

Supernova 1979c in M100

SN 1979c is arrowed in this composite photo, which is made up of X-ray (gold), optical (yellow–white, blue), and infrared (red) data. Photo credit: X-ray: NASA/CXC/SAO/D.Patnaude et al, Optical: ESO/VLT, Infrared: NASA/JPL/Caltech. More at: chandra.harvard.edu/photo/2010/sn1979c/

Reports & Other Items

Newest Black Hole?

Amateur astronomer **Gus Johnson** of Swanton, Maryland, was the discoverer, on April 18th, 1979, of supernova 1979c in M100 (see *Regulus*, May 1979, page 1). He was an RASC member at the time of discovery and later affiliated with Kingston Centre in the autumn of 1980 (*Regulus*, November 1980, page 3). This was a great honour for our centre, as **Leo Enright** described Mr. Johnson as “one of the best amateur observers anywhere” (*Regulus*, Jul-Aug 1986, page 3). At least one KC member, **Leslie Roberts**, photographed this supernova (*Regulus*, July 1979, page 6).

Fast forward almost 32 years, and SN 1979c is once again in the news! Astronomers now say that it may

have created what is the youngest black hole known so far—younger than most KC members!

Douglas-Levy Photo

Far-flung KC member **Angelika Hackett** writes in regards to the special January issue:

This is a great issue. It brings back fond memories of the late 70s and early 80s, especially the photo of David and Dr. Douglas on page 11—I was there!

Regarding the photo, it must have been taken on one of two occasions when Dr. Douglas came to give a talk to the Kingston Centre while I was still there: on Tues., Feb. 21, 1978 she spoke about the International Astro-

Upcoming Meetings

Friday, February 11, 2011

Regular Meeting 7:30-9:30 p.m.
☛ *Professor Larry Widrow, Queen's U*
**The Tangled Past of the
Andromeda and Triangulum Galaxies**

Meetings are held at 7:30 p.m. at Stirling Hall Theatre “A” on Bader Lane at Queen’s University in Kingston, Ontario. Our meetings are co-sponsored by the Queen’s Physics Department and include Astronomy lectures open to the public. ★

KAON Public Observing

Saturday, February 12 7:30 p.m.

☛ *Joel Roedeger*
Astronomy in the Middle East

KAON (Kingston Astronomy Outreach Network) sessions are held at Queen’s Observatory on the 4th floor of Ellis Hall. ★

Other Events

Saturday, February 26 7:00 p.m.

☛ *Susan Gagnon*
Navigating the Winter Sky

There will be an indoor presentation with StarryNight, some planisphere demos, and more. If it is clear there will be a sky tour session outside. Location is the Little Cataraqui Conservation Area. ★

More info at kingston.rasc.ca

From Kingston Centre, the RASC, and Beyond...

nomical Union; on Thurs., April 19, 1979 she spoke about Sir **Arthur Eddington**. It’s likely that Leo took the photo: he often came with a camera, and also took photos of many Holleford Crater excursions.

...it could be from the April 1979 meeting rather than February

Continued on next page...

In this issue:

- ▶ Reports & Other Items 1
- ▶ Contacts & Info. 2
- ▶ Meeting Report: Jan. 2010 3
- ▶ Donations for 2010 3
- ▶ Contest Concluded! 3
- ▶ Solar Radio Astronomy. 4
- ▶ ECU 6 Released / Review. 6
- ▶ Blast from the Past: Sunspots . . 8
- ▶ Compendium of Esoteric Facts. 9

...Reports & Other Items

...continued from front page

February 1978 meeting because both she and David are wearing light clothes, which is not very likely during the cold Kingston winters we used to have!

Editor's note: This is great work by Angelika—perhaps last issue's contest should have been to figure out the date this photo was taken!

