

AURORA

An Observer's Journal from Space by Rod Clark

When astronaut John Grunsfeld had completed his scheduled space-walks while updating the Hubble Space telescope, he took time to do some personal observing. With his Ziess 20X60 stabilized binoculars he visited some of the more familiar celestial objects. These are his notes from Space.

As HST moved off into the distance, I could only watch in awe. What an amazing telescope that we had worked on over the previous five days. More remarkable is the team that had developed the new instruments. The Advanced Camera for Surveys will provide us such remarkable views from its three cameras that I can't even imagine the scope of the new discoveries that it will make.

Finally as the HST became another star in the sky, we went back to work stowing the space suits and space walking tools. Without the payload in the bay of Columbia, we could also take time to look out the window at the beautiful blue Earth. I watched as we passed over Hawaii, searching for the domes of Kecks, UKIRT and other telescopes atop Mauna Kea, with no luck. As we passed over the Andes, I desperately searched for Cerro Telloolo but again to no avail.

While my search for observatory domes was not successful, the good news is that as we orbit the Earth, we see a night and day every 95 minutes with about 35 minutes of darkness. What a joy it is to darken the cabin and with naked eyes see the broad expanse of the Milky Way. From our vantage point above the atmosphere, the stars are steady and don't twinkle. They seem just a bit brighter and the colors are more vibrant.

As we pass southward, the Large Magellenic Cloud is easy to discern. Using the binoculars, Jupiter is clearly resolved with light banding. The Great Nebula in Orion is a favorite target as well as many open clusters. The crescent Moon is visible as part of a complete orb, illuminated by the bright Earth, just around the horizon.

As the stars head down towards what looks like the visible horizon at night, they first go through the air-glow layer, starting at about 95 kilometers. The greenish layer results from excited atoms releasing energy in the form of light. During the day, the atmosphere is constantly absorbing sun-light and only at night can we see the dull glow from the atomic de-excitation. When a bright object sets, it looks like it should disappear behind Earth, but instead we see the stars a bit longer as we go through the fog of the Earth's atmosphere. In this thin region, the stars do twinkle and fade before blinking out as they go behind the Earth.

Tomorrow we start turning the space shuttle into a re-entry vehicle. I hope that before we head back home that I will have more chances to look out the window and star-gaze. There will be a time, and soon I believe, that many people will be able to view the stars as we have on this mission. I would not be surprised to see an observatory on the Moon, sometime this century. After all, it has always been the adventurous astronomers who brave cold nights, high altitude environments and even the rigors of space flight to get a better view and an understanding of our Universe. I am convinced that as we push out of low-earth orbit and on to the Moon and beyond, that astronomers will be there.

Whether in our own backyards, on a cold and remote mountaintop or in earth orbit, the beauty of the heavens is always present and the drive to indulge our curiosity is always strong.

In This Issue

An Observer's Journal from Space	Cover
Calendar of Events / Maps / Submitting Articles / Membership	Page 2
Biographical Eyepiece Names	Page 3
Out Behind The Barn	Page 3
March Meeting Minutes	Pages 4 and 5
For Sale	Page 5
Useful Web Sites	Page 6



Calendar of Events

Our next meeting...

Tuesday, May 21, 2002
 8:00 p.m.
 at
 St. Stephen's Church
 Howard Road, 1.4 kms. south of
 Hwy # 3

Main Speaker...

Rev. Harry Brydon

Topic...

“Strings and Things”

Activities...

Earth Day: Sunday April 21 at Ojibway Park. If you have a scope with an appropriate solar filter or would like to help with the display setup will be at 9:00 a.m. Festivities run from 11:00 a.m. through 4:00 p.m.

Mercury: For the last week of April and the first week of May look for Mercury well up in the evening sky. During the spring northern hemisphere observers get a particularly good view of Mercury since the Ecliptic makes a very steep angle with the horizon.

