

Event Horizon

January 1999

Volume 6 Issue 3

Rob'serving Report

This month's Binbrook observing nights are scheduled for Jan 15/16 and 22/23. Call Rob Roy (692-3245), Bret Culver (575-9492), or John McCloy (523-4359) at 7pm for local weather conditions and to confirm. The Binbrook Conservation Area currently has a lot of snow and it is not plowed. Unless Mother Nature cooperates and melts some, we may not be able to get in.

The window of Jupiter observing is narrowing as evening twilight is later and Jupiter sets earlier each day. There are only about three hours of observing time. This will be the last report to include Satellites and the Great Red Spot until about June, 1999.

Jupiter's Satellite Phenomena

There are only a about 1.5 months left for good Jupiter observing before it gets too close to conjunction with the Sun. Get out and have a look. Possibilities are: a TRANSIT of a satellite or its SHADOW across the face of the planet, an OCCULTATION

as it passes behind the planet, or an ECLIPSE by Jupiter's shadow.

Shadow transit times which occur between evening and morning twilight are listed below. Times are converted to Eastern Standard Time (EST). The first time is the start of the shadow crossing (ingress) and the second is the end (egress). *-only one of the shadow's ingress and egress times may be listed when the other occurs before evening twilight or after Jupiter has set.

A window of UT (Universal Times) is given below so you can search in "Sky and Telescope" and in the "RASC Handbook" -1999 for other events you may wish to observe. Events on either side of this window occur either before evening twilight or after Jupiter has set. To get your local EST subtract 5 hours from the UT shown for each event.

Jan. 16 Io 19:20 --->*
25 Io *---> 17:57
28 Europa *---> 17:40

Feb. 01 Io 17:40 ---> 19:53
04 Europa 17:40 ---> 20:17
08 Io 19:36 --->*
12 Europa 20:17 --->*
17 Io *---> 18:13
24 Io *---> 20:08

For other events, search the table in the "RASC Handbook"- 1999, pages 182-3 between 23:00-02:00 UT. Jupiter is setting earlier each night. "Sky and Telescope" also includes Jupiter's satellite phenomena in its monthly issues.

Jupiter's Red Spot

You can check the list below to see when the Great Red Spot is likely to be visible on Jupiter. After each date the meridian transit time is given in EST to the nearest hour, so you will see it near but not necessarily on the centerline of the disk at that time. If you want exact transit times, "Sky and Telescope" lists them in Universal Time for each day of the month.

Jan. 17(8pm), 22(7p), 26(6p), 29

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Chair's Report

I have some exciting news for you about Saltfleet high school in Stoney Creek. This three year old school is very unusual in that it now has its own observatory. Carmen Martino, Chair of the Science Department of Saltfleet High School, was the driving force behind the project. Over the past few years we have been following the progress of the observatory starting with Carmen raising funds, getting school board approval and now finally the completion. Three of our own HAA members, Grant Dixon, Doug Welch and Steve Barnes, also played a role. There are still a few bugs to be worked out but the scope saw first light in December. The telescope housed in their 12 ft Ash dome is a Meade 16" LX200 equipped with a CCD camera. You will find this event to be especially interesting when I tell you that the HAA will have use of this observing facility one day a week. The details are not finalized yet so stay tuned for more information.

There is a very special web site for you to check out this month. It has been recently redesigned through the efforts of Gregg Caines and Grant Dixon. You have probably already guessed that I am talking about the HAA's own website at <http://www.science.mcmaster.ca/HAA/index.html>. Thanks to Bob Botts, another site worth checking out is located at <http://dspace.dial.pipex.com/lc/halo/halosim.htm>. This site is all about atmospheric halos caused by sunlight passing through various forms of ice crystals at different orientations. Included on the page is a link that allows you to download a program that simulates these halos on your computer. Each simulation is built up by accurately tracing thousands to millions of light rays through models of cloud crystals. On a Pentium 166MMX computer 100,000 ray tracings take less than one minute to run.

