

AUTORA



Volume 35, No. 4

The Royal Astronomical Society of Canada - Windsor Centre

January 2010

Kepler's Somnium by Matt McCall

Newton once said 'if I have seen further, it is by standing on the shoulders of giants'. Two of them were Copernicus and Galileo, but the other was the greatly underappreciated Johannes Kepler. A brilliant mathematician, Kepler contributed more to scientific thought throughout his hard life than many believe. His three laws of planetary motion changed science in the 1600s and eventually led to the law of universal gravitation. But it was his imagination that created a work of writing that, to this day, remains mostly unknown even among some in the scientific community. Begun in 1593 as a Theses and published posthumously, complete with footnotes forty years later, Kepler's story of lunar astronomy speaks of a fantastic voyage to the Moon. He called it 'Somnium,' Latin for 'The Dream.'

His dream of astronomy on the Moon was one born from a fascination of the heavens, but even a man of strong Christian faith such as Kepler led an anxiety-laden life full of disability and anguish. The harmony he knew existed above was not a concept those around him shared, and the privately circulated manuscript of lunar astronomy fell into the hands of the religious leaders of the day, eventually landing his mother in a torturous prison on witchcraft charges for six years. All because the main character's mother shared similar traits with Kepler's own mother, such as knowledge of mixing herbs. The ceremonies performed by the mother in the story to summon a 'Daemon' did not help the situation either.

This spirit and others like him take the two humans to what they called 'Levania,' where he narrates through the rest of the dream, describing the Moon's geography in relation to positions of the Sun, stars and planets. He refers to Earth as 'Volva' as it is seen to revolve, and calls the hemisphere facing it 'Subvolva'; the other 'Privolva,' as the far side is deprived of the sight of it. To quote an excerpt from Somnium below:

"For in Privolva the night is as long as fifteen or sixteen of our natural days; it is gloomy with perpetual darkness, like that of our moonless nights, for it is never illuminated by any rays of Volva; therefore, everything is stiff with cold and frost, and there are besides very strong, sharp winds; there follows a day as long as fourteen of our days, or a little less, when the sun is quite big and slow-moving with respect to the fixed stars and there are no winds."

It is paragraphs like this, where Kepler shows how accurate his observations of lunar astronomy were, even from standing on Earth. Since the story is in the form of a dream, he was also given the freedom to speculate on imaginative ideas that nobody could have known about the Moon at the time; from existence of wind, to inhabitants that sought water in caves beneath the surface.

In his footnotes; which Kepler would write plenty of during his mother's trial; he explained away things like demon spirits as being mere fantasy to prevent her being killed. But of course, the precise calculations of the Moon's movement through the heavens, and possibility that one could stand on its surface were anything but fiction, especially by today's standards of knowledge. 'The Dream' was centuries ahead of its time, and should be considered the very first work of science fiction. Obtaining a copy complete with Kepler's notes comes strongly recommended as it is a delightful read and should be enjoyed by enthusiasts of astronomy.

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Calendar of Events

Our next meeting...

Tuesday February 16, 2010

7:30 p.m.

at

Maidstone K of C Hall

10720 County Road 34 (Old Highway #3)

Main Speaker...

TBD

Topic...

"TBD"

Activities...

