



Regulus



The Newsletter of the Royal Astronomical Society of Canada – Kingston Centre — 2007 May

Coming up...

RASC-KC Meetings

Stirling Hall Theatre A, Baader Lane, Queen's University
Kingston, Ontario.

Regular Meetings:

May 11 Friday 7:30-10:00 pm

June 8 Friday 7:30-10:00 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 9:00 pm to 10:30 pm

May 12 Saturday 9–10:30 pm

June 9 Saturday 9–10:30 pm

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CYGNUS HILL OBSERVATORY by Fred Barrett

The present observatory is actually the Mark II version. A Mark I version was to feature a roll-on, roll-off building, but construction was halted after a 6' X 4' control room and a 12" pier were constructed. I too late realized that the building-on-wheels concept was overly complicated. Too bad I didn't start the "rolling building" part first....

The present Mark II observatory's location was pondered upon over two summers. It involved much standing on step ladders and horizon estimations. As well, the ground depth to bedrock, and soil firmness, were investigated. Construction started July 2003. Six holes were dug about 3' down to bedrock, and 8" sonotubes carefully placed on bedrock. Each sonotube base had to be carved to match the shape of the bedrock, and then braced sufficiently so as not to move when concrete was poured in. (*con't. page 7*)

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President's Tidbits by Kim Hay

Astronomy Day has come and gone, and it was a perfect day. The sun shone, great friends, lots of one on one, but more to come from Susan Gagnon, our Astronomy Day Coordinator.

Here is a picture of the group of volunteers for Astronomy Day:



(right to left: Frank Hitchens, Kevin Kell, Steve Hart, Susan Gagnon, Hank Bartlett, Leo Enright, Laura Gagne, Kim Hay)

and of Dr. Terry Bridges who will be our speaker at the May meeting:



As noted in our April Regulus, Arlyne Gillespie our past Vice President needed to resign and we were looking for a volunteer to come forward to fill the interim position. The board voted and has accepted Norman Welbanks to fill the position of interim Vice President. This position will be coming up for

election at the November Annual Meeting. Thank you Norm for coming forth.

The Centre has sent flowers to Arlyne, and a card signed by members of Kingston and Belleville. We are all thinking of you Arlyne!

We have a great summer coming up with speakers in May and June, and for July someone has come forth to do a talk/workshop on Astro-Imaging. Details are being worked out and will be available online shortly and at the next meeting.

June is also time for the RASC General Assembly, which is being held in Calgary this year. It is also co-sponsored with the AAVSO (<http://www.aavso.org/>) and ALPO (<http://www.lpl.arizona.edu/alpo/>). It will be a good time, to be able to interact with two other Astronomy groups that are experienced in their own fields. As Solar Coordinator, I will be presenting a presentation for the ALPO Solar Section.

A few members of the Kingston Centre have applied to present a poster at the GA this year, but at this time they have not heard back if accepted.

Keep in mind that in August, that Mark Kaye and Linda Santry will be hosting the annual BBQ but it will be Friday August 17, a week later than normal, due to Starfest being the weekend of August 10-12.

September 14-16 we will hold the Fall N Stars star party being co-hosted with RASC-Belleville and the Peterborough Astronomical Association (PAA). We hope the weather will be good, but if not, it's always a good time to get together with other astronomers and share information and stories. More information will be coming forward, but to keep yourself informed, check the web site for Fall N Stars by visiting www.rascbelleville.ca/fallnstars. There will always be information at the upcoming meetings.

I hope everyone has a great spring/summer of

Astronomy Day Report 2007, by Susan Gagnon

Well, you can't have it all. April 21, 2007, Astronomy Day, was a day of solar observing with no sunspots; however, we could see the sun, all day at that!

Terry Bridges showed up with the Queen's SolarMax (that's right, and she does not lend it to just anyone!) and the solar prominences were fabulous. This view, plus Leo's PST and a variety of other filters, added an interesting dimension to the observing, and we made the best of a "blank" situation.

Other targets were Venus and the Moon. As usual there were many visitors who were surprised to see anything other than the Sun that could be seen in a daytime sky.

