



Regulus



The Newsletter of the RASC Kingston Centre

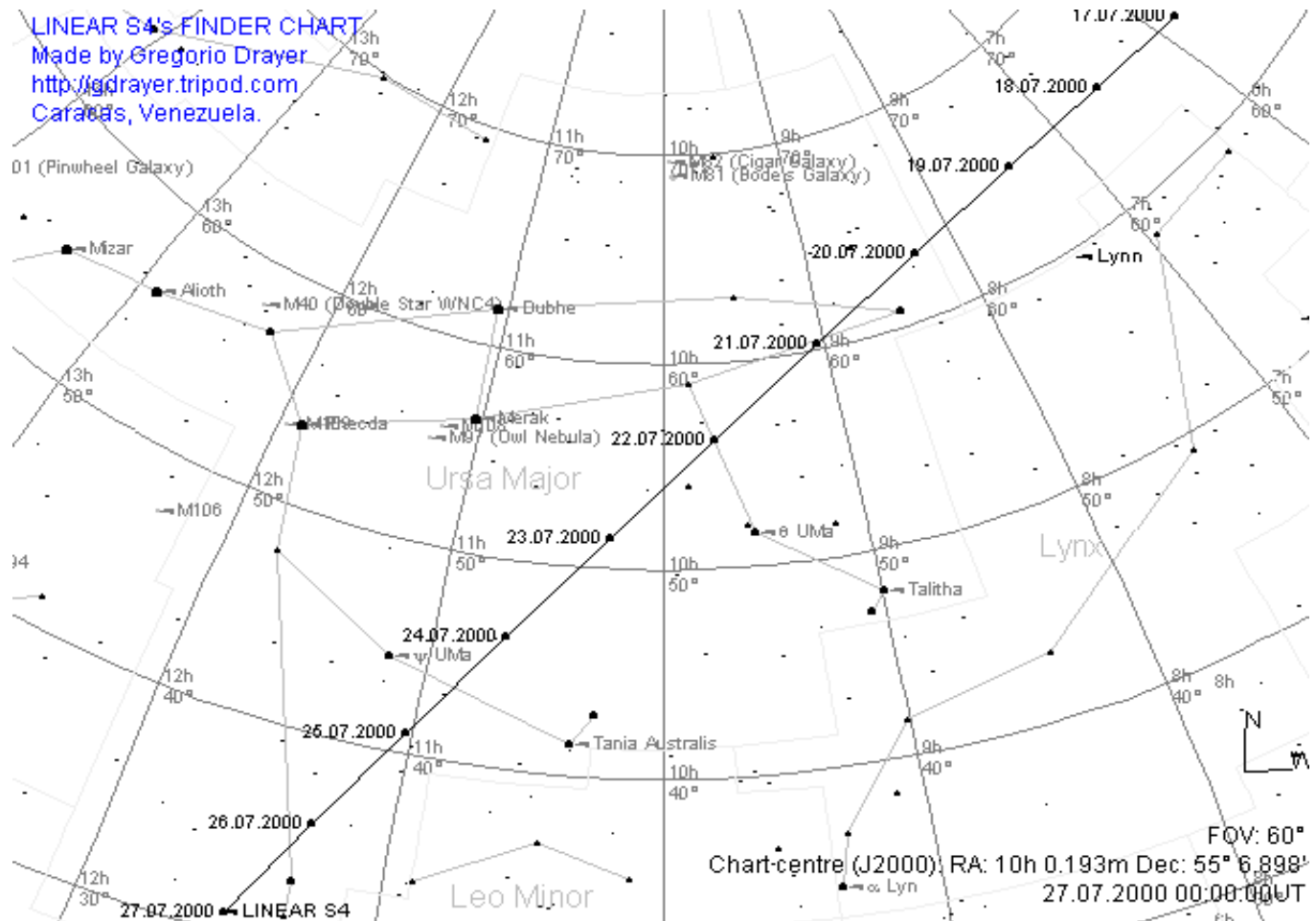
2000 July-August

C/1999 S4 (LINEAR)

