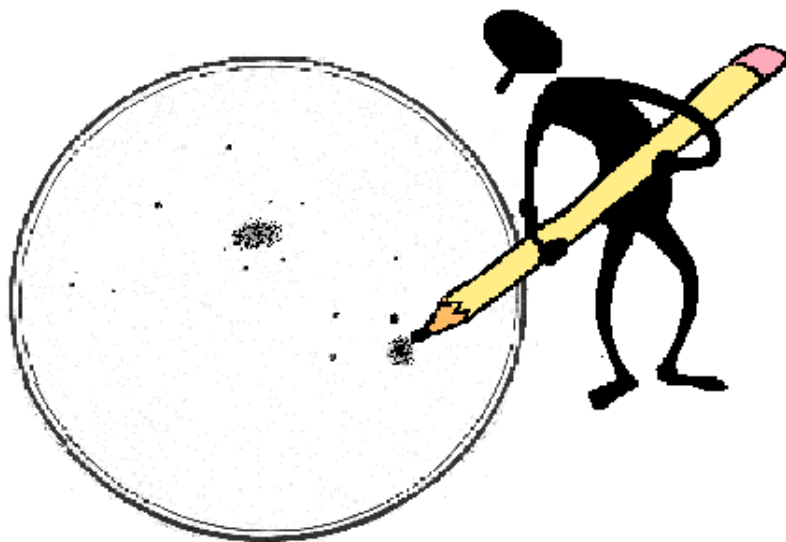


Saskatoon Skies

The Newsletter of the Saskatoon Centre
of the Royal Astronomical Society of Canada

Volume 32 **April 2001** Number 04



Sketch what you see - it helps you observe. If you have to draw it, you have to see it first! That's the second step to *OBSERVING*. The first it to take time to look! See page 15.

RASC Calendar Happenings

Date (2001)	Event	Contact	Telephone
Apr. 9	NOTE EARLY DATE of Executive Meeting - Room 8313 - 6:30 pm	Les Dickson	249-1091
Apr. 9	NOTE EARLY DATE of General Meeting - Room 8313 - 7:30 pm -	Les Dickson	249-1091
Apr. 27	Youth Group Meeting - Nutana - 7:30 pm	Andrew Krochko	955-1543
Apr. 28	Astronomy Day at Confederation Mall	Mike Stephens	682-5989
Apr. 28	Astronomy Gastronomy - 5:30 pm Confed.	Les Dickson	249-1091
May 14	NOTE EARLY DATE of Executive Meeting - Room 8313 - 6:30 pm	Les Dickson	249-1091
May 14	NOTE EARLY DATE of General Meeting - Room 8313 - 7:30 pm -	Les Dickson	249-1091
June 18	Executive Meeting - Room 8313 - 6:30 pm	Les Dickson	249-1091
June 18	General Meeting - Room 8313 - 7:30 pm -	Les Dickson	249-1091
Aug. 17 -19	Sask. Summer Star Party - Cypress Hills	Les Dickson	249-1091

Sky Buys and Mirror Sells

The Saskatoon Centre's Swap and Sale Page!

Wanted: Telescope. Mike Clancy, a co-worker of Les Dickson, is looking to buy a used 6" or 8" Dobsonian telescope for himself and his two sons. If you have one for sale, contact him at (306) 384-2643.

For Sale: Brass lined trunk for SC-8 or SC-10, 9 mm Kellner eyepiece, 0.965 "6x30" eyepiece with crosshair for a spotter, 3-D Saturn V Rocket puzzle (3-feet tall), and some very good astronomy books: *The Pocket Guide to Astronomy* by I. Ridpath, *Astronomy* by Menzel, *Introduction to Practical Astronomy* by Jones, *Burnham's Celestial Handbook* (3 vol set, hardcover). All books are in excellent shape. Call Darrell Chatfield for prices at 374-9278.

Wanted: 25mm Orthoscopic or Plossl eyepiece, spider and 2" - 2-1/4" diagonal for 10" scope. Will buy or trade. Call Rick Huziak at 665-3392.

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Saskatoon Centre

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ASTRONOMY DAY is April 28th

By Mike Stephens <messiercx@hotmail.com>

Astronomy Day is on Saturday, April 28th at Confederation Mall. We need to set up by 9:00 a.m. so please have your telescopes and display items there by 8:30 a.m. The display will run until about 5:00 p.m. and be torn down by store closure at 5:30 p.m. We'd like to see some new members participate, so if you've never been to an Astronomy Day display, what we do is set up books, display panels, a slide show and telescopes, and then meet the public for the next 8 hours. We try to promote astronomy to the general public, and hopefully also sign up temporary members and new members. If you don't have a telescope to display, we can use your body to help man the booth and give the rest of us a break now and then. Even if you can't help in the booth, we'd love to see you come down for a few minutes just to say "hi".

