Orbit

The official publication
Hamilton Centre of the Royal Astronomical Society of Canada

July 2003 Volume 36 Issue 5

TAKING THE TOUR
BY: HEATHER NEPROSZEL

Lured by unseasonably warm temperatures this past April 15, I decided to observe on the patio at the back of my house in Burlington and set up my Celestron Nexstar 80mm telescope.

An almost full moon was the first and almost obligatory object to observe that evening – after all, the moon shines quite brightly when other objects are still hidden from view. It is always a pleasure to see the varied terrain of the moon's surface through a telescope, the many numerous craters and mountain ranges, to see the detail of surface features on an object that itself is often taken for granted.

On this night the glare from the moon lit up a surrounding halo of haze that plainly indicated that seeing and transparency were not good, to say the least.

I then decided to take a look at Jupiter, still shining brightly in the West.

The Celestron Nexstar 80 is a "go-to" telescope, meaning it has a hand control paddle resembling a TV remote with a small LED screen, direction buttons, and a computerized database of several thousand celestial objects. After achieving a 2-star alignment using auto-align (helped along with prompts from the control paddle), the telescope was ready to locate any object I could think of, and much, much more besides.

One of the buttons on the hand control says "planets". I pressed the "planet" button and on the screen the title "Solar System" appeared. I scrolled with the "down" arrow button until the planet Jupiter appeared on screen, then I pressed Enter and voila! The telescope started slewing towards Jupiter.

Once I had Jupiter in view in my 25mm eyepiece (I used the Celestron eyepieces that came with the telescope), I switched to a 10mm eyepiece, and then added a 2x Barlow. I could see the two equatorial belts of Jupiter, but I did not see the Giant Red Spot: it was on a side of Jupiter not facing the earth at this particular time, which around 9:30 pm. As for Jupiter's 4 largest moons, three (Ganymede, Europa and Io) could be seen on the right or eastern side of the planet and one was on the left or western side. The one moon on the left side, Callisto, appeared to be at a much farther distance away from the planet than the group of three on the right side. And of the group of three, the innermost two (Ganymede and Io) appeared quite close to each other, whereas Europa was the furthest outside on the east side of the planet.

After Jupiter I decided to observe Saturn by scrolling down once and pressing, "enter" when "Saturn" appeared on the LED screen. Unfortunately, even before the telescope had slewed all the way to Saturn I could tell I was not going to be able to observe Saturn very well – it was sighted behind a maple tree growing beside my house. I could see the planet and its rings, but not any detail of either.

It was at that point that I decided to take the "Tour". The "Tour" is an itinerary of objects that the computer has in its database – just press the "tour" button and away you go! Because of the almost full moon and really hazy skies, I decided to skip the Messier objects - I knew I would not be seeing much trying to observe "faint fuzzies" this particular night.

However, I did observe the "Beehive" open cluster of stars next to Saturn. Since the sky was so bright, I did not see a lot of stars in the cluster. Oh to be at a dark sky site on a moonless night! I looked at one other open cluster: again, not a lot of stars to see.

I tried observing the double stars listed on the "Tour" instead, with much better luck. The first double star I selected from the itinerary and then observed was "Iota Cancer" – it was a pretty tight double in my telescope, with one yellowish looking star and the other brighter star a bright white colour. The separation was 31 arc seconds. How did I know this? The computer in the telescope told me. Just press the "Info" button and you get it all – first a brief description: a) coloured double with a period of 5.4 days. b) RA: 08 hrs 46.7 min c) Dec: +28° 46' d) Magnitude 4.2 e) Constellation: Cancer f) Separation: as mentioned above g) Position Angle: 307°

Now that is a lot of information literally at your fingertips (shining at you in convenient red LED) as you observe the object.

I observed 6 other double stars while doing the tour, including one called Algeiba (Gamma Leonis), 24 Com, 3 doubles in Bootes and I ended my night of observing with Delta Ser, a pretty blue and white double in the constellation Serpens.

As you can probably tell, I had a lot of fun observing these double stars.

