

S.C.R.A.P.S.

Society's **Ch**Ronological **A**stronomical **P**aper**S**



Mar. 10th SMAS MEETING

PSTCC, Main Campus,
Hardin Valley Road

7:30 pm, Alexander Bldg, Room 223

Agenda: Change of SMAS Officers
President's Remarks-Lee Erickson
Southern Winter Night Sky-Michael McCulloch
Astronomy Internet Resources-Mike Littleton

From the President - Lee Erickson

I take the reigns of President of the SMAS with fear, excitement and a little nostalgia for my position as Secretary. It is reassuring that Mike Littleton will be my back up, and will be arranging program content for our meetings. That allays my biggest fear. My thanks also to: Scott Byers and Bill Dittus for offering to serve as Treasurer and Secretary respectively.

The tools for managing club activities, especially the SMAS Yahoo group, provide a way to arrange both our spontaneous observing and our planned star parties. These observing prospects and the improved portability of the 20 inch telescope no doubt make for an exciting year of observing before us. If you haven't looked through the 20 inch telescope, at M51 for instance, you simply don't know what you're missing.

I'll miss my position as Secretary, where I got to write history which can be surprisingly fun. My last act as Secretary was to write up the meeting notes which included the election which I, as Secretary, administer. It was difficult not to report on the only mail-in ballot we received for the election. (You know who you are.) The ballot contained write-in votes for each office in the name of the person whose return address was on the envelope. As the only vote to be in on time for the February 10th election date, it was tempting to declare the write in candidate victorious in all officer positions. But dutifully I consulted the SMAS constitution and discovered that it requires a quorum for the election. This quorum did not happen until the 17th. So our write-in candidate is off the hook this time. I guess the only thing preventing me from not reporting on this election incident in the meeting notes was the opportunity to report on it here. I ask for your forgiveness.

The SMAS meeting of February 17, 2006 - Lee Erickson

The SMAS meeting of February 17, 2006.

After a cancellation of the previously scheduled meeting of February 10th due to predicted snow, the SMAS met on February 17 in Room 223 of the Alexander building of the Harden Valley campus of the Pellissippi State Community College. Socializing began at about 7:00 PM and President Mike Littleton presided over his last meeting as President for the 2005-2006 term. The meeting began at about 7:30 PM.

There were nine members present and two officers making a quorum for elections.

Mike Littleton presented the 2005 financial report. Income was \$1609.08. Expenses were \$1462.78 for a net increase over this time last year of \$146.30. Net cash assets are \$911 with projected insurance expenses and Astronomy League expenses to eat over 2/3 of that during the course of 2006. The failed effort to get enough members to subscribe and qualify for club rates on Astronomy and Sky and Telescope made for accounting work that yielded no benefit. Members are advised that if we ever want to try this again, interested members must first get together as a group meeting the minimum number required. Only then should any checks or money be collected. *(Please see the revised Report on pages 3 & 4 - Editor)*

Bob Arr requested approval of expenditure for a battery charger for the club 20 inch telescope. This was approved.

2006 Officer Elections

Roger Macklin and Joe Baldwin formed the election committee responsible for passing out ballots and counting the votes. (Thanks Roger and Joe.)

Officers for 2006 are- President: Lee Erickson, Vice President: Mike Littleton, Treasurer: Scott Byers, Secretary: Bill Dittus.

February Program:

Bill Dittus presented a biographical power point on Johannes Kepler. Bill presented, by the use of time lines, not only the events of Kepler's life but the tumultuous events happening in Europe around Kepler's time. The early Renaissance and enlightenment were taking root, but it was a time where new ideas in natural philosophy (science) were not always welcome. As well as Kepler's famous three laws, also interesting was the material on one of Kepler's ideas that did not turn out to be true. Kepler had, at one point, an idea that some combination of nested inscribed and circumscribed arrangements of the platonic solids could account for the observed orbital sizes of the planets - interesting but not true. However this lead Kepler, by actual measurements of the positions of the planets by the end of his life, to the production of a description of the motion of the planets that was far more accurate, and more importantly, free of the erroneous preconceptions that the motions of object in the heavens had to be composed of perfect circular motions. Thanks for the entertaining and informative program Bill!

SMAS Web Site.

Michael McCulloch and Mike Fleenor have discussed moving the SMAS web site onto web hosting space which Michael McCulloch can provide. Due to school loading, Mike Fleenor would also like to pass the maintenance of the web site off to Michael McCulloch. We all say a big thanks to Mike Fleenor for his efforts on the web site and a big thanks to Michael McCulloch for taking on this important function! Michael McCulloch presented some ideas for new navigation features on the web page for our input. We were unable to think of further improvement, and gave Michael McCulloch our approval. Michael McCulloch notes that we should also be planning on paying the domain name registration fee when it is due, and a transfer fee for moving the site to his hosting. The exact amount is TBD but is estimated at about \$35 to \$50.00 or so.

End of report,
Lee Erickson outgoing Secretary to the SMAS.

SMAS Treasurer's Report

Profit/Loss Statement Fiscal Year March 2005 - February 2006

Income

Dues ⁽¹⁾	\$755.00
"Sasquatch" Monetary Donations	\$460.00
"Sasquatch" Gifts ⁽²⁾	\$1,500.00
Astronomy Day Donation ⁽³⁾	\$100.00
Miscellaneous Donations	\$13.33
<u>S&T/Astronomy Magazine Subscriptions</u>	<u>\$280.75</u>
 Total Income	 \$3,109.08

Expenses

Insurance	\$327.00
Astronomy League ⁽⁴⁾	\$210.00
P.O. Box (2 years rental) ⁽⁵⁾	\$88.00
SCRAPS Publication	\$89.28
Bank Charges	\$7.75
"Sasquatch" Rebuild	\$1,960.00
<u>Refund of Magazine Subscriptions⁽⁶⁾</u>	<u>\$280.75</u>
 Total Expenses	 \$2,962.78

Net - Profit (Loss) \$146.30

(1) Membership dues are \$20/member, with new members pro-rated depending upon what month they joined.

