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nightwatch

Newsletter of the Pomona Valley Amateur Astronomers

Volume 22 Number 2

nightwatch

February 2002

Amateur
astronomers
just get better
looking . . .



CLAIRE STOVER

President's ADDRESS

In 1997 I had a unique chance of working with a group of technicians from Russia during the installation of a 60" telescope. They were the original team that installed the 6m reflector on Caucasus. I have admired their talent and knowledge. Besides being experts on what they were doing, they were warm and friendly people. Their profession enabled them to visit many places; on what they were doing they were warm from dry plains of central Asia to the mountains of eastern Europe. They had incredible memories in each and every of those places.

For example one fellow was chased by a giant lizard in a dry lake bed in Kazakhstan. He had run at least 2 miles to save himself from the monster. Considering his physical status and fitness it was a miraculous event. In the end he was exhausted and crouched in a state ready to accept his fate. The lizard had stopped as well and did nothing. Later he had found out that poor lizard was not after him, it was just chasing an elusive shadow!

In one conversation they explained how the Soviet Union saved the East German optical industry from collapse. At one point East German factories had tens of one meter size telescopes ready to be shipped. Those who are familiar with cold war era Iron curtain economy will easily realize that in that system there was no relation between production and demand. In early 70's German manufacturers realized this too! Just the interference of a big brother could save them from bankruptcy and that's what happened. Today in Russia there are many meter size telescopes still inside the crates. They don't have "goto" capability or a computer interface but to an old fashioned astronomer they will serve well. I thought a lot about finding someone ready to spend a few tens of thousands of dollars to buy one of those telescopes and make me happy. Since none of my relatives is that rich

or the rich people that I know of don't like me that much, I gave up my dreams on a 1m telescope.

Let's keep our dreams in a safe place and turn to the realities of life. John Dobson is coming over to give us a talk in our February general meeting. It's a great honor to have him over. For me he is definitely a historical character, a man with an impact. We owe the sudden boom of big and affordable reflectors to his practical mind and creativity. He insists on getting the idea from the naval guns and refuses that Dobsonians are his invention. That doesn't change anything. Bill Gates got the idea of MS Windows from Steve Jobs, father of Apple Macs, who had gotten the idea from Xerox Parc machine. In a world of chain reactions, John Dobson stands as an innovator, it doesn't matter who used alt-az mounts for what purpose first.

I started writing down my questions for him, perhaps you should do that too, it will be a night to remember.

See you all in Galileo Hall.

Alper Ates

PVAA Events Calendar

Month	Star Party	General Meeting	Board Meeting
February	9	22	1
March	16	22	1
April	13	26	5
May	11	31	3

Club Announcements

Ludd Trozpek, Club Treasurer, announced that a few copies of Observers Handbook 2002 and an Astronomy Calendar for this year were for sale at a reduced rate. All were purchased during the meeting.

We had three visitors at our January meeting, two of whom joined the Club. Welcome to Mark Simmons and Ray Andrade. Also, a belated welcome to Antonio Aurilia who became a member of the PVAA last November and has already joined us to see the Leonid meteor shower and enjoyed our holiday dinner in December. Members of our club have many and varied specialties and are eager to share their astronomical knowledge and enthusiasm with you. We're sure you have much to contribute to our Club as well and look forward to getting to know you all at many future club events.

Our Program Director, Roy Schmidt, asked for a show of hands to indicate interest in a Club trip to the 200" telescope at Palomar where we would receive a behind the scenes tour. Many hands shot up. This trip is planned for June 15, 2002 and more details will be provided as we get closer to June.

Alper Ates, Club President, informed us that more viewing opportunities might come up soon for us at Brackett Observatory. He also said there were some opportunities for amateurs to assist in telescope operation and in observations such as timing occultations at the observatory. Please let him know if you are interested.

A Club member has an 8" Schmidt-Cassegrain for sale (price recently dropped to \$800). See recent Nightwatch issues for details.

