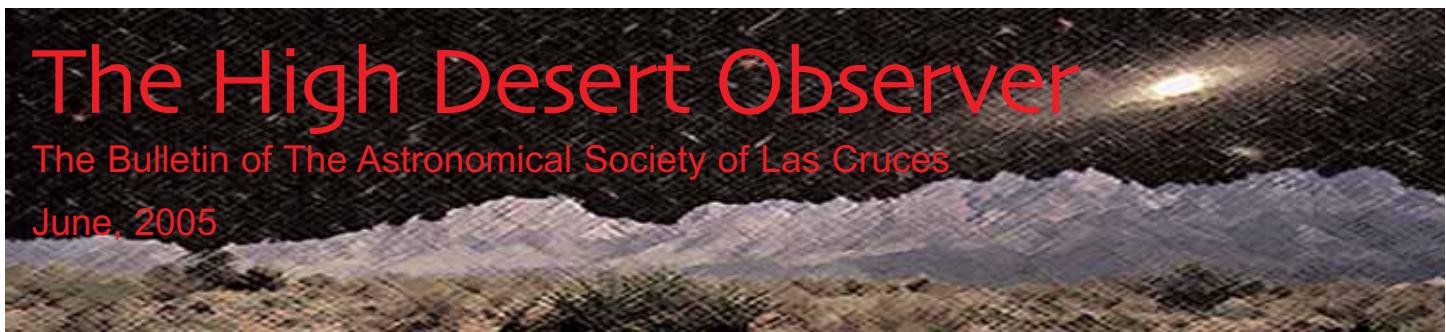


The High Desert Observer

The Bulletin of The Astronomical Society of Las Cruces

June, 2005



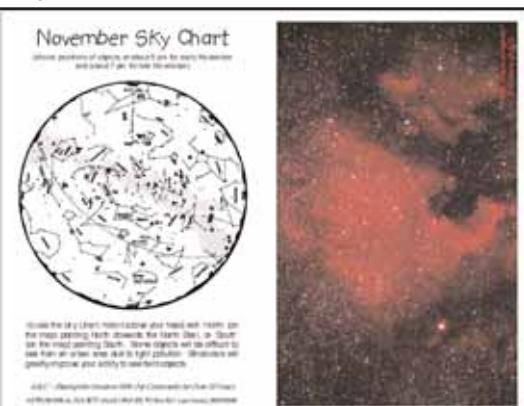
Sharing Our Night Sky

One of the frequent topics at our monthly board meetings is how to improve our public outreach program. We haul our scopes out to International Delights each month, but usually get only a few dozen folks to take a look. We typically got an even poorer turn-out when we did DSOs at La Llarona. How can we reach the masses as effectively as the Sidewalk Astronomers do when they set up their scopes outside Ghiradelli Square in San Francisco?

This past month, I had the occasion to do two impromptu moongazes - one at the *Music at the Park* venue at Young Park, the second at the Girl Scout's *Camp Twilight*. In both cases, there was a sizeable crowd assembled in an outdoor setting. In both cases, there were pauses in the event programming that gave individuals an opportunity to come over and have a look.

And in both cases, I was already going to be at the event anyway so there was no significant loss of my precious time. Every person that I invited took a look. Some took several looks. And some expressed interest in attending additional club activities like one of our DSOs at Upham.

I wonder how many outdoor public events could we 'informally' cover to further our public outreach efforts without taking additional time from our all-too-busy lives? Perhaps at a local football game this Fall? Or Saturday night at the *Whole Enchilada Festival*. I think that if we look, we'll find that opportunities abound.



Handouts are informative and make a nice connection back to the club and its future events. Seasonal handouts will soon be posted on the aslc website. Download, print and bring them to whatever event you're supporting

- Rich Richins

Upcoming ASLC Events

Please see the ASLC website <aslc-nm.org> for more information

- June 24 - ASLC Meeting (DABCC)
- June 27 or 29 - Imaging Workshop (DABCC)
- July 2 - DSO (Upham)
- July 9 - MoonGaze (Int'l Delights)

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ASLC Meeting Highlights

June Meeting: “TSP Recap”. Presentation by TSP 2005 Attendees.