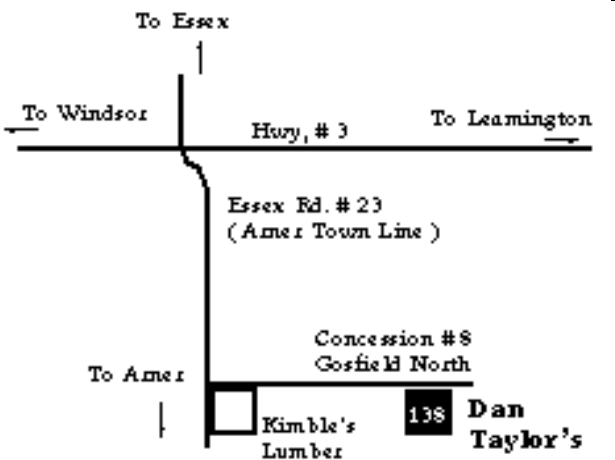
Five Planets: Also during Mercury’s appearance you will have an opportunity to observe a dance of five planets which will include Mercury, Venus, Mars, Saturn and Jupiter. On May 10 Venus passes just 0.3 degrees above Mars and on May 14 all five planets form their tightest grouping spanning just 33 degrees of the sky.

Moon Occultation's: Also on Tuesday May 14 the Moon will occult Saturn, Mars and Venus from somewhere on the Earth. Although none of these events will be well placed for observers in Windsor you will find the Moon sitting next to Venus and Mars in the early evening sky.

Council Meeting: Tuesday June 4 at 7:30 p.m. at Randy Groundwater’s house.

Windsor Center Picnic: Mark you calendars for Saturday June 15. Details will follow in the coming months.

Maps



**Dan's House
 (776-4493)**

Observing Nights

Frank Shepley's.....Last Quarter Moon
Dan Taylor's.....New Moon

(please call before showing up)

Submissions

Aurora is published monthly except for August. The September, November, January, March, May and July issues are full newsletters (usually 6 pages) with a number of member submitted articles. The October, December, February, April and June issues are short flyers (2 pages) with one short article. Submitted articles can be of any length from a paragraph to multiple pages. I can scan pictures and/or diagrams (both prints and film) to support your article and the originals will be returned to you.

Submission deadline is the 1st of the month. I will accept Emails at the address below, floppy disks, or written submissions.

Editor: Steve Mastellotto Email: smastell@wincom.net

Membership

The Windsor Centre of The Royal Astronomical Society of Canada meets on the 3rd Tuesday of every month (except July and August) at St. Stephan’s church. In addition to regular meetings the centre hosts a number of observing nights, a picnic and a December social. Members receive a copy of the Observer’s Handbook, the RASC Journal, a subscription to SkyNews magazine and access to the Centre’s library and telescopes.

Annual Membership Fees are Regular - \$44.00, Youth - \$27.50 and Life - \$880.00.

Contact Frank Shepley at (519) 839-5934 or visit our website at: www.mnsi.net/~rasc for more information.

Kellner, Carl

Carl Kellner was born March 26th 1826 in Hirzenhain, Germany, and died May 13th 1855 in Wetzlar. His father was Albrecht (1791-1865) who lead the Buderus foundry. His mother was Elisabeth Rudersdorf (1751-1848), daughter of a shoemaker in Haiger. After school in 1843 he went to Giessen for an apprenticeship with the mechanic Carl Ludwig Sartorius, in 1845 to Hamburg to work at Repsold & Sons where he stayed for 18 months. There he met Moritz Hensold, with whom he opened a workshop for mechanical and optical parts in Wetzlar 1848. The opening of the workshop was officially announced with the publishing of his paper "Das orthoskopische Ocular" in 1849. This publication on important improvements on eyepieces for telescopes and microscopes made him well known in the optical and scientific field. The improvements included a wider field of view and correcting for aberrations. Based on this paper he received many orders for optical elements. His customer list included Argelander, Liebig and others. The eyepieces he made were for use mainly in telescopes, but soon also found their way into microscopes. Finally Kellner and his twelve employees built complete instruments. Until his early death in 1855 his workshop manufactured at least 130 microscopes, 5 big telescopes and a number of small handheld telescopes. The consequences of Kellners work are threefold. First, he founded the optical industry at Wetzlar, turning this town into a prospering place. Soon after Kellners death Ernst Leitz took over the workshop. Leitz is a still busy optical company today. Second, he together with the Zeiss shop in Jena made Germany independent from the import of optical components from France and England. And third his microscopes and subsequent instruments from Wetzlar allowed progress in medical work.

König, Albert

Albert König was born on the 16th of August 1871 in Plettenberg. He was the son of the carpenter Peter Heinrich König (1844 - 1925) and his wife Lisette (1845 - 1890). He studied mathematics, physics and chemistry in Berlin and Jena from 1891 to 1895. His doctoral thesis in 1894 (supervised by E. Abbe) was on the theory of Fresnel diffraction spectra. Started the same year a lifelong work at the Zeiss works in Jena. He worked on telescopes, distance measuring equipment and various instruments. In 1919 he married the widow Barbara Lehmann, daughter of J. Georg Dattler in Freiburg. Barbara seemed to have worked at Zeiss at that time. For the terrestrial telescopes he received a 'Gold Medal' at the 1938 Paris Expo. He died on the 30th of April 1946 in Jena.

