The High Desert Observer

The Bulletin of The Astronomical Society of Las Cruces

March, 2005

Daylight Savings Time, TSP and Other Meanderings

There was a time, just a couple of years ago, when I looked forward to the coming of daylight savings time each Spring (and cursed the coming of Standard Time in the Fall). I relished the extra hours of sunlight each evening. It was a time to get outside and relax in the beautiful New Mexico sunshine. How times have changed!

Io and its shadow traverse Jupiter in this image taken by Cassini. No fewer than eight transits by Io and its shadow will be visible locally during the next few weeks.

Springtime and DST now signal additional challenges to my astronomy habit. I've lost a full two hours of evening darkness compared with just a couple of months ago (and don't get me started on that hour of sleep that I had to give up last Sunday morning). A few hours of observing now comes with the price of some degree of sleep deprivation. A pity - there's a lot to see right now. Jupiter is putting on its finest show of the year (opposition was just a few days ago). There are no fewer than 11 moon/shadow transits during the next few weeks. Saturn looks almost three dimensional in my telescope due to the planet's shadows prominently displayed on its rings. My friend, Orion, makes his final stand this month. Next month (May), I'll be awaiting his arch-nemesis, Scorpius.

Locals begin preparing the viewing fields for the upcoming Texas Star Party.

May also brings the Texas Star Party (TSP) - a time to substitute caffeine for sleep and enjoy the sights (and challenges) of the night skies with hundreds of other 'crazies'. You all will undoubtedly hear about the various escapades of our members during their week at the TSP during our May meeting. In the meantime, I've a scope to build, 'stuff' to buy (don't let my wife find out how much I've been spending), a soccer team to coach, packing to do. And if I can find just a little extra time, maybe I'll be able to get outside in the beautiful New Mexico night sky to enjoy a shadow transit or two.

- Rich Richins

Upcoming ASLC Events

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

April 7 - Conlee Elementary School Star Party
April 16 - MoonGaze (Int'l Delights)
April 22 - Monthly Meeting
April 23 - SCIAD Fair at the Mesilla Valley Mall
May 1 - DSO (Upham)
May 1-8 - ASLC Board Meeting ;)

This Month s Observer

ASLC Meeting Highlights

April Meeting: "Situation of Gravity". Presentation by Bert Stevens.

From when you are born until you die, you are resisting gravity. We will explore how gravity affects objects in its field. From Galileo to Einstein, astronomers have studied gravity and learned how to it affects all the celestial objects we see in our telescopes. We start on Earth with the study of falling objects. We will jump to the Moon for a quick experiment repeating Galileo's original one in Pisa, Italy.

Speed combined with gravity allows us to orbit the Earth. We will look at what it means to be in orbit. This will take us onward toward a description of the parameters that describe an orbit. Finally, we will look at Kepler's laws and Newton's contribution to the calculation of the orbit of Comet Halley.

Then, knowing what an orbit is, we will investigate the calculation of orbits from observations (particularly of minor planets). We will find out why it is often hard for astronomers to immediately tell us whether a minor planet may impact the Earth now or in the future or not. Finally, we will talk about the meaning of the predictions of future impacts and whether you should head for the hills when you hear the predictions of an future impact.

April Beginner's Corner: Beginner's Corner topic for our April meeting: GoTo vs non-GoTo...It's NOT a moral dilemma! We'll contrast the arguments pro & con for choosing & using either of the most popular modern starter-scopes - the latest Go-To scopes versus the ubiquitous 6" Dob. It all boils down to discovering the choice that works for your own expectations and personality. You can even try to live in both worlds if you're brave!

March Meeting: "Fear and Loathing at the JPL". Presentation by John Strand

John Strand, an astrophysicist who worked for the Jet Propulsion Lab during the 60's and 70's, shared many of his JPL experiences with the audience. He recently published a book on his experiences and feels that others should do likewise before the history of that era is lost. He spoke of early computer systems and the frustrations and eventual successes in modeling the many variables involved in navigation through the solar system. John also told some interesting stories about some of the characters that he worked with at the JPL. The history and the stories can all be relived in his book, "Pathways to the Planets", available from his website: http://www.pathwaystotheplanets.com/

John asked me to say that he was very impressed with the knowledge level of the audience. At one point, somebody pointed out that a couple of the computer systems in his book were mislabelled. John acknowledged the error and was most impressed that our members knew about these systems.