This comet will reach a perihelion distance of 0.77 AU on July 26, 2000 (MPC 38308). The Northern Hemisphere is favoured during most of the apparition. The comet has been picked up visually. It emerged in the morning sky at the end of May as an 11th magnitude object, at least a magnitude below earlier predictions. The comet should brighten rapidly as it moves northward. In mid-July 2000, the comet will be at a high Northern declination (~+65 deg. max.). The comet will move under the pole from the morning sky into the evening sky. At peak brightness, the comet might be magnitude 5.0, barely visible to the naked eye in dark skies...This value is extremely uncertain and is

more likely to be fainter than brighter. The comet will then rapidly dive to the south in the evening sky and will fade. There will be a period in late July and August 2000 when the comet is visible from both hemispheres. During this same period the comet will become a binocular object. In September the comet will slip into conjunction with the Sun. When the comet emerges in November 2000, it will be a faint telescopic comet for Southern Hemisphere observers. More charts (earlier and later) are available from: http://encke.jpl.nasa.gov/whats_visible.html

Astronomy Day 2000!



The Kingston Centre Astronomy Day display was held May 13th, at the Cataraqui Town Centre. It was a great display with lots of photos, telescopes, spacecraft models and memorabilia, and boundless, bordering on relentless enthusiasm. The display was interpreted by Laura, Tom, Don, Leo, Hank, Susan, and those younger Gagne troopers, Steven and Jessica. Kevin supplied much appreciated set up



and tear-down assistance, and several members stopped by for moral support. The mall supplied us with a nice supply of tables with deep blue fabric drapes and a great deal of space near an exit so that solar observing

could be carried out. Hank put many miles on his scope moving it in and out of the building but the clouds would not cooperate. But all was not lost, Hank is always thinking and every eyepiece seemed to hold a view of some astronomical wonder in spite of the weather.

Many people stopped to chat and some confessed a life long interest in astronomy that they had never explored. More high school kids seemed to stop this year and that was really encouraging. The little kids of course were attracted by CSAR, then gradually made their way around the display to the Quiz Board. We had lots of handouts including the beginner handouts from Astronomy and Sky and Telescope. People were amazed that we had free stuff and free glossy stuff! As tiring as the day always is, it is very rewarding. The conversations are varied and interesting, and it is great to tell a teenager that, yes, they could make a scope just like the one made by the members. If you have never participated in the display before, think about it next year, it can be a lot of fun.

Submissions from Members

YOG

(Youth Observing Group) by Hank Bartlett
May 2000

6 youth were in attendance tonight. A first visit was made by a youth RASC member who joined us at Christmas.

Tonight we had a fair night for solar observing. Clouds in the west obscured our view earlier than we had hoped but what we saw was good. Spot counts varied from 30's to 120's, a wide range but we are learning. After observing and drawing the sunspots we headed in to discuss the count and 2 handouts. The iridium handout forecast a - 8.4 for 7:55 pm. To fill in until then we checked out today's alignment of Jupiter and Venus and the May 5th alignment on Starry Night.

At 7:50 we headed out back of the school and cast our eyes toward 127 degrees az. 83 degrees al. Some of us chose to lay on the sidewalk, gazing into the blue sky at approximately 7:56 there it was (for those who were looking UP not down) our first DAYLIGHT IRIDIUM @ - 8.4! It was brief, about 5 degrees of sky, but bright, wow!

June 2000

Tonight was the on again off again night, that was almost off again. When we arrived the doors to the school were locked. All was not lost though, the sky had cleared and we were able to do our solar observing. By 7:00 the doors were unlocked, if the pounding from our members brought that about I thank you. Unfortunately Andrew had to leave as we were not sure whether we would be there until 8:00. 7 members signed in tonight for our last meeting of the 99/2000 season. The sunspots were plentiful and clear with relative count around the 200 mark. I had to leave early, when I did Mr. Seitz had the members in the computer lab and was going to talk about and demonstrate about using the spectrum to identify some elements. Laura was in attendance as well to lend her support. The youth have been invited to join us at Public obs., Sky is the Limit and monthly meetings over the summer.

I feel that YOG has been a success and we are reaching out to interested youth. Currently most are from Holy Cross School where the meetings are held, but not all. If all members who are active were to attend we would have 12 per meeting. Personally I find this a comfortable group and think that if it was to get over 15 per meeting it would require some more help from our members and possibly splitting the group 50/50 each night for obs. and practical. I look forward to YOG growing through some advertising and handouts at our functions where we meet interested kids.