John York, author of *Sharing the Night Sky*, will speak at the June Club meeting.

Have you ever had a good observing session one evening, and the next day realized you had forgotten about a well-known object you could have stopped by and visited? Did you ever show a deep sky object to someone that, admittedly, was something of a faint fuzzy to the untrained eye, and wish you had a few interesting things to tell them to counter their polite, “Oh, that’s nice...I’ve got to go back inside now.” How about these: You’re a little rusty on what’s up on a particular evening, but you’d like to take in a few celestial highlights without dragging out an atlas and a couple of fact books. Ever wanted a handy way to know what’s up between 4 am and astronomical twilight on a particular morning? Has anyone ever asked you where the astronauts landed when you were showing them the moon? And lastly, you’d like to cruise through a few lunar points of interest and observe some of those features you read about a

while back in Sky and Telescope, but where did you put that issue? Well, John York, of El Paso, will be here in July to share a solution for these situations.



John will have copies of his book, *Sharing the Night Sky*, for sale at the meeting

June's Beginner's Corner:

May Meeting: “TSP Recap”. Presentation by TSP 2005 Attendees.

Dave, Nils, Ron, Rich and both Steves gave a presentation on this year's Texas Star Party. The poor weather was one of the main topics. However, on those occasions when the skies did open up, the group succeeded in observing and photographing a plethora of objects. Numerous astrophotos were shown including some superb wide angle images of the Milky Way that Dave took with his

new Pentax 6 x 7 medium format camera. Steve Smith also took some outstanding widefield images using his modified Canon 300D (Steve's image is Cygnus is shown below). Rich showed a nice image of Omega Centauri that he took with his 300D through his new Orion ED80.



The Cygnus area of the Milky Way as photographed by Steve Smith with his Hutech-modified Canon 300D

The group also earned numerous observing pins. Ron observed a bunch of Arp galaxies to earn his Advanced Observing Pin. A new challenge this year was the Bright Sky Observing list - earned by several members. The object was to observe 20 of the brighter stars and planets during the day. Some were pretty easy. Polaris was quite challenging.

May's Beginner's Corner: Steve talked on the merits and problems of Alt-Az mounts versus equatorial mounts. Please see page 2 for an article (prepared by Nils) on the topic.

Mount Up! - Alt-Azimuth vs Equatorial

Besides good optics a telescope must have a good mounting to perform well overall. There are two basic mount types: Alt-Azimuth and Equatorial (and many variations of each). We will look at both types.

Alt-Azimuth is a contraction of altitude & azimuth since these mounts can move up/down (altitude) & side to side (azimuth). These are simple mounts that are easy to build and use. The main drawback is that they cannot easily track a celestial object as it moves across the sky. While there are drive systems on the market that can do just that, they tend to be expensive and/or tricky. Even if one is used, the scope's field-of-view will still rotate, making long-exposure imaging impossible without adding another (tricky) system to cancel this out by counter-rotating the sensor/focuser. But if the scope is to be used for visual observing, this 'field-rotation' is not a problem. There are many computer controlled "go-to" telescopes on the market that are mounted in alt-azimuth configuration – the microprocessor makes the necessary calculations to drive a stair-step micro-movement that emulates true sidereal tracking fairly well. Many of these can also be mounted on an 'EQ wedge' to make them into true equatorial systems.

Possibly the most common type of alt-azimuth mount is a simple photographic tripod with a pan head. These are not usually designed for astronomical observation, having difficulty pointing at high altitude angles. Another common type is the tilted fork, most often found on Walmart-type telescopes, well known for their shakiness & instability. A more recent form of Alt-Azimuth is the simple yet effective Dobsonian mount, which moves via Formica that bears against Teflon pads. Good examples support the scope directly below its center of gravity, which is kept low anyway, for maximum stability. Many variations of these basic types exist, with innovation still playing a major role.

