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Rochester Academy of Science
BULLETIN

"An organization of people in the Natural Sciences"



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ABOUT THE **ACADEMY** - The Rochester Academy Of Science, Inc. is an organization which has been promoting interest in the natural sciences since 1881, with special focus on the western New York state region. Membership is open to anyone with an interest in science. Dues are minimal for the Academy, and are listed in the membership application. Each Section also sets dues to cover Section-related publications and mailings.



For applications and/or more information contact membership chairman Stephen Busschaert, 54 Keswick Rd., Rochester, NY 14609; by telephone 288-5683; or by e-mail <sbusschaert@msn.com>.

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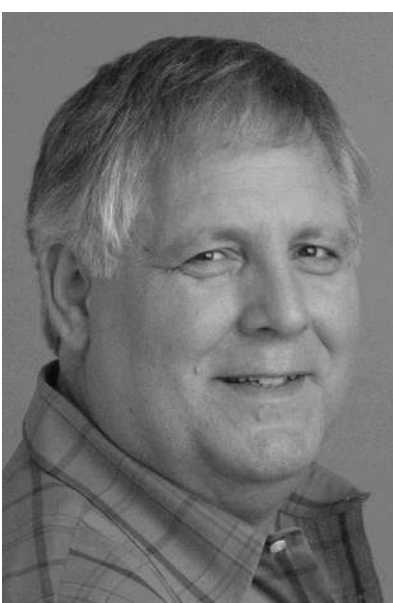
The *Astronomy Section* Information phone number is (585) 987-5330. The *Astronomy Section* Internet web page is <http://rochesterastronomy.org>

This "**BULLETIN**" is produced monthly, *except July and September*, by the *Astronomy Section, Rochester Academy of Science*. The editor is Frank Bov, 16 Gladbrook Rd., Pittsford, NY 14534 Phone (585) 422-9910 (days) and (585) 385-1518 (evenings), e-mail <editor@rasny.org>

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**PRESIDENT'S MESSAGE
AUGUST, 2007**

I challenge you to a duel!

While RAS does a good job of bringing science education to our members, the public, and students through lectures and outreach programs, I rarely hear good intellectual debate over scientific subjects. I know from a few after-meeting stops with some of the Astronomy members at Applebee's, that there are a lot of scientific debates going on with some educated people taking each side in the debates.

At this year's Spring Lecture, we heard a presentation about Mark Twain's essay on one of the burning scientific questions of his time. It combined his dry humor

with a serious scientific discussion. At this November's Fall Scientific Paper Session, we will hear a summation of scientific evidence on the side of Evolution versus Intelligent Design.

I would like to devote some space in the Bulletin to some not-too-esoteric scientific debates. I'd like to hear both sides, backed up by scientific evidence, at a level that the general membership can understand. With the many recent advances in astronomy, and fossil discoveries making the news every day, there are some issues without a generally accepted answer. Pick someone in your RAS section, that you disagree with on a major issue, and agree to put together arguments for each side of the issue. Make it a scientific discussion, not a general discussion light on facts. Challenge them to duel it out on the newsletter pages.

Run your topic by the newsletter editor at <editor@rasny.org> with a proposed word limit on each side. He will try to put it in an upcoming newsletter, as space permits, if our editor thinks it is a subject people will care to read about. We may (gladly - Ed.) have to put off publishing some of the abstracts from the paper session as we have done in the

past to have space for this but I think it is worth a try. The next issue of the Newsletter has a deadline of September 15.

En guard
Stan Spector,
President, RAS

PS The Fall Paper Session is coming on November 10th at SUNY Geneseo. I would very much like to see some presentations or poster sessions by members of the RAS. We always have a few from our group, but last year there were very few. So consider putting something together to present. The first Paper Session I went to there were enough presentations from the astronomy section to warrant a separate meeting room to cover all of the sessions.

