

SIDEREAL TIMES

The Official Publication of the
Amateur Astronomers Association of Princeton

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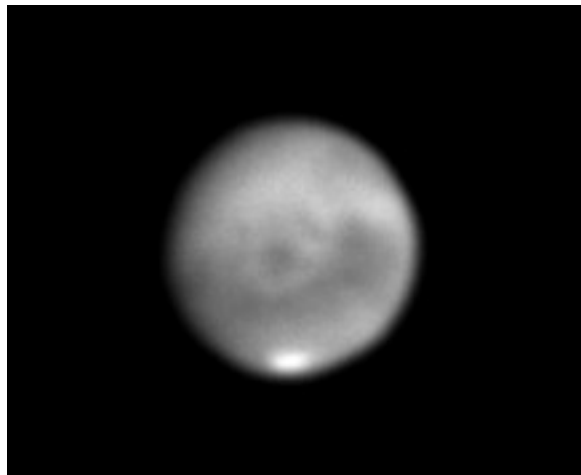
Number 9

From the Director

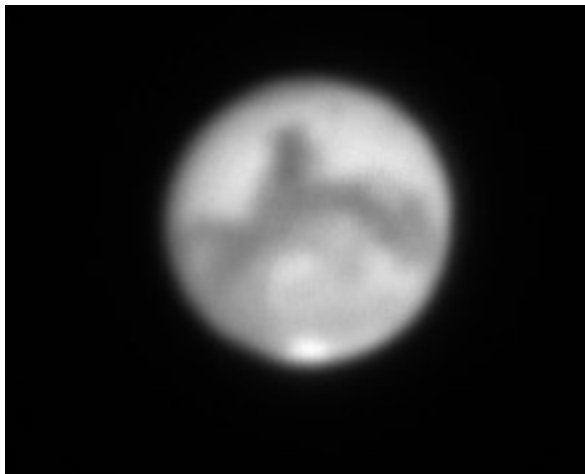
Some of us just can't get enough of Mars! With last month's lecture and with observing conditions taking a turn for the better, we are getting a chance to fill our eyes and our minds with the mysteries of the Red Planet. But those of you with a penchant for deep sky astronomy are not being neglected. In fact, you'd better be eating your mental Wheaties before the next meeting of the AAAP (Oct 14, 8:00 at Peyton Hall). The lecture will be given by the esteemed Bohdan Paczynski of Princeton University who will discuss optical gravitational lensing (see Mark's section elsewhere in this issue and the AAAP website for more info). Those of you who recall the last time Bohdan spoke to us will realize we are in for a challenging and fascinating night of astrophysics.

Like many of you, I've been trying to get out on many of the recent clear evenings we've been fortunate to have, trying to get a glimpse of Mars as it spins away with rapidly diminishing angular diameter (less than 20 arcsec now, vs. a maximum of greater than 25 arcsec in late August). Some of

you saw my newly upgraded CCD camera, a SBIG ST-10XME, at its first light back at StarQuest in June. I convinced myself (and my very understanding wife, Carol!) that I just HAD to have that RGB filter device (the CFW-8 from SBIG). Using this imaging setup with my Tak FS-128 refractor on a Losmandy G-11 and a 5X Powermate to give f/40, I was able to get decent RGB images



Mars, September 29, 2003, 20 arcsec



Mars, August 23, 2003, 25 arcsec

in late August and again in early Oct. The panels below are the red filter frames only, and show the change in diameter over 36 days and the difference in surface features at differing times in the rotation period.

These images illustrate the amazing power of amateur equipment, which is available to all of us if we are suitably motivated. Many of the AAAP's members have highly sophisticated

telescope and imaging equipment, which they use for personal and public astronomy. Some members have done remarkably well with more realistic budgetary restraint than I've been able to harness! Not least of all, the equipment at the AAAP's observatory at Washington Crossing State Park is there for all members to use in their attempts to learn more about the sky and what makes our universe click.

