

**DOWN HOME *Gumbo*
Astronomy from *Chaos*
Manor South!**

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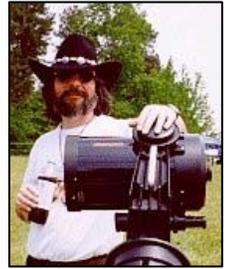
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Skywatch
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Uncle Rod Mollise's

Skywatch



Traveling Light, Going Deep, and Doing it Cheap

Uncle Rod

I like to see a lot. Of the deep sky, that is; the sort of views delivered by larger-than 12-inch scopes. I don't want my telescope to dictate my choice of vehicle, though. What's good for me is what's beloved of the middle class, the Japanese sedan. Since I commute 80 miles a day, one's a reasonable choice for me in this day of four-dollar-a-gallon gas, even if deep down I might prefer a big, honkin' F250 pickemup. This uncharacteristic stripe of practicality in my character is one reason I don't do big Dobs. Oh, I've got a 12.5-inch truss tube job, but that hardly qualifies as "big" in this incipient age of 30-inchers on every observing field.

I also don't like to go to star parties alone (though I will if I have to). A drive is much more pleasant when I have Miss Dorothy or a fellow amateur along for company. That tends to eliminate big CATs as well as big Dobs. Oh, when it's just me, sure, I'll haul the NexStar 11 out to our local dark site, but for trips further afield it's not as practical (that word again). The NS11 in her case takes up *at least* half the trunk. But, still, *I like to see stuff*. Plenty of stuff. In detail.

So what to do? I have found salvation, brothers and sisters, in what was the amateur's favorite scope in the days before aperture fever struck and everybody (it seems) glommed onto a C14 or M14. I'm talkin' about the good, old C8, of course (please read C8 to also mean "Meade 8"). A C8—or any eight inch scope—many folks have forgot, can actually show a heck of a lot of the deep sky from a good site. Which isn't to say one can compete with a 24-inch Dobsonian, right?

Yes and no. At the eyepiece there's no doubt the big Dob will blow the little CAT away. But in order to enjoy the blow-you-away experience of a large scope, you have to get that scope to the site, which ain't easy, and, if, like me, you don't want to buy vehicles to fit your scopes, "impossible." Or is it?

I have finally found a solution to this size vice capability problem by combining a deep sky video camera with the C8. I'm talking Stellacams and Mallincams, of course. Now, granted, looking at a video display is not *quite* the same experience and lacks a little of the *romance* of looking through an eyepiece. Romance? Shomance! I just want to see the deep sky in detail in (at least near) real time and don't care how I do it. In truth, though, "video observing" is actually more similar to the eyepiece experience than it is to CCDing.





Ready to Rock!

Globular clusters, for example, resemble eyepiece views more than they do long CCD exposures. Sure, there are plenty of stars resolved, but the cores of these objects are not burned out as they tend to be in deep CCD images.

Which video system? Mallincam or Stellacam? Both brands work incredibly well, with the latest models offering significant advances over my old Stellacam II. The Stellacam III, in addition to its ability to expose for as long as desired, can be purchased with a Peltier cooler to help eliminate the pesky “false stars”—thermal noise—that have bothered users in the

thing, one very important thing, Stellacam’s seller, Adirondack Video Astronomy, does not: a color camera. As might be expected, the color model is not as sensitive as the black and white Mallincams or Stellacams, but that’s not the way the human eye perceives it. The addition of color makes images look *more* detailed and higher in contrast than monochrome ones. *How much?* It won’t hurt *too* much. Expect to pay about \$1200.00 for the latest models.

What, exactly, can one of these videocams deliver with an humble C8? It’s been said one can effectively multiply scope aperture *three times*. I believe it. Based on my experience, the images on my monitor are at least comparable to what I’ve seen visually through 24-inch scopes. Actually, for some objects, the “multiplier” is even larger. I’ve struggled, for example, to see even a trace of the Horsehead Nebula with a 24-inch h-betaed Dobbie from a dark site. In the Stellacam-equipped C8, however, there’s no need for *averted imagination*.

What these cameras do to do what they do is expose for longer than the normal 1/30 second of the normal video camera, but for still relatively short periods of time. My own Stellacam II, a “previous generation” camera, exposes for a maximum of about 12 seconds before automatically refreshing the frame on the monitor. Newer cameras can go longer (unlimited in the case of the Stellacam III), but even with longer exposures, the experience feels “live” compared to that of a “real” CCD, since there’s no need to punch keys on a computer to start exposures or process frames. Just hook camera to video display with a simple coax cable and stare at a monitor as the pics come through in an endless stream. The images delivered to that monitor remind of the visual experience as well.

past. The Mallincams are similar, featuring *integral* Peltiers (the Stellacam III cooler is more of a “bolt on” affair”). While the Mallincams can’t expose for as long as the SCIII, with about a minute being the limit for the Hyper Plus models, Mallincam offers one



And Ready for the road...

The Nag is there, and, from good skies, looks like a horse, not just a faint kidney bean shape.

To take advantage of one of these video marvels in the context of my "Go Light, Go Deep" metaphor, you'll also need a C8 of some kind, of course. Which one's best? Any 8, old or new, will work...BUT...there are some things that will dramatically improve the video experience. The first requirement for happy videoing is an accurate go-to system. The chips of deep sky video cameras are still relatively small, and even with an f/3.3 reducer on the C8 (**a must**) the field isn't much larger than about 20' in size. For maximum enjoyment the scope must be able to put target objects on the chip consistently without making the astrovideographer resort to annoying dodges like "sync" or "precise go-to."