Blast from the Past

Thanks to the power of **facebook**, your editor was able to locate one of the early members of KC, **Flynn Marr**, and ask him about the early days of our Centre. Here is his reply:

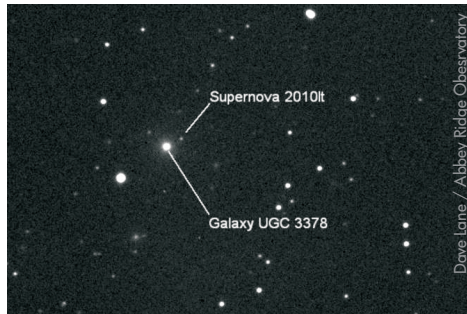
Thanks for the message about my experiences with astronomy at Queen's. I was in Science '64 and in the summer of '63 worked for **Dr. Harrower** in the observatory on the top of Ellis Hall. Wow, that was 45 years ago! I often forget how much time has passed (if indeed time passes at all!). Yes I have reminiscences. I had a key to the observatory and the 15" reflector was all mine as no one was doing anything with it. The darkroom was not used either. That was a summer!

Photography was my hobby and

I have photos of all of this. I took glass plates with the wide field camera on the 15-inch. I photographed a 98% eclipse we saw in Kingston. I even photographed lightning over New York State with the wide-field camera.

Odds & Ends

ECU 6 has been released (see story elsewhere in this issue) ... **Kathryn Aurora Gray** has become the youngest person (10) ever to discover a supernova (SN2010lt in UGC 3378, image below) ... A brief comment from **Mark Coady's** editorial on the MLO (*Regulus*, Nov. 2010, page 4) has been posted to the Fix the MLO comments page: fixthemlo.org/mlovoices.php (with credit to the Kingston Centre newsletter!) ... The Centre's **facebook** page received another 41 visits in January. ★



Discovery image of 17th-magnitude SN 2010lt, taken on December 31, 2010.

Regulus Needs You!

ITEMS OF INTEREST FROM MEMBERS—full articles, or even just a couple of paragraphs are always welcome. Items are gratefully accepted on each and every day of the year! Send items to:

walter2 (at) starlightccd (dot) com
or:

Walter MacDonald
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Winchester ON K0C 2K0

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*Happy 50th Anniversary
RASC Kingston Centre!*

17 PEOPLE WERE IN ATTENDANCE at the 7:30 meeting in Stirling Hall Theatre A. Susan ran down the plans for 2011 as there are some obstacles coming up, eg in May Stirling Hall will be closed for electrical maintenance. In this 50th year (actual anniversary is January 19th), we plan on trying a lot of new things, like moving a regular meeting to a Saturday and out in a campground. And another one that will be an observing session out on Wolfe Island. And yet another one in the fall at the Kingston downtown branch of the Public Library.

We had some technical issues and were not able to connect to our Skype video conference, so instead watched 40 minutes of Dr. **Phil Plait** of Bad Astronomy fame, Episode 2 of his TV series *Bad Astronomer: Alien Attack*.



The cake came out and we came very close to finishing it off. ★

BIRTHDAY GREETINGS

On January 19th, former President-for-Life, **Ian Levstein**, sent along his greetings in both English and Klingon:

*Happy birthday to you,
Happy birthday to you,
Happy birthday Kingston Centre,
Happy birthday to you.*

*Quch qoS Daq SoH
Quch qoS Daq SoH
Quch qoS Kingston Centre
Quch qoS Daq SoH★*

Walter MacDonald

It could be the beautiful star with 9 rays next to the 'RASC-KC Board of Directors,' on page 2 of every issue since Oct. 2009. You did say since September 2010, though, so perhaps that's not it?

Kudos to Angelika for the depth of her research, but no, that was not it!

Not one to torture the readers *too* much, your editor pointed out that the memorial was somewhere on page one and that “if you used a telescope to examine page one...or perhaps there is some other way? If you do find it, can you explain it? (Ooooh, the mystery continues to build...)” **Hank** replied: *Oh, how devilish you are, I shall have to consult E. Kliptik.* Unfortunately, this was not ‘Who Wants to be a Millionaire’ (indeed there was no prize, let alone cash involved!) so no lifelines were allowed and Hank was disqualified

THE RASC KINGSTON CENTRE is a registered charity (# 827905720RR0001), able to receive donations and issue tax receipts. In the calendar year of 2010 (January 1–December 31) we received 13 donations totaling \$685.48. 2010 Tax receipts went in the mail on January 24th, 2011 and you should receive them soon.

