



Regulus



The Newsletter of the Royal Astronomical Society of Canada – Kingston Centre — 2008 October

Coming up...

RASC-KC Meetings

Stirling Hall Theatre “A”, Bader Lane, Queen’s University
Kingston, Ontario.

Friday 10 October 7:30-9:30 pm

Friday 14 November 7:30-9:30

Meetings are co-sponsored by Queen’s Physics and include astronomy lectures open to the public.

KAON Public Observing:

Queen’s Observatory Ellis Hall, 4th floor from 7:30 pm to 9:30 pm

Saturday 11 October 7:30-9:30pm

Saturday 08 November 7:30-9:30

List of contents

Atomic Clocks

Neptune and moon Triton

Uranus and Moons

New Kingston URL

Earth’s Moon

Masthead

Buckhorn Observatory

Donations Wanted

Kingston Cosmic & Events

Calendar



It’s about time.

Photo by Kevin Kell

Kingston Centre of the Royal Astronomical Society of Canada

Box 1793 Kingston Ontario K7L 5J6

<http://kingston.rasc.ca/>

Infoline:613-377-6029

Email:kingston (at) rasc (dot). ca

"Atomic Clocks", Astronomy and You

Pretty well most astronomers know that many types of observing are contingent on accurate time... VERY accurate time! Years back we would set our wrist watches to the CBC time signal at 13:00 local time on Sundays. Then the internet came along and we tried setting our time based on that, but quickly discovered that computer clocks drift a lot. Regular old digital watches (much ballyhooed in Hitchhikers Guide to the Galaxy) also drifted over the course of a month, some of mine by as much as 5 minutes.

Finally technology caught up and introduced the concept of "atomic clocks". Not really atomic at all but rather a method of synchronizing a desktop clock to a radio frequency (60 kHz) time sync signal broadcast out of Fort Collins, Colorado. Atomic is a misnomer, so we will use the term "Radio clock". A good entry on this can be found at http://en.wikipedia.org/wiki/Radio_clock

Accurate timekeeping is necessary for occultation observations, although even for observing such things as Iridium Flares, which last only for a few seconds, better timing is needed.

We have two of these desktop variety Radio Clocks, one of which is about 6 years old and has failed and the other continues to work. We can't leave it in the observatory however, as ours is a metal shed and blocks the time signal.

So, for the last two years or more I have been searching for a wristwatch that receives these time signals, having seen one for sale about 8 years ago but never being able to find one. Success! The image shows a Casio Wave Captor model WV-59A that I found at the Napanee Wal-Mart store for only \$40. Better yet, it works! For over two weeks now I have checked the watch time daily against internet sources and radio sources. It has been keeping time to better than my ability to notice a difference (i.e. less than one second).

This has made a big difference in going outside to wait for an event and not knowing, within even a few minutes, as to what the time really is. Heard of the ancient Chinese philosopher Confucius, say: "Man with one watch always knows what time it is, man with two never does?" How many clocks do you have around?

Another big bonus feature is the world time function. With one button touch it switches over to UT time (aka London time). Very nice!

Recommended Purchase For Sure!

--

Kevin Kell, RASC-Kingston Centre President
kevin@starlightcascade.ca

Chairs: Equipment Loan Program, OAFTN, Observatory



19 Aug 08;
03:00:01 UT

Neptune at
centre with
its moon
Triton in the
8 o'clock
position.

NEPTUNE & TRITON

Neptune's moon Triton has an orbital period of 5.877 days. It is the largest of Neptune's 13 satellites. Triton, 354,800 km distant from its planet, was discovered by William Lassell in 1846.

16 Sept 08;
01: 46:38 UT

Neptune at
centre with
Triton facing
in an 11
o'clock
direction.



24 Sep 08;
00:16:28 UT

Neptune at
centre, with
Triton at the 7
o'clock
position.



NEPTUNE & TRITON

.Neptune is currently in the constellation Capricornus.



3 Oct 08;
23:42:29 UT

Neptune at
centre. Triton
is at the 10
o'clock
position.



30 July 08;
23: 35: 39 UT

Uranus is displayed at right centre, as are its moons Ariel, Umbriel, and Titania, all in line just south of Uranus at the 6 o'clock position. They are visible under increased magnification.

URANUS & SATELLITES

These two photos are separated in time by 29 hours, 56 minutes and 39 seconds, or nearly 30 hours. One of the moons in the first photo has gone halfway around Uranus by the time of the second photo. Since the orbital period of Uranian moon Ariel is listed on page 30 of RASC *Observers Handbook* as 2.520 days, (which is 60 hours and 48 minutes), it is reasonable to say that the moon traveling half an orbit in half that time is Ariel.

01 August 08;
05: 32: 18 UT

Uranus, the bright object at lower centre, has Ariel barely visible north of the planet, while Umbriel and Titania are aligned south of Uranus, diametrically opposite Ariel.



