Regulus

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

Coming up…

RASC-KC Meetings

Stirling Hall Theatre ***"A",*** Baader Lane, Queen's University Kingston, Ontario.
Friday 11 January 7:30-9:30 pm
Friday 8 February 7:30-9:30 pm
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 12 January 7:30-9:30 pm
Saturday 9 February 7:30-9:30 pm

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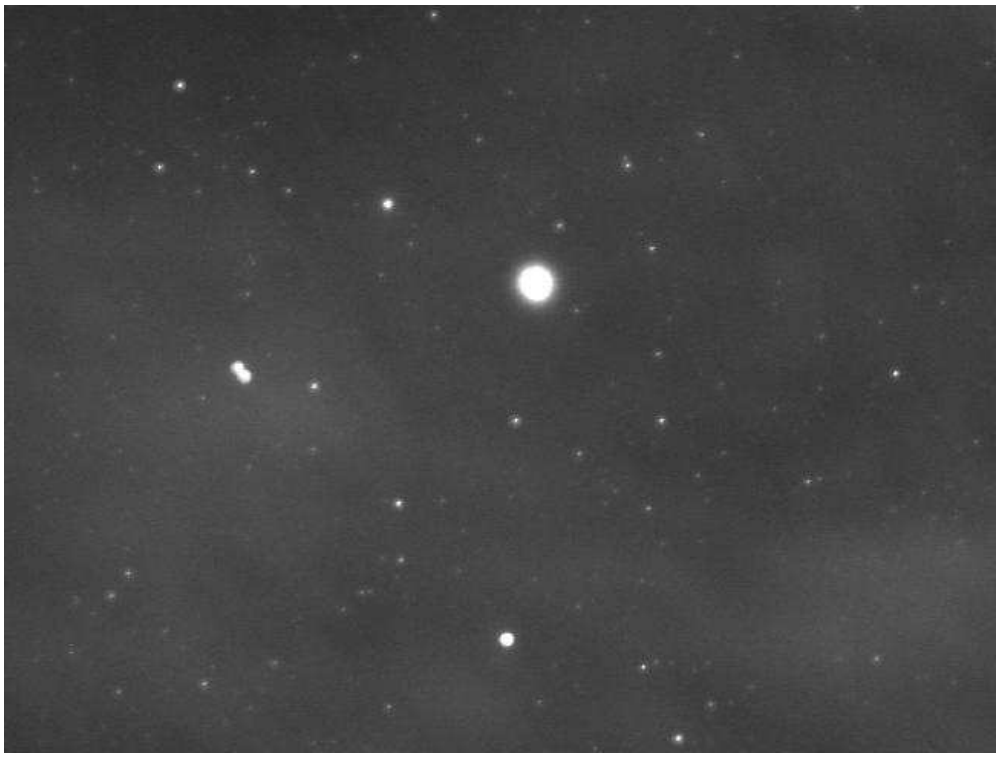

Bigger and Better Vegas

I attached an old Minolta camera lens to my deep sky imager pro, using an adaptor I purchased over the Internet, to get my images.

This allows me to get a wide field view. The field of view is at least 4 degree across. An area of sky around Vega was used in the test.

Using a *two-second capture,* I can see stars down to at least magnitude 8.

—See page 6 for further details

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President's Notes

2007 has passed into the veils of time and out pops 2008! Happy New Year!

This note is a little New Year Summary of past and future rolled into one. We've had our AGM back in November and the new Board of Directors was acclaimed. I'd like to thank again those outgoing Directors for their time and commitment to the RASC-KC.

The Age of the Internet continues to provide more astronomy-related resources to amateur astronomers and this in turn contributes to falling membership across the RASC. My thoughts are to realize this and move forward with interests and resources more relevant to members, such as public outreach activities, hardware, observing facilities, etc.

Low cost imports from China have pretty well killed Amateur Telescope Making in small (4") and mid-sized (8") telescopes, so our ATM group has moved onto larger projects like the 16" mirror.