In the fall I would like to take advantage of the expertise of our membership and have some talks through the winter when it is too cold to observe more than 1/2 hr. If you are interested in a 30-45 min. time slot please let me know. Kim has already volunteered and I am sure others will. If nothing changes we will meet 1st and 3rd Wed. of each month 6:30 to 8:00. Topics? Solar, scopes, binocular obs., radio, sky charts, ATM, anything you like. You volunteer and we will listen. Remember though these are kids 12 - 18 generally with some younger, keep it simple and brief.

[Ed: The YOG shuts down for the summer but will return in September!]



Grinding the 24" using a suitable mass

ATM Projects: The Power Box by Kevin Kell

I was browsing through the web one day and came across the idea of a portable power box. Looked like a good

plan as having the battery outside leads to curious people wanting to see what happens when they drop a wrench or other metal object across the terminals (Starfest '99). So I took the concept, added room (a compartment inside) to hold my 110vac power inverter (200watts) and 12vdc 3

plug adapter. Why? You now have a complete power unit that can run telescopes, radios, computers, TV's and other devices out in the field all in one place with no little bits and pieces to keep track of. In addition it is safer enclosed with a smaller chance of shorts and dampness/dew. The results are shown below.



Inside is a 40 amp hour deep cycle rechargeable lead battery. Canadian Tire supplies the two colour coded alligator clips to 12vdc female plug. Canadian Tire also supplies the 3 jack

adapter with male plug. The 110vac inverter came from a local photo shop and plugs into the 12vdc adapter. The positive clip comes off the terminal for on/off master control. A red LED (25mA) with an inline 470 ohm (yellow, violet, red) resistor ($V=IR$; $R=V/I=12v/0.025A=470\text{ ohm}$) is installed in the lid and 24 gauge wires are connected to the two alligator clips. This gives an at-a-glance indication if the unit is on. Four slots are cut on the right side wall to allow cables in. Normally to connect a new load, open the lid, make the connection, run the cable through the slot and close the lid. This keeps all the electrical pieces inside protected from the dew and damp. It also allows for any potentially dangerous hydrogen gas to vent.

Construction info:

The size of the box depends mainly on the size of your battery. I used 3/8" one side good plywood for the sides, top bottom and the inside divider. The top is actually two layers of plywood to give enough thickness for the handle screws, piano hinge and front clasps. Wood was glued together and nailed with countersunk finishing nails. Wood filler went into the holes and was sanded afterward. A piano hinge joins the lid and back side. A folding handle is on the top (at the centre

of mass balance point, NOT the geographical centre, as the battery is off to one side of the box) and two clasps on the front hold the lid down. 4 coats of varathane went on after sanding and 4 felt pads stuck on for feet. The internal dividing wall does not extend full height to allow for the power cables to cross over from the battery to the storage compartment.

Electrical details:

The 3 plug 12vdc adapter comes with a fuse. Recharging is accomplished by hooking up a standard battery charger to the battery and charging normally. In the field I use a small 5watt solar panel during the day to top it off (normally it would take 80 hours of sun to completely charge this battery). My battery charger will do it in about 6-10 hours. See the web site below for more details, pictures and a parts list:

<http://130.15.144.100/atm/>

(Next month comes an article on the observing table)

"Slide - ing" into observing!

by E. Kliptic

Astronomy day approaches, the weather for the past week has been terrible and the weekend forecast is no better. Showing the public your hobby is very rewarding, except when all you can show them is cloud bands around the Earth.

What to do.....? Then suddenly a "light" (non-polluting red of course) goes on. Remember those scrap binoculars you dissected a few months ago? Remember the eyepieces you saved from the scrap bin? Remember the extra slides from the grade 9 project? There is a use for them!

