

Gemini

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The Texas Star Party 2005 Part I

By Tom Lindquist

TSP 2005 went into history as possibly the cloudiest at Ft. Davis in 16 years. Not since the infamous storm-lashed week of 1989 has luck in the Davis Mts. been this adverse. True, there was the one year when a nice site just West of San Antonio known as "Leakey" (really, you can look it up) was tried, and every night, just about all night, was murky overcast, and TSP headed straight back to Fort Davis. Let's just say that this year was a regrettably restful and pleasant TSP. No long dusk to dawn marathons on the observing fields followed by mid-morning, boiling, tent wake-up under the relentless heat of the pre-noon, clear-naked West Texas sun. No experiments in extreme sleep deprivation that diurnal repetition of this routine creates as an exceptionally good TSP week makes possible. No, this year was a year for the little pleasures. As the week wore on and the observing conditions held mostly dismal, I noticed that it didn't seem 'bad' and that I was having a good time overall, frustrations notwithstanding, and became a bit puzzled by it. "It's the people," I finally concluded, and in trying this idea out on others found it echoed with them as well.

This is not to say we were shut out. Harassed maybe, teased, cheated, and knocked around a bit, perhaps, but we were not without some chances of which to take advantage. Our group, Dave Tosteson, Tim Parson, myself and a full trailer got to the ranch gate line up ten minutes early for a noon Sunday opening after a nearly 28 hour drive without a restaurant sit-down meal. When riding like that, who is looking for a place to sit down? Oddly, I was much less tired arriving than when we started out, having been up all the night before repacking and reorganizing stuff. Slept most of the way to Kansas City, no problem, and did not miss much scenery by doing that.

But back to observing: That Sunday night was pretty good for the most part, but those already there earlier than us gloated that we should have been there the night before. I had noticed that while at the wheel a good bit of the way from Kansas right through to dawn in mid North Texas (I owed the guys some sleep, remember). The skies had looked awfully good. Then mid-day Monday a weak Norther blew in, but without the weight to blow through and clear the sky. Not rain, just leaden gray November skies and cool breeze. By midweek the weak front crept back north across TSP, first as Down-East Maine coastal fog shrouding the low mountain rim around the ranch, then as a midnight lightening storm.

This all was beautiful viewed as a tourist, but that is not how we were viewing it. This rain and lightning display cleared in an hour, followed after a clear hour by some of the heaviest dew the Houston boys could remember even back home. Scopes that were sun bleached desert bone dry under tarps through the midnight cloudburst got so thoroughly soaked in the dew, they might as well have been left out in the rain uncovered.

Then Friday night was cloudy, and Saturday night was cloudy, and just when all hope seemed lost, about 1 AM Sunday morning, when half the people had

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NOTE FROM THE SECRETARY

By Steve Emert

It's amazing to realize that we've slipped into the second half of the year already. We're already starting to see the nights getting longer. Soon we'll be able to do our observing without the ever-present mosquitoes bugging us. Hmm... Longer nights, fewer mosquitoes, moderate temperatures... not bad!

With late summer comes the first notice that we'll soon be looking at board elections in December. This year we are looking for candidates for Vice President, Treasurer and Board Member at Large. Start thinking about running for one of these positions if you're inclined to do so. Yes, it does consume a little time, but you also can have a lot of fun on the board!

In addition to board positions, we have a few SIG Coordinator and Forum Moderator volunteer positions that could use a hand.

- Gene Kremer is moving away from the Twin Cities and as a result needs to give up his duties as Road Trip SIG Coordinator and forum moderator. Thanks to Gene for keeping us abreast of all the regional star parties and tours over the last couple years!
- Also, after what must be at least several years, Ben Huset has indicated he'd like to turn his reins as Outreach Coordinator to someone else at the end of the season. (How long has it been, Ben?) Since Ben has been doing such an outstanding job and has kept so busy with Outreach, we are thinking of splitting his duties between two "co-coordinators" (two outreach telescopes, two coordinators). We'd like to thank Ben for all his enthusiasm and work over his reign. Anyone that is interested in becoming an Outreach Coordinator or Co-Coordinator, just let either Ben or a board member know.
- Finally, Greg Haubrich is looking to see if someone would like to take over the Messier/Observer's SIG. SIG activities include hosting the SIG meetings (perhaps two or three or so per year) and hosting the Messier Marathon and the Virgo Venture in the spring and the MAS Mini-Messier Marathon (4M) in the fall. I've assisted Greg with several of the 4M and Messier Marathon events recently and can attest to the fact that it is great fun. As you may recall, in addition to running the SIG, Greg is the Observing Chair for the MAS, a position he intends to continue. As MAS Observing Chair, Greg reviews members' observing logs and administers Observing Certificates with the Astro League.

Of course, the Society thrives on the active participation of its' members. In addition to elected board positions and forum moderators and SIG coordinators, volunteers help out in numerous areas. Sometimes we take those volunteers for granted and forget to say "thanks" for all their efforts. After joining the board last winter, I was amazed by how many of the ongoing activities at the MAS "just happen" with little or no involvement by the board. There are a lot of people who make those things happen. I'd like to thank the following (and ask forgiveness for those others that I've forgotten to acknowledge).

- Bob Brose – Bob maintains the e-mail lists, with little fanfare – it seems we only realize the work he's doing when something goes wrong and he has to fix it!
- Tom Youngblood is the Metcalf site manager and does all the maintenance at that site. Since Onan and Cherry Grove get all the attention, we tend to forget about Metcalf – it is a great close-in site for a couple hour observing session, especially for those on the east side of the cities, and Tom keeps it in good shape.
- Vic Heiner (Cherry Grove manager) and John Connery do the vast majority of CGO maintenance and upgrades. Without their persistent efforts, CGO would not be the great member resource it is.

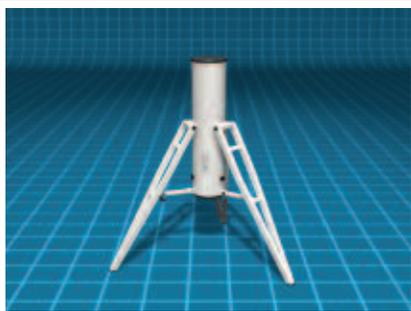
- Lauren Nelson manages all the MAS monthly meeting programs. He lines up and coordinates all the guest and member lecturers – an amazing task that we on the board are very grateful he manages.
- All the various people who have volunteered for the "ad-hoc" public outreach requests we get. One that especially comes to mind is Michael Lawrence, for taking on the potentially daunting task of helping an especially gifted 4th grader to build a web page on stellar evolution! That was definitely a different type of outreach activity, much different than the normal Onan events or sidewalk astronomy! Another tireless volunteer is John Young. In the year or so that he has been a member, he has found time to help just about anywhere.
- Last but not least, the Gemini staff deserves recognition for all their efforts, ranging from reporting and editing to collating and mailing. Take a look around this issue for all their names.

Astronomy by its nature can sometimes be a solitary hobby. Volunteering can not only help others, but can also help bring you more enjoyment and satisfaction in the hobby. 

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left or at least packed their scopes, and the other half were in bed, the clearing line arrived and the great West Texas skies were back. Those very few who got to enjoy them until dawn were rewarded, and I must admit that again I was up all night before starting a 27 hour drive.

After copious double-coffee and packing the trailer in the morning, on the return trip I slept my way back across most of North Texas before being a reasonable risk to take the wheel. Dave and Tim are never more valued as companions than times like these. Next year I pull bunk duty Saturday night no matter how good the skies are so there is at least one driver awake Sunday morning to start the drive back and Dave can observe. (Tim wouldn't be of much use to assign to bed for "bunk duty", he couldn't sleep anyway from his total circadian clock re-set by the end of TSP week). That's the TSP way. They've got a modern-day saying out there "Do it the best way or do it the cowboy way", and I guess there's a little bit of the cowboy in the TSP way.