Historic records are another item to be affected by technology. For instance, we do not publish on paper every issue of Regulus anymore, not for some years actually. Our new webmaster, Walter MacDonald, is a man with too much time on his hands, and has been working on adding old historic information to the web site (which is being archived off to DVD disks). Take some time to browse around the site; a *lot* of material is there.

We have a new Kingston Astronomy Outreach Network (KAON) coordinator in Susan Gagnon who will continue our public outreach work with the Queen's Physics, Engineering Physics and Astronomy (PEPA). We will miss Terry Bridges, the Queen's Observatory Director, who will be off to a new job in Australia in the spring. More information about the future of KAON will be forthcoming, although we fully expect it to continue.

Nationally, the RASC has raised fees yet again, up from $55 to $59 (plus the $5 RASC-KC surcharge). Hopefully this will be the last one needed to balance the "Cost of Membership" deficit that National Council seems to believe in.

The Kingston Centre continues to budget for and achieve balanced or near-balanced annual budgets and is in good health financially.

In closing, we continue to move along with our search for The RASC-KC Observatory Site (RASC-KCOS?), along with setting up the financial infrastructure necessary to build and operate it.

The General Assembly will be in Toronto this year, hosted at York University. More details can be found at http://www.rasc.ca/ga2008/

Any comments or suggestions are always welcome; drop an email to kingston (at) rasc.ca

Clear Skies for 2008!

Kevin Kell, President, RASC-KC

Regular Centre Meeting 14 December 2007

by Susan Gagnon

The meeting began at 7:30 with a welcome from our new president, Kevin Kell. Kevin introduced the new executive for 2008 and we got on with the meeting. Susan Gagnon provided a brief KAON report and announced that the next KAON session is January 12, 2007. There was also a report of a successful application for funds for KAON totaling $2750. The funds are just a small portion of money received by Queen's from Coca-Cola as part of an exclusivity contract. Terry Bridges and Kevin came up with a wish list, and the items they will concentrate on, considering the amount of the award, include: an LCD monitor, laptop, and signs. We hope that the new signs will put an end to the movement of the (feels like 500 lbs.) sandwich board from the warm room to the sidewalk, and back, for all public sessions.

Kevin presented some photos of area surrounding the observing deck that were taken by Hank at the last KAON session. There are a few examples of the new lighting in use even though construction around campus is far from complete. The most obvious improvements to date are parking area lights to the west, lower and full cut-off compared to the old cobra-style so common around town.

President Kell reported on features new to the Centre website. The Webmaster has added a column to the page which provides links to astronomy stories in the news as well as specific links to other pertinent astronomy organizations such as AAVSO. There is also a section that tallies what the recent top five hits on the site have been. Webmaster Walter MacDonald would also like feedback regarding what you would want to see added to the observing page.

Next on the meeting agenda was a short clip from a TV series called *The Universe,* a science-oriented show that talks about things astronomical. Kevin will donate DVD copies to the Library for loan.

Then there was a demonstration of SLOOH. It is a remote observing site set up in the Canary Islands that you can reserve time on and take photos. You can reserve your own target, or else accept the target that has been chosen by program operators. Time is purchased in five-minute slots for your target, but if you log in and look at what someone else has reserved time to look at, you are charged as well. There are a few bits of information surrounding the charges that are not obvious at the outset, but the whole idea is intriguing. The company has plans to add more telescopes in other locations.

Kevin Fetter showed two videos, including his own video of a rocket fuel dump that CBC had shown on *The National* earlier that week. Congratulations Kevin! His videos are showing up everywhere. The second video was the launch of an Atlas rocket used to put a Canadian Radarsat into orbit. This was from Kazakhstan.

Doug Angle told us about a week spent helping some of the Physics/Engineering students get a telescope made for a class assignment. Tusi Chowdray, a regular at KAON, was one of the students involved. During the course of this event Doug ran into Bernie Ziomkowics, the physics department man who knows where stuff is (along with other talents). He commented about interference filters being made for class projects, then being summarily disposed of. This caused a discussion among club members attending the meeting about what might be created and perhaps *not* disposed of. Furthermore, it was revealed that the department has a small chamber for aluminizing mirrors, up to and including eight-inch- diameter mirrors. That information generated even more interest among the membership.