The Club will have a well-known and distinguished visitor at our next meeting on February 22nd, the famed telescope maker, John Dobson. Come early to get a good seat, or in fact, any seat at all!

January Meeting

Alper presented a What's Up covering the planet locations during February as well as the various constellations well placed for observing – Gemini, Leo, Orion, Taurus, and Cancer.

We were then treated to a wonderful journey through our local area of the galaxy by Chris Butler, a professional artist who has had his work displayed in both popular science and astronomy magazines as well as on television. His talk was titled "Our Little Corner of the Galaxy" and through his

artwork he brought us from a vantage point just outside the Milky Way in to our nearby neighborhood of 150 or so stars. We then traveled to imagined sites near our closest neighbors – Sirius, Procyon, Pollux, Castor and Chi-1 Orionis. The view of the night skies showed the changes our familiar constellations went through as we traveled. Scorpius remained relatively unchanged while Sagittarius' teapot became warped beyond recognition almost immediately. We also saw our own star, Sol, from the perspective of the possible inhabitants of other worlds. I found the scientific background behind the drawings very interesting. They weren't just pretty pictures (although they WERE). The satellites around the other stars were created with regard to the gravitational forces they would experience as well as the temperatures they would endure. Conditions on most of these bodies made us glad for a return to our familiar landing area around our star. Even Mars didn't look so inhospitable by comparison. Chris well deserves the title of science communicator as he uses his artistic ability to convey scientific ideas of interstellar distances, physics, and planetary science to the general public. A very interesting and enjoyable presentation – thank you, Chris!

Claire Stover

..PVAA 24 HR. Hotline.

Get the latest news on the star party, club meetings, special events and astronomy happenings.call
909/596-7274

Visit or website at:

<http://www.cyberg8t.com/patrick/PVAA.htm>

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What's Up This Month?

February 20: Occultation of Saturn. The disappearance of Saturn in the dark limb will occur in the late afternoon at approximately 3:22 p.m. PST in Claremont. The reappearance from behind the bright limb will occur at approximately 3:57 p.m. PST. This will be a challenging observation but might be possible because the moon can be easily found in the southern sky just a little past first quarter. Saturn will be brighter than mag 1—actually pretty close to mag 0 so it ought to be visible in a telescope. Use moderate power to keep the entire lunar image visible with enough of the eastern (dark) limb in the field. If you can see Saturn—pale white against the blue sky—it “sets” behind the dark limb about 3:22. More power will darken the sky but also narrow your field of view. Consider it when and if you have found the planet. Watch closely around 3:57 for Saturn to reappear on the opposite side. The occultation is not quite central from here. The centerline is to the south. Therefore, the occultation of the ringed planet will occur in the north quarter chord of the moon. More or less.

Speaking of Saturn, this month is a good time to try to observe the Cassini and other divisions in the rings, as well as the Crepe Ring. Saturn's rings are highly inclined to the ecliptic and show good detail. You don't need dark skies or a great telescope. Just get out in the evening. Keep your telescope set up after observing the occultation—or trying to—and watch the planet throughout the evening.

If you visit a dark sky site in the month of March, look for the Zodiacal Light. It should be visible if the moon is not in the sky in the first and last parts of March. It will appear as a bright glow from the western horizon stretching up approximately to the Pleiades. Last spring, at Kelso Sand Dunes, we observed it and it cast a shadow for the early part of the evening.

March is a good month to observe Jupiter and his satellites. Two days in March feature double shadow transits: Wednesday night, March 13, at around 9:13 p.m. PST, and a week later on Wednesday, March 20 at around 11:08 p.m. PST. The March 13 event is both earlier in the evening and higher in the sky, so it might be preferred.

On March 13, Ganymede's shadow begins to cross the planet at 6:15 p.m. (Ganymede itself will have just completed a transit two hours before this.) While this shadow remains on the planet, Io begins its transit at 7:58 p.m. Io's shadow begins its transit at 9:13 p.m. and for twelve minutes both shadows are on the planet. Ganymede's shadow egresses at 9:25 p.m. and Io alone remains in transit. It egresses at 10:12 p.m. and its shadow egresses at 11:28 p.m.