We set up telescopes and displays at the Isabel Turner Library at 12:00 p.m. and there was a steady trickle of people to the 'scopes all day until we packed up at 5:00 p.m. Displays received a makeover this year with 6 posters very nicely mounted on foam core. You can view these on the web site in the education section. These will be a nice addition to our travelling road show.

There were many paper give-aways, including a big stack of the current issue of *SkyNews*, courtesy of Terry Dickinson. Previously-enjoyed magazine copies of *SkyNews*, and *Sky and Telescope*, also have been donated by members so that a full year of rudimentary charts can easily be supplied to an interested visitor. Other handouts focused on binocular observing, and purchasing a telescope.

There was a draw for three great door prizes: An Uproject backpack/equipment case (retail value \$100) donated by Linden Audiotronic was won by Ellen Symons; a copy of *NightWatch* contained within a lovely RASC observing tote bag went to David Hurley; and *Summer Stargazing*, also in a RASC tote bag, was won by the enigmatic Connor, who seems to go by a single name!

At 5 hours it was a very manageable day, and an important opportunity to do solar observing with the public. There was no evening session this year as we chose to promote the monthly Open House at Queens' Observatory.

This great day of astronomy outreach was made possible by the following folks: Kim Hay, Kevin Kell, Hank Bartlett, Steve Hart, Norm Welbanks, Leo Enright, Laura Gagne, Frank Hitchens, and Terry Bridges. Thanks also to supporting characters Paula Smith and Nancy Welbanks.

Astronomy Day Chair Susan Gagnon



Gleanings From *Regulus* of 25 Years Ago, by Leo Enright

The issue of *Regulus* that our members were reading in May 1982 was the April/May issue of that year, one that was subtitled "Special Astronomy Day '82 Issue." Astronomy Day was held on Saturday May 1st with our Centre having a display at the Frontenac Mall and a Public Star Night at Macdonald Park near the Murney Tower.

As editor I had received plenty of correspondence to be shared with the membership in that issue, and the introduction to that issue referred to correspondence from active members in four very widely separated parts of the continent. Those letters had come from Swanton, Maryland, from Tucson, Arizona, from Calgary, Alberta, and from Peterborough, Ontario.

The correspondence from our member, Warren Morris on, an outstanding observer in the Peterborough area, was in reply to the contest I had announced in the previous issue of *Regulus*—a competition to see who could discover an error in the current issue of our Society's *Observer's Handbook*. (It could be any kind of error: an error of fact, a violation of an established convention, or even a spelling mistake. It had been something that I had done previously in order to encourage all members to scrutinize, and effectively use, the "Society's bible" in learning more about observing and in planning their observing sessions.) Warren's letter, on the second page of the newsletter, pointed out that he had noticed that the charts for the paths for Uranus (page 96) and Neptune (page 98) showed "each planet about a half a degree too far east on any given date." He had noted that this was evident from his own observations and from comparing with the maps published in *Sky and Telescope* magazine. He recognized that in preparing the *Handbook*, planetary coordinates given for epoch 1982 had been plotted on a star chart whose coordinates were for epoch 1950.0. Warren thoughtfully pointed out for us that knowing this fact would make it easier for our members who wished to observe these two planets in 1982. As an editorial addendum to the letter, I pointed out that Dr. Roy Bishop had informed the wider (world-wide) astronomical community of this error, in a letter of his that appeared in the March issue of *Sky and Telescope* magazine.

I was pleased to announce that Warren was the winner of the small prize that had been offered for the competition. I, myself, had also noted the error Warren found, and I had found five other very slight errors or inconsistencies which I explained in the article which was entitled "The Handbook Was Scrutinized." One of the errors was the listing of two of the Jovian moons, Sinope, discovered in 1914, and Carme, discovered in 1938, with the Roman numeral "XI," whereas the former should have had "IX," being the ninth Jovian satellite discovered. Two other errors I had detected were in the spelling of the word Tethys for the two Saturnian moons that had been recently discovered to be co-orbital with the moon Tethys, and their misplacement in the order of the Saturnian moons on the list. (Those two moons have been subsequently renamed; they are no longer called Tethys A and Tethys B, but rather Telesto and Calypso.)

