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Skywatch
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Rod Mollise's

Skywatch



BIG POST HURRICANE ISSUE!

Absolutely Free

RTGUI Freeware for Telescope Control

Rod Mollise

<http://www.debunker.com/astro/rtguipage.html>

Is simpler better when it comes to astronomy software? Previously, I hadn't thought so, being unable to resist loading my hard drive up with more and more multi-gigabyte wonders like The Sky 6 and Starry Night Pro. There's no denying, certainly, that these programs can do a lot. Make that "almost anything," from showing you what the sky looked like in the days of the ancient Egyptians, to helping you hunt down the last of those Herschel 400 fuzzies. Of course, to do that you'll find yourself feeding your PC CD after CD (or, now, DVD after DVD), and unless you've got the latest blazing-hot machine from Alienware, you're likely to soon have a maxed-out hard drive packed with programs that run as slow as molasses.

Even worse, if you're like most amateurs, you use a less than state-of-the-art PC as your observatory or field computer. A 300mhz laptop or desktop being more dew-worthy than the latest gigahertz greyhound. I can hear it now, "But Uncle Rod, I *have* to have The Sky 6 (or Desktop Universe, or whatever). How else can I make my goto goto?"

Good question. But I've got a question for you. How many of the features of those mega-sized programs do you really use? Be honest, now. I'll bet all you use most of the time is the program's search function to find objects and its goto capability to send it there. Look, Skeezeix, you do NOT need a 300 dollar program on 5 CDs to do that. That's what I found out when I was introduced to the freeware program, RTGUI.

What's an RTGUI? RTGUI stands for "Real Time Graphic User Interface." It's a small program, at a download size of 500K and an installed size of about twice that, and runs incredibly fast and well on older machines. What can it do?

- Shows the observer what's visible instantly, using its GUI interface. No need to prepare observations in advance. [Find deep-sky objects](#) or stars by their common names. Unusually rich search capabilities - each entry has up to five different names (Example: *M1*, *NGC 1952*, *CrabNebula*, *Taurus*, *Planetary*)
- Create a custom "tour" based on your own criteria (by constellation and/or object type, elevation, magnitude).
- Small and fast - Download is about 500k.
- Controls most Celestron and Meade "Goto" telescopes to [slew directly to the selected object!](#)
- Using [the Skycharts program \(Cartes du Ciel\)](#),

get an ["instant sky chart"](#) of the selected object.

- Read hand-held [GPS Devices](#) or Celestron and Meade GPS Telescopes to set highly-accurate Location and System Time. Read object position from most Celestron and Meade Goto scopes. Upload data from GPS devices to Meade Goto scopes.
- Locate [Sun, Moon, and Planets](#), with excellent accuracy. [Transient Catalogs](#) exist for automatically finding bright comets, etc.
- Can set the "night vision" [color palette](#) in Windows.
- Displays Altitude and Azimuth of Astronomical Objects, updated in Real-Time, along with Rise and Set times.
- Automatically record object, time, & location information when the [Observing Log](#) is opened
- Auxiliary Catalogs allow you to instantly locate hundreds of thousands of objects, using standard astronomical nomenclature, a time-saving tool for observing projects and for research.
- Command-Line Parameters allow [Scripting](#) for [automated operation](#)

That's a lot, huh? Sure is. Maybe everything you normally want to do with an astro-ware program?

The first thing you need to do if you're interested in RTGUI, of course, is download the sucker and get it installed. There's not much to that, you download it from the url above and unzip it into a directory you create (normally "RTGUI"). You

then manually create a Windows shortcut icon for the executable program file for your desktop. It would be nice if RTGUI had an installation program that took care of these things for you, but let's not quibble. This is freeware, after all, and RTGUI does indeed do all those things in the list above, and does them speedily, simply and reliably. If, like me, you're not overly computer savvy, you can undoubtedly find a buddy to help you get the program set up on your hard drive.

The big draw for most of us will be RTGUI's ability to command a goto scope, that's the raison d'être for the program, really. RTGUI is capable of interfacing with the following telescopes:

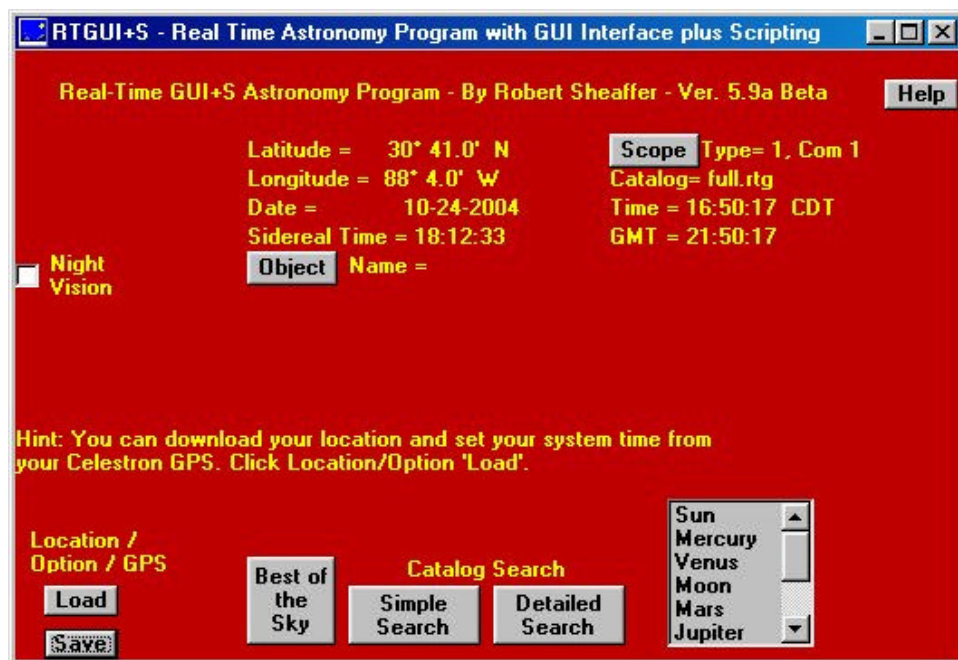
Meade LX200GPS/LX200
Meade LX90
Vixen Skysensor 2000
Mel Bartels System
Celestron Nexstar GPS
Celestron CGE
Celestron Advanced Series
And numerous others (see the website for a complete list).