Also, while alt-azimuth scopes can be used (I've had very good results with my alt-az mode NS11), a GEM offers considerable advantages. Most importantly, if decently polar aligned there will be fewer frames with oblong, slightly trailed stars. Alt-az scopes track "good enough" for video, but in some parts of the sky their stair-step style tracking means frames with icky stars. That will become truly annoying with the longer exposure times offered by the newer cameras. Sure, you could put a fork mount scope on a wedge, but who wants to fool with that these days? Not me. Finally, a GEM - C8 combo can be broken down into easy-to-pack components. My Ultima 8 OTA and GEM

mount head reside in an amazingly small Rubbermaid storage container during transit.

Which GEM, then? A C8 is super on a CGE or a G11 or any one of the excellent medium-heavy

OTA to any of its library's 30,000 plus objects. At \$1499.00, the SC-8 AT 8-inch would seem a hard-to- beat deal for the deep sky video user.

And yet...and yet...there are a



The Light-Deep Observing/Control Position

German mounts on sale today. Frankly, though, if video is the main goal, the sturdiness and precision of these larger mounts is not needed. Save some money and space with something smaller. The two prime mount candidates for deep sky videographers (cheap ones like Uncle Rod, anyhow) are Meade's LX200 and Celestron's CG5 mounted 8-inch SCTs.

The LX200 75 (the SCT package is the **SC-8 AT**) is the successor to Meade's less than stellar LX200. Both the 55 and 75 packages have been blessed with outstanding Meade tubes; the difference is in the mount itself. The newer LX200 GEM (finished a pretty white) is a considerably sturdier, less buggy affair. Equipped with the Autostar hand controller, the LX200 can drive its UHTC coated 8-inch SCT

few nits to pick. While the LX200 is quite an advance over the oft-cursed LX200, it suffers from a few of the same ills as the earlier model. Number one is slipping gears. As on the LX200, the LX200's declination drive gear tends to come loose over time, putting a swift end to go-to operation. It's fairly easy to re-tighten the set screw, but the problem tends to recur. The new mount does sport a much-improved tripod--the original was cursed with one of those datted extruded aluminum jobs. Alas, the LX200's support is still a wee bit on the light side. Finally, while the go-to accuracy of the 75 is often good, it usually ain't *great*. Don't even *think* about doing a two star go-to align. Three alignment stars are

mandatory for decent performance.

All in all, despite these quibbles, the LXD75 is a good value that's certainly worthy of consideration by the Stellacam and Mallincam brigade.

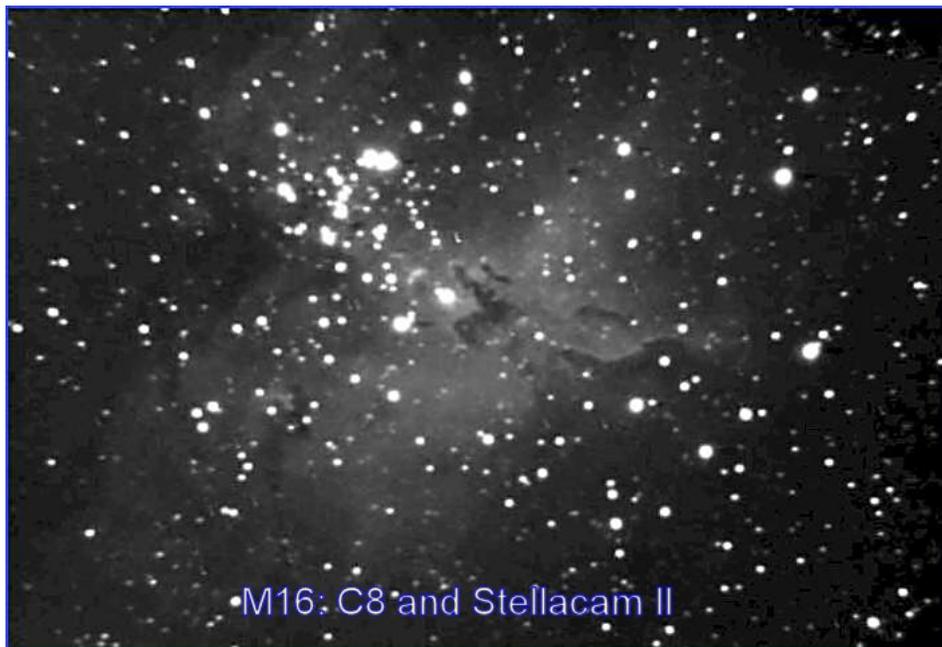
the CG5 placed every single one of the more than fifty objects I requested smack on the Stellacam's small chip at f/4.

Tracking? The CG5's gears are probably not any more accurate than those on the Meade mount,

will not be a happy one. The CG5's polar alignment routine is not as good as a doing a drift alignment, but is more than sufficient for even 30-second exposures.

Stability? The mount is not *inherently* less shaky than the LXD75—they are at heart very similar—but it is aided by its excellent tripod, which is equipped with hefty 2-inch diameter steel legs (this is the exact same tripod used on the much heavier Orion Atlas mount).

Complaints? T'wouldn't be me if I couldn't find *something* to err... "whine" about. It would be nice if the CG5 featured PEC, periodic error correction, to further improve its tracking accuracy, but it does not. The Meade does. Why, Celestron, *why?* The CG5 has a nice tripod, but don't imagine it's the rock of Gibraltar. In windy conditions stars will trail constantly. Fatal? No. A set of Celestron's vibration suppression pads can help under less than optimum conditions. With the pads in



Celestron's Great Polaris "clone," the CG5, looks a lot like the LXD75, though I'd call its indifferently finished black GEM head "less attractive." Appearances can be deceiving, however. In some ways, the CG5 (the CG5/C8 combo is the **C8-SGT**) is a more capable outfit, if a slightly more expensive one at \$1614.00 with XLT-coated optics. Two things put the CG5 a nose ahead: go-to accuracy and stability.

but an ingenious polar alignment routine built into the hand control helps maximize the accuracy that's there. No matter how good a drive, if objects keep drifting in declination due to poor polar alignment, the video experience

Go-to precision? Getting the CG5 go-to aligned *is* a little more time-consuming. For max accuracy the user needs to center six alignment stars rather than the LXD75's three. When that's done, though, this little GEM's go-to accuracy is *amazing*. On a recent video run,





place, I found I could get good results under all but the breeziest conditions.

