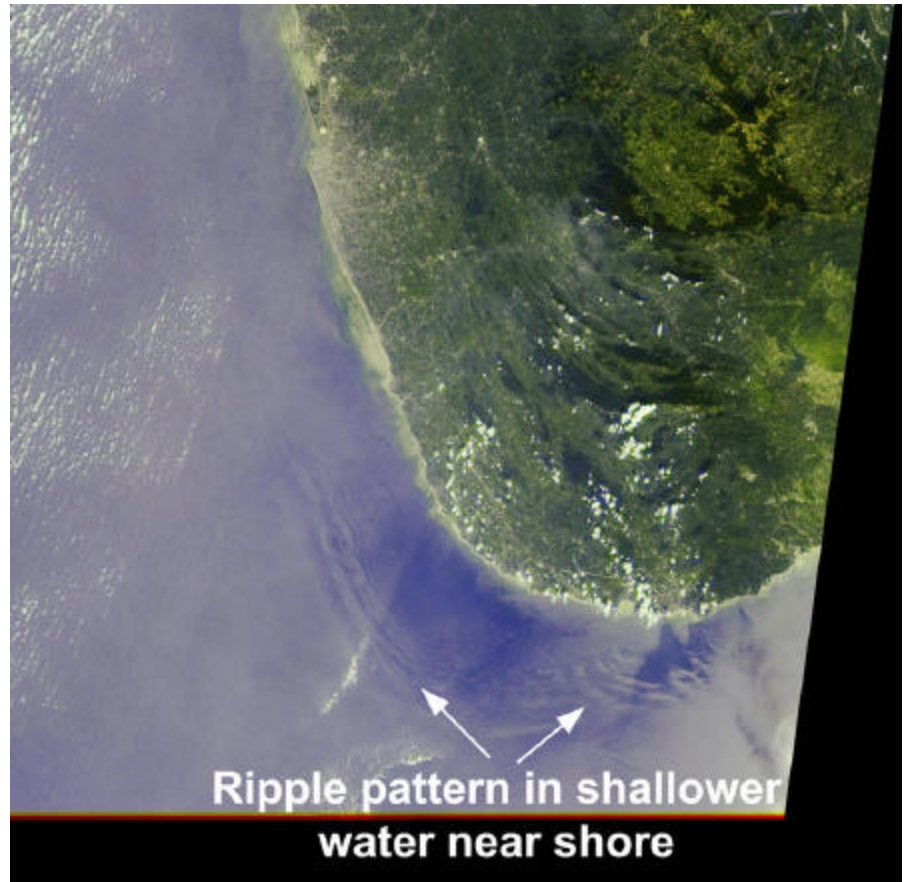
breaking waves, each about a minute apart. This gave scientists a unique time-lapse view of the motion of the waves, providing valuable data such as the location, speed, and direction of the breaking waves.

Realizing the importance of the find, Garay contacted Vasily Titov at the National Oceanic and Atmospheric Administration's Pacific Marine Environmental Laboratory in Seattle, Washington. Titov is a tsunami expert who had made a computer simulation of the Asian tsunami.

"Because the Indian Ocean doesn't have a tsunami warning system, hardly any scientific measurements of the tsunami's propagation exist, making it hard for Dr. Titov to check his simulations against reality," Garay explains. "Our images provide some important data points to help make his simulations more accurate. By predicting where a tsunami will hit hardest, those simulations may someday help authorities issue more effective warnings next time a tsunami strikes."

Find out more about MISR and see the latest images at [www-misr.jpl.nasa.gov/](http://www-misr.jpl.nasa.gov/). Kids can read their own version of the MISR tsunami story at [http://spaceplace.nasa.gov/en/kids/misr\\_tsunami](http://spaceplace.nasa.gov/en/kids/misr_tsunami).

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.*





# My Back Pages

"Crimson flames tied through my ears  
Rollin' high and mighty traps  
Pounced with fire on flaming roads  
Using ideas as my maps  
"We'll meet on edges, soon," said I  
Proud 'neath heated brow.  
Ah, but I was so much older then,  
I'm younger than that now."