I look forward to my next "tour", hopefully with a dark sky and good seeing. I will select from my itinerary the Messier type objects I skipped this time out.

Buy & Sell Table

For our next General Meeting on Thursday June 6 we will be setting up a buy and sell table. If you have any astronomical gadgets that you would be interested in selling to other members please bring them to the meeting. We will have the table set up before the meeting and during the break.

RASC Annual Family Picnic

On Saturday July 5, 2003 at 4:00 pm we will be gathering at the observatory for our annual picnic. Fun for the entire family. Mark Kaye will once again be wearing the white chefs hat as he cooks up Hamburg's and sausages. If the weather is clear there will probably be a telescope set for solar observing. If the weather continues to cooperate we will be setting up for some evening observing. If you have something to donate as a draw prize please contact Tina Coppolino at tinacoppolino@cogeco.ca

Beginners Observing Group
By: Grant Maguire

Ken Lemke's and Gary Colwell's beginners Observing Group is shaping up to be great venue for new members who are just getting into the hobby.

If you are interest in the Beginners Observing Group contact Ken Lemke by e-mail at cfs@worldchat.com (day time) or klemke@attcanada.ca (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@sympatico.ca

Starfest 2003 Update
By Andreas Gada

The North York Astronomical Association invites you to attend its twenty-second annual Starfest, August 21 - 24, 2003. Starfest is Canada's largest annual observing convention and star party. It attracts over nine hundred astronomy enthusiasts from Ontario, and neighbouring provinces and states. It has been ranked among the top seven star parties in North America by Sky and Telescope magazine. Starfest offers a wide variety of observing-oriented activities that address the needs and interests of experienced observers and astrophotographers, as well as those new to the hobby. Activities include observing sessions, formal and informal presentations, workshops, commercial exhibits, and a children's program. You are invited to bring your telescope, astronomical images, and share your observing experiences with others.

Full details to help you plan your agenda are available on our website at www.nyaa-starfest.com.

We hope to see you at Starfest,

Andreas, Bonnie, Kirth, Peter and Team Starfest.

North York Astronomical Association
26 Chryessa Avenue, Toronto, Ontario M6N 4T5
416-761-1798
Email: nyaa@ca.inter.net

The Colour of Stars
By: Ken Lemke

When I started observing the night sky, about two years ago, I found objects such as large globular clusters and open clusters quite spell-binding. With some objects; however, I was less than overwhelmed by the visual image, eg., faint galaxies. A real appreciation was obtained, when I realized that galaxies were a collection of billions of stars, whose light had traveled for millions of years to reach my eyes.

With respect to naked eye stars, I was tempted to pass over them, and move on to find something more exotic. How interesting can a star be, that is so easily seen? I soon discovered that many of the "stars" were actually doubles or even more complex groupings of stars. Further, you often see various colours in doubles and for that matter, single stars, they are quite visually pleasing. (The list of double stars in the RASC's "Exploring the Universe" programme contains many fine doubles). If you haven't observed Alberio, (regarded by many, as the finest double in the Northern Skies), I would highly recommend you search it out. To my eyes, I see an icy blue star with a beautiful golden companion. What do you see? Alberio is the bright "star" at the foot of the Northern Cross in the constellation Cygnus.

As with faint galaxies, having an appreciation for what you are observing, turns it into something special. When I look at stars now, I take time to note the colour and reflect on what the colour might be telling me about its' spectral type, possible age and temperature.

Below is a chart I use as a guide (with some named stars as examples):

Spectral Type	Colour	Approximate Temperature
O	Blue	50,000 Kelvin (Alnitak, Meissa)
B	Blue	30,000 Kelvin (Regulus, Spica)
A	Blue-white	10,000 Kelvin (Altair, Cor Caroli)
F	White	7,000 Kelvin (Polaris, Mirphak)
G	Yellow	6,000 Kelvin (Sun, Capella)
K	Orange	4,500 Kelvin (Aldebaran, Arcturus)
M	Red	3,500 Kelvin (Antares,)

A mnemonic is an easy way to remember the orders: Oh Be A Fine Girl/Guy Kiss Me.

