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WINNICENTRICS

The Journal of the Winnipeg Centre of the Royal Astronomical Society of Canada

NOVEMBER—DOUBLE BILL by Jay ANDERSON

November is doubly blessed this year with two sky shows for the ambitious to watch. The first of these is a Transit of Mercury across the face of the Sun on the 15th, followed two nights later by the peak of the Leonid meteor shower. While the transit is a sure thing, the meteor shower is much more uncertain, though many researchers expect that this year may be as good or better than last year's spectacle.

First the Transit.

Mercury crosses the solar disk 13 times per century on average. The event is not at regular intervals, but at interleaved cycles of 7, 13, and 33 years. All Mercurian transits occur within a few days of May 8 and November 10; during the November transit, Mercury is near perihelion, making it more distant from Earth, and so its disk is small. For this transit that will mean about 10 arc seconds in size. The last transit was on November 6 1993.

This transit comes very close to not occurring at all. Mercury passes across the Sun very close to the limb of the Sun, and in Australia is actually a graze. Here in Winnipeg the planet will be modestly inside the solar limb, as the Sun moves into the late afternoon sky. My copy of "The Sky" indicates that the event will be visible from about 3:15 to 4:10 CST in the city, with Mercury slightly inside the north limb of the Sun.

Our 14" telescope at Glenlea will function very nicely for watching this event if skies are clear.

The C14 has a solar filter and can be pointed directly at the Sun without concern for safety (but don't look through the finder – keep the cover on it at all times). In fact, because the C14 magnification is so high, I recommend the use of the f/6.5 telecompressor to reduce the power somewhat. Mercury will be easy to spot because sunspots (and there are lots of them) are not found near the north pole of the Sun.

And for the Meteor Shower

The Leonid meteor shower has a reputation for putting on a spectacular display every 33 years, corresponding to the period of the comet (Temple-Tuttle)

(continued on page 6)

IN THIS ISSUE...

November Double Bill	1
Who, Where and When	2
Observing Nights	3
Binocular Vistas (2)	4
Upcoming Events	5
SETI@HOME	6
REVIEW Starry Night Pro	7
Net-Pics	8
News & Announcements	8

Deadline for the next issue is December 31, 1999

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November

Nov **12**

Place: St John's College, Room 118
Time: 7:00 PM Beginners' Session
7:30 PM Regular meeting
Friday November 12, 1999

Electronic Astronomy : CCD Observing

You can't open an astronomy magazine without reading about them: CCDs are taking over as the "hot ticket" in astronomy. At this meeting Kevin Black and Jay Anderson will introduce CCDs and explain a bit about how and why they are so effective for astronomy. And, as always with a Kevin presentation, expect to see lots of gorgeous CCD astro-photography.

If you have CCD questions (costs, difficulty, etc.) bring them along to this meeting and enjoy the expert company.

As well this month we have a Messier review from Stan. Gail will also take a look at the constellation Auriga, the Charioteer. As usual, friends and family are welcome, and coffee and donuts will be served at the break.

December

Dec **10**

Place: St John's College, Room 118
Time: 7:00 PM Beginners' Session
7:30 PM Regular meeting
Friday December 10, 1999

Eclectic Astronomy

This month is a wild mixture of arm-chair astronomy and hands-on observing. In order to whet you palate, this meeting will look at a number of recent purchases by the club. Just in time for Christmas. (bring your personal Santa Claus along for the meeting!)

The list of goodies will expand, but already on the list includes Ray's review of the new finder scope; Ian will talk about the laser collimator we bought for the club and he will trial it.

(continued on page 5)

November

Nov
17

Observing night

Place: Glenlea Observatory
Time: Nov. 17, 9 pm until whenever

November is Leonid Month. "Leonid" as in the Leonid meteor shower. Every year at this time the Earth passes through the debris left behind Comet Tempel-Tuttle, treating us to a festival of shooting stars.

The nightly show begins gradually around the 15th of November, building quickly to a peak on the 17th and then tapering off for the three days following.

It's an annual event and normally doesn't attract a lot of attention. But this year is different. This year the Leonids may offer a show that is the best in decades.

