# REGULUS

**MAY-JUNE 1991**

NEWSLETTER OF THE KINGSTON CENTRE
OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA


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| | Peggy Torney | (000) 000-0000 |

## UPCOMING MEETINGS AND EVENTS

**Regular Meetings** of the **Kingston Centre, RASC** are held on the **second Friday** of each month at **8 p.m.**, in **Room D-216, MacIntosh-Corry Hall, Queen's University. Non-members are welcome.** Executive meetings are at 7:30 p.m.

**Sat., May 4** **NFCAAA SPRING MEETING (including tour of Holleford Crater)**

**Fri., May 10** **Regular Meeting.** **Speaker, Leo Enright: "July 1991 Total Solar Eclipse"**

**Fri., June 14** **Regular Meeting.** **Speaker, Walter MacDonald: "Tales From a Spinning Astronomer"**

**Fri., July 19** **Regular Meeting.** **Film: "Clyde Tombaugh: Discovering Pluto" (tentative).**

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# SUNSPOTS DURING THE ROTATIONS 1836 to 1838

By Hein Van Asperen

I observe the sunspots by projecting the sun on a screen. To allow me to record the position of spots on the sundisc I project the sun on a piece of white cardboard on which is drawn a circle with a diameter equal to the sunimage. Across the circle is drawn a coordinate system. My record book has a similar circle with coordinate system. I record the position of the spots and the East-West direction (by letting the sunimage drift across the screen and record where a prominent spot intersects with the coordinate system).

The recorded information and the Sun data from the **Observer's Handbook** (section SUN, Ephemeris is for...) enables me to calculate the Latitude and the Heliographic Longitude of the spots. Knowing the Latitude and the H.G. Longitude makes it easier to follow and recognize the spots while the sun slowly rotates. Particularly when because of bad weather the observing is interrupted for some days. It also allows me to construct a sunmap. I use the computer to draw the map for successive Carrington rotations.

The sun was very irregular during the rotations 1836 to 1838.

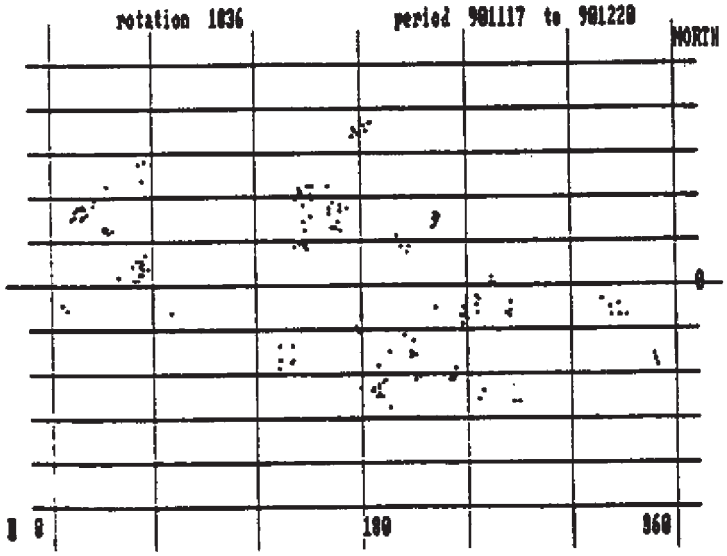
During the rotation 1836 the sun was quite active with spots evenly distributed over both hemispheres.

Rotation 1837 was much quieter and the spots were predominently in the Southern hemisphere.

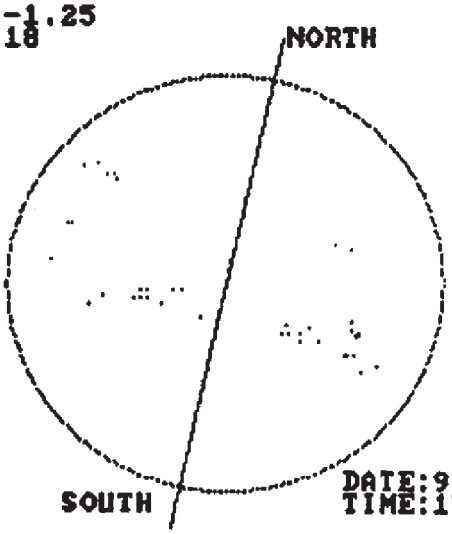
During the rotation 1838 the sun flared up in the Southern hemisphere. The concentrated activity between the Heliographic Longitudes 120 to 220 degrees was clearly visible between January 30 and February 2, 1991. The computer-drawn sun pictures are approximately the same site as the drawings in my record book. The value Alpha is the angle with which the East-West line intersects the coordinate system. The term P is from the **Observer's Handbook** and indicates the angle between the rotation axis and the North point on the disc. In the computer drawing the North-South line is the axis of rotation.