On March 20, Ganymede and Io are again involved in a double shadow transit. Ganymede's shadow ingresses at 10:15 p.m. PST followed soon by Io's shadow at 11:08 p.m. At 1:23 a.m., a little over two hours later, Io's shadow egresses followed quickly by the egress of Ganymede's shadow at 1:26 a.m. Jupiter will be pretty close to setting at the end of this event, but the first part should be readily visible.

(You may wonder if it is just a lucky coincidence that this Io-Ganymede double shadow transit repeats itself just a week and a few hours apart. Partly yes and partly no. The orbital period of Ganymede is just a little over seven days. This fact accounts for the approximate one-week spacing of these events and is coincidental with the fact that we call seven days a week. However, it is due to the 'resonance' of their orbits with each other—Io's orbital period is 1.77 days, exactly $\frac{1}{4}$ that of Ganymede—that accounts for the fact that Io also appears in line with the Sun when Ganymede does.)

Challenge objects this month are in Leo. Look for Leo I, a dwarf elliptical galaxy only 0.3 degrees north of Regulus. It is a satellite of the Milky Way with a visual magnitude of 9.8 but a very low surface brightness because of its relatively large size of 10.7 x 8.3 arc minutes. Rumor has it that it takes a dark sky and a 12-inch telescope with clean optics—that let's me out—to spot this one. Set your Sky Wizard to RA 11 h 08.4 min and Dec +12 deg 18 min.

Also in Leo is Abell 1367, a cluster of some 30 or more galaxies in a one-degree field. These are within a degree of 93 Leonis at RA 11h 44.0 min and Dec +19 deg 57 min. The bad news is that they range in brightness from mag 13 to mag 16 and it will likely take a 12-16 inch telescope to reach them. That's why it's a challenge object.

Ludd Trozpek

Mars, Past and Present

During the 1999 opposition of Mars, I read *Lowell and Mars* by William Graves Hoyt. Ever since then I have wondered: What was it that skillful and careful observers such as Percival Lowell were seeing and interpreting as “canals?” It was partly in search of an answer to this puzzle that I decided to read *The Planet Mars: A History of Observation and Discovery* by William Sheehan.

Since human beings began observing and trying to make sense of the sky, Mars has fascinated us. Because of its similarities to Earth this interest has only intensified in more recent times. The possibility that Mars does or once did harbor life makes it an irresistible object for study. In this book Sheehan follows the story of the study of Mars from ancient times to modern spacecraft, nearly up to the present day. (The book was published in 1996 just before the stunningly successful Pathfinder Mars probe, with the little rover Sojourner, arrived on the surface of

the red planet.) While the book starts with the Egyptians and the Babylonians through to the ancient Greeks, there is a heavy emphasis on the period from the renaissance onward. The book covers the essential role of Tyco Brahe's Mars observations to Kepler's discovery of the laws of planetary motion. Because of the eccentricity of its orbit and the relative ease of observation, Mars was the only planet that would do.

The canal controversy is covered well although not quite as thoroughly as I would have liked. The book does give the rudiments of an explanation of what it was that Schiaparelli, Lowell, and others were seeing on the planet. Another of Sheehan's books may flesh it out some more. (The same author has written *Planets and Perceptions* which has been highly recommended to me by Bob Branch and which has received critical praise and awards. So far however I have been unable to find a copy of the book although I look for it every year up at the Riverside Telescope Maker's Conference.)

In the last half of the 20th century, advances in technology have made a wealth of new data about Mars available to scientists. This is covered along with some of the ideas and speculation that it has engendered. A chapter is devoted to the geology of Mars and another to its two satellites, Phobos and Deimos. There is some discussion of the search for evidence of life.

Also covered in this book is an interesting story involving the rotation of the planet Mercury, showing how coincidence, circumstance, and the tendency of observers to "see what they expect to see" can lead to mistakes and errors being accepted and perpetuated. Sometimes science advances slowly, but it advances.