When observing stars, colours such as "yellowish-orange, yellowish-white, etc., will be noted. Colours of stars aren't always one distinct colour, shades are seen, and different observers see different shades. An example is Arcturus in Bootes, some observers see an orange star, some observers see a yellowish star, and I see a yellowish-orange star. What do you see?

If you consult a star catalogue, you will find that the Spectral Types are subdivided much further, ie., A0, to A9 etc, than the above scale, but it is a good guide when working at the telescope (and easier to remember). This subdivision of the Spectral Types tells us to expect to see shades of blue, white, yellow, orange and red.

The 2003 RASC Observers Handbook has a good catalogue (pages 241- 250) of the skies brightest stars. In addition to the Spectral Type, the other interesting fact the catalogue offers is information on the distance the star is from earth. This always helps establish the "WOW" factor and make an observation more interesting.

With respect to age, as we progress from Spectral Type O to Spectral Type M, we go from typically hot, young stars to cooler, older stars. On cloudy evenings, I revisit my observations by scouring the Internet, and Star Catalogues to see what further information I can discover. Was that red star a super giant or was it a red dwarf?

If you don't make notes at the eye-piece, I would challenge you to give it a try. Note the star's colour, and estimate its spectral type. Are there other stars close by? What were their colours? How far apart were they? How were they oriented to one another (I always make a little sketch to supplement my notes)? Then on the next cloudy night, compare your observations with a star catalogue or search out information on the Internet (www.google.ca is a good search engine).

By adding a little "science" and research to your observations, your sessions will become that much more special.

Above all, Enjoy the Night Sky

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. Here is a list of the clothing items and our introductory special prices. If you are interested in ordering items please contact Ken Lemke by e-mail at cfs@worldchat.com (day time) or klemke@attcanada.ca (night time or week-ends). His phone number is 905-634-5168 (day time) or 905-639-5127 (night time and week-ends)

Item	Style Number	Price
Ladies North End Fleece Vest	ASH70086	$39.00
Denim Shirt Long Sleeve	WD7120	$36.00
Sweat Top "Heavy Cotton"	WD18430-D	$30.00
Men's Micro Plus Lined Wind shirt	ASH88001	$53.00
High Point Golf Shirt	WD5600-01	$34.00
Men's Extreme Cotton Long Sleeve Pique Golf Shirt	ASH85017	$33.00
Ladies Extreme Fashion Cut Pique Golf Shirt	ASH75008	$27.00
Men's North End Fleece Vest	ASH88005	$49.00
Elements Polyester Fleece Toque	ASH441006	$16.00
Elements Polyester Fleece Headband	ASH441007	$16.00
Gildan Long Sleeve T-Shirt	WD2400	$23.00

2003 Sidewalk Astronomy Program

Here are the dates for this years Program: Friday July 4, 2003 Friday August 8, 2003
Friday September 5, 2003 Friday October 3, 2003