14 Aug 08;
00:51:56 UT

Uranus is right of centre. 13 days after the previous photo, Ariel and Titania align north of the planet, Umbriel is at the 8 o'clock position, and Oberon is diametrically opposite Ariel and Titania.



URANUS & SATELLITES

Uranus has 27 satellites, 22 of which were discovered in the last 22 years, and one other was discovered only 60 years ago by G. Kuiper, after whom the Kuiper Belt is named. The remaining four satellites, Ariel, Umbriel, Titania, and Oberon, are also the largest of the Uranian satellites. Their discovery is shared by only two people: William Lassell, a Liverpool brewmaster, who detected Ariel and Umbriel in 1846, and Sir William Herschel, British court astronomer to King George III. Herschel discovered Uranian moons Titania and Oberon in 1787, but he was made court astronomer in 1782 for his discovery of Uranus itself, in 1781.

Herschel went on to become the most famous astronomer of his time. In later life, he helped to found the Astronomical Society of London in 1820, but died two years later, before he could see that organisation receive a royal charter in 1832 and subsequently become known as the Royal Astronomical Society.

Herschel is credited with discovering infrared radiation. During 2009, the European Space Agency will launch the Herschel Space Observatory that will collect long-wavelength radiation from the coldest and most distant parts of the universe.

All photos of Uranus, Neptune, and their moons, and of Earth's moon, were taken using remote telescopes of Slooh.com. The telescopes are located in the Canary Islands.

URANUS & SATELLITES

9 Oct 08
00:19:49 UT

Uranus can be found at lower centre. Its moons Titania, Umbriel, and Ariel are in the 6 o'clock position.



A Reminder

Remember our new Web URL:
KINGSTON.RASC.CA

You can find us by typing in www.rasc.ca/kingston

but this is just a redirect that takes you to our web site. This new URL allows us to enhance our ability to communicate page information.

In the old days we would have to tell you to go to our web site, look for a link and click on it, then look for another link and click on it (i.e. go to www.rasc.ca/kingston, look for Committees and click on that, then look for IYA and click on that).

Now we can tell you to go to kingston.rasc.ca/iya

So, delete any old bookmarks you may have had and make a new one at kingston.rasc.ca Today!

Kevin Kell, RASC-Kingston Centre
President

[kevin\(at\)starlightcascade.ca](mailto:kevin(at)starlightcascade.ca)

Chairs: Equipment Loan Program, OAFTN,
Observatory

LEADING EDGE HOBBIES

We are proud to carry the complete
line of Sky-Watcher Telescopes.
Come by and see what we have
in stock today!



699 Gardiners Rd.
Kingston, ON

Tel: 613-389-4878

Toll Free: 866-389-4878

www.leadingedgehobbies.com



Earth's moon, in waxing gibbous phase. Prominent features are, clockwise from Mare Humorum with Crater Gassendion its northern rim at middle left, and Oceanus Procellarum above them. Kepler Crater is at top left, the large rayed crater Copernicus at top right, and Mare Nubium at lower right which contains Crater Bullialdus, The eastern shore of Mare Nubium contains crater Lassell, found inside the dark image of a seated scrawny-necked kitten, near its easternmost eye.



Regulus



The Newsletter of the Royal Astronomical Society of Canada – Kingston Centre — 2008 October

RASC-KC Board of Directors

President: Kevin Kell
 Vice President: Susan Gagnon
 Secretary: Steve Hart
 Treasurer: Kim Hay
 Librarian: David Maguire
 Editor: Joseph Benderavage
 National Council Rep: John Hurley
2007-2008 Committee Chairs/Coordinators:
Astronomy Day: vacant
Amateur Telescope Makers: Doug Angle
Awards: Kevin Kell
Banquet: vacant
Education: vacant
Equipment Loan: Kevin Kell
Fall 'N' Stars: vacant
KAON: Susan Gagnon
OAFN Instructors: Doug Angle, Brian Hunter
Observing: vacant
Publicity: vacant
Relay for Life: vacant
Responsible Lighting: Kim Hay
Sky Is the Limit: vacant
Webmaster: Walter MacDonald

The Royal Astronomical Society of Canada— Kingston Centre

Newsletter Submission Info:

I can take most common formats, although I prefer plain text. Pictures should be sent as image files in attachments separate from the articles. Please avoid the use of capitals, asterisks etc for formatting, as I use the publishing software's formats for this kind of emphasis.

E-mail: lbenderavage (at) sympatico (dot) ca
 Post: Joseph Benderavage, [edited] Kingston, Ontario,
 Canada K7M 4B7

2008 Publication Deadlines

For the month (Deadline)

November (October 24)
 December (November 28)

Subscriptions: Members of the Kingston Centre receive *Regulus* as a benefit of membership. Advertisements are free to members of the Centre. Commercial advertising should be in electronic format. Contributions are more than welcome. Submitted material may be edited for brevity or clarity. Copyright 2008 All rights reserved. Permission is granted to other publications of a similar nature to print material from *Regulus* provided that credit is given to the author and to *Regulus*. We would appreciate you letting us know if you do use material published in *Regulus*. Thanks to Angus Benderavage for technical assistance.