To sum up, I like the LXD75, but I prefer the CG5. I've used one with my Ultima 8 OTA for three years, often for video and other imaging tasks, and it has *never* let me down. There are other similar-size but pricier choices like the Vixen Sphinx that can do well for video, too, but for an inveterate penny-pincher of a video astronomer like me, the C8-SGT is just about perfect.

OK, SCT? Check! Mount? Check? Vidcam? Check! But what's the totality of the observing experience really like with a "video C8"? *Deep down don't I miss the visual reach of a big scope?* Not hardly. As above, with my Deeper-Cheaper C8, the Horsehead is not a challenge. Nor are Hickson galaxy groups. Or the Palomar globulars. Or...I could go on. I am seeing more with this setup than I *ever* saw visually with a C11 or C14, and I can fit this

rig in a corner of the Camry's trunk, leaving plenty of room for *necessities*--like cans of jalapeno bean dip and bottles o' Rebel Yell. The observing experience with this or any video setup is also *way cool*.

I typically run my CG5 using Celestron's *NexRemote* software, which replaces the hand control with a laptop PC. I sit under a tent canopy out of the dew and damp and off a step ladder; two cables run to the scope, one for computer control, one for the video feed. When I want to observe a DSO, I enter it's ID into the virtual hand control on my laptop screen (or click on it in a planetarium or planning program). *NexRemote* responds in its (her?) Microsoft Mary voice, "Enter Messier number! Acquiring target! Target acquired!" What I clicked will invariably be visible on the monitor of my little portable (12vdc) DVD player and looking great, showing more stars, or spiral arms, or clouds of nebulosity than my middle-aged eyes could hope to see in anything smaller than Tom Clark's 42-inch behemoth. For an

additional touch of coolness, if the DSO needs a little centering up I do that with a wireless Logitech gamepad interfaced to *NexRemote*. When I'm satisfied, if I want to, I hit "record" on the DVD recorder to preserve my observation. Most of the time I want to. Deep sky wonders look flat-out **amazing** back home on the big screen TV. Omega Centauri spills its myriad suns everywhere, M51's spiral arms whip across the screen, M81 threatens to pirouette right into my lap.

If **Lighter, Cheaper, Deeper** sounds like a good solution for you, too, more information about current deep sky video cameras can be found at:

<http://waningmoonii.com/>
(Mallincam)

<http://www.astrovid.com>
(Stellacam)

The mounts? The best place to glean inside information and tips is at the Yahoogroups devoted to them:

http://tech.groups.yahoo.com/group/celestron_as/

<http://tech.groups.yahoo.com/group/LXD75telescopes/>

Incorporating Video Cameras into Astronomy Programs

Bill McDonald

There's a new way to look at the night sky. Integrating video

cameras can provide astonishingly sharp, almost live views of nebulae, clusters, galaxies, planetaries, star fields and more. They have the potential to revolutionize many activities in amateur astronomy from public star parties to group and private observing. But in their current designs, at least, they provide a small view of the universe, missing some of the grandeur and giving the misleading impression that the sky consists of a few striking, but isolated features. So how should they be used?

The object should be to incorporate these new tools into a bigger view of the universe. As an example of this approach consider a public program in summer or early fall. The Milky Way stretches across the whole sky. I would begin around sunset with a slide presentation showing views of the Milky Way as well as detail images of some of the awesome objects in its midst. As darkness falls, move on to a naked eye survey of the Milky Way from horizon to horizon emphasizing the overall shape and some of the bright objects within. Laser pointers help to identify the features being discussed. Then move on to binoculars and repeat the survey, again using pointers, and continuing the conversation.

The next phase would employ multiple traditional telescopes, concentrating on closer views of some of the regions identified previously and further emphasizing the vast continuum of star fields in the disk of the milky way and the contrast between those star fields and the relatively emptiness in out-

of-plane regions. Emphasize the grandeur of the wide field views.

The final phase brings the video systems to bear on some of the spectacular objects in our galaxy. The nebulae of Sagittarius, M8, 20, 16, 17, the clusters, M11 and 22, and the wonderful planetaries, M27 and 57 are stunning, particularly in color. They provide the desert for the evenings' sky feast.

The overall impact of such an in-depth presentation should be much greater than either a traditional star party with an array of scopes concentrating on a list of targets or an exclusive video display showing isolated bright targets.

Our club (www.prescottastronomyclub.org) tried to do the program outlined above on a recent Saturday night at a local park. Unfortunately, as the initial slide show wound down, a dark cloud rolled in from the direction of Sagittarius and negated our planning. So this is about a concept rather than a tested model. I'm confident, however, that the model will work. Another problem will be to find other celestial regions that will lend themselves to this model as well as does the Milky Way. Orion may fit the bill in a few months. We'll be looking for others.

I've been using video systems with my 8 inch Celestron C8-SGT for several years. At star parties they are a big hit. (we do close to 20 observing programs each year) They really get peoples' attention. I started with a (SAC) Minton with up to 2 sec integration. It provided splendid, detailed images of many Messier objects and regularly elicited comments like, "this is the

way to see the universe"....and encouraged people to come back. Reviews of these cameras suggested that they provided the equivalent of an increase in aperture of a factor of three or four. The trick is that the human eye can only respond to the instantaneous flow of photons while the cameras collect photons over time to present a much more sensitive view of the sky. They simulate a larger aperture, collecting more photons over time rather than relying on capturing more photons from a larger aperture. I have moved up to a Mallincam hyper color with integration time up to 12 seconds. The views are even deeper and the impact greater.