Hints, Highlights and Surprises from TSP'05

Discussing TSP'05 with Tim Parson brought out some interesting observations, like the point that the observing programs are different. John Wagoner annually comes up with creative binocular observing lists for pin awards upon completion, most notably the "Binocular List From Hell" and "Grass Grazers" which would be more easily observed from Guatemala. Larry Mitchell always works up an 'Advanced' list for a truly difficult to win (most years) observing pin. With 'the easiest advanced list ever' drawn up by Larry to encourage participation on the Arp Objects detail, this year was my big chance with my little 12.5" dob.

Finally by mid-week I had painstakingly drawn up a "can't miss" observing plan in my notebook Wednesday afternoon. I was carrying it in before the rain that night, when I stopped to visit with Tim and Dave, and somehow in the pitch blackness as the storm rolled in, the notebook got left out 'observing plan open' on Dave's table by his well covered scope. After the cloudburst there was one good sky hour before the incredible dew descended. I spent it glumly trying to dry the observing plan, and that failing to produce immediate results, returned to observing with low morale, no observing plan, lots of dew, and ended up with not much for Wednesday night observations. Just four objects short at the end of the week, eh? Just seems it wasn't meant to be?

My advice is don't leave your notebooks out in the rainstorm, just for the record. But, then, there's a bright side. This was an old-fashioned paper notebook, and it was back in service the following observing opportunity. There is another sort of "notebook" used by observers that might not have proved so resilient to being left out in a downpour.



Consulting the observations: Halton Arp (right) with Larry Mitchell of Houston, TX, and TSP

Daylight observing at TSP is normally routine as solar scopes are around and in use, both on the observing fields and in the vendor area, though this year the daytime skies didn't live up to expectations just like the night ones didn't. The biggest surprise this year was the weather, and that wasn't a nice surprise, but everybody seemed to have a good time and be glad they came in spite of it, and that was a pleasant surprise given the disappointment.

One of the things I've enjoyed a lot in my trips has been the side-trips out from the ranch, both around the Ft. Davis area as well as West Texas. Tim particularly enjoyed this year a visit to the Chihuahua Desert and Mining museum south of town where he found a cactus requested by one of his daughters. The old fort and the state park and lodge and the MacDonald Observatory tour are obviously interesting. The Presideo-Lajitas entry to Big Bend and the Chisos Mts and lodge off one direction, and Carlsbad Cavern off the other direction are well known and very worthwhile daytrips. There's "Pop's" nice new restaurant just out the Marfa highway, and the old Ft. Davis Drug for afternoon ice cream, with its unusual definition of "closing time": better come twenty minutes or more before it closes or you can't get in. "Closed" seems to mean that's when everyone is out the door and on the way home. Makes sense when you think about it. The ladies have to prepare supper for families. We are learning to adjust. The point is, it is fun to stay on the ranch and it is fun to get out and about.

We enjoyed all the speakers, but especially Halton Arp's fresh approach and perspective. His theories certainly are different, and leave one with the feeling that nothing is concrete, nothing fixed in stone. He's a good reminder about keeping an open mind. Controversy surrounds both his observations and his theories that grow out of them. From his talk, I got the impression that with multi-wavelength observations becoming common now, the newer observations were more tending to favor




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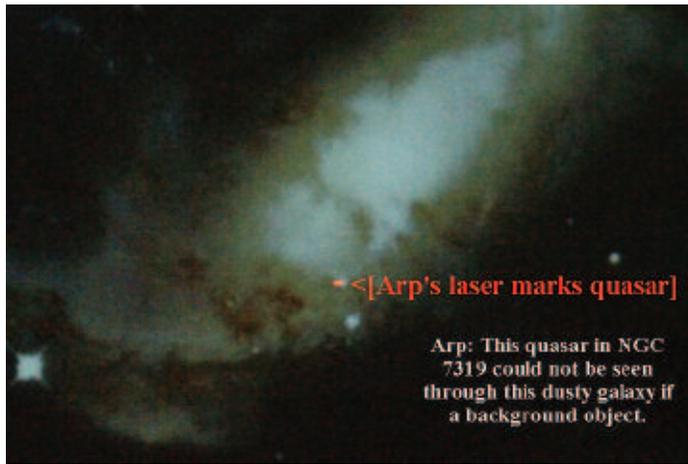
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at least giving some consideration to Arp's observations of the apparent possible close relation between active and disturbed galaxies and quasars, but I'm left feeling less than convinced about his total cosmology. But the controversy and uncertainty over quasars and some mostly faint, compact galaxy distances and therefore actual physical size and mass and kinematic velocities has little effect on observing them except to increase the interest and mystery. Some Abell Clusters might perhaps be affected even, but if possibly they're suddenly a lot closer in the catalogs they're not the slightest bit brighter or bigger in the sky, and not less of an observing challenge in the least. On the other hand, if Arp Associations involving close groupings of quasars, compact (proto-?) galaxies, and maybe even some Abell clusters were to become widely accepted, then we amateur observers would have a whole new class and list of objects to observe. Seen that way, it's a can't lose situation for us amateurs. So, if practical amateur observing is like salami, any way you slice it, it's still salami, and that's not chopped liver. Keeping an open mind and seeing what happens seems a reasonable approach to Arp's issues, and keep looking up as the Star Hustler used to say when his old episodes were played over the years as fill in MAS monthly meeting programs.

Tim Parson has long done well observing at TSP, and he makes the point that it leads to a lot of research on possible observing targets if you want to do well down there. For Tim, this means getting into books and websites, so TSP is a lot more than just one week in Texas. It's also his vacation, literally, so it's just as much his chance to kick back and relax and see what's new and fill up on astronomy. Normally it's the really dark skies everyone dreams about and consecutive



NGC 7319 Appears to show a bright quasar to the near side of this dusty galaxy which would block the line of sight if the quasar were a background object, as would be the case if it's redshift corresponded to its recession velocity and thus its actual distance.

nights of twilight to twilight observing. And even this year, bad as it was for clouds, Tim still got in nearly twenty hours, and some of it quality time.

Tim has an interesting angle on what's different about observing at a dark sky star party that lasts a week like TSP. "At TSP there's a chance for the details. Expect anything, and write down everything." There's lots of detail being seen in the eyepiece, so look in that eyepiece with a very open mind and take plenty of time. Tim wants to know the object very well from having done research, and then come at it with that very open mind, writing

everything down even if it's not "supposed" to be there. Yes, writing everything down *especially* if it's not supposed to be there.

Accommodations:

Clearly "Motel" on the Ranch itself is the high class approach, and if it has a rival it is your own RV if it's fancy enough. Motel rooms and good RV spots are in demand, so get those reservations in early and hope for a lucky lottery -- meaning the TSP registration lottery, though a different sort of lottery luck would help with the bills. Tim evaluates the motel room option like this: That motel room is spendy but great, with maid service and is very quiet, highly desirable for sleeping through lunch during exceptionally good TSPs with multiple consecutive nights of dusk to dawn observing. For the rest of us, the motel option opens up if it's a group or family involved. Generally the bunk house with meals included seems to work out the best overall. Compared to tents, bunk housing has advantages like the shower that's almost always empty. It is warmer (like it was this year), has air conditioning (hardly useful this year), and is much less dusty (not this year, but in good-TSP years there's quite a bit of dust around). *To be continued Next issue* 🐉

Astronomy 101

By John Young

STAR PARTY ETIQUETTE

So now you are starting to kind of get the hang of stargazing and the MAS. You are looking longingly at the telescope catalogues, dreaming of your next big aperture scope. Until then, you are excitedly looking forward to the next Star Party (if and when the sky ever clears). What now?

You want to attend...fit in...but you are not quite sure of the etiquette rules of the Star Party. Well, I am here to fill you in. Remember that Star Parties are all about light...too little and too much.

