

# ***STARSCAN***

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Comet Neat Q4



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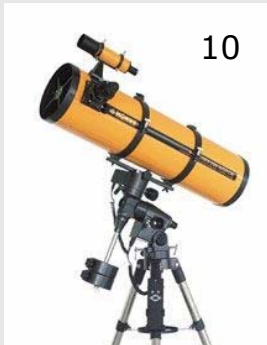


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# Tales of TSP 2004

Ken Lester



Panorama of upper field, Prude Ranch, TSP 2004—Ken Lester

After a two year hiatus from attending TSP, I made the decision to return to the Prude Ranch. I finally decided that the reasons for attending TSP, out weighed the reasons not to attend. Attending TSP gives me the opportunity to visit with old friends and make new acquaintances. It also gives me the chance to see some fabulous new equipment designs and innovations. Add to that, the knowledge gained through discussions with some very learned colleagues and lecturers. My returning to TSP isn't to say that all the problems that go with it have been cured. You still have to deal with the Prude and the lottery system. However, I really missed attending and I was willing to try again.

My trip to the Prude was actually quite enjoyable. I left my home in Deer Park around 1:00 in the afternoon on Saturday. I had been told that no one would be allowed on the ranch until noon on Sunday. In days-gone-by, that rule was ignored and I would arrive at noon to find the place was packed. My plan was to drive to Fort McKavett, and with Buddy's permission, spend the night. I would then head out to the Prude early Sunday morning with an ETA of noon.

It turns out that Len Cassidy had the same plan. We met up at the fort and caravanned to the Prude. We left Fort McKavett at 6:45 a.m. and made great time arriving just after 11:00 A.M. A very long line of cars, trucks, and campers had already formed from the entrance to the Prude back down the highway toward Fort Davis. Needless to say, Len and I were well down the road. By noon, the line of vehicles stretched around the hill and out of our sight.

At two minutes past noon, the gates were opened and the task of verifying that the occupants of each vehicle were on the admit list began. Surprisingly, it only took 20 minutes before I hit the front gate. After being admitted, I headed for the RV park and was met by Steve Goldberg who showed me my assigned spot. I noticed there were ample hookups for the RVs. There would be no repeat of a past problem of not getting the hookups promised.



A green Prude Ranch

It didn't take long to set up camp. I then headed up to the upper field to unload my scope. Becky and Shane Ramotowski, had staked out a JSCAS section on the east side of the field, just west of the new Prude swamp. It had rained 2" Saturday night and there was standing water where the equipment tents would normally go. It has been a wet spring at the Prude and the observing fields were nice and green with grasses and weeds and very little dust. It wasn't long before the Prude staff showed up with a sump pump and began draining off the standing water. By night fall, the area was dry enough to walk across and set up some tents.

Prude registration went smoothly. I returned to my

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camper and put the finishing touches on its setup. Having accomplished all the maintenance tasks, I fixed some dinner and cleaned up. I was ready to start observing!

Unlike the star parties that I have attended for the last few years, I had an observing plan. My goal for TSP was to 1) really learn to star hop; 2) find and log all Messier objects in the Virgo and Coma Berenices constellations; and 3) log as many other Messier objects as I could. In reviewing my log book, I realized that I had logged almost nothing in the past several years. It was time to return to logging.



Shade tree astronomers—Charlie, Jeff and Len

As sunset approached on that first night, very black clouds started building to the north. Gradually they began back building above the Prude. Were we in for another 2" of rain? Soon, a few pea sized hail stones started falling, but no rain. By dark, the clouds had dissipated, though the atmosphere was heavy with moisture.

After aligning my finder scope and Telrad using a beautiful thin crescent Venus, I began searching for comet Neat Q4. In the fading twilight, I found the Beehive cluster in my finder scope, but could not find the comet. I had forgotten my binoculars at the camper, which would have helped locate it. Shane came over and using his binoculars found it for me. With the telescope at 51x, the comet's nucleus was nice and bright and appeared to have a bow shock. The tail was faintly visible and extended for several eyepiece fields of view.

After observing the comet, it was time to get down to work on learning to "galaxy" hop through the Virgo cluster. I used my *Millennium Star Atlas*, my *Finder Charts of the Messier Objects*, and the *ASTROATLAS* to find my way through the hundreds of small galaxies to my targets. I verified each Messier found by comparing the position and orientation of nearby stars and galaxies with the star atlases. When I was satisfied I had found the correct object I logged it, along with the smaller galaxies that I had found on the way to my target. The first night I logged 10 Virgo Messier galaxies before heavy dew cut the evening short.

Night two started out with a build up of clouds over the Prude. The clouds stretched from the southwest to the north and east. A small section of the sky to the south was clear. Eventually, the sky cleared, and I was able to start logging the remaining Messiers in Virgo. By 11:30, I had completed the task of logging the Virgo Messier galaxies.



(left) an observatory on wheels — (right) 10" binocular telescope

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Finding these galaxies without digital setting circles or computer go-to is a very challenging task. I had attempted it about 4 years ago and quickly gave up in frustration. Having detailed star atlases was the key to this year's success.

Nights three and four also turned out great. There was some moisture around midnight which tended to get things wet, but the air dried out as the night progressed. Dark clouds rolled in on Wednesday night around 0500, halting my observing.

Over the years I have half-heartedly worked toward obtaining a Messier certificate. With my goal of logging the Virgo Messier galaxies accomplished, I proceeded to log the other possible Messier objects. When the clouds rolled in on Wednesday night, I called it quits. In all, I logged 75 Messier objects, a comet, and 26 other NGC objects. The remaining Messier objects would have to wait until October's Fort McKavett trip.

Along with the fabulous viewing, TSP is a place to spend some time and socialize. The JSCAS contingent this year included Shane and Becky Ramotowski, Dick Miller, Dennis Webb, Scott Ewart, Jeff Rowe, Len Casady, Jim Cate, Charlie McLeod, Randy Brewer, Richard Nugent, Jack Peterson, James and Nubia Eisenlohr and James' father Bob. Tuesday night, Shane and Becky cooked fajitas for the group.

Not to be overlooked, TSP brings out some really neat ATM innovations. This year, the observatory on wheels was back. The builder converted an ambulance into an observatory. Granted, with the fiberglass dome on top, his mileage isn't great. But I'm sure the Celestron C-11 under the dome gave some fantastic views. There was also a home made 10" binocular telescope. Built entirely from spare parts, the owner reports that this scope gives some breathtaking views.

Due to some prior commitments, I said goodbye to TSP and the Prude on Thursday morning. I missed the great lectures, the presentation of the contest winners, and the Great Texas Giveaways. I heard that Dick Miller won *Best All Around CCD Image* with his image of Arp 1 taken at this year's TSP. Congratulations to Dick.

I think this was my most enjoyable TSP ever. Despite my past differences with the Prude and the lottery system, I had fun. TSP 2004 was run efficiently. The recent rain helped with the TSP dust, which also made the experience delightful. But I believe that the single most important thing that contributed to my enjoyment, was having that observing plan and the satisfaction that I accomplished something while having fun.



Fajita night — (left) Dick, Jeff, Charlie and Len wait as Shane (right) slow cooks the main course.

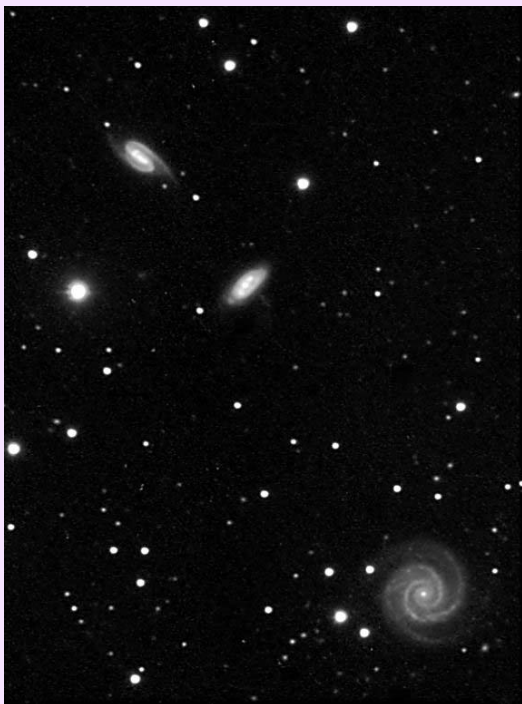
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### Dennis Webb

JSCAS attendees included: Len Casady, Jack Petersen, Jeff Rowe, Jim Cate, Dick Miller, Dennis Webb, Charlie McLeod, Scott Ewert, Becky and Shane Ramotowski, Ken Lester, Randy and Dolly Brewer, Richard Nugent with Ana Reyes (Ana sends her regards!) - did I leave anybody out?



