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Event Horizon

June 2001

Volume 8 Issue 8

Copernicus, The Crater

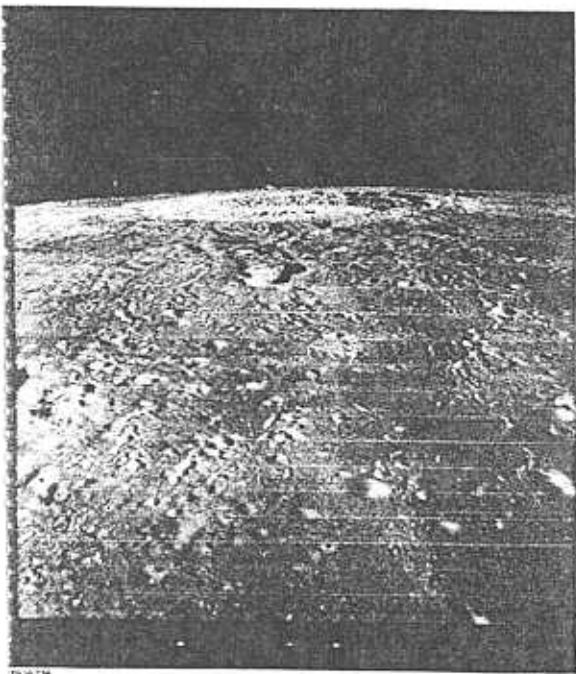
- Ann Tekatch

On one of the extremely few clear nights we had last month, I set up our 4" refractor for a quick look at the moon. (Actually, it wasn't clear. It was hazy and generally disgusting, but I was so desperate for an "astronomy fix", that I convinced myself it was "clear"!)

The moon was near last quarter and I scanned the lunar terminator, just going for an astronomical Sunday drive. The crater, Copernicus, was near the terminator and beautifully illuminated. There was enough light inside it to give good contrast and I was amazed at the detail!

sion to see if my observations bore any resemblance to reality.

Some astounding photographs of Copernicus are available on Nasa's website. One in particular (<http://antwrp.gsfc.nasa.gov/apod/ap980909.html>) was taken by Apollo 17 and was chosen as September 9, 1998's Astronomy Picture of the Day. The photo was obviously taken as the Apollo 17 approached Copernicus. You can see that the crater floor is smooth on one half and ridged on the other. The crater walls do appear terraced. <damn, I'm good>



Half of the crater floor appeared to be broken up and the other half was smooth. The central peaks were prominent, but what kept my interest was that difference in the crater floor. The rough half seemed rippled like water on a windy day. These ripples carry up the crater wall, creating a terraced effect.

I was so intrigued that I did a little research after my observing ses-

Here are some other tidbits I gleaned from my research:

- Copernicus is
- 93 km wide
- about 3800 meters deep
- relatively young having

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Chair's Report

On May 27 Jill Tartar came to town and was the speaker for the Helen Sawyer Hogg lecture as part of the Canadian Astronomical Society conference. I had the privilege of having dinner with her before hand. One of the topics discussed was what we as amateurs could do to help out in the search, besides using our SETI screensavers! She mentioned Project Argus. This is an effort to deploy and coordinate about 5,000 small radio telescopes around the world, in an all-sky survey for microwave signals of possible intelligent extra-terrestrial origin. Check out their web site at <http://setileague.org/general/whargus.htm>. They even have the plans for building the scope.

Environment Canada has decided to help us out and is giving us cloud forecasts for astronomers. The site shows radiation/cloud forecasts and has all the information needed to interpret them. Check this out before you head out for the evening. Their address is http://www.cmc.ec.gc.ca/cmc/htmls/astro_e.html.

The club is participating in a couple of public events this

summer. The first takes place this Saturday, June 9 at the Binbrook Conservation Area. This is our observing location and we have been invited to set up a display at their open house. It looks like it will be a sunny day so hopefully we will get some good solar viewing in. The Hamilton Children's Museum has invited us to take part in their annual birthday party. A few thousand children, parents, etc are expected to attend and we will have a display, scopes and some activities for the kids. This takes place July 19, and everyone who would like to help out is welcome to attend.

We have a new web master! Anthony Tekatch has enthusiastically volunteered to redo our web site and maintain it. He has already been at work and I would like to thank him for taking the time to do this. Be sure to check back often to see the progress on this site.