For the observing session this month, we will meet out at Glenlea Observatory. Gail and Ray are your Observing Session hosts this month. Remember to dress warmly as the nights are getting colder. If you need directions to Glenlea, contact the Gail Wise 253-8297 or Ray Andrejowich 667-6896.

December

Dec
12

Observing night

Place: Glenlea Observatory
Time: Dec. 12, 7-8 pm for beginners, continuing until whenever

Stan, Jay and Kevin are hosts for this month's Observing session at Glenlea Observatory.

The evening will start at 7pm with a Beginner's Session. This is a great opportunity for those of you who are just starting to observe, Come on out and and have some help getting around the night's sky. Also bring your equipment out (scopes, binocs). With these three experts on hand you should be able to get all your
questions answered.

The skies should provide ample viewing for beginners and experts alike. So if you are more advanced in your observing come on out for the later part of the evening. Kev and Jay might even be convinced to get the CCD up and running. Stan, I am sure, will be encouraging all of you to work on your Messier certificates.

If you have been one of those people who have been wondering what all the Messier fuss is about, now is the time to go out and get aquatinted with some of the greatest looking objects in the night

If it is clear on the night of the 12th, dress warmly, bring hot chocolate and a friend! If you need more information contact Stan Runge at 261-9984 or Kevin Black at 224-0182.