Dick's "People's Choice" best astrophoto of TSP 2004  
— ©Dick Miller

The group had 6 good nights between Sunday and Saturday, with storms Thursday night giving most of the attendees a needed night of sleep. The bunkhouse team had full afternoons of conversations with passing luminaries, not to mention eating smoked mollusks and strong flavored cheese. Near dawn a few hardy souls gathered with spirits to discuss the night's observing and larger questions. The Ramotowski's hosted the traditional delicious fajita dinner with most of the JSCAS attendees enjoying. TSP Prude Food was better than ever as well!

This was Dick Miller's TSP! He won best astrophoto of TSP 2004 with his exceptional image of two Arp galaxies. He also won best Amateur Telescope Making with his three excellent projects: an X-Y offset for a guidescope using a Meade 2045 and one of its fork arms; his magnificently simple "flipper" for swapping eyepiece and camera at the telescope; and his simple flatfield device from a paint can lid. Not only that, he won one of the better door prizes, a padded tripod case. Finally, he got his 100th Arp galaxy image and joining a very special group of imagers.



Afternoon JSCAS gathering at the Harmony 1 bunkhouse  
photo by Dennis Webb

Dennis Webb had a great time as well, earning a best Art award for a strange film photo self portrait. He also got to meet and introduce Wil Tirion and David Levy/Tim Hunter at the Saturday afternoon talks. He also introduced the TSP 2004 Lone Stargazer, Jay McNeil (of the McNeil Nebula). Imaging worked great except for one laptop failure (good to have a spare).

The Ramotowski's are now both imaging, with Becky the proud user of Al Kelly's venerable Cookbook Camera. Dick and Dennis helped her over the hump including image processing in the afternoon. She got a pretty good image of Comet NEAT.

Jeff Rowe and Jack Petersen observed faint stuff together, as "Jet Pilot" and

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Dennis' best art of TSP 2004 (missing its mulberry paper border) — ©Dennis Webb

"Hannibal Lechter". Scott Ewart pursued the most demanding observations with usual vigor (he got up after the storms early Friday AM. Jim Cate cranked away on the Messiers and was recognized for excellent telescope making for his new dob - he provided a lovely domestic white for one afternoon's discussion.



It was great to have Ken Lester back at TSP, lending his humor and enthusiasm. Charlie McLeod announced he had just purchased one of Andy's New Mexico lots and we were all envious.

A great TSP! Can't wait until next year.

(TSP 2005 will be May 1<sup>st</sup> through 8<sup>th</sup>, 2005)

Storm clouds Thursday at sunset  
Photo by Dennis Webb

## Family Space Day

May 16, 2004 — Eleta Malewitz

After Dr. Stephanie Shipp's invitation at last night's meeting, Ed and I went to LPI this morning to check out their Family Space Day, aimed at kids 5 - 8 years old. We took our little Takahashi scope to view the Moon, just in case the clouds parted enough to see it. Ed had checked it out earlier in the morning, to make sure it would be visible enough to make it worthwhile, and though it was a crescent, it was readily visible in the Takahashi. Unfortunately, by the time we got there, the clouds were winning and the sucker holes were few and far between. We did check out the inflatable dome and planetarium, where they were showing a film about native American Moon lore. There was also a room set up to let kids build space stations and habitats. Another room was set up as a space theater showing a nice Moon colony animated film by space artist Pat Rawlings. There were some other activities in the Great Room. There were earth rocks of the same type as Moon rocks, Moon maps and information for the kids to take home, and pages for them to color. After about an hour, the sun peeked out and we decided to set up the telescope. Though Ed got a glimpse of the Moon naked-eye and in binoculars, the clouds wouldn't stay away long enough to get it in the scope, so we mostly looked at the Sun. Still, the LPI folks were very appreciative of our coming and bringing the scope.

The new director is apparently very serious about doing real public outreach, and making this monthly Space Day a success. They spent quite a bit of money on the inflatable planetarium, and that nice 10" Meade LX200 that they got for the Mars close approach. Now we just need to persuade him that they need a good solar filter and an H-alpha filter for that scope! Next month's Family Space Day is on June 19 (yes, the same date as our Moody Gardens star party). Its theme is the Sun. Hopefully by then the Institute will have at least a Thousand Oaks filter for their scope. We promised to bring our two scopes. Another scope or two might be called for as well, if we can get the event publicized well enough to draw a crowd. They did have a steady stream of people coming through this time, apparently a big increase over the first event. They hope to eventually get a couple of hundred kids at these events. I'm going to help publicize this with my list of contacts, and any help with that would be great. They did get the word to a few local school districts, but not all. They also received several requests from schools to bring the event to the schools during the school day, and may start doing that as well.

One of the folks there, who brought his young son, is with NASA's Education Office, and is in charge of getting the Explorer Schools set up. He said he has boxes of equipment, some unopened, with telescopes that he needs someone to show him how to set up and use, so he can go out to the schools and teach the teachers. He's interested in cooperative arrangements with our group, too. He said many of the schools are in remote areas, like Indian reservations, where they don't have any local astronomy clubs to help them learn to use the telescopes, so he spends a lot of time on the road getting the program going in the schools. Ed's going to get with him during the coming week and make arrangements to come out and look over the equipment.

We both had a lot of fun there today, and hopefully this will be a chance for us to repay LPI for letting us meet there all these years.

Eleta

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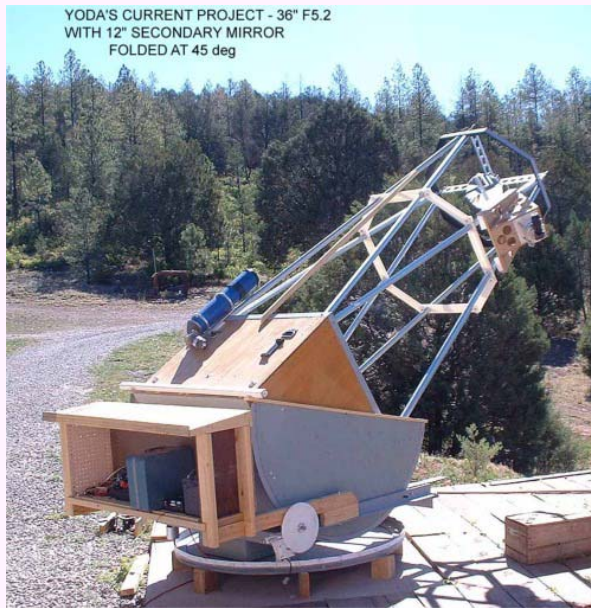
### Editor's note:

Family Space Days at LPI is held from 10:00 a.m. to 2:00 p.m. the third Saturday of every month. For more information on this event and other LPI activities visit their web site at [http://www.lpi.usra.edu/education/other\\_programs/](http://www.lpi.usra.edu/education/other_programs/).



# Yoda's New Projects

Andy Saulietis



My latest big telescope project is an Alt-Az 36" f5.2 with focal plane de-rotation. It will have the Bartels stepper drive system, like Chuck Shaw's and Bob Taylor's. The large rear cabinet was an idea I borrowed from Bob Taylor (thanks Bob).

Shown in the pictures are the HDPE/knurled roller azimuth drive, with tapered main drive roller, and the focuser/field rotator/secondary mirror assembly. The focuser is the square plate with the eyepiece/diagonal on it. There are 3 sliding rods and one threaded rod that move the plate in/out for focusing. The threaded rod will get motorized later.