The solar maps show all the spots recorded. The number of recorded spots depends on the abundance of sunspots but also on the number of days that I could observe the sun. A comparison between my observation and the information published by the Joint NOAA-USAF Space Environment Services Centre is presented in the table below. With a few exceptions due to bad weather I observed all sunspots with an area larger than .00001 Solar hemisphere.

| Rotation | R E G I O N S | | | | | | R E M A R K S |
|---|---|---|---|---|---|---|---|
| | NOAA-USAF | | | HvA observs. | | | |
| | N | S | Tot | N | S | Tot | |
| 1836 | 19 | 24 | 43 | 13 | 19 | 32 | 10 spots too small,<br>1 spot very short lived. |
| 1837 | 13 | 20 | 33 | 3 | 13 | 16 | 15 spots too small,<br>2 spots missed, bad weather. |
| 1838 | 13 | 28 | 41 | 7 | 14 | 21 | 16 spots too small,<br>4 spots missed, bad weather. |




alpha? -1.25
p? -11.18
Ok

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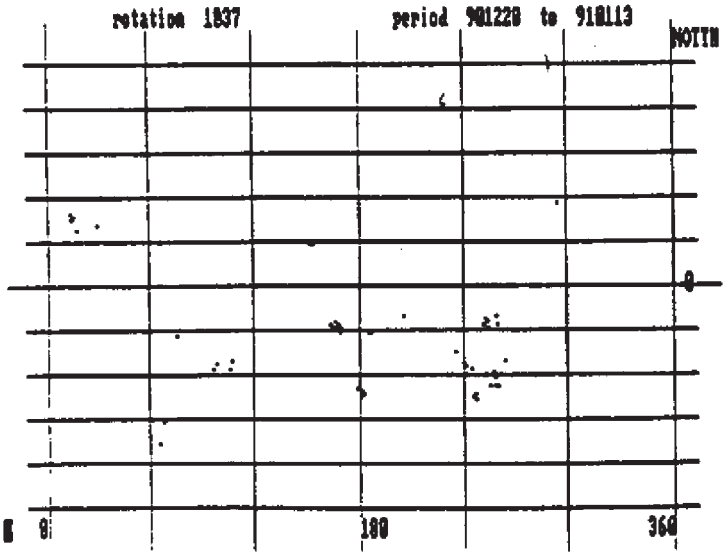
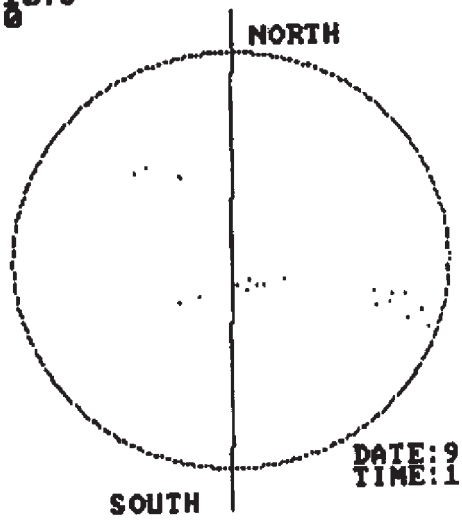