Lets put it all together. Select some good slides, lunar, deep sky, galaxy, whatever. Clean up those greasy eyepieces and make a nice 1/2" cardboard sleeve for the longest part of the shaft. To the cardboard glue (glue gun works well) a slide and trim it, now "slide" the slide sleeve onto the eyepiece. You can now focus the image by adjusting back and forth until just right, Wow! (see cross section diagram below)

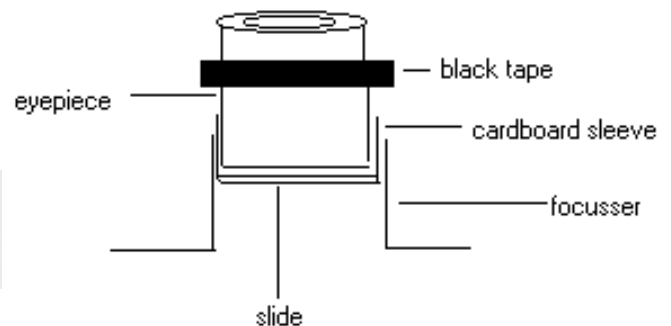
Place this new virtual view into your 1.25" focuser and it will slip right through and chip your mirror.

Now how do you prevent this disaster? Good old Canadian tape ingenuity! No not Red Green duct tape it is too thick. Electrical tape is thinner and smoother. Wrap electrical tape around the eyepiece until it nicely slides into the focuser just like a factory made eyepiece. To prevent the eyepiece slipping all the way cut sections of tape in half up the middle and wrap this around the upper portion until it stops the eyepiece from sliding in all the way.

Wow! You now have a virtual observation of the object you selected which can be easily focused according to the individual observer. Of course you must be careful NOT to point your scope toward the Sun for its back light. Also after a couple of double takes by the observer you really should admit that the image is counterfeit. Those of you who were fooled at Astroday 2000 could vouch for me, if you would admit it.

Although I made up a solar slide I must caution that this is not a good idea as this may lead laypersons to believe the Sun can be viewed without a solar filter. I do not recommend using solar slides for this purpose. If you are not using interior lighting for backlight I also recommend locking your scope in a position that absolutely prevents the Sun from entering your view.

Try it, its cool and believe me it works!



A note from Bill Broderick

Hi y'all, the following is from the International Dark-Sky Association's June 2000 Newsletter:

A previously anonymous asteroid has been named "Gent" in recognition of the many contributions to the dark sky movement and astronomy of IDA's Public Relations Officer, Bob Gent. Now known as (10498) Gent, this asteroid--formerly known by the arcane designation 1986 RG3 (note that the previous designation includes Bob's initials)--orbits in the inner part of the main asteroid belt between Mars and Jupiter. The official designation, approved by the International Astronomical Union is:

Gent 10498: Robert Gent, American amateur astronomer (10498) Gent = 1986 RG3

Discovered 1986 Sept. 11 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory. Robert Gent (b. 1947) is an enthusiastic amateur astronomer and IDA volunteer. Now retired, Gent was a U.S. Air Force space systems officer, analyzing data from 24-inch infrared space telescopes in geosynchronous orbits. Name suggested by D.R. Davis.

Congratulations, Bob, from all of the members of IDA. This is a richly deserved honour. Bob will undoubtedly be anxious to get a telescope at a dark site and have a look at his new "real estate." Don Davis President, IDA Board of Directors

[Ed: Congratulations From Us To!]

Notes from the Secretary

Regular meeting of the Kingston Centre of the Royal Astronomical Society of Canada. May 12, 2000



Member Susan Phillips as seen in the eastern and western hemispheres

Bruno Sicardy, Professor, Paris University and Paris Observatory, gave an excellent public lecture on Planetary Rings in Stirling Hall. The regular meeting was diverted from our regular room to one in Stirling Hall so that members could attend the lecture. These arrangements were made for us by Martin Duncan.

After the lecture refreshments were supplied in the foyer and the Kingston Centre began a brief meeting in a nearby room at 22:00 hrs. Reports given were from the Secretary, National Council Rep, Astronomy Day, Observing, the V.P., Education, A.T.M., Y.O.G.

Dieter offered to include members in an upcoming tour of the Holleford Crater that Leo would be leading, as well as a request for people with scopes Monday. There was a visitor, Mike Earl, from the R.M.C. Physics Department who announced that he was working on an open house for local R.A.S.C. members to see the Observing facilities at R.M.C. This idea was well received.

Kim Hay won the wine, which as usual was generously donated by Hank Bartlett

The meeting adjourned at 22:25 hrs.



How to tell the time in Greenwich England

Minutes of the regular meeting of the Kingston Centre, June 12, 2000.