The 45 degree folded Newtonian does have a large 1/3 obstruction which makes eyepiece access much easier. The scope only needs a 6'

ladder. The diagonal mirror makes it easier to find a comfortable viewing position. Baffles are not installed yet, so it's usable only when it's dark for now. The head of Comet NEAT just fits into a Nagler 20mm field of view. It's an awesome sight!

The scope will be delivered to Tut Campbell of Arizona and will mostly be used to monitor cataclysmic variable stars with an ST-6 CCD camera.



A 37" f4.6 is in the final design stages. This one will stay here at Stars End, New Mexico and be operated via the web by Wheaton College, MA. I plan to submit progress pictures and reports to JSCAS on this project also. First light is expected in October of this year. The 37" project will most likely be my last big telescope project. I want to spend more time observing and CCD imaging instead of building stuff. Of course, like with boat building projects, these telescopes never actually get finished.

# Astronomy 101

## Advice on Buying Your First Telescope

Ken Lester

Every month, I present information about our hobby that new and novice amateur astronomers might find useful in exploring the heavens. This month, I present an unpleasant but true story that gratefully, has a happy ending. The story serves as a backdrop for some sound advice, which I have put in **bold print**, about purchasing your first telescope via the web or by mail order.

The story starts back on March 1st. My wife Lisa and I received an e-mail from Kaycie Sullivan, Administrative Coordinator, Texas Tech University at Junction, Texas. Kaycie wrote: "We have started an Outdoor School at the Texas Tech University Campus in Junction, Texas and we would like some of your advice. ... We just received 2 brand new Konus f-5 telescopes and we are having trouble using them. We know that the two of you are heading out to Ft. McKavett for the March 20 star party. We would love to attend the star party and we will, but we also wondered if we could meet you personally on our campus. ...." As it turns out, Bob Taylor, Triple Nickel, Randy Brewer, and myself had arrived early for the star party at the fort. We arranged to meet with Kaycie on Wednesday the 17th.

When we arrived at our meeting, Kaycie explained how their new telescopes would be used in their astronomy program for 5th graders. She also showed us their new Konus telescopes. The scopes were KonuSky 200 7.8" Newtonian reflectors on EM-10 equatorial mounts. Appearance wise, these were really sharp looking telescopes. She also briefed us on the problems they were having. The first problem: one of the OTAs (optical tube assemblies) was dented in shipment. It was determined that this was a cosmetic problem and while it's unfortunate and should never have happened, it wouldn't affect the optical performance of the telescope. The second problem was quite a bit more serious. The secondary

mirror of one of the scopes, fell out of its holder and struck the primary. As a result, the primary was chipped. The Konus secondary mirrors are held in place by a bit of glue and a retainer with a single screw. Bob Taylor, re-attached the secondary in its holder using more glue and a screwdriver in about 15 minutes. He then proceeded to give this invaluable piece of advice: **always store OTAs in a horizontal position.**

While Bob was repairing the secondary, Kaycie told us about the biggest problem of all. They were having trouble finding anything with the scope. Our first thoughts were to blame the 9x50 finder scopes. Finder scopes are difficult to use. They must be accurately aligned. Even then, beginners and experienced observers alike often have difficulty pointing the finder scope at the right place in the sky. An illuminated cross hair reticle definitely helps, but only if you are near the correct star field. **We recommended the purchase of a 1x pointing device like a Telrad or Rigel Quick Finder.**

Another possibility for their scope pointing problems was the equatorial mount. Equatorial mounts can be very difficult to use for beginners. One axis, right ascension, is parallel to Earth's polar axis. The other axis, declination, is 90° from the polar axis. Unlike alt-azimuth mounts like the Dobsonian mounts, the motions of an equatorial just don't seem natural. Kaycie assured us that her staff had spent time in learning how to point the telescope. They even sent one person out to the McDonald Observatory where they received some tips and pointers from the staff which runs the public observatory near the gift shop. They had also spent considerable time with local amateur astronomers, learning how to use the scopes. Kaycie had also sought assistance with the retailer of the telescopes.

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Kaycie had contacted the retailer many times complaining of the problem of trying to find anything with the scope. They refused to listen to Kaycie, saying that the Konus scopes were one of the best they have ever tested. They defied her to have anyone who knew what they were talking about, call them up and discuss the quality of the scopes. The retailer's focus seemed to be on collimating the telescopes. They did correctly explain to Kaycie how to center dot the primary mirror and use the rudimentary collimation tool. They even offered to collimate the scopes for free whenever needed. Some words of advice about free collimation: 1) you have to pay to transport the scope there and back (\$100 or more); 2) shipping will probably knock the optics out of alignment before you get the scope back; 3) you may be without a scope for a month or more.

**The offer for unlimited free collimation is a gimmick.** Don't get fooled. In between calls to the retailer, the crew at Tech researched using the scopes and collimation from local astronomers and the McDonald staff. By the time Kaycie called the retailer back to return the scopes, the retailer told them that too much time had elapsed and returning the scopes was out of the question.

Our suggestion to Kaycie was that she and her staff bring the telescopes out to the fort that night for a quick lesson on using the equatorial mounts. We also planned on checking the scope collimation using the proper tools, which we had neglected to bring with us.

The Texas Tech staff arrived early that night and set up their scopes. Bob checked the collimation, which was very close to being dead on. They did a great job collimating considering the primitive tools they used. Bob told them about collimation tools and explained how to use them.

By the time I arrived, it was quite dark. Triple was in the process of showing them how to use the equatorial mount. The target was M42. Try as he might, the mount was uncooperative and he could not get M42 in the eyepiece. In fact, the equatorial mount has a built-in slow motion knob which can be used to slew to your target when you are close. I watched in amazement as not once, not twice, but three times, Triple

got knocked in the eye by the eyepiece when the OTA, for no explainable reason, suddenly jumped when the slow motion knob was turned.

I also tried to find M42 in their scopes. I know equatorial mounts very well; my first telescope was a Celestron C11 on a German Equatorial mount. I loosened the clutches on the Konus mount, and repositioned the OTA to a point very nearly on the nebula. I then tightened the clutches to hold the position. To my amazement the OTA just started sliding away from the target. The clutches were slipping. No amount of coaxing could get either mount to work correctly. Before the night was over, we all agreed that the problem was not in the staff's lack of ability but in the poor quality of the mount. It was decided that on Kaycie's behalf, I would contact the retailer with our findings.

My initial contact with the owner of the retail outlet did nothing to raise my hopes of resolving the problems with the Konus scopes. He politely let me explain the problems. I explained about the secondary coming loose and damaging the primary and our reattaching the secondary. It seemed to me that as soon as he heard that we had reattached the secondary, to him, there was no longer a problem with the secondary. There were no words of compassion for the damaged mirror. He didn't even inquire about the extent of damage. Nor did he offer any options for replacing the mirror. When I explained the problems with the equatorial mount, he explained that oil from the mount could leak onto the plastic washer in the clutch mechanism and cause slippage. This was followed by an explanation of how to disassemble the mechanism and clean the parts. As to Triple's experience with the slow motion knob, he was in disbelief that this could happen. He did give us the number to Konus USA and suggest we ship the mount back for warranty repair. The owner kept bringing up the subject of free lifetime collimation and the impression that I received from him was that all the problems with the scopes were the fault of the users, JSCAS members included.

While the story gets longer, I will try to condense it down to a successful conclusion. Myself and Triple became involved in an e-mail campaign with the owner, urging him, some-

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times very strongly, that it would be in the best interest of astronomy to allow Kaycie to return the scopes and purchase something more reliable. There were two complications to which the owner eventually conceded. The first, Kaycie no longer had the original shipping cartons. As a rule of thumb: **keep all shipping containers until you are satisfied that the product will fit your needs and is performing as advertised.** The second, since it took so long for it to be established that the problem was with the scopes and not the users, the length of time that the store would allow the product to be returned had been exceeded.

**Before you make a purchase, make sure the store will allow you to return the item, if you are having problems, for a full refund or exchange within a reasonable period of time. In addition, if you do have problems, re-negotiate the return policy at the time you make your first call.** Stores don't want returns. It is only natural that they would try to resolve the problem before accepting a return. They will suggest you try a number of "solutions". These "solution attempts" may cause the return period to be exceeded. This is what happened to Kaycie. If the store will not allow you to exceed the return period once you report the problem, then go ahead and insist they take their product back on your first contact with the dealer.