Equatorial ((EQ) mounts have fewer limitations, being capable of tracking the stars using rotation about only one axis. There exist many variations, the earliest & most common being the German equatorial. It consists of a north-pointing polar axis and a declination axis perpendicular to it on the north end. Quality examples utilize bearings in the polar & declination axis housings to produce smooth motions. The scope is mounted on the upper end of the declination axis with a counter weight on the lower end for balancing. A star-tracking 'clock drive', if installed, is on the south (lower) end of the polar axis. Simple equatorial mounts can be built out of common iron/steel pipe components, using the threads (which have been lapped in) as bearings.

Another EQ type in common use is the fork mount. They have a polar axis like a German however the declination axis is split into two fork arms with the optical tube suspended between them. This offset arrangement tends to be less stable than the German but it works well for scopes with short tubes like Schmidt-Cassegrains and Rich Field Telescopes. Sometimes these fork mounts are reduced to only one arm, like the Celestron Nexstar series. An English yoke mount, like the 100" Hooker telescope, can be considered a derivation of a fork with the north fork ends extended to a second bearing. These fork mounts do not inherently require a counterweight on the declination axis and are thus somewhat lighter and more compact. However, not all areas of the sky are easily accessible or viewable, such the north celestial pole area.

A third type of equatorial is the horseshoe. It consists of fork on the south end connected to a large disk at the north end, with the disk having a U-shaped opening where the tube assembly is situated. The tracking drive can be either on the rim of the disk or at the south end of the fork. Best example is the great 200" Mount Palomar reflector. These very stable mounts can cover the entire sky, but use a lot of real estate on the ground. The Poncet platform is a more recent design that can be visualized as a horseshoe with the upper parts cut off. It's low to the ground & especially useful for providing large Dobsonian telescopes 1-2 hours of equatorial motion. Imagine that – an Alt-Azimuth mount riding on top of an EQ mount...what will they think of next!



May Sky Map

Chart shows positions of objects at about 10 pm (MDT) for mid May,
about 9 pm for late May and about 8 pm for mid June