The Meeting was called to order by our President Doug Angle.

The guest speaker for the evening was Kingston Centre member Ray Berg. Ray, one of our long distance members, is a retired metallurgical engineer and a full time amateur astronomer living in Indiana. This was Ray's first Centre

meeting, but many of us met him in 1997 when he came up for the G.A. in Kingston.

Ray has always had an interest in the southern hemisphere and the topic of his presentation was a 4 week trip that he made with his wife to New Zealand, Australia and Fiji. Along with sharing in his wife's daytime activities, including scuba diving, Ray had a few modest astronomical goals: plenty of deepsky objects, monitor some variables, and complete the Astronomical League's list of 50 binocular objects. From all accounts, the trip was a success with one half of the binocular list covered in New Zealand and the second half being completed in the Australian outback.

It seems that the Astronomical B and B is also a hit in the southern hemisphere. In New Zealand the Berg's stayed at the Southern Heavens Bed and Breakfast, run by Peter Knowles. A small observatory for guest use included a 6" refractor and a 12.5 inch Newtonian. In Australia they visited Tom Craig's home in Coonabarabran, New South Wales. Many of the great southern sites viewed were Eta Carinae, the Coal Sack, the Tarantula Nebula, and the Jewel Box, just to name a few. Ray has offered travel tip information to anyone who may be contemplating a similar trip and his report is a great example of a well planned

astronomical vacation. He just has to figure out how to get some sleep next time.

After a break the meeting continued with reports from YOG, Observing, ATM, Newsletter, National Council, Secretary, Treasurer and Vice President. Look for updates to these activities in the Newsletter.

Leo gave us the run down on the latest magnetic storm warnings and potential Auroral displays if the sky is ever clear-again.

The 50/50 draw was held and the cash was won by Tim Sietz and the wine, Artic Asteriod (that is the correct spelling) was won by Cliff Newman.

The next meeting is July 14, and our speaker will be Kathy Perrett who will talk about the Queen's Observatory and then take small groups on a tour of the dome.

The meeting adjourned at 21:51 to Harvey's.

Editor's Corner

by Kevin Kell

I've sprinkled in some submitted photos across the whole newsletters... people seem to like pictures :) This issue introduces an often asked for item of information: the details on how to access the secure web site (for KC members only). I'll be publishing the info every issue in the form of a bookmark located on pages 9&10. You'll need to cut it out (or not). We investigated printing them out on cardstock and including them with the newsletter but that alone would put us over our 30g limit for mail, and would almost double the postage.

Welcome new members!

Robert L. Gulley, Bath, Ontario K0H 1G0
Barbara R. Gulley Bath Ontario K0H 1G0
William Comars Toronto, Ontario M3A 1X8
<wcomars@istar.ca>

Starfest 2000

Starfest is scheduled for Thursday Aug 24th to Sunday August 27th. If you have attended in the past you should have received your registration package on or around June 9th. For those early birds, we as a centre are planning on arriving on the

TUESDAY this year, in hopes of another night of clear skies.

Interested in Radio?

A lot of people ask about shortwave radios for getting accurate time. Well, here are the list of frequencies that you may want your radio to receive!

WWV: 2.5, 5, 10, 15, 20 MHz

CHU: 3.33, 7.335, 14.670 MHz

Regulus Back Issues Wanted:

Again, I am requesting that if you have any issues of Regulus from 1988 and before, please send them in to me so I can make copies for our archives (and I will send the original back to you). Thanks to one of our past Presidents, Angelika Hackett, for sending 6 issues from 1979, 1980 and 1988). There are now 3 archive copies of these held by the Librarian, Secretary and Editor.



Slide Loan Sets:

To remind you that we have a large selection of 35mm slide that can be loaned out to members for use in giving public talks, talks to schools, etc. And we forgot to mention two of our own!

Expanding Their Universe Set #1 (40 slides)

Expanding Their Universe Set #2 (40 slides)

New - Member Web Sites: Check out <http://members.kingston.net/rasc/memlinks.htm> for links to the web pages of our members. Good for seeing astroimagery, project ideas and details and more!