*Comeback? Comeback? I hope they NEVER come back! Word on the street was that those two scoundrels, Beavis and Butthead, had deserted the Coast in the wake of Katrina. Good thing. We don't exactly need their bumbling help with reconstruction! Seems as their movie career, such as it ever was, is back on for the moment. I wonder, though, how do you follow up on a title like Beavis and Butthead Do America?! Be that as it may, I felt a brief, very brief, moment of sadness as a lonely Mayo Jar (kept on Funk and Wagnall's porch for a fortnight) came floating down the muddy river that was once Selma Street and hove itself up in the front yard of the unbowed edifice of Chaos Manor South...naturally, a quick glance revealed that it contained some...*

## Rumours

***Two down, how many to go?*** After several years of being very hot items, Russian telescopes seem to have fallen on hard times (maybe those dirt cheap/good quality Chinese scopes are just too...well...*dirt cheap* to compete with?). Intes, beloved for their MCTs and MNTs, stopped production some time back. Now LOMO is out of the amateur scope biz. LOMO has not produced telescopes, (non-military that is), for a few months now. If you want one you'd better get it now. I did not know just how highly the LOMO line was regarded. LOMO is still in business but produces

military sights, military optics and night vision only.

***I always wondered why the heck Meade or Celestron didn't produce a well-made inexpensive truss tube dob.*** Well, now they've done it—or at least Meade has—with the new Lightbridge series. These are 8, 10, and 12 inch scopes that look something like a cross between one of Meade's old StarFinder jobs (particle board rocker box and all) and something a wee bit more sophisticated. Time will tell how good they are. Maybe quite some time...Uncle Rod ordered one of the first 12 inch StarFinders back in March of 1994. Said scope arrived on 3 September of that year, the day before Uncle Rod and Miss Dorothy got married. As you can imagine, I at least insisted on opening the box and assembling the scope the evenin' before those weddin' bells rang. Good thing for Rod it was CLOUDY THE FOLLOWING NIGHT! One curious thing is...why an 8? An 8 inch really isn't much of a candidate for truss-tube-dom. Now a 16 would be a different matter. Meade's old 16 inch warhorse cried out for a truss body.

***Well, somebody HAS already thought of that.*** Word is that the Chinese are preparing to send 16 inch dobbies, truss tube dobbies, our way. Who in China? I've heard Guan Sheng...

**Are Meade's RCX problems over?** After an exciting introduction, Meade's new line of super-sophisticated SCTs hit a few snags. Main one was trouble with the focus/collimation motors that move the secondary to—well-- focus and collimate. There have been some problems reported with "motor runaway," and some folks also reported that focusing *changed collimation*. Last I heard, the RCXes are shipping again, so apparently Meade thinks they've exterminated the bugs. Stay tuned.

**The Orion Starshoot camera is finally shipping.** Those of you who've been itchin' to get your hands on the (cooled) "DSI killer" (some say) from Orion/SAC/Cyanogen now have your chance.

**Celestron guru Bob Piekiehl has a new and greatly expanded edition of his fantastic e-book, Celestron the Early Years, out.** Look for a review soon, but if you can't wait, contact Bob at [piekielr1@yahoo.com](mailto:piekielr1@yahoo.com) for information about getting a copy of this VALUABLE resource for Celestron fanciers!

**That's all this time.** But with things nearing normalcy here, we at the Skywatch Editorial Offices in glorious Chaos Manor South shall and will be keeping our ears to the ground for much more delicious gossip for the Spring issue!

--The Anonymous Astronomer

## The Wrap-up...

"See y'all in October," I wrote in July. Because of a THING called "Katrina," life here at Chaos Manor South has been, shall we say, "disrupted" over the last several months. Things are basically back to normal now, and after this "double issue," I expect to be back on our regular quarterly schedule—as we define "regular" down here in Possum Swamp, that is.

I've got some great stuff lined up for y'all, including an IN-DEPTH review of the new Meade ETX 125PE. And, as they say late at night on WTBS, "AND MUCH, MUCH MORE!"

As always, I solicit your fine articles. I think you can see from this issue thaatt the quality of our contributors is getting higher all the time, with some of 'em easily puttin' poor little me to shame.

One more note...things were EXTREMELY confused down here for a while. If you submitted material to me and it hasn't been printed in this issue, please e-mail me. Some material was lost with the hard drive crashes, etc. that happened due to the storm and the funky AC after.

--Rod Mollise



**BLOODY BUT UNBOWED: CHAOS MANOR SOUTH THE DAY AFTER KATRINA.**

SEE <http://skywatch.brainiac.com/katrina/katrina.htm> FOR MORE PIX...