Stewart Attlesey
attlesey@interlog.com

Editor's Report

Now that the nights are long there are many great opportunities to get out and do some observing. On page seven of this issue of *Event Horizon* you will notice a Jupiter Report Form. Use it along with Rob Roy's *Rob'serving Report* when you observe Jupiter.

During some of these cold winter days you might want to explore the world from the comfort of your home. Stewart makes some great web site suggestions in his *Chair's Report*. An additional suggestion which was sent to me from Bob Botts was to read the article at <http://boston.com/>

dailyglobe2/355/science/Planetary_demolition_+.shtml it's an interesting read about Pluto.

Send your articles to me for the next issue of *Event Horizon* before the deadline of February 5th. I look forward to reading all your articles.

Rosa Assalone
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540-8793



HAMILTON AMATEUR ASTRONOMERS

Event Horizon is a publication of the Hamilton Amateur Astronomers (HAA).

The HAA is an amateur astronomy club dedicated to the promotion and enjoyment of astronomy for people of all ages and experience levels

The cost of the subscription is included in the \$15 individual or \$20 family membership fee for the year. *Event Horizon* is published a minimum of 10 times a year.

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Constellation of the Month - Cancer

Margaret Walton

The midnight culmination of this constellation is at the end of January or the beginning of February. It once marked the position of the sun at the June solstice.

To the Mesopotamians, Cancer was the gateway for the descent of souls into incarnation. To the Egyptians it was the dawn Sun-god Khephri, symbolizing fertility, life and rebirth.

In Greek legend, Cancer (the crab) was part of the story of Hercules, involved in the second labour of Hercules. Hercules was sent to kill the Hydra, a creature with nine heads who lived in a swamp near Lerna. Hera, Hercules' enemy, sent

a crab to aid Hydra by distracting Hercules. However, as soon as the crab came out of the swamp Hercules crushed it. This is the reason the constellation of Cancer has a crooked shape.

Objects to see in Cancer

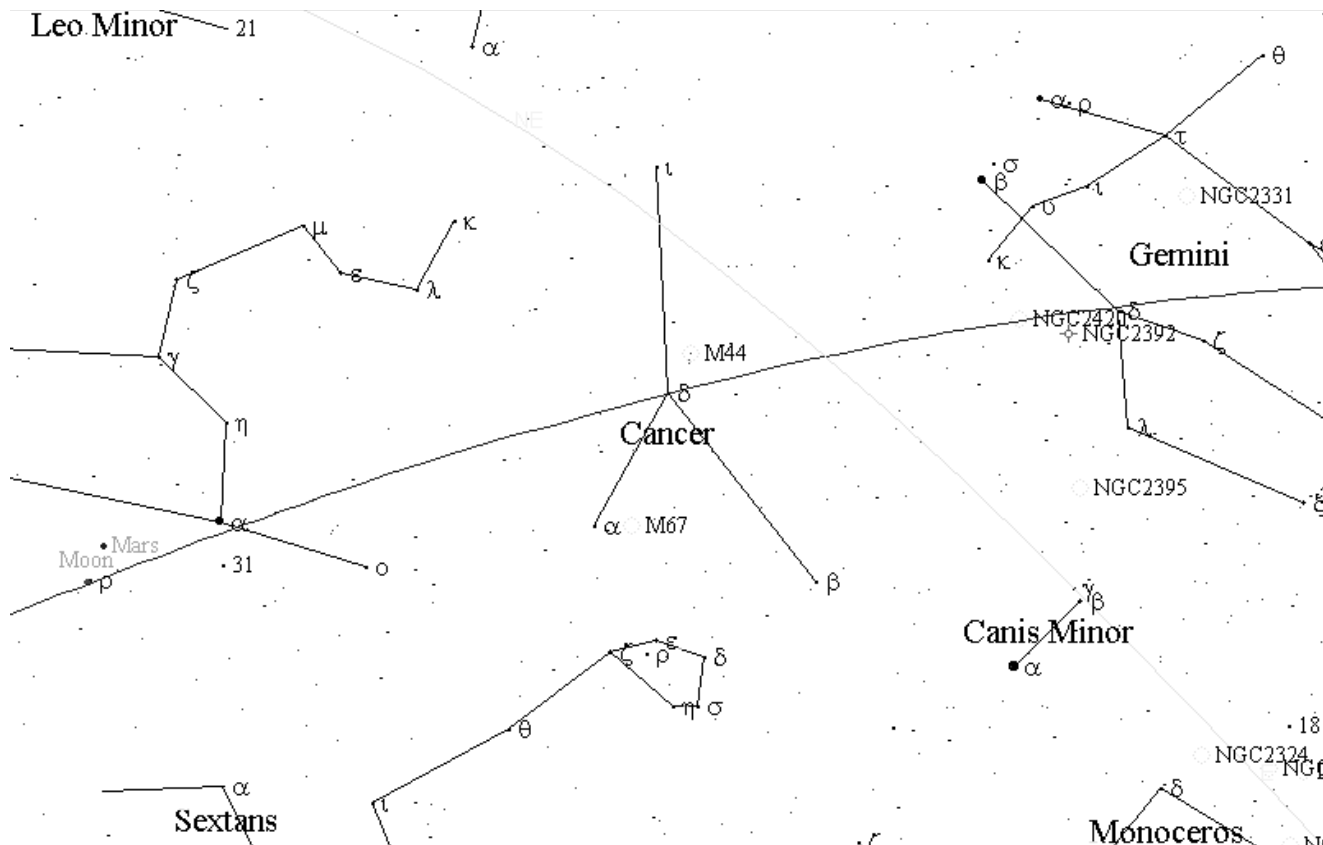
M44 (NGC2532) - Beehive Cluster or Praesepe. This is a group of stars creating a 6th magnitude open cluster. It is visible to the naked eye. It was used in ancient times as a weather indicator. If the cluster was invisible in an otherwise clear sky, it was considered to forecast the approach of a violent storm. It was referenced as far back as 260 B. C. by Aratus, who referred to it as a "Little Mist".