The letter from Gus Johnson near Swanton, Maryland reported on his observations at various times in the previous winter. He also sent along two AAVSO charts for areas of the constellation Monoceros, and pointed out that R Mon was the first object photographed by what was then called "the 200-inch reflector," and the nearby Christmas Tree Cluster (which we now call Levy 159) "contains the Cone Nebula, or as some call it, 'The

Madonna and Child'." His advice was: "It is worth seeking on a very clear night. There is dim nebulosity in the area." [I still maintain a correspondence with Gus Johnson, who remains to this day a highly recognized and active observational astronomer.]

The correspondence from Alberta was from Paul Brown who had long been an active member of the Kingston Centre but who, in the year or so previously, had moved to Calgary with his wife Elwyn. The letter mentioned the arrival of their first daughter, Lindsay Erin Brown. The editorial comment was that she would be, according to our calculations, eligible for youth membership until about the year 2000, but the year 2000 seemed to be a long way in the future. [I still maintain contact with Paul and Elwyn; we exchange Christmas cards, if not a little more information at that time of year.]

In a special section called "Tucson Report," David Levy reported on the recent activities of what, in those days, was called The Tucson Branch of The Kingston Centre. David had been working on his book on observing variable stars. He reported on what other members had been doing in the recent past. One of them, Jim Scotti, had visited the Smithsonian's Air and Space Museum in Washington at the same time that Peter Jedicke of the London Centre had been doing the same thing. In their conversations, David speculated that Peter had probably tried to convince Jim that he should transfer from Kingston to London Centre. Jokingly, David stated: "Imagine a rivalry between two RASC Centres to see who can get the most Tucson members!" David also mentioned an upcoming meeting of the Tucson Branch at Jarnac Observatory (his own site, called after his "original observatory in the Gatineau northeast of Ottawa") in conjunction with the Astronomical Society of Albuquerque, N.M.

A look at the speaker's list for April and May of 1982 would be an occasion for envy by the executive of any Centre in the country. On April 2nd we had our honorary president, Dr. A. Vibert Douglas speaking on the topic "Astronomy In The Bible"; it was an excellent presentation. On April 16th, the National President and recognized authority on meteorites in Canada, Dr. Ian Halliday, spoke to us on the topic "Meteorites." On April 30th, the recognized mathematician and former RMC calculus and navigation instructor, Terry Hicks, delivered his talk on "Determining Latitude." Imagine, if you can, three talks of that calibre in one month!!!! For May we had the London-Kingston Centre Speaker Exchange lined up, and Peter Jedicke was scheduled to be the speaker in Kingston on May 18th. As usually happened in those days, I was able to make the trip to London to give a talk to the London Centre.

Once again, a glance through *Regulus* of 25 years ago demonstrates what a vibrant group of individuals we had working together in this Centre "for the advancement of astronomy and the allied sciences."

OBSERVING LPV STARS, by Walter MacDonald
(Part 3 of a 4-part series)

A Little Help, Please!

Choosing stars for the first time can be a daunting challenge. Fortunately AAVSO's "Bulletin" and its chart-download page make this quite easy! (Before Internet, observers had to request a chart catalogue by mail, and then had to order charts by mail—and they had to pay for charts! Now anyone can use the AAVSO web site and download not only Bulletins, but as many charts as they like—free!)

A few lines of a Bulletin are shown in Figure One, at the right-hand edge of this page. You see on the first line, headings run from January of one year to February of the next, 14 months total. Bulletin 69 for 2006 thus covers the period from January 2006 to February 2007, and it contains predictions on 562 stars in total.

"DESIGN." is the designation of the star. For Y Per, "0320+43" means the star is near RA 03h 20m and dec. +43 degrees. "RANGE" gives maximum and minimum brightness of the star. Already, you have an idea of the brightness of the star, and where it is in the sky, so you can use this information to narrow down your choices of star. Between the "NAME" and "RANGE" of certain stars you may notice some symbols: # & @. These denote stars that have more urgent need for observations, but these stars are often more difficult to observe, so they are best left to more experienced observers. As Elizabeth Waagen put it:

"The symbols #, &, and @ indicate increasing levels of 'neediness' of observations, that is, a shortage of observations (# needs, & urgently needs, @ very urgently needs observations). They don't imply neediness at a particular phase [brightness] necessarily, but overall neediness (however, almost all stars could use more positive observations at minimum)."