William Sheehan is a psychiatrist, writer, and an amateur astronomer. He is published by the University of Arizona Press.

After reading *The Planet Mars: A History of Observation and Discovery* I will definitely be reading other works by this author. I found it to be entertaining, informative, and pleasant to read. I would recommend this book to anyone who is curious about the subject.

Ron Hoekwater

John Dobson at PVAA in February

In early September, 1969, Charles A. Federer, Jr., the distinguished Editor in Chief of *Sky and Telescope Magazine*—the "World's Largest Astronomical Magazine" it says on the letterhead—received a submission from a lanky long-haired San Franciscan. This stack of paper outlined an unfamiliar way to go about building large amateur telescopes. With characteristic New England diffidence Mr. Federer wrote back, "I have looked over the voluminous material supplied in your recent letter, getting a pretty good idea of what you have done without taking the time to read every detail because I simply have so much other essential reading to do." He then went on:

"While your shortcuts undoubtedly help to demonstrate large amateur telescopes, they can hardly lead to satisfactory instruments of the kind most amateurs want in these large sizes. Porthole glass, makeshift wooden altazimuth mountings, 'light-bulb' test methods, all may be of value in demonstrating the process of telescope making, but they are no longer suitable for telling thousands of other people who lack your knack of getting something 'passable' out of such procedures. This may have been all right 20 or 30 years ago, but even then one of the reasons for the success of the ATM [Amateur Telescope Making] series of books was that they contained the true story of what pains must be taken if one wants a telescope that will perform to the high standards astronomical observing requires."

"In any event, we would not want to publish your material in SKY AND TELESCOPE."

John Dobson was not deterred. He went on building and proselytizing for these makeshift wooden, porthole glass, star-tested light buckets and in the process did more to popularize and re-energize amateur astronomy than anyone had done for a century. By the late 1980s, the name "Dobsonian" had come to denote this amazing and wonderful telescope design that stripped the instrument to its barest essentials: quality large aperture optics on a stable simple mount, all done as inexpensively as possible.

As Dobson has said many times, those books on telescope building are meant to encourage dozens of people and discourage thousands of people.

PVAA will welcome John Dobson and all of our members and the general public to a talk at our normal meeting place—Galileo Hall at Harvey Mudd College in Claremont, on Friday, February 22 at 7:30 p.m. We hope everyone can make it that night to see and hear this remarkable telescope builder. Bring a guest!

We will *try* to keep John on the subject of telescope making. If you know John Dobson you know that he will pretty much talk about what *he* wants to talk about. Bring your telescope-making questions, especially those of you who haven't built one *yet*. No matter what he is talking about, John is always lively and entertaining.

Hope to see you at the meeting on February 22.

Ludd Trozpek

World's Largest Astronomical Magazine



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September 12, 1969

Mr. John Dobson
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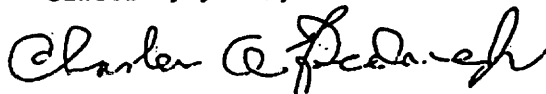
Dear Mr. Dobson:

Your efforts in bringing large telescopes to the neighborhood and community are quite exemplary. I have looked over the voluminous material supplied in your recent letter, getting a pretty good idea of what you have done without taking the time to read every detail because I simply have so much other essential reading to do. Your friends must appreciate your help in getting introduced to astronomy.

While your shortcuts undoubtedly help to demonstrate large amateur telescopes, they can hardly lead to satisfactory instruments of the kind most amateurs want in these large sizes. Port-hole glass, makeshift wooden altazimuth mountings, "light-bulb" test methods, all may be of value in demonstrating the process of telescope making, but they are no longer suitable for telling thousands of other people who lack your knack of getting something "passable" out of such procedures. This may have been all right 20 or 30 years ago, but even then one of the reasons for the success of the ATM series of books was that they contained the true story of what pains must be taken if one wants a telescope that will perform to the high standards astronomical observing requires.

In any event, we would not want to publish your material in SKY AND TELESCOPE. However, I am sending this letter via the editor of Gleanings for ATM's to be sure he agrees with me. If the letter reaches you as I have written it, he does.