In order to properly see the objects we are looking for through

the eyepiece, we need our eyes to be "night adapted". That means, for many of us, we need our eyes to be adapted for 15 to 30 minutes away from bright lights to see what we want to see through our scopes.

The light receiving area of the eye, the retina, consists of "cones" that see color and the "rods" that see "black and white". Nature designed us to see color best near the center of our eyes and "black and white" off to the side. That is why our eyes are marvelously able to see color best during the day and shades of gray during the night. It is also the reason we sometimes need to use averted vision, looking a little off to the side

of our target. So what does that mean to you?

All serious astronomers want to preserve their “night vision” when they observe. That brings up two important issues:

All night-map observing and night sky observing is done under red light, which allows us to see things while still maintaining our “night vision”. I won't go into detail as to why (read: I don't know and I'm too lazy to research it). White light “messes up” our night vision. That is why we, at Cherry Grove, or elsewhere, shield our eyes and curse when a car goes by.

So how not to “mess up” at a Star Party. When you drive up to and leave a Star Party, do so only with your parking lights on, unless you feel you MUST have your headlights on for safety reasons.

More etiquette. Don't knock over another observer's scope in the dark. Makes them mad. They tend to lose focus on their politeness.

It is desirable to walk up to a MAS member at a star party and ask, “What have you got in there?” No member of a MAS star party will EVER not want to show you what s/he has in the scope. All MAS members are, by nature, willing to share their knowledge and finds with everyone and anyone who wanders by. Even if you are not nearby, it is not uncommon to hear “Anyone want to see M56?” Antisocial and non-sharing astronomers tend not to belong to the MAS and, if they do, tend not to show up at star parties. Talk to us...we love to talk

Guards, Growls, and Galaxies

By Vic Heiner

Around 12 years ago I visited a missionary friend of mine in Nairobi, Kenya. I noticed how nice it was to see the Southern Cross and other star patterns. However, I didn't have binoculars or a telescope. In talking to a science teacher at the school where my friends children attended, I noticed he didn't have much of a telescope either.

Two years later Meade was selling 8" Dobsonian telescopes at a reasonable price. I contacted the school to see if they would like a telescope donated to them, which of course they did. So my wife and I left again for Nairobi, this time with an 8" telescope in tow. The school, which had no idea what type of scope I was bringing, was pleased; and we scheduled classes and a star party. Unfortunately, in the ten days we were there, we never really had clear skies. I left with the understanding that I could return and borrow the scope to finish the observing I never got done.

Now, ten years later, Joan and I wanted to try again. So on March 1st, we headed out to Nairobi. 30 hours later, we landed at the airport in Nairobi. It was cloudy. Was I doomed? The next 2 nights were the same way. I was doomed.

However, the next night (Saturday, March 5th) was clear and I got the scope out and did my observing in my friend's back yard in Nairobi. I was able to work in several constellations we don't see up here. I'll discuss the observations later. Jet lag got to me after five hours so I turned in. I was very surprised at the visibility available in the middle of Nairobi.

One of my goals was to view the Large Magellanic Cloud(LMC). This required a dark southern horizon right at sunset. But that was not available in Nairobi. So off we went to a game lodge catering to photo opportunities of wild animals where dark skies should

about the heavens.

One of the hazards of Minnesota stargazing during those few warm days we refer to as “summer” is mosquitoes. We don't mind the smell of DEET, OFF or any other repellent, but please spray it on yourself well away from the scopes. It can put an icky film on our mirrors and lenses.

Laser pointers. Those little green laser pointers can be useful and educational when trying to point out a star or constellation and, lets face it, they are just plain cool to use. In general, persons more than a few feet off to the side cannot see them, but a few rules apply here. If anyone nearby is doing astrophotography, you may possibly mess up their imaging. Don't ever point them directly at anyone (Duh, like you need to be told that!) . And don't EVER use them to point out aircraft. The FAA, FBI, CIA, NSA and MAS will be on you like skeeters on an astronomer. If you ever do point one at any aircraft, make sure you have a patsy lined up to take the blame. At the angle we would use them, and the altitude they would be, no pilot would probably ever see it, but why take the chance?

So much for the things you should not do. How about the things you should? Have fun, ask questions, interact, show up, volunteer, be inquisitive, learn. The more you enjoy the facilities of the MAS the more you will be in awe of the space that surrounds this tiny, little “third rock from the sun”

also be available. I couldn't take the 8" scope but I did have a Televue Ranger.

Once we got there, we learned that you couldn't leave your vehicle nor walk outside the lodge grounds due to wild animals. Signs declaring "no guests beyond this point" were everywhere. Even though the sky cleared after sunset, I could find no spot with a southern horizon. I could see Sirius, Canopus, and some of the stars of Dorado, but not the LMC. Was I doomed?

On the second day I talked to our driver to check on the possibility of going to a nearby bridge after dark, which would give me a view of the LMC. He agreed to try get permission. Later in the afternoon, he said we could do it but would need guards along. So, at dusk, we set out to the bridge with two armed guards along. While setting up, we heard a low growl. Our driver assured us that the lion was far away. We could hear the elephants below the bridge tromping around.

We were rewarded. Once it got dark, there was the LMC. We couldn't see all of it, because of cloud below it. However, we could see many of the major features in binoculars and in the Ranger. I was amazed by the size of it and how white it was. I tried to imagine what the first explorers thought. After about an hour, we needed to leave to eat dinner. On the way back a hyena loped across the road. This was a very different observation session.

After returning to Nairobi, we got another good night of observing at my friend's house in Nairobi. We then returned the scope to the school and worked with the new science teacher on techniques of using the telescope. After that we returned to Minneapolis with lots of good memories.

Cedar Key Star Party (CKSP)

By Vic Heiner

The best way to describe CKSP is that it is laid back and unstructured. It is held at Cedar Key, Florida for approximately a week in late January or February. For us in Minnesota, the concept of looking at M42 without shivering too much (or not at all) is the main appeal. Also, since it is further south by some 20 degrees, everything in the south is much higher in the sky.

Two viewing sites are used, one when the public is invited, the other darker site on the non-public nights. The non-public site is located about 8 miles out of town near the ocean. It's not much larger than cherry grove. When the tide is in, it might be smaller. However, it is nice and dark. We saw zodiacal light several nights this year. I'm not a good estimator of limiting magnitude but one night M42 just glowed.

The public site located at a museum in town is also a good site. It's about as dark as Cherry Grove on an average night. It is larger and has more parking. This year on the public night we had people from Gainesville which is 50 miles away.

On two of the nights the public is invited. Usually, one of the attendees has volunteered to supply a simple program prior to observing. Then, if it's clear, we all share the sights with the public. Usually, around 10pm, the public has left and depending on sky conditions we may drive to the dark site to continue our observing. Other times we have just remained at the public site.

On the other than public nights we head out to the dark site if the sky is clear. Given the early sunsets in January/February we can get started fairly early. Also, since the site is only 15 minutes from Cedar Key, one can check hourly to see if conditions are good for observing.

During the day solar viewing is also scheduled. Several of the attendees have Coronado and other types of filters. We have some spectacular views.

From my house in Richfield it is 1530 miles to Cedar Key via Cedar Rapids, Iowa; Quad Cities; Springfield Ill; Paducah Kentucky, Nashville Tennessee; Atlanta Georgia; and Gainesville Florida. Going, it takes about 2.5 days given the

25 Years Ago in Gemini

From the archives of Bob Schmidt:

Build Now, Play Later

The Racine Astronomical Society and the Chicago Astronomical Society are planning to host the first annual "MIDWEST ASTROFEST & TELESCOPE FAIRE" -- a gathering for Telescope makers and observers.

It will provide a yearly forum for the exchange of ideas and experiences in amateur telescope making and observing, and at the same time provide a pleasant weekend outing. The main emphasis of the event, however, is to have as many amateur-built telescopes on display as possible.