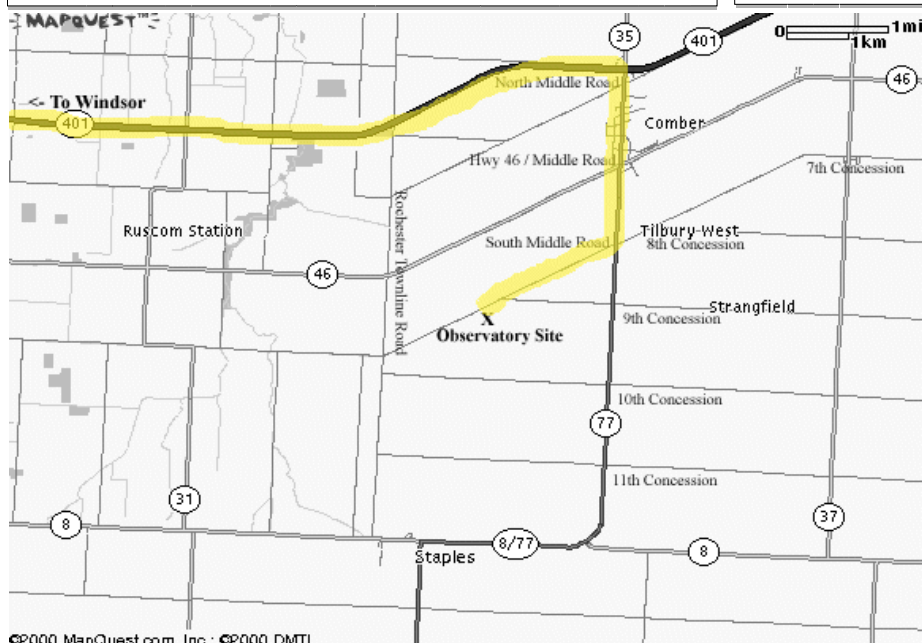
Open House Night at Hallam: Starting at 7:00 p.m. on Saturday January 23rd.

The Moon and Mars: Friday January 29 the Full Moon is the largest of the year (Moon at perigee) and Mars is at opposition 6° above the Moon.

Mars and the Beehive Cluster: Watch Mars pass 3° North of M44 on Saturday February 6.

Council Meeting: On Tuesday February 9, 2010 starting at 7:30 p.m. at Susan Sawyer-Beaulieu's house.

Vesta: The asteroid Vesta will be 1/4° below the double star gamma Leonis and an easy binocular object on the night of Tuesday February 16 and is at opposition 2 nights later.



Hallam Observatory Site

Directions: The map above shows the Comber area and it includes the major highways (401, 77, 8 and 46) that are in the area of the observatory.

The most direct route from Windsor is "highlighted" on the map which is to take Highway 401 East to Highway 77 South to South Middle Road. Turn right onto South Middle Road and go about 1 kilometer and just after the point where Concession 9 joins it (it is hard to see this intersection) you will find the observatory site on the South side (left) of the road.

If you hit the Rochester Townline Road (you come to a stop sign) you have gone too far.

Submissions

Aurora is published monthly except for July and December. The August, October, January, March and May issues are full newsletters (usually 6 pages) with a number of member submitted articles. The September, November, 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.

Editor: Steve Mastellotto Email: mmastellotto@cogeco.ca

Membership

The Windsor Centre of The Royal Astronomical Society of Canada meets on the 3rd Tuesday of every month (except July and August) at the K of C Maidstone Recreation Centre. 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, a subscription to SkyNews magazine and access to the Centre's library and telescopes. And optionally the RASC Journal in print form—online version free.

Annual Membership Fees: Please see the RASC website at www.rasc.ca for current rates.

Contact Ken Garber at (519) 966-3478 or visit our website at: <http://www.rascwindsor.com> for more information.

November 2009 Meeting Minutes by Dave Panton

Minutes from the meeting of November 17, 2009 held at the Maidstone Recreation Centre and chaired by President Dr. Pierre Boulos.

Pierre welcomed members and guests. The minutes from the October meeting were read and accepted following a motion by Tina Chichkan seconded by Peter Bondy.

Main Speaker

Pierre announced the main presentation of the evening "The Galileo Play" with characters to be acted by three of our own as follows:

Kepler played by Pierre Boulos
Galileo played by Dr. William Baylis
The Cardinal by Steve Pellarin

Paul Pratt set the scene pointing out that Galileo and Kepler never met but were in frequent correspondence. Their views and theories of the time about the mysteries of planetary motion were the prime topic. The Cardinal's part in all this was to ensure their theories fit properly into the teachings of the Bible.