"How to incorporate the #/&/@ symbols in planning your observing? If you are a novice, I recommend you leave the & and @ stars to more experienced observers for a while, since these stars usually are difficult to observe for one or more reasons, and maybe pass on the # stars for your first year while you learn the ropes and train your eye and brain. If you are experienced, I urge you to adopt some of these needy stars and KEEP them in your program--they will become old friends who only take a little time to check in on 2-3 times a month, and who will repay you by teaching all of us how they behave and how they will evolve."

Here, you could use ECU or some similar program to see if the variable is in an "easy" part of the sky, and you could download an AAVSO chart to see if the field looks easy to observe once you get there. AAVSO has different chart scales available, such as B, C, D, E, F, G. "B" charts cover the most sky, giving a degree or so field of view, and are most useful for finding a variable's field. Smaller scale charts C, D, E, etc. show smaller fields of view, but fainter stars, so they are useful for faint variables. Chart format (e.g. GIF, JPG, PS) is given in brackets after the chart scale on the AAVSO's chart download page. Other than this general info on chart scales, experience is the best teacher! Your own preferences will depend on telescope size, and the brightness of your chosen stars.

—Next Issue: THE BULLETIN DECODED

DESIGN.	NAME	RANGE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB
0320+43	Y Per	<8.4-10.3>	+++ 3M	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
0133+38	Y And #	<9.2-14.2>	+++++		-----1m	-----	+++++	+++++11M	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++16M+

Figure One: A sample portion of AAVSO Bulletin 69 for 2006/7. AAVSO's web page for the Bulletin is at <http://www.aavso.org/publications/bulletin/>

Observing on May 5-6, by Kevin Kell

Nice night for a change; first time I have been out in a while. We spent about three hours outside tonight, prepping, getting scopes out into position. Kim worked on her ETU to track down some pesky double stars. I roamed around the universe, checking out Saturn at x48 and x133. Couldn't make out the Cassini division but did see the planet shadow on the backside rings. The moons Titan and Rhea were clearly visible as well. Our SQM reading around 23:00 was 21.17. Seeing was good, transparency was good, but there was a good stiff wind from the north with a temperature of 7 deg C.

M7 The Ring Nebula showed up nicely even though it was low in the northeast. Here it is 23:23 and Venus is still up and looking like an aircraft landing light. Jupiter rose about 30 minutes ago, but low over Kingston from where we are. Haven't identified it yet.

The moon doesn't come up for another 30 minutes but it has been a long day and this old astronomer just can't make it outside as long as he used to, even though the black flies have all gone to sleep. They have been pretty bad the last week in the mid-late afternoon and early evening.

Hope some of you were out tonight. The Clear Sky Clock looks pretty good for Sunday night as well.

What else was out tonight? Corvus was nice in the south. I'll remember that constellation forever as it was where I took my only b & w photo of comet Halley back in 1986.

Orion was already down at twilight. Yay, Summer is coming!
—Kevin Kell at Starlight Cascade

Observatory and Gardens

Also Observing on May 5-6, by Kim Hay

On a side note from this, as I was looking for one of the "pesky" doubles in Draco on the *Starry Night*, it showed comet Lovejoy. So I spent half an hour seeking this lovely comet before the moon came up.

Though I tried hard, I could not find it; I was in the right location, so either the magnitudes were wrong in *Starry Night*, or it was a lot further along from the night sky map I was looking at. *Starry Night* had it pegged at 9.2 mag, easy enough in the telescope. Tonight, with better charts in hand I will attempt to find it again. It is in Draco, so look east.

So go out tonight and try to find it. Has anyone else seen it at night, and not as a pre-dawn comet? As for the nap, yes, very good indeed. On Kevin's last

attempt to finally come and see if I was coming in, the moon had risen, and the sky had dropped in magnitudes from 21.62 (when I took a reading) to 20.42, and the sky was totally falling apart.

Lots of meteors, lots of satellites, and lots of great seeing.

—Kim

Daytime Observing on May 6, by Susan Gagnon

> Lots of meteors, lots of satellites, and lots of great seeing.