**ABSTRACTS OF A PAPER
GIVEN AT THE 2006
PAPER SESSION**

**STRUCTURE-FUNCTION
ANALYSIS OF THE
CUPROUS OXIDASE
ACTIVITY IN FET3P
FROM *SACCHAROMYCES
CEREVISIAE*.**

Christopher S. Stoj^{†§}, T.J. Augustine[‡], Edward I. Solomon[‡] and Daniel J. Kosman[§]. From the [†]Department of Biochemistry, Chemistry, and Physics, Niagara

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Baker's yeast, *Saccharomyces cerevisiae*, deficient in high-affinity iron uptake are sensitive to exogenous copper exposure. This phenotype is attributed to the lack of Fet3p cuprous oxidase activity at the yeast plasma membrane, resulting in over-accumulation of the aggressive pro-oxidant CuI, leading to lipid peroxidation and cell death. In addition to their well defined roles as multicopper ferroxidases, Fet3p, as well as human ceruloplasmin, oxidize CuI. The structure of Fet3p has been used to identify possible amino acid residues responsible for this protein's reactivity with CuI. Fet3pM345 is required for the enzyme's reactivity towards CuI. While the Fet3pM345A mutant exhibits wild type spectral and electrochemical behavior, the kinetic constants for CuI turnover and for single-turnover electron transfer from CuI to the enzyme are significantly reduced. The specificity constant with CuI as substrate is reduced by one-fifth while the electron transfer rate from CuI is reduced 50-fold. This mutation has little effect on the reactivity towards FeII indicating that M345 contributes specifically to Fet3p reactivity with cuprous ion. These kinetic defects render the Fet3pM345A unable to support wild type cellular copper resistance suggesting there is a finely tuned copper redox balance at the yeast plasma membrane.

Fri 3 ASTRONOMY GENERAL MEETING

7:00 PM at the Wolk Observatory in Ionia. Come early and socialize! There's hot or hamburgers on the deck before the meeting for a small charge. The meeting begins at 7:30. Observing will follow if clear, so plan to stay a while if skies permit! Main speaker: Chuck Spoelhof: *Is The Earth Becoming More Like Venus? It Is Getting Warmer*. Public welcome. For information, contact Carol Latta at <cosmos@rochester.rr.com> or 230-9548.

Sat 11 MINERAL FIELD TRIP

10:00 AM to the Alden, NY area for pyritized fossils and other minerals from septarian nodules. More information to follow. Check the RAS Web page for updates or contact Chuck Hiler at <mineraltrips@rasny.org> or 924-7496.

Fri 17 ASTRONOMY STAR PARTY

9:15 to 10:30+ PM at Northampton Park on Hubble Road off Rt. 31. Join us for views of Jupiter and deep sky objects in members telescopes. No need to bring equipment or a deep understanding; just come and enjoy the views. Members will be on hand to answer questions and show how to navigate in the sky. Dress warm as evenings may be chilly and you may want to stay a while! Cloud date Saturday. For more information, contact Jim

Seidewand at 723-6225 or cell 703-9876

Wed 15 LIFE SCIENCE FIELD TRIP

10:00 AM to 2:00 PM We will join Burroughs Audubon Nature Club for a Summer Open House at their Sanctuary. A perfect time to explore this 23+ acres on your own. One never know what one will find in these woods, walk along a river, swampy area, hillside pine forest or butterfly garden. A wide range of habitats for various plants and wildlife, and the sanctuary has a great wildlife library as well. For more information, contact Karen Wolf at 670-9709.

Sat.18 LIFE SCIENCE FIELD TRIP

10:00 AM Hike in Ellison Park Wetlands on Empire Blvd, near Masters Stone Yard in the Irondequoit Bay outlet. This walk can be 1 to 3 miles depending on interest, and either hilly or relatively flat also depending on interest. For more information, contact Karen Wolf at 670-9709. (Rain date Aug. 19)

Sat 4, 11 or 25 ANTHROPOLOGY FIELD TRIP(S)

9:00 AM Mills Mansion in Mt. Morris NY. The Mills Mansion is a homestead built in the early 1800's and while doing some renovations, workers found Paleo-Indian artifacts. Digs continue throughout the summer and we are invited to observe and perhaps assist in the work. Call Karen Wolf, 670-9709, to let her know

which date will be good for you. Karen can arrange car-pools on 1 or more of these dates (takes around 40 minutes to get to Mt. Morris).