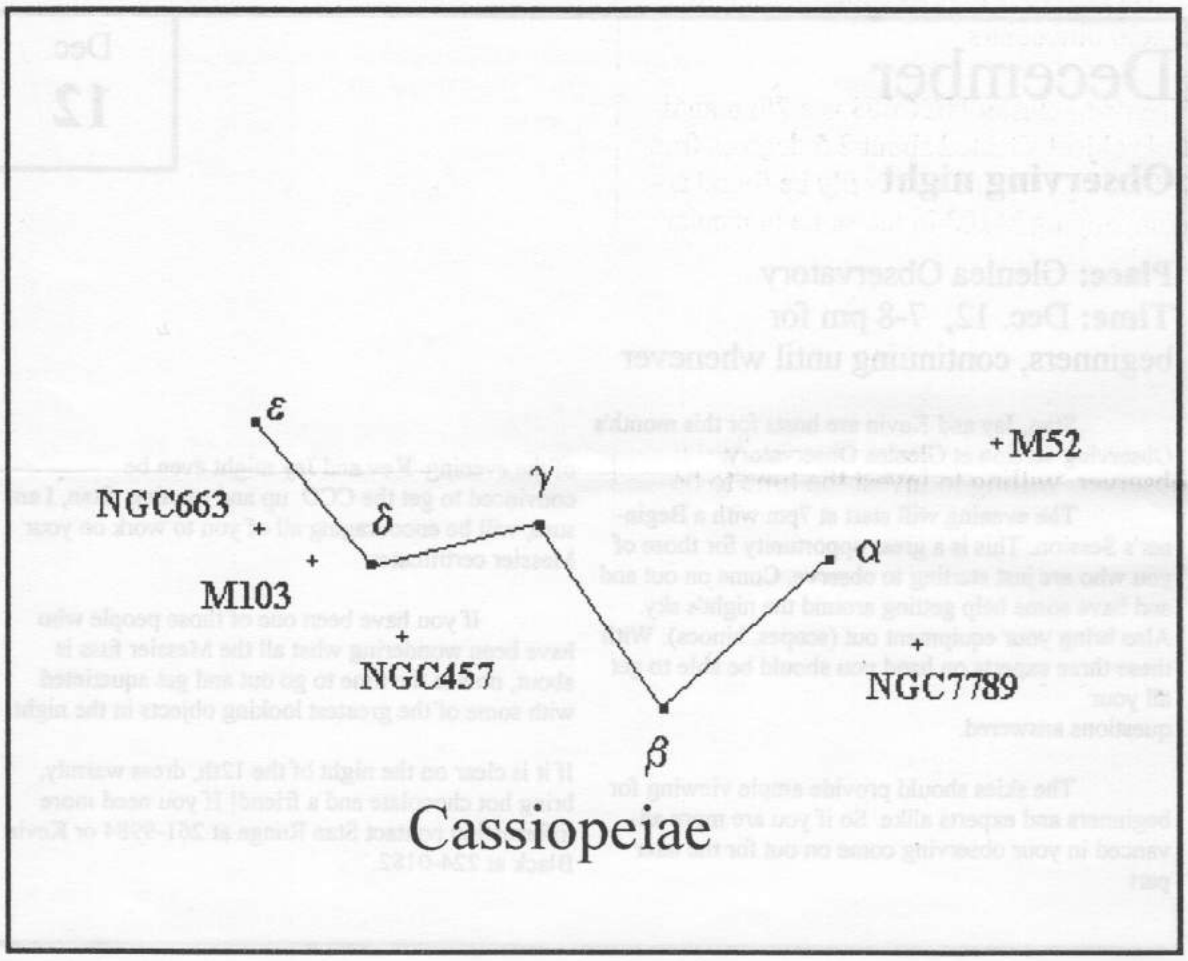
Binocular Vistas

Gil Raineault

This short binocular star-hop will examine a few of the many deep-sky objects that are found in Cassiopeia, the Queen of the night sky. Five bright stars in the pattern of a W or M define her basic shape, but since these stars lie in the Milky Way, an abundance of open star clusters adorn her figure. Some of these are accessible using binoculars in an urban setting. The following objects are but a sampler of what can be found in this region of the sky.

The compact open cluster **M103** is located close to the star δ **Cassiopeiae**. This object is faint when viewed through binoculars. It contains about two dozen magnitude 10 stars tightly packed together, so the low magnification of binoculars won't fully resolve the cluster.

NGC457 is a little cluster situated about two degrees from δ **Cassiopeiae**. It is easily resolved into many points of light in 7x50 binoculars.



Binocular Vistas (Continued)

M52 is an open cluster which appears as a hazy disk in 7x binoculars, but is observed as a stellar grouping in 10x instruments. A small telescope will resolve this object into many stars. Look for this cluster halfway between Cepheus and Cassiopeia.

The star γ **Cassiopeiae**, the central component in the five star figure, is an irregular variable that exhibits random fluctuations in brightness of about 1.5 magnitudes. Its magnitude varies from 1.6 to 3.0 over time.

NGC7789 is the finest open cluster in Cassiopeia available to the observer using binoculars. It contains over 300 stars, none of which are brighter than magnitude 10.7. This cluster appears as a grainy haze in 10x50 binoculars.

The open cluster **NGC663** is a 7th magnitude object situated about 2.5 degrees from δ **Cassiopeiae** and can easily be found accompanying **M103** in the same binocular field.

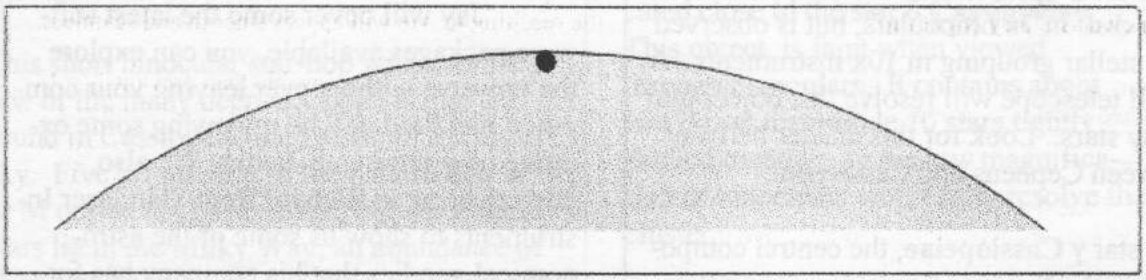
Locating and examing closely these six highlighted objects with binoculars under urban skies is a great way to sharpen one's observing skills. Many treasures await the observer willing to invest the time to become familiar with this northern region of the Milky Way.

Eclectic Astronomy (continued from page 2)

Jay will cover some the latest software packages available, you can explore the universe without ever leaving your computer; and Fred will be reviewing some exciting new astronomy books. We also hope to bring in Richard from StarGazer Instruments to show us some of the astronomical goodies that his company has for sale.