Rex Parker

[Both photos were cropped with the background shown at the same size rectangle while leaving the planet at the size as photographed. This enables the viewer to visualize the difference in size of the view a month after the 60,000 year maximum that was hyped by the media. --ed.]

Deadline for the November Issue

October 31, 2003

Simpson Observatory (609) 737-2575

Welcome from the Sacramento Valley

by: Kirk Alexander

Hello everyone! As you now know at the end of July my family and I relocated to Davis, California where we are both now working for the University of California at Davis. We had a great time driving across country staying (and observing) in Colorado for a couple of weeks then through Moab, Utah—a gorgeous spot—where we went out on a long walk at dusk and watched the moon dance in and out behind various natural arches. Naturally I was anxious to see if all my telescopes and related gizmos would arrive safely but fortunately everything arrived without a scratch.

The hard part was finding all the right boxes so I could match up the parts again!

The first scope to come ready was the 18" dob which I set up out



SVAS HGO Observatory

in the driveway to check it out. After finding that the van ride didn't do much for the collimation I found myself in for a couple of thrills. Mars was actually spectacular right from the driveway even though the elevation here is only about a hundred feet. A quick walk down to the meadow where I plan to do most of my local observing convinced me that local lighting ordinances can really make a difference (Davis has had some in place for awhile now.) The Milky Way was plainly visible all across the sky—something I never enjoyed in Princeton! Things were looking up—still hardly know a soul here but at least some of my old friends in the night sky are easy to find!

This encouraged me to hunt down the Sacramento Valley Astronomical Society (SVAS) which turns out to be an active and reasonably large (300 members) organization. To my delight I discovered that they were hosting a Mars viewing event right in

Davis. I called up to see if they wanted help from a new member and was instantly treated as if I were Santa Claus! I thought they were just being extremely kind but I was soon to find out they needed every scope they could get. By the time the state patrol closed the freeway due to the backup of cars waiting to get into the wildlife preserve where the event took place we had parked over a thousand cars and easily hosted a couple of thousand people. I



SVAS Mars Viewing, Early Crowd

no sooner had the Dob setup and a line started forming behind me. It was great fun showing a couple of hundred people a great view of Mars...especially when it was their first view through a telescope or when they realized they could see dark patches and the polar ice cap. I understand SVAS hosted two other Mars viewings

in other nearby towns and drew several hundred visitors at each of those events as well!

Shortly after the Mars event I attended the first SVAS monthly meeting. They seem to find speakers such as AAAP does for each meeting and they are held at California State University in Sacramento. Interestingly, the last speaker was Bob Crowl



SVAS 16" Ritchey

who gave a performance similar to the one Jack Gelfand put on for AAAP when he demonstrated his 16" Dob-in-a-suitcase. Bob's scope was an 8" Dob that was written up in Sky & Tel a couple years back by one of the magazine's editors. Bob built his own version and then added a clever compass+inclinometer arrangement to give him azimuth and altitude in the sky. He

(SVAS, continued on page 3)

(SVAS, continued from page 2)

revealed this in a letter to the editor of Sky & Tel. Bob also talked about his experience as a technician on the Kuiper Airborne observatory and the challenges they had trying to steady a scope flying in a plane with a hole in the roof!

At the monthly meeting I learned that the club also has both a monthly board meeting as well as a monthly star party. Haven't



SVAS 16" Ritchey, side view

been to a board meeting yet (though I could tell they were smelling fresh meat!) but I did go to September star party. The club owns and operates the Henry Grieb Observatory in the Sierra Nevada mountains that is located at the edge of a forest service airport literally on the "top of the mountain." The elevation there is about 5200' and the skies are *very* dark. My first night there started out with a magnificent sunset followed by a gorgeous Milky Way but we lost the sky to some clouds for the middle part of the evening. What really surprised me was that there were at least 50 telescopes on hand (in addition to the 16-inch Ritchey telescope in the observatory.) A special area was marked off for folks doing imaging—and there were about half a dozen of those. My 18" felt quite at home as there were at least 4 other 18" dobs and a 20" dob on a motorized platform! And they do this monthly all year until the snow's close the mountain. Recently the club has embarked on a project to add a robotic dome to the observatory (now installed and visible in the picture.) The plan is to create a remotely accessible automated telescope. When complete, this instrument will be made available for use in educational programs such as Hands On Universe. Initially it will house a 12" LX200 and an Apogee AP7 CCD sitting under the 10'6" Ash dome.