We would like to publicly thank our donors for helping to further our efforts in promoting astronomy in our local area:

- ▶ **William Blades**
- ▶ **Peter Brown**
- ▶ **Tessa Clarke**
- ▶ **Susan Gagnon**
- ▶ **Kim Hay**
- ▶ **Drakkar Human Resources**
- ▶ **Kevin Kell**
- ▶ **Ian Levstein**
- ▶ **Ernest Munroe**
- ▶ **Joseph Pasek**
- ▶ **Javier Ramirez**
- ▶ **John Rossiter**
- ▶ **Andrew Telesca Jr**

All of these donations were either targeted for our Observatory Fund, or untargeted, in which case we put them into the Observatory Fund as well. Someday this will allow us to build our own Centre observatory and warm-room to house our Library and Equipment.

For more information, please see kingston.rasc.ca/donations.php★

from the contest—a first in our centre’s history! ☺

In the closest guess yet, **Kim Hay** suggested *the star Regulus in the constellation of Leo*. The search was closing in! Indeed, about the same time, the mystery was solved by our former President-for-Life **Ian Levstein**...and the answer is...

continues on page 9...

Contest Concluded!

THIS WAS THE CHALLENGE:

For almost half a year now, Regulus has contained a subtle memorial to Leo Enright in each issue. Can you find it? It may not be what you think it is!

Angelika Hackett wrote: *...I remember Leo’s “Find the Error in the Observer’s Handbook” contests. Your idea to include a little tribute to Leo in each issue is great.*

Not surprisingly, everyone’s initial guess was that the constellation Leo, which has appeared on page one since September 2010 was the memorial, or as **Hank Bartlett** humourously put it: *the over-obvious constellation that Leo named after himself*. Now, Leo had been involved in Astronomy for a long time, but not that long!

Angelika had another idea:

SOME NEW DEVELOPMENTS IN AUTOMATED DATA PROCESSING WITH THE SCO "VLF 40 KHZ" RECEIVER

Background information on our atmosphere's "D layer" is available here:

en.wikipedia.org/wiki/Ionosphere#D_layer

We have had this system up and running since early 2007 but have not spent any time analyzing or even looking at the data until recently. In September 2010 we (with the help of Paulo Nuin for the Python stuff) developed code to automatically process each day's worth of data, creating visual graphs and uploading them and the text data to the web server at starlightcascade.ca/solarradio

Now we review the previous day's data each evening when it becomes available and note anything interesting. This article is mainly about developing the code to automate this process, which involves these five steps:

- Step 1: Create the data file.
- Step 2: Rename the data file and archive it.
- Step 3: Create the graph and archive it.
- Step 4: Upload the image and text to the web server.
- Step 5: Move the image and text files into the correct places and generate 7 and 30 day summaries.

STEP 1: Create the data file, copy and archive it (see Table 1)

The Receiver is a small "black box" (figure one) that outputs a signal on a serial port cable and is received by a windows workstation running windows NT2000 and the program Spectracyber I v3.2. The antenna is a single 15m wire running north-south along the garage roof.

The data is received as a measurement from 0-10 volts DC and the data file looks like this:

```
c 10 14 2010 0 22 51 240.000000 0 360 5 0
0.007324
0.007324 ...
```

where the first line is a header row indicating the mode (c = continuous), month (10), day (14), year (2010), hour (0), minute (22), second (51), and time interval (240 seconds). Lines 2-360 are the raw voltages levels and are single value numerical data.

The program takes a data reading every 240 seconds which works out to 360 readings during a 24 hour period. At the end of that period, the data file is read out and the program starts afresh.

STEP 2: Rename the data file (see Tables 2 and 3).

The windows workstation runs a batch file roughly every hour after the expected creation time of the previous days data file and archives it locally, renames it and copies it to our linux file server with an archive copy as well.

The original filename looks like this:
sco 2010-09-17 00 10 53 utc.11
The renamed file looks like this:
scosrt-2010-10-14-0-22-51.txt

STEP 3: Create the graph and archive it (see Tables 2 & 4)

The linux server (Fedora 13) then runs a cron bash script that processes the txt data file and creates a graph in .PNG image format (figure two). PNG format is a small and compressed, but is not lossy like JPG format is.