We are still working on the details of a Public Starnight in conjunction with Astronomy Day, so stay tuned for more information on whether or not there will be one. We will have more information at the General Meeting.

Immediately following the Astronomy Day display, we will meet in a local restaurant for the *traditional Annual Astronomy Gastronomy*, and chow down some food and beverage.

A Note About the Next Meeting

May's General Meeting - May 14th

Note the early date for this meeting in order to avoid the Victoria Day holiday. Note also that newsletter deadlines will move up by one week - to the 21st of the month for May.

Call for Photos --2002 RASC Observer's Calendar

Rajiv Gupta <gupta@INTERCHANGE.UBC.CA>

Members of the RASC are encouraged to submit astronomical photos for consideration for publication in the 2002 RASC Observer's Calendar. Images can be of any type -

deep-sky or solar system; prime-focus, piggyback, or fixed-tripod; emulsion- or CCD-based.

Electronic images under 1 MB in size may be sent by email to: gupta@interchange.ubc.ca. Larger electronic images may be sent on CDs or disks (1.44 MB floppies or 100 MB Zip disks). Film-based images should be submitted, or be made available on request, as 8- by 10-inch prints or original negatives or slides. Prints, negatives or slides, CDs, or disks (1.44 megabyte floppies, 100 megabyte Zip disks) should be sent to me at: **2478 1st. Ave. W., Vancouver BC V6K 1G6.**

The deadline for submission is April 15, 2001. For further information about submissions, please contact me by email or by phone at 604-733-0682. Note: The submission deadline of March 31, 2001 previously announced in the February issue of the RASC Journal has been extended because of a delay in the mailing of that issue.

Bad News - Stolen 25" Obsession + eyepieces / equipment ...

from Randy Rogers <rrogers2@dart.org>

To all amateur astronomers and lovers of astronomy:

During the week of March 17-25 my storage unit was burglarized and my 25" f/5 Obsession telescope and large wooden eyepiece box was stolen. I believe the thief to be in the astronomical community as only one who has knowledge of the scopes whereabouts and what it was would steal it. The thief left a 31" Sony Trinitron sitting right next to the scope there and closed the storage up. A thief wouldn't know what truss poles were for, or a light shroud bag, or even what they were looking at (a disassembled Obsession).



The scope is new (manufactured 5/00) and has the name "Mike Benz" inscribed on the brass nameplate with serial #605 (I believe). It has a f/5 Galaxy mirror (serial # as yet unknown, but I have the interferogram in storage somewhere and have requested the # from John Hudek of Galaxy). It has hi-resolution digital setting circles, the truss poles are wired for 12V and the encoder cables run through one of the poles. The secondary has an Astrosystems dew heater with the battery velcroed to the spider (Novak). It also has a Feathertouch (black) focuser and light shroud.

The eyepiece box is one of Steve Carroll's Astrocaddy's and has the following eyepieces: 35mm Panoptic, 30mm Takahashi LE, 27mm Panoptic, 24mm UOrtho, 20mm Nagler, 18mm Takahashi LE, 16mm Nagler 2, 14mm Pentax XL, 10.5mm Pentax XL, 9mm Nagler, 7mm Nagler, 4.7mm Meade UWA, TV 2" Big Barlow, 48mm O-III (Lumicon) filter and 1.25" Orion or Meade light pollution filter. There was also a red adjustable and green adjustable intensity flashlight with string to hang around your neck.

The telescope was NOT insured and I'm at a loss as to how I ever could recover such a loss. These are bad times when fellow amateurs would rip another astronomer off like this, so everybody start taking extra precautions of who you allow to see your equipment.

I would give a \$1000 reward for the return of the equipment and like others have said before me, if the scope/accessories are returned, I promise not to press charges.

Thank you for all your help in recovering and watching for all my equipment at star parties.