It will be held at the Modine-Benstead Observatory of the RAS,

hour time zone loss. Coming back, Joan and I have made it in 2 days, but we drive 12 and 13 hours a day.

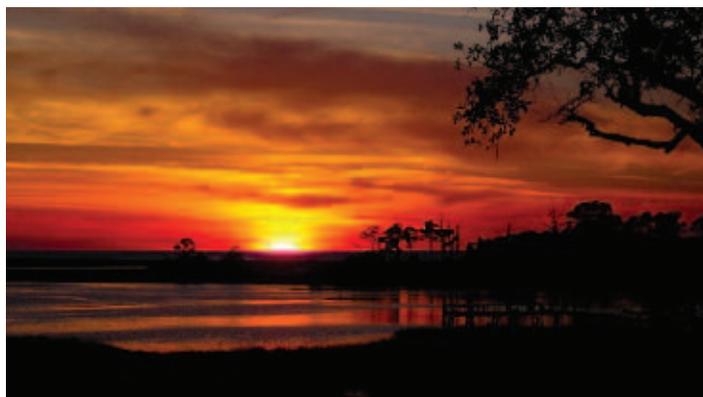
Accommodations run the gamut in Cedar Key. There are many motels with wide varying prices. There also some RV parks and a camp site (for the very brave, it can still be cold in Florida in January) near the dark observing site. If you like sea food, there are many options. Other cuisine is available, but not as abundantly. A good web site to start with is: www.cedarkey.org.

What else can you do in and near Cedar Key? First, boat tours are available. We have taken a couple of these and had a very good time. Manatee Springs is near by where you can hike and occasionally see Manatees swimming. For those who like birding there are many opportunities, especially for shore birds. If you like deep sea fishing that is also available. Of course, Orlando is not too far away.

If you think this might be the star party for you, start planning for next year. The next star party is scheduled for Jan 21st through Jan 29, 2006. See you there. 🍷



We are always free to use the observatory



Sunset at Cedar Key

Friday night through Sunday morning, September 5-7 1980. Everyone interested in attending should obtain a registration and information packet.

Event of the Month

Daytime Grazing Occultation of Venus on July 9.

At about 2:37 p.m. CDT the Moon will pass in front of Venus. The path of the shadow will fall entirely south of the Twin Cities along a line running just north of Albert Lea. The Moon, a thin waning crescent, will be at an altitude of about 40 degrees in the SW. To be sure of seeing this event find the moon just before sunrise and track it with your telescope. 🍷

Imaging SIG: The Great Comet Chase

By Ron Bubany

During December, January and February last winter, a newly found comet appeared in the arboreal skies. Its name was Machholz, after the amateur astronomer who discovered it last summer. Our own Imaging SIG, along with guest observers followed its path from below Orion, up past Taurus and then actually intersecting the Pleiades. Later it passed by Perseus and approached Polaris.

What follows are notes from our web site, describing how we followed the comet and attempted to get some good images. We'll leave it up to you to decide how well we did.

Matt Love Mon Oct 04, 2004: Just thought I'd share that with y'all...don't know exactly why...but hey...beehive cluster is coming, Pleiades is already here, Andromeda is still high, and we have a comet coming...a lot to look forward to this winter.

Matt Love Mon Dec 13, 2004: I picked the scope up earlier today (Sunday) with the slight fib that there was a comet in the sky tonight and I really wanted to see it...Yeah so there is a comet, but hey it's cloudy, and well the comet will be here all month. So anyway, I put the thing together and it doesn't look as bad as I was expecting...although I'm still not expecting to see a lot more than the moon.

Ron Bubany Tue Dec 14, 2004: Not to mention the comet, it is PERFECT for viewing right now and will only get better over the next several days (Machholz).

Ben Mullin Tue Dec 14, 2004: I took a peek last night with the binocs trying to spot the first comet I can remember seriously looking for (I might have looked at one naked eye or binoc when the last "spectacular" naked eye comet came through). From my northern suburb home it nicely falls into the light dome of the cities. I do think I managed to spot it through using averted vision.

Tonight I decided I best capitalize on the second clear night in a row (knock on wood). I hauled out the telescope from the garage and put it on the front porch. With astounding luck, all of the neighbors on my townhome street turned off their lights by 10:15. Sure enough, approximately where I was looking last night I see it. Took a little while observing it, then I tried snapping a few pics afocally. We'll see what I get.

Starforce2 Wed Dec 15, 2004: Yup, they had the 16" and 24" at CG on it and I had my 3" and binocs on it as well. I think it is almost naked eye right now. It looks as good as M31 in binocs if not better, and is roughly the same size. I was looking in the wrong spot originally and got M41 instead. No wonder Messier made his list. I can see how that would irritate people using poor equipment. M41 in binocs looks like the comet.

Ron Bubany Thu Dec 23, 2004: ...because comet Machholz, according to my Astronomy software, is going to be right up by the Pleiades 1/7/05, with the tail actually passing through them. Should be a sight to behold and/or photograph.

Deane Clark Sat Dec 25, 2004: I've seen it a couple nights

this week in a 70mm refractor. Even though the moon is washing out a lot, it's easy to find. Looks like a globular cluster at first, but there aren't any nearby. It has a stellar core and a large coma, but no tail to see in all the moon-glow.

Dick Jacobson Mon Jan 03, 2005: This must be one of the strangest looking comets in history, with the dust tail and ion tail about 90 degrees apart. Any comet experts out there who can explain this?

(Apparently not __ed.)

Ron Bubany Mon Jan 03, 2005: I just stepped out the back door and checked on the comet before the clouds came in. It's right where it's supposed to be and moving past Taurus now and on up towards the Pleiades. I stuck my thumb in the air for a quick polar alignment and got a shot of it – no you can't see it – I'll get a better one Friday.

My observation was that it has a definite greenish tinge, contrary to what I had heard that everything fuzzy in the telescope tends to be colorless. Maybe it had something to do with the fierce urban light pollution I live in.

Michael Burr Thu Jan 06, 2005: Greetings!

Pity about the temperature. My eyes were streaming with tears as I observed the comet's Pleiades flyby tonight in below-zero temps. It was a nice pairing in my 8x42 binoculars. I think maybe I could just barely detect the hint of a shadow of a tail, but I'm not certain. But it IS a naked-eye object tonight, from the countryside near Little Falls. In binoculars the comet looks like a large ball of smudgy smoke. Very cool.

Craig Cotner Fri Jan 07, 2005: I posted an image I took last night in the Album...Check it out.

Camera: Vivitar V3000(Manual),Film: Fuji Sensi 400 Slide Film, Lens: 135mm(cropped), f-stop: f5.6, Exp Time 20 minutes. Note: You can see one tail at 9 O'clock and the other at about 5 O'clock if you look closely.



Comet Machholz. Taken Jan 6, 2005 by Craig Cotner. A 20 minute exposure taken with a Vivitar 3000 camera and Fuji Sensi 400 slide film.

Ron Bubany Sat Jan 08, 2005: ...although it was cloudy last night in the cities, when we got out to our cabin in Darwin, the skies were crystal clear and remained so the entire night. Also, no wind and no frost. I took a shot of the comet and have posted it in the album.



Comet Machholz. Taken Jan 7, 2005 by Ron Bubany. A 4 minute afocal exposure with the newtonian telescope and Canon D20 digital camera.

Kirk Sun Jan 09, 2005: I was able to spot the comet on Thursday night around 10:30 from my deck in south Minneapolis. It was about 3.5 degrees away from the Pleiades. It definitely isn't a naked eye object from the cities. It showed up well in the scope though given the conditions. No tail visible against the polluted skies.

Kevin Seal Mon Jan 10, 2005: Was up last night looking at it when it FINALLY cleared. Good stuff, although from here in town it was tough to see much contrast, and hence, no tail.