Yes, Yes and Yes! I found that I was seeing so many bino and 'scope fields that it really did seem like a bumper crop.

Today I was doing solar, after which I park in a lounge chair in the shadow of the west wall and look for Venus. I find that it is easy in the clear sky with the binocs to do the focusing for you but it was impossible naked eye.

Then with no clouds to aid in this department I decided to make those fast swimming zigzaggy things (that you see when you stare up at a blue sky) work for me. Viola! I turned my gaze to the area where Venus should be and focused on the swimmers, and Venus came into view. By the way these are not "floaters" which are not good to have in huge numbers, these are supposedly good to see.

Not a Venus fly trap but something else.

—Susan

Solar Observation on 6 May 2007, by Hank Bartlett

There was a lot of prominence activity, at least 8 of them, the attached image shows 6. The two at 7:30 were actually bridged together but it doesn't show well in the image. I guess I will have to get a better imaging system now.



CYGNUS HILL OBSERVATORY (con't from page 1)

The floor had to be 2' above ground because the ground was rocky, sloped and uneven. Also, each sonotube top had to be level with all the others, be perfectly vertical, and be exactly placed with respect to the others. This job took a few days!

I blundered in my measurements to align the observatory with the North Pole. I used a compass!! This error I discovered months later when I was polar-aligning my scope and it didn't line up with the base line of the observatory. Whoops!

I decided to divide the building into two rooms. One room would be an office/control room 4' X 8' in size. A separate observing area would be 8' X 8'. Now I'll tell you about the next blunder, a very fortuitous one, as it turned out. I decided to put in a full size door for the entrance. After I did this, I discovered that the walls ended up so high, the only observing that could be done was straight up! Now the fortuitous fix: raise the observing area floor by 2'; add stairs for access from the office; and extend the pier an appropriate amount. It was a lot of extra work, but I did end up with more horizon, and a 2' high storage area under the observing area floor.

The pier was a complicated piece of work. It is 12" in diam. with a 6" diam. hollow centre filled with sand. Four half-inch reinforcing bars run up from bedrock through the concrete portion. Also, there are two copper pipes that run through the concrete down to bedrock. There, they coil along the bedrock and come up at ground level at a corner of the observatory. There will be a reservoir and pump placed there eventually to provide coolant for cameras. Mixing concrete and shoveling it into the space between the 12" and 6" sonotubes, ascertaining the mix was uniform, and making sure the whole construct didn't fall

over, wasn't easy. I couldn't have done a lot of the observatory work without the help of a good friend, Bob Hillier, from the Ottawa RASC. The result was a success. The pier is about 11' from bedrock to telescope mount with roughly 1500 lbs. of rock and concrete around its base; not going anywhere!

The roof has 6 grooved wheels riding on angle iron, angle side up. It's a very smooth ride and plywood extends down the side of the edge of the roof to cover and protect the roof railway from snow and rain. There has never been as much as a drop of rain penetrate the interior and I believe that there is probably a slight positive pressure inside. The south wall is lower than the other walls, and two plywood flaps that flip up and down are held in place with bungee cords to cover that area. There are folding shelves in the interior of the observing area for maps and references, and the office area boasts a picture window facing east. Four L-shaped hooks (fence gate hinges) slide into "O" rings when the roof is closed, to guard against it flying away, but it's a heavy roof and has a low silhouette, so that's unlikely. The horizon from northwest to southeast is flat; southeast to southwest is 20 degrees, and southwest to northwest is 15 degrees. My darkness scale is 3 on the Bortle scale.

Major construction ended by late fall 2003. Summer 2004 was spent fine tuning, and an official dedication party was held September 11; Leo Enright was official Skyguide for some 30 attendees. It was a perfectly clear evening, LM 5.6, no moon. The Milky Way cast a shadow.

Get in touch if you want to come out to observe. There's a Clear Sky clock available for Cygnus Hill Observatory.

On 28 April 2007, Arlyne Gillespie sent this E-mail:

Dear fellow stargazers,

I want to thank you so much for the wonderful card with so many encouraging messages as well as the gorgeous bouquet of flowers. It is so big and so beautiful it draws comments from all who come to visit.