In order to get this interface working, you have to inform the program of two things: the type of goto scope you have (Meade or Celestron, and,

the particular model) and the com port that your PC uses to talk to the telescope. That's it. I was truly impressed that it was so simple to set the program up for my scope. Most freeware/shareware programs require you to download, install and configure the ASCOM program for goto functions to be enabled. ASCOM is nice, but it can be a bit daunting for novices and computerphobes to get going. And it does eat away at the disk space, it alone taking up more space than the whole RTGUI program.

Once you've got RTGUI installed and configured for your scope, you'll soon find how wonderful life can be in "slow lane" of the computer/software information highway. Want to go to an object? Nothing could be easier: click the "simple search" button, type in the object's designation—M31, NGC 2024, or whatever (the program's default catalog is the NGC/IC—and, when the object's vitals are displayed in RTGUI's little window, hit the "goto" button. That's all there is to it. This works perfectly with my Nexstar 11 GPS, a newer scope with a newer way of doing things than the time honored LX200 protocol, so it should work just as well with your blue tube 'scope.

Frankly, the above is mostly what I



do with this program. Or any astronomy program hooked to my telescope. It's all I *need* to do. But that's not all RTGUI *can* do. Despite its size and quickness, it has a lot of features, and the author is adding more all the time without compromising the program's basic simplicity. One of the most important of these "extra features" is the program's advanced search capability. Sure, Old Rod usually just stays with the "simple search" button, but you can also do things like display all the globular star clusters in Sagittarius. The richness of these search abilities almost allows RTGUI to qualify as a "planner."

Another feature that may allow this little wonder to be used in place of your humongous observing planner program is its "tour" creation ability. Make up a list of objects using the program's search engine, and you can have RTGUI send your scope to each of your chosen "stops."

Not only can you send the scope to each entry in a list of objects, you can record your observations and impressions of those objects using the RTGUI's built-in logging capability. The program will automatically append the current date and time to these entries, ensuring that your observations stay organized (at least more organized than the index card file Rod used as a log for many years). Truthfully, RTGUI may be all the planner a lot of folks need.

Naturally, for the program and a goto scope to be able to work together correctly, times, dates and locations must be set and set exactly in the scope and in the computer. That's no problem for the scope if it has a built-in GPS receiver. But how about the computer you are using to run RTGUI? One of the nicest features of the program is that it can read position and time from the scope and set these parameters in your computer. RTGUI can also be

commanded to ask the telescope where it is currently pointed and display its position for you.

One other GPS-related feature that is of special interest for non GPS Meade goto scopes is RTGUI's ability to *read* handheld GPS receivers. You can download the receiver's time and position data to RTGUI and then *upload* this information to your LX90 or other non GPS scope. That means that your little 90 suddenly has a lot of the features of its more expensive big brother, the LX200 GPS.

One thing I'm often asked when I start enthusing about this program is, "How can RTGUI, which is tiny as astronomy programs go, create decent starcharts?" Easy: it doesn't. Or, actually, it does, but not on its own. Having a star chart display is not completely necessary if you're using a goto scope, but it is still nice to be able to display a map to graphically show where the scope is pointing and to jog your memory as regards other objects of interest in the area. RTGUI provides charts by furnishing an interface to another freeware program, Cartes du Ciel. CdC is a fantastic planetarium that will do anything the expensive software will, and provides RTGUI with charting/atlas capabilities every bit as useful as those in the big, expensive software. Search for and display an object in RTGUI, hit the "Skychart" button, and CdC is opened and appears onscreen with the object of your choice centered.

One thing most computer-crazy amateurs always want to know about a program is "how many objects?" RTGUI is no slouch in that department, coming equipped with the NGC/IC, which is more than enough for most of us, but it can be expanded easily, with numerous add-on catalogs already available for download from the program's website.

Another welcome feature is RTGUI's constantly updating display

of altitude and azimuth values for selected objects, and its ability to display rise and set times. This is another of the program's capabilities that lessens the need for you to go elsewhere for the data you need to plan and execute an observing run.

Rounding out RTGUI's feature-stable is the ability to set the program's colors to night-vision friendly ones. For most laptop displays, the night-vision setup is just right. Also, while the program's window can be maximized, its simple layout only requires the small window shown in Figure 1, so most of us will run it as shown rather than expand it to fill the entire screen. Because of that, the program's ability to set Windows' colors to a night-vision color-palette is very welcome.

Oh, one last thing. The latest feature of RTGUI is its new ability to run "scripts." That means the user can write a list of commands for telescope positioning which RTGUI will execute, pointing the scope at specified objects without human intervention. That sounds like the kind of computer wizardry that's far outside my needs, but it's nice to know that the program will do things like that for people smart enough to need such high-falutin' technology.

In summary? If you've got a goto scope, you need RTGUI. Like its freeware sister, Cartes du Ciel, it works incredibly well, and has no downside. RTGUI is so good that I cannot believe Robert Scheaffer is giving it away for *free*. But, shhhh!, let's not tell *him* that.

Deepsky Astronomy Software

for Microsoft Windows

Rod Mollise

Downloadable version: \$39.95

CD ROM version: \$52.99
DVD ROM version: \$79.99

<http://www.deepskysoftware.net/index.html>

How do you plan your observing runs? Do you plan them at all? If you don't, you're missing a lot. All too many amateurs begin to lose interest in our wonderful pursuit because they are "not seeing anything." Is it the weather? The light pollution? A too-small telescope? When the situation is scrutinized in detail, the culprit usually turns out to be "none of the above." Usually, what you'll find is that the observer in question looks out the door, sees that the sky is clear, grabs scope, star atlas and a box of eyepieces and heads for the backyard or a club observing site. Once there, she/he looks up at the stars, thinks for a minute, points the scope to the obvious goodies—the M42s, M13s and other bright ones—stops, thinks for a minute, glances at the atlas, shrugs, and moves everything back inside. Ho-hum. Not much to see tonight.

In reality, of course, there was a tremendous amount to be seen beyond the bright showpieces, a tremendous amount for any telescope. But you have to have some idea of *what* you want to look at if you're gonna see it. Vague memories of good objects and a mag 6 star atlas ain't gonna get it. You need a PLAN...a list of objects to observe along with their vital statistics and detailed charts for finding if you don't use a goto scope. If you have a list, a plan, a program for the evening, you'll see incomparably more than you will if you just wing it.