The downside to this graph at this stage is there is no easy time reference to events. So another script was applied to add in the annotations in blue (Starlight Cascade Observatory, LatLong, and relative time in hours across the graph). The starting time of the data is listed at the bottom and is basically the header row 1.

STEP 4: Upload the image and text to the web server (see Table 2)

This image is then archived and then automatically FTP'd up to our web server at starlightcascade.ca/solarradio into a temporary folder, along with the txt data.

STEP 5: move the image and text files into the correct places and generate 7 & 30 day summaries (see Table 6).

Another timed script runs on the web server StarlightCascade, copying and archiving the image and text data and moving them into the

Figure one: The receiver



Table one: Batch file for copying the data.

```
@echo off
echo copy spectracyber data from workstation to server every night
echo incremental backup runs daily from 20:00-23:00 (when we expect the
data to arrive)
w:
cd \sco-srt\dataservercopy
c:
cd "\program files\spectracyber\data\"
rem /d=new of changed /s=subdirs /c=continue
xcopy * w:\sco-srt\rawdataarchive /d /s /c /y
xcopy * w:\sco-srt\dataservercopy /d /s /c /y
move "c:\program files\spectracyber\data\*" d:\sco-srt-data-archive
cd \
echo done
```

live web page that you see. In addition, it creates two more summary web pages, one displaying the last 7 days of data images:

starlightcascade.ca/solarradio/last7.htm

and another with 30 days:

starlightcascade.ca/solarradio/last30.htm.

SOFTWARE REQUIRED:

Windows and Spectracyber, Python, Linux and “R” and “ImageMagick.”

Spectracyber is available from jupiterspacestation.org/spectrometer/

Linux Fedora is available from fedoraproject.org/

To install the packages “R” and ImageMagick run the following commands in a linux terminal window: “yum install R” and “yum install ImageMagick” and “yum install Python”.

SUMMARY:

We hope that this will aid others in developing automated data processing systems for astronomical use. In this age of electronics, we can easily achieve levels of data collection and automated processing that were impossible just a few years back.

Actual data analysis is the next step after ensuring a steady and regular data processing routine. We need to compare our data against an outside source to try to identify events, and recognize patterns.

You can find a one page summary of all of our automated data collection systems, including the VLF 40KHz receiver, the All-sky camera, the FM Meteor Detector and the Weather Station here:

starlightcascade.ca/blog/relatively-real-time-data/

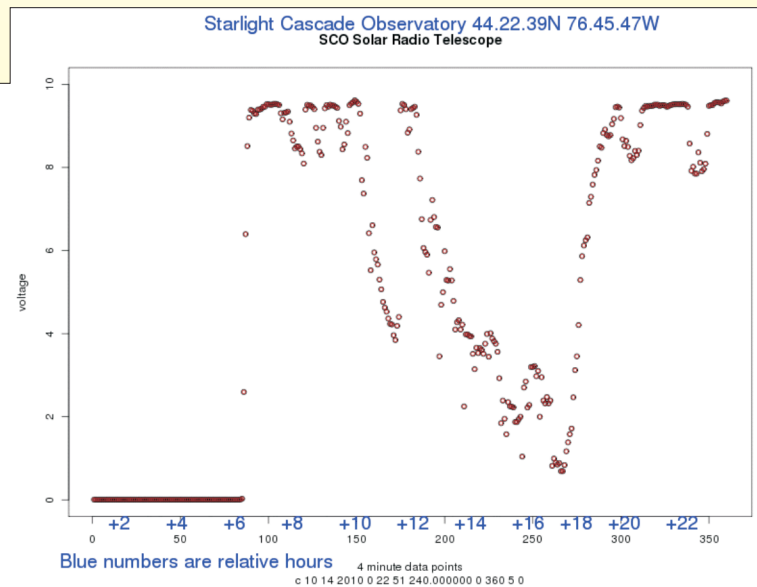
THE FUTURE

We hope to add in some relatively live webcams and the Radio Jove radio telescope project data. ★