alpha? 10.8
p? -12.0

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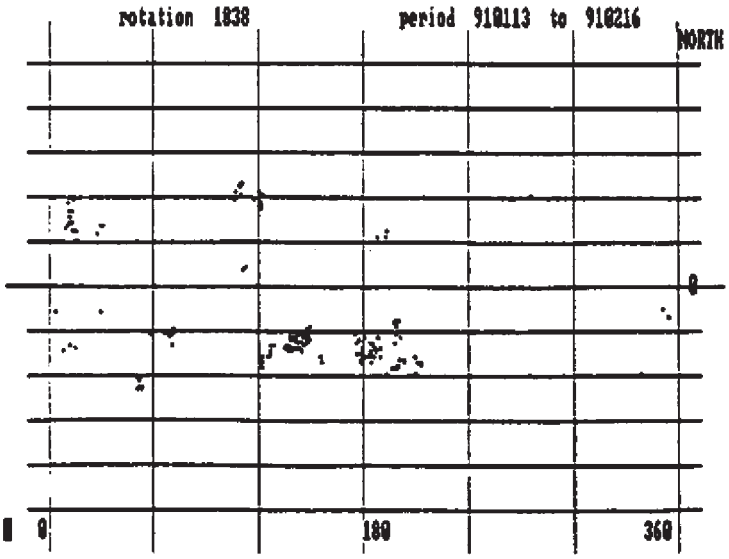
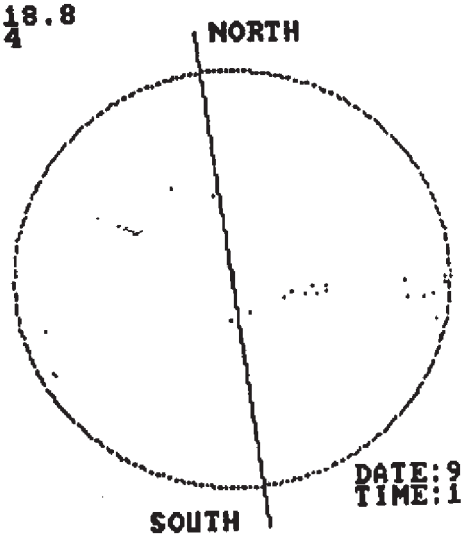



alpha? 18.8
p? -12.4

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## AN INTERVIEW WITH JEFF STOP, ASTROPROTOGRAPHER

By Walter MacDonald

I recently had a chance to interview world-famous astrophotographer Jeff Stop at a recent astronomical gathering. Here is a portion of that conversation...

**WM:** Tell we about some of the constellations you've photographed.

**JS:** Well, there was Cetus--now that was a whale of a shot. I did several shots of Ursa Major but just couldn't bear it, so I switched over to Lyra and got some great pics. I don't want to harp on that though. I had an absolutely fantastic shot of Capricornus until a friend of mine borrowed and never returned it. I guess you could say he really got my goat! My shots of Leo turned out quite well also, though if I told you they were better than David Malin's I'd be lion.

**WM:** Like many astrophotographers, you must have had your share of problems along the way.

**JS:** Definitely. One night I tried to photograph Coma Berenices, but it disappeared every time I stopped down. That was a hairy experience to say the least. None of my Pisces photos seemed quite right either; there was something fishy about them. My pictures of Taurus were quite disappointing. In fact, I'd go as far as to say they were just a bunch of bull. To top it all off, my only picture of Canis Major tuned out to be a real dog, and my Aquila photos were all turkeys.

**WM:** Experiences like this must be extremely frustrating. Were there ever times when this got you discouraged?

**JS:** Oh yes. I remember one night I went out to photograph Orion. I thought I'd photograph his belt but it seemed like such a waist. Then I figured, "Why not photograph his sword?", but I couldn't see the point. In fact, I almost gave up the hobby right then.

**WM:** What got you back on track?

**JS:** Corona Borealis. It was my crowning achievement. Since then I've only had one bad astrophoto.

**WM:** Which one was that?

**JS:** Delphinus. Actually, the photo was good, it was just that the camera was pointed a little bit off so the whole constellation wasn't in the frame. As a result my picture of Delphinus was not taken entirely on porpoise.

**WM:** Of course film itself has made tremendous advances over the last 10 years or so, but besides that what do you think are the most significant changes in the universe of amateur astrophotography?