Randy Rogers <rrogers2@dart.org>

Dallas, TX

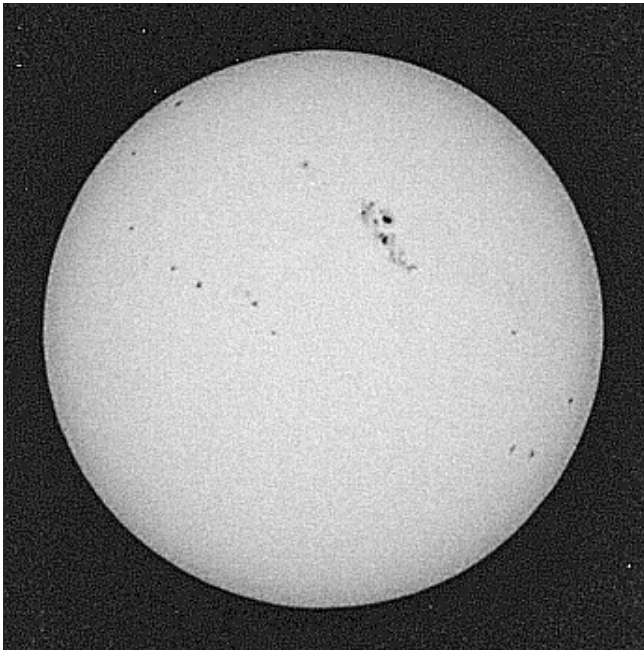
(214) 458-7961

[What type of scum-sucking lowlife would do such a thing? Submit your comments to the editor suggesting appropriate or non-appropriate forms of torture for this lowest of low no-guts, loser dweeb crook! - And keep your eyes and ears open for this scope or even parts of this scope and eyepieces if he chooses to sell it as piece parts. The picture is from the Obsession Telescopes website - Ed]

The Planets for April 2001

By Murray D. Paulson <mpaulson@ecn.ab.ca>

Ah, spring is in the air and with it the vigor and promise of summer. I look forward to the gentle nights under the stars, but I will miss the parade of the planets as we have enjoyed them this winter. Venus moves into the morning sky and Mercury converges on the sun as the gas giants prepare to depart stage right.



April finds Mercury closing on the sun where on April 22 it will pass less than 1/4 degree from the sun. This is a superior conjunction where Mercury sits on the far side of the sun, as far from Earth as it gets. At this time it would show, if you could see it, a 5.06" disk from its 1.329 AU distance. It will then climb into the evening sky as it heads to its May 21st greatest eastern elongation.

Venus has passed in front of the sun, and now is headed into the morning sky. I did manage to catch it the evening before it passed 8 degrees above the incredibly spotted sun (see the accompanying photograph), but the clouds got it the next morning. It is so cool to

see it's delicate crescent in binoculars! By the 10th of the month it will have moved to 19 degrees from the sun and will shine at magnitude -4.5. Venus will display a shallow crescent 54.9" in width. Since it is so close to us, we will see it speed into the morning sky and do a reverse of last month's growing waning crescent. On Mercury's date with the sun, it will have moved off to 31 degrees west of the sun and will show a 46.3" crescent. By early May it will have dwindled to 33.6" and will be near dichotomy, or half phase, and 42.5 degrees from the sun. At this time, you will have to get up pretty early in the morning to see it, as it rises at 4 a.m. Another interesting thing to note is that from the end of March, Venus has progressed from being 8 degrees above the ecliptic to crossing the ecliptic on May 10!

Mars is slowly making its way to the lowest point on the ecliptic, which it will save for opposition. Its altitude will decline from 13 degrees early in the month to about 11 degrees in early May. The disk will swell from 11.2" in early April to just over 16", or just larger than it was at opposition in 1999. It will brighten as we close in on it as well, going from -0.5 magnitude to -1.4 in early May. Despite it's poor altitude, it is worth having a look at now. By the June opposition, it will drop to only 9 degrees altitude, and June is traditionally our poorest observing month. So the point is to do it now. Mars culminates at 3:00 a.m. in early May. Have a look after you find Pluto in the morning sky!

April will see the great gas giants closing in on the sun. Near the beginning of the month, Saturn sets nearly at 11 p.m. and Jupiter an hour later at midnight. By early May, Saturn will have disappeared into the evening twilight, and Jupiter will set at 10:45 p.m., a little over 2 hrs after the sun. Their conjunctions are May 25 for Saturn and June 16 for Jupiter. They still provide an excellent view in the early evening.

As a consolation, the coldest planet / Oort? object, Pluto is well placed for late night/morning viewing. Consult the charts in *Sky and Telescope*, *Astronomy* magazine or the *Observer's Handbook* for finder charts to locate it. To verify that you have actually seen it, you need to observe it, draw it against the field stars and then return to the same field on another night to see that it has in fact moved against the stars. Fortunately it doesn't take much artistic talent to draw the field and it is fun to have documented that you have captured this distant wanderer. One cheat on making the drawing that I commit is to get a printout of the field down to magnitude 14 -15 and plot your observation on it. To get the most out of your scope, you will need to use fairly high power. I use 170 to 280 power. This will maximize the sky background contrast and make Pluto's faint mote more visible. An entertaining pastime is to try your luck and see how small an instrument you can use to see Pluto. I challenged Alister L. many years ago when he owned a 125 mm refractor and I owned a 94 mm Brandon. We both found it, but not without some serious scrutinizing! My effort took just over an hour and my eyes were very tired afterward from

the strain to see the few photons that were trickling by. If you miss Pluto in the April-May window, don't despair because it is easily visible in the early evening sky at the summer star parties.

Till next month, clear skies!