There is ongoing discussion on the relative merits of black and white vs. color. In my mind the addition of color represents a substantial increase in information. For public programs, the ability to point out the colors of the planetary nebula M27 and their significance is an enormous advantage. Similarly, observing the stunning colors of the Sagittarius nebulae is highly educational as well as having a giant "WOW" factor.

Other factors make these tools effective in public applications. Focus, for example can be a problem with guests lining up to observe through a traditional scope. With a video system I can focus for all. Pointing out details of an emission nebula while a whole group is looking on is much more effective than telling that same group what to look for when they make their way to the scope.

In short, these are incredible tools for use in public programs, but because they provide very small views of the sky they work most effectively at impressing public guests with the beauty of our sky when used as one part of a suite of tools, from the naked eye to binoculars, traditional scopes, and video-scopes.

Beyond the application of these cameras in public programs, video systems should be marvelous additions to club and other group observing settings. I envision half a dozen friends sitting at a table contemplating a beautiful galaxy image, switching between positive and negative images (the negative images looking like something out of the 1880s)... Or deciding to zoom an image, or adjust color balance of M33 to emphasize the red star forming regions, while twenty 12 second images are collected and stacked, and then collectively massaged to bring out more detail. Meanwhile, star patterns in the image are compared with detailed charts and/or planetarium programs. After a session, the collected images are available to group members to rework later. Could be a marvelous learning/teaching experience, and give members without access to high power equipment an opportunity to participate in the collection and processing of wonderful data sets.

Back to a more public setting, Sidewalk astronomy is another area where video scopes should really stand out. One of the appealing aspects of these cameras for any public setting is that they are much less

sensitive to ambient light than are traditional scopes because the cameras, unlike our eyes, do not need to be dark adapted. Much of my personal observing is done is done from my driveway which is directly across the street from a lighted parking lot.

The two video cameras I am familiar with are the Stellacam (latest version is Stellacam 3, (see review in September, 07 S&T), and the Mallincam Hyper Plus (color or b&w).

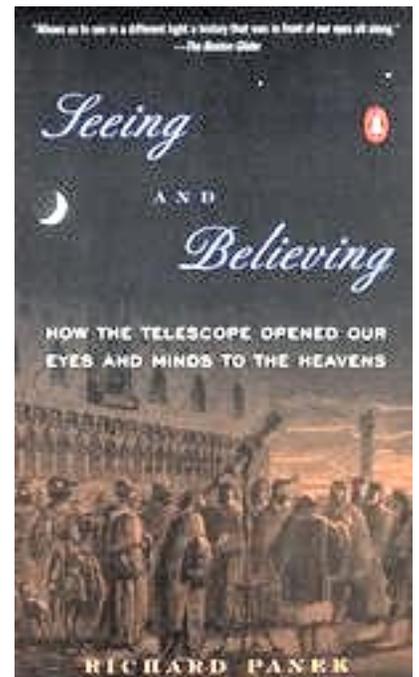
A couple of equipment issues ought to be considered before purchasing these cameras. They, particularly the Mallincams, have a lot of flexibility (read: many adjustments). My old mintron and the Stellacams came with control boxes (on cables). Adjustments are easy to make. The Mallincam uses five tiny buttons on the camera housing. Really annoying! Some of my friends have found problems when running the Mallincam on SCTs via a focuser. The combined length of the Camera and the focuser runs into the base platform on some alt-az mounts, requiring them to avoid overhead targets. I have no problem with my GEM.

One other issue comes to mind when using these video tools. Monitors, computer or TV, shed unwanted light. My solution consists of six foot plant stake tripods with black shower curtains draped across them.

A few highly relevant sites: Yahoo Groups: videoastro, Mallincam, Stellacam. On the videoastro message board a "shootout" between the latest versions of Mallincam and Stellacam starts with message #24864.

Review: Seeing and Believing: How the Telescope Opened Our Eyes and Minds. Richard Panek, New York: Viking, 1998.

MAX OELSCHLAEGER



Given that the readers of *Skywatch* are lovers of telescopes, I'd recommend Richard Panek's *Seeing and Believing*. I missed this book when first published, and found it while browsing the astronomy books in a used book store. The first sentence absolutely captivated me: "On January 15, 1996, the universe grew by forty billion galaxies" (1). Panek's reference is to the so-called Hubble Deep Field photograph. (Cf. <http://www.hubblesite.org/newscenter/newsdesk/archive/releases/>

[1996/01/](#)) And so Panek's story of the telescope, and its world-changing consequences, begins. And what a rich, rich story it is, although I only gloss a few details here.

The dominant storyline throughout is how, over a few centuries continuing to the present, the telescope has again and again changed the way we see the world and our place in it. "No other instrument has consistently addressed the question of our place in the universe as directly as the telescope. It's what a telescope *does*; it's what we have designed it, and then refined, and refined, and refined it, to *do*: address our place in the universe, literally" (4). And while the HST itself, and the Deep Field image, constitute the frosting on this thematic cake, Panek reveals dozens of other telescopic refinements, such as the Newtonian reflector, the screw micrometer, and the spectrograph that in their time were also revolutionary.

I especially enjoyed the detailed glimpses into the "telescopic" lives of the astronomical greats, including Galileo, Newton, Herschel, and Hubble. Working from an impressive bibliography, Panek weaves together some compelling tales, such as how the first telescopes followed upon the production of corrective lenses for the eye. By 1608 the telescopic combination of concave and convex lenses had occurred. In November of 1609 Galileo, having constructed his own instrument, turned it towards the moon. In discussing Galileo and others, Panek makes clear what all observers have discovered as

we contemplate dim fuzzies. Retinal images are only part of the story. Conceptual Interpretation is equally crucial.