March's Beginner's Corner: Magnitude defines an object's total brightness. If that object is particularly large, such as the magnitude 6.3 Helix Nebula, it may be very difficult to see since the brightness is spread out over a very large area. Observers should, therefore, be also aware of an objects surface brightness (SB). SB is a measure of an objects total brightness (in magnitude) divided by its area (in square arc-minutes or arc-seconds). Often, SB is a better indicator of viewability than magnitude. However, other factors, such as the uniformity of an object also affect its observability.

Educational Update

Our ASTRO 102 instruction has been moving along well. We are currently in the middle of the Telescopes / Visual Observing modules (they are weaved together), with 6 to 8 students. The small group allows us to be informal & relaxed, emphasizing the topics the students want the most. We are starting into the more 'hands-on' part of these courses, which will peak with the Astro-Imaging module taught by Dave Dockery (still planned for mid-May on evenings of Dave's choice). You might want to consider joining the fun...

Spring 2005 Telescope Making Workshop is coming! May 14 & 21 are the two main Saturday work-days scheduled for building those cute 4.5" Dobsonians from our pre-fab kits. Perhaps you know a youngster or anyone who would like the experience (and end result!) of constructing an inexpensive, easy-to-use small scope - spread the word!

- Nils

Where'd the Color Go?

For those of you who receive the High Desert Observer by mail, this issue has a new look (actually, it's more of an old look). Sadly, we've been forced to stop printing the bulletin in color. The cost has turned out to be prohibitive. Bob Yearley was doing an outstanding job printing and distributing the bulletin, but those darn ink-jet cartridges just don't print many pages of a graphics-intensive newsletter. So it's back to boring old black and white, I'm afraid (unless somebody has a low-cost color printing option).

- Rich

Eye Candy

by Steve Barkes

Well I've had a couple of months to get acquainted with my new scope and I have to say that I really am enjoying it. There is just something about using a dobsonian scope that is probably best described as either personal or intimate. Just me, the scope, the stars and DSO's. No computers, no umbilical cords, no slewing motors. I really get the feeling of being one with the scope and it becomes an extension of my meager vision.

One surprise, is that the views of Jupiter and Saturn are consistently better with this 8" F6 scope than my 10" LX200 at 2500mm. Now I know they couldn't compete on a night of exceptional seeing, but the combination of a smaller aperture and minimal central obstruction really make for some nice views on just about any given night. I've had the chance to look at two different shadow transits on Jupiter in the last couple of weeks, and have really been pleased. The image scale is large enough to appreciate some nice details on the planet, and there's no missing the shadow on the surface.

Last night I ran through a set of objects that were assigned to our visual observing class by Joseph Mancilla. One object which I have neglected/overlooked in the past, and Joseph really likes, is NGC4565 in Coma Berenices. This is a gorgeous edge-on spiral galaxy. It's large, with a bulging core in the center. Using adverted vision, a faint dust lane can be easily seen. Next DSO at Upham, I'd be glad to show you this beautiful galaxy in my Eye Candy 8" scope.

Next month… Texas Star Party…. WHOOO HOOOO!!!

April Sky Map

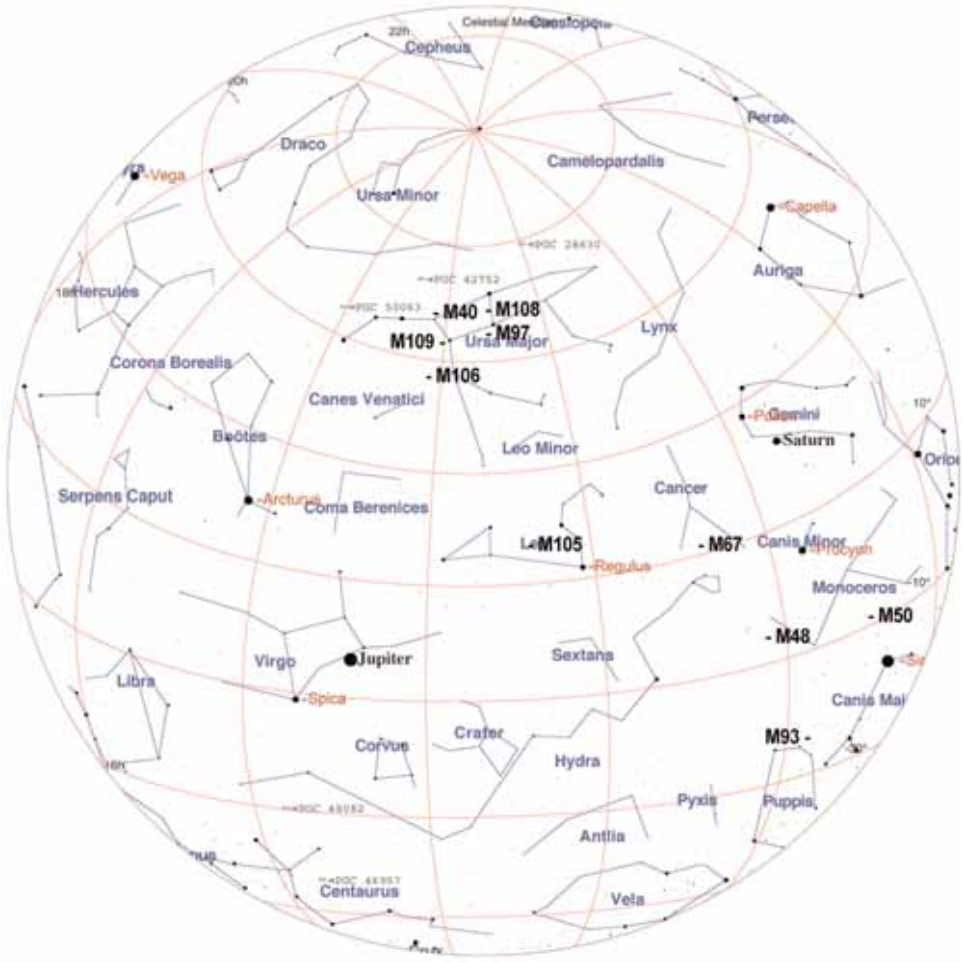
Chart shows positions of objects from Las Cruces at about 10 pm for mid April, about 9 pm for late April and about 8pm (MDT) for mid May