Astronomical Events Calendar

by Les Dickson

Date (2001) Event

Apr 8 Full Moon

Apr 12 40th Anniversary (1961), Vostok 1 Launch (1st Man In Space)
20th Anniversary (1981), 1st Space Shuttle Launch

Apr 13 Mars 1.3° S of Moon

Apr 15 Last Quarter Moon

Apr 16 Jupiter 5° N of Aldebaran

Neptune 3° N of Moon

Apr 17 Uranus 3° N of Moon

Apr 20 Venus 10° N of Moon

Apr 22 Lyrid meteors peak

Apr 23 New Moon

Apr 25 Saturn 1.4° N of Moon

Apr 26 Jupiter 1.8° N of Moon

Date (2001) Event

Apr 28 Astronomy Day

Apr 30 First Quarter Moon

May 4 Venus at greatest brilliancy

h -Aquarid Meteors peak

May 5 40th Anniversary (1961), Freedom 7 Launch (Alan Shepard, 1st US Man In Space)

May 7 Full Moon

Mercury 4° N of Saturn

May 10 Mars 1.9° S of Moon

May 11 85th Anniversary (1916), Albert Einstein's General Theory Of Relativity

May 12 Mercury 8° N of Aldebaran

May 14 Neptune 3° N of Moon

Messier, FNGC, H-400 & Binoc Club

MESSIER CLUB

Certified at 110 Objects: R. Huziak, G. Sarty, S. Alexander, S. Ferguson, D. Jeffrey, D. Chatfield, R. Christie, K. Noesgaard

Mike Stephens 96

Wade Selvig 71

Andrew Krochko 42

Brent Grätias 39

Stan Noble 28

Mike Oosterlaken 28

Lorne Jensen 25

Les & Ellen Dickson 20

Debbie Anderson 17

Brian Friesen 15

FINEST NGC CLUB

Certified at 110 Objects: R. Huziak, D. Jeffrey , G. Sarty, D. Chatfield

Scott Alexander 89

Ken Noesgaard 24

Sandy Ferguson 23

Mike Stephens 12

Mike Oosterlaken 1

HERSCHEL 400 CLUB

Certified at 400 Objects: Dale Jeffrey

Rick Huziak 389

Darrell Chatfield 321

Gord Sarty 147

Scott Alexander 98

Ken Noesgaard 44

Sandy Ferguson 18

Mike Oosterlaken 7

Chatfield BINOCULAR CERTIFICATE

Mike Stephens 45

Join the Messier, Finest NGC, H-400 & Binocular Club!

Observe all 110 Messier, 100 FNGC or 400 H-400, or 40 Binocular objects and earn your

CERTIFICATES!

The first 2 lists can be found in *the Observer's Handbook*. The Binocular List & Herschel 400 list will be available at each general meeting for 50 cents (covers photocopying) or **can be mailed out on request to distant members**. Each month I'll be posting updates.

Active Observers!

There has been a lot of movement in the lists this month, since the nice weather and many clear nights got the dust blown off of more than a few scopes! I am now within 11 objects of completing my H-400 list, but realized that I won't be able to finish for about 8 months since I forgot one object in Sculptor!

Mike Stephens, Ken Noesgaard and Darrell Chatfield also moved along toward completion of their lists. Please get those numbers in! I haven't heard from some of you for a long time!

Send observing numbers to huziak@SEDSsystems.ca

International Space Station Evening Passes - April 5 to May 14, 2001

by Les Dickson

Date Mag Starts Max. Altitude Ends

Time Alt. Az. Time Alt. Az. Time Alt. Az.

05 Apr 1.5 20:54:16 10 S 20:55:16 12 SSE 20:55:16 12 SSE

06 Apr 0.4 21:28:21 10 SW 21:30:43 28 SSE 21:30:43 28 SSE
07 Apr 1.0 20:28:50 10 S 20:31:02 18 SE 20:33:15 10 E
07 Apr 0.2 22:03:27 10 WSW 22:05:40 39 SW 22:05:40 39 SW
08 Apr -0.1 21:03:13 10 SW 21:06:08 38 SSE 21:08:02 18 E
08 Apr 1.3 22:38:47 10 W 22:40:11 24 W 22:40:11 24 W
09 Apr -0.8 21:38:11 10 WSW 21:41:16 69 S 21:42:13 40 E
09 Apr 2.4 23:14:01 10 W 23:14:21 12 W 23:14:21 12 W
10 Apr -0.4 20:37:31 10 WSW 20:40:32 49 SSE 20:43:34 10 E
10 Apr -0.6 22:13:13 10 W 22:16:05 73 WSW 22:16:05 73 WSW
11 Apr -0.8 21:12:16 10 WSW 21:15:23 77 SSE 21:17:35 17 E
11 Apr 1.2 22:48:07 10 W 22:49:41 26 W 22:49:41 26 W
12 Apr -0.8 21:46:59 10 W 21:50:05 80 S 21:50:57 43 ESE
12 Apr 2.4 23:22:53 10 W 23:23:02 11 W 23:23:02 11 W
13 Apr -0.7 20:45:42 10 W 20:48:48 82 S 20:51:53 10 E
13 Apr -0.1 22:21:32 10 W 22:24:07 48 SW 22:24:07 48 SW
14 Apr 1.7 22:56:03 10 W 22:57:04 17 WSW 22:57:04 17 WSW
15 Apr -0.2 21:54:18 10 W 21:57:16 44 SSW 21:57:48 39 SSE
16 Apr -0.6 20:52:30 10 W 20:55:33 64 SSW 20:58:24 11 ESE
16 Apr 1.3 22:28:36 10 W 22:30:26 20 SW 22:30:26 20 SW
17 Apr 0.3 21:26:25 10 W 21:29:17 35 SSW 21:30:52 20 SSE
18 Apr 1.5 22:00:37 10 WSW 22:02:36 16 SW 22:03:12 15 SSW