M67 (NGC2682) - Condensed, very

bright (6.9) large open cluster. It is visible with binoculars and at approx. 10 billion years old is one of the most ancient known clusters. It is about 2500 light years away.

NGC2672 - Bright, large galaxy in pair with NGC2673. It has a magnitude of 11.6.

NGC2775 - Bright, large spiral galaxy with a sharply defined core. The many arms form a dark lane. Its magnitude is 11.2.



Canada: Toronto ON | LMT: 98/10/15 11:30pm | RA: 08:44.4 Dec: +16°15' | Field: 39.5° | Step: 1 day | Mag: 6.5/8.6

Minor Bodies 1999

by *Ray Badgerow*

Here is information on some of the asteroids and comets visible from Earth during the upcoming calendar year. I have altered the format of the comet table for this year.

Table 1: Close Approach NEOS

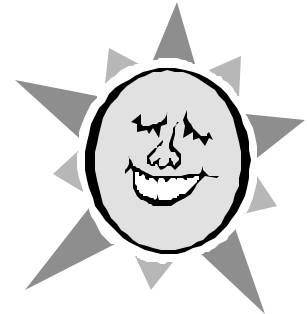
	<u>Name</u>	<u>Date</u>	<u>JD</u>	<u>Distance(AU)</u>
	1994 WR12	1999 Jan. 17.61	2451196.11	0.1277
	1991 VE	1999 Jan. 18.91	2451197.41	0.1573
(6047)	1991 TB1	1999 Mar.18.52	2451256.02	0.1632
	1992 SK	1999 Mar.26.26	2451263.76	0.0559
(1863)	Antinous	1999 Apr. 1.61	2451270.11	0.1894
(6489)	Golevka	1999 Jun. 2.81	2451332.31	0.0500
	1989 VA	1999 Nov.21.89	2451504.39	0.1938