Have a great summer.
Margaret Walton

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 \$25 individual or \$30 family membership fee for the year. Event Horizon is published a minimum of 10 times a year.

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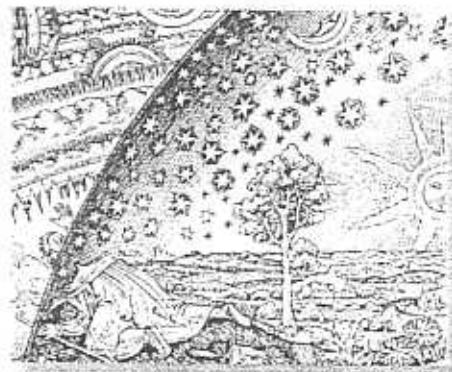
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Is Anyone watching Mars lately !!!

Mars is a fascinating planet, not only in its own right, being at opposition this year, so many will be enjoying its features. Although it is not at its best declination for northern observers, it is still worth observing.

The most fascinating aspect this year for me is the fact that it enters and will reside for quite some time in Ophiuchus. One of the newest constellations on

the ecliptic, it holds a 3 week time slot. Rather substantial. (the other is Cetus, holding a 2 day time slot interrupting Pisces) Mars will make some very interesting moves this year within Ophiuchus. We have already missed some of it. However, now that it's up at a reasonable hour we can watch the rest of this progression. Here's the layout:

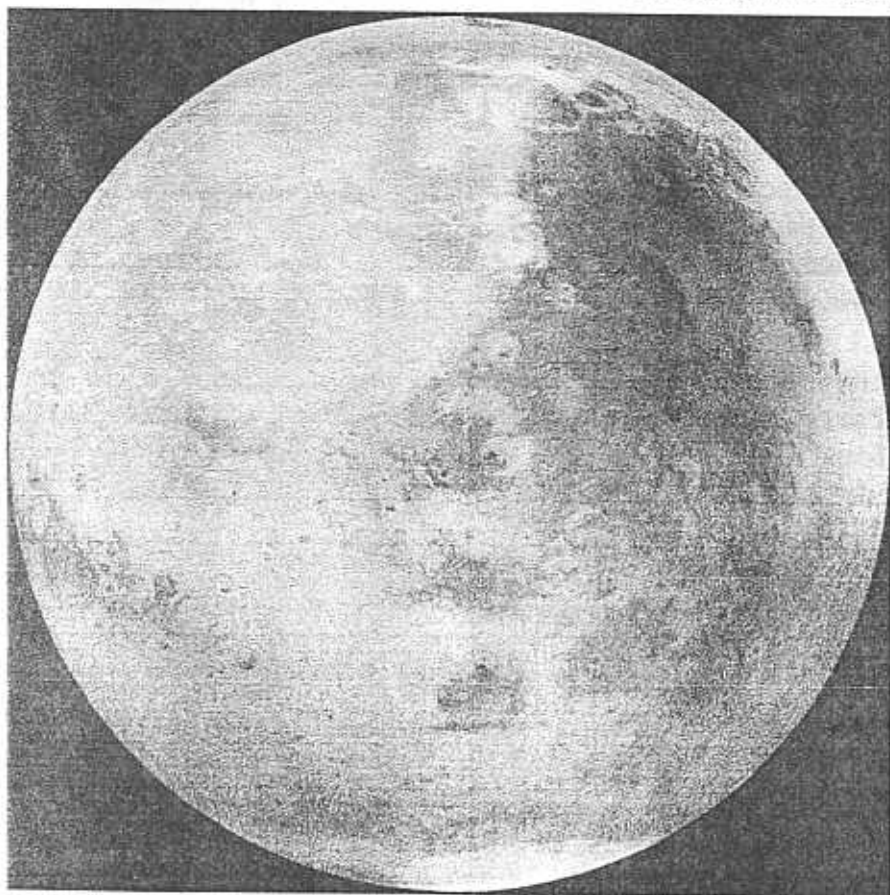
Beginning : March 1 - 18, 2000, Mars will enter Ophiuchus and travel the lower

left hand area of the constellations boundary. (unfortunately it is not in the coffee pot) It will cross the Descending Node on Apr 9th.