Charleston Lake Star Party

This year it has been set for Friday August 4th. Yay! A non-work night! This event has been an Annual Slide Show Seminar and public observing session since 1987 (at least by my records) hosted by the Park Staff and Terry Dickinson. We are

invited to help out by providing telescopes and operators and normally have a great time in a dark site. Come on out! Charleston Lake is located East of Kingston and North of the 401 between Gananoque and Brockville.

Education Group News

As this edition of Regulus goes to press, the elementary school edition of "Expanding Their Universe" is just about finished. It will be called "Worlds to Discover - Astronomy for Elementary School". The format is different from its older sibling, though many of the activities are similar. The emphasis in elementary school is on the Solar system, our own planet and space exploration. There will be six sections in the book: teacher's notes, student's notes, activities, assessments (quizzes, puzzles etc), answers, and resources. I expect to have the book completed by the first week of July (ambitious?), ready for proofreading. Although the text is almost complete, I will need artwork and photographs to embellish the book. If you can draw, or have photographs that will scan well in black and white (and that we can hold the copyright for), then please contact me <rainbow@kingston.net>. Once this book has been completed, we will need to do some advertising of both of our publications. Expanding Their Universe will also be going into its second edition after I finish writing Worlds to Discover!

Laura Gagne, Chair - Education Committee

Public Observing Sessions

This will be the last "2nd Tuesday" of the month as the lunar cycle is getting out of whack. Rather we'll start referring to these sessions as the ones "about the first Tuesday after a New Moon". The sessions generally start with setup around dusk and run for an hour or so and are held at the Murney Tower Museum Park (King & Barrie Sts) in Downtown Kingston

Tuesday July 4th (3 days old)

Tuesday August 8th (8 days old)

Tuesday September 5th (7 days old)

Equipment Loan Program

- the newest addition to our loan program is a Televue 19mm Panoptic 1.25" eyepiece

- Barney-the-purple-telescope is our ATM built 200mm f4.5 dobsonian - now comes with a purple carry bag for accessories

- Voyager is our commercial "Astroscan style" 114mm f4.3 scope

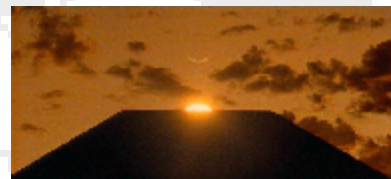
- The Fitz is our ATM built 200mm f6.9 dobsonian

- The Douglas is our 254mm f5.5 dobsonian and now comes with a blue carry bag for accessories

New additions this summer (probably after Starfest) will be a filter set, including colour filters, neutral density, light pollution and nebula filters.

RASC Kingston Centre Meetings

The Kingston Centre RASC meets once a month on the 2nd Friday of each month at 8:00 pm (20:00) in Mackintosh-Corry Hall, Room B-201 on Queen's University Campus **unless noted otherwise**. We have adopted a policy of moving any meeting that is held on a holiday weekend to the **WEEK BEFORE**.



Event Horizon 2000

- ! **Friday July 14th** Regular Meeting. Guest Speaker: Kathy Perrett (Queen's University) on the Queen's New Observatory at Ellis Hall.
- ! **Friday August 4th** Charleston Lake Star Party
- ! **Friday August 11th** Annual BBQ & Observing session at the home of Mark Kaye (Loborough Lake), no regular meeting, but there is a special guest speaker!
- ! **Friday September 8th** Regular Meeting Guest Speaker: JJ. Kavelaars Topic TBA

- ! Saturday September 23rd: Kingston/Belleville Observing Session at Presqu'ile Provincial Park
- ! **Friday October 13th** Regular Meeting. Guest Speaker: Bill Broderick (Kingston) Topic TBA
- ! **Friday November 10th** Annual General Meeting and Elections and Member's Night Presentations
- ! **Saturday November 25th Annual Awards Dinner** Guest Speaker Dr. Dave Hanes (Queen's University) Topic TBA
- ! **Friday December 8th** Regular Meeting Guest Speaker: Jan Wisniewski Topic: CCD Imager/imaging

2000 Officers and Executive Council

PO Box 1793, Kingston, On K7L 5J6

Infoline & answering machine xxx-xxx-xxxx

President: Doug Angle

Vice President: Laura Gagne

Secretary: Susan Gagnon

Treasurer: John Hurley

Librarian: David Maguire

Editor: Kevin Kell

National Council Rep: Susan Gagnon

Standing Committee Chairs:

Observing Group: Tom Dean

ATM Group: Kendra Angle

Youth Group: Hank Bartlett

Astronomy Day: vacant

Publicity: Kim Hay

Awards: Dave Pianosi

Observing Group Meetings

July This Session was a visit to the RMC

Observatory on Saturday June 24th

Friday August 11th Annual BBQ & Observing session at the home of Mark Kaye (Loborough Lake), 4 days before full moon. Not ideal. Maybe another one earlier?