Table two: Process-scosrt-home – linux server bash script

```
#process-scosrt
#2010 Sept 16
### this script renames the current file in the folder and then creates
### a .PNG image
cd /web/sco-srt/dataservercopy
echo empty ftp upload folder
rm /web/sco-srt/upload/*
echo starting file rename for all files in dataservercopy
for i in *
do python ../rename_files.py "$i"
done
echo done file rename $i in datservercopy
echo copy *.txt to textarchive
cp *.txt /web/sco-srt/textarchive
echo starting graph generation for all *.txt in dataservercopy
for i in *.txt
do python /web/sco-srt/graphing.py $i; rm $i.R; echo $i
done
cp *.png current.png
#new 2100929
for i in *.png
do
convert -font helvetica -fill blue -pointsize 20 \
-draw 'text 200,20 "Starlight Cascade Observatory 44.22.39N 76.45.47W" \
-draw 'text 100,540 "+2" \
-draw 'text 160,540 "+4" \
-draw 'text 220,540 "+6" \
-draw 'text 280,540 "+8" \
-draw 'text 340,540 "+10" \
-draw 'text 400,540 "+12" \
-draw 'text 460,540 "+14" \
-draw 'text 520,540 "+16" \
-draw 'text 570,540 "+18" \
-draw 'text 620,540 "+20" \
-draw 'text 680,540 "+22" \
-draw 'text 50,580 "Blue numbers are relative hours" \
$i $i
done
echo done graph generation
echo copy *.png to imagearchive
cd /web/sco-srt/dataservercopy
cp *.png /web/sco-srt/imagearchive
echo moving .png and .txt from dtaservercopy to upload
mv *.png /web/sco-srt/upload/
mv *.txt /web/sco-srt/upload
rm -f /web/sco-srt/dataservercopy/*
echo done process-scosrt
# Starting autoftp99 using lftp
cd /web/sco-srt/upload
lftp <<EOF
open 130.15.144.99
cd /web/starlightcascade/solarradio/temp
pwd
ls
mput *
bye
EOF
```

Figure two:
A graph
of the data.



The Earth Centered Universe, Version 6

Walter MacDonald

I'VE BEEN BETA TESTING this since Christmas Eve (talk about a great Christmas present!)—though not with scope control because there has been no clear sky here in ages!

Though there were few new features at the instant of release, a few more have been added during the past few weeks; even without these ECU 6 is, nevertheless, a huge leap forward. I can report that ECU 6 runs more smoothly even under Windows XP, and it has nice modern dialog boxes/shortcut menus and snappier execution all around.

NEW FEATURES:

▶ You can now zoom in and out using the mouse wheel (or equivalent trackpad feature!)

▶ A local horizon (alt/az) grid. Enable it in the Field⇨Display menu or use the grid toolbar item to cycle through the two grid types and off.

▶ A cool new navigation mode that

allows you to drag the sky around using your mouse. Hold down the shift key over the sky, the mouse cursor will change to a 'hand' and you can then move the mouse to drag the sky.

▶ Animation rates can be set using a floating point number (fractions of seconds) and the timing algorithm has been changed so that animation should be even smoother than before.

▶ A new animation time step 'Same Sun Altitude' has been added. Dave gives a couple of examples of how this could be used:

(1) you could set the time so the sun is 9 degrees below the horizon, set local horizon mode, lock on the sun, then it will animate the planets at the same sky illumination. (2) Set the time at sunset, start the animation, and watch the sun walk back and forth along the western sky (SW to NW), etc.

▶ With more memory to work with, the number of orbits active at a time has been increased from 1000 to 5000 and the number of trail points from 200 to 500.

▶ Although ECU only updates the display once each minute, the time displays now show seconds (you can guess where this is leading!)

