Hamilton Centre Update

The Hamilton Centre Board members have been busy this past month. The board email list has been sending many messages on a daily basis. We have now placed the order for the 16-inch Ritchie Cretien Telescope and the Paramount ME Mount. We thought we had our digital projector ordered but we found out later that the company was out of stock. We should have the projector reorder after the February Board meeting. It has been an a trying time for many of our board members who have been donating countless hours researching comparing, trying to find the best deal for the telescope and the projector.

Pack your bags – we're going Observing!

Have you ever gone out for an observing session, only to find that you left an important piece of equipment at home?? I know when I first started observing, this was a common occurrence, which made many a session less enjoyable.

To help eliminate the problem, I decided to start keeping all my equipment in cases --- problem solved. Unfortunately no. Since I had a habit of not putting things (red flashlight, an eyepiece etc) back into the carrying case after an observing session. I'd stick them in a pocket and empty my pockets when I got home – but I didn't return things to their case.

The way to solve the problem was a checklist, which I review as I'm packing the car for a session at the Observatory or a Dark Sky weekend.

We all have different equipment and needs, so you may want a list more or less comprehensive than my list, but hopefully the following will help you to prepare your own checklist.

Health and Safety

- Take a "cell" phone or is there a phone where you are going. Have you informed someone where you will be? These points are important if you are going out observing alone.
- If going away overnight – have you packed any medications you require?
- In case you need to be reached, have you provided a contact phone number?
- Do you have your wallet with ID, emergency numbers etc?
- White flashlight for emergency use.

Observing Aids

- Planisphere
- Star Charts
- Red flashlight
- Binoculars
- Observing list and finder charts you have prepared.
- If you wear eyeglasses, a lanyard for attaching to your eyeglasses. In the event you take them off during an observing session, they will be hanging nicely around your neck. Misplaced eyeglasses can be very difficult to find in the dark! Eyeglass lanyards can be found at most pharmacies, and they are quite inexpensive.
- Battery pack to power your scope and/or dew heaters.
- Power cords
- Extra batteries for: red flashlight, one power finder and any equipment that operates on disposable batteries.
- Water proof cover for your telescope – in case of a sudden rainstorm. Heavy-duty green garbage bags do a great job. Don't forget some cord to tie the covering around your telescope.

Comfort Aids

- Observing chair
- Insect repellent during the bug season.
- Hand wipes to remove excess repellent from your hands, and prevent it from getting on your optics. I collect the alcohol type hand wipes you get at most restaurants.
- Snack or food for a long observing session
- Thermos of Tea, Coffee or Hot Chocolate. On hot summer evenings, I like to take a Thermos of ice water.

Recording Supplies

- Prepared observing forms, plain paper or notepad.
- Clipboard
- Pens, Pencils, erasers

Observing Equipment

- Telescope
- Tripod or base
- Counterweights, dovetail plate, and mounting rings if your scope uses them
- Eyepieces
- One power finder, e.g.: Telrad, Rigel etc
- Barlow
- Lens cleaning materials.
- Solar Filter
- Dew heaters
- Cords to connect dew heaters, and telescope to battery packs
- Filters – lunar, deep sky, planetary etc

Good to have --- just in case

- Masking/electrical tape
- Velcro strips
- Tools – go over your telescope and put a kit together so you have a tool that fits every allen screw, bolt, screw etc on your telescope. My kit has a variety of wrenches, allen keys, screwdrivers and pliers.

If you are going to be doing photography and/or camping as part of your observing expedition, this will require additional lists – but that's for another issue of Orbit.

Enjoy the Night Sky

Ken Lemke

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Spring Banquet

The Hamilton Centre has a tentative date of May 8, 2004 for our Annual Spring Banquet. Steve Barnes has secured Ivan Semeniuk as our guest speaker for that night.

Ivan Semeniuk - Astronomy columnist

Ivan Semeniuk is the host of Discovery Connection, and "Skylights", the weekly astronomy column on *@discovery.ca*

Ivan has been a columnist on the show since its inception, and began working as a full time producer in the fall of 1999. Before becoming a science journalist Ivan spent 13 years developing science exhibits, programs and planetarium shows at the world-renowned Ontario Science Centre in Toronto.