Starfest 2000 Observing Sessions! **August 24-27** at Mount Forest Ontario.

September 23rd (Saturday)
The Kingston Centre and
The Belleville Astronomy Club
present:

A Dark Sky Night Observing Session

To be held at Presqu'ile Provincial Park (near Brighton) in the Group Camping Area

For more details and maps see

<http://www3.sympatico.ca/aimdave.pianosi/rasc.htm>

This promises to be a great overnighter... the first that the Observing Group has done, AND in a very dark dark site! Contact Dave Pianosi for more details and registration. You will be responsible for paying your own way into the Park (if you have a season pass already, then you are set!) and we will be charging \$10/person to pay for the site reservation/camping spaces.

Buy Sell and Trade

compiled by Kevin Kell

Telescope for sale call Bruce at xxx-xxx-xxxx

4.5" Concord newtonian reflector, 900mm fl \$225

[No date on this ad but received it in May: Ed]

For Sale: Meade 8" LX3 f10 Schmidt

Cassegrain c1988, AC or DC power, Heavy Duty

Wedge and Variable Height Field Tripod, Mini-

Max Computerized setting circles – app 4000

objects RA motor and hand controller, Electric

focuser 8x50 right angle finder with illuminated

reticle and polar finder, Orion EZ Finder Meade

4000 26mm 1¼" eyepiece Meade 1¼ 90deg

diaganol, Meade 2" 90deg diaganol with 1¼"

adapter Kendrick dew heaters for objective, finder

and eyepiece Dew Cap Piggyback mount for

camera Celestron Radial Guider in original box

with instructions Original Meade telescope case

This is a turnkey system. Everything you need for

observing and short duration astrophotography.

All equipment is in first rate condition. Total retail

replacement cost is approximately \$3600 Cdn

(\$2500US). For sale at \$2600Cdn for everything.

Scope is located near Napanee. Might consider a

small refractor as part trade. Cliff Newman

xxxx@xxxx.xxx xxx xxx xxxx

FOR SALE "Powerstar 8" (with tripod) - 8"

Schmidt - Cassegrain (f10) With "Starbright"

coating, 7.54" byers worm gear drive, 6x30 finder

scope, 30 mm Plossl, 12 mm Ortho, 7.5 mm Plossl
 Skylight filter, No 21, No 80, LPR Filter, 1 1/4
 star diagonal, 1 1/4 Erect diagonal 45o, Lens shade
 and Duffle Bag as carrying case., Asking \$1,800
 Xxx-xxx-xxxx Trenton, Ontario
 e-mail address: (xxx@xxx.xxx)

From The Net

compiled by Kevin Kell

Subject: GREAT MANITOU STAR PARTY ...

Hello Kingston, This is a quick note to let you know that the GREAT MANITOU STAR PARTY website is fully renovated for the year 2000. Our party takes place at Gordon's Park on Manitoulin Island. It's a beautiful place for a laid-back summer vacation. No industry, no pollution, no cities. Just velvety black skies and the soothing sounds of the great outdoors. The third annual GMSP takes place Thursday, July 27 - Wednesday, August 2, 2000. Here's the URL.

You'll find lots of info. on the site -- prices, maps, special events calendar, camping conditions, etc. There's also a printable registration form. Please join us for a very special get-together.

<http://www.manitoulin-link.com/starparty/>
 GMSP Coordinator -- Sudbury Astronomy Club.

June 22, 2000 RELEASE: 00-99 NEW IMAGES SUGGEST PRESENT-DAY SOURCES OF LIQUID WATER ON MARS

In what could turn out to be a landmark discovery in the history of Mars exploration, imaging scientists using data from NASA's Mars Global Surveyor spacecraft have recently observed features that suggest there may be current sources of liquid water at or near the surface of the red planet.