June 6



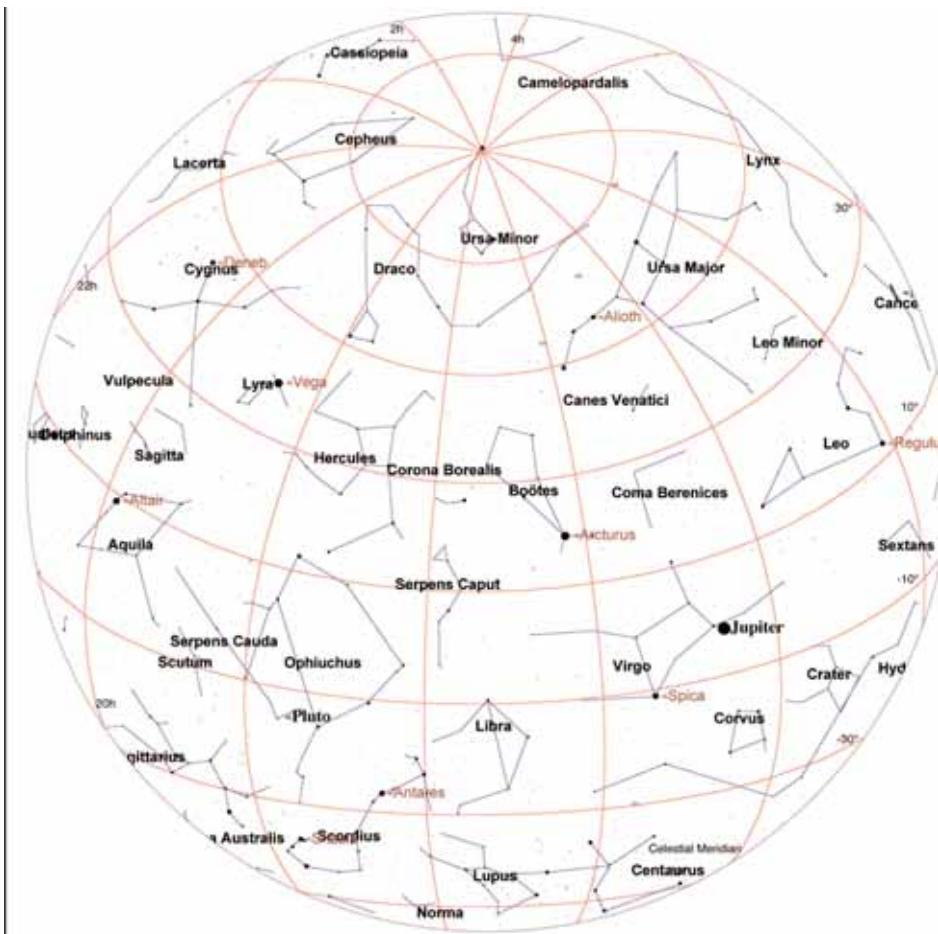
June 15



June 22



June 28



Mars



In Pisces
Mag. 0.0

Rises about 1:30 am

Jupiter



In Virgo
Mag. -2.1

Rises about 2:00 pm

Saturn



In Gemini
Mag. 0.2

Rises about 8 am

Astronomy Calendar

Dates are MDT. Please see the ASLC website
<aslc-nm.org> for more information

- | | |
|---------|------------------------------------|
| June 21 | Summer Solstice (12:46 am) |
| June 21 | Solar Sail Launch |
| June 25 | Saturn, Venus, Mercury within 1.4° |
| June 29 | (351) Yrsa Occultation |
| July 3 | Deep Impact!! |
| July 11 | Double Transit (Io, Europa) |

May's Challenge

The Ghost (NGC3003) was a difficult object to find. I tried twice and saw no more than an elusive flicker as my eye-piece moved through the field. I need to get my 16" finished!



June/July Tour

Binocular Objects

- 1)M4 (Globular Cluster)
- 2) M5 (Globular Cluster)
- 3) M53 (Globular Cluster)
- 4) M80 (Globular Cluster)
- 5) M83 (Globular Cluster)

Telescope Objects

- 6) M58 (Galaxy)
- 7) M59 (Galaxy)
- 8) M60 (Galaxy)
- 9) M84 (Galaxy)
- 10) M104 (Sombrero Galaxy)

Joseph's Challenge - NGC6309
PN (Leo Minor) 11.0, 17H 14.1m, -12° 55'

The Mountainview Observatory: Part III - Construction Phase

Just a reminder that last month we highlighted Walt and Marion Seibyl's finished product: Mountainview Observatory. The descriptive article and a few photos can be found on the ASLC's web-site <http://aslcnm.org/> (click on the HDO link in the right-hand menu on the home page).



I think this article (now in its third month) is getting a bit like Walt and Marion's observatory adventure....it just keeps going on and on!! Finally Walt said they got lucky on one of our trips. We stopped at Frank's Lumber on Rt. 70 in Las Cruces, since we saw a dog house built in a SW motif. If a dog house, why not an observatory? They stopped in and talked with the owner and his son, Rick and presented our problem to the company's owner. They were very cooperative and finally after several discussions and project review they agreed to take on the project.

Rick turned out to be a very knowledge and skilled carpenter. He was most cooperative, understanding and a good resource for solving inevitable construction problems. It is impossible to foresee every aspect of the job, especially when it had never been done before. It also happened that Rick suggested a cement person who the Siebys were able to use for the pad and pier pouring.

While the building was being constructed, Walt was working with Technical Innovations (TI) on the dome details and delivery schedule. They were kind enough to send advanced drawings of the dome structure so that the building could be prepared in advance. As a result the dome was lifted to the top of the building and secured into position with relative ease.