Source: CBAT homepage

Table 2: Comets for 1999

<u>Name</u>	<u>T</u>	<u>q(au)</u>	<u>Nearest(au)</u>	<u>Date</u>	<u>Mag.</u>
C/1998 M5(Linear)	Jan.	24.6	1.74	1.52	Mar.9 9
52P/Harrington-Abell	Jan.	27.9	1.76	0.80	Jan.13 15-10?
60P/Tsuchinshan 2	Mar.	8.2	1.77	0.84	Jan.15 15
102P/Shoemaker 1	Mar.	16.9	1.97	2.02	Dec. 3 15
P/1990S1(Mueller3)	Mar.	20.53	0.01	2.28	Nov. 7 18
105P/Singer-Brewster	Apr.	6.4	2.03	1.10	Jun. 10 15
P/1983C1(Bowell-Ski)	Apr.	27.6	1.97	1.21	Jan 31 17
P/1991V1(S-L 6)	May	2.4	1.13	2.07	Apr.25 15
37P/Forbes	May	4.2	1.44	0.98	Aug.28 13
4P/Faye	May	6.11	0.66	2.66	May 1 13
C/1998 T1(Linear)	Jun	25.2	1.47	0.48	Jul. 2 8
P/1988V1(Ge-Wang)	Jun.	26.8	2.49	1.65	Oct. 2 16
50P/Arend	Aug.	3.8	1.91	1.42	Dec.20 16
84P/Giclas	Aug.	25.1	1.84	1.05	Nov.22 15
10P/Tempel 2	Sep.	8.4	1.48	0.66	Jul. 11 8
59P/Kearns-Kwee	Sep.	16.3	2.33	1.54	Jan.11/00 14
P/1994P1(Macholz 2A)	Dec.	8.4	0.75	0.30	Jan.14/00 7*
P/1992 G2(S-L8)	Dec.	10.6	2.72	2.08	Mar.24 18
106P/Schuster	Dec.	16.2	1.54	0.77	Oct. 24 16
63P/Wild 1	Dec.	27.4	1.96	1.25	Apr.2/00 16

There will also be 3 space missions headed towards comets & asteroids this year: On January 10th, the NEAR spacecraft will reach the asteroid Eros to begin its 1 year study of that NEO. The Stardust mission will launch on February 6th and will reach comet Wild2 in June 2004. Finally, the Deep Space 1 craft will fly past the high-inclination Mars-crosser 1992KD on July 28 or 29th, 1999 depended on how good the autonomous navigation system is in bringing it too within 5-10 km of the asteroids surface.



Astro Quiz: Size Does Matter

Denise Kaisler
kaisler@astro.ucla.edu

What's the difference between a planet and a moon? Well if you're talking about terrestrial planets, the answer is : not a whole lot. Below is a list of planets and satellites. See if you can put them in order of size, from largest to smallest.

- ___ Mars
- ___ Uranus
- ___ The Moon
- ___ Ganymede
- ___ Mercury
- ___ Neptune
- ___ Titan
- ___ Venus
- ___ Europa
- ___ Earth
- ___ Pluto



(Continued from page 1)
(8p).

Feb. 10(8pm), 15(7p), 22
(8p), 27(7p).

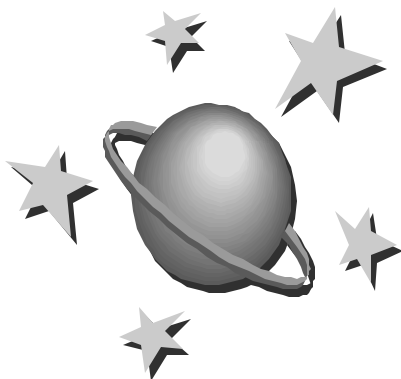
Monthly In-Sights

January

19- 3am Crescent Moon 2
deg. N of Venus.

21- 6pm 4-day crescent
Moon 1.8 deg. S of Jupiter.

24- 1am 6-day crescent



Moon 2 deg. S of Saturn.

27- 2:50am ---> Moonset.
Gibbous Moon occults
Aldebaran.

31- "Blue Moon"- second
full Moon this month.

February

01- Moonrise ---> 7:00pm.
Nearly full Moon occults
Regulus.