The dialogue was clever and went in to their various theories such as why there are tides, phases of the Moon and strange motions of wandering planets. Whether or not the Earth is the centre of the universe was a major controversy of the time 4 centuries ago.

To the audience the motion of the Earth, Moon, planets and their moons is obvious given the knowledge gained over so many years. To the church of the time and even into fairly recent days, Heaven was their responsibility and persons like Galileo and Kepler should, stay out of Heavenly matters.

At plays conclusion the audience expressed a strong round of applause. Pierre thanked the actors for handling their roles so well.

Pierre announced the meeting was our annual election night and also a special evening for thanking so many members who have contributed their time and many talents to help Windsor Centre.

Awards

The awards committee this year nominated two members for special mention. **Al DesRosiers** received a plaque for his many hours of hard work building the observatory, maintaining the grounds and more recently running two large and successful garage sales with all proceeds donated to Windsor Centre. **Dave Panton** received a service award for his many years as secretary and for building the system to operate the dome shutter mechanism electrically instead of by hand crank. His solar powered loo lights were also noted.

Elections

Steve Mastellotto as Past President presented a list of nominees

stressing if any member present wished to nominate another member for any position they could do so before the elections for that position. Steve walked through the elections for each position and the results are presented on page 5 of this issue of Aurora.

Coffee Break and **50/50 draw** was held and won by Sue Iihola.

Messier Pins: Mike Mastronardi received lapel pins from National, recognizing the accomplishment of those who have earned their Messier Certificates. Pins were presented to (or for, in the case of absent or deceased) members as follows:

Ray Drouillard	Larry Burgess	Dave Marchand
Mike Pataky	Ken Rount	Joe Cambala
Tim Bennett	Al DesRosiers	John Hurley
Nat Bourdeau	Dan Taylor	Alan Legary
Randy Groundwater	Susan Sawyer-Beaulieu	

Reports

Treasurer, Ken Garber: Ken reported a bank balance of \$6,160.85 and cautioned there are lots of expenses ahead. The 2010 RASC Calendars are all sold. He can order five more if needed.

Librarian, Rick Marion: Rick has removed the unused (no mirror) 12 inch Dobsonian telescope from the observatory and stored it at his home.

Newsletter, Steve Mastellotto: For the January issue Steve indicated that he has received two poems and asked if there was anyone else interested in writing a poem for the issue to send them to his attention. As well, any articles and photos are also welcome. He also mentioned our newsletter is on our website in full color.

Webmaster, Steve Mastellotto: Steve reported our website is up-to-date. Pierre added National has a network of centre websites and are especially pleased with Windsor Centre's website.

Public Education, Randy Groundwater: Randy was unable to attend the meeting. Others reported their public education activities. Paul Pratt spoke to a group of 106 people at a gathering of Essex County Field Naturalists. He has a further presentation later this week at the Ojibway Nature Centre. At Budimir Library Mike Mastronardi and Juliana Grigorescu gave a presentation to a small group followed by an observing session aided by Steve Pellarin who had set up a telescope in the parking lot. Juliana has planned a "Night Under the Stars" for children in her neighborhood. She will use her own telescope for observing and has also prepared a quiz for her little guests.

Dr. Baylis thanked Windsor Centre for the telescope and eye-piece donation to the Canada South Science Centre. He also mentioned an award winning film "The Search for the Red Sprite" would be shown on December 2nd Windsor Centre

(Continued on page 5)

Hallam Happenings by Dave Panton

The big news at Hallam is a reduction in light pollution in the Northeast sky from the new truck stop. Just before Christmas all the big double head glaring Esso truck fueling plaza light fixtures were changed to the full cutoff type. From all directions the truck stop no longer offends the eye at night. RASC Windsor Centre involvement in all this began in March. There were times during follow-up with Lakeshore authorities we worried the lights would never be changed. We owe thanks to their perseverance. A letter of gratitude will be sent to Mayor Tom Bain.