The new images show the smallest features ever observed from martian orbit -- the size of an SUV. NASA scientists compare the features to those left by flash floods on Earth.

"We see features that look like gullies formed by flowing water and the deposits of soil and rocks transported by these flows. The features appear to be so young that they might be forming today. We think we are seeing evidence of a ground water supply, similar to an aquifer," said Dr. Michael Malin, principal investigator for the Mars Orbiter Camera on the Mars Global Surveyor spacecraft at Malin Space Science Systems (MSSS), San Diego, CA. "These are new landforms that have never been seen before on Mars."

The findings will be published in the June 30 issue of Science magazine. The Mars Global Surveyor images are available at:

http://www.msss.com/mars_images/moc/june2000/

June 6, 2000 RELEASE: 00-89 SPECTACULAR X-RAY JET POINTS TOWARD COSMIC ENERGY BOOSTER

NASA's Chandra X-ray Observatory has revealed a spectacular luminous spike of X-rays that emanates from the vicinity of a giant black hole in the center of the radio galaxy Pictor A. The spike, or jet, is due to a beam of particles streaking across hundreds of thousands of light-years of intergalactic space toward a brilliant X-ray hot spot that marks its end point.

The hot spot is at least 800 thousand light-years (eight times the diameter of our Milky Way galaxy) away from where the jet originates. It is thought to represent the advancing head of the jet, which brightens conspicuously where it plows into the tenuous gas of intergalactic space. The jet, powered by the giant black hole, originates from a region of space no bigger than the solar system.

The Chandra observation of Pictor A was made on January 18, 2000 for eight hours using the Advanced CCD Imaging Spectrometer (ACIS).

Images associated with this release are available on the Internet at: <http://chandra.harvard.edu> and <http://chandra.nasa.gov>

May 26, 2000 N000-24 COMPTON GAMMA RAY OBSERVATORY RE- ENTRY ACTIVITIES

On Sunday, June 4, the successful nine-year mission of the Compton Gamma Ray Observatory (CGRO) will end when NASA redirects the spacecraft into Earth's atmosphere. Debris from the controlled re-entry is expected to fall in a remote area of the Pacific Ocean,

approximately 2,500 miles southeast of Hawaii. A NASA fact sheet on the re-entry can be found at:
<http://pao.gsfc.nasa.gov>

Unlike most satellites, Compton is too large to burn up entirely in the atmosphere during re-entry. More than 6 tons (12,400 pounds) of metal debris is expected to fall to the Earth's surface. The debris fragments will range in size from the size of a small stone to several hundred pounds or kilograms.

**May 22, 2000 RELEASE: 00-82
 PUBLIC INVITED TO BROWSE 20,000 NEW
 ADDITIONS TO MARS PHOTO GALLERY**

More than 20,000 new images of the planet Mars taken by NASA's Mars Global Surveyor spacecraft are now available in a web-based photo album -- the single largest one-time release of images for any planet in the history of solar system exploration.

The 'picture postcard' scenes in the new images reveal the Red Planet, often said to be the most Earth-like planet, as an alien, bizarre and puzzling world.

"These are exciting times for Mars scientists and this release of images is in my opinion something unprecedented in the Mars science business," said Dr. Ken Edgett, staff scientist at Malin Space Science Systems, San Diego, CA. "People everywhere with Internet access will be able to take their own personal journey of exploration and discover Mars via these pictures. They can experience them the same way that Mars Global Surveyor scientists do -- one at a time, no captions or explanations, just 'Here it is. What does it show me?'"

The archive of images now covers a period that spans one Mars year (687 Earth days), beginning in September 1997 with pictures taken during the aerobraking phase and extending through August 1999 when Global Surveyor was well into its mapping mission. Many of the pictures have such high resolution that objects on the surface the size of a school bus can be seen.

Mars Global Surveyor was launched on November 7, 1996 and arrived at Mars on September 12, 1997. The spacecraft has made more than 5,000 orbits of and has been systematically mapping the Red Planet since March 1999.

The archive of images can be found at:
http://www.msss.com/moc_gallery/
 A subset of the images can be seen at:
<http://photojournal.jpl.nasa.gov/new> and
<http://mars.jpl.nasa.gov/mgs>

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