The good news is the owner of the store finally agreed to let Texas Tech exchange the scopes for a different make and model. I'm happy to report that Kaycie has successfully been able to exchange the scopes and is the proud owner of two new Dobsonian reflectors.

As an organization, astronomy clubs probably should not get involved with an individual's problems with suppliers. In this case, the owner invited our participation when he told Kaycie that these were some of the finest scopes they have ever tested and she could get anyone who disagreed with that to call him to discuss the issue. So we did.

As amateur astronomers we are often asked: "what kind of scope should I buy?". Besides going to star parties to see what's available, I tell people to research the subject. I mention that the big two astronomy magazines often have product reviews which may be helpful in

making a decision. After my experiences with the Konus mounts, I happened to pick up the April 2004 issue of Astronomy magazine. They had a review of the Konus Motormax-130 which just happened to have the same mount as the KonuSky 200. Astronomy reported: "The German equatorial mount for this telescope is nice and sturdy, and the operation of both the right ascension (R.A.) and declination (Dec.) axes is firm and smooth with very little 'slop' in the gears." They go on to say: "The large R.A. and Dec. locking levers are easy to locate and operate. The slow motion controls are short with large knobs and have a smooth feel."

I must admit, I'm puzzled about the good review when we had so much trouble with not just one but two of these equatorial mounts. I'm not suggesting that Astronomy's review was in error, however, our own tests had far different results. As a possible explanation, and this is pure speculation on my part, perhaps the Konus quality control is at fault, allowing too high a variance in the precision of manufactured parts. Another rule of thumb: **low price usually means lower quality.** In this case they are selling an 8" reflector on a German equatorial mount for what some other companies are selling 8" Dobsonians.

The question about who to buy your scope from also comes to mind. While the dealer eventually agreed to take the scopes back, it took considerable negotiation between Texas Tech, the dealer and JSCAS members to reach an agreement. The dealer's attitude was one barrier which needed to be overcome. In the dealer's own words: "They (Texas Tech) clearly don't seem to understand, or have the ability to operate any equatorial mount. This would make almost any telescope unusable for them..." Triple and I can attest to the fact that the Tech staff was competent. This dealer advertises in the major astronomy magazines. Their ads imply they welcome new users, will help them select a telescope and teach them how to operate it. Having past experience in retail, I know that from a business perspective, you can't treat your customers like they treated Kaycie. Unfortunately, the true nature of a company cannot be determined from their ads in the major magazines. If you're looking to buy your first scope, you may want to consider

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this: if you buy over the Internet or by mail order, you cannot plop the scope down in front of the retailer and say fix it if there is a problem. You may want to consider a local retailer with a reputation for service.

It is my hope that this article will not discourage anyone from purchasing their first telescope. It is intended to give some tips that just may help you in the purchase process. When you're looking to buy that first scope, **find an astron-**

**omy club and get feedback from its members. Attend star parties and see how well the different scopes function and question the owners on their satisfaction with their scope and the dealer who sold it.** After you have purchased your new scope and feel really comfortable with it, consider participating in star parties and sharing your experiences with others looking to buy their first scope.

## PANAMA ECLIPSE EXPEDITION PRICE INCREASES

Paul Maley

The JSCAS Panama solar eclipse trip prices had to be increased by Carlson Wagonlit Future Travel from \$999 double to \$1175 (new price is \$1349 single rate)—an extraordinary occurrence due to what has been happening to the price of oil. All airlines that fly to Panama raised their fees and they had to be passed along. The travel agency indicated that prices are expected to be stable from here on and they apologize for what they have had no control over. There is only one thing that is rumored. It has always been possible for visitors to the Panama Canal to get in without a fee. However, the Panamanian government may place a visitors tax of approximately US\$10 on persons who tour the canal. This is not confirmed but, if it is mandated, would become an additional expense.

Future Travel has always had a great way of working with the JSCAS. All those who had signed up were offered the option to get a complete refund of their deposit if they wanted to after this notice; none have elected to do so. As it stands, even with this increase the RING OF FIRE EXPEDITIONS tour is still the best priced one on the market.

Delta Airlines, in the 3rd week of May, offered some incentives (including increased commission and free tour escort travel) to the agency if they switched airline carriers but Carlson turned them down. The reasons Carlson decided to stick with Continental and not to use Delta were as follows: a) Delta's flights must go through Atlanta, hence, would not be nonstop from Houston (implies more risk of flight delays and misconnection and a much longer travel day); b) the arrival time in Panama is such that we would not get to the hotel until midnight! c) departure time on the return for Delta was so early that the group would be forced to leave the hotel at 3:00am!

We hope everyone enjoys the upcoming tour and look forward to yet another successful eclipse venture.

## Sky & Telescope Discount Subscriptions

Renewing your subscription to Sky & Telescope? Subscribing for the first time? Contact David Haviland, [tcell@hal-pc.org](mailto:tcell@hal-pc.org), to take advantage of the JSCAS Club Discount before you subscribe!

## Current Events

### CALIFORNIA SPACE PORT

Tucked away near old gold and silver mines in southeastern Kern County, California is the Mojave Airport. The Mojave Airport Civilian Flight Test Center is nearing government approval for being the first private inland space port, handling horizontal launches of reusable space craft.

The airport was established in 1935 as a county airport suitable for general aviation with taxiways and minor support facilities. In 1942, it was reconstructed as the Mojave Marine Corps Auxiliary Air Station. In July 1961, Kern County obtained title to the property and operated the facility as part of the county system of general aviation airports and site for promotion of industry.

Today, the Mojave Airport serves as a home for companies involved in modification and flight test of major military jet and civilian aircraft, aircraft storage, and other high-tech industries, including companies vying for the \$10 million X Prize which will go to the first privately funded group to send three people on a 62.5-mile-high sub-orbital flight and repeat the feat within two weeks using the same vehicle.

The Mojave Airport is a world renowned civilian flight test center and is home to some of the most unique and exotic aircraft ever built such as the Voyager, Proteus and Derringer. It is also home to the National Test Pilot School.

### GALEX First Year Anniversary

Celebrating one year since the launch of GALEX on April 28, 2003, this ultraviolet image of Messier 81 and Messier 82 (M81 & M82), a pair of galaxies lying 10 Million Light Years distant, illustrates the satellite's unique window on the Universe. The diameter of the image on the sky is 1.2 degrees, or more than twice the diameter of the full moon.

The great spiral galaxy M81, similar in size and brightness to our Milky Way galaxy, is in the lower half of the image. The stars in its spiral arms have formed within the last 100 million years, as have most of the stars in a nearby dwarf galaxy just to the left of M81. GALEX reveals that star formation is occurring quite distant from the nucleus of M81 in the faint blue extensions to the brighter spiral arms. The nucleus, or center of M81, shines from the light of 10 billion year old stars near the end of their lives, which produce their energy by burning helium into carbon. These stars are cooler (and thus appear more red) than the younger hotter stars in the spiral arms of M81.



The upper half of the full GALEX field of view shows the remarkable star forming galaxy M82. Star formation is so violent in this galaxy that gas and dust is being expelled perpendicular to its disk which we view on its side. Once thought to be an exploding galaxy; the flows are now known to be caused by the supernova explosions from the young stars in this turbulent galaxy.