07- Moon near Mars in the
early morning.

11- Pluto once again
becomes the furthest planet
from the Sun after being
closer than Neptune for 20
years since 1979.

The Planets

Mercury starts its brief shift
as an evening "star". Its
greatest elongation is in early
March.

Venus is an evening
phenomenon setting at about
7:30 pm.

Mars rises at about midnight
in Virgo. Very small size-
still not much of a telescope
object, but steadily increasing
in apparent diameter.

Jupiter starts in Aquarius
moving into Pisces and shines
brightly until about 10pm in
January and 9pm in February.
You can't miss it as the
brightest object to the SSW at
dusk. Last chance to observe
it before June, when you'll
have to get up early in the
morning!

Saturn is visible until about
midnight in Pisces. Its fairly
large disk and the appreciable
tilt of the rings continue to
make it a nice fall object!
The tilt of its ring system is
steadily increasing from
about 15 degrees as we look
at its southern hemisphere.

Neptune & Uranus are rising
in February in the dawn's
twilight.

Rob Roy,
Observing Director
**Please note new*
*e-mail address**
rroy@idirect.com



The next meeting of the
Hamilton Amateur Junior
Astronomers will be **Tuesday,**
January 19th at 7pm. The evening
will be a fun filled evening of
activities. If you have children under
the age of 12 who are interested in
attending, contact Rosa at 540-8793.

In February, HAJA will not be held
on the usual third Tuesday. Instead,
the February meeting will be held on
Tuesday, February 23rd at 7pm in
the usual place, McMaster University,
Burke Science Building room B148.

See you there!

Did you know that...

the longest eclipse in
thousands of years will
occur on July 16, 2186,
lasting 7min-29sec,
only 2 sec short of the
maximum.

Rob Roy

You know you are a Deep Sky person when...

- ...you consider the moon a major annoyance.
- ...you consider Jupiter 'light pollution.'
- ...you spend most of your time looking at or for objects you can barely see.
- ...your favourite objects are objects you can barely see.
- ...you enjoy looking at faint fuzzies with the smallest possible aperture.
- ...you enjoy looking at faint fuzzies with the largest possible aperture.
- ...you like to choose objects that are easier to imagine than to see.
- ...your observing schedule demands that you search for objects in twilight.
- ...you keep thinking that if only the stars would go away, it might really get dark.
- ...you wonder how your favourite objects missed getting included in the New General Catalog or the Index Catalog.
- ...you're not sure that anything in this solar system counts as astronomy any more.
- ...you're amazed that anyone needs artificial light to read star charts.
- ...you could do a Messier Marathon from memory, if you still bothered with Messier objects.
- ...you can read all the NGC abbreviated visual descriptions without using the key, but you have to be careful not to cheat by just remembering what things look like.
- ...you view an earthquake/hurricane/power outage as a good opportunity for a close-to-home dark-sky star party.
- ...you can talk while holding a red flashlight in your mouth.
- ...you can UNDERSTAND someone talking with a red flashlight in her/his mouth!
- ...you can only recognize observing buddies by their voices.



CALENDAR OF EVENTS

- January 15, 16, 22, 23, 8:00pm **BINBROOK OBSERVING NIGHTS** - For confirmation or directions call Rob Roy at 692-3245 or Bret Culver 575-9492 or John McCloy 523-4359.
- Tuesday, January 19, 7:00pm **HAA MEETING** - McMaster Burke Science Building, room B148. For more information contact Rosa Assalone at 540-8793.
- Friday, January 22, 7:30pm **HAA COUNCIL MEETING**
- Friday, February 12, 7:30pm **HAA GENERAL MEETING** - At the Spectator Building auditorium
- February 12, 13, 19, 20, 8:00pm **BINBROOK OBSERVING NIGHTS** - For confirmation or directions call Rob Roy at 692-3245 or Bret Culver 575-9492 or John McCloy 523-4359.
- Tuesday, February 23, 7:00pm **HAA MEETING** - McMaster Burke Science Building, room B148.