19 Apr 0.8 20:57:55 10 W 21:00:34 27 SSW 21:03:13 10 SSE

20 Apr 2.0 21:32:14 10 WSW 21:33:28 12 SW 21:34:44 10 SSW

Mir was successfully de-orbited on March 23. The dolphins in the area have complained that the Russians failed to file an environmental impact statement before dumping the station in their backyard?

[Data taken from "Heavens-Above" website (<http://heavens-above.com>) for location Saskatoon (52.133N, 106.667W)]

Notice of the General Meeting of the Saskatoon Centre



Monday, April 9, 2001 at 7:30 p.m.

Room 8313 City Hospital

Presenting

Dr. Konstantin Getman

Moscow Institute

"Physics of Long Decay Flares in Solar Atmosphere"

(See the detailed description of this talk on the next page)

U of S Observatory Hours

The U of S Observatory is open to the general public every Saturday in April & May from 9:30 p.m. to 11:30 p.m.. Admission is free. The observatory is located on campus, one block north of the Wiggins Avenue and College Drive entrance. On clear evenings visitors may look through the 6-inch refractor to the moon, star clusters, Jupiter, Saturn and other exciting astronomical objects. For further information, phone the recorded Astronomy Information Line at 966-6429.

Interested in

Saskatoon RASC

Membership?

Regular - \$48.00 per year

Youth - \$26.00 per year

It's never too late to join!

The Saskatoon Centre operates on a one-year revolving membership. You will now be a member for the next 12 months no matter when in the year you join.

Benefits of Membership in the Saskatoon Centre

- knowledgeable & friendly amateur astronomers
- use of the Sleaford Observatory
- use of the UofS Observatory (after training)
- Saskatoon Skies Newsletter

- Observer's Handbook 2001
- The Journal of the RASC (bi-monthly)
- SkyNews Magazine (bi-monthly)
- use of the Centre library
- discounts to Sky & Telescope Magazine
- discounts of Sky Publishing merchandise
- discounts to Firefly Books
- free, no cost, no obligation, 3-month temporary membership if you don't want to join right now!

Saskatoon Centre Books for Sale

Books For Sale: The Saskatoon Centre has a number of Firefly Books left over from SSSP sales, and these are now available to general members to purchase at discount rates! There are only one or two copies remaining of the following titles. Contact Debbie Anderson at 242-8854.



(1) *The Universe and Beyond* (hardcover) - \$21.00

(1) *Binocular Astronomy* (hardcover) - \$37.00

(7+) *Astrophotography* (G. N. Patterson) - \$13.00

(1) *Exploring the Sky by Day* - \$8.00

(2) *Other Worlds* - \$8.00

(2) *Extraterrestrials* - \$8.00

(2) *Messier Cards* - \$8.00

Membership Update

by Rick Huziak - Acting Membership Coordinator (until Bob's return)

The following are changes to the Membership List published in the January issue of Saskatoon Skies.

Renewed - Evan Budd, Box 1543, Swift Current, Sask., S9H 4G5

Change of E-mail Address - Jim Wood <jk.wood@sk.sympatico.ca>

Comments on the General Meeting Presentation

Konstantin Getman, Ph.D. (Physics and Mathematics)

I would like to talk a little bit about the physical processes taking place in the giant coronal loops on the Sun and also discuss some results of X-ray (Yohkoh, GOES) and radio (IZMIRAN) observations. I will also show the numerical simulations of the gas dynamical processes in a such loops. If time permits, I would present some words about numerical simulation of the process of impact of the enhanced stellar wind from the active component, the F9 giant, with the outer corona of the G6 star in Capella binary system. And, at last, if time permits again, a couple words about the X-ray Chandra Observatory and the physics of the active galactic nuclei. But officially my topic can be called "*Physics of Long Decay Flares in Solar Atmosphere*".