Erfle, Heinrich Valentin (1884-1923)

H.V. Erfle was born on the 11th of April 1884 in Duerkheim, Germany. His father was Heinrich Johann Erfle (1848 - 1896), his mother Marie Erfle, nee Stolleis (1849 - 1923). H.V. Erfle married Ilse Rittner in 1914 in Koenigshuette. They had a son and a daughter.

Erfles studies in Munich were finished with his doctoral thesis, dated 1st August 1907. He worked with the optical shop of Steinheil & Soehne until 1909, when he moved to Jena for the Carl Zeiss firm there. In that company he joined the telescope department. He was promoted head of this department in 1918 and his work improved the performance of the various optics then manufactured, mainly for military use. His published papers were on prisms and on algebraic formulae, but he also tried to broaden the knowledge of optics for all interested. His last work was mainly as a co-editor on the third edition of the 'Grundzuege der Theorie der optischen Instrumente', (Basics of the theory of optical instruments) published in 1924. Today the name Erfle is well known to amateur astronomers for the wide field eyepiece he constructed.

Erfle died on the 8th of April 1923 in Jena.

Out Behind The Barn

A strange social event
a dark gathering like no other.
The guest of honour Charles Messier
our long dead astronomy brother.

Can't tell who's here, except by ear
dark shadows in the night.
Quiet, intent on Messier bent
Heaven forbid you turn on a light.

It's black as a boot, hear the owls hoot,
the coyote yodels his tune.
Faint whiff of air, says a skunk is there
we hope he moves on real soon.

I love to see a galaxy
a nebula or a cluster.
Always there in the clear night air
and they never lose their luster.

Though the wind is chill,
it's still a thrill.
With eyes that are bare,
to stand and stare.
On a cold black night,
see this star studded sight.

Martha Pinch

March Meeting Minutes

General Meeting Minutes March 19, 2002

President, Randy Groundwater: Randy Groundwater opened the meeting and requested and received a motion to accept the minutes from the February meeting. Moved by Joe Cambala, and seconded by John Welsh, the motion was carried.

Reports

Correspondence Secretary, Joady Ulrich: Joady had no correspondence to report.

Treasurer, Frank Shepley and Assistant, Ken Garber: Frank was unable to attend. Ken reported he had ten membership cards ready for pickup and was set up to take funds for the group. There was no financial report.

National Council Representative, Tim Bennett: Tim reported only he and one other person so far were planning to attend the National Annual Meeting to be in Montreal on the May long weekend. He encouraged more members to make the trip to represent our Centre. Then he asked for signed proxies which he can take and use for votes.

Librarian, Tom Sharron: Tom was unable to attend the meeting due to a death in his family.

Newsletter Editor, Steve Mastellotto: Steve reminded us next month's newsletter will be the full issue size and he needs local reports and articles.

Public Relations, Robin Smallwood: Robin reminded members of the April 21st "Earth Day" event at Ojibway Park. Members with telescopes equipped with sun filters are requested to help by setting up for the day. Others can help by assisting setting up and manning the club's astronomy display.

Director of Observing, Robin Smallwood: Robin told about the Messier Marathon held at the observatory site on March 20th. A Cold North wind didn't discourage about two dozen people from setting up a dozen telescopes in shelter of the machinery building. By 7:45 p.m. Comet Ikeya-Zhang was found low in the Western sky, naked eye to some, easy in binoculars for others. The clear sky unfortunately deteriorated and was lost in the early morning hours.

The next two months feature seven visible planets. On April 30th five will cruise along their orbits to form a straight line as viewed from earth in early evening.

Business

Website, Randy commented on our website, originally set up and run by very keen but recently deceased member Dave Marchand. Steve Mastellotto and Frank Shepley are working on it's maintenance and progressive additions. He mentioned anyone can ac-

cess it to find meeting dates, see dome project photos and other information.

A **Dome Project** update was detailed by Randy and Tim Bennett. Tim's immediate concern was keeping traffic off the driveway to the dome for an indefinite drying period. The earth fill and gravel topping are still soft, damp and easily rutted.