Sincerely yours,



Charles A. Federer, Jr.
Editor-in-Chief

CAF/jka

RTMC Coming Up in May

With February fast drawing to a close, the warmer though ever-shorter spring nights promise more comfortable viewing of the night sky. Capping off every spring season for many members of PVAA is RTMC—the Riverside Telescope Makers Conference. RTMC recently restyled itself “RTMC Astronomy Expo” in an attempt to be more popular and seem less intimidating. Whatever changes were made were only superficial and RTMC remains one of the best astronomy events in the country and a great way to spend all or part of the Memorial Day weekend, May 24-26, 2002.

PVAA always has a strong contingent camped out back of the pool so be sure to come up to Camp Oakes in the San Bernardino mountains and see the sights. This year, regrettably, will be the dreaded Full Moon. The Moon will be up all night Friday, Saturday, and Sunday night, so the dimmer deep-sky objects will not play much of a role, but there will be some good early evening view of Venus and Jupiter with Uranus and Neptune near opposition. Even though the dark sky will be washed out, there will be literally hundreds of telescopes set up for the visitor to look at during the day and to look through at night. Come and get some great design ideas, or just come out to appreciate the craftsmanship.

This year’s theme is “Women In Astronomy”, so we

may hear some tales of Henrietta Leavitt, Cecilia Payne-Gaposchkin, and more recently Vera Rubin and the current president of the AAS—my classmate from Harvey Mudd, Caty Pilachowski. There will be a Beginner’s Corner as well as Expert Panels back by popular demand. The vendors that line the road to the observing field and that crowd around it will offer virtually every type of astronomy item, accessory, and knick-knack you can think of. Many of us find the swap meet on Saturday morning the event not to be missed.

Camp Oakes, the site of RTMC, is less than two hours from Claremont on the other side of Big Bear Lake. Family activities are not limited to prowling the telescopes: canoeing, swimming, horseback riding for a small fee, and hiking in the beautiful high-country woods are offered for those who want them. Come out for a day or for all weekend. One day admission is as little as \$15 per person. Camping for the entire weekend only costs \$30. Various meal plans are available if you wish to indulge. See the RTMC website at <http://www.rtmc-inc.org>. Or, ask around at the PVAA meeting; some of the members there can explain the options.

RTMC is still a three months off, but it is not too early to begin to make your plans to attend. It is a great event and one that all members should plan on at least visiting.

Ludd Trozpek

2002 RTMC ASTRONOMY EXPO REGISTRATION FORM

Name		
Company		
Address		
City	State	Zip

New Address? Need Vendor Booth?

If Vendor, please provide phone #/email _____

MEALS AND LODGING (dorms or camping)	Cost Before May 1	Cost After May 1	Times # People	Equals Amount
Plan 1 - 5 Meals + Lodging	\$69.00	\$79.00		
Plan 2 - 6 Meals + Lodging	\$75.00	\$85.00		
Plan 3 - 7 Meals + Lodging	\$81.00	\$91.00		
Plan 4 - 8 Meals + Lodging	\$87.00	\$97.00		

CAMPING ONLY (no meals included)	Cost Before May 1	Cost After May 1	Times # People	Equals Amount
Adults (for whole weekend)	\$30.00	\$40.00		
Children 5 to 13 (under 5 free)	\$7.00	\$7.00		

DAY USE ONLY (no meals)	# Days (3 Days Max.)	Cost Before May 1	Cost After May 1	Times # People	Equals Amount
Adults (Per Day)		\$15.00	\$20.00		
Children 5 to 13		\$7.00	\$7.00		

I need _____ extra parking passes.

TOTAL

Individual meal tickets can be bought at the dining hall, if the meal plans are not sold out. A snack bar by the telescope field opens Friday at 1:00 PM and stays open until dusk. It opens mid-morning on Saturday and Sunday.

Make checks payable to: RIVERSIDE TELESCOPE MAKERS CONFERENCE

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