[I would like to thank Dan Neves for bring Dr. Getman to our attention - Ed]

Minutes of the March General Meeting

March 19, 2001, Room 8313, City Hospital, 7:30 p.m.

recorded by Al Hartridge, Secretary <ahartrid@sk.sympatico.ca>

1. Herschel 400: an award was presented to Dale Jeffrey by Darrell Chatfield for completing the list.

2. Introduction of guests and new members by Les Dickson.
3. Presentations:
 - Paul Campbell from the Edmonton Club gave a talk *on Astronomical Computing and Solar Observing* which was well received. He also donated a copy of his program to the library of our club.
 - Rick Huziak gave a great talk on using a black and white CCD surveillance video camera on your telescope.
1. Meeting date changes: for April it will be on April 9th and for May on the 14th.
2. Minutes of February meeting: moved by Scott Alexander and seconded by Darrell Chatfield and carried that the minutes be accepted as read.
3. Treasurer's Report: at present the bank balance is \$10,981.51.
4. Membership Report: there are 74 paid up members as of this date.
5. Observers Group: during the last one and a half weeks there have been six different visits to the Sleaford site.
6. Fundraising: a meeting has been held by the committee, and all methods by which the RASC raises funds were reviewed. Lotteries and corporate donations seem to be the two best choices. Bottle drives and school talks help to pay for the on going expenses.
7. SSSP: Alan Dyers is 90% sure. The registration and meal costs will remain the same as last year. There will be no T-shirts this year. Instead maybe crests or pins this year.
8. Meeting adjourned at 9:30 p.m.

[Note: There was no executive meeting in March - Ed]

RZ Cassiopeiae Eclipses - Ephemeral Corrections

by Rick Huziak

Boy - I must have been asleep for last month's issue! Here are the corrected times for eclipses for RZ Cas - all times are CST and are given to the nearest ½ hour as not to influence the observed time of minimum. Discard last month's predictions!

April 5 23:30

April 11 23:00

April 17 22:30

April 23 22:00

April 29 09:30

April 30 02:00

May 6 01:30

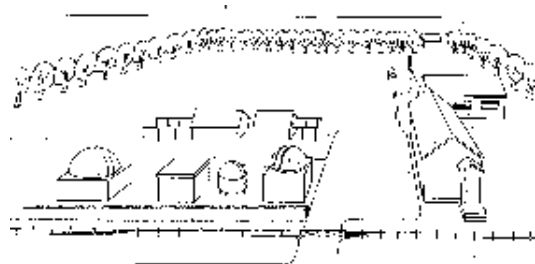
May 12 01:00

May 18-19 00:00

May 24 23:50

May 30 23:00

The Sleaford Observatory



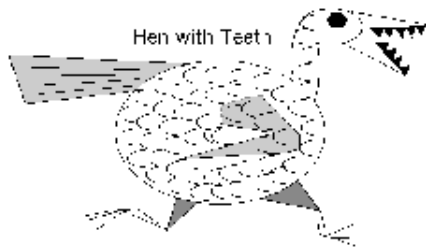
Longitude: 105 deg 55' 13" +/- 13" W Latitude: 52 deg 05' 04" +/- 08" N, tel.: (306) 255-2045

by Rick Huziak

General Site Use - Last month, I announced that site use for Sleaford was way down over the winter, but that has now dramatically turned around. In March, we received 21 individual visits to the observatory, which brought 30 people out to the site. March was

our best month ever! Excellent skies and warm weather helped the situation enormously, after a very cold February. For those who are doing the Messier List, get out to the site in the next month or two, or the Virgo cluster will be gone again for another year!

A Meeting with the Friends of Sleaford - On March 25th, Les Dickson and I attended a meeting of the *Friends of Sleaford*, a group dedicated to the preservation of the Sleaford Schoolhouse. Our hosts were the *Friends* executive Terry Beebe, Robert Grey, Roy Grey and Jim Markowski. Our discussions centered on the future use of the schoolhouse. The *Friends of Sleaford* felt that they no longer wanted to actively raise money toward the preservation of the school, since their initial goals had been accomplished - the general restoration of the inside and outside of the school. They agreed to remain in name, but to scale down their activities for the time being, and to work with us if future work on the school is needed.



Please submit stuff for the newsletter, no matter what your astronomical interests are! I'd love to hear from every member. And don't think that an observation or comment is 'not good enough'! Send in an observation, or an editorial, or a book report, or even just, say, 25 bucks (to the editor). Cover photos or sketches are always as rare as hen's teeth! Remember - when the supply of articles gets short, Rick begins to write! Please do everything in your power to prevent this from happening!

AN EXCITING ASTRONOMY EVENT IN ST. PAUL, MINNESOTA

By Marilyn Delgado <mdelgado@aspsky.org> The Astronomical Society of the Pacific

The heavens are coming to Earth in St. Paul, Minnesota, on July 13-15, & you are invited!