The Herschel story, covering an entire chapter, is remarkably interesting. I like to think I have an astronomical obsession. Compared to Herschel I'm a dabbler at best. An accomplished musician, he abandoned that career for one as a renowned maker of mirrors — the King of England was among his customers — and incredible observer (working with his sister Caroline). Based on his observations, Herschel theorized that all "starry systems" moved, and that Milky Way Galaxy was a great conglomeration of stars "whose shape is roughly that of a convex lens" (118). As I work on the Herschel 400 I will keep in mind Panek's assessment that "More than any other astronomer since Galileo, Herschel left an impression on the world" (119).

I love "readerly books," meaning books that carry me along effortlessly from page to page, with sentences and paragraphs that flow into my comprehension in a way that is almost as breathtaking as a photon-whopper like M-31. *Seeing and Believing* is simply a joy to read. As a writer Panek is in the same league as Chet Raymo or Tim Ferris or Martin Rees. (Panek's "Relativity Turns 100," in *Astronomy* [Feb., 2005] is stiff in comparison.)

To conclude. *Seeing and Believing* contributes to my own enjoyment as an amateur astronomer. We are blessed to live in a time when reasonably affordable telescopes (Don't ask your significant other to share this belief!) offer heavenly

views that far exceed what Galileo or Newton or many other astronomical greats enjoyed.

The Burnouts

Uncle Rod

It's the dirty little secret of amateur astronomy: someone who's been in our avocation for ten or twenty or even thirty years suddenly throws up her or his hands, sells all the astro-gear and takes up fly fishing or r/c model flying. They are the **BURNOUTS**...sometimes they are novices...sometimes they are the rank in file in a club...sometimes they are the leaders who form the backbone of local amateur astronomy. *And suddenly they are gone.*

Most of us, thank goodness, yours truly for example, are able to keep on keepin' on year after year, never red-lining on the burnout meter. Not even after 44 years of observing in my case. Oh, there have been times when I haven't observed as much as at other times. Occasionally I've gone quite a while without doing serious observing; usually because of circumstances beyond my control--attending the USAF's ICBM School back in 1976, for example--though I did see Comet West from that brilliantly lit Air Force Base. One thing is sure: I have never ever contemplated walking away from amateur astronomy.

Too many amateurs *do* burnout, though, and I think it's worthwhile to examine the reasons they do, so something can be done to keep ourselves and our friends in this wonderful

hobby when the ominous signs of burnout appear. Who burns out?

1. Novices who do too much too early. They started simple, but in a few months are the owners of an AP1200 and a C14 and a brace of CCD cameras. Too much, too soon. They don't know what to do with all that "stuff" or why. It becomes overwhelming. One good thing about these folks? They keep cheap used gear flowing onto Astromart!

*Seriously, though, how do we keep 'em on the amateur astronomy strait and narrow? Encourage them to **stop**, take a deep breath, and simplify. They don't have to sell that giant CAT, but they don't have to use it every night, either. Convince 'em it's OK to stop trying to play Jack Newton **every** evenin' and just enjoy the night sky with a StarBlast, a pair of 10x50s, or their eyes once in a while.*

2. Novices who don't get enough support. They don't get it from their local club or don't join the local club. They look at the Moon and then Jupiter and are then lost. A subset of these folks is composed of those who are surprised that amateur astronomy is so "hard." They don't want to invest the time and study required to become a practicing amateur astronomer.

What can be done for these people? Those who are in the club can be taken under an experienced amateur's wing. A little tutelage will get 'em o'er the rough spots. Those who aren't in a club? I assume somebody has contact with 'em or we wouldn't know about 'em.

*This somebody can try to get these loners into the club (some of these newbies would actually like to get involved, but are a mite shy). Otherwise, help might possibly be offered on a one-on-one basis—if someone can be found willing to bear that cross. 'Course, sometimes nothing helps, especially for those who have decided astronomy **is too hard**, and we must realize amateur astronomy is **not** for everybody. "Many are called, few are chosen."*

3. People who cycle through hobbies. I've known quite a few who do this. Amateur astronomy for a couple of years. Then ham radio. Then RC models. Then crocheting. Then amateur astronomy again. Never did understand this mindset and I guess I never will.

About all that's possible here is to make these guys feel welcome when they reappear at the club, which they invariably do.

4. The overachiever. These amateurs are often leaders in their local clubs and/or regional/national star parties. They do a lot, they do it for years, and it eventually becomes an impossible situation.

When you see one of your colleagues shouldering more than her/his fair load, help 'em out. Often you'll meet with a little resistance, "I can do it, I've been doing it for years." But if you persist, an overachiever will usually give in with a secret and thankful sigh. Afterwards, these people often take a low profile for a while, but if they have been helped to gracefully ease their burdens, they usually do not drop out of the avocation altogether, and even if they do, they almost always return shortly.

5. The sudden and unexplained burnout. These amateurs are thankfully few and far between. An example was a person of my acquaintance who'd been observing since childhood, had been the President of our club for a couple of terms, and who was one of the most enthusiastic amateurs I have ever known. Till one day out of the blue he calls me to inform me somebody will have to take over his club duties. He'd had enough of the club, and of astronomy. Period. He was OUTTATHERE!

I can't say how to help the sudden burnout, since I'm still not sure what's the cause of these cases. I'd like to say it is as simple as something like friction with a fellow club member or members. Or being tired of observing. But it doesn't seem that simple. Why would someone suddenly, utterly, and completely divorce themselves from a pursuit that's been a long-held passion—a life's blood since childhood?

5. People who get into a rut. Take the scope out. Look at the same old Messiers as last time. Take the scope back in.

*Often these amateurs just need a change. Encourage them to do that; maybe to take up a pursuit of yours or another club member's that the Burnout hasn't tried yet. Take on the Herschel 400. Attend as many star parties as humanly possible. Give up star parties. Become a Solar observer. Desert scopes for binoculars. Embrace **change!***

Alas, some people can't be helped—which used to bother

me. I've come to realize that people just come and go in clubs and astronomy. Some last a few months, some last years. In retrospect, it's usually clear amateur astronomy wasn't really for them—the PASSION wasn't there. Let's just make sure that that's the whole story; that there wasn't something we could have/should have done to keep a valued colleague in the hobby.