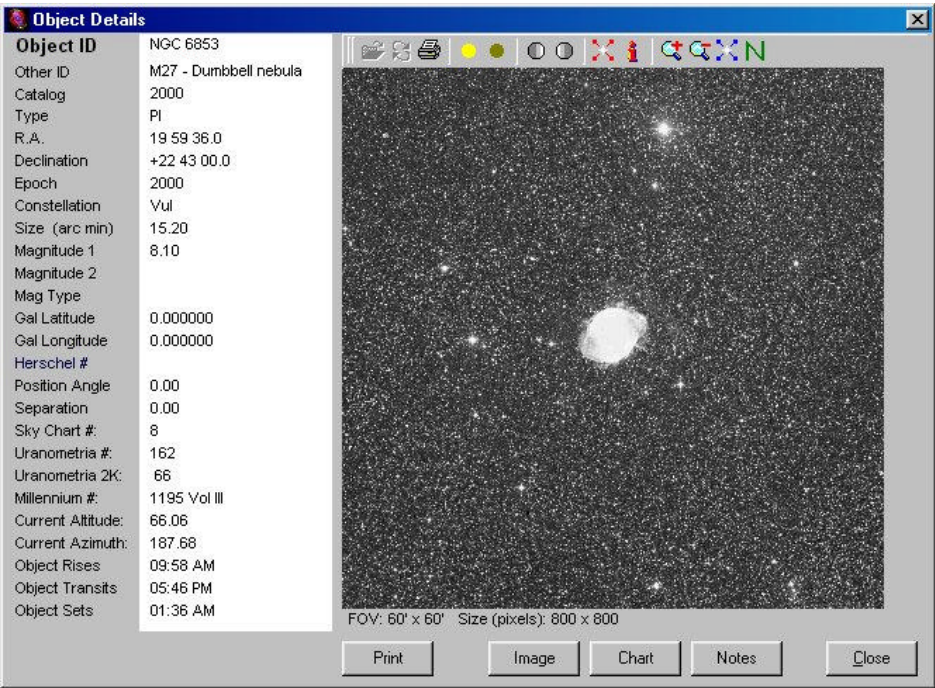
How do you make such a plan? A copy of *Burnham's Star Atlas*, *Sky Atlas 2000*, and a pencil and paper are *one* way to do it. But in this age of powerful desktop computers, there's a better way. That better way is one of the planning-logging

programs now available for amateur astronomers. These programs are essentially massive databases of deep sky objects, but the most modern of them also allow you to print detailed star charts (though, in this day of goto scopes, detailed charts are probably less necessary than they used to be). The two top programs in this genre of astronomy software for Windows PCs, SkyTools 2 and Deepsky, can produce charts easily competitive with big-name planetarium software, and certainly far more detailed than what you'll find in the venerable *Sky Atlas 2000*. Or even *Uranometria* or *Millennium*.

Skytools 2 and Deepsky, huh? Which to choose? As I've said before, I use both. I simply love Skytools, but there are things I love about Deepsky, too, so I use both,

the year of its release was appended to the program name: "Deepsky 96," "Deepsky 2000," etc. The program is now stable and settled, though, and I think Steve's decision to henceforth refer to it just as "Deepsky" is a good one, and one that makes things less confusing for new users.

What exactly does Deepsky do? For details, I'll refer you to the reviews of earlier releases I've done in these pages in the past, but to summarize, this is a humongous Access database that includes over 700,000 deep sky objects and the entire Hubble Guide Star Catalog (for the CD and DVD issues). Users can run detailed searches easily, allowing them to pluck objects that fit their criteria (visibility, types, magnitudes, constellations, and more) and assemble these objects into an



and have found appropriate tasks for each.

Deepsky, now officially "Deepsky Astronomy Software (DAS)," is the latest version of a program that's been around for quite a few years. Its author, Steve Tuma, has continued to upgrade it through almost yearly releases, and it's garnered quite a few fans. Formerly,

observing list that can be printed out to provide a clear and useful plan for use at the telescope. Detailed information is available on any of the objects in the plan (or, indeed, in Deepsky's databases), and charts can be produced as desired.

If you're like many of us, you won't be printing out *anything*. You'll be

using a laptop with your goto telescope. In that case, Deepsky becomes even sweeter. It uses ASCOM to allow you to reliably point your goto scope (many models are supported) at any of the objects in your plan, on the charts, or in the database. For some scopes, you can even enable a "slideshow" mode, with the telescope pointing itself at successive objects in your list without your intervention.

But what if you're old fashioned (like Uncle Rod), and still like paper charts? Deepsky gives you two options. You can use the charts generated by the program itself (the charting module was done by Dean Williams). In addition to standard atlas-style charts, you've got numerous options for doing finder type charts in various scales and styles. If you're more comfortable with something you're already familiar with, Deepsky interfaces with the famous freeware program Cartes du Ciel, so that you can use CdC to generate your charts instead of Deepsky. A copy of Cartes is included on the CD/DVD ROM versions of deep sky.

Which brings up the question of what's the difference between the three versions of this program, downloadable, CD and DVD? The downloadable version, which is a very good value, is different from the other two in that it has a limited set of stars that can be plotted on the charts. You can "only" go down to magnitude 11 rather than the 15.5 of the CD and DVD editions. It also lacks a couple of the bonus software programs included on the disks: Cartes du Ciel, and Virtual Moon Atlas. The big difference, though, is images. While the CD and DVD feature 11,000 and 400,000 object images--most culled from the Digital Sky Survey-- respectively (yes, 400 **THOUSAND**), the downloadable version must make do with 109. All versions include the Pocket Deepsky Program, which allows you to download lists to your Pocket PC and do other cool things.

Which would I choose? Heck, man, *get the DVD!* One of THE most useful features of this program when you're in the field is its image database. I've often found that being able to look at a picture of my quarry makes the difference between finding it and missing it. If you're out in the boondocks, you won't likely have an Internet connection, and the image DVD that comes with the DVD edition is much better than dew-soaked inkjet printer hardcopies. The DVD edition's program is contained on a CD, and is identical to the CD version, by the way.

How about the program itself? How does the latest version improve on what's gone before? Deepsky has been around for a long time now, the first release, I recall, being Deepsky 96. Steve should have had the time to get the bugs out, and he definitely has. This version feels the most solid of any of the previous editions. I've never had it crash or do anything weird on me, and the installation program seems smoother and less prone to hang-ups than some of the earlier versions.