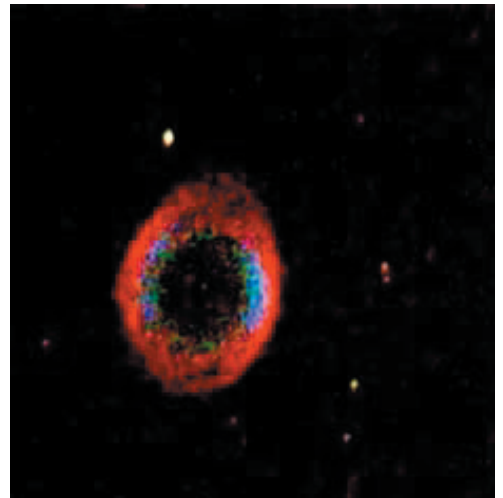
I guess that's it for now from the wild west. The folks in SVAS are all extremely friendly and would welcome any AAAP'ers that might find their way out here. Meanwhile I'm working on how to port my imaging setup into the green belt meadow a few houses down the street so I can revive my CCD exercises (seems like ages since I had a chance to do that.) I send my best to all of you and hope you have some terrific observing experiences in the remainder of 2003

Kirk

WebCam and the DSO

I've had a lot of fun using my web-cam for imaging Mars and I found some are using them for DSOs [Deep Sky Objects, ed]. In search the websites, I found a lot them getting good results with modified cameras. Steve Chambers is the inventor of the long exposure modification with these cameras and has graciously provided it out there for all to see. Normal cameras would only allow a maximum exposure of 1/25th of a second. Once the changes are in place the length of exposure is endless. The only problem with endless is that the noise from the CCD will eventually catch up. Practically the maximum exposure time will be less than a minute. The modification wasn't too hard but a delicate and steady hand was required in performing it. Once I had the circuit board rewired and back in place I was ready for an evening test. I would be using my C-11 and prime imaging (no eyepiece). I set up for a trial run on a bright DSO, M57 in my back yard. The hardest thing I have found is getting the image on the CCD and in focus without a flip mirror. I would swap an EP back and forth with the CCD repeatedly and repeatedly trying

to align my scope. Then I had to figure how much to adjust the focus to get from what my EP showed to get the image crisp on the CCD. Another factor in making this worse was not using a focal reducer. I was imaging at F10, which made the image very large



(high magnification) and my field of view very small. Once I located the nebula I found it very dim on my laptop display.

Well I've come this far so I set up the same freeware code that I used for Mars (K3CCD Tools) for a few long collects. I decided on 20 seconds and a couple of 40-second exposures. I was worried that my polar alignment was off enough that any longer would show drifting. I got 3 or 4 of each exposure and found I my target was going behind the trees. So I packed it in and would process the files inside. Before I broke down my setup I took one dark frame file of a couple frames to use later in the processing phase.

Inside I didn't think there was much hope for any success but I wanted to see just how much I could pullout from the rather poor raw images. I used another freeware code (Registax2) to align; stack, and dark frame subtract the images. The resulting image was much better than I had hoped for, grainy, but OK. I adjusted the contrast and brightness and tweaked the wavelets filters to get my final image.

The result could have been better if I had more images to stack. Then the graininess would average out in the final image. Another factor is my web-cam is un-cooled. There are websites out there showing numerous ways of doing this so I guess it will be a matter of time until I get there.