A short respite followed. A raffle was held for wine (courtesy of John Pilon) and for two books donated by Tim Seitz and Kevin Kell. In all, $22 was raised.

After the break, Walter gave us a peek at an observing session that was running at his house while he attended the meeting. He delivered a short primer on how all of the software and hardware are integrated, to show how he manages these smooth running sessions while he is snug in his bed! Not only does he stay warm but he is able to max out his observing which appeals to us all when observing weather is at a premium.

The natural follow up to this was Observing Reports. Mark Kaye showed us pictures of the installation process for his new mount, which is verrrry smooth. The old mount was a Celestron Super Polaris with declination gears so very worn as to be unreliable. The new mount is a Losmandy G11, which can carry a heavier load than the Celestron. Brian Hunter produced a beautiful photo of Comet Holmes taken with a camera which he had heard was no good for astrophotography! Wow! It is a Pentax K100. Leslie also had great photos of comets.

The meeting ended at 9:57, longer than planned, since a goal for 2008 is to complete all meetings by 9:30.

KAON 8 DECEMBER 2007

by Susan Gagnon

December's KAON session saw great improvements regarding light pollution. There seemed to be a definite decrease in the overall glow about the observing deck. The sky was less than perfect but there are always things to see.

Thanks to all volunteers, RASCals: Kim, Hank, Steve, and Kevin Kell, who was our speaker for the night on "Another Martian Summer," which he presented to a packed house. On the Queen's University end of things we had Tusi, Amy, Jonathan and Melanie.

We had 47 visitors to the deck, and targets viewed were Andromeda, Alberio, the Pleiades, Orion Nebula, Hyades cluster, Mars, and a couple of us saw Comet Holmes with binoculars. It was far too diffuse to see in the telescopes.

Mars was a big hit, and most folks were stunned to see contrasting features on its surface through smaller 'scopes on the deck.

Several times there were momentary freak-outs when the green laser was used (always a crowd pleaser), and when birds flew by.

You can tell from the last few lines that the crowd in attendance is appreciative of staff efforts, and is easy to please. They love that someone gives their time to the effort, and many are return visitors. If you can aim a telescope or binoculars and point out a few constellations, please think about taking part in these nights. It can be a lot of fun and it all adds to our observing experience. Dress warmly. Remember

The World At Night web site
by Kevin Kell

I stumbled upon a great new visual astronomy web site called The World at Night.

http://www.twanight.org/

It is loosely affiliated with the APOD (Astronomy Picture of the Day) at http://antwrp.gsfc.nasa.gov/apod/ which is another must-not-miss site.

What is TWAN all about? From their pages:

"The World At Night (TWAN) is a new program to create and exhibit a collection of stunning photographs of the world's most beautiful and historic sites against a nighttime backdrop of stars, planets and celestial events. The eternally peaceful sky looks the same above all the landmarks and symbols of different nations and regions, attesting to the truly unified nature of Earth as a planet rather than an amalgam of human-designated territories. Those involved in global programs learn to see humanity as a family living together on a single planet amidst the vast ocean of our Universe. This global perspective motivates us to work for a better, more peaceful planet for all the world's inhabitants. TWAN is an innovative new approach to expanding this global perspective.

"TWAN photographs are being taken by the best night sky photographers around the world. The resulting collection will be presented in an international traveling exhibition and in a virtual exhibition on the TWAN web site. A book and a DVD of the images will also be published. Time-lapse digital photographs of the night sky that are being created at particular locations will be used in a high-quality documentary film of celestial motion over the planet's most important sites. TWAN is bringing together photographers, astronomers and organizations worldwide to create a new international team. That team will fulfill TWAN's primary goal of bringing to the public a new way of seeing the wonders of our planet by portraying Earth's people as one family and our world as a living planet we must care for."