Text and images courtesy NASA/JPL-Caltech



**HOUSTON  
AREA  
ASTRONOMY  
CLUBS**

Brazosport Astronomy Club  
Meets the Third Tuesday of the month, 7:45PM  
At the Planetarium  
400 College Drive  
Clute, Texas  
For more information, contact Judi James at the Planetarium  
979-265-3376

Fort Bend Astronomy Club <http://www.fbac.org/>  
Meets the third Friday of the month, 7:00 p.m.  
First Colony Conference Center  
3232 Austin Pkwy  
Sugar Land, Texas

Houston Astronomical Society <http://spacibm.rice.edu/~has/>  
Meets the first Friday of the month, 8:00 p.m.  
University of Houston, University Park  
Science and Research Building, room 117

North Houston Astronomy Club <http://www.astronomyclub.org/>  
Meets the fourth Friday of the month, 7:30 p.m.  
In the Teaching Theater at Kingwood College  
20000 Kingwood Drive  
Kingwood, Texas

## Upcoming Events

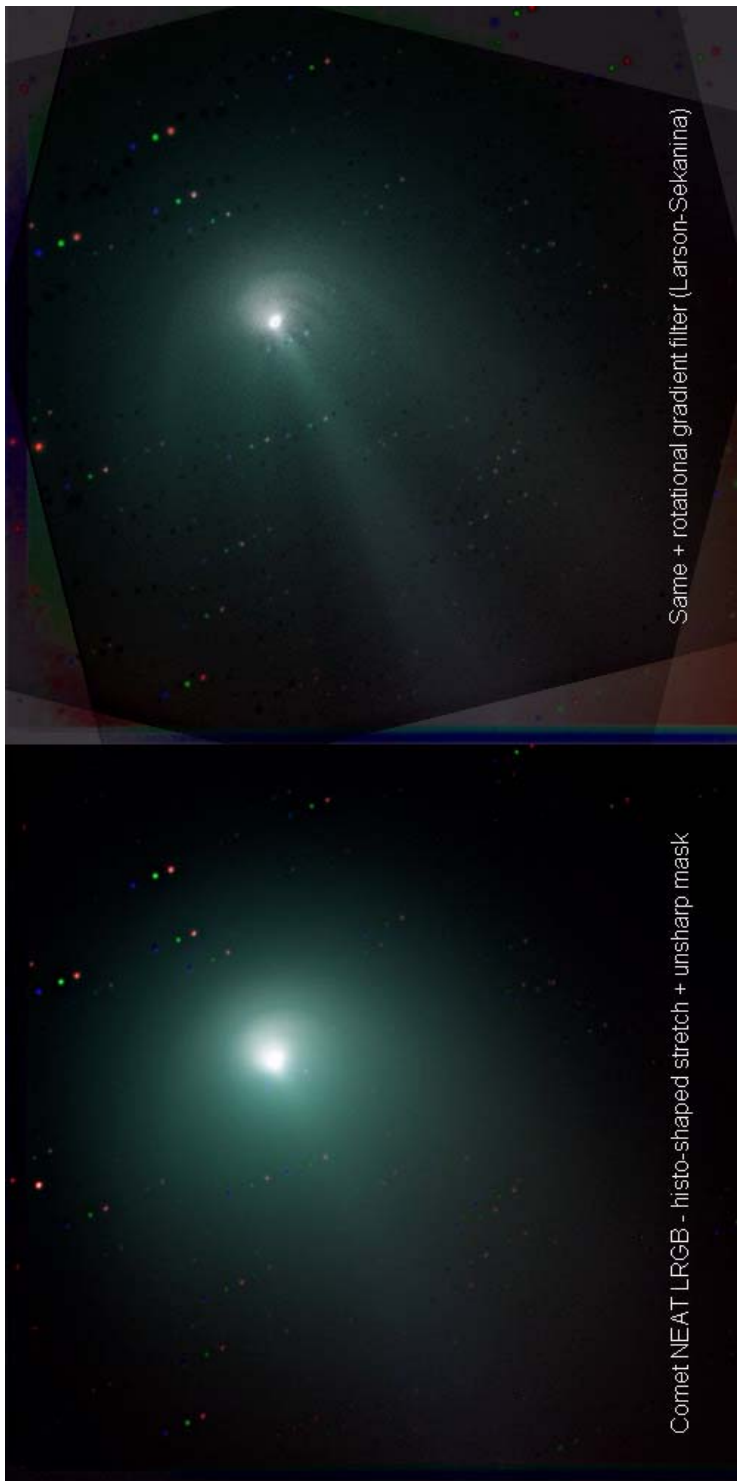
**CASSINI LECTURE:** Steve Eckberg from the Cassini team will speak to the North Houston Astronomy Club on Friday, June 25, 2004 at 7:30 PM at the Kingwood College. Bill Leach extends his personal invitation to JSCAS members to attend and enjoy the latest information just 6 days before Saturn Orbit Insertion. Details on the speaker can be found at <http://www.astronomyclub.org>.

**StarConn:** June 5, 2004. This daylong, astronomy 'convention' is held at 150 Science Center Auditorium, Wesleyan University in Middletown, Connecticut. Speakers for this year's event will include Dr John Andrews: Chairmain Department of Physics, University of Illinois, 'Cosmic String Theory'; Dr. Ed Moran, Wesleyan University, 'Chandra X-Ray Observations'; Dr. Robert Ferl, University of Florida, 'Life To Mars'; and our Keynote Speaker: Z. Nagin Cox, Deputy Team Chief - Spacecraft/Rover Engineering Flight Team MER projects, NASA-JPL, 'Roving the Red Planet'. For more information, please see our web page at <http://www.innovativesolu.com/asgh/starconn/StarConn.htm>.

**CENTRAL TEXAS STAR PARTY:** August 13th and 14th. A free star party for amateur astronomers held at the Eagle Eye Observatory, Canyon of the Eagles Lodge and Nature Park, Lake Buchanan, Texas. Hosted by the Austin Astronomical Society. The event features a talk by Russell Croman, astrophotographer. Other activities include observing challenges, door prizes, and skies filled with the Summer Milky Way. For more information visit the Austin Astronomical Society web site at <http://austinastro.org/ctsp.html>.

**OKIE-TEX STAR PARTY:** The 21st annual Okie-Tex Star Party will be held October 9-17 at Camp Billy Joe, Kenton, Oklahoma. Sponsored by the Oklahoma City Astronomy Club, activities include speakers Brian Lula and Dick Parker, vendors, door prizes and dark sky observing. For more information contact Larry Beatty, [ldbeatty@aol.com](mailto:ldbeatty@aol.com) or to register, go to <http://www.okie-tex.com>.

# Member's Gallery



**Comet Neat Q4**  
**©AI Kelly and Arne Hendon**

LRGB color composite of comet NEAT Q4 made by AI Kelly from filtered images taken by Arne Hendon of the US Naval Observatory in Flagstaff, AZ with the USNO 1.0- meter telescope. Arne made the images on May 11, 2004 using BVR filters. AI composited B=blue, V=green, and R=red and created the luminance layer from a stack of all images.



**Sagittarius**  
**©Shane Ramotowski**

Taken at TSP 2003 - Ft. Davis, TX on May 2, 2003. Taken with a Nikon F2 with Nikkor 50 f/1.4 lens, piggybacked. Focal length was 50 mm; F ratio was 2.8; exposure time 10 min; film was Fuji Provia 400 Slide Film. Equalized RGB histograms in VueScan.



# Visual Observing

By Chris Randall

★ **SSO:** (Solar System Objects) Summary for 15 June 04

Object	Const	Mag	% Ill	Rise Time	Transient	Set Time
Sun	Tau	-26.7	100	06:20	13:20	20:21
Moon	Tau	----	3	04:35	11:39	18:47
Mercury	Tau	-2.0	99	06:07	13:07	20:11
Venus	Tau	-4.0	2	05:41	12:32	19:26
Mars	Gem	1.8	98	08:36	15:32	22:31
Jupiter	Leo	-1.9	99	12:14	18:35	01:00
Saturn	Gem	0.9	100	07:47	14:43	21:43
Uranus	Aqr	5.8	100	00:40	06:19	11:58
Neptune	Cap	7.9	100	23:31	04:55	10:18
Pluto	Ser	13.8	99	19:38	01:07	19:38
2001 Q4 Neat	Uma	4.4	81	08:42	17:50	03:02
2003 K4 Linear	Her	7.7	94	17:02	01:38	10:10
2002 T7 Linear	Sex	5.3	82	11:56	17:39	23:25

Highlighted times denote daylight events.