Matt Thu Jan 13, 2005: Still I took the 90mm out and viewed the moon and the comet.

Eric Smestad Thu Jan 13, 2005: Canon EOS 10D multiple 30 second exposures at ISO 800. Stacked with Registax using the comet as the alignment feature.



Comet Machholz. Taken Jan 13, 2005 by Eric Smestad. Multiple stacked 30 second exposures with a Canon 10D camera. Stacking done using Registax software. Note the star trails due to tracking the motion of the comet rather than the earth's rotation.

Starforce2 Sun Jan 16, 2005: What is its (Machholz) current magnitude? The site says that it begins as 3.7 mag and fades through the month but that was predicted...what did it actu-

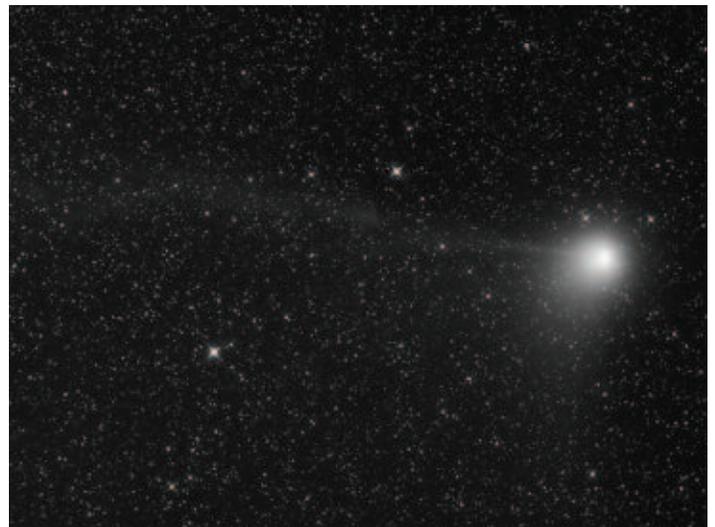
ally reach? I am finding it difficult in binocs from my driveway and 3.7 doesn't sound right. Even Andromeda will show up better.

Ben Mullin Sun Jan 16, 2005

According to www.heavens-above.com it's currently at magnitude 4.2. I found it easily near Algol last night from my northern suburb townhome. And that was with the neighbors lights on.

Starforce2 Mon Jan 17, 2005: ...as for the comet, I did find it last night plain as can be. It's possible the extreme cold fogged up the eyepieces just enough to make it blend in.

Matt Russell Tue Jan 18, 2005: OK, here's my attempt at Comet Machholz.. Matt also captured an interesting animation of the comet which we obviously cannot show you here. But, if you go to Matt's web site, www.telescopes.cc, you will see it in all its glory.



4. Comet Machholz. Taken Jan 17, 2005 by Matt Russell. A one minute exposure using the Takahashi FSQ-106n telescope and SBIG STL-11000n CCD camera.

Starforce2 Sat Feb 05, 2005: Well, it was a good night. I logged 1 nebula, 5 or 6 open clusters and a galaxy I had never seen before for my Messier list, plus the usual suspects, Jupiter, Saturn, Orion nebula, and comet Machholz, beehives, and that one big one in canis (M41 or was it M44).

Bill Kocken Sun Feb 06, 2005: I don't recall names, but there were 4 scopes (at Metcalf) and one bino observer set up. Saturn and M42 were the showpieces of the night, but we had a good time observing other favorites including the comet Machholz.

And so, Comet Machholz continued on its way out of the solar system, carefully hiding itself behind a blanket of February clouds. Were there more observations, or more images? You can bet some of us were trying – but the clouds were never ending! 🌩️

I and the DSI

Ron Bubany

Background:

Last summer Meade Instruments Corporation announced the new Deep Sky Imager, or DSI. For a low price of \$299 you could obtain impressive images of deep sky objects your first time out. Pictures were included with their announcement that made frustrated imagers around the globe drool with desire for the new product.

Your author ordered the DSI early last September and was placed on a waiting list, as the product was not available in sufficient quantities to meet demand. While I waited for my DSI, I joined the Deep Sky Imager Group in order to share experiences and ideas with other interested amateurs.

The DSI Group was frustrated to say the least. No one was receiving the product, and there seemed to be no definite date when it would be delivered. Finally, as we moved into October, some of the group were receiving their new cameras. What a tale of woe ensued! There were problems implementing the software, problems connecting the DSI to the computer and problems with the “all too brief” instruction manual. Further, at that time, no one was posting images to the group, implying there were no decent images being obtained. A concern was forming that the DSI was not living up to its advertising.

So, in October, I cancelled my order.

Making the Plunge:

Late this spring, I decided to check in with the DSI Group to see how things had progressed over the winter. Surprisingly, the group was beginning to obtain good results and I enjoyed perusing an extensive library of successful images produced by amateurs using the DSI.

I placed my order and shortly the new DSI arrived at my doorstep.

Installing the DSI

It would seem simple enough to install the DSI – merely place the CD in your computer and, when it begins, respond to the on-screen prompts. As indicated in the instructions, this is exactly what happened. It only took me about five minutes to get the software installed. I placed the DSI into my telescope and connected it to the USB port on my laptop. We’re “good to go”.

Frustration

I start up the program and select the DSI option from the menu. A little box appears on screen with the message “No DSI Imagers”. Uh Oh. I had read about this earlier in the Deep Sky Imager web site. This is where it pays to wait on things until others have solved the problem.

A study of the group’s web site reveals that my laptop must be running Windows XP, upgraded to Service Pack 2. The DSI AutoStar software will not work under Windows XP unless Service Pack 2 has been applied. This can be obtained from the Microsoft web site. It wasn’t easy, but I finally am able to

get the service pack and apply it.

I start up the software, select DSI Imager from the menu and once again get the message “No DSI Imagers”. So back I must go to the DSI Group web site to get further help and suggestions.

I learn that, despite Meade’s promise that the DSI is compatible with USB 1.1, you MUST have a USB 2.0 port. So, off I go to the shops to get a USB 2.0 interface card. I install it on my laptop.

No joy!

After much research I learn that the USB port used by the DSI must have full power in order to work properly (many USB devices can function at less than full power). On most laptops the USB ports share the power supply and as a result are under powered. What I need to do is plug the USB port into a 110-volt electric outlet to provide the missing power that is needed. I use the adapter and cord supplied with the interface card to connect it to an electrical outlet.

This time when I start up the software the program successfully connects to the DSI. I have a blurry white and green blob displaying on my “live image” window!

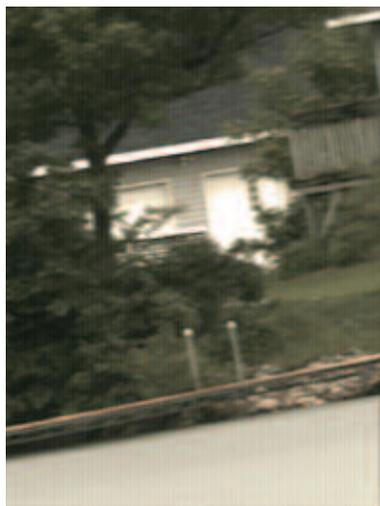
Terrestrial

It is time to attempt my first image. Meade recommends doing this in the daylight using a distant object. So, I select a house about two miles across the lake from me. I zero in on the house and check the computer screen. The DSI image is just a blur of green and white specks. I crank the focuser in and out until something unrecognizable appears on the screen. It’s unrecognizable, but it is definitely an image! This is the point where I learn about DSI focussing issues.

Focussing the DSI

The on-screen DSI image is not continuous. Rather, it is a series of still photographs which refresh every one or two seconds. Using this to focus is therefore difficult, because you do not see the immediate results of turning the focussing knob. The tendency is to over compensate from one side of center to the other. The picture is blurry so you turn the focus knob. When the next picture appears, it is still blurry. So, you turn the knob some more and the next picture is a total mess.