Enjoy every clear night! One never knows when the opportunity will no longer be there. But I do hope to be back for some of that wonderful summer stargazing.

Take care, and thanks again for the encouragement and the beautiful flowers.

A window star gazer,
Arlyne

The Comet Lovejoy —by Walter MacDonald

I had intended to go out for the moonless period on Sunday/Monday, May 6/7 but was tired and slept through it. I did finally go out for a quick session with the 17.5" from 01:25 to 02:20. There was no wind and no dew. The temperature was quite pleasant (Ottawa airport reported a 2am temperature of +9C!).

I started out by observing T CrB which was not in outburst. Then I found Comet Lovejoy in the head of Draco (thanks for reminding me Kim!), right where it is supposed to be! It was rather diffuse and I could see some nuclear condensation with the 13mm Nagler (my favourite eyepiece!). All in all, a respectable comet for one of that magnitude (ECU reports it as mag 9.3). I could see a little glow from the moon by this time through some thin cloud hugging the horizon. Carrying on, I next observed DO Draconis at 14th mag -- not quite at its "bottom". I wonder if it is getting ready to do something? To end the session I decided to return to Comet Lovejoy. The sky was noticeably brighter by this time, and I could see the moon reflecting off the windows of the house. Alas, I was unable to find Lovejoy a second time, but such is the fate of diffuse comets!

Of course the dome was running all this time, on its 5th consecutive night of imaging! May is shaping up to be quite a nice month!

Walter MacDonald II [MDW]

Robodome Report, by Kevin Kell

At Starlight Cascade, the Allsky Continuous Camera (sco-concam) stopped running a few days ago, so it and the server running it were shut down for a rest. The computer's warmbox was renovated to allow more venting for the upcoming summer heat, and for better cable management. Started it back up and-- presto!--the concam came back as well.

This is a P4-1700MHz winXP system running with 512mb and a 10 GB drive running SBIG's CCDOPs with an SBIG ST237A parallel port CCD camera. There is a PS/2 keyboard and mouse attached to it but they are tucked away inside the warmbox along with the power bar, and SBIG camera controller, in case the observatory springs a leak or the roof blows off again! :)

We normally access and control the server using built-in Microsoft Remote Desktop, which we find much more responsive than our previous choice, UltraVNC. UltraVNC peaked the CPU at 100% and was very slow and unresponsive at the best of times, and this over a 100mbps network link.

The Robodome server was replaced with another donated hardware piece. It was a P3-733 MHz, and is now a P4-1700 MHz with 756mb RAM, two 20GB drives running under WinXP. But the old drive/operating system would not migrate over to the new motherboard, and the operating system had to be completely reinstalled. We are also starting the process of reinstalling all associated Robodome software. So far the ASCOM drivers are loaded along with Digital DomeWorks. We have control of the dome. To follow soon are the ACP, SBIG, Maxim and other software.

The Robodome warmbox was also renovated to provide better summer ventilation along with better cable management. The Robodome system also has a PS/2 and mouse stored inside the warmbox along with the APC UPS which the Technical Innovations Robodome itself is plugged into. The Robodome server is not plugged into the UPS, with the idea that if the power goes out, the computer turns off and the Robodome AI notices this and shuts down the telescope, camera, rotates to the home position and closes the shutter all by itself.

Finally, the system that we use for ourselves when out observing also had its warmbox renovated with the same vents and cable management updates. It gets primarily used for stary night and satellite pass predictions along with AAVSO Chat.

One of these days I'd like to find a Kill-A-Watt meter and just sit down to see how much power these things are really pulling down. Their power supplies are rated for 250 or 300 watts but that is usually peak demand only. They are not running SETI@HOME and so are normally quiet through the day. Assuming all three work 12 hours each night at 100 watts that gives us 3.6kwh each day and 108kwh each month @ \$0.15/kwh is about \$16/month.

Not too bad. Maybe we'll add in some other power saving configurations, like spinning down the hard drives after an hour or doing nothing.

The Starlight Cascade weather page has been updated. We now show two other weather stations located near Napanee on the page as well. <http://starlightcascade.ca/weather>

Clear Skies (are coming soon...sez the clear sky clock!)