Brian Van Liew

From the Treasurer

Note: 2004 Calendars are here and in limited quantities and will be at the November meeting selling at our cost of \$7. By request, I will try to list the new members joining the AAAP in the last few months. Matt Brauer, Joseph Colasi, Arthur Ebbin, Michael Feldstein, Bob Gaydosh, Gregory Giovannetti, Eugene Mc Carthy, and Farhan Siddiqui. Hope I didn't forget anyone.

A few of us went to the Connecticut Star Party in late September where the featured guest was John Dobson of San Francisco's Sidewalk Astronomers. John, of course, is most famous for the



Alti-Azimuth Dobsonian Mount design attributed to him. This low cost, easily built mount has brought telescopemaking and astronomy to many who would have been otherwise priced out of this hobby. Shown left to right: Ron Mittelstaedt, John Dobson, Bill Fesio, and George Walker.

Michele, our publisher, will continue putting the dues renewal date on the upper right corner of each Sidereal Times address label. This the date that your renewal membership is due with the AAAP. Those with club magazine subscriptions to Astronomy or Sky and Telescope or both would want their subscriptions renewed about three months prior to the date of your club renewal. Please act accordingly, for if you wait until your club dues are due to pay for your magazine subscription you may miss one or two issues.

I am not going to send out renewal notices to members who get magazines, they get enough notices from their respective publishers. If I don't receive you renewal on the date indicated on your address label you will be dropped from the roster. If you are a keyholder, the respected observatory chairman will be notified and you will be asked to return the key.

Note! The dues structure is as follows: \$30 basic membership. \$60 for membership and subscription to Astronomy magazine. *\$63 for membership and subscription to Sky and Telescope magazine. \$93 if both magazines are desired with membership. *Recent Increase of Sky and Telescope magazine.

If you have a Sky and Tel subscription please send the subscription notice and the postage paid envelope when renewing your membership.

Ron Mittelstaedt

From the Editor

Everyone should take special notice of the contribution from our Past Director, Kirk. As you know opportunity has dragged him away from Princeton and to UC in Davis California. He has gotten his priorities in order and found a new astronomy club, which offers to replace what he has lost here on the east coast. We thank him for thinking of us.

October 14, Meeting This month we are honored to have Dr. Bohdan Paczynski, Professor of Astrophysics returning to share his current research work with us. His topic this time will be OGLE, Optical Gravitational Lensing Experiment, which he is collaborating with colleagues at Warsaw University and the Las Campanas Observatory in Chile. Dr. Paczynski has accepted our invitation to attend the pre-meeting dinner so be watching your email for details of the time and place.

Summer Picnic Our August picnic was a great success and well

attended and a short review was included in last month's Sidereal Times but a few things were left out. First, I want to thank Gene Ramsey's son (shown in the background behind the smoke), who is not a member of our club, but graciously worked the entire time over a hot grill cooking hamburgers, hot dogs, and Polish sausage. He not only was our short order cook but also brought a couple of grills for the practice of his craft.



(Editor, continued on page 6)

(Editor, continued from page 4)



I also want to thank Larry Kane for his photographic journalism of the event; some of that work is shown here. I apologize for not publishing this last month but somehow the pictures fell through the cyber cracks of the internet until they were resurrected this month. I'll try to forward more of them to John Miller for possible display on the website.

More Webcam Thanks to Barlow Bob Godfrey again for more submissions from his contact Roland Chavez (rolochavez@aol.com) of Powder Springs, Georgia. Its amazing what these low cost cameras can do as exhibited by Roland and our own Brian Van Liew, shown elsewhere in this issue of the Times.

'From Eve and Morning Recollections of a sometime chemist,' the memoirs of our long time member John Church, was unveiled at the end of our September business meeting. I was rather busy at work after that meeting so I didn't get around to opening his book until Sunday morning whereupon I didn't put it down until I finished it on the following Tuesday. I thought I'd known John for a long time but now that quiet gentleman in the back of the room has become a very familiar friend that I wish I had known a lot longer. I thoroughly enjoyed reading John's book and highly recommend that it be checked out from the AAAP library and read by all. Literary kudos to John.

Vic

October 2003

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