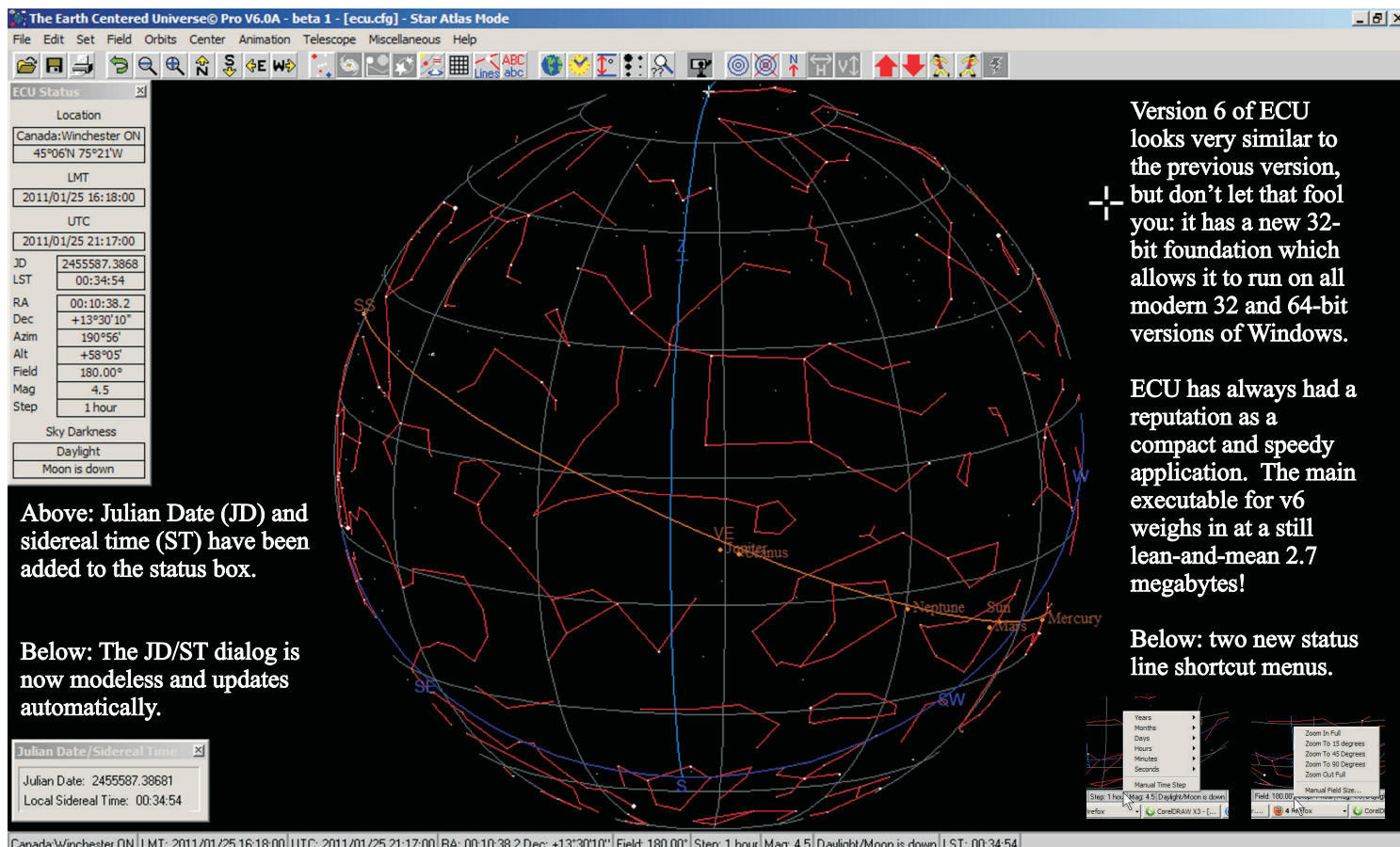
▶ JD and LST are now displayed in the large status box and JD in the small status box

▶ The JD/ST dialog is now modeless and updates automatically (though only once per minute currently)

▶ You can now right-click the Field or Step areas of the status bar to get shortcut menus for setting these values.

▶ The SAC, WVDS, and GCVS databases have been updated to current versions.

With its new foundation and some great new features, ECU 6 is a highly recommended upgrade! ★



Version 6 of ECU looks very similar to the previous version, but don't let that fool you: it has a new 32-bit foundation which allows it to run on all modern 32 and 64-bit versions of Windows.

ECU has always had a reputation as a compact and speedy application. The main executable for v6 weighs in at a still lean-and-mean 2.7 megabytes!

Below: two new status line shortcut menus.