**JS:** Three things. The first is hypersensitizing. The ability to increase the ASA of a film, though perhaps less important now, was quite helpful back in the days when film was only 200 ASA. I found a combination of Extra Strength Tylenol and Bufferin to be the most effective.

The second thing is the BAT computer. I remember my first night out with it. I'd punch in an NGC number and it would direct the 'scope right to it! After finding several objects this way, I didn't even bother to look in the eyepiece. I'd just punch in the number, point the 'scope and consider the object found!

The third thing is the SoBig Es-Tee 4 auto tracker. This did for astrophotography what the BAT computer did for visual astronomy. One night I forgot to put film in the camera, but the guiding was perfect so I considered the object photographed. Some of my best photos have been taken this way!

**WM:** Thanks for your time.

**JS:** You're most welcome.

**R.A.S.C. PROMOTIONAL ITEMS PRICES AS OF APRIL 1, 1991**

| | | | |
|---|---|---|---|
| 1. | **R.A.S.C. GOLF SHIRTS:** | **white with navy emblem, sizes adult S, M, L, XL** | **$20.** |
| 2. | **R.A.S.C. KEY-CHAINS:** | **clear acrylic with navy emblem on white insert, metal ring** | **$ 4.** |
| 3. | **R.A.S.C. STICKER:** | **round white vinyl with navy emblem, 3.5 inch diameter** | **$ 1.** |

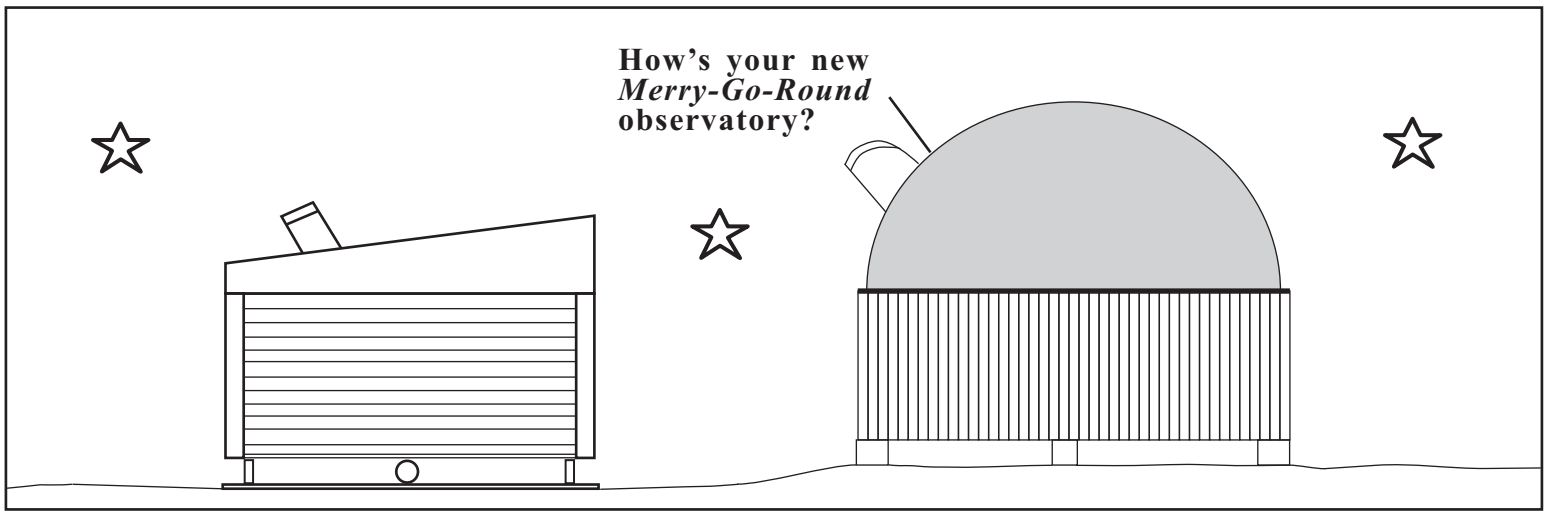
**Add packaging and postage of $3.75 per shirt, $1.00 per item or batch order for stickers, key-chains.**