July 2003

Toronto, Ontario

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 Sun Rise: 5:40am Sun Set: 9:02pm Moon Rise: 7:07am Moon Set: 10:58pm	2 Sun Rise: 5:40am Sun Set: 9:02pm Moon Rise: 8:14am Moon Set: 11:32pm	3 Sun Rise: 5:41am Sun Set: 9:02pm Moon Rise: 9:25am Moon Set: none	4 **Sidewalk Astro. Spencer Smith Park, Burlington** Sun Rise: 5:42am Sun Set: 9:02pm Moon Rise: 10:37am Moon Set: 12:00am	5 **Hamilton Centre Picnic 4:00pm at the observatory** Sun Rise: 5:42am Sun Set: 9:02pm Moon Rise: 11:49am Moon Set: 12:25am
6 Sun Rise: 5:43am Sun Set: 9:01pm Moon Rise: 1:01pm Moon Set: 12:48am First Qtr: 9:33pm	7 Sun Rise: 5:43am Sun Set: 9:01pm Moon Rise: 2:15pm Moon Set: 1:11am	8 Sun Rise: 5:44am Sun Set: 9:01pm Moon Rise: 3:31pm Moon Set: 1:35am	9 Sun Rise: 5:45am Sun Set: 9:00pm Moon Rise: 4:50pm Moon Set: 2:02am	10 Sun Rise: 5:46am Sun Set: 9:00pm Moon Rise: 6:09pm Moon Set: 2:34am	11 **Public Observing at the Observatory** Sun Rise: 5:46am Sun Set: 8:59pm Moon Rise: 7:26pm Moon Set: 3:15am	12 Sun Rise: 5:47am Sun Set: 8:59pm Moon Rise: 8:34pm Moon Set: 4:06am
13 Sun Rise: 5:48am Sun Set: 8:58pm Moon Rise: 9:30pm Moon Set: 5:08am Full Moon: 2:22pm	14 Sun Rise: 5:49am Sun Set: 8:58pm Moon Rise: 10:14pm Moon Set: 6:19am	15 Sun Rise: 5:50am Sun Set: 8:57pm Moon Rise: 10:48pm Moon Set: 7:33am	16 Sun Rise: 5:50am Sun Set: 8:56pm Moon Rise: 11:16pm Moon Set: 8:46am	17 Sun Rise: 5:51am Sun Set: 8:56pm Moon Rise: 11:39pm Moon Set: 9:57am	18 Sun Rise: 5:52am Sun Set: 8:55pm Moon Rise: 11:59pm Moon Set: 11:03am	19 Sun Rise: 5:53am Sun Set: 8:54pm Moon Rise: none Moon Set: 12:07pm
20 Sun Rise: 5:54am Sun Set: 8:53pm Moon Rise: 12:19am Moon Set: 1:10pm	21 Sun Rise: 5:55am Sun Set: 8:53pm Moon Rise: 12:38am Moon Set: 2:11pm Last Qtr: 2:02am	22 Sun Rise: 5:56am Sun Set: 8:52pm Moon Rise: 12:59am Moon Set: 3:13pm	23 Sun Rise: 5:57am Sun Set: 8:51pm Moon Rise: 1:22am Moon Set: 4:16pm	24 Sun Rise: 5:58am Sun Set: 8:50pm Moon Rise: 1:49am Moon Set: 5:20pm	25 **Public Observing at the Observatory** Sun Rise: 5:59am Sun Set: 8:49pm Moon Rise: 2:23am Moon Set: 6:22pm	26 Sun Rise: 6:00am Sun Set: 8:48pm Moon Rise: 3:04am Moon Set: 7:20pm
27 Sun Rise: 6:01am Sun Set: 8:47pm Moon Rise: 3:55am Moon Set: 8:12pm	28 Sun Rise: 6:02am Sun Set: 8:46pm Moon Rise: 4:55am Moon Set: 8:56pm	29 Sun Rise: 6:03am Sun Set: 8:45pm Moon Rise: 6:02am Moon Set: 9:33pm New Moon: 1:53am	30 Sun Rise: 6:04am Sun Set: 8:44pm Moon Rise: 7:14am Moon Set: 10:04pm	31 Sun Rise: 6:05am Sun Set: 8:43pm Moon Rise: 8:27am Moon Set: 10:30pm		