Above: Julian Date (JD) and sidereal time (ST) have been added to the status box.

Below: The JD/ST dialog is now modeless and updates automatically.

HOW LONG CAN A SUNSPOT LIVE? These gigantic electric storms on the surface of the sun have considerable influence on our earth, so the question is important. It has just been answered in an interesting discussion by **Dr. Edison Pettit** of the Mount Wilson and Palomar observatories.

For a century astronomers have quoted the greatest duration for a sunspot at 18 months. This Methusaleh of sunspots was observed in 1840 and 1841. Practically all astronomical textbooks of the past 75 years, as well as the most recent technical books on the sun, refer to this spot group as the one which lasted longest.

Since a photographic record of the sun has been kept—nearly 80 years now—no other spot group has had anything approaching the longevity of this one. This circumstance aroused the suspicions of Dr. Pettit, who has had many years of experience in studying sunspots. He has this year examined the original records with great care in the light of modern knowledge of sunspots and their behavior.

18-MONTH SUNSPOT JUST FABLE

This 18-month sunspot was recorded by **Hofrath Heinrich Schwabe**, a magistrate in a little German town, who had both a small telescope and a great deal of leisure. This discovery of the sunspot cycle is due to his persistent observations over a period of more than 20 years. He discovered that about every 11 years sunspots increase to a maximum number on the sun's face. Schwabe was such a diligent observer that it is said that "for 30 years the sun never exhibited his disc above the horizon of Dessau without being confronted by Schwabe's imperturbable telescope." About 300 days a year Schwabe was able to

see the sun sufficiently to record spots.

But a spot group cannot be kept under continuous observation for more than two weeks at a time because the rotation of the sun carries it around to the side turned away from earth. One can only make assumptions as to what has happened to the group when it is on the back side of the sun. If when rotation brings that part of the sun again into view there is still a spot group in the same position with the same characteristics, it may be assumed that the group has lived through one rotation.

From a careful study of Schwabe's records, however, Dr. Pettit now interprets the observations to show that the famous spot group did not actually live 18 months. On the contrary, groups of new spots

...for 30 years the sun never exhibited his disc above the horizon of Dessau without being confronted by Schwabe's imperturbable telescope.

broke out near the position of the old group when the group was on the other side of the sun. The 18-months period actually involved seven or eight different groups. The longest possible duration for a single group from Schwabe's records of 1840-41 is 136 days, and probably 121 days is nearer the true value.

MAXIMUM LIFE ABOUT FOUR MONTHS

The photographic records of the sun began at Greenwich in 1874, now covering an interval of 77 years, provide an accurate record for study. These photographs show 624 instances where groups recurred after a rotation of the sun. Of these, 468 were seen in two rotations, 118 in

three, 25 in four, 12 in five, and on possibly survived to a sixth apparition, with a duration of 138 days in 1885. The longest duration of which there is no doubt is for a group in 1919 which lasted 134 days. Spots usually occur in groups. It is harder to determine the duration of a single spot than of a group, but the record probably goes to a single spot in 1946-47 which lasted for 113 days.

The largest spot groups, though of long life, are not the ones which establish the longevity records. We have just passed through one of the most active sunspot maxima ever recorded. Twice during the maximum of this cycle spot groups broke all existing records for size. First the great spot group of Jan. 29, 1946 until that time the largest ever measured had an area of five-and-a-half billion square miles. It lasted 99 days. This record for size was broken a year later by the great group of Feb 5, 1947 with an area of over six billion square miles, which lasted 94 days.

So the oft-quoted 18-month sunspot has now been relegated to the realm of fable, and we may conclude that four months is much closer to the maximum lifetime of a sunspot. ★

This column was originally published in the Toronto Daily Star for Saturday, December 15, 1951 and is reprinted here with the permission of Dr. Hogg's family.



Sunspots on 2005 Sep 9 at 13:47 (above) and 2003 October 30 at 14:57 (below) local time.



IN THE DISTANT PAST, the Moon was much closer to the Earth. Thanks to tidal forces and the Law of Conservation of Momentum, the size of the Moon's orbit has been increasing (currently by ~3.8 cm/yr). As luck would have it, we live in an epoch in which the Moon has an apparent size close to that of the Sun. When near perigee, the moon's apparent size is adequate to completely cover the Sun. (Unfortunately we do not get monthly eclipses because the Moon's orbit is tilted about 5° with respect to the ecliptic.)