With 2 CCD workshops by Richard Berry, lectures by famous professional and amateur astronomers and recognized science writers, a star party with astronomers from around the country, and an exhibit hall filled with astronomy merchandise from telescopes to books to t-shirts, the 113th Annual Meeting of the Astronomical Society of the Pacific (ASP) promises to be grand.

Indeed, this is an astronomy event you cannot afford to miss! The ASP's 113th Annual Meeting, *UNIVERSE 2001*, begins on the evening of Friday, July 13, with a star party hosted by the Minnesota Astronomical Society and the ASP. Saturday and Sunday, July 14-15, the *Universe 2001 EXPO* weekend is filled with speakers such as David H. Levy, writer and comet discoverer; astronaut Claude Nicollier; astronomer Virginia Trimble, who will discuss the past millennium of astronomy; Bob Berman, astronomy columnist for *Discover* and *Astronomy* magazines. Berkeley astronomer Alex Filippenko will present *Einstein's Biggest Blunder? The Case for Cosmic "Antigravity"*; William Sheehan, well-known amateur astronomer and author, will discuss our changing perception of Mars through the ages; and many others.

In addition, a large exhibit hall will be filled with astronomy-related merchandise and displays-including books and photography supplies, telescopes and computer software, and booths for on-going and future NASA missions. There will also be book signings and drawings for astronomy-related prizes.

On Saturday, July 14, noted amateur astronomer and writer Richard Berry, author of *The CCD Camera Cookbook* and co-author of the new *Handbook of Astronomical Image Processing*, will conduct two CCD workshops: one for beginners; the second for more advanced operators.

Join people from around North America in a national astronomy festival at the Radisson Riverfront Hotel, 11 E. Kellogg Blvd., St. Paul, MN 55101, 651-292-1900, from 8:30a.m.-5:30 p.m. where a Universe 2001 EXPO weekend pass is only \$20. The costs for Richard Berry's CCD workshops will be \$20 for each or \$35 for both. For information and to register (space in the CCD workshops is very limited!), visit

<http://www.aspsky.org/meetings.html>

Meeting co-sponsors include Astronomy Magazine and Astronomy.com, the Chandra X-Ray Observatory Center, the University of Minnesota's Department of Astronomy, the Science Museum of Minnesota, the Minnesota Astronomical Society, and the Teaching Company.

For complete details, including fees, visit our website regularly for updates <<http://www.aspsky.org/meetings.html>>

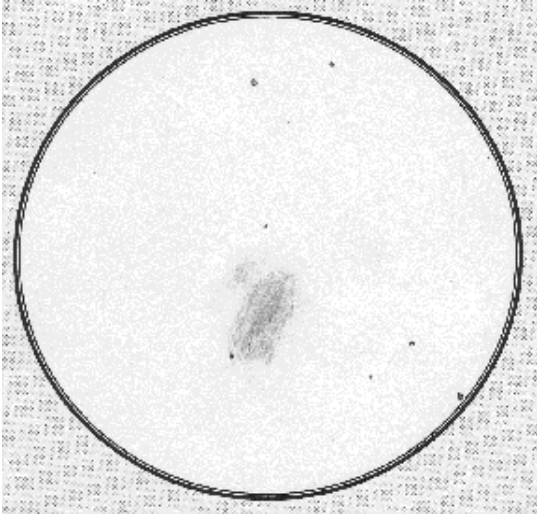
Observing to the Max - Trust What You See

By Rick Huziak

Just *finding* an object in the sky is not necessarily *observing* that object! There are many objects that can be described as "*faint and fuzzy*"; indeed, this describes most objects in the sky once you are past the more familiar Messier list! However, *faint and fuzzy* are just very poor descriptions based on quick-glance type observations. More often than not, I see so-called *observers* hop to an object on their observing list, and within seconds hop to the next, checking this object off of their list!

But that's not observing in my book. That is just finding! To properly *observe* a faint object takes many minutes of concentrated efforts - continuous staring for 5 minutes or 10 minutes or even 45 minutes per object. Only then does the faint and elusive detail become more than "faint and fuzzy"! And it is amazing what detail is indeed visible in these objects! It doesn't matter how you *find* it - it matters you *observed* it!

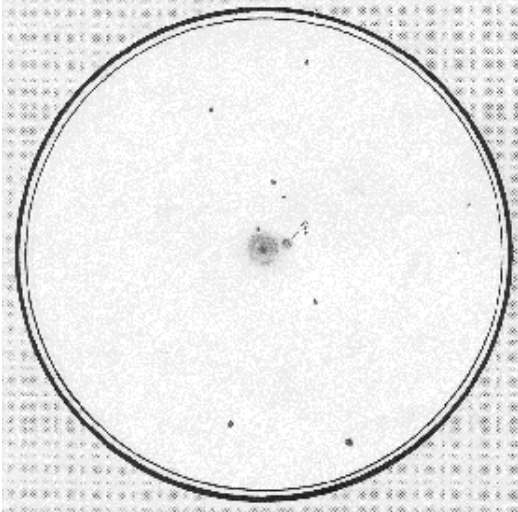
Despite almost finishing my Herschel 400 list, *I feel that I have taken much longer than I could have, because I have so many distractions along the way* - these distractions are the objects themselves! Every time I find a new Herschel, I take a long time to observe it - looking for minute details that may be there. It is rare that a galaxy ends up being described as faint and fuzzy! Almost every galaxy yields some sort of detail, even if it is just "nucleus brighter to the middle", or "mottled appearance". However, many galaxies have astonishing details! For a 10-inch scope, details should be visible in most galaxies to 13.5 magnitude, and to 14 magnitude for a 12.5". Some galaxies from the Herschel 400 list are described below.