★ **BSO:** (Bright Sky Objects)

**NGC 6205 (M 13)** – Globular cluster in Hercules, Magnitude 5.8, Size 20'.

**NGC 6218 (M 12)** – Globular Cluster in Ophiuchus, Magnitude 6.1 Size 16'.

**Cr 316** – Open Cluster in Scorpius, Magnitude 3.4, Size 105'.

**NGC 6121 (M 4)**– Globular Cluster in Scorpius, Magnitude 5.4, Size 30'.

★ **DSO:** (Dark Sky Objects)

**NGC 4258 (M 106)** – Galaxy in Canes Venatici, Magnitude 9.1, Size 18.8' X 7.3'.

**NGC 5194 (M51)** – Galaxy in Canes Venatici, Magnitude 9.0, Size 10.3' X 8.1'.

**NGC 4736 (M94)** – Galaxy in Coma Venatici, Magnitude 9.0, Size 14.3' X 12.1'.

**NGC 4736 (M 94)** – Galaxy in Canes Venatici, Magnitude 9.0, Size 14.3' X 12.1'.

★ **CDMP:** (Chris' Don't Miss Pick)

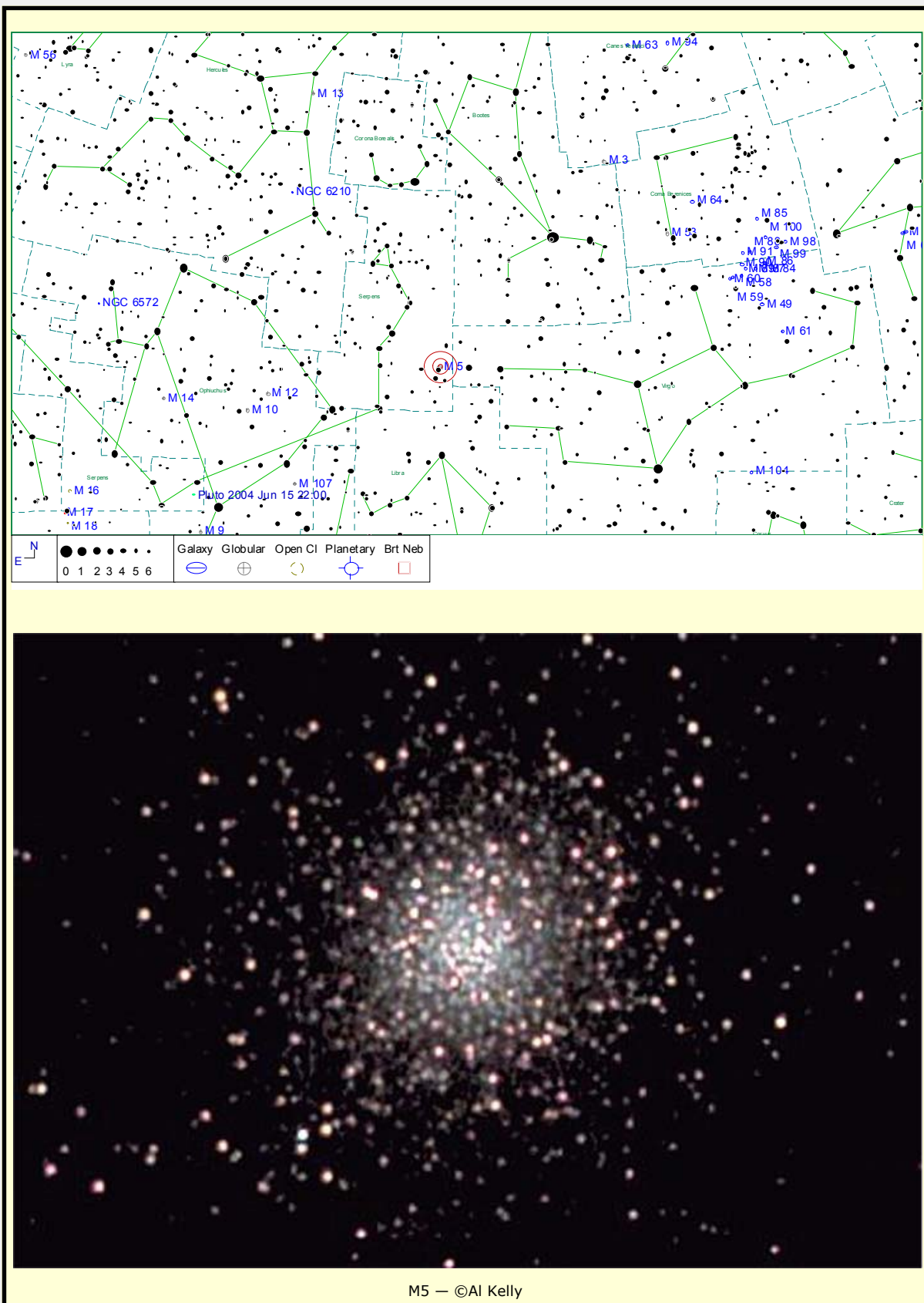
**NGC 5904 (M5)** –Globular Cluster in Serpens. Magnitude 5.7, Size 23'.

M5 was first seen by Gottfried Kirch and his wife Maria Margarethe on May 5, 1702, when they observed a comet, it was described as a "nebulous star". Charles Messier found it independently on May 23, 1764, and described it as a round nebula which "doesn't contain any stars". William Herschel was the first to resolve this cluster into stars; he counted 200 of them with his 40-foot [FL] reflector in 1791, "although the middle is so compressed that it is impossible to distinguish the components."