After installing a single step and short railing, the warmup building passed the Lakeshore building inspector's scrutiny.

Fund raising is now a major phase of the project. Randy explained how the club project progressed very rapidly, beyond expectations via internal cash and donations. A very important part has been all the volunteer labour donated by members. The cost to this stage has thus been much less than the original projections. Companies such as Moir Crane and others virtually donated their services via very low prices. Others donated both materials and labour, an example being the firm which drilled the concrete dome foundation, provided and installed the hold down bolts.

So far Randy said only about \$6,500 has been spent. It would have cost far more had it all been done under outside contract.

There is still more to be done to complete the project and materials will cost \$7,000 to \$10,000. They include some interior finishing. Stripping and replacing the damaged exterior sheet metal from the base of the dome will improve it's worn appearance. An outside observation deck and landscaping would make the site look complete.

There are 117 members, if each raised \$100 there would be funds enough to complete all of the above phases.

Fund Raising. Peter Bondy was delayed and missed the meeting. Randy spoke of Peter's efforts with the Trillium Foundation. They are being approached for funds to purchase a telescope large and elegant enough to do serious observing from Essex County. The amount needed is about \$24,500. The application is complex but well underway.

The completed fund raising flyer was distributed and reviewed for contents. It can be used by members in their individual fund raising efforts. It will be included with letters to selected firms being prepared by Peter Bondy. Randy asked that all contacts be first coordinated via Peter so no person or company is approached twice.

Observatory Name. Steve and Randy are looking for ideas for a name needed by June 2002. Only one submission has been received to date.

Martha Pinch announced an unusual affair to be held for 75 to 100 children by her church on May 11th. It has the theme "**Out of this world**" and will held at the Leamington Marina. Given the theme, she asked if some members could bring telescopes and

(Continued on page 5)

March Meeting Minutes (continued)

set them up on the edge of the park for the event.

Speakers for the Evening

Short Talk: *Joady Ulrich* presented a surprise topic "Observations on Observing". He gave many thoughts on why people have observed the heavens over the ages. Then he showed how they have done so and what they were able to see and comprehend within the limitations of their times. The question of the evening was "Why do we observe?". Thoughts from the audience came and Joady used them to show us how observing can be a very moving experience. Familiarity with the night sky and being prepared for discovery experiences make each session a voyage to the unknown. As cognition develops, chances of seeing and recognizing fainter, more exotic objects improve.

Joady highly recommended two books, both in current print ("Hubbles Universe" and "The Heart of God").

Randy thanked Joady and commented on his exceptional observing ability. In part he thought Joady had developed his skills via living with limited normal vision, honing the balance of his sight to a very high degree.

Main Talk: *Randy Groundwater* spoke on the topic of binoculars. He enlightened us on their surprising complexities and variations. Binocular viewing, Randy pointed out, can provide many rewards on a modest budget. A well chosen pair of good binoculars can be acquired for about \$150. The various features most useful for viewing the night sky are primarily aperture, field of view and magnification. To gather and utilize the most light possible, he showed us how see, measure and match exit pupil diameters to the user's eye.

For those inclined, Randy pointed out there are also very exotic and costly binoculars. The additional investment is often justified primarily in pride of ownership in fine optical equipment. Examples of several types were displayed and their features explained.

Meeting Adjourned.

For Sale:

Used 9 1/2 inch Rockwell table saw, 12.5 amps, complete with carbide tipped blade. Well used, well loved, but still working very well, complete with its accessories. Asking \$100.00. See Susan Sawyer-Beaulieu, 972-5516.

UNIVERSAL SCIENCE

Windsor's Astronomy And More Store



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Skywatcher 8" Dob with metal tube, 8x50 finder, 2" focuser, 25mm and 10mm Plossl eyepieces, new improved balance system. All this for an incredibly low price of **\$525 + tax**. Please allow 1–2 weeks for delivery. Check this scope out at www.skywatchertelescope.com.