The Siebys discovered that TI shipped by truck with a tailgate delivery only. This meant that the delivery truck would arrive at their house, the driver would push a 650 pound plywood box on the tailgate and it would be the customer's responsibility to get it off the truck. Walt said "Red flags went up!!! There is no way that I could personally do this with just Marion and myself." They called their builder, Rick, and asked him if he could accept delivery at his place, since he had a fork lift truck. Since the observatory was being built in his shop this would allow for the dome's fit to be tested on the building as it was being built and allow for any necessary adjustments. Rick graciously agreed to the and the crisis was solved in a manner that actually saved time and other potential problems.



Finally, the entire observatory (less dome) was ready to be transported to Walt and Marion's backyard. Site preparation included the removal of two trees and shrubs so that the truck and trailer could negotiate to the desired location on the pad for unloading. When the structure finally arrived obstacles to backing the assembly into the backyard had to be overcome, not the least of which was we a neighborhood postal box. The 8ft wide trailer had to be able to go through an 8.5ft opening between our stone wall and house. Doing so required patience, planning and persistence.

Unloading was done by Rick and one of his workers. They had to lift the side of the observatory over the 4ft high concrete pier, and while it was elevated, roll the structure until it was over the pier, and then lower it again and roll it once more to its final resting place. The placement operation was all done with car jacks and circular pipes for rollers. Once in place, the building was bolted to the pad, and the dome was placed on the roof and installed and the remaining bits and pieces installed.

Canopus

(by Bert Leston Taylor)

When quacks with pills political would dope us,
When politics absorbs the livelong day,
I like to think about the star Canopus
So far, so far away.

Greatest of visioned suns, they say who list 'em,
To weigh it science always must despair,
Its shell would hold our whole dinged solar system,
Nor know 'twas there.

When temporary chairmen utter speeches
And frenzied henchmen howl their battle hymns,
My thoughts float out across the cosmic reaches
To where Canopus swims.

When men are calling names and making faces,
And all the world's ajangle and ajar,
I meditate on interstellar spaces
And smoke a mild seegar.

For after one has had about a week of
The arguments of friends as well as foes,
A star that has no parallax to speak of
Conduces to repose.

Have fun with webcams and dark sky sites! - *Submitted by Walter Hass*



Carina, the ship's keel, with magnitude -0.6
Canopus at its northern end.

MountainView Observatory Construction (part III) continued

The building looked as if it were ready for scope installation but some major adjustments and problems had yet to be solved. Dave Dockery, an ASLC member, was kind enough to help with the telescope installation and alignment. They found several problems, but the major problem was the pier was too short for the telescope to see a good portion of the sky. It is too lengthy to go into the story here but it is enough to say that 4ft more were added to the length of the pier, making it now 8ft from the floor. A platform had to be constructed around the pier to allow access to the telescope.

Walt and Marion said "this was quite a project with lots of frustrations, but in the end a wonderful window to observe, contemplate and enjoy the wonders of it all."

ACKNOWLEDGEMENTS: Walt and Marion would like to thank Dave Dockery, Steve Barkes and Bob Yearly for their encouragement, suggestions and help that they were kind enough to share. Dave in particular spent many hours with them sharing and teaching from his experiences.

Article and photos submitted by Tim Barnett-Queen. Photos and article content courtesy of Walt and Marion Seibyl.

The Astronomical Society of Las Cruces (ASLC)...

... is dedicated to expanding members and public awareness and understanding of the wonders of the universe. ASLC holds frequent observing sessions and star parties, and provides opportunities to work on club and public educational projects.

Members receive The *ASLC Bulletin*, our monthly newsletter, membership in The Astronomical League, including AL's quarterly *A.L. Reflector*. Club dues are \$35 per year. Those opting to receive the *ASLC Bulletin* electronically, receive a \$5 membership discount. Send dues, payable to A.S.L.C. with an application form or a note to: Treasurer ASLC, PO Box 921, Las Cruces, NM 88004

ASLC members are entitled to a \$10 discount on subscriptions to *Sky and Telescope* magazine. S&T subscribers MUST subscribe and renew through the Society Treasurer for the special club rate. To avoid a lapse in delivery, this must be done when S&T sends their reminder, 4 months in advance.