Now many observers will be watching the action in the morning hours. It will enter Sagittarius on Apr. 19 where it will immediately begin its retrograde loop and head back into Ophiuchus on June 1. Now we evening planetary observers will be watching. It will cross the lower quadrant just like the first time. Almost the same path. On July 17, it will make another retrograde turn. I am not even sure it actually enters Scorpius at all. Mars will then sweep for a 3rd time across the same quadrant of Ophiuchus heading into Sagittarius on Sept. 1, 2000. It will then continue its onward journey. For us Mars will disappear in August.

Mars will spend a total of 92 days in our newest constellation Ophiuchus. Isn't that just the neatest thing. Yeah Ophiuchus.

Ev Rilett



Star Party Summer

There are a number of great star parties to feed your fix for dark skies and astronomical wisdom this year. There are good listings on the web, especially useful to check out if you are traveling – maybe there will be a party near you! Two good sites to check are: <http://www.skynewsmagazine.com/pages/starpy.html> for Canadian parties, and <http://www.skypub.com/resources/calendar.shtml> for more international listings.

Gateway to the Universe <http://users.efni.com/~brent/nbclub/gateway.htm> is held on July 20-22 at the Munro Campground near North Bay. They usually have great speakers and dark skies. Camping is either in a field or, if you get their early enough, you can nab a spot under the trees.



Next up is the **Huron Star Party** <http://www.geocities.com/CapeCanaveral/Lab/3681/index.html>. This is hosted by the South Simcoe Amateur Astronomers and is held on a private farm near Alliston. Dates are August 10-12.

1000 people attended last year's **Star Fest**, held this year August 16-18. Our own Doug Welch is one of the key speakers, along with several other great talks. This is the place to go to check out almost every possible type and make of scope. We hope to have a large Hamilton Amateur Astronomers showing here so come on out and camp with us. We will have the HAA banner displayed so look for us there and join the party! River Place Campground, Mount Forest. <http://www.nyaa-starfest.com>

Finally, the **Great Manitou Star Party**, held on Manitoulin Island. Go to this party for dark skies and a great beach! August 21-25 at Gordon's Park. <http://www.manitoulin-links.com/starparty>.

Have a great summer!
Margaret Walton

Millennium Messier Marathon Update

We have collected over \$400 so far from our first-ever Messier Marathon fund-raiser!

The final tally should be available shortly and I will prepare a full report for the summer issue of *Event Horizon*. Tax receipts for all donations over \$10 will be going out soon.

Thanks, again, to all who participated!!

Ann Tekatch

Various Mythologies

- Sheila Overall

The Big Bang
Scientists now say that the universe began with the Big Bang, a huge explosion 10 billion years ago, that sent matter in all directions to create the ever expanding universe. This is a new vision of the beginning, a new "myth" for a scientific age.

Fire and Ice

The Vikings believed that the world began when fire from the south met ice from the north. At the centre, the ice began to thaw and as it dripped, it shaped itself into the first being, 'Ymir' whose sweat formed the first frost giants. Then the ice-melt shaped a cow, whose milk fed Ymir. As the cow licked the ice, she shaped the first man, 'Buri'.

Cosmic Stone

The Babylonian boundary stone shows the gods and goddesses of the Babylonian cosmos as witnesses to a legal agreement. At the top are symbols of the goddess of love and war, Ishtar, the moon god Sin and the sun god Shamash. An underworld snake wriggles up the side. The scorpion in

the centre row is the symbol of Ishhara, the goddess of marriage and childbirth and enforcer of oaths.

Ra, The Sun God

The falcon-headed god Horus joined forces with the Egyptian sun god Ra and became Ra-Horakhty. He sailed a special boat, the solar-bark across the sky by day and through the underworld by night.

Inca Inti

Viracocha, the Inca creator god, ordered the sun, moon and stars to emerge from the Island of the Sun, in Lake Titicaca, to bring light to the world. Inti, the sun god was regarded as the father of the Inca emperors and his wife Mama Kilya, the moon goddess, as the mother of the Inca race.

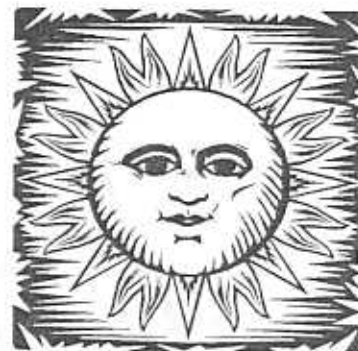
The Sun Goddess Amaterasu

This Japanese sun goddess was so offended by her brother Susano's practical jokes, that she hid in a cave and deprived the world of the sun. Uzume, the goddess of mirth, did a striptease and

made the other gods laugh. Intrigued, Amaterasu emerged from the cave, returning sunlight to the world.