Buckhorn Observatory Posted to NASA Website

Hi everyone,

If you'd like a peek at what's up here at BHO, click up

<http://soho.nascom.nasa.gov/> <<http://soho.nascom.nasa.gov/>> and have a read.

Buckhorn Observatory is the featured spotlight observatory on their Website from now until mid-October. To say we're proud is probably the understatement of the century. Again, special thanks to Kim Hay and Kevin Kell of Starlight Cascade Observatory and the Kingston Branch of the RASC for recommending BHO. Yipeeee!

Clear skies from John and Deb.

Help Support your Centre Activities

Kim Hay, Treasurer

As in the past we have had support from our members for Centre projects by way of donations through renewing your membership from the National website.

The rules from the CRA have changed and centre donations are no longer accepted at the National level. If you are thinking of helping to support your centre for its projects, you must now do this by sending your donation directly to the Centre.

Do this at a centre meeting, or by mailing your donation to the Kingston Centre post office c/o Treasurer. Income tax receipts will be issued for donations over \$10.00.

If you have any questions about donations to the centre, ask me at one of our meetings, or by email at ([cdnspooky \(at\) persona.ca](mailto:cdnspooky@persona.ca))

Thank you to all who have donated to the Kingston Centre in the past.

<http://kingston.rasc.ca/donations.php>

Kingston Cosmic & Events Calendar, October—November 2008, by Joseph Benderavage

	<i>Date</i>	<i>Events</i>	<i>Local Time</i>	
OCTOBER	04	- Antares 0.1° N of Moon,	07:00	
	07	- <i>Jupiter</i> 2° N of Moon, 03:00; First Quarter,	05:04; Draconid meteors peak, 21:00	
	10	- <i>Neptune</i> 0.9° S of Moon,	06:00	
	10	- Regular Meeting Stirling Hall “A” 7:30-9:30 pm; P. Mortfield, “Remote Controlled Astrophotography”		
	11	- KAON Observing, Ellis Hall Queen’s Observatory <u>7:30-9:30 pm</u>		
	13	- Thanksgiving Day		
	14	- Full Moon (“Hunter’s Moon”),	16:02	
	17	- Moon 0.8° N of Pleides (M45),	07:00	
	21	- Last Quarter, 07:55; Orionid meteors peak at midnight (ZHR=20)		
	22	- Moon 0.9° S of Beehive (M44) at midnight; <i>Mercury</i> greatest elongation W (18°),	06:00	
NOVEMBER	23	- Regulus 1.9° N of Moon,	17:00	
	27	- Zodiacal Light readily visible in E. before morning twilight for next two weeks		
	28	- New Moon,	19:14	
	29	- Vesta at opposition (m=6.3)		
	31	- Antares 0.1° S of Moon,	14:00	
	PLANETS for October: <i>Mercury</i> : very low in ESE in morning twilight in second half of month; <i>Venus</i> : very low in SW in evening twilight; <i>Mars</i> : not easily observed; <i>Jupiter</i> : low in SSW after dark, sets in WSW in late evening; <i>Saturn</i> : rises in E near 4 am, low in ESE in morning twilight			
	02	- Daylight Savings Time ends,	02:00	
	03	- Crescent Moon 2.6° S of Jupiter,	19:00	
	04	- South Taurid meteors (ZHR=10),	23:00	
	06	- First Quarter Moon, 00:03; <i>Neptune</i> 1.1° S of Moon		
08	- KAON Observing, Ellis Hall Queen’s Observatory <u>7:30-9:30 pm</u>			
11	- N. Taurid meteors (ZHR=15),	23:00		
12	- <i>Venus</i> near M8, visible soon after dark			
13	- Full Moon, 02:17; Moon 1° E of the Pleiades, best in NE of N. America,	16:00		
14	- Annual General Meeting including Elections, and Regular Meeting , Stirling Hall “A” 7:30-9:30pm; Dan Falk will discuss his book, “In Search of Time.”			
14	- Moon at perigee (358 971km),	06:00, Large tides		
17	- Leonid meteors (ZHR=15),	05:00		
18	- <i>Venus</i> near M22 and M28, visible soon after dark			
19	- Last Quarter Moon,	17:31		
27	- New Moon,	12:55		
30	- <i>Venus</i> 2° S of <i>Jupiter</i> ,	20:00		
PLANETS for November: <i>Mercury</i> : very low in ESE in morning twilight in first week of month; <i>Venus</i> : at mag -4.2, will dominate the evening sky; very low in SW in evening twilight; <i>Mars</i> : not easily observed; <i>Jupiter</i> : very low in SW after dark, sets in WSW near 8 pm; <i>Saturn</i> : rises in E near 01:30, in SE at dawn.				