Apr. 8


Apr. 16


Apr. 24


May 1



Mars

In Capricornus
Mag. 0.8
Rises about 3:30 am

Jupiter

In Virgo
Mag. -2.4
Rises about 6:30 pm

Saturn

In Gemini
Mag. 0.1
Rises about 12 pm

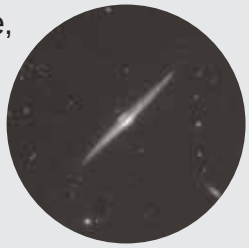
Astronomy Calendar

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

April 22	Lyrid Meteor Shower
May 1-8	Texas Star Party!
May 1-2	Europa, Io shadow transits
May 5	Eta Aquarids Meteor Shower
May 9-10	Europa, Io shadow transits

March's Challenge

Last month's challenge, NGC4565, was a relatively bright edge-on galaxy. John Dobson told the crowd during his talk in El Paso that this was his favorite galaxy. It's quite striking.



April-May Tour

Binocular Objects

M40 (Dbl Star)
M48 (Open Cluster)
M50 (Open Cluster)
M67 (Open Cluster)
M93 (Open Cluster)

Telescope Objects

M97 (Owl Nebula)
M105 (Galaxy)
M106 (Galaxy)
M108 (Galaxy)
M109 (Galaxy)

Joseph's Challenge - NGC 4361
PN (Corvus) Mag 10.0, SB 19.9
R.A. 12H 24.5m; Decl. -18° 48'

The Dream Is Now Reality: The Mountainview Observatory Story

I first met Walt and Marion Seibyl during the opening session of ASLC's inaugural Beginner's Astronomy class held at J. W. Flours. There was an immediate affinity: we were all displaced Buckeyes. We each had a lifelong interest in astronomy but had not had the opportunity to explore the hobby. We were in the Beginner's class in order to change that. By the end of the class, Walt and Marion had their LX 200 and I had my 10x50 binoculars! I remember too that Walt had another dream: his own observatory. As a somewhat distant observer, it has been exciting watching his dream come to fruition.

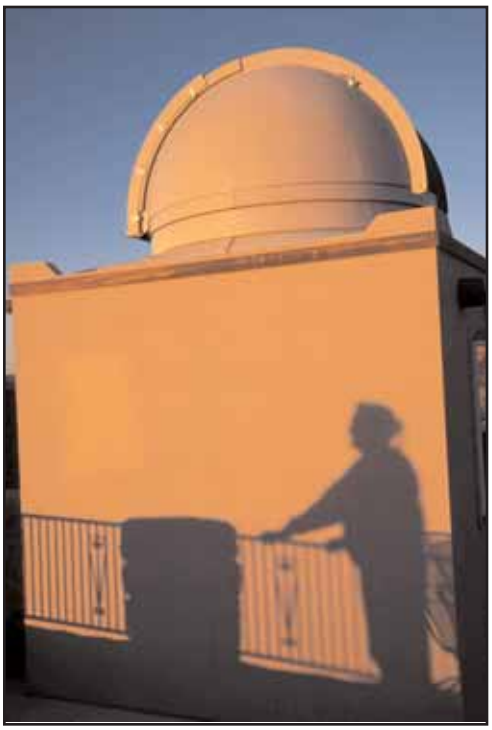
Walt and Marion in front of the Mountainview Observatory

Walt's interest in astronomy began back in high school. His first telescope was a gift from Marion (1951; $25). It was a 3 inch Newtonian reflector with three eyepieces and an unstable tripod. From his first telescope to the observatory was about 50 years. In the interim the Seibyl's involvement with astronomy was intermittent for a variety of reasons. But the dream of a backyard observatory lived on.