Testing the Meade Deep Sky Imager Pro

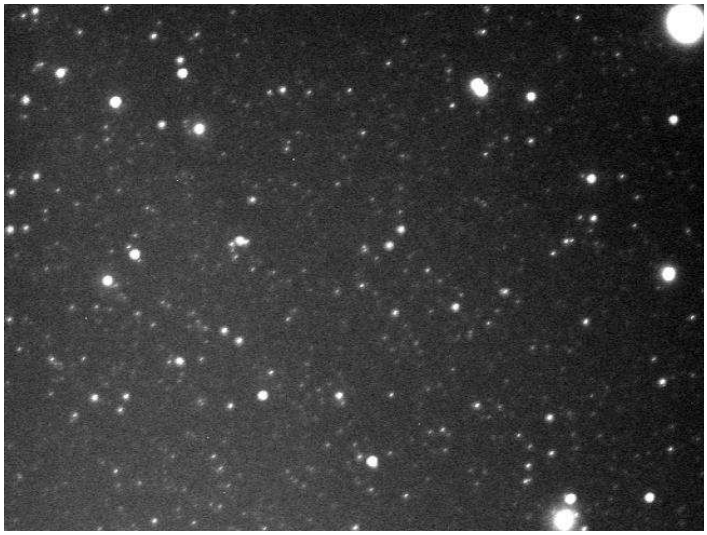
Finally, I got around to seeing how the Meade Deep Sky Imager Pro was. All I can say is wow ! This one being a mono (black and white) imager, is way way better then the one I donated to the centre.

I captured an eight-second-long image to see what was the faintest star I could see. I will post the image later.

But it looks good for using in satellite observing. That's the reason I got it, to look at high-up stuff, i.e. Geo satellites. Got some more playing around to do, but it looks good so far, for what I want to do with it.
—Kevin Fetter

Another Image Taken With Deep Sky Imager Pro

The page one photo can be seen at:
http://www.kfetter.com/meade/2sec.jpg



With an eight-second capture, stars down to the 10th magnitude I can spot. Vega is in the top right corner., and delta Lyr is the bright star at bottom right
http://www.kfetter.com/meade/8sec.jpg

So I am happy with these test results.

Now to play with it some more, such as attaching the camera to my Goto mount. Also I will have to attach the CCD camera to the end of the 4-inch scope. Might be awhile before that happens.
—Kevin Fetter

Target for Tonight, by Susan Gagnon

Aries
ETU: Hamal, Sheratan
Messier:
Finest NGC:
Levy List: 340 (NGC 1134)
Deep Sky Challenge: None

Pegasus
ETU: Markab.
Messier: M15.
Finest NGC: 7331.
Levy List: 38 (NGC 7753), 55 (NGC 7664), 247 (NGC 7217), 249 (NGC 7457), 276 (NGC 7814), 314 (NGC 7457).
DSC: NGC 7317-20, Jones 1 (PK104.2)

Triangulum
ETU: none
Messier: M33,
Finest NGC: 772
Levy List: 99 (NGC 949)
Deep Sky Challenge: none

Lacerta: no list items

David Levy's Asteroid Receives Special Status,
by Leo Enright

Of the half-dozen or so asteroids connected with members of the Royal Astronomical Society of Canada, Kingston Centre, one of them recently received a very special kind of recognition. It is, in fact, the asteroid named after our Honorary President, David Levy. Recent studies have revealed the singularly interesting fact that the asteroid connected with David's name has a satellite accompanying it in its orbit; in other words, it is a binary system.