How about y'all out there in the choir? Those who are already convinced that Deepsky is a GREAT program, but who are wondering whether they should upgrade from an earlier version? My answer is a big y-e-s! For one thing, Mssr. Tuma makes upgrading attractively inexpensive. For another thing, you don't want to miss the program's many enhancements. Here is a small sample:

-Consolidated logbook spreadsheet screen and logbook entry onto the main screen making the whole logbook easier to use.

-Specify which columns you want to appear on the logbook. There are now nearly 50 columns that you can specify.

-Added other ID as a searchable field using the logbook advanced search button.

-There is a Freeze Columns option on the logbook spreadsheet that freezes columns to the left of the cell.

-The logbook entry screen is completely redesigned. All information is now entered on one screen. In addition, information on the observed object like RA, Dec, Type, Constellation, magnitude, and size are shown on the logbook entry screen for reference.

-There is now a Weather Conditions section in the logbook that lets you store the weather, seeing, transparency, and other notes related to the weather.

-You now have the ability to restore backed up logbooks. You would use this if you had to reinstall Deepsky.

-The search screen on the main spreadsheet hasn't changed much over the years, but now it has been completely redesigned. It is now much easier to find what you are looking for. Besides adding a common name lookup feature, you can specify multiple criteria and save the criteria set for later use. I think you will like this new feature!

-Deepsky can now display *Uranometria 2000* chart numbers's in the spreadsheet

-Find Date of Highest Altitude During Darkness. You can now right click an object in the spreadsheet and select this option to find the date the object will be highest in the sky for your location. Information displayed will include altitude, azimuth, date, time, altitude of the moon, and the moon phase.

-Observing Plan Manager lets you see a list of all your plans in a spreadsheet format. You can rename or delete them and also quickly open them.

Excuse me, but I see it's clear outside. Am I prepared for that? You bet I am. With Deepsky, I most definitely am!

THE THRILLA IN POSSUM SWAMP: SHORT TUBE 80 VERSUS STARBLAST

Rod Mollise

I'm back inside and drinking a *cold* one. And I don't mean a co-cola! I'm drenched in sweat and stinking of Deep Woods Off, but it was a fun August evening way down south in Mobile, Alabama. This wasn't the kind of night where you do deep-deep sky viewing or even critical lunar imaging. It was hot (heat index in the 90s at 9pm), hazy, and the Moon was "southing" and down near the horizon in so-so seeing. What to observe? My goal tonight was to see how the venerable Short Tube 80 stacks up against the *new* king of the el cheapo grab 'n go scopes, the Orion (Synta) StarBlast, on a 10-day-old Moon.

The Contendas:

In this corner, the Short Tube 80, 80mm f/5 achromatic refractor. I used the Celestron version (made, like the StarBlast, by Mainland China's Synta) mounted on the EQ1 GEM that was included in the since-discontinued Celestron package. Based on comparisons I've made over the nearly four years I've owned it, it has distinctly above average optics for one of these scopes.

In the opposite corner we have the StarBlast. This is a Synta-made f/4 4.5 inch (114mm) Newtonian on a simple single-arm dobsonian mount. I've placed this little scope on a home-made "StarBlast Stand" (see my StarBlast review at <http://astromart.com> for details) that

is more or less equal to the EQ1 in steadiness. The EQ1, despite its spindly appearance, is surprisingly stable with the 80 on it.



Eyepieces: In keeping with the bargain-basement tone of this shootout, I used three Synta Ultra-wide eyepieces, a 15mm, a 9mm and a 6mm. These are sold by Orion under the badge "Expanse," and feature 66 degree apparent fields. For lowest power, I used an old Celestron "Silver Top" 26mm Plossl. For higher powers, an Orion Shorty 2x barlow and a GTO (Hands-on Optics) 3x barlow were put into play.

Both telescopes were easy to carry into the yard at a moment's notice, with the 80mm being a one trip affair and the StarBlast requiring two trips. The StarBlast is a little larger and heavier than it looks, and its stand, lightweight though it is, needed to be carried out by itself.

I allowed both scopes about an hour to acclimate to the hot outdoor temps (otherwise you get the "bathroom-mirror-post-shower" effect). Because of problems with condensation down here when you take a scope from air conditioning to the beastly hot outdoors, a refractor

really doesn't have any advantage "cooldown" wise.

While the Moon would not be as difficult a target for these small, fast scopes as, say, Jupiter, it turned out to be a very telling subject.

Round 1: 26mm Plossl, 15x for the ST80, 17x for the StarBlast.

This is a good place to start, as low powers, *really* low powers, are a major attraction of these scopes. Normally you're more interested in the deep sky at these magnifications, but the appearance of the Moon at this power was revealing optics-wise.

ST80: Very pleasing indeed. The nice gibbous Moon was framed by a huge expanse of sky, and the field included some picturesque Victorian rooftops. The image was incredibly sharp with the Moon at the center of the field. Excess color? This is a fast achromat, but with my eye on-axis, only a very subdued yellow/amber fringe on the limb was apparent. Moving my eye off-axis transmuted this to a violet color, but it was still minor and not at all disturbing. Decentering the Moon to see how sharpness held up as the field edge was approached showed that the 80 is surprisingly good in this regard, hanging in there until you get to about 70% of the distance to the field stop. Sharpness begins to degrade there, but even at field edge it is not disturbingly bad.

StarBlast: Very similar image despite the slightly higher magnification. In sharpness, the two scopes appeared almost identical. Color? It wasn't so much the absence of the yellow fringe on the limb that caught my eye, but the much "purer" color of the Newtonian. The 80 delivered a slightly yellowish Moon. In the StarBlast she was a wonderful silvery hue. This was a very good image indeed, but moving the Moon off center, revealed, as you would expect, considerable coma in this

fast Newtonian design. At 50% of the distance to the edge, sharpness was obviously degraded, and at field edge the Moon was mushy indeed. At this low power (and in a sky that was not quite dark), the shadow of the secondary was obvious but not really distracting. Both of these fast scopes required a gentle hand on the focuser, as their depth of good focus is shallow.

The Victor? The ST80. At these low powers a small refractor shines. In some ways the image was "better" in the Newtonian, but the very curved field and the shadow of the secondary resulted in a downcheck for it here.

Round 2 15mm Synta Ultrawide, 27x in ST80, 30x in StarBlast.

At 27x, the image in the ST80 is still pleasingly sharp. At this magnification, details like the terracing in Copernicus begin to be easy to see. The color is still well under control, and virtually the same as far as its prominence goes as at 15x.