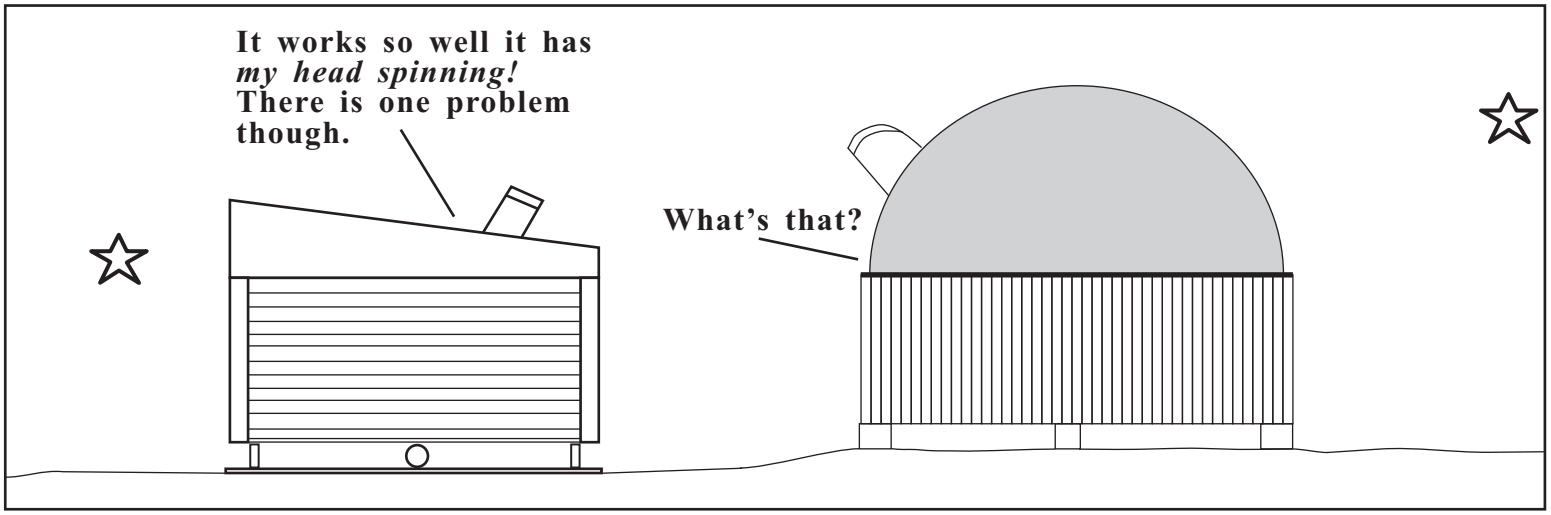
**The above prices include all taxes.**

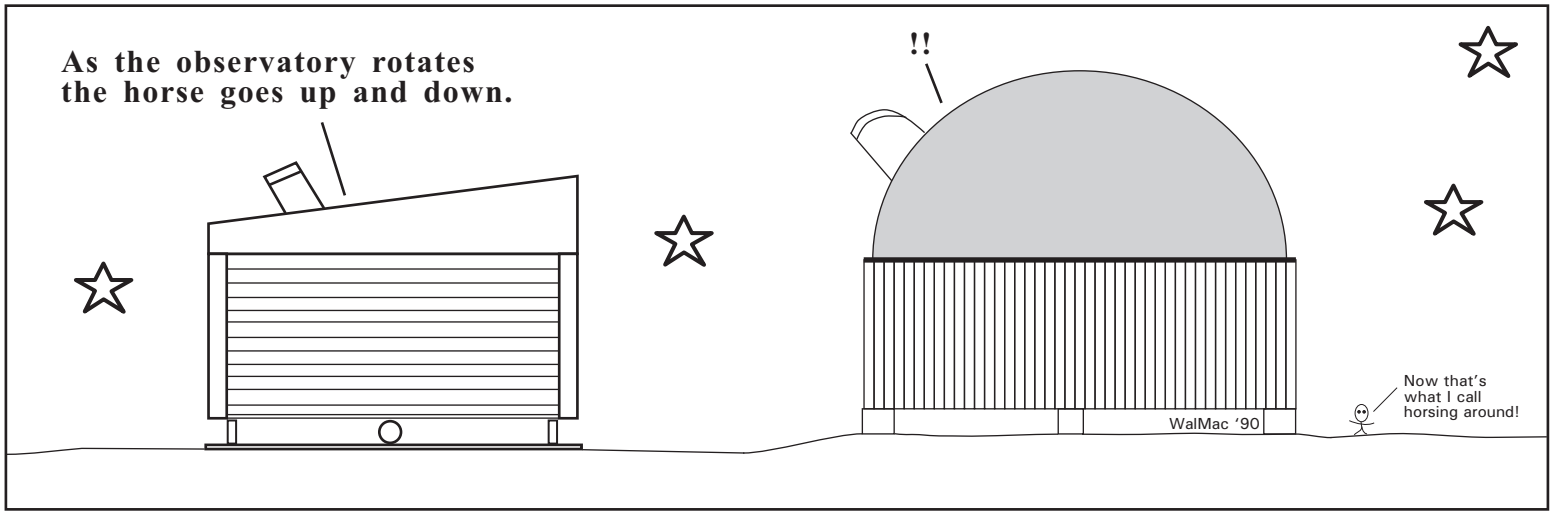
**Send Canadian cheque or money order, payable to "Royal Astronomical Society of Canada" to:**