As is most fitting for announcements regarding my friend, David, who is certainly one of the world's foremost amateur astronomers, the credit for this significant discovery rests also with an amateur astronomer. Between December 5th and December 9th, Don Pray of Greene, Rhode Island, in the U.S., used his CCD equipment and his 60 cm. f/4 reflector to conduct an intensive study on one of the main belt asteroids. It happened to be Minor Planet 3673, which in 1988 had been named 3673 Levy in David's honour. Mr. Pray's careful light-curve measurements of the asteroid's visual magnitude revealed several things. The magnitude was not absolutely steady; there was a tiny fluctuation of 0.13 magnitude – revealing that the object was rotating on its axis once every 2 hours 41.3 minutes. That was not all; there were further fluctuations that allowed Mr. Pray and a team of amateurs under the direction of Petr Pravec, an expert in the study of minor planets, who studied the data, to conclude that these fluctuations indicated a satellite was regularly passing in front of, and behind, the main object. The data shows that the "moonlet" is about 28% as large as the main object, and that it orbits the main object once every 21.6 hours.

In his prior studies of minor planets, Mr. Pray has noted that about 15 to 17% of his targeted objects are proving to be binary systems or "asteroids with satellites". Of course, future studies may or may not reveal if any more of the satellites associated with Kingston Centre are binary systems.

David was very pleasantly surprised to learn several weeks ago that 3673 Levy had its own little moon. It was a fitting accompaniment to the recent announcement that his current Star Trails column in *Sky and Telescope* magazine was his 20th anniversary column – an event that the magazine has marked with the publication of a book also called *Star Trails*. Congratulations for both announcements to my friend, and our Honorary President, David Levy.

After it finally cleared, I was able to Sat observe again. So nice... been over 2 weeks since the last time. December was a rotten month.

I found the following Geo sat's to be the brightest = easy to see on the tv.

Their satellite catalog number (norad number) is the number beside their names.

MC-12 (28526)
INTELSAT 1R (26608)
INTELSAT 805 (25371)
AMAZONAS (28393)
RAINBOW 1 (27852)
STAR ONE C1 (32293)
HORIZONS 2 (32390)
DIRECTV 3 (23598)
XM-3 (28626)
XM-1 (26761)
GALAXY 11 (26038)
DIRECTV 9S (29494)
ANIK F1 (26624)
ECHOSTAR 10 (28935)

Also observed 5 flashing Geo sats. The magnitude listed, is for the time I was observing them, so they're brighter or fainter than what's reported, when you observe them.

RADUGA 1-1 (20083) flashed to 9th magnitude every 84 seconds
SATCOM C4 (22096) flashed to 5th magnitude every 174 seconds
DIRECTV 2 (23192) flashed to 10th magnitude every 144 seconds
GORIZONT 26 (22041) flashed to 6th magnitude every 82 seconds
HOTBIRD 1 (23537) gave flashes under 8 mimutes apart, to the 9th magnitude.

—Kevin Fetter

--- Hank <rhaobservatory (at) persona.ca> wrote:

> So, would these flashes be off multiple surfaces?

For those I listed, I can't see that being the cause at this time.

The rotational speed of the satellite, makes more of a difference, I find.

Depending on the angle between you, the sun and sat, will determine how bright the flashes are.

So they flash brightly for a certain time, then fainter at another time.

There's one geo sat, where multiple surfaces produce a nice flash show. It's called DSP
http://en.wikipedia.org/wiki/Defense_Support_Program

While they're in service, then every 2.5 seconds you see a flash, thanks to the rotational speed of the satellite, and that it's got 4 solar panels.
http://www.kfetter.com/satvideo/other/USA197.wmv

Another one, in which multiple surfaces are noticeable is SYMPHONIE 2

http://www.skyrocket.de/space/doc_sdat/symphonie-1.htm

http://www.kfetter.com/satvideo/flashing-geosat/08132.wmv

—Kevin Fetter

Homing in on Holmes, by Kevin Kell

Today is Saturday? I lose track during the holidays...
Thursday night at 18:30 or so it cleared enough that we went out for a quick looksee and could see Comet P17 Holmes naked eye. It's still pretty big in binoculars as well.

We have yet to see Comet 8P Tuttle in Andromeda but hope to go out tonight when the clear sky clock says it will clear up a bit.

An Upcoming Asteroid

On Jan 29, 2008 an asteroid called 2007 TU24 will pass by.
http://ssd.jpl.nasa.gov/sbdb.cgi?sstr=2007TU24;orb=1

It is predicted to reach mag 11 or brighter.