The StarBlast's 30x image is still very similar to that of the ST80. It is noticeably brighter, but the level of detail visible is about the same. Again, the color appears more "natural" in the StarBlast in my opinion.

The victor? Tie.

Round 3: 9mm Synta Ultrawide, 44x in ST80, 50x in StarBlast.

The 80 f/5 is delivering with ease at this power. The terminator is delicious, with Gassendi, which is just peeping out of the shadow, appearing razor sharp. Good detail is also available away from the terminator, all across the disk, with the maria standing out with decent contrast. The color fringing of the limb is more apparent now, and I thought I began to detect a little violet in the terminator detail in the southern highlands. Not disturbing, though.

This is the magnification where the StarBlast started to pull ahead. The lack of spurious color is immediately evident, but there is more to it than that. The terminator is sharp in the ST 80, but it's just a wee bit sharper in the StarBlast. Also, more detail was seen across the disk in the StarBlast, including in Tycho's ray system. The maria are more contrasty than in the refractor.

Victor? The StarBlast, by a nose.

Round 4: 6mm Synta Ultrawide, 66x in the ST80, 76x in the StarBlast.

The terminator still looks good in the ST80, with more detail--the smaller craters on the floor of Clavius, for example--becoming visible. The rest of the Moon's disk is starting to look decidedly soft, though. Not bad, not bad at all, but obviously not as sharp as at lower powers.

The detail visible in the StarBlast at this magnification is impressive. Copernicus, especially, is wonderful. Detail away from the terminator is just excellent, too, with maria and other dark detail standing out amazingly starkly against the highlands. In addition to the main arc of craters across Clavius' floor, other small craters are beginning to be visible within its walls.

Victor? StarBlast, more detail, more sharpness.

Round 5: 9mm Ultrawide, 2x barlow, 88x for ST80, 101x in the StarBlast.

The image is still holding up surprisingly well in the 80. The terminator is sharp, giving up plenty of detail. Unfortunately, the rest of the disk looks softer yet, and the color fringing and violet cast are slightly more apparent--but only slightly.

Tremendous image in the StarBlast, with excellent detail everywhere.

VERY sharp. Unfortunately, at 100x, the little dob mount becomes noticeably harder to manage. Tracking is more difficult than it is using the ST80's slow motion controls. The EQ1 is a joy. Heck, y'all know I just am not a dob kinda guy. But the image? Nothing to complain about whatsoever. It looks quite comparable to that in my hallowed and ancient Edmund Scientific 4.25 inch f/11 "Palomar Junior."

Victor? StarBlast. It's beginning to open a lead on the 80, which seems to be breathing a little hard now.

Round 6: 6mm Ultrawide, 2x barlow, 133x in ST80, 152x in StarBlast.

The 80 *is* persevering, but the entire image, including the terminator, is looking soft. Surprisingly, the chromatic aberration is STILL not objectionable on-axis. And there is still good detail to be had. If the Sun were a little higher, I think Gassendi's floor would be showing off considerable detail. The major difference from 88x? The image is getting dimmer, and noticeably so.

Once again, the Moon in the StarBlast reminded me very much of its appearance in my long focal length 4.25 inch Edmund. It does 150x with ease, and this is an excellent power for casual inspection of the Moon. It does not stress the scope or mount out, and it reveals tons of detail.

Victor? Again, the StarBlast, but not in a blowout.

Round 7: 6mm Ultrawide, 3x barlow. 200x for ST80, 228x in StarBlast.

This is where my pore li'l 80 didn't just start breathing hard, she started to pant and stumble. The image was soft overall, with no more detail visible than that at 133x. Again, however, I was impressed that the color remained under control. This is

a usable power for double stars with this scope, but admittedly *ugly* on the Moon. It might be at least somewhat better under better seeing conditions, of course.

StarBlast? The silly little thang took 228x and asked for more! Now, the image was becoming a trifle dim, but it was still amazingly sharp, and more detail was visible than at 152x. Notably, I found that the bright spot in the middle of Plato, which is the "main" craterlet on its floor, came into view at this magnification. Gassendi was superb and so was Clavius. This magnification is quite usable on the Moon with this scope.

Da Winna? No contest. I wouldn't necessarily choose *any* 4 inch scope for serious Lunar work, but the StarBlast acquitted herself well, and, on a night like this one, I certainly would not have bothered to set up a larger scope. Not even an 8 inch. The detail this 4 inch revealed was *stunning*. The ST80 certainly had nothing to be ashamed of either. It took powers up to about 150x without complaint, not a bad accomplishment for an humble three inch rich-field telescope.

So the 80 is NOT destined for the scrap heap. Not hardly. The StarBlast, with its lack of color and larger aperture, *will* show more of *anything*. See my Astromart review (in the articles section) for a run-down on its deep sky performance. But the StarBlast is really only well suited to visual use. The 80 can do other things. It is surprisingly good as a deep sky imager, for example. But, yes, there is no use denying it, visual-image-wise the StarBlast IS a better scope if you're after a grab 'n go with enough aperture and sharpness to satisfy on those *Cat On A Hot Tin Roof* nights when you can't convince yourself to even think about setting up a big gun.

I love my 80, but, dang, this StarBlast is amazing.

Book Review – *Brother Astronomer: Adventures of a Vatican Scientist*

George Reynolds

Many of you have read – or have a copy of – *Turn Left at Orion* by Guy Consolmagno, an entertaining and instructive guide for amateur astronomers with small telescopes. No less entertaining

is his book, *Brother Astronomer: Adventures of a Vatican Scientist*, in which Jesuit Brother Guy Consolmagno tells his life story in brief, and in more detail discusses Mars rocks, Antarctica adventures, and science/religion issues.

With grace and good humor he tells of his becoming curator of the Vatican's collection of meteorites, one of the oldest collections in the world, mostly amassed in the nineteenth century by French nobleman Marquis de Mauroy. Consolmagno and his associates devised a method to determine the mass, the density, and the porosity of meteorites, which lead to theories on where meteorites come from – asteroids and other planets. He calls them his outer space "aliens" at the Vatican.

His real adventures are recounted with good-natured wit in the section titled "Wide Wildwhiteness", a meteorite-hunting expedition with other scientists on the bottom of the world in Antarctica. He makes the vast, cold continent seem to come alive in its bleak expanse and extremes of cold and wind. The personal interaction among the small group of individuals forced to spend six weeks together in that

harsh frigid environment is insightful, at times poignant and other times hilarious. Everyone on the team has a specialty, and he often wonders, "Why am I here?" They bring home a treasure trove of 390 meteorites. It is fascinating to learn how they go to great pains to preserve the pristine condition of the space rocks. To collect them without contaminating them is a real challenge, especially under subzero temperatures, where the cold dulls the mind and freezes the fingers.