Kevin Kell at Starlight Cascade Observatory
and Gardens outside Yarker Ontario Canada

RASC-KC Board of Directors

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 OAFTN Instructor: Kevin Kell
 Observing : TBA
 Publicity : Peter McMahan
 Relay for Life: TBA
 Responsible Lighting: Kim Hay
 Sky Is the Limit: TBA

Sky & Telescope Club Program Changes

We have been notified of some changes Sky Publishing is making to its Club Program discount subscriptions to *Sky & Telescope* Magazine.

Typically we are charged \$40 US for a one year subscription, which is about \$10 better than the regular price. In this \$1.00 US = \$0.90 Can environment, this is about \$45 Can. At 85 cent exchange, it is about \$50 Can.

1) If you are a NEW subscriber, you still go through the Treasurer to subscribe, or if you are renewing outside of the Club Program and want to join it.

2) For all other existing Club Program subscribers, you can now renew directly yourself without going through the RASC-KC treasurer. You can either mail your renewal directly in with payment, or telephone a toll number with credit card.

This will eliminate any delays by an extra middleman in the system (me) in getting your renewal processed.

How will Sky Publishing know that you are still a member in good standing? They will continue to communicate with me regularly to verify subscribers are still RASC-KC members.

For questions please ask at: kingston@rasc.ca
 —Kevin Kell, RASC-KC Treasurer

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](mailto:lbenderavage@sympatico.ca)

Post:

2007 Publication Deadlines

For the month (Deadline)

June (May 25)

July (June 22)

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. Copyright 2007 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*.

With Gratitude: Thank you, writers and image-makers, for submitted material, and to Angus Benderavage for technical formatting assistance.

***** SolObs 2007/05/01 6:22:27 AM

Solar data from: HAYK Kim Hay

For the month of: April 2007

Instrument: SCT Method: Direct Filter: 1000 Oaks Solar Filter

Aperture: 100 mm EP: 26 mm plossel

/ Day / seeing / UT / g / s / W / ng / sg / ns / ss / Obs.

|Remarks

11	E	1140	0	0	0	0	0	0	0	HAYK
18	POOR	2110	0	0	0	0	0	0	0	HAYK
19	E	1615	0	0	0	0	0	0	0	HAYK
20	E	1620	0	0	0	0	0	0	0	HAYK
21	FAIR	1630	0	0	0	0	0	0	0	HAYK
22	E	1700	0	0	0	0	0	0	0	HAYK
24	FAIR	1610	0	0	0	0	0	0	0	HAYK
25	FAIR	2055	1	2	12	1	0	2	0	HAYK

AR10953

29	FAIR	1748	2	9	29	2	0	9	0	HAYK
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AR10953 AND AR10954

30	POOR	1633	2	6	26	2	0	6	0	HAYK
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AR10953 AND AR10954

Key:

UT=time in UT

g=groups

s=spots

ng=north groups

sg=south groups

ns= north spots

ss= south spots

Obs= and comments or observations

W= Wolf Number (Total groups plus spots) (R= Relative sunspot number=# of groups x 10 + spots)

44.3775N 76.7633W 144m

<http://www.starlightcascade.ca/>

Kingston & Cosmic Events Calendar, May & June 2007, by Kim Hay*Date & Time* *Events*

May 2 Wednesday Full Moon 6:09

May 5 Saturday n-Aquarid Meteor Peak 7 am

May 9 Wednesday Venus 1.6° of M35, visible after Dark

May 10 Thursday Last Quarter Moon 0:27

May 11 Friday Guest Speaker: Dr. Terry Bridges Topic: "Extrasolar Planets: from Hot Jupiters to Earth-like Systems" and Member's Speaker Susan Gagnon; Stirling Hall, Theatre "A," 7:30 p.m.

May 12 Saturday KAON Observing Session Ellis Hall Queen's Observatory 9:00-10:30p.m. For more information visit <http://130.15.144.99/rasc/Observing/kaon.php> ** Note New Time **

May 16 Wednesday New Moon 15:27

May 19 Saturday Crescent Moon 1°N of Venus 11 pm

May 23 Wednesday First Quarter Moon 17:03

May 31 Thursday Full Moon or "Blue" Moon (Second Full Moon within the same month) 21:04

Brightest Planets: Jupiter rises in ESE at dusk, in SSW at dawn, Saturn in WSW after dark, sets near 2:00 am.