—Kevin Fetter

Two Weeks of No Observing

Midnight of 29 December 2007, and it has now been 2 weeks since the last time a clear sky occurred on a night I am not working:(Oh where are you clear sky!

—Kevin Fetter

SLOOH NOOZ, by Kevin Fetter

One of the Slooh telescopes is out of use on the evening of 28 December 2007. Here is the message describing what had happened:

"We have lost our connection to the dome 1 hardware. The likely fault is one of the serial ports on the PC, or the controller card on the dome. Either way, a visit to the observatory will be required to fix it.

A maintenance trip has been scheduled and we will be operating on Dome 2 exclusively until repairs are made. Editor channel missions will be running on the working dome and member reservations are temporarily offline."

A Day in the Life of an Amateur Astronomer
Kevin Fetter: January 2, 2008

9:18 A.M.

Ah, now that's what I like to see, a clear blue sky. The satellite image looks good, so it looks like clear skies tonight. It's time to set up my gear, so I'll be all ready for tonight. Ah, be nice to observe the geo satellites again, plus other satellites.

6:14 P.M.

What the ****** hell! I woke up, and looked out the window and all I see is a cloudy sky! It *was* clear, less then 6 hours ago, when I went to sleep. They had called for a partly cloudy sky, yeah right. So much for observing tonight, it seems.

9:07 P.M.

--- Hank <rhaobservatory(at) personal.com> wrote:
> Totally spotless clear in Newburgh, [Ontario,] 8:30pm! Maybe it is coming your way.

* * * * *

That's good to know. Hopefully it gets here soon. So far, 3 hours of observing time I have lost tonight.

11:26 P.M.

The sky had gotten clear, after Hank's message. So I can now observe the Geo sats. Oh STAR ONE C1 (32293) you are oh so easy to see.
It was launched into orbit on November 14 2007. It's a new one I haven't looked at.

RASC-KC Board of Directors

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Observing: vacant
Publicity: vacant
Relay for Life: vacant
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Sky Is the Limit: vacant

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, 147 Braemar Road, Kingston, Ontario, Canada K7M 4B7

2008 Publication Deadlines

For the month	**(Deadline)**
February 2008	(January 25, 2008)
March 2008	(February 22, 2008)

Subscriptions: Members of the Kingston Centre receive Regulus as a benefit of membership. Advertisements are free to members of the Centre. Commercial advertising is $20/quarter, $40/half page, $100/ full page and should be in electronic format. Contributions are more than welcome. Submitted material may be edited for brevity or clarity.

Canadian space Agency Photo Contest

From http://www.space.gc.ca/asc/eng/astronomy/mars/contest.asp

Are you seeing red yet? Join the Canadian Space Agency in celebrating the Red Planet and our upcoming landing on this mysterious planet by entering our *Images of Mars* contest.

The CSA is inviting stargazers across the country to send in your best Martian snapshots and drawings. Upload your entry directly via the CSA website between January 9 and February 14, 2008. A panel of Canadian Space Agency judges will choose winners from three categories:

1. *Mars in the sky*: Mars as seen to the naked eye (without the use of telescopes or telephoto lenses)
2. *Mars as seen through a telescope or telephoto lenses* (any size, any type)
3. *Mars in my imagination*: original drawings of Mars, either as seen in the night sky or of the planet itself. Drawings can be done in crayon, pencil, ink, paint or digital drawings, but all submissions must be sent to the CSA in electronic format (jpg). Winners will be chosen from each of the following age groups: 6-8 years old; 9-12 years old; 13-15 years old; and 15-17 years old; 18 years and up.

Winners will see their entry posted on the Canadian Space Agency's website and will receive an exclusive Canadian Space Agency Phoenix backpack filled with space goodies, like a Canadian Space Agency baseball cap, stickers, "Maple Leaf on Mars" candies and a few other surprises!

So head outside this holiday season to get a glimpse of Mars, then send the CSA your best shot or artwork for the world to see!

Visit the webpage above for more details.