Perhaps most enlightening and enjoyable are Consolmagno's discourses on science and religion. He reminds us that only recently, in our popular culture, has there been an apparent schism between science and religion; that indeed, the great thinkers of ages gone by were men of renown in the church, men of great religious faith. The search for truth is and always has been the goal of both good religion and good science. "God gave us brains; He expects us to use them," he says.

"To understand why" science and religion are thought to be opposed, says Consolmagno, "we need to look not at science, nor at religion, but at the popular culture." He explains that science in school is often a turn-off for kids, and many leave the church as teenagers, "before they are old enough to appreciate it." The result is a childish view of both science and religion.

The popular media – news, TV, movies – present a distorted view of both science and religion as well, he contends. If there is no action, no drama, no conflict, it doesn't make good copy or good video. Scientists are often portrayed as "mad", and preachers are stereotyped as extremists. Fear and confusion of the roles and relationships of science and faith are the result. "It's a fundamental misconception of how both science and religion work." He goes on to say that Christianity

does not start with faith, it starts with experience; and that science does not begin with experiment or logic, it begins with intuition.

He recounts the timeworn story of Galileo and the Church, and contends that that situation was largely a matter of pride and politics, not strictly religion and science. The ill-feeling produced by Galileo's trial set back science for years, and sparked the thinking that the church was anti-science, though the Church has since repeatedly admitted the mistakes it made there almost 400 years ago.

In his "Confession of a Vatican Scientist" section of the book, Consolmagno presents many wise arguments explaining the deep connections between science and religion. You'll have to read it to appreciate it. He says, "Good science is a very religious act. The search for Truth is the same as the search for God." Of the "unexplainable", he says, "Our theology prepared science to accept the seeming contradictions of quantum theory, for instance; just because something doesn't seem to make sense, is no proof that it must be false."

He sums it up by saying, "The desire for truth and understanding, including understanding the truth of the natural world, was given to us by God, in order to lead us to God. It is the desire for God. It is why I am a scientist; it is why the Vatican supports me."

2004 Illinois Dark Sky Party

John Solodar
Observing Chair
St. Louis Astronomical Society

The 2004 Illinois Dark Sky Party was a great success. It was held at Jim Edgar Panther Creek State Fish & Wildlife Area about 25 miles northwest of Springfield, IL. This is

the third year for the event. It is run by the Sangamon Astronomical Society (www.sas-sky.org). This year, they asked my club, the St. Louis Astronomical Society (www.slasonline.org) to co-host the event. We gladly agreed.

I arrived on Thursday afternoon around 2 pm. I was among the first ten or so to arrive and the registration desk was not open yet. I talked to Larry Hardy, President of SAS. I had met him when he came to St. Louis to promote the star party. He gave me the run down on where we could set up. Two large fields, each with a pavilion, were available. One pavilion was for the speakers, the other for the food. We would be allowed to pull onto these fields to unload, but not park overnight. There were also two fields across the main road which we could park in overnight. No problem, I'll wait for fellow SLAS member and frequent observing partner, Jerry Loethen. He was supposed to arrive at 2 pm. Together, we would make a decision on where to set up. Little did I know that Jerry was entertaining a plumber at his house that morning and would not arrive until around 4 pm. After about 30 minutes, I decided to set up on the first field with the pavilion near the

registration desk. This would be next to the folks from SAS and give us a chance to get to know them. The only draw back was one large tree about 100 yards away that might block a few low objects in the Southwest. This tree turned out to be a good thing, as it put us in the shade from 5 pm on. This allowed us to uncover the scopes and let them fully acclimate each evening.

So I pulled up along the side of the road to unload. Larry Hardy then told me we could leave our cars there for the duration. Fantastic. So I unloaded the car, got the tent set up, scope set up and covered. All this in my work clothes. Time to climb into the tent for a pair of shorts and a drink of water. After talking to some folks for awhile, Jerry arrived about 4 pm. I explained the layout and how I had picked the spot. He talked about moving, but I told him he was nuts since my gear was already all set up. Jerry parked and unloaded next to me. He then proceeded to set up the world's biggest one-man tent. I think the whole club could have fit inside. Next to that went the dining fly and all of the necessary kitchen appliances.

We were joined next by Greg Rigelman and then Rhonda Whelan



and Cliff, all SLAS members. This would make up the SLAS contingent that would be in attendance for the entire weekend.

Dinner that night was spaghetti and meat balls. I left stuffed. The food for the weekend was provided by the Lion's Club. It was fantastic and plentiful. The folks preparing and serving the food were glad to be there and a lot of fun to talk to.

After dinner, we watched the sun set and a large cloud bank hang in the Southwest. Greg had read it was from Hurricane Ivan, but some of the locals said it was just a local front. Either way, it had a very different look to it than any other cloud formation I have seen. It looked like the edge of a lake. Ripples in the middle with a very finite edge that ran from the Southwest to Northeast. It stayed with us all night, but only blocked half the sky. In Missouri, we would call this M111, The Missouri Nebula. Otherwise know as a large cloud bank. This must have been M112, The Illinois Nebula. The North and West were clear all night.



I've been observing for about 3 years and have recently started on several of the Astronomical League observing programs. I decided to devote each night to a different program. For the first night, I worked on my deep sky objects for the Universe Sampler program.

Star hopping with my LX-90 (8" SCT) I bagged 11 of these, leaving just a few left for the spring. Two of these were 10th magnitude galaxies, which was a first for me. Jerry was working on Herschel objects with his home made 8" dobsonian and binocular deep sky. Greg was enjoying some dark sky with his home made 12" truss tube dob. Rhonda was set up with her Celestron 9.25 SCT on a GEM. She got some help from numerous folks (myself, Greg, SAS members, and a few others) with her focus issue and tracking. By the end of the night, the focus issue was fixed, but still not sure about the tracking.

Around midnight, you could hear the snoring on the observing field as some folks had already retired for the night. The other sound for the night was two packs of coyotes. They were located on opposite sides of our observing fields and were having a howling contest. This continued for most of the night and made us think of the past weekend at Lake Carlyle (this was a SLAS observing weekend where we had coyotes as well). Most of us went

until around 1:30 am, and then called it a night. I fell asleep to the sound of coyotes as I waited for them to invade the camp.