(2) Estimated value. Some members donated their time and/or materials to the rebuild of Sasquatch: Bob Arr, Michael McCulloch, Brent Holt, Joe Baldwin, Tom Rimmell, Bill Dittus, Jean Littleton, Lee Erickson, and Erik Iverson. No formal accounting is available for the time and materials provided by these individuals. Their generosity is reflected in the increased value of the club's 20" dobsonian.

(3) Pledged for the '04 Astronomy Day and received in January '05.

(4) 40 members @ \$5/member, plus \$10 club fee.

(5) Two year PO Box rental ending in December '06.

(6) Funds were collected for discount subscriptions to *Astronomy* and *Sky and Telescope*, but there were insufficient numbers of members to qualify for the discount subscriptions. The money collected has been refunded.

SMAS Treasurer's Report

Balance Sheet 2/10/06

Current Assets

Cash	\$192.37
Checking Account	\$1210.31
<u>Pre-Paid Expenses (PO Box ¾ year)</u>	<u>\$33.00</u>

Total Current Assets **\$1,435.68**

Non-Current Assets

Estimated Value of Library	\$500.00
Estimated Value of Telescopes & Equipment	\$8000.00
<u>Other Non-Current Assets</u>	<u>\$0.00</u>

Total Non-Current Assets **\$8500.00**

Total Assets **\$9,935.68**

Current Liabilities

Astronomy League Dues (2006)	\$210.00
<u>Magazine Subscriptions (Return)</u>	<u>\$280.75</u>

Total Current Liabilities **\$490.75**

Long Term Liabilities **\$0**

Total Liabilities **\$490.75**

Equity (Net Worth) **\$9,444.93**

The Wiz

Dear Wiz,

What's a Strehl ratio?

Curious.

Dear Curious,

It's a measurement of the reflecting accuracy of a parabolic mirror. A Strehl ratio of 1.0 means the mirror is absolutely perfect: 100% of a star's light is reflected into the Airy disk: you don't get any diminishing light rings around the star's image.

What would be so bad if you did get a few diminishing rings? You'd lose contrast; faint objects might simply disappear into the background. Faint detail on planets would blur.

In practice, the number is stated as a decimal, sometimes to three places. But only high-priced mirror makers measure it that closely. It is measured with an expensive piece of gear called an interferometer. Many people say that they are unreliable to the third decimal place. At least one major mirror maker, Carl Zambuto, has stopped certifying his Strehl ratios (which are routinely .98+) because of mixed results by other testers. He says it's just not worth arguing over.

There are two other measurements opticians use to evaluate mirrors: PV (peak to valley irregularities), and RMS (root mean square, a statistical average of numerous readings over the entire mirror). They can be useful to the mirror maker, but don't tell the amateur astronomer very much.

Here's a rough table of how most experts evaluate Strehl ratios:

PV Wavefront	RMS	Strehl Ratio	Comment
1/4	.250	.82	Rayleigh Limit (says this is good enough for most amateurs)
1/6	.167	.92	Good
1/8	.125	.95	Excellent
1/10	.100	.969	Excellent
1/12	.083	.978	Mindboggling

For a really good discourse on the subject, see:

<http://www.rfroyce.com/standards.htm>

Da Wiz

[Help students who want to do research at the Tamke-Allan Observatory](#)

Mary Watson was a member of SMAS and an ardent supporter of astronomical research. She especially wanted young girls in grades 7—12 to become interested in science and space study. The Mary Watson Memorial Astronomy Research Endowment provides funding to those who want to do research at the Roane State Community College Tamke-Allan Observatory. The criteria for a research stipend are:

Submit a written proposal for the research idea that includes the re-search question, the research plan and the timeline for completion of the research.

Preference will be given to female students in grades 7—12.

Research must be done in conjunction with the Tamke-Allan Observatory or an approved radio astronomy site.

The selection of the recipients of the Mary Watson Memorial Astronomy Research awards will be made by the Director of the Tamke-Allan Observatory, the Director of ORION, and the President of the Society of Amateur Radio Astronomers (SARA).

All contributions to the Mary Watson Memorial Astronomy Research Endowment are tax deductible as allowed by law. The Roane State Community College Foundation manages the endowment, invests all gifts to the fund, and spends only the interest earnings for stipend awards. Make checks payable to the **Roane State Community College Foundation**. The address is 276 Patton Lane, Harriman, TN 37748.

**Please note that SMAS Dues for the 2006 year are now due.
Please remit your \$20.00 today:**

**Smoky Mountain Astronomical Society
P.O. Box 53265
Knoxville, TN 37950**

March 2006

SUN	MON	TUE	WED	THU	FRI	SAT
<div style="border: 1px solid black; padding: 5px;"> UTK—roof of Neilson Physics Building on The Hill at UT 1st & 3rd Fridays TAO —Tamke-Allan Observatory Public Stargaze Watts Bar Lake, Roane County 1st & 3rd Saturdays </div>			1	2	3	4
					UTK	SMAS Star Party TAO TAO
5	6	7	8	9	10	11
					SMAS Meeting PSTCC Rm 223 7:30 pm	
12	13	14	15	16	17	18
		<i>Full Moon</i> Penumbral eclipse of Moon			St. Patrick's Day UTK	TAO
19	20	21	22	23	24	25
	Vernal Equinox Spring begins					SMAS Star Party Lock Rock #4
26	27	28	29	30	31	4/1
			<i>New Moon</i>			SMAS Star Party Unicoi Crest