Winter Hallam skies have been dismally overcast. I can recall only three clear nights, two of them fully illuminated by a big bright Moon. None were wasted in spite of the very cold temperatures. The warm room helps one keep comfortable but lots of clothing layers are still essential for comfort. While we are all aware warm air distorts telescope images, the effect on such cold nights is extreme. Bubbles of warm air wafting up through the dome slit distort images beyond belief though the effect is fairly brief.

All the equipment is operating well. A caution to those not familiar with operating the dome shutter in Winter. On closing it must not be shut tight or the lower shutter will freeze to the rim of the dome. It is almost impossible to thaw it out so always leave the lower shutter slightly open, hanging by the big latch. So far snow has not drifted and access to the site is as easy as opening the gate and driving right in.

A small group has been formed to find a way to relocate the C14 telescope side-by-side with Steve Mastellotto's AstroTech 111mm refractor and add a permanently installed autoguider. With this setup, one or the other telescope will be accessible to children and shorter folks. Both telescopes will also become more accessible for astrophotography.



Veil Nebula - This image is a combination of 6 individual frames each 5 minute exposures at ISO 1600 with a Canon 5D Mark II shot through the AstroTech 111mm f/7 telescope (777mm focal length) at Hallam Observatory. Minimal processing of dark frame subtraction, colour correction and contrast stretch was performed with ImagesPlus and Photoshop. *Photo by Steve Mastellotto*

June Meeting Minutes

(Continued from page 3)

members are welcome.

Public Relations, Tina Chichkan: Tina announced the December Social will be held at this meeting place on December 4th, setup time starting at 6:00 p.m. She requested persons attending let her know the type of food they plan to bring.

Light Pollution Abatement, Dan Taylor: Dan's annual report is online as are all of his monthly updates. The word is they are often fun reading.

National Council Representative, Mike Mastronardi: Mike will try to participate in a day long Canada wide National meeting to be held by long distance telephone this Saturday.

Observatory Director, Dave Panton: The most recently developed pointing accuracy problem has been resolved by an unusual method. The Sun and daytime stars were used as references to re-adjust the out of level base of the Paramount to a different out of level position. A later pointing test run was done over a wide portion of the sky and the method found surprisingly accurate. Al DesRosiers and Peter Bondy were instrumental in the success this effort.

Steve Mastellotto announced the locks on the observatory have all been changed and a new key is required. The annual access fee is unchanged.

Open house at Hallam is on November 23rd as usual, no matter the weather. As there is no Bell telephone line to Hallam due to the \$58 per month cost one member suggested a dedicated cell phone be located there at much lower cost.

Membership Director, Paul Pratt: No report.

Director of Observing - None tonight.

Meeting Location: Pierre Boulos and Steve Mastellotto staff a sub-committee searching for a less costly meeting room. They learned Windsor Centre's meeting room cost is by far, the highest paid by any RASC Centre in Canada. There are some alternatives but for the time being meetings will continue to be held at the Maidstone Recreation Centre. Suggestions for a less costly venue are welcome.

Meeting Suggestion: Juliana suggested we host a professional astronomer on an annual basis. The suggestion was welcomed but Pierre cautioned we have no budget to pay expenses. Mike Mastronardi noted the local Professional Engineers of Ontario chapter is trying to arrange a visit to Windsor by Canadian Astronaut Julie Payette from the Canadian Space Agency.

Astronomy observation of the Day: Tina Chichkan as she returned home from work this morning observed a few Leonid meteors from her front yard at 4:00 a.m..

Meeting adjourned: 9:48 p.m.