There is something for everyone at this meeting, including the regulars -- Gail's Constellation of the Month, Stan's Messier Object Review and Andora's Spacecraft Update.

November Double Bill (continued from page 1)



Mercurian transit

Double Bill (continued from page 1)

which laid down the dust and gravel which causes the shower. The last of these spectacles was in 1966, which puts us on the nose for a 33-year repeat this year. The 1966 shower is legendary, with rates of over 100, 000 meteors per hour, a number so high that the event is known as a meteor storm. Whether or not this year will conform to the 33 year expectation is still uncertain, but many predictions suggest that it will, and it is certainly not to be missed, even from the city.

The Leonids require no magnification at all – just a clear sky, a lawn chair, blankets, coffee, and the time to spend out in the night sky at Glenlea. For the best view, plan on being out after midnight when the Moon sets (1:26 AM actually). Watch the sky overhead and if the show is really spectacular, look toward Leo, which will be rising in the east at the time. A large display gives the impression that the Earth is rushing through space (which of course it is) and this is said to be one of the most incredible effects of a good storm. It's difficult to say what will happen, but if a meteor storm develops, it could be comparable to or even better than the awesome impression of a total eclipse.

SETI@HOME

There is a remarkable opportunity waiting for anyone with an internet connected computer to participate in some research that is truly out of this world.

SETI@home is a scientific experiment that harnesses the power of hundreds of thousands of Internet-connected computers in the Search for Extraterrestrial Intelligence (SETI). You can participate by running a free program that downloads and analyzes radio telescope data. There's a small but captivating possibility that your computer will detect the faint murmur of a civilization beyond Earth.

There are currently over 1.3 million participants, and they have logged over 108 thousand years of CPU time.

The program is a screen saver that only taxes your system when you are not using it.

The program is free and may be downloaded from the seti@home website: http://setiathome.ssl.berkeley.edu

Review: Starry Night Pro
— Michael P. Rogers

Sienna Software, manufacturer of desktop planetarium programs Starry Night and Starry Night Deluxe, has just released an evolutionary improvement to the latter, known as Starry Night Pro.

As many of you know, I have greatly enjoyed and often touted previous versions of Starry Night. Simply put, the people at Sienna Software have managed to produce an elegant interface, a work of art worthy of its namesake. I am pleased to report that in this latest installment they have managed to live up to their reputation by simultaneously adding a number of significant features, without jeopordizing ease-of-use in the slightest.

So, what's new with Starry Night? First, a lot more stars! In particular, the complete Hipparcos and Tycho stellar databases, from the European Space Agency, the entire NGC/IC deep sky database, the Catalog of Principal Galaxies are now included on the CD-ROM.

The Digitized Sky Survey is also nicely integrated into the package. Merely zoom in to a small portion (about 30', the maximum size supported by the DSS) of the nightsky, and then choose Digital Sky Survey from a menu. Assuming that you have an internet connection, the image will appear automatically in a browser (suitable for pasting directly into Starry Night, to replace the existing image, if you feel so inclined). Note that the entire DSS comes on several hundred CDs, so that some of these images can be quite large.

Starry Night Deluxe allows users to view the sky from any planet, moon, satellite, comet, or asteroid, or from any heliocentric coordinates; Pro now allows users to situate themselves on any star or location within 20,000 light years from here. For instance, I just took a quick click to Mars by highlighting on the Mars in the Planet Palette, and then clicking on the prominently displayed "Go There" button. Similarly, I could take a quick trip to Regulus in two clicks — one click to open up an information box, and another on the button labeled "Go There".

In one of the many nice touches in this program, "Go There" does not instantaneously transport the user to a location (unless they are in a hurry). Instead, the user is able to experience the journey; nearby objects recede as the user rushes towards their desired location, in an effect that is right out of Star Trek.