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Dave's Astrophotography Corner

Astro-imaging 101 - session one report

There was a good turn out for the astro-imaging workshop, held on June 6th at the Upham DSO site. The goal was to have the participants gain hands-on experience by working through the processes of astrophotography. I think this approach was really beneficial and I was pleased with the progress we made over the course of the evening. I'm happy to report that everyone came away with images and I'm confident that many in the group will continue to image and build on the experience they gained.

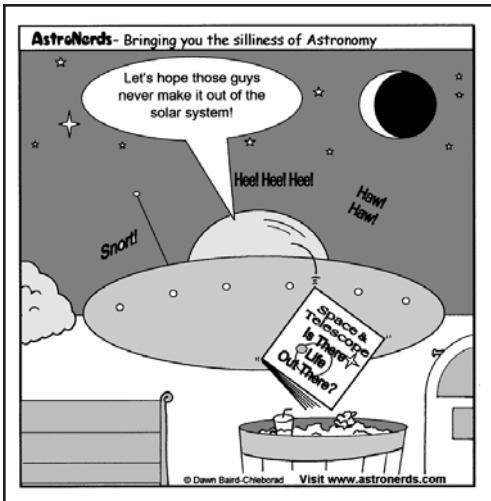


Scenes from the imaging workshop: top and bottom-right - Imagers setting up for the evening; bottom left - wide field image of Cygnus captured by Dave

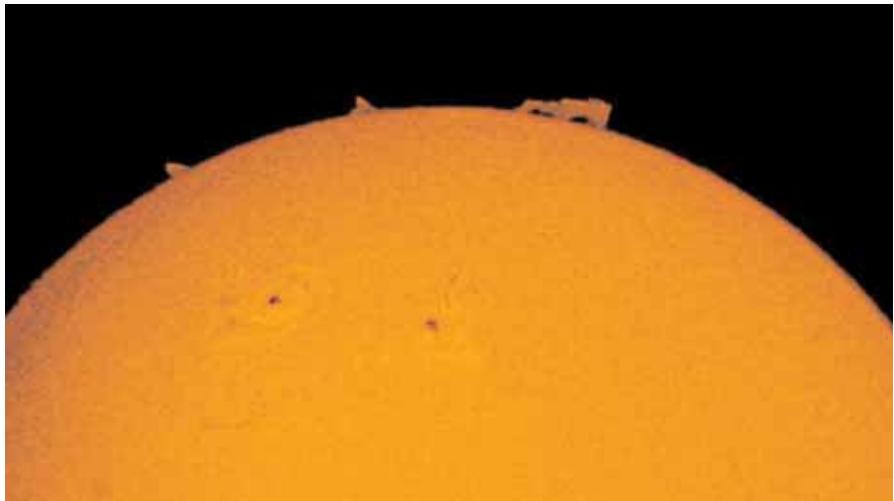
We will continue the astro-imaging module in the coming weeks with two more sessions covering webcam AVI processing and astro-image processing basics. These sessions will also stress active student participation and we'll work through the basic processes using common data and software. All participants will be required to bring a laptop computer and the processing software and image files will be provided or available for download.

Thanks to Steve B. for helping out and to all the imagers for their enthusiastic participation.

- Dave Dockery



(Comic provided free of charge by
www.astronerdz.com)



Close-up of some large solar prominences taken by Steve Smith with his new PST

ASLC IMAGE GALLERY



A magnificent image of the southern Milky Way by Chuck Sterling. Chuck used a Yashika 35mm camera and 50mm f/1.7 lens to capture this beauty



M13 imaged by Rich Richins (300D/prime focus/C11) during the imaging clinic



Steve Smith took this widefield image of the Antares region with his 300D.

**ASTRONOMICAL SOCIETY
of Las Cruces, New Mexico**
PO Box 921, Las Cruces, NM 88004



*ASLC - Sharing the Universe
With Our Community for
Over 50 Years*