What you have to do is turn the focus knob a very small amount and then wait for the next image to appear. You must patiently repeat this process over and over until you have a good focus. Yes, there is a “magic eye” on the screen, but it is of little help other than to confirm that you have focussed as good as possible.



I select “Terrestrial” from the image types list box, set all the controls to automatic, and hit the “Start” button. Lo and behold, a picture gradually emerges and refines itself on my viewing screen!

Planetary

It is now night, and time to make the move toward and astro image. The moon is up, so I decide to take a picture of it. I zero the ‘scope in on the moon. Then, I must repeat the tedious focussing process. I

I hit the “Start” button. As I watch, the image of M57 gradually builds on my computer screen. I let it continue until it has stacked 50 images.

Bugs

When I tried using my computer after the “bug” season started, I had a disaster on my hands. As soon as I turned on the laptop about a zillion little bugs landed on the screen, on the keyboard and on me. They actually formed a pile on the keyboard and completely covered my screen. I believe that this is what the trout fishermen joyfully call a “hatch”. I had to give up, go back inside and clean up my computer.

Solution. Go to the fabric store and buy about a yard of very fine netting material, such as for bridal veils. Wrap this around your computer. You still have bugs, but they are on the material and not on your expensive laptop. This worked well for me the next time out.

I didn’t use cling film because I was afraid the computer would not cool properly.

Conclusions

The Deep Sky Imager can produce acceptable images at low cost, even after your first few attempts. You must, however, take pains to install all of the necessary pieces on your computer. Also, you must develop the skill to focus your images using a succession of “still” images.

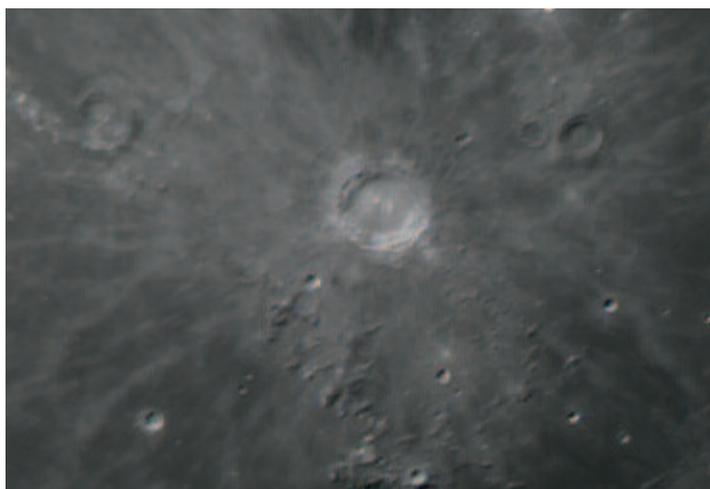
Although the software will automatically compensate for slight “drifts” in your telescope’s motor drive, the deviations must be small and gradual. If the drift is major, the software loses track of your guide star and stops accumulating images.

I also noticed that the quality of your first image is important as the software attempts to select subsequent images that emulate the first one or two taken. So, if the first image captured looks bad, stop the process and restart it. This will result in much better image quality in the end.

If you want to build a catalogue of deep sky images, are on a low budget, and are happy with not being able to build large prints (best quality of the DSI would be about the 4 x 6 inch snapshot size) – then the DSI might just be right for you. Give it a try! 🐛



M57



select “Planetary” from the image types list box and set all the controls on to automatic. I hit the “Start” button, and an image of the moon appears on my screen. Not bad!

Deep Space

Many weeks later, there is finally a clear night and I have time to take advantage of it. I decide that it is time to attempt a deep space image with the DSI. I select M57, the Ring Nebula.

Same process as before, but with a couple of extra steps. First, since this is going to be a long time exposure, we need to create “darks” which the DSI can use to remove “hot” pixels from the image. I select the option to “Create Darks” from the image type box. Since I anticipate taking images of 5 to 15 seconds in duration, I select this range for the system to create the darks. Then, I hit the “Start” button. The DSI reminds me to put the cover over the end of my telescope. I do so and click “OK”. In about five minutes it finishes and reminds me to remove the lens cover.

Now I center and repeat the tedious focussing process. I select “Long Exposure” and set the exposure time to 15 seconds. I set the other controls to their automatic value.

(Photo on Right) I also select a nearby bright star and draw a box around it so that the software can figure out how to accurately align the succession of images it is about to take. Then

Beginner's Special Interest Group

By Matt Love

Where have you been? The year is more than half over and you still haven't gotten out to a BSIG function?!? Well maybe you just didn't know what was going on, or maybe you just didn't want to get involved in anything else that would take up your dwindling free time. Well we in the Beginner's SIG have great news, both problems are easily solved.

First the best place to learn about BSIG events, activities, and meetings is the discussion area of the MAS website, however; information is also regularly sent out on the general MAS emailing list.

Second, the problem of time. In short this isn't a problem. We don't require you to attend everything, in fact we don't require you to do anything at all. Show up for what interests you, and make sure you make know things you'd like to see the BSIG do. Want to see a presentation on a topic, go somewhere, or do something? Post it on the discussion boards, contact me via personal mail or email.

Sisters in the Stars

By Jackie LaVaque

Welcome! Hope you've been able to get out and do some viewing, since we've actually had a few clear nights lately (I am writing this in late June, though).

It took me awhile to come up with a topic for this article. I didn't want to do a repeat of my last article, but I did want to keep a "sisters in the stars" theme going. I started thinking about how many of the constellations have some feminine representation. It didn't take me long to think about my favorite star cluster, the Pleiades. Though the legend of the Pleiades as we know it comes from Greek mythology, a bit of cursory research will lead one to discover that this beautiful star cluster has often been represented in a feminine manner across many cultures.

For example, in the legends of certain tribes of aboriginal Australians, the seven brightest stars of the group represent a group of teenaged girls who were sent into the wilderness at the behest of tribal elders to learn how to overcome pain, greed and fear, so their people could advance. The Kungkarunkara tribe called them the ancestral women, and the Makara tribe thought of them as the wives of stars in the Orion constellation.

The Lakota Indians of the Great Plains had a story about maidens who watched over mankind from Harney Peak (in the Black Hills of South Dakota) and welcomed the thunder. They were referred to as "Wincincala Sakowin," the "Seven Little

So what have we been doing in the BSIG lately? Well we've had a hands on tour of the Eisenhower Observatory in Hopkins, courtesy of Ron Schmidt. We've had a cookout that turned into a public stargazing night with boy scouts and girl scouts. We've had meetings on: star hopping, binocular astronomy, lunar observing, GOTO scopes, planning your observing session, and many more, but that's the past.

Looking ahead to the future. This month Phil Lefever will be doing a presentation/class on collimation, and in the coming months we'll have one on the Messier Objects. Keep on the lookout for the next Eisenhower Observatory sign up, cause we're going back and space is limited! There is unlimited space however for the cookout later this fall, it's not scheduled yet, but we'll get it done before it gets too cold.

Jump on board the BSIG, you're always welcome at our gatherings whether you're a newbie or expert, and if you have any ideas or questions make sure you let them be known. ■

Girls."

The Incas of Peru referred to the cluster as the "little mothers."

Ancient Sanskrit lore styled the cluster as "Krtikkas," who were the six wives of a Hindu war god.

Ancient Egyptians referred to them as Net, the "divine mother and lady of heaven."