When Walt and Marion retired to Las Cruces it did not take long for them to realize they were in an "astronomical Mecca". In addition they found the astronomical resources in the community to be supportive and plentiful (especially when compared to northern Ohio!) They got involved in ASLC and purchased the 10 inch LX200-GPS thinking they would use it for DSO's and other Society activities. But their plans had to change due to some medical problems which made transport and setup of the scope problematic.

Walt at the eyepiece of his 10" Meade LX-200

After much exploration and consultation with fellow ASLC members Walt and Marion settled on their own backyard observatory to serve as a permanent home for their 10 inch Meade Schmidt-Cassegrain scope. I don't know what Walt ever did to deserve such a loving, tolerant and supportive spouse, but Marion has been with him on this project every step of the way. As with all projects, there were pitfalls, changes to design, delays and disappointments, but as the photos associated with this story demonstrate, all the hard work was worthwhile. From finding a plan, determining specifics of the dome, locating it suitably on the property, to dealing with local covenants and finding a contractor willing to take on this unusual project, the "birthing" of Moutainview Observatory has been a labor of love and a very long term process (2002 to present).



At the moment the observatory is almost completed and is being used for general observation. Walt and Marion's long range planned use is to photograph as many Messier objects as possible.

In next month's HDO look for some construction photos and details of the construction process.

- *Photos and article submitted by Tim Barnett-Queen. Many thanks to Walt and Marion for cooperating with this HDO project. [Editor's Note: Additional photos will be available on 'Page 9' of the on-line (HTML) edition of the High Desert Observer.]*

As Far As Eye Can See

by Joseph Mancilla

This month let's look a beautiful edge-on galaxy and three bright double stars. We'll start with last month's challenge object (and John Dobson's favorite galaxy), NGC 4565. This magnitude 9.5 galaxy is in Coma Berenices, and spans a rather large at 3'x16' arc-minutes [*editor's note: an image of NGC 4565 appears on page 4*]. The dust lane is visible near the center bulge and there is a 13th magnitude star just above this central nucleus. This is a good galaxy to practice using averted vision.

I would be remiss if I didn't mention three classic bright double stars that are currently in the evening sky. The first is Alpha Cane Venatici (Cor Caroli) mag. 2.9 and 5.5 are separated by a generous 19.4" arcseconds.

Next on our tour of bright double stars is Castor (Alpha Geminori) in Gemini. magnitude 1.9 and 2.9 separated by 1.8" arcseconds. Some have referred to this double as a pair of white diamonds - the finest double in the northern sky. 90x magnification works well.

Finally, we turn to Gamma Leonis (Albieba) at magnitude 2.2 and 3.5. This bright pair is separated by 4.4" arcseconds. These two stars have a golden cast to them. 90x also works well on these two.

Happy hunting,

Supernova 1954a

It was the summer of 1954. Astronomers A and B had each been granted research time at the Mount Wilson Observatory. Famous astronomer A was taking a photograph demanding many hours of exposure, as sometimes occurred at that time. Famous astronomer B was enjoying an outside evening stroll when he noticed two very bright red stars in the southern sky. Going back to his boy scout days, he eventually identified one of them as the star Antares in Scorpio. But what was the other one? He verified that it was not on star maps. And therefore - ah, a red supernova! It was most important that he get observations at once on A's telescope. While A was most reluctant to trash his many hours of data secured so far, B was higher on the totem pole. He took over the telescope - and made an independent discovery of the red planet Mars!

At a magnitude in excess of -2, 'Supernova' 1954a must have been an impressive sight in the Summer of 1954

It is reported that the two astronomers did not speak to each other during the remainder of their week on Mount Wilson.

The moral might appear to be that in our age of wondrous technologies and amazing new instrumentation, there may still be some merit in knowing the sky.

- Walter Haas

(Walter's note: I have been assured that this incident is a true story, but the source and the characters must be nameless for obvious reasons.)