Green Bank Star Quest IV

Linda Stalnaker

When I first joined the Ohio Valley Astronomical Society, members often talked about the Laurel Highlands Star Cruise in Preston County, WV, and praised it as a great amateur astronomy event. Finally, I got to go too, in 2004, the year the Pittsburgh astronomy group locked the gate at the end of the last day and threw away the key.

West Virginia has been blessed with another amateur astronomy event, the Almost Heaven Star Party near Spruce Knob, a well-liked gathering...but another event sponsored by an out-of-state group...the astronomers in northern Virginia.

West Virginia now has a home-grown star party that is tapping on the shoulders of amateurs nationwide, and inviting them to come hither. And they are, *and they are liking it.*

Green Bank Star Quest IV ended its run to a bevy of compliments from those attending from all sorts of places: Colorado, North Carolina, South Carolina, New York, even Hurricane, WV.

It seems that in four short years, the Central Appalachian and the Kanawha Valley astronomy clubs along with the National Radio Astronomy Observatory staff have meshed to put on a first rate event that folks from the bigger clubs around the nation are praising as well-organized and a must go-to (sorry) entry on their calendars.

Star Quest ran July 4 thru the morning of July 8. Speakers brought us topics such as the New Horizons space probe going to our red-headed step child solar system member Pluto, a brief history of women in astronomy, exoplanets, and astrophotography (taught by OVAS member Brent Maynard).

Oh, and did I mention several of the Rocket Boys were there and mingled among the crowd like they were everyone's old friends. No, Homer Hickam was not among them, Still Roy Lee, Quentin, and O'Dell delighted



You just can't beat the backdrop for Star Quest: a premier internationally recognized astronomy facility in the middle of nowhere with first rate meeting facilities, great speakers, dark skies and really good food. During Star Quest I saw the Milky Way two nights in a row within sight of the Green Bank Telescope, a simple pleasure in these days of polluted urban skies.

attendees with memories of Coalwood, WV, their efforts in rocketry and how Hollywood took Homer memoirs - "Rocket Boys" - and bent the facts show biz style in the movie "October Sky." Those guys were just delightful.

Delightful too, were the Star Quest attendees. No one was a stranger. I had the chance to hang out with two members of the Raleigh (NC) Astronomy Club, whom I met during Star

Quest III. Bill and Ian were invaluable in helping me figure out why my CGE mount would



When I finally got the C11/CGE up and running I looked at all sorts of the celestial goodies. Jupiter was bright and had four of its babies hovering close by. I used the opportunity to do some southern sky work and observed M5,10, 12, 62 among others. I also looked at the Andromeda Galaxy, the Whirlpool, the Sombrero, the Hercules Cluster, the Ring Nebula, the Veil Nebula (I even got out my OIII filter for that one), M81 and M82 (after which OVAS member Galaxy Rob was named) and Venus. I tried for Neptune, but from my spot on the observing field it was behind some trees.

not go-to when I asked it to. They loaned me a deep cycle battery (one that powers an electric wheel chair) and that cured my woes. Now I proudly own a deep cycle battery. It seems the CGE doesn't like those jump-your-car-battery power supplies.

They also made me an honorary member of RAC and included me in their group picture. I then felt obligated, and sent the club membership dues for a year. I doubt if I will make any of their meetings, but I now have dual citizenship...in two clubs.

If you have not guessed already, I had a wonderful time. Of course, Green Bank is one of my favorite places to be. I think the radio telescopes are just plain fascinating. And the fact that amplifiers, receivers and other electronics are made and parts machined right there is amazing. Top that off with world class science and you have a gem that West Virginia can be proud of.

I highly encourage you to mark you calendars for **Green Bank Star Quest V, July 2, 3, 4 and 5, 2008**. I will see you there.

WHEN I WAS SEVENTEEN...

Walter Dutchak

As I now recall, it was 1964, back in the good old days of high school. I joined the drama club to hopefully "star" in a play (what an egotist – that never happened, but I kept on with the acting for it seemed to be a good place to escape everyday reality. Science really caught my interest even before I was seventeen. I can recall at a younger age building a crystal radio from scratch – literally scratching a germanium crystal in a lead case with the tip of a safety pin that was attached to a very short piece of coat hanger wire which acted as a selector which scraped across a coil wound onto a block of wood. I had rounded the edges of the 4-inch long piece of 1 1/2" x 1 1/2" wood with sandpaper because I did not have a dowel of that diameter on which to wind a coil. Surprisingly, after proper grounding and a length of wire strung out the second story back window for an antenna, I could catch several of the local AM stations. The earphone was an old carbon particle telephone receiver unit removed from a telephone handset. Yes, this really amazed me at about age 14 since no transistors, resistors or capacitors or other standard electronic components were used, and yet the radio worked like a charm.

At this time I was also experimenting with making little refractor telescopes with junk lenses I found in the most amazing places. They seemed

to work OK, but for some reason, I had never thought of looking at the moon or other celestial objects. It was all about games, treasure hunting, etc... that interested most of us kids – I guess I had not yet found the right crowd to spend time with.