2010 Council of the RASC - Windsor Centre

Elected Officers

President	Paul Pratt
1st Vice-President	Tina Chichkan
2nd Vice-President	Peter Bondy
Secretary	Dave Panton
Treasurer	Greg Mockler
National Council Rep.	Mike Mastronardi

Councilors

Randy Groundwater	Sue Iihola
Barry Martin	Steve Mastellotto
Steve Pellarin	Paul Preney
Donna Ronconi	Susan Sawyer-Beaulieu
C. Joady Ulrich	

Appointed Officers

Honorary President	Dr. William Baylis
Past-President	Dr. Pierre Boulos
Librarian	Rick Marion
Recording Secretary	Dave Panton
Public Education Director	Randy Groundwater
Public Relations Director	Peter Bondy
Directors of Observing	Steve Pellarin
	Susan Sawyer-Beaulieu
	Juliana Grigorescu
Light Pollution Abatement Dir.	Dan Taylor
Hallam Observatory Director	Dave Panton
Aurora Editor	Steve Mastellotto
Webmaster	Steve Mastellotto

Reminders

Hallam Observatory Fees: All key holders to Hallam Observatory must return their keys by October 1 or pay the \$40 access fee to keep using the observatory. Windsor Centre members can have exclusive access to the observatory by paying the annual access fee of \$40 (plus a one-time key deposit of \$10). Also, if you use the observatory site and find it of value we have a voluntary support fee of \$10 that helps offset the cost of maintaining the site.

Canadian Tire Money: Do you have any Canadian Tire money lying around? Why not donate it to the Centre? We have collected about \$100 and use the money for the trees planted on the grounds, oil and gas for cutting the grass, chain lube for the dome and bug spray. Bring it along to any meeting and drop it off at the Treasurer's table and it will be put to good use.

THE SILENT SKY

Tonight I see a different sky,
a sky like that of days gone by.
No flashing lights, no airplanes fly.

There is no joy in this silent night,
as we contemplate our neighbours plight.
In humble silence I ponder this sight.

Never in my lifetime did I think,
not to see the airplanes blink.
Terror has caused my heart to sink.

In silence our ancestors saw the stars,
unhampered by lights of passing cars.
Tonight no joy in my view of Mars.

We long for dark and silent skies,
but not at the expense of innocent lives.
Conclude this night with saddened sighs.

Martha Pinch, 2001

Editor's Note: Martha is a former member (deceased) of the Windsor Centre who regularly provided poems for Aurora. I have reprinted "The Silent Sky" (one of my favourites) that Martha wrote following the September 11 attacks on the World Trade Centers.

MY UNIVERSE IS ALIVE

I wish I could walk on a beach
I wish I could walk on tall grass
Get lost in a myriad of stars
And listen to the windy night pass.

I wish I could count shooting stars
That fall to the ground every day.
I wish I could fly to the Moon,
Alone, for a wonderful stay.

I wish I could spiral the arms
Of Milky Way, blazing bright,
And fall in a mighty big cloud
Of dust, almost as black as night.

You know, stars have also a life,
They're born, live and die, just like us
So many stories they have to tell,
Explosions or dead nebulae?

I travel in space and in time
So see quasars, showing "the start"
My universe is smiling at me
My universe must have a heart!

Juliana Grigorescu, 2009

POLARIS ONE APRIL NIGHT AT HALLAM OBSERVATORY

Clear spaces midst clouds in cool air sky show vigilant stars
In a quiet country place near a road travelled on by few cars.
The telescope, guided by human and computer command,
Slewed to its next illuminated subject over the night darkened land.

Polaris, that old reliable steady star,
That guided many a mariner on ships to places far.
Perhaps despite its own onward rush in our Galaxy proceeding,
Its proximity to the sky's North Pole point is still receding.*

Through the eyepiece in magnified brightness and glare,
This arc white star causes me to ponder and stare.
With enhanced vision I feel closer to this light years distanced light,
I am encouraged at Hallam Observatory on this spring April night.

C. Joady Ulrich, 2009

* Joady provides the following note: Polaris is as of 2009 less than 1° from the true North Pole of the sky and the distance between them will continue to decrease until this star will be closest to that important point of reference in the year 2102 at 27' 31" away. The motion is due to the Earth's axis changing direction and therefore its position in space. Robert Burnham Jr., *Burnham's Celestial Handbook: An Observer's Guide to the Universe Beyond the Solar System*, vol. 3, Dover Publications, Inc., New York, 1978, page 2009.