Sat18 MINERAL FIELD TRIP

10:00 AM to Barton Garnet Mines at Gore Mountain in the Adirondacks. Barton Mine Rd. is off Rt. 28 near North River, NY. \$5/person. We'll have access to Pit #8 in the old abandoned mine where tools are allowed, as well as Pit #1 where the public is allowed (no tools allowed). Hard hats, safety glasses and steel-toed shoes are recommended in Pit #8 - bicycle helmets/sturdy shoes for children. Charge for all rock removed is \$1/pound. Gift Shop/Facilities. Please let us know if you're going - headcount is required ahead of time. For more information, contact Chuck Hiler at 924-7496 or <mineraltrips@rasny.org>, or go to <http://garnetminetours.com>.

EVENTS IN SEPTEMBER

Fri 7 ASTRONOMY GENERAL MEETING

Note: location change to RIT

7:30 PM RIT, Gosnell Hall, room A300. This month's main speaker is (tentatively) Dan Green from the Central Bureau of Astronomical Telegrams (CBAT) telling us "The history of CBAT", plus short talks by members. Visitors are always welcome. For information, contact Carol Latta at 230-9548, or <cosmos@rochester.rr.com

Sat 08 ASTRONOMY STAR PARTY

8:30 to 10:00 PM at Mendon Ponds Park on Hopkins Point Road. Join us for views of deep sky objects in members telescopes. We'll be showing Jupiter (early only), star clusters, galaxies, double stars, and gaseous nebulae. No need to bring equipment or a deep understanding; just come and enjoy the views. Dress warm as evenings may be cool and you may want to stay a while. We suggest hats and also waterproof shoes as the grass may be wet after dark. For more information, contact Jim Seidewand at 723-6225 or cell 703-9876

Tue 18 LIFE SCIENCE FIELD TRIP

6:00 pm. Picnic dinner, Field Trip and Meeting in Webster Arboretum, on Schlegel Road in Webster. Bring a sandwich and drink and Karen will bring dessert to share. The arboretum should be lovely this time of year with fall flowers and migrating birds. Call Karen Wolf for further instructions or information, 670-9709. (rain date Sept 19),

Tue 18 MINERAL MEETING

7:30 to 9:30 PM at the Brighton Town Hall, 2300 Elmwood Ave., in the downstairs Community Meeting Room. Meeting will be a "Show and Tell" of what members have collected and/or acquired this summer, Please bring specimens. Each person

can give a short talk or description about their specimens. For more information call Chuck Hiler at 924-7496 or <mineraltrips@rasny.org>, or check the RAS Web page for possible updates.

ONGOING EVENTS

LIFE SCIENCE HERBARIUM WORKSHOPS

Several Life Sciences Herbarium workshops are being planned for September. Contact Elizabeth Pixley at 585-334-0977 or <epixley@rochester.rr.com> for further details. Watch your email for updates with dates and times.

ASTRONOMY PUBLIC TELESCOPE VIEWING

Dusk to 10:30 PM every clear Saturday night at the Strasenburgh Planetarium. Call the planetarium box office 697-1945 after 7:30 if in doubt about the skies or contact Jim Seidewand at 723-6225 for general info.

SAVE THE DATE

Sat Nov10 ANNUAL RAS FALL SCIENTIFIC PAPER SESSION

Hosted by SUNY Geneseo. Look for more information in the October *BULLETIN*.

Astro-Daffynitions: aperture-challenged (adj) - referring in a politically-correct sense to any observer who owns only a small telescope.

Jack Kramer