August 2003

Toronto, Ontario

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1 Sun Rise: 6:06am Sun Set: 8:42pm Moon Rise: 9:40am Moon Set: 10:54pm	2 Sun Rise: 6:07am Sun Set: 8:40pm Moon Rise: 10:53am Moon Set: 11:16pm
3 Sun Rise: 6:08am Sun Set: 8:39pm Moon Rise: 12:06pm Moon Set: 11:39pm	4 Sun Rise: 6:09am Sun Set: 8:38pm Moon Rise: 1:21pm Moon Set: none	5 Sun Rise: 6:10am Sun Set: 8:37pm Moon Rise: 2:38pm Moon Set: 12:05am First Qtr: 2:28am	6 Sun Rise: 6:12am Sun Set: 8:35pm Moon Rise: 3:55pm Moon Set: 12:35am	7 Sun Rise: 6:13am Sun Set: 8:34pm Moon Rise: 5:11pm Moon Set: 1:11am	8 **Sidewalk Astro. Spencer Smith Park, Burlington** Sun Rise: 6:14am Sun Set: 8:33pm Moon Rise: 6:21pm Moon Set: 1:57am	9 Sun Rise: 6:15am Sun Set: 8:31pm Moon Rise: 7:20pm Moon Set: 2:53am
10 Sun Rise: 6:16am Sun Set: 8:30pm Moon Rise: 8:08pm Moon Set: 3:59am	11 Sun Rise: 6:17am Sun Set: 8:29pm Moon Rise: 8:46pm Moon Set: 5:11am Full Moon: 11:49pm	12 Sun Rise: 6:18am Sun Set: 8:27pm Moon Rise: 9:16pm Moon Set: 6:25am	13 Sun Rise: 6:19am Sun Set: 8:26pm Moon Rise: 9:40pm Moon Set: 7:37am	14 Sun Rise: 6:20am Sun Set: 8:24pm Moon Rise: 10:02pm Moon Set: 8:46am	15 Sun Rise: 6:21am Sun Set: 8:23pm Moon Rise: 10:22pm Moon Set: 9:52am	16 Sun Rise: 6:23am Sun Set: 8:21pm Moon Rise: 10:41pm Moon Set: 10:56am
17 Sun Rise: 6:24am Sun Set: 8:20pm Moon Rise: 11:01pm Moon Set: 11:59am	18 Sun Rise: 6:25am Sun Set: 8:18pm Moon Rise: 11:23pm Moon Set: 1:01pm	19 Sun Rise: 6:26am Sun Set: 8:17pm Moon Rise: 11:49pm Moon Set: 2:04pm Last Qtr: 7:49pm	20 Sun Rise: 6:27am Sun Set: 8:15pm Moon Rise: none Moon Set: 3:07pm	21 **Starfest Aug 21-24** Sun Rise: 6:28am Sun Set: 8:14pm Moon Rise: 12:19am Moon Set: 4:10pm	22 **Public Observing at the Observatory** Sun Rise: 6:29am Sun Set: 8:12pm Moon Rise: 12:57am Moon Set: 5:09pm	23 Sun Rise: 6:30am Sun Set: 8:10pm Moon Rise: 1:43am Moon Set: 6:04pm
24 Sun Rise: 6:31am Sun Set: 8:09pm Moon Rise: 2:40am Moon Set: 6:51pm	25 Sun Rise: 6:33am Sun Set: 8:07pm Moon Rise: 3:44am Moon Set: 7:31pm	26 Sun Rise: 6:34am Sun Set: 8:05pm Moon Rise: 4:55am Moon Set: 8:04pm	27 Sun Rise: 6:35am Sun Set: 8:04pm Moon Rise: 6:09am Moon Set: 8:32pm New Moon: 12:27pm	28 Sun Rise: 6:36am Sun Set: 8:02pm Moon Rise: 7:24am Moon Set: 8:57pm	29 Sun Rise: 6:37am Sun Set: 8:00pm Moon Rise: 8:39am Moon Set: 9:20pm	30 Sun Rise: 6:38am Sun Set: 7:59pm Moon Rise: 9:54am Moon Set: 9:44pm
31 Sun Rise: 6:39am Sun Set: 7:57pm Moon Rise: 11:10am Moon Set: 10:09pm						

Board of Directors

Position	Name	email	Position	Name	email
President	Mark Kaye	mark.kaye@sympatico.ca	Obs. Director	Gary Colwell	glcolwell@sympatico.ca
Treasurer	Tina Coppolino	tinacoppolino@cogeco.ca	Webmaster	Ev Rilett	erilett@cogeco.ca
Secretary	Ken Lemke	cfs@worldchat.com	Librarian	John Williamson	john.williamson@sympatico.ca
Recorder	Roger Hill	roger.hill@sympatico.ca	Orbit Editor	Grant Maguire	maguires@lara.on.ca
1st VP/ Edu.	Michael Spicer	lawfirm@lara.on.ca	Curator	Heather Neproszel	hneproszel@aol.com