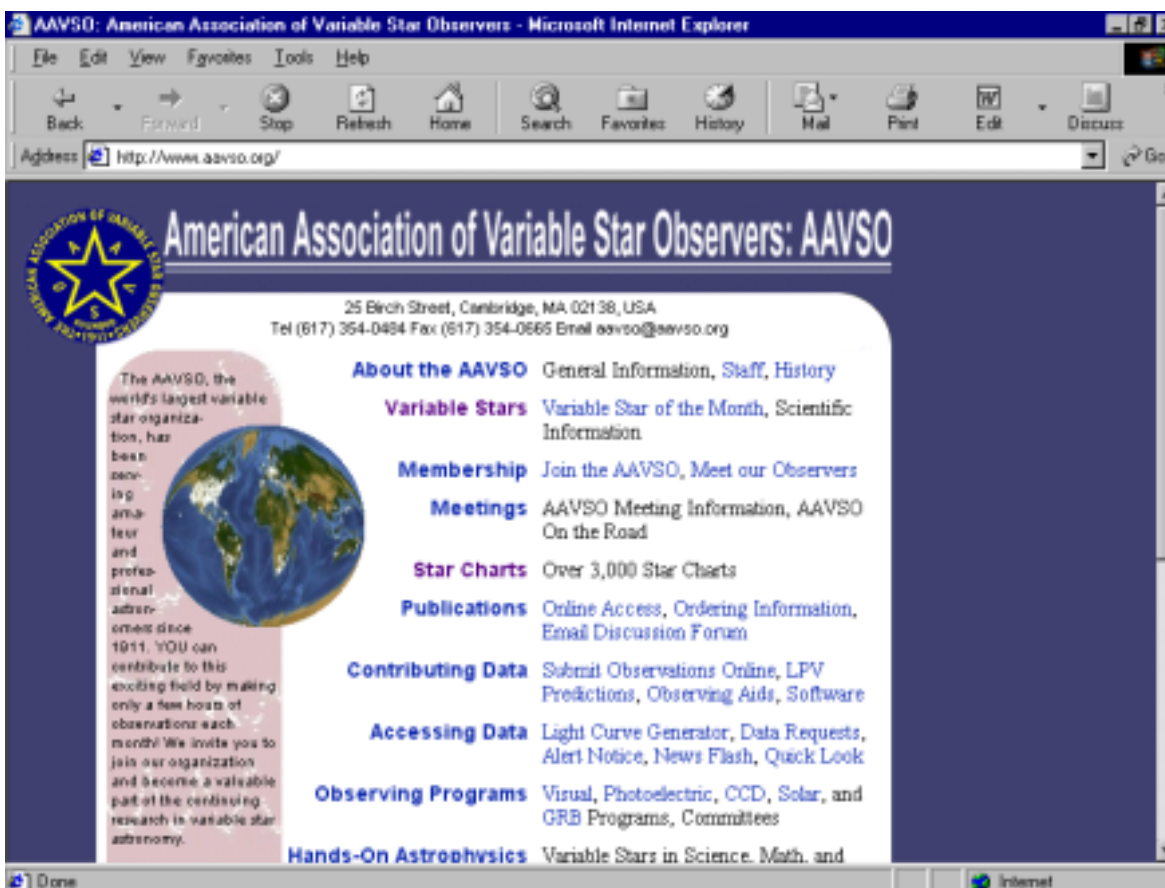
Skywatcher 6" f/8 Dob with metal tube, 6x30 finder, 25mm and 10mm Plossl eyepieces, built-in accessory tray, spring balance system. All this for **\$500 tax included**. IN STOCK NOW.

Coming in May. Skywatcher 10" f/4.7 Dob with metal tube, Pyrex mirror, 9x50 finder, unique easy adjust balance system, Plossl eyepieces. Pricing not yet available but promises to be very competitive.

Contact Robin Smallwood
Monday - Friday 9:00 a.m. - 5:00 p.m., Saturday 9:00 a.m. - Noon, Closed Sunday
Telephone: (519) 967-1655 Fax: (519) 967-1657
Email: unisci@sympatico.ca



Nasa's comet observation home page at <http://encke.jpl.nasa.gov/index.html> is the one place I stop for the latest news about currently visiting periodic comets and new discoveries alike. If you want to know where to find a particular comet you will find ephemeris lists that show the position and expected magnitude every few days over a period of time, finder charts and orbital elements for loading into your favourite sky charting software. Current observations and pictures will also guide you in what to expect when you finally get a clear sky and a chance to observe a comet for yourself.



The American Association of Variable Star Observers (AAVSO) has a wonderful site at <http://www.aavso.org> that will help you with variable star observing. The material on this site is very comprehensive and includes educational information (types of observing, how to report and types of variable stars) as well as news flashes, tools kits and what I think are the two best features of the site the monthly featured variable star and the online AAVSO star charts. There is so much to go into in this little sidebar so go check it out today.