One of my personal favorite Pleiades myths is that of the Cheyenne tribe, whose ancestral home is on the plains of Wyoming and Montana. In this version, a legend tells of seven beautiful maidens who were being pursued by an angry bear. In desperation, with the bear almost upon them, they called on the gods to save them from the bear. The gods heard their wails and raised the ground where they were located, until it was almost as high as a mountain. The bear was angry and still tried to reach the girls by clawing his way up the sides of the mountain. He left his claw-marks all over the sides of the mountain before he eventually gave up and went away. The bear's claw marks can still be seen on the side of Devil's Tower, in Wyoming. The maidens eventually found favor with the gods and were turned into the stars of the Pleiades.

I am hoping to think up something a bit different for the next issue of Gemini. Not sure what it'll be yet, but at least I've got a couple more months to think about it. Until then, clear skies! ■

Telescope For Sale

Meade 8 inch LX90 with UHTC (like new, used four times), Meade tripod, 8x50 Meade finder-. Kept in JMI case, OTA in perfect shape. Comes with--1. Meade 25 mm series 4000 Plossl, (other eyepieces from 20-4mm can be negotiated); 2. Meade dew shield; 3. Bubble level-North arrow eyepiece insert; 4. Bob's Knobs collimation screws; 5. 12v cigarette lighter adapter to power Go To base; 6. Tripod carrying case. I bought a 12" Dob, so I'm looking to sell this scope. More than \$2000 value-\$1350 obo. Call Chris Alper at 651-762-1944.

A Desert, a Levy and a Village

By Bob Seabold

Last April I decided to take a trip down to Arizona for three reasons. The first was a visit to my mom's vacation place in Sun City West and to see her new place in Tucson. The second was to bring a recently acquired scope and really spend some time with it...strangely enough there seems to be a lack of consecutive clear nights here in Minnesota. Finally, I've wanted to start work on a documentary on amateur astronomers.

I've worked in film and video production for twelve years and I have always dreamed of working on my own project and I've always been interested in astronomy. Amateur astronomers are, as all of you know, a great topic...of course I am biased in that regard! After thinking, planning and talking about it for far too long, I finally decided to start it, my first subject was Russ Durkee who was kind enough to let me haul in a bunch of lights and a camera into his home to interview him.

Just a day later I jumped in the car loaded up with my relatively new and mostly unused 10" LX200, video camera and lights and headed south to Phoenix, no room in the car for clouds! Not the most exciting trip to attempt solo but I had access to a satellite radio and a bunch of CD's. 1,780 miles in 27 hours of driving over two days. I used 92 gallons of gas for a cost of around 240 dollars to get there.

My first few days I had planned to stay with my mom, afterwards, I would wing it and try to find an astronomy b & b. I could have had a more thorough plan but I guess I just didn't want to!

Once I arrived at my mom's I set up my scope in her back yard, right on the golf course...of course the scope with the silver tarp over it was quite a conversation starter with the passersby! I spent most of the time learning my way around the new scope, learning to polar align, spending a lot of time on the moon, Jupiter, and the Orion area...I certainly could have picked a better time of the month...the moon was pretty much right in the way. That's a newbie for you! The first night as I was setting up the scope I noticed a visitor lurking nearby...it was a coyote that had wandered into the yard, I wondered if this would

be a foreshadowing of critters I might run into out in the desert. I also experimented with a newly acquired digital camera, attached directly to the scope. I took several moon shots the first of which was an attempt at a 3 picture mosaic, that worked! I also experimented with shooting Jupiter, although not as successful. During the daylight hours I hiked in the nearby White Tank Mountains, did a little exploring of Scottsdale and found a little telescope shop in Phoenix.

Towards the end of my first week I contacted New Mexico Skies to try and book a room for my last week, however they do not take reservations over the full moon. As I searched for an alternative I came across a house for rent in the Arizona Sky Village. I had read about the place but didn't expect that one of the residences would be available for rent. This was good luck as I had intended to visit the ASV to do some research for my docu-



Orion and Telescope

mentary. After exchanging several e-mails with the owner, who actually lives in Connecticut, we had a deal and I would be renting the house for four nights.

I left Sun City West to head to Tucson to check out my mom's new vacation digs and also to visit my cousin. I would have liked to visit Kitt Peak but just didn't have time this trip. The traffic in Phoenix is terrible and constant...Tucson was a little better. I had heard of a scope place in Tucson called Starizona so I went to check it out. Outside was a refractor set up with an h-alpha solar filter. Inside I met a busy Dean and Scott who were very nice and helpful. It's a really neat place packed with goodies and scopes. Dean took me outside to check out a view of the sun, it was my first view of a prominence through a scope, pretty spectacular! Dean said that if I stuck around a bit David Levy would be showing up soon...I had noticed that several of the scopes on display were signed by David Levy...it turns out he and his wife Wendee are regular customers and they live nearby. They did indeed show up, and with a favorite scope of David's, which he calls Minerva, the scope has gone through several changes but still has his fathers original optics. The Levy's had just returned from a solar eclipse trip to the Galapagos Islands. I had a really nice conversation with the Levy's and it turns out that they may soon have a place at the Arizona Sky Village. They seemed quite interested in participating in the documentary so we tentatively set up another visit in the fall for an interview! I hadn't even been to the ASV and already I'm making plans for a return!

I finished my stay in Tucson with a hike in Sabino Canyon then I was off to Portal, Arizona, home of the ASV. It is about 2 and a half hours east of Tucson on the border of New Mexico and Arizona and just south of Highway 10 about 30 miles. It sits at the foot of the Chiricahua Mountains at the mouth of a canyon. The ASV, a work in progress, consists of 85 or so 4 acre properties, only 5 houses are finished so far, and two were in the process of construction. The house I stayed in was a quite nice 3 bedroom, 2 bath with a beautiful view of the mountains just a few minutes away. Soon a remote observatory will be built on a nearby peak. There will also be a community center.



Rock Formation

Jack and Alice Newton, who I had just missed by a few days, started the community along with a small group of amateurs, particularly Gene Turner who I had really hoped to meet with but was very busy with Village business. By the end of the summer there will be several more houses built. There are also interval ownership houses available. Ray Brooks, a resident who was just finishing his house, stopped by for a visit one day. After coming to the area Ray, a nuclear engineer and his wife Dori, an architect, decided to retire early from their life in Chicago to live in the ASV and do real estate in the area.

Some of the houses have observatories, however the house I stayed in had a cement pad out back. Even with the moon high in the sky the views were pretty spectacular, it made me anxious to get back down here sans moon. There were just a few hours between moonset and sunrise where the milky way popped out...although you certainly could still see the glow of the moon and sun though both were below the horizons. Just sitting outside the warm breeze coming off the desert and watching Orion set behind the mountains was breathtaking.

I was pretty nervous standing out there in the middle of the desert, howling coyotes in the distance, mysterious sounds all around, and of course the leaflet from the Chiricahua National forest warning of Black Bears, Mountain Lions and rattlers in my back pocket. Fortunately, I had a new scope and an amazing expanse of sky to focus on!

The ASV is somewhat in the middle of nowhere, several very small towns in the area but for any larger city Tucson is your best bet although Douglas to the south is a busy border town. The City of Portal pretty much consists of the Portal Café and a little post office. There are a few places to rent cabins. On the way to the ASV I passed a place called "Amigos del Cielo", I'm not exactly sure what it is but there will be a star party there planned by the ASV and Meade in the fall.

Daylight hours were spent hiking in the nearby Chiricahua National Monument and the Cave Creek Canyon. The canyon is popular with birders and you could spend weeks hiking the National Monument area amongst the "Land of Standing up Rocks." It's a fascinating area where the desert and mountain meets. There are yucca and cactus amongst spruce and pine. The higher peaks were still covered in snow. The Village is at around 1200 feet while the highest nearby peak was around 9000. One day I drove up to around 7500 feet where the temperature dropped to 55 degrees! There are a few camping facilities available at this height.

I didn't accomplish much in the way of footage for my documentary but I did make some great contacts and potential interviewees for my next trip in October.