But when I was seventeen, it was a very good year. Chemistry in high school was much different from the toy sets I experimented with at age 9, however at age 12 I had made gunpowder from saltpeter, sulphur and carbon (all obtainable at the local pharmaceuticals dispensary) and designed a rocket of sorts, using an oval-shaped Aspirin bottle as the rocket engine/combustion chamber. I stuffed it with my gunpowder mixture, lit the fuse, and watched one heck of a scary, head-ducking event which had the 'rocket' bouncing in all sorts of directions rather than shooting straight up. Well, that was before I was seventeen. At seventeen the reality of science and engineering began to assert itself with some logical meaning. I took to physics very well and geometry and trigonometry were a blast. I loved it. And then I discovered optics as a science. Also, there was the whole universe out there with all sorts of wonders that I read about in the astronomy magazines in the school library during study periods when I should have been studying for an upcoming test or doing my homework.

What a break when I found out that one of the teachers was running an Astronomy club after classes. The teacher had

built his own f/8 Newtonian telescope equatorially mounted. He had ground and silvered his own 6-inch mirror (parabolic). The tube was homemade out of metal and painted white on the outside and black inside. A GEM was mounted on a pier made of iron plumbing pipes. It looked great!

That winter, in January, the astronomy club had an outing on a very dark farmer's field (owned by the uncle of one of the female members of our club--she brought us hot chocolate to warm us up). Our teeth chattered, and anyone who dared to maintain a fashionable macho look by not wearing head and ear-warming gear was in for one heck of a cold, frost-bitten ears, or both.



We were out very late that night. Around midnight we observed MARS. The white ice cap and the rusty red of the rest of the planet left quite an impression with me to this day. I had seen MARS for the first time in the 3-inch refractor of a club member. (It would be another 42 years before I, quite surreptitiously, found Saturn and saw its rings through my own telescope for the first time).

Well, I was hooked. I had to get a telescope. But they were expensive! The club member with the 3-inch refractor had just received that telescope from a

relative as a Christmas present, and he told me that he would no longer be grinding his own 6-inch mirror. He had just purchased all the necessary equipment (6" Pyrex blank along with its 6" crown glass counter-part, carborundum powder, pitch, a rubber mat subdivided into squares to format the pitch into a proper polishing tool, various instruction booklets, etc.). He had purchased the whole kit from Edmund Scientific (which no longer goes by that name) and was willing to let me have it for only \$25, which was still a lot of money when I was seventeen.



Well I bought the kit (you bet I had to!). Soon I was spending every evening grinding away and performing periodic Foucault tests to make sure that my f/8 parabolic curve was not going astray. Actually I found a great book in the library (I do not remember its name now). It showed how I could build a very accurate measuring device with a calibration scale and a Fresnel grating instead of a knife. So I built this wonderful test apparatus and used it 'like a professional'. After about 3 months of hard 'manual' labor I was finishing grinding with the finest grade of carborundum abrasive and was ready to start polishing with the rouge powder

during which process the final figuring stages would take place. Boy, did I have plans for my telescope! And then it was time for building and flying model airplanes, and guitar etc., etc. I still have that Edmund Scientific kit in its original packing box and an unfinished mirror.

(See pictures 1 and 2).

The years passed... My love of Astronomy was still there. I continued to read the magazines and dream while my life story went in a different direction. I studied Astronomy and Physics at the University because I really thought that was where I might like to go. But soon I found myself teaching children in a school and running extra-curricular activities such as a Drama Club, and a Photography Club. It seems that marriage and parenting were inevitable, and the bills that followed made it less and less likely that I would get back on track with Astronomy. This is probably the story of many a person who is, to this very day, an "armchair" astronomer.

After teaching for 6 years I went back to school for 3 years to study electronics engineering technology, because the world seemed to be going in that direction and I did not want to miss out on quantum field effect transistors and designing computer circuits. Meanwhile photography became a major interest for me, and the purchase of camera equipment was quickly followed by a darkroom and darkroom equipment.

My new job was in the field of telecommunications and 23 years later I was retiring and my son Peter, was graduating from my old college – another engineering mind that wanted to be a construction worker until our little talk about how some background in engineering would be useful, even if he did go into construction after graduation. (He didn't).



Now that I had some 'time to spare' a telescope came to mind. So I bought one – a 4-inch Newtonian. Then the 4-inch became a 6-inch (Picture 3 – A very poor quality instrument, but it was affordable). Then I added an 8-inch SCT (Picture 4 – Now a big spender)! Then I built an observatory shed (Picture 5).



Wow! Things were happening fast!



Now, after retirement, there seemed to be so much more time. What a myth!

The human being seems to be the only animal preoccupied with a faulty understanding of time which in reality may only exist as a mental construct related to the survival of a self-image, and still the meaning of existence escapes up. Well let's not go there now. That is beyond even Astronomy!

I joined the Royal Astronomical Society of Canada, went to the local meetings, and heard a lot of familiar things and some new things presented by guest speakers who were mostly astronomers with degrees in astronomy. There were many interesting things going on but for some reason I was not getting involved. My interest in astronomy is still strong, but rushing out to dark sites with a telescope does not seem to be 'my thing'. I suspect there are a few of us aging astronomy buffs in that mode of life. I don't know how it is in other astronomy clubs around the world, but in our local area the 'gang' is really getting on in age and there is an obvious absence of a 'younger crowd'. Maybe this is just true for my particular example.

Now we have moved again to live closer to our two



Tracking Wildlife from Space

Patrick Barry

It's 10 o'clock, and do you know where your Oriental Honey Buzzard is?

Tracking the whereabouts of birds and other migrating wildlife across thousands of miles of land, air, and sea is no easy feat. Yet to protect the habitats of endangered species, scientists need to know where these roving animals go during their seasonal travels.

Rather than chasing these animals around the globe, a growing number of scientists are leveraging the bird's-eye view of orbiting satellites to easily monitor animals' movements anywhere in the world.