This, like all the other animated features of Starry Night Pro — basic celestial motions, planet flybys, and liftoffs from whatever planet one happens to be on at the time — can be captured in a QuickTime movie, a standard file format for video that is rapidly becoming universal. Thus, if you want to view an eclipse from a particular time and place, you can then distribute the movie (free of charge). This is particularly useful if you have a slow computer — Starry Night can spend as much time as it likes on each frame, but the resulting movie will appear smooth and seamless.

Liftoffs are even more enjoyable than previously. As with prior versions, it is possible to liftoff from any planet or moon. What's new is the magnitude and nature of the ascent. As one climbs, more and more stars creep into the field of view until, at a "height" of 200,000 light years, the entire Milky Way —or at least those stars in the catalogs for which 3D data is available — lies visible. It is a visually stunning tour de force.

Even the constellations in Starry Night Pro are improved. Classical 17th century images of all constellations (whose brightness one can adjust from nearly invisible to quite bright) can now be displayed: previously only those of the Zodiac were included. As with previous editions, these may be viewed in conjunction with or in lieu of the standard astronomical stick figures. While I am not a great fan of Rey's renditions, they are also included.

Considering the incredible wealth of astronomy resources on the internet, it's not surprising that Sienna has integrated some of these resources into their program. In addition to the DSS access mentioned earlier, detailed information on every object on the screen is available courtesy of LiveSky.com. For instance, I just clicked on Arcturus, and in under 10 seconds (with a 56 kbps connection) I was reading about it in my web browser. Starry Night Pro and LiveSky.com, taken together, constitute an incredible, interactive textbook.

Last but not least, Sienna Software has introduced a feature to die for — at least that's how I would hope most astronomy instructors would react. All of the stars visible in a window can be plotted in a Hertzsprung-Russell diagram (a plot of absolute magnitude vs. spectral type). What's more, this plot, placed in a separate floating window, is dynamic — as the user scrolls, the plot changes automatically and instantaneously as stars come in and out of view.

In short, Starry Night Pro makes an excellent addition to any astronomer's software collection. It can generate magnificent star charts, of course, and render telrad circles with the best of them. For working in the field, it provides a "night-vision" mode (the entire display is colored red); and, of course, it can control automated telescopes. For Further information, visit http://www.sierrasoft.com.

NET-PICS

This issue's featured sites come from Ray Philippe, member RASC Winnipeg.

There are several good sites out there with information and images of all the Messier objects. The SEDS site has an excellent Messier database:

http://www.seds.org/messier/

All those long-exposure images of the objects are just beautiful. Of course, my view of an object through a telescope is much fainter and less detailed than the long-exposure image. A few months ago, I had observed and sketched a couple of deep-sky objects, and I wanted to verify that I had indeed sketched the correct Messier object. I thought it would be useful to have someone else's sketch of the same object to compare to.

After some searching I found a personal web site, created by a fellow amateur astronomer, containing sketches of all 110 Mesier objects. Here is the URL:

http://www.city-net.com/~LSMCH/SKETCH3.HTML

Another interesting site is the Heavens-Above page (formerly known as the GSOC Satellite Preditions page):

http://www.heavens-above.com

It provides visibility predictions for satellites, MIR, the ISS, and the space shuttle. If you've always wanted to see a MIR or shuttle pass, or an Iridium flare, this site will tell you when and where to look.

All members are encouraged to submit their own NET-PICS for future issues of WINNI.

NEWS AND ANNOUNCEMENTS

TRAINING ON THE C14 TELESCOPE

If you are comfortable finding your way around the night sky with a small telescope and would like to learn how to use the Winnipeg Centre's 14 inch Celestron, contact Chris Brown by phone, email or at the next meeting, to reserve a spot (you can only fit some many people in the dome) The next session will be held on Dec 12.

775-6392 or **chris_brown@umanitoba.ca**

CORPORATE DONATIONS NEEDED FOR THE GA

We are looking for corporate donations of door prizes for next year's GA. If you know of, or work for, an organization that might offer one, please ask them about it. We expect about 100-150 people from all across Canada and will gladly advertise the organization in our GA literature in return for their sponsorship. Contact Chris Brown if you have any questions or need help.

775-6392 or **chris_brown@umanitoba.ca**