Kevin Kell

Kingston Cosmic & Events Calendar, **January— February 2008,** by Joseph Benderavage

*Date Events Time **(UT)***

JANUARY 2008

04- Quadrantid meteors (ZHR=120), 7:00
05- Venus 7° N of Moon 6:00; Antares 0.5° N of Moon, occultation at 10:00
07- Venus 6° N of Antares (38° W), 1:00
08- New Moon, 11:37.
10- Eunomia at opposition (m=8.1)
11- **Regular Meeting,** Stirling Hall "A" 7:30-9:30 pm local time. Speaker: Doug Angle: "Relativity, Black Holes & the Nature of Dark Matter."
11- Neptune 0.4° N of Moon, occultation at 1:00
12- ***KAON*** Observing Session- Ellis Hall Queen's Observatory 7:30-9:30 pm local time. For more info, visit http://130.15.144.99/rasc/Observing/kaon.php Speaker: Terry Bridges, "Helen Sawyer Hogg."
15- Moon at First Quarter, 19:46
18- Moon 1.1° N of the Pleiades, 7:00; *best in NW of N America*
19- Moon at perigee, 9:00; Moon 0.7° N of Mars 6 pm, local time; *best in NE of N. America*
20- Mars 1.1° S of Moon, occultation, 0:00
22- Mercury at greatest elongation E (19°); 5:00; Full Moon 13:35; Neptune 0.3° to left of Mercury visible telescopically soon after sunset; Moon 0.3° N of Beehive (M44), 23:00
23- Mercury at ascending node, and 0.3° N of Neptune (18° W), 4:00
24- Venus near M20 & M21 visible before sunrise, *best in S of N. America;* Regulus 0.7° N of Moon,15:00
27- Mercury at perihelion
30- Last Quarter Moon 5:03
31- Venus & Jupiter near M22 visible before sunrise, *best in S of N. America;* Moon at apogee, 4:00

PLANETS for January: ***Mercury*** very low in WSW in evening twilight, except early in month; ***Venus*** very low in SE in morning twilight; *Mars* in E after dark, sets in NW before dawn; ***Jupiter:*** very low in SE in morning twilight, late in month; ***Saturn*** rises in ENE in mid-evening, in WSW in morning twilight.

2008 FEBRUARY

01 - Venus 0.6° N. Of Jupiter (32° W), 12:00; Antares 0.6° N. of crescent Moon, 18:00.
04 - Jupiter 4° N. of Moon; 6:00; Venus 4° N. of Moon, 12:00
08 - **Regular Meeting** Stirling Hall "A" 7:30-9:30 pm. Members Night
09 - ***KAON*** Observing Session-Ellis Hall Queen's Observatory 7:30-9:30 pm. Spkr: Tara Parkins, "Irregular Galaxies: Outcasts of the Extragalactic Zoo."
14 - First Quarter Moon 3:33; Moon 1.2° N. of Pleiades (M45), 13:00
16 - Mars 1.6° S. of Moon, 8:00
19 - Moon 0.3° N. of Beehive (M44), 8.00
21 - Regulus 0.7° N. of Moon, 0:00; Full Moon**, total lunar eclipse**, **3:30 UT;** Saturn 3° N. of Moon 12:00
23 - **Zodiacal Light** visible in N. lat. for next 2 weeks after evening twilight
24 - Saturn at opposition, 10:00
26 - Mercury 1.3° N of Venus (27° W), 2:00
29 - Antares 0.6° N of Moon, 2:00; Last Quarter Moon, 2:18

PLANETS for February: ***Mercury*** very low in ESE in morning twilight, in second half of month; ***Venus*** is very low in SE in morning twilight; ***Mars:*** high in SE after dark, sets in NW near 4:00; ***Jupiter:*** very low in SE in morning twilight; ***Saturn:*** rises in ENE in evening twilight, low in W at dawn.

RASC *Observer's Handbook 2008,* beginning its second century of publication, contains more detailed information, & is available from our Treasurer or from http://www.store.rasc.ca/