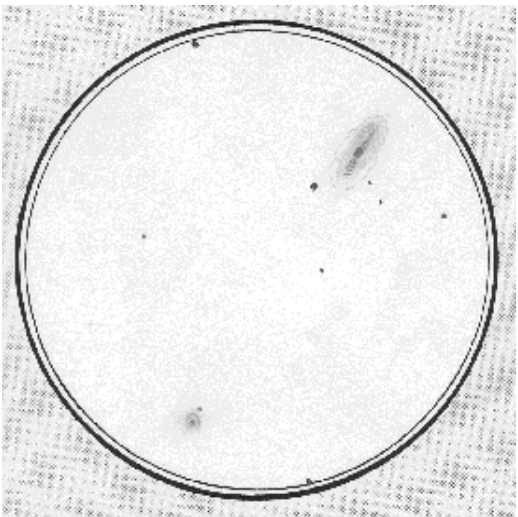
Three of the sketches that accompany this article were made using my 10-inch f/5.6 scope at 119x magnification. The fourth sketch (Markarian 205) was made using the 12.5" f/4 Dobsonian (a.k.a. Eetook) at 220x. All sketches were made at the Sleaford Observatory between January and March of this year. ***Note: sketching makes you see better!***

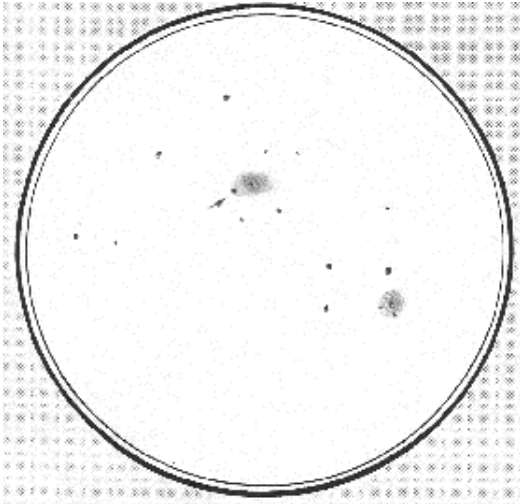
One thing that I've learned over the years is that *you should trust what you see*. This does not mean you should believe your imagination! These are two very different things! Trusting what you see means that you take time to see those first photons that appear, and if you suspect something more, you take the time to continue the observation until there are enough photons in your eyes and brain to give you good confidence that the features are real! I do not generally record features until I can hold these features steady by *direct* vision. I also never check photos until *after* the observation.

The 1st sketch, NGC 3726 in UMa shows a very large and diffuse galaxy, about 12th magnitude and an enormous 4' x 6' in size. But after 15 minutes of observing, a central bar became visible as well as two offset patches. Checking the Digital Sky Survey (DSS) print later confirmed that this galaxy has a bar and the patches are star-clouds in the arms!



The 2nd sketch (to the right) is NGC 4596 in Virgo, a 12th magnitude galaxy only about 2' in diameter. After about 10 minutes I noticed and sketched a faint ball "?" to the SE, and assumed it was a faint companion. Checking the DSS print, again much later, showed it wasn't a companion at all, but one of the two arms of this strange edge-on galaxy!





The 3rd sketch (to the left) shows NGC 4654. This is another largish galaxy, about 3' x 5' in extent. Observing for 15 minutes showed that the disk was not homogeneous, but also seemed to have a bar. Checking the DSS print showed that this was not a bar, but two normal spiral arms extending from the nucleus! The other galaxy is NGC 4639, a very compact barred spiral.

In the 4th sketch, I was striving to see Markarian 205, a faint, 15.5 magnitude quasar (arrowed) in Draco that is the center of controversy in redshift measurement. According to Halton Arp, this quasar is connected to its "parent" galaxy NGC 4319. It was a struggle to see such a faint object near the relatively bright (13 magnitude) galaxy. It took almost 25 minutes to finally see the quasar and hold it steady. One byproduct of this amount of observing time is that the central bar and the outer arms of NGC 4319 became quite obvious - represented as two non-concentric ovals. The other galaxy in the field is NGC 4291.