June 2 Saturday Mercury at greatest elongation E (23°); favourable evening view, as well as the past week

June 5 Tuesday Jupiter at opposition

June 8 Friday Last Quarter Moon (7:43)

June 8 Friday Regular Meeting Guest Speaker: Mark Coady from PAA Topic "Reclaiming Our Night Skies: Fighting Light Pollution"

June 8 Friday Venus at greatest elongation e (45°)

June 9 Saturday KAON Observing Session, Ellis Hall Queen's Observatory ** 9:00-10:30 p.m. For more information visit <http://130.15.144.99/rasc/Observing/kaon.php> ** Note New Time **

June 12 Tuesday Venus 1° N of M44, visible soon after dark

June 14 Thursday New Moon 23:13

June 18 Monday Moon occults Venus in daylight visible in parts of the NE of N.America (9:00 am)

June 18 Monday Crescent moon between Saturn and Venus 8:00 pm

June 19 Pluto at opposition- Crescent moon occults Regulus, visible in parts of SW of N.America (10:00pm)

June 21 Thursday Summer Solstice 2:06 pm

June 22 Friday First Quarter moon

June 28-July 3 Thursday to Tuesday- RASC General Assembly in Calgary, joint event with AAVSO <http://www.aavso.org/> and ALPO <http://www.lpl.arizona.edu/alpo/>

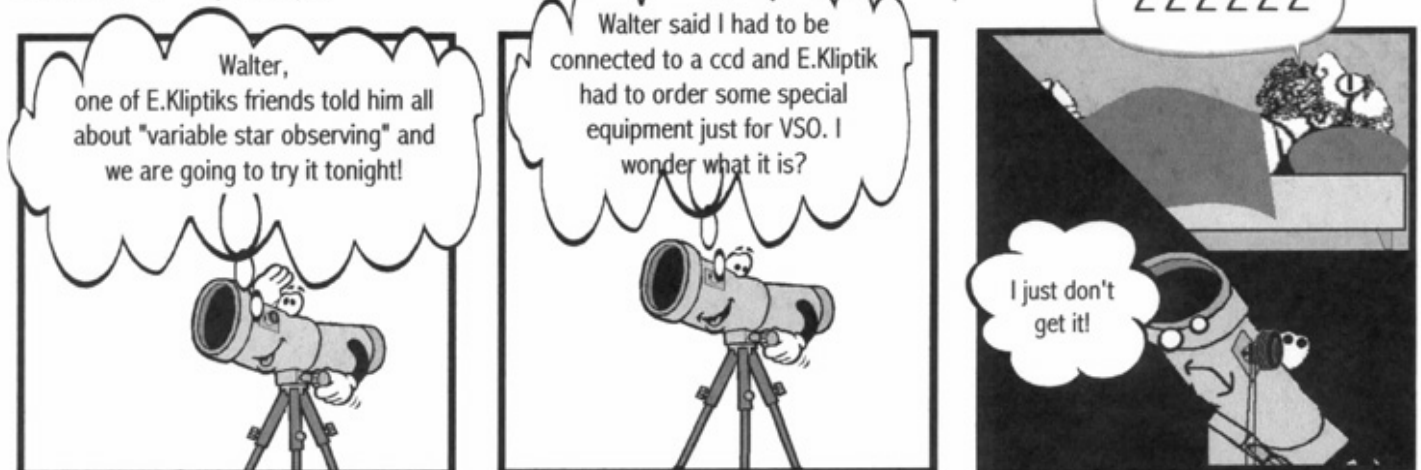
June 28 Thursday Moon 1.3° S of Antares best in W of N.America 4:00 am

June 30 Saturday Full Moon 9:49

June 30 Saturday Venus 0.7° below Saturn, visible in evening twilight

For more detailed information, please refer to the RASC 2007 Calendar, and the RASC 2007 Observers Handbook. Available from our Treasurer or <http://www.store.rasc.ca/>**NEWT**

by E. Kliptik



Some characters in this cartoon are adapted from The Print Shop Ensemble III