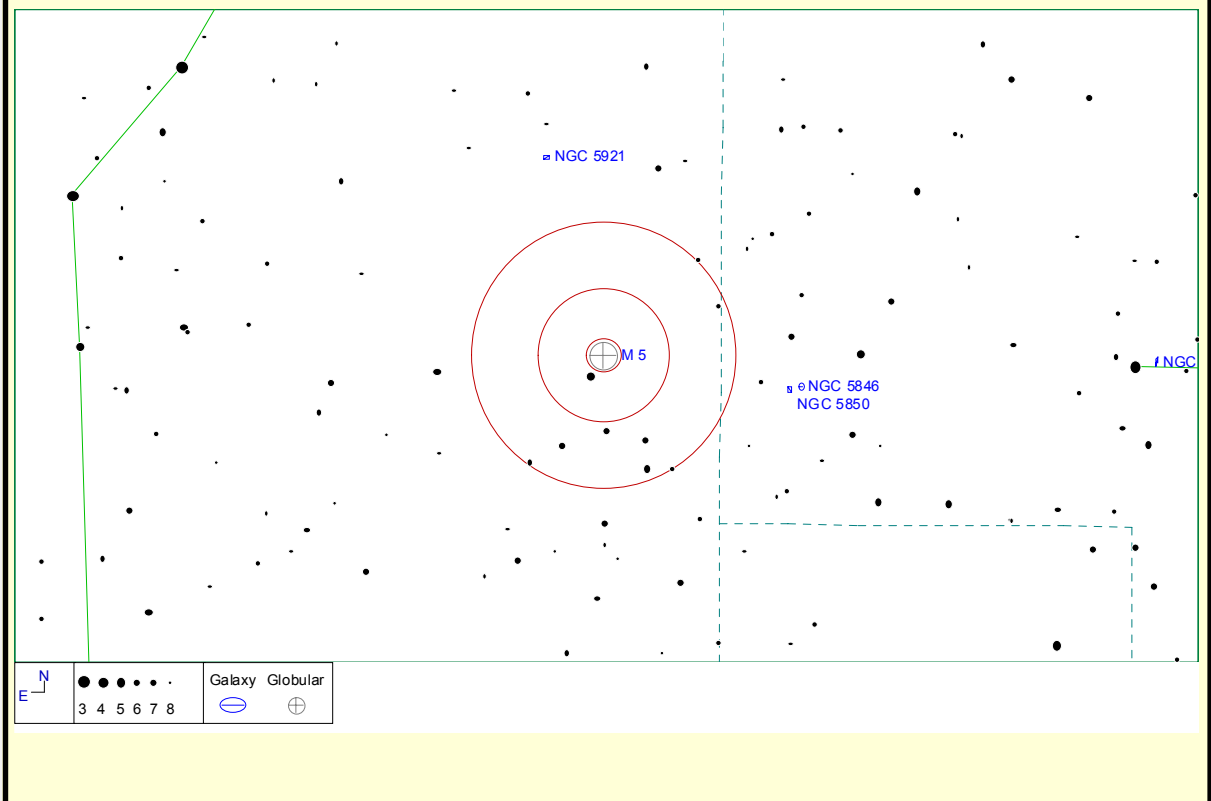
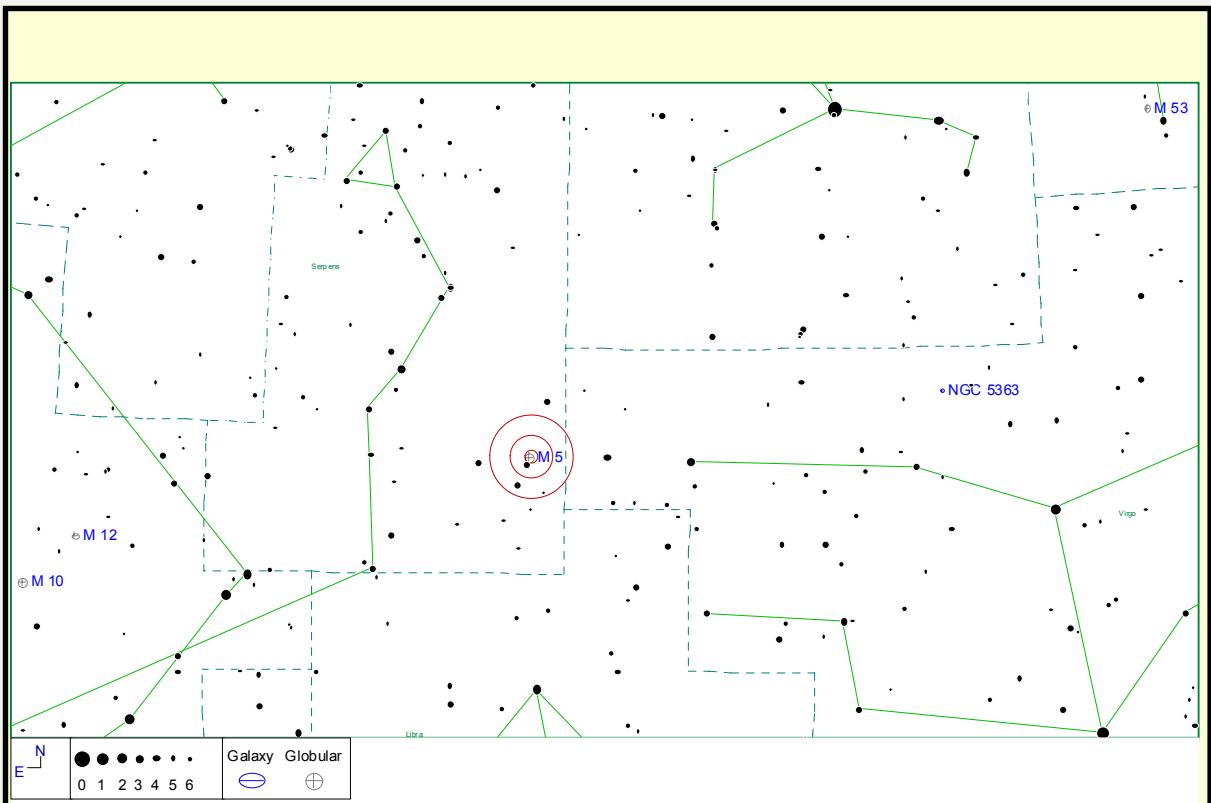
M5 is thought to be one of the oldest globular clusters, with a computed age of 13 billion years. Its diameter is about 165 light years, making it one of the larger globular clusters. At its distance of 24,500 light years, this diameter is about 23 minutes of arc.

For More information go to <http://www.seds.org/messier/m/m005.html> .

(Continued on page 19)



M5 — ©Al Kelly





## Comet Chasing

Around the June new moon, there will be a possibility of seeing six comets in one night. They are listed below with German Equatorial Mount sweeps for each day from the 11th to the 19th. Also listed is the RA and Dec for each day. The locations are for 7 P.M. CDT on each date. The motion of some of the morning comets is enough that the sweep will need to be slightly revised by the time they are observable. In this event, there is listed a "motion per hour" that can be used to recalculate the sweep. The magnitudes are based on a combination of predictions and current reported values as listed on <http://encke.jpl.nasa.gov/RecentObs.html>.

There are six comets but finding all six will be a real challenge. T7, even though bright, will never get very high, Bradfield will be very dim and Howell will be dim and low. You will need a good horizon to the west (T7), to the NE (T3) and the east (Howell).

For those of you not familiar with the "Sweep" information, it is highly useful for those folks with equatorial mounts and setting circles. Point your scope at the indicated star and then, using the "Sweep" information, move your scope in the indicated directions and voila, there's the object. For those folks with alt-az mounts, you'll have to rely on the RA/Dec values and use a set of star charts for proper location. You computer controlled scope folks can just GOTO the RA/Dec.

### 2002 T7 (LINEAR)

Date	Star	Sweep	Move	RA	Dec	Mag
11-Jun	Alpha (a) Hya	0.5 S / 4.8 E	n/a	09 47.02	-09 10.6	7
12-Jun	Alpha (a) Hya	0.3 S / 5.3 E	n/a	09 49.48	-08 59.7	7.1
13-Jun	Alpha (a) Hya	0.1 S / 6.0 E	n/a	09 51.80	-08 49.7	7.2
14-Jun	Alpha (a) Hya	6.5 E	n/a	09 53.97	-08 40.4	7.3
15-Jun	Alpha (a) Hya	0.2 N / 7.0 E	n/a	09 56.03	-08 31.9	7.4
16-Jun	Alpha (a) Hya	0.3 N / 7.5 E	n/a	09 57.98	-08 24.1	7.6
17-Jun	Alpha (a) Hya	0.4 N / 8.0 E	n/a	09 59.83	-08 16.8	7.7
18-Jun	Alpha (a) Hya	0.5 N / 8.5 E	n/a	10 01.60	-08 10.2	7.9
19-Jun	Alpha (a) Hya	0.6 N / 9.0 E	n/a	10 03.29	-08 04.1	8

### 2001 Q4 (NEAT)

Date	Star	Sweep	Move	RA	Dec	Mag
11-Jun	Theta (q) UMa	1.6 S / 4.5 E	n/a	10 00.59	+50 13.8	6.3
12-Jun	Theta (q) UMa	1.2 S / 4.8 E	n/a	10 02.31	+50 35.6	6.3
13-Jun	Theta (q) UMa	0.9 S / 5.0 E	n/a	10 04.00	+50 56.4	6.4
14-Jun	Theta (q) UMa	0.5 S / 5.2 E	n/a	10 05.66	+51 16.2	6.4
15-Jun	Theta (q) UMa	0.2 S / 5.4 E	n/a	10 07.29	+51 35.2	6.5
16-Jun	Theta (q) UMa	0.1 N / 5.6 E	n/a	10 08.90	+51 53.4	6.6
17-Jun	Theta (q) UMa	0.4 N / 5.8 E	n/a	10 10.48	+52 10.8	6.7
18-Jun	Theta (q) UMa	0.7 N / 6.0 E	n/a	10 12.04	+52 27.6	6.8
19-Jun	Theta (q) UMa	0.9 N / 6.2 E	n/a	10 13.59	+52 43.6	6.9

2003 K4 (LINEAR)

Date	Star	Sweep	Move	RA	Dec	Mag
11-Jun	Iota (j) Her	0.1 S / 6.5 E	0.04 W	18 16.88	+45 55.0	9
12-Jun	Iota (j) Her	0.2 N / 5.6 E	0.04 W	18 11.40	+46 09.2	8.9
13-Jun	Iota (j) Her	0.4 N / 4.7 E	0.04 W	18 05.76	+46 22.2	8.9
14-Jun	Iota (j) Her	0.6 N / 3.7 E	0.04 W	17 59.97	+46 33.7	8.9
15-Jun	Iota (j) Her	0.7 N / 2.6 E	0.04 W	17 54.04	+46 43.8	8.8
16-Jun	Iota (j) Her	0.9 N / 1.5 E	0.04 W	17 47.97	+46 52.3	8.8
17-Jun	Iota (j) Her	1.0 N / 0.4 E	0.04 W	17 41.78	+46 59.1	8.8
18-Jun	Iota (j) Her	1.1 N / 0.7 W	0.04 W	17 35.48	+47 04.3	8.7
19-Jun	Iota (j) Her	1.1 N / 1.8 W	0.04 W	17 29.07	+47 07.6	8.7