I had visions of sleeping in until 10 am, but this was not to happen. The folks who had crashed at midnight were

now up at 6:30 am, drinking coffee and having a great conversation. All of this about 30 yards from our tents. They were trying to be quiet, but when you are the only sound around in the early morning, voices can carry pretty far. So I crawled out of bed around 7 and decided to go for a walk. About 45 minutes

later I returned to camp and had managed to remove most of the congestion from my head. The previous night had been cool with a moderate breeze, followed by cold during the night. This would be typical of the remaining nights.

We spent a good portion of the day lounging around, reading books, and talking about many different topics. Some of which were even astronomy related. We attended a presentation by a NASA Ambassador who gave us an overview of all the current projects. Greg and I wandered up for lunch while Jerry, Rhonda, and Cliff fended for themselves.

We were joined later in the afternoon by two more SLAS members, Victor Castillo and Len Haertter. Victor set up his 8" SCT next to us and brought with him his great sense of humor. He fit right in and even gave Jerry a new nickname. Perhaps this will appear in a future SLAS puzzler or Star-B-Que quiz. Len set up with his brand new, not even been powered up yet, 10" LX200 GPS scope. It was tricked out very nicely with a new diagonal, Televue eyepiece, and Dewbuster controller and heater strips. At this point, the clouds were intermittent and the evening did not look very promising. We were glad we had made it up Thursday night, as Friday was not looking great.

We set up for the evening and watched as Len turned on his new machine. If you have never seen a GPS scope do it tricks, it is quite amazing. It finds the satellites, finds north, turns in several directions as it checks the base for level, and then proceeds to find the alignment stars. You just have to center the stars and hit enter. About half way through this, we convinced Len that he needed to abort the computer alignment and get his Telrad and finder scope aligned first. After convincing him that we were serious, he followed our advice. He powered off and on, then proceeded

with a new computer alignment and was off and running. Around this time, Rhonda had her scope set back up and got the mount and tracking to work. She proceeded through a tour of the sky.

Len had not packed a tent for the night. He was planning on sleeping in his car. Around 11 or so, with the temps in the 50's, Len discovered that he had not packed a jacket either. We dug up a spare for him and he continued on his search of the sky.

I spent the evening working on the remainder of the fall / winter Messier objects that I had not gotten at Carlyle the previous weekend. I was working in the northern part of the sky. About midnight, I stood up to stretch. When I turned around, I saw the entire remainder of the sky was clouded out. I had happened to be working in the only clear portion. Around 12:30 most of us called it quits and headed for bed. Len decided he would drive home then instead of spending the night. We offered space in

our tents, but he insisted on taking the 2.5 hour drive home. Len, if you made it home safe, let us know!

The next morning was overcast and Victor bailed out early. Then he reappeared. Turns out he had a calling for a proper breakfast at Cracker Barrel. He did decide later in the morning to leave. We thanked him for being the sacrifice and taking the clouds with him.

We spent the day lounging again. We participated in an Astronomy Bowl, which Greg's team won. Greg got a few prizes included a lecture series on tape. This may be destined for the SLAS library. Greg Ruppel and Gary Kronk gave talks that were similar to their presentations at our monthly meetings this year. We also wandered the field and admired many different scopes. The evening meal was a steak dinner with cheesecake for desert. This was followed by the raffle. I won the

coveted key chain red light, Cliff got a poster with a Hubble photo, and Jerry won an accessory case. He refused to trade for the key chain flashlight. The photo contest winners were announced, with some

goto loose. I started in the West with a few low constellations, and then proceed my way across the Milky Way. Cygnus to Cassiopeia to Perseus to Auriga. I was picking Messier and Caldwell objects in these constellations and feeding the NGC numbers to the goto. Jerry, Greg, and I spent a good deal of time on the Veil Nebula and several others in the area. We compared views in each scope and swapped eyepieces and narrow band filters. This was my highlight of the evening and perhaps the trip. By the end of the night, around 1:30, my list

topped out at 40 objects. About half of which were new.

Somewhere in the evening, Jerry called the coyotes who promptly answered back. The other sound of the night was Rhonda. She was working the goto on her scope with Cliff sitting in a chair taking notes for her. How good is that set up? Just call out your notes and someone will write them down for you. I told Cliff that my hands were tired

and would he please come take notes for me. Cliff came up with some lame excuse like he didn't know me that well and would be sticking with Rhonda. Oh well, it was worth a try.

Sunday morning we packed up and headed out. I left around 9 am and the others were probably not far behind. We let Greg pick up the rear to troll for stranded astronomers.



amazing results. One of folks had been published in S&T. We had admired their setups earlier in the day.

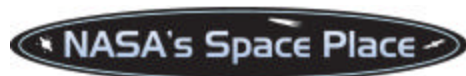
We wandered back to our tents and waited to see what the sky would bring that evening. It turned out to be the best night of the three. Thanks Victor! After two nights of star hopping, I decided to let the goto computer do its thing. I first checked off some lunar objects as the moon set. Then I turned the

It was a great weekend. I had a blast observing with SLAS members and seeing many new sights. Jerry got a new nickname. Len's new scope saw first light on M13. Rhonda got her scope working. I learned that Cliff is not nearly as scary as he looks. I also got to meet many of the folks in SAS (Larry Hardy - President, Mike Robertson - VP, Tony, Ray Watt, Don Walker, and many others). They invited us to join them for their March Messier marathon. Just a great bunch of folks who made us feel right at home. I have a feeling that SLAS and SAS will be doing many events together in the future.

Hope you can join us next year, as this event is definitely on my calendar.

John

P.S. Cookie, thanks for the great cobbler on Friday night.



Resisting Retirement: Earth Observing 1

Patrick L. Barry

The Hubble Space Telescope isn't the only satellite that scientists have fought to keep alive beyond its scheduled retirement. Scientists also went to bat for a satellite called EO-1, short for Earth Observing 1, back in 2001 when the end of its one-year mission was looming.

The motivation in both cases was similar: like Hubble, EO-1 represents a "quantum leap" over its predecessors. Losing EO-1 would have been a great loss for the scientific community. EO-1, which gazes back at Earth's surface instead of out at the stars, provides about 20 times more detail about the spectrum of light reflecting from the landscape below than other

Earth-watching satellites, such as Landsat 7.