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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Night Sky Network

Dave's Astrophotography Corner

This month: Capturing ISS Images

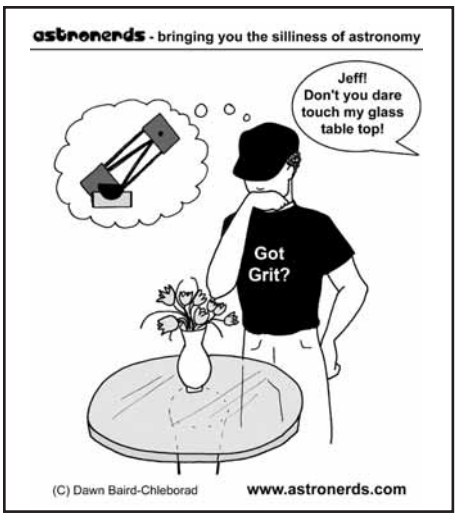
This month I'd like to share a simple technique for capturing images of the International Space Station (ISS) using a web camera and manually guided telescope. Webcams are readily available from computer and office supply stores and need no special modifications but will require an adapter to connect to the telescope (http://webcaddy.com.au/astro/adapter.htm .) You'll also need a laptop computer to collect images in the field (or backyard as it may be.) The telescope mounting can be alt-az, equatorial, or Dobsonian with no sidereal tracking required. The telescope focal length should be on the order of 1000-2000mm.

Procedure for imaging an ISS pass:

1. Choose a pass of at least 65 degrees elevation to minimize distance and atmospheric scintillation. (Pass info available from http://www.heavens-above.com/)
2. Camera settings: Turn AGC off and set the gain as high as the sensor noise will allow. Use a short exposure time to freeze-motion. (I used 1/1000sec shutter and gain of 70% for the shots above.) Tip: you can use a star or planet of similar magnitude to determine the correct exposure to get mid range counts. Set the camera for max resolution (e.g. 640x480) and slow the frame rate to avoid compression losses (I use 5 fps.)
3. Set up well before the pass and focus using a bright star and Hartman mask.
4. Make sure your Telrad or finder-scope is well aligned to the telescope then practice by recording a few frames and slewing the scope along the predicted path by hand. Tip: Lightly engage the axis brakes for a smoother manual slew.
5. As the pass begins, start the video recording and then follow ISS for the duration using your Telrad and keeping the target centered as best you can. This will be most difficult at closest approach, as ISS passes overhead.
6. When the pass is complete, stop the recording and then playback the video frame by frame, noting all frames with good data. Check the exposure level and make sure you note all your settings in case you need to make adjustments the next time you try it. You may only get a few good frames out of a thousand or more but it only takes one for an exciting image…

Imaging the ISS is challenging but relatively simple and doesn't take lots of specialized or expensive imaging equipment. Give it a try some night…

- *Dave Dockery*



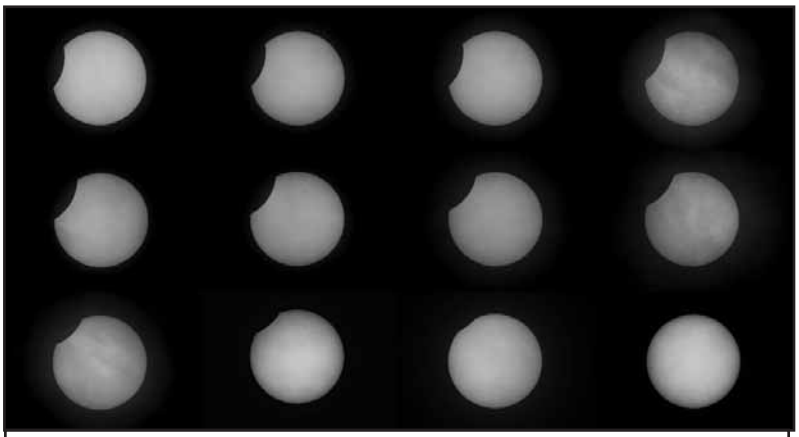
(Comic provided free of charge by www.astronerds.com)

For Sale

Excellent starter scopes at good prices - Orion 6" f/8 Dob, Meade 6" f/8 EQ Starfinder, Meade ETX90-RA, Orion 4" f/6 refractor. Lots of affordable eyepieces & other accessories available, with or w/o a scope. Assistance provided. Nils Allen, 522-1456.

ASLC IMAGE GALLERY

M64, The Blackeye Galaxy imaged by Bill Stein at New Mexico Skies. Bob used a Meade 16" LX200 and SBIG ST-2000X



Just a little eclipse, but beautiful nonetheless. This series was captured by Dave Dockery using his TeleVue85 and Canon 300D.

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