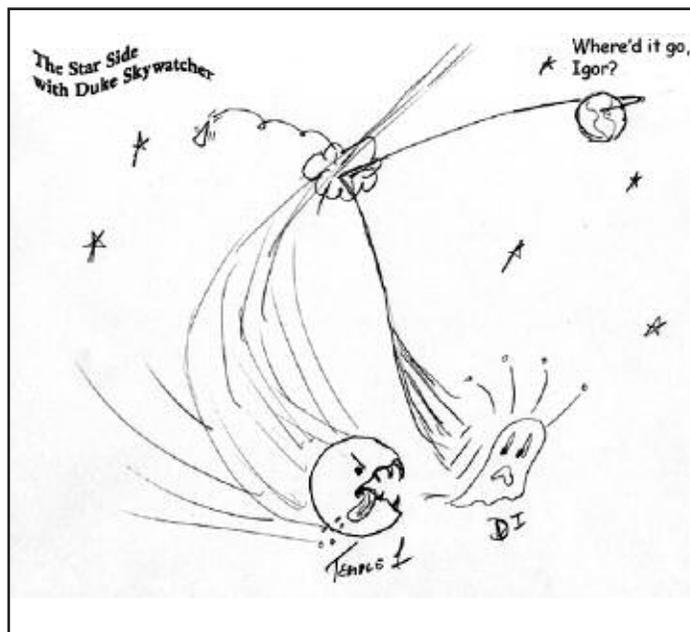
My last night there I was extremely proud to spy Omega Centauri very low on the horizon. Just a smudge in the light of the still setting moon and just a tease to get me down to the ASV again! I stopped by the Portal Café and had a quick breakfast before heading home, dreaming of early retirement and wintering at the ASV.

Did I forget to mention the 14 clear nights in a row? 🍷



Chiricaua At Night

Duke Skywatcher



2005 Onan Observatory Public Star Parties

Public Star Parties at Onan Observatory at Baylor Regional Park are held on both Friday and Saturday evenings one weekend per month. Public Star Parties begin at dusk and officially end at 10:00 pm. Public Star Parties are held rain or shine - if it is cloudy or rainy, a slide show or other program is substituted for the stargazing event.

Date	Event	Time Start	Finishing Time
08/12/2005	Public star-gazing at Onan Observatory	Dusk	10:00 PM
08/13/2005	Public star-gazing at Onan Observatory	Dusk	10:00 PM
09/02/2005	Public star-gazing at Onan Observatory	Dusk	10:00 PM
09/03/2005	Public star-gazing at Onan Observatory	Dusk	10:00 PM
09/23/2005	Public star-gazing at Onan Observatory	Dusk	10:00 PM
09/24/2005	Public star-gazing at Onan Observatory	Dusk	10:00 PM
10/21/2005	Public star-gazing at Onan Observatory	Dusk	10:00 PM
10/22/2005	Public star-gazing at Onan Observatory	Dusk	10:00 PM
11/04/2005	Public star-gazing at Onan Observatory	Dusk	10:00 PM
11/05/2005	Public star-gazing at Onan Observatory	Dusk	10:00 PM

Directions to the Star parties

Metcalf

Metcalf is the grassy parking lot of Metcalf Nature Center, about 20 miles east of St. Paul along highway 94. About 6 miles E of the 694/494 crossing is county road 15 (Manning Ave.). Turn right, then left onto the frontage road and continue east, crossing over county road 71. Turn right (south) onto Indian Trail; follow it 1.1 miles to an chicken-wire gate on the right, (marked by three blue reflectors), opening onto a dirt driveway, which is the entrance to Metcalf.

Baylor Regional Park

Baylor Regional Park is roughly 25 miles W of the SW corner of 494. Head west on highway 5, through Waconia, to Norwood Young America. Turn right onto county road 33 and follow it about 2 miles to the park which is located on the right (east) side of the road. When entering the park stay to the right, follow the park road roughly $\frac{1}{2}$ of a mile. Card-Carrying MAS members may observe at Baylor at any time; call the park caretakers Steve and Margo by 7 p.m. in advance at 952-467-6488.

When visiting Baylor Regional Park, MAS members are requested to NOT PARK OR DRIVE on the grass. Annual Parking Permits (not required for observing) can be purchased for \$20 in the following ways:

- Mail a check to Carver County Parks, 11360 Hwy 212 W, PO Box 330, Cologne, MN 55322
- Call the Park office at 952-466-5250, can be paid with Master or Visa Cards.
- Through the honor box or gate attendant at either Baylor or Lake Minnewashta Regional Park.

For additional information about the Carver County Park system visit the park web site at www.co.carver.mn.us/parks or contact the park office at 952-466-5250.

Cherry Grove

Cherry Grove is about 20 miles south of Cannon Falls. Head south on Hwy 52. Around 6 miles south of Cannon Falls, take a right onto Goodhue County 1 and follow it around 16 miles, where it ends in a T with Dodge County A. The observatory and warming house are at your right, nestled in the corner of the T.

2005 Star Parties

Star parties are held on Friday if weather permits, otherwise on Saturday. Call (952) 467-2426 after 6:00 p.m. on a star party date to hear whether it will be held.

Date	ALT	Event	Location
07/29/2005	07/30/2005	Star Party: Baylor	Baylor Regional Park (Onan Observatory)
08/05/2005	08/06/2005	Star Party: Cherry Grove	Cherry Grove Observatory
08/12/2005		Public star-gazing at Onan Observatory	Carver County's Baylor Regional Park
08/13/2005		Public star-gazing at Onan Observatory	Carver County's Baylor Regional Park
08/12/2005	08/13/2005	Star Party: Metcalf	Metcalf Nature Center
08/26/2005	08/27/2005	Star Party: Baylor	Baylor Regional Park (Onan Observatory)
09/02/2005		Public star-gazing at Onan Observatory	Carver County's Baylor Regional Park
09/03/2005		Public star-gazing at Onan Observatory	Carver County's Baylor Regional Park
09/02/2005	09/03/2005	Star Party: Cherry Grove	Cherry Grove Observatory
09/09/2005	09/10/2005	Star Party: Baylor	Baylor Regional Park (Onan Observatory)
09/23/2005		Public star-gazing at Onan Observatory	Carver County's Baylor Regional Park
09/24/2005		Public star-gazing at Onan Observatory	Carver County's Baylor Regional Park
09/23/2005	09/24/2005	Star Party: Metcalf	Metcalf Nature Center
09/30/2005	10/01/2005	Star Party: Cherry Grove	Cherry Grove Observatory
10/07/2005	10/08/2005	Star Party: Baylor	Baylor Regional Park (Onan Observatory)
10/21/2005		Public star-gazing at Onan Observatory	Carver County's Baylor Regional Park
10/22/2005		Public star-gazing at Onan Observatory	Carver County's Baylor Regional Park
10/21/2005	10/22/2005	Star Party: Metcalf	Metcalf Nature Center
10/28/2005	10/29/2005	Star Party: Baylor	Baylor Regional Park (Onan Observatory)
11/04/2005		Public star-gazing at Onan Observatory	Carver County's Baylor Regional Park
11/05/2005		Public star-gazing at Onan Observatory	Carver County's Baylor Regional Park
11/04/2005	11/05/2005	Star Party: Cherry Grove	Cherry Grove Observatory
11/11/2005	11/12/2005	Star Party: Metcalf	Metcalf Nature Center
11/25/2005	11/26/2005	Star Party: Baylor	Baylor Regional Park (Onan Observatory)
12/02/2005	12/03/2005	Star Party: Cherry Grove	Cherry Grove Observatory
12/09/2005	12/10/2005	Star Party: Metcalf	Metcalf Nature Center
12/23/2005	12/24/2005	Star Party: Baylor	Baylor Regional Park (Onan Observatory)
12/30/2005	12/31/2005	Star Party: Cherry Grove	Cherry Grove Observatory



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