The Big Crunch

Many mythologies envisage a cycle of creation and destruction and foresee the emergence of a new world after this one ends. According to scientific theory, this is perfectly feasible. The universe, which is currently expanding, may one day reach a maximum size and collapse in on itself in a Big Crunch. The matter and energy from the collapsed universe may then bounce back to create a new universe.



Starfest

The North York Astronomical Association invites you to attend Starfest 2001, August 16 - 19, 2001.

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 of people 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.

This year's theme, The Universe - A Spectrum of "Light", examines how modern astronomers are using a wide array of instruments to probe the mysteries of the universe. The results of their work have given us new insight into the nature of the universe, its origin and its destiny. These instruments span the entire spectrum from extremely high-energy gamma rays to meter-long radio waves. Join us for a fascinating look at our universe through the "eyes" of these unique instruments and the astronomers that use them.

Starfest 2001 features over fifteen presentations and workshops, given by leading professional and amateur astronomers. This year's stellar line up includes: Alex Fullerton, Judith Irwin, Jaymie Matthews, Marshall McCall, Steve Murray, Doug Welch, Tom Clark,

Paul Markov, Glenn LeDrew, Phil McCausland, Jerry Spevak, and many more. Full details to help you plan your agenda are available on our webstie at www.nyaa-starfest.com.

We hope to see you at Starfest,

Andreas, Bonnie and Team Starfest.

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Toronto, Ontario M6N 4T5
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July Night Skies



ECU V3.0 (Star Atlas Mode) - JulyNight Skies

UTC: 2001/07/16 at 03:30
LMT: 2001/07/15 at 10:30pm

RA=17h46.5m Dec=-43°16'
Field=180.0° Azim=-349°59' Alt=-90°00'

Cosmology Discussion Group

Copernicus

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been formed about 1 billion years ago

- the centre of a bright ray pattern, visible at full moon

This crater is definitely worth setting up your telescope – even on a night when the sky beckons only the most desperate observers!

Ann Tekatch

Presents: *The Analysis of Eclipsing Binaries Containing Cepheid Variables*. Graduate student Dave Lepischak will do our presentation.

It has been called the “Rosetta Stone” of variable star research: a cepheid variable star which is a member of an eclipsing binary system. Such a system would allow the first direct measurements of a Cepheid’s stellar properties, such as mass and change in radius, improving both our understanding of stars’ internal structure and our ability to measure distance in the universe.

Dave will discuss the difficulties encountered and the results obtained from the first analysis of several systems exemplifying this rare coincidence of disparate types of stellar variability.

The meeting will be held: Saturday, September 29th, 2001, 8pm in McMaster’s Burke Science Building, Room B148

Refreshments will be provided. We welcome our members to bring a small entree. Everyone welcome, open discussion. For further information, call Larry at (905) 529-1037.

CALENDAR OF EVENTS

- June 15, 16, 22, 23 ~ 8pm
- Saturday, June 9
- July 20-22
- August 16-19
- August 21-25
- Friday, September 14, 7:30pm
- Saturday, September 29th, 8pm

BINBROOK OBSERVING NIGHTS - For confirmation or directions call Bret Culver 575-9492, Marg Walton 627-7361, Rob Roy 692-3245

Binbrook Conservation Area Open House - See chair’s report (page 3) for details.

GATEWAY TO THE UNIVERSE - at the Munro Campground near North Bay. Details on page 4.

STARFEST - River Place Campground, Mount Forest. Details on page 6.

GREAT MANITOU STAR PARTY - held on Manitoulin Island at Gordon’s Park. Go to this party for dark skies and a great beach! Details on page 4.

HAA GENERAL MEETING - The meeting will be at the Spectator Building auditorium. Please check the website to confirm the date and location.

COSMOLOGY DISCUSSION GROUP - The meeting will be held at McMaster University, Burke Science Building, Room B148. Dave Lepischak will speak about: *The Analysis of Eclipsing Binaries Containing Cepheid Variables*. Call Larry at (905) 529-1037 to confirm.