That spectral information is important, because as sunlight reflects off forests and crops and waterways, the caldron of chemicals within these objects leave their "fingerprints" in the light's spectrum of colors. Analyzing that spectrum is a powerful way for scientists to study the environment and assess its health, whether it's measuring nitrate fertilizers polluting a lake or a calcium deficiency stressing acres of wheat fields.

Landsat 7 measures only 8 points along the spectrum; in contrast, EO-1 measures 220 points (with wavelengths between 0.4 to 2.5 μm) thanks to the prototype Hyperion "hyperspectral" sensor onboard. That means that EO-1 can detect much more subtle fingerprints than Landsat and reveal a more complete picture of the chemicals that comprise the environment.

As a NASA New Millennium Program mission, the original purpose for EO-1 was just to "test drive" this next-generation Hyperion sensor and other cutting-edge satellite technologies, so that future satellites could use the technologies without the risk of flying them for the first time. It was never meant to be a science data-gathering mission.

But it has become one. "We were the only hyperspectral sensor flying in space, so it was advantageous to keep us up there," says Dr. Thomas Brakke, EO-1 Mission Deputy

Scientist at NASA's Goddard Space Flight Center.

Now, almost three years after it was scheduled to be de-orbited, EO-1 is still collecting valuable data about our planet's natural ecosystems. Scientists have begun more than a dozen environmental studies to take advantage of EO-1's extended mission. Topics range from mapping harmful invasive plant species to documenting the impacts of cattle grazing in Argentina to monitoring bush fires in Australia.

Not bad for a satellite in retirement.

Read about EO1 at:

<http://eo1.gsfc.nasa.gov>

See sample EO-1 images at:

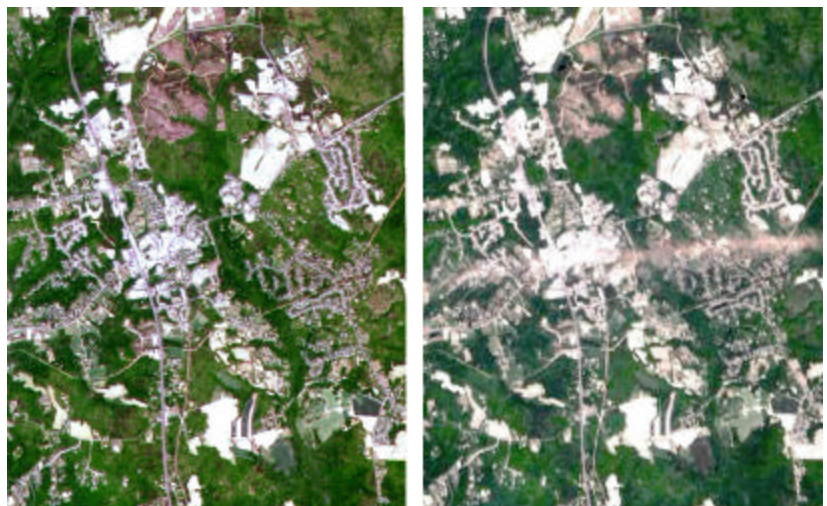
<http://eo1.usgs.gov/samples.php>

Budding young astronomers can learn more at:

http://spaceplace.nasa.gov/eo1_1.htm

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

Caption: These images, made from EO-1 data, are of La Plata, Maryland, before and after a tornado swept through May 1, 2002.



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."



It's an ill wind that blows NOBODY good! What was the last I saw of those two you-know-who morons? Beavis was paddling (!) Butt-head upstream along a flooded Selma Street during the height of the much feared Ivan, mumbling, "Hurricane, heh-heh, hurricane, heh-heh." Butt-head seemed a little subdued. Least ways, that was what I THOUGHT was the last I'd see of the two pinheads. Until I answered a persistent knocking on Chaos Manor South's storied portal, and opened it to reveal the terrible two, faces smeared with marshmallow pumpkins:

*"Uh, Trick or Treat."
 "You boneheads, it's not Halloween yet!"
 "Uh, huh-huh, we mean just 'trick'!"*

BONK! I was conked with another hermetically sealed mayo jar (kept on Funk and Wagnal's porch for a fortnight. One with at least a few stray...

Rumours

What's causing indigestion for some Solar observers?
 The announcement that their favorite little company, Coronado, has been bought out by what some of them consider the Evil Empire, Meade Instruments. Before the

news was a day old, we had worthies on s.a.a. predicting that the Coronado Ha scopes would soon feature plastic tubes! My impression? This could be a good thing. Coronado has turned out some nice gear, but I understand they've been a little light in the capital department, and their delivery times have been—well, they can stand improvement from what my sun-gazing friends tell me.

The end of the Nexstar GPS scopes? As you may have heard, Meade has prevailed in one facet of its patent infringement suit against Celestron, the part concerning its "find north and level" routines that are used in goto GPS scopes for initial alignments. Birds are twittering that Celestron is to bring out a new line of scopes to replace the GPS models, ones that will not infringe upon the Meade patent. How different they will be from the current models we cannot say as yet.

Meade is on the move in an area they've let stagnate for some time. Lots of us have wondered why they've never chosen to update their premium Ultrawide and Superwide eyepiece lines. They've always been popular, but have remained unchanged for at least a decade. Well, change is here with the company's announcement of The Series 5000 eyepiece line. This includes a return to the famous 5 element plossl design that Meade offered once-upon-a-time as its original Super Plossls, and new eyepieces and barrel designs for its Super and Ultrawide series. Anything different optically with the Ultras and Supers from their current designs? Stay tuned, as these eyepieces will prove popular and will no doubt be dissected in detail by every eyepiece crazy amateur out there (of which there are many these days).

That is it this time boys and ghouls. Yes, a little light, but bad ol' Ivan threw us a monkey wrench fer sure.

--The Anonymous Astronomer

The Wrap-up...

As the Anonymous one says, Hurricane Ivan dealt us a nasty old hand. Chaos Manor South was relatively unscathed, despite the way it appears in this picture. But being without power for a few days, and having PC problems when it came back resulted in a rather lighter than usual Skywatch this time. Here's hopin' things will be back to normal come the Winter issue in January!

As always, I'm looking for articles on any aspect of **amateur astronomy**: Observing, equipment/book/software reviews, poems, personal experiences, star party reports, fiction, cartoons, you name it!

If you have something for me, well, send it on to yer ol' Uncle Rod at RMOLLISE@aol.com

See you all in January!

--Uncle Rod