The system piggybacks on weather satellites called Polar Operational Environmental Satellites, which are operated by the National Oceanic and Atmospheric Administration (NOAA), as well as a European satellite called MetOp. Sensors aboard these satellites pick up signals beamed from portable transmitters on the Earth's surface, 850 kilometers below. NOAA began the project—called Argos—in cooperation with NASA and the French space agency (CNES) in 1974. At that time, scientists placed these transmitters primarily on buoys and balloons to study the oceans and atmosphere. As electronics shrank and new

satellites' sensors became more sensitive, the transmitters became small and light enough by the 1990s that scientists could mount them safely on animals. Yes, even on birds like the Oriental Honey Buzzard.

“Scientists just never had the capability of doing this before,” says Christopher O’Connors, Program Manager for Argos at NOAA.

Today, transmitters weigh as little as 1/20th of a pound and require a fraction of a watt of power. The satellites can detect these feeble signals in part because the transmitters broadcast at frequencies between 401 and 403 MHz, a part of the spectrum reserved for environmental uses. That way there's very little interference from other sources of radio noise.

“Argos is being used more and more for animal tracking,” O’Connors says. More than 17,000 transmitters are currently being tracked by Argos, and almost 4,000 of them are on wildlife. “The animal research has been the most interesting area in terms of innovative science.”

For example, researchers in Japan used Argos to track endangered Grey-faced Buzzards and Oriental Honey Buzzards for thousands of kilometers along the birds' migrations through Japan and Southeast Asia. Scientists have also mapped the movements of loggerhead sea turtles off the west coast of Africa. Other studies have documented migrations of wood storks, Malaysian elephants, porcupine

granddaughters. It seems that we move an awful lot. The observatory from our previous house got left behind (in was a permanent structure). Having a bit of a disability makes it difficult to carry out that 8-inch SCT now-a-days. Either another observatory will be needed or a smaller instrument will have to do. And observatories are expensive projects, especially now-a-days. Also, we may move again before that happens, because I do not care much for the lighting on the streets around our house, but whether we will be able to afford it is another question to be considered first.

But it seemed so wonderful when I was seventeen! That is when my affair with astronomy began, and Urania is still on my mind, but in many more ways than a simple astronomer would conceive.

caribou, right whales, and walrus, to name a few.

Argos data is available online at www.argos-system.org, so every evening, scientists can check the whereabouts of all their herds, schools, and flocks. Kids can learn about some of these endangered species and play a memory game with them at:

http://spaceplace.nasa.gov/en/kids/poes_tracking.

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

Caption:

The ARGOS program tracks the whereabouts of endangered migrating animals via miniature transmitters on the animals and the POES satellites in orbit.



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.”



Club Notes: News of the Mobile Astronomical Society

What's happenin' down yonder at your friendly, neighborhood astro-club? Some newsbytes from the MAS:

- March's spring Public Star Gaze went well *except*—wouldn't you know it?—for the weather. We were not *completely* clouded out, but iffy skies kept public attendance down to about 25 – 30 youngsters and parents.
- While the weather wasn't perfect for International Sidewalk Astronomy Night, we persevered and were able to show quite a few Eastern Shore Centre shoppers quite a few objects. Thanks to the members who made this, the MAS' first year of participation in this event, a success!

- We *were* skunked for our Spring Picnic/Messier Marathon. That did not stop the members who turned out (at the ESC) from enjoying plenty of great picnic food, however, and despite no observing we had a lot of fun.
- On the other hand, we've had some nice, clear nights for our Members Only Star Parties at the dark site. We did a "prelim" Messier marathon in early March, with members bagging quite a few Ms. Rod Mollise did about 60 before turning **astro-wimp** when ice began to coat his Dobsonian!

You thought you were done with Beavis and Butthead, did you? Not hardly. Those rascals are back in the business of lobbing mayo jars (hermetically sealed ones kept on Funk and Wagnall's porch for a fortnight) at your editor's head. Lucky those jars are filled with...

RUMOURS

Meade seems to have weathered the worst of its recent financial storm, moved its production from California to China and Mexico, and is slowly cranking back up. The LX200Rs are available again (now called the "ACFs," ("Advanced Coma Free") and

Skywatch

using the same optics Meade dubbed "Advanced Ritchey Chrétien" pre-the STAR/RCOS lawsuit). The LX90s are back, too, now also with ACF optics. But the RCX (rechristened the LX400 ACF) is still missing in action. When, Meade, *when?* How about the LXD75 SCT? Will it get ACF optics, too? A Meade rep recently told Uncle Rod "no."

We were sorry to hear Meade stalwart Scott Roberts has left the company to pursue other opportunities. As the visible face of Big Blue, Scott was well-regarded by amateurs and his presence there will be missed by us.

What's going on at Celestron? Not too much I've heard about. I suppose they think they can play it safe for a while, given Meade's recent semi-foundering, and that's resulted in a distinct lack of new product introductions or e'en rumors of 'em. There *are* rumblings that the much-loved ASGT CG5-equipped series is due for replacement (perhaps with a Celestron-badged EQ-6 series of scopes?), and the price for the CG5 *has* indeed fallen recently, but nothing is sure at this time.

--The Anonymous Astronomer

The Wrap-Up...

We're back and we're rested (well sorta, Rod has just put a new book to bed), we're enthusiastic, and we're intent on reviving *Skywatch*. You'll note the issue you are reading is identified by number rather than "Spring," "Summer," etc. That's an indication you can PROBABLY expect a somewhat irregular schedule for now. That is, Uncle Rod and the gang will do a *Skywatch* when they feel like it, have the time, and, most importantly, YOU GOOD FOLKS HAVE SUBMITTED ENOUGH GOOD STUFF TO MAKE PUBLISHING ONE WORTHWHILE. Hope that all happens "real soon now."

OK, OK...we give! Quite a few folks have asked for a **current** picture of Unk (lord knows why). That familiar photo of him posed with an Ultima 8 is, after all, nearly a decade and a

half old now. Alright, you axed for it. That's Your Old Uncle below; still identifiable if a wee bit the worse for wear (ain't we all?)!

--The Skywatch Gang