**R.A.S.C. Promotional Items**
**C/o Mrs. C. L. Cresswetl**
**XXXXXXXXXXXXXXXX**
**XXXXXXXXXXXXX, Ontario**
**XXX XXX**

**Where possible, I will arrange delivery to avoid mailing charges completely - contact me by phone at (000) 000-0000.**




**LIMERICKS**

By Walter MacDonald

There was an observer named Clarence
Whose horizons needed more clearance,
So he cut down the trees
To the height of his knees
And now observes without interference.

There once was a man named Evans
Who loved to observe the heavens,
So he went to dark skies,
Dark-adapted his eyes,
And stayed up all night with his C-11's.

## ASTRONOMY DAY AT KINGSTON CENTRE

Our **Astronomy Day** exhibit at the Kingston Centre was a great success, even if the weather did fail to cooperate for evening observing.

Participation was excellent with plenty of telescopes and lots of display items to stimulate public interest.

Besides books and posters, members provided models of galaxies, a solar system model, and examples of their astro photo efforts.

Best of all, of course, was that we bad a good number of members on hand to talk with the public and answer questions.

Thanks to everyone who partici-pated or helped in any way.

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## A WORD OF WELCOME

...to new member **Christine Kulyk** of Kingston. Great to have you with us, Christine.

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## MEETINGS IN JULY AND AUGUST

Please make a note that the **July** and **August** meetings of the Centre have been rescheduled for the **third Fridays** in these two months. This change was deemed desirable because of the eclipse, Starfest and other events. The July meeting will be on **July 19**, the August meeting on **August 16.**

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## ASTRO JUMBLE

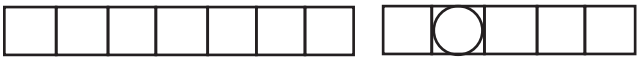
Unscramble the letters (see clue), then use the **circled letters** to solve the puzzle. Answer in next issue. Good luck!

**CLUE: METEORITE IMPACT SITES IN CANADA**

**B E R N T**

**E L F R H O O D L**

**D U S R U B Y  N A B I S**



**N O C A I M A G U N A**

**S C W A L L E R**

**THE SCAR LEFT BY A METEORITE IMPACT IS CALLED AN**

**Answer from last issue**

PHOBOS, GANYMEDE, TITAN, TITANIA, TRITON, CHARON

In some cases, a moon could be a captured **ASTEROID.**

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**YOUR WORDS OF WISDOM WANTED**: Everyone has something to contribute, whether it's experience, humour, or plain old-fashioned common-sense advice. Please send all communications intended for the newsletter to the editor **Bill Broderick, XXXXXX, XXXXXXXXXXXX, Ontario XXX XXX.** All other communications should be sent to the RASC Kingston Centre, P.O. Box 1793, Kingston, Ontario K7L 5J6.