During his career chasing the stars and telling people about the night sky, Ivan has been on hand for two Mars landings, witnessed three total eclipses of the sun and transported one moon rock across an international border.

Ivan is a contributing editor to SkyNew magazine and his articles have appeared in Astronomy, Mercury, and NewScientist among other publications.

Ivan completed his undergraduate studies in physics and astronomy at the University of Toronto "back when MIR was shiny and new." He has since earned a Master's degree in Science Journalism from Boston University.

Astronomy Day

Astronomy Day 2004 is set for Saturday April 24, 2004. The Hamilton Centre will be planning events for that Day.

Beginners Observing Group

If you are interest in the Beginners Observing Group contact Ken Lemke by e-mail at cfs@worldchat.com (day time) or klemke@worldchat.com (night time or week-ends). His phone number is 905-634-5168 (day time) or 905-639-5127 (night time and week-ends) or Gary Colwell at glcolwell@rogers.com

Hamilton Centre Logo Clothing

Ken Lemke has generously offered to coordinate the sale of various clothing items with a very distinct Hamilton Centre Logo on them. The logo is shown as the header on page one of Orbit. Here is a list of the clothing items. If you are interested in ordering items please contact Ken Lemke by e-mail at cfs@worldchat.com (day time) or klemke@worldchat.com (night time or week-ends). His phone number is 905-634-5168 (day time) or 905-639-5127 (night time and week-ends) To make the ordering process as easy as possible we are requesting that you pay for your garments upon ordering with a cheque payable to "RASC Hamilton Centre"

Item	Style No.	Price
Ladies North End Fleece Vest	ASH70086	$40.00
Denim Shirt Long Sleeve	WD7120	$37.00
Sweat Top "Heavy Cotton"	WD18430-D	$31.00
Men's Micro Plus Lined Wind shirt	ASH88001	$54.00

High Point Golf Shirt	WD5600-01	$35.00
Men's Extreme Cotton Long Sleeve Pique Golf Shirt	ASH85017	$34.00
Ladies Extreme Fashion Cut Pique Golf Shirt	ASH75008	$28.00
Men's North End Fleece Vest	ASH88005	$50.00
Elements Polyester Fleece Headband	ASH441007	$17.00
Gildan Long Sleeve T-Shirt	WD2400	$24.00

Support your Club

Please remember that you can support the Hamilton Centre financially by making a tax-deductible contribution to the club. Please contact our treasurer John Williamson if you are interested in supporting the club in this manner.

Donate Books to Disadvantaged Children in Northern Ontario

By Scott Barrie

The Lieutenant Governor has started a program to collect used books to be sent to disadvantaged schools in Northern Ontario. Details of the program can be found at his site here....

http://www.lt.gov.on.ca/

or at our site here....

http://www.archives.gov.on.ca/english/index.html

I'm getting involved with collecting books and thought people could hunt around for books they don't want anymore.

If people brought books to the next general meeting I would see that that they were delivered to the right place. Books can also be dropped off at any OPP detachment office in case they forget to bring them to the meeting. It would be particularly nice if there were some astronomy books donated, but any books that are appropriate for school age kids and young adults would be much appreciated.

Moon Phase Calandar
Feb 2004

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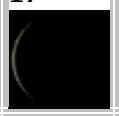
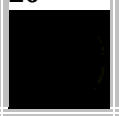
15 	16 	17 	18 	19 	20 	21 
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The Clear Sky Clock another good tool for the amateur astronomer

The web address is http://cleardarksky.com/csk/prov/Ontario_clocks.shtml . The clear sky clock (CSC) is tool that allows users to check various locations in North America for astronomical weather conditions. By accessing the Clear sky clock for the Hamilton Centre Observatory, users can check sky conditions for the near forecast.

The chart that you access shows condition in four categories, cloud cover, transparency, seeing and darkness.

- The **Cloud Cover** line is visible-light cloud forecast. It forecasts percentage cloud cover. Dark blue is clear. Lighter shades of blue are increasing cloudiness' and white is overcast. This forecast may miss low cloud and afternoon thunderstorms.

- The **Transparency** line is the transparency forecast. Here 'transparency' means just what astronomers mean by the word: the total transparency of the atmosphere from ground to space. It's calculated from the total amount of water vapor in the air. Dark blue means excellent transparency, light blue is better than average, pale blue is worse than average, and white means that there is at least 20% cloud cover and transparency was not calculated.