A total solar eclipse is possibly the most spectacular sight in all of

Astronomy. Indeed, many amateur astronomers are *eclipse chasers* and travel the world in pursuit of their next "fix."

Of course not all total solar eclipses are equal. During the period –1999 to 3000 the shortest and longest totalities are 9 seconds (919 Feb 3) and 7 minutes 29 seconds (2186 Jul 16).¹ A few KC members, who travelled to Baja, Mexico in July 1991, experienced 6 minutes 57 seconds of totality; as you can see this is at the upper end of the range of totality durations. The longest total eclipse of this century is already past: 6 minutes 39 seconds on 2009 July 20.

But did you know that the 20th century brought us the technology to extend totality? A group of observers chartered a plane from Tahiti during the 2010 Jul 11 eclipse and got an impressive 9 minutes 23 seconds!² During the 1973 Jun 30 eclipse a group of observers flew in a Concorde at Mach 2.05 and extended the length of totality to an incredible 74 minutes!³ With the Concorde no longer in service, only supersonic military aircraft are currently capable of replicating this feat, so this record is likely to stand for a long time. ★

References:

1 eclipse.gsfc.nasa.gov/SEcat5/catalog.html

2 wired.com/wiredscience/2010/07/eclipse-chasers/

3 nature.com/nature/journal/v246/n5428/abs/246072a0.html

...Contest Concluded!

(found in the wee hours of Jan 26th):

Leo's subtle tribute...Oso—for Oso Township, Sharbot Lake—smack in the heart of Regulus in the constellation Leo.

Boy, I'll say it was subtle...I had to magnify the online version to 400% to notice it, and 800% to read it clearly!

Kudos for a most subtle tribute!

Ian is correct. Also, "Oso" is the name of Leo's observatory, built in 1979 on a base of 43 tons of concrete! You can hear Leo talking about his observatory here (6 and 18 minutes in): letstalkstars.com/asx/2009/20090630.asx

An easy way to find the subject of this contest (now that you know what it is!) is to do a text search for "oso" in your PDF reader. Interestingly, "OSO" also seems to be prefixing the Google search results for recent *Regulus* issues.

Wow, this contest has been such fun! Thanks to everyone who participated and congratulations to Ian!

But wait—the story doesn't end here! As it turns out, **Angelika** had previously found the memorial, but failed to recognize it! (How often

that has happened in the history of Astronomy!) She writes:

I had already "magnified" the star Regulus on page 1 when looking at in on my laptop, and inside it, it says "OSO." That didn't mean much to me, though, so I just ignored it.

A "d'oh!" moment if there ever was one! She writes further:

...that was indeed fun, and I think made people read *Regulus* more thoroughly than they might otherwise have done. Congrats to Ian! I hope the little tribute will remain there—what a unique idea.

...I know what you mean by "not" discovering it. In March 1996 my (then 7-year-old) daughter "discovered" comet Hyakutake while camping in the southern California desert—she hadn't heard about it yet, but of course, it had already been discovered. She just looked up and said, "There's a comet!" To this day she claims she discovered that comet. Likewise I'm quite happy to have unofficially

...continued from page 3
"discovered" the OSO (even before your hints)!

What better way to conclude our contest adventure than with **Ken Kingdon's** great anecdote:

At a Kingston Centre meeting around 2003, **Leo** discussed the opening of our friend **Guy Nason's** new observatory named Gneiss Hill Observatory. Gneiss (pronounced "nice") is a common rock up in the Canadian Shield both at Guy's observatory, and all around Sharbot Lake, the home of Leo's Oso Observatory.

At the KC meeting, Leo commented that these two observatories were located 50 km apart, and that he and Guy were planning to connect them together via a laser beam to form one of the world's largest interferometry telescopes.

Without batting an eye, Leo said they planned to name the pairing "The Oso-Nice Observatory."

We often chuckled over that one whenever we observed together at Sharbot Lake. And, I'm still chuckling. ★