2004 F4 (Bradfield)

Date	Star	Sweep	Move	RA	Dec	Mag
11-Jun	Theta (q) Cas	0.8 S / 2.3 E	n/a	01 27.14	+54 17.7	12
12-Jun	Theta (q) Cas	0.5 S / 2.4 E	n/a	01 27.56	+54 36.4	12.1
13-Jun	Theta (q) Cas	0.2 S / 2.5 E	n/a	01 27.94	+54 54.9	12.2
14-Jun	Theta (q) Cas	0.1 N / 2.5 E	n/a	01 28.29	+55 13.3	12.3
15-Jun	Theta (q) Cas	0.4 N / 2.6 E	n/a	01 28.60	+55 31.4	12.3
16-Jun	Theta (q) Cas	0.7 N / 2.6 E	n/a	01 28.88	+55 49.5	12.4
17-Jun	Theta (q) Cas	1.0 N / 2.6 E	n/a	01 29.13	+56 07.3	12.4
18-Jun	Theta (q) Cas	1.3 N / 2.6 E	n/a	01 29.33	+56 25.1	12.5
19-Jun	Theta (q) Cas	1.6 N / 2.6 E	n/a	01 29.50	+56 42.6	12.6

2003 T3 (Tabur)

Date	Star	Sweep	Move	RA	Dec	Mag
11-Jun	Lambda (l) Per	1.4 N / 1.8 W	0.03 E	03 55.61	+51 43.4	10.8
12-Jun	Lambda (l) Per	1.7 N / 0.9 W	0.03 E	04 00.55	+52 04.1	10.8
13-Jun	Lambda (l) Per	2.1 N	0.03 E	04 05.54	+52 24.0	10.8
14-Jun	Lambda (l) Per	2.4 N / 0.8 E	0.03 E	04 10.58	+52 43.3	10.9
15-Jun	Lambda (l) Per	2.7 N / 1.4 E	0.03 E	04 15.67	+53 01.8	10.9
16-Jun	Lambda (l) Per	3.0 N / 2.1 E	0.03 E	04 20.79	+53 19.6	10.9
17-Jun	Lambda (l) Per	3.3 N / 2.9 E	0.03 E	04 25.96	+53 36.6	10.9
18-Jun	1 Cam*	0.1 W	0.03 E	04 31.16	+53 52.8	11
19-Jun	1 Cam	0.2 N / 0.6 E	0.03 E	04 36.40	+54 08.3	11

\*1 Cam is 3.5 N / 3.8 E of Lambda Per

88P (Howell)

Date	Star	Sweep	Move	RA	Dec	Mag
11-Jun	29 Cet	0.2 S / 2.2 W	0.02 E	00 58.89	+01 48.7	10.6
12-Jun	29 Cet	1.7 W	0.02 E	01 01.15	+02 02.2	10.6
13-Jun	29 Cet	0.3 N / 1.1 W	0.02 E	01 03.39	+02 15.6	10.6
14-Jun	29 Cet	0.5 N / 0.6 W	0.02 E	01 05.61	+02 28.8	10.6
15-Jun	29 Cet	0.7 N	0.02 E	01 07.81	+02 41.9	10.6
16-Jun	29 Cet	0.9 N / 0.5 E	0.02 E	01 10.00	+02 54.8	10.7
17-Jun	29 Cet	1.1 N / 1.0 E	0.02 E	01 12.16	+03 07.6	10.7
18-Jun	29 Cet	1.3 N / 1.6 E	0.02 E	01 14.31	+03 20.2	10.7
19-Jun	29 Cet	1.5 N / 2.1 E	0.02 E	01 16.43	+03 32.7	10.7

Epsilon (e) Psc is 7.2 S / 12.3 E of Gamma (g) Peg  
 29 Cet is 5.9 S / 1.2 E of Epsilon Psc (page 217 Uranometria)

Due to the movement of comets some of the positions could be off a little bit since press time.



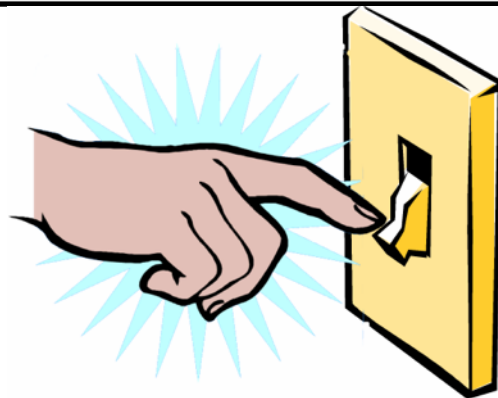
## Star Party News

Saturday, June 19th, is our next public star party. This one will be at Moody Gardens. Hopefully the weather gods will be kind to us. If you haven't been to a Moody Gardens Star Party in a while, we have relocated the star party to a site near the hotel. There are lots of shrubs around for light shielding. Power will be provided. The map below shows our new observing site. Please monitor the list server for a "go/no-go" decision the day of the event. Hope to see you there. Bring your OFF in case the mosquitoes are hungry. Arrive about 30 minutes before sunset to set up.

## Help turn off the lights...

Join the  
**International Dark-Sky Association (IDA)**  
<http://www.darksky.org>

"To preserve and protect the nighttime environment and our heritage of dark skies through quality outdoor lighting."





### **Johnson Space Center Astronomical Society**

An association of amateur astronomers dedicated to the study and enjoyment of astronomy. Membership is open to anyone wishing to learn about astronomy.

#### **OFFICERS**

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Paul Maley  
Web Master  
Chris Randall

#### **SIGS**

Observing Awards  
Triple Nickel  
CCD Imaging  
Al Kelly  
Binocular Observing  
Karen Nickel  
Telescope Making  
Bob Taylor  
Deep Sky Observing  
Chris Randall

### **June Meeting Agenda**

June 11<sup>th</sup>. Center for Advanced Space Studies/Lunar Planetary Institute, 3600 Bay Area Blvd. (at Middlebrook Drive).

- |      |  |
|------|--|
| 7:30 | Meeting start and welcome                  |
| 7:40 | Presentation— To be announced              |
| 8:30 | Break                                      |
| 8:45 | Calendar review, presentations, and awards |
| 8:50 | Star Party Announcements, Lisa Lester      |
| 9:10 | Deep Sky Observing, Chris Randall          |
| 9:30 | Astronomical Oddities, Hernan Contreras    |
| 9:40 | Charles Challenge, Charles Hudson          |
| 9:50 | Door Prizes                                |

#### **Starscan Submission Procedures**

Original articles of astronomical interest will be accepted up to **6 P.M. June 25<sup>th</sup>**.

The most convenient way to submit articles or a Calendar of Events is by electronic mail, however, computer diskettes or CDs will also be accepted. All articles should include author's name and phone number. Also include any picture credits. The recommended format is Microsoft Word. Text files will also be accepted.

Submitter bears all responsibility for the publishing of any e-mail addresses in the article on the World Wide Web.

Editor's electronic address is: [lesteke@swbell.net](mailto:lesteke@swbell.net). Be sure to include the word Starscan in the subject line for proper routing of your message.

#### **Starscan Staff**

Editor	Assistant Editors
Ken Lester	Sheila Steele
	Ken Steele

### **Cover Image by Shane Ramotowski**

Comet Neat Q4 taken from Tijeras, New Mexico on May 7, 2004. Taken with a 300 mm Nikkor lens on a Nikon F2. Total exposure time was 4 minutes at f4.0 on Fuji Provia 400 slide film. Processing: equalized RGB histograms in VueScan and equalized Levels in Photoshop.