- The **Seeing** line is the astronomical seeing forecast. This is an experimental forecast. Excellent seeing means at high magnification you will see fine detail on planets and stars will show diffraction rings. In bad seeing, planets might look like they are under a layer of rippling water and show little detail at any magnification, but the view of galaxies is will probably be undiminished. Bad seeing is caused by turbulence combined with temperature differences in the atmosphere. This forecast attempts to predict turbulence and temperature differences that affect seeing for all altitudes.

- The **Darkness** line is not a weather forecast. It shows when the sky will be dark, assuming no light pollution and a clear sky. Black is a dark sky, deep blue shows interference from moonlight, light blue is full moon, turquoise is twilight, yellow is dusk and white is daylight.

The clock for each location also has some nice links that you can access including, sun and moon data, Road map to the particular location, a topography map of the location, satellite predictions, a star map, a light pollution map, and a link to sign you up to the clear sky alarm clock.

The Clear sky alarm clock allows individuals to sign up to receive emails when your favourite locations are predicting favourable sky conditions. This is a nice little reminder for us office workers that, HEY the skies are looking great. Maybe I should pack up the equipment and get up to the observatory.

If you happen to have your own web site, another great feature of the CSC is that you can attach a particular clock to your site by following the instructions on the CSC web site. The Hamilton Centres site has a clock attached to it.

This entire site is maintained by one person and serves a huge community of astronomers across North America. If you find the CSC to be a good utility and tool I recommend that you become a sponsor for the web site. By contributing a few dollars you help to continue this service and you also raise the priority of clock you choose to sponsor. It would get updated quicker than a non-sponsored clock.

Take some time to visit the Clear Sky Clock web site. It is another great astronomy resource.

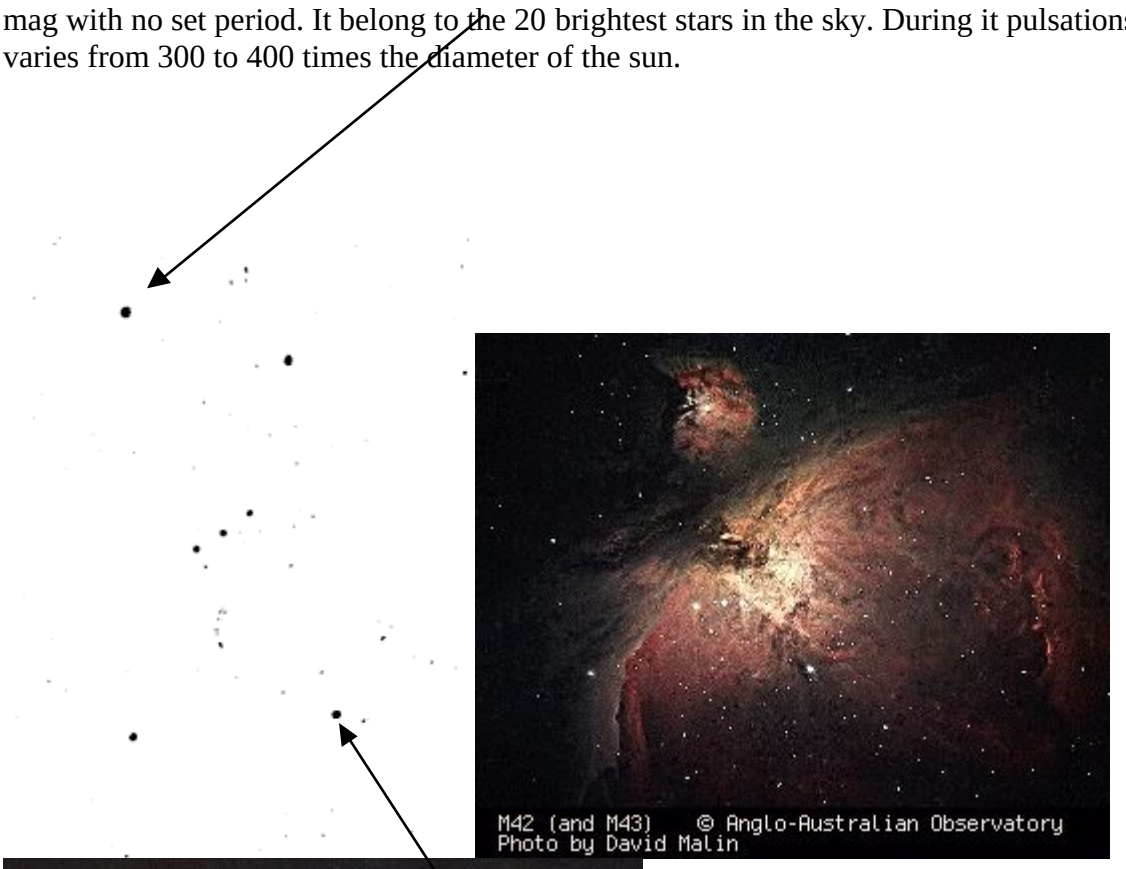
Orion the Hunter

The Constellation Orion is now proudly visible in the southern during these winter months. In some ways the central part of this constellation looks like and oblique hourglass. In wintertime Orion is a magnificent constellation which can easily be found by the three stars forming a line building the belt of the Hunter (these stars are sometimes called *Jacob's Ladder* or *Jacob's Stick*). The belt stars point towards Sirius, the brightest star in the constellation of the Larger Dog, Canis Maioris, situated SE of Orion. From his belt there hangs a

well defined dagger (known as "Sword of Orion"), which is known for one of the most famous nebulas in the sky: The Large Orion Nebula (M42).

According to Greek mythology Orion died being stung by a scorpion. He is set such in the sky that he sets in the west while his slayer; the Scorpius rises in the east. Followed by his two dogs he is now fighting the bull Taurus. The ancient Sumerians saw in this star pattern a sheep. The name *Betelgeuse* literally means "the armpit"; in case of the Sumerians it meant "the armpit of the sheep."

The shoulder star *alpha Ori*, ***Betelgeuse***, is a variable red giant; its brightness varies from 0.4 mag to 1.3 mag with no set period. It belong to the 20 brightest stars in the sky. During it pulsations the diameter of the star varies from 300 to 400 times the diameter of the sun.



The leg of the hunter, *beta Ori*, ***Rigel*** (arab.: the foot), is a blue-white giant of 0.08 mag. This makes it the sixth brightest star in the sky and the brightest in the constellation Orion. With medium sized telescopes it is possible to distinguish the companion of Rigel, a 7th mag star (smaller telescopes may fail to reveal the companion because of the glare of Rigel).

This constellation offers a great number of binaries and multiple stars:
For binoculars and smaller telescopes the following stars are of interest:

- *delta Ori*, ***Mintaka*** (arab.: upper end of the girdle), a blue-white star of 2.2 mag with a 7th mag companion.
- *iota Ori*, a 3rd mag and a 7th mag star forming an unequal double; in the same field the wider double
- *Struve 747* can be found - a pair of a 5th mag and a 6th mag star.
- *lamba Ori*, a tight pair of 4th and 6th mag stars.
- *sigma Ori* is a terrific multiple star; in binoculars this blue-white star of 4 mag and a 7th mag companion can be resolved; using a small telescope two closer companions of 7th mag and 10th mag are revealed. These stars are grouped in a way that they look like a planet with moons.
- If the resolution is not too high in the same telescopic field as *sigma Ori* the triple star *Struve 761* can be seen. It consists of a triangle of 8th mag and 9th mag stars. Together with *sigma Ori* this triple star gives a delightfully rich grouping.
- *NGC 1981*, a little cluster of 10 stars including the binary *Struve 750*, a pair of a 6th mag and a 8th mag star.
- The multiple star *theta1 Ori*, the northern star of the dagger of the Hunter is also called the ***Trapezium***; it is located in the heart of the Orion nebula. This group of stars has been formed from the gas of the nebula, which now glows in their light. Small telecopes (about 2-inch and higher) show four stars, ranging from 5th mag to 8th mag, which form a rectangular figure. Scopes with an aperture of about 100 mm show two more stars of 11th mag in this group.

For more information on Orion and other constellations visit the web site

http://www.maa.mhn.de/Maps/Stars_en/Fig/const.html

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