

Event Horizon

Summer 2003

Volume 10 Issue 9

MARS - From Dream to Reality 07/17/03

by Glenn Muller

A frost fence separated the park from the apartment building I'd lived in around 1970. Another enthusiast was there, trying to decide the best place to view the Mars/Moon conjunction. I suggested the apartment's parking lot and she found a place we could slip through the fence. The hill up to the pavement was snow-covered, but once there a few spaces were available for setting up. I looked skyward. I couldn't see Mars yet, but the Moon was full and sitting next to a Hyades cluster like I'd never seen with about two-dozen red stars interspersed with a dozen or so bright yellow ones. As I cast my eye about, bright red and yellow stars were everywhere. A couple more astronomers drove up and proceeded to unload equipment. Thinking I'd better bring my car over while there was still space I headed for my 1969 Dodge Charger; but before I got there the alarm I'd set for 4:15am went off, waking me. It was time for the real thing!

I scanned the living room to locate the cat then stepped around her to reach the west-facing front door. Lunar rays illuminated the street though I couldn't see the source. Through a window to the South, the Moon sat high and bright above the few wispy clouds that hugged the horizon. I called softly to Gail as I passed the bedroom, "Are you awake?" "Trying to be," was the sleepy reply.

Our 6" reflector was on the deck under its Desert Storm cover, the binocular box with the 10x50's inside sat beside it, both covered with a light dew. By naked eye, the sight of a glinting topaz chip accentuating a brilliantly etched orb was alone worth the price of admission. With the binocular/mirror box combination there was a slight flaring of the planet but a couple of stars entered the picture giving a nice size and colour

contrast.

Gail came out as I attached a Moon filter to the 21mm Pentax eyepiece. Through slight turbulence a myriad of craters, peaks and rilles along the terminator swam into view. A little nudge of the scope and there, inverted, was Mars jauntily wearing its cap of South Polar ice! Barely detectable changes of hue teased across the planet's surface and I switched to an orange filter which enhanced the cap a bit but didn't make an appreciable difference on any other features. The 7mm Pentax bumped the power from 57x to 171x. With a light green filter, again the ice cap was prominent but other details were hard to discern. Moon glare also caused a reflective kidney bean effect that is not normally present. Perhaps the most pleasing view of the pairing was a barlowed 21mm with Moon filter. At 114X, this gave a happy combination of magnification, sharpness and content.

At 5am Gail decided she'd sacrificed enough sleep and left me mixing and matching optics. Dawn was brightening in the East and the early bird could be heard chirping in the distance. Telescopic, binocular, and naked eye, I committed each view to memory, then began to pack up. Racing to the Walnut tree only Farley, our dog, knows how close I came to being ravaged by a pair of Canadian killer squirrels. It had been a good night for such a rare sight.

by Glenn Muller

Glenn is the Publicity coordinator for the HAA. You can read more of Glenn's work in the September 2003 edition of Astronomy Magazine where he reviews "Astronomy with a Budget Telescope" by Patrick Moore and John Watson.



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Chair's Report

It's the summer of Mars! At least, you would think that from all the media attention. One of my neighbours said that they heard that Mars would be coming within 55 km of Earth! They also said that they heard that Mars would appear as big as the Moon in the sky. Clearly we have our work cut out for us in terms of educating the media and the public! The truth, of course, is not quite so interesting (or potentially catastrophic!) Mars will be as close as it gets at the end of August and will appear ever so slightly larger than at other oppositions. For apparent size, Mars never even comes close to Jupiter and isn't much of a rival for Saturn or Venus. Still, the polar ice caps and colouration are relatively straightforward to see through a small scope.

We are planning to have a public Mars-observing session on Labour Day weekend at Bayfront Park. This will undoubtedly bring plenty of curious folk out, so the more telescopes and HAA people, the better. Please join us there (if it is clear!) Also, do what you can to prevent a major dust storm on Mars from developing between now and then!!

This November marks the tenth anniversary of the creation of the HAA. We are planning a banquet to celebrate. Cindy Bingham has taken on the task of organizing this event and has done a HUGE amount of work already. Not only has she picked a wonderful venue, the Royal Botanical Gardens, but

she has also arranged a total lunar eclipse for that evening! (Clearly this is not a person you want to annoy!) Please book your tickets early - we hope to have a big crowd to hear Bob McDonald of CBC's "Quirks and Quarks" speak that night!

On a personal note, I recently returned from a great trip to Australia. My primary reason for being there was the International Astronomical Union's 25th General Assembly and the Joint Discussion 13 "Extragalactic Binaries". However, I managed to take a few days with my family on an island on the Great Barrier Reef. It was over two hours off the coast and we arrived close to New Moon. The centre of the Milky Way was overhead. Needless to say, the skies were absolutely breathtaking. Crux was also high up and omega Cen and 47 Tuc were both naked eye objects. Mars created reflections on the ocean when it rose. I was very fortunate to be able to share this with my wife and children - so few people from the northern hemisphere get to see the amazing southern sky under such ideal conditions.

Finally, I hope to see many of you at StarFest and also hope that you will share your summer astronomical experiences with the rest of the HAA by writing an article for Event Horizon and/or giving a talk at one of our meetings.

Doug Welch



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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<http://www.axess.com>

support@axess.com

Items Needed

If anyone from the club has pictures or slides that would be suitable to show at the HAA Banquet in November then please bring them to the next HAA meeting or forward them to Marg Walton.

WebWatch

Site www.ras.sk.ca/ClubPhotos/VPetriew/VP_Noctillucent_640_2_2.avi

Description Vance Petriew's noctilucent cloud AVI animation.

Submitted by Doug Welch

Site www.astropolaris.tk

Description Groupe d'astronomes amateurs Polaris club in Quebec

Submitted by Pierre Paquette

Site www.webcam-astrophotography.com

Description Tips for photographing the planet Mars

Submitted by Alwyn Botha

Site <http://home.austin.rr.com/cmlab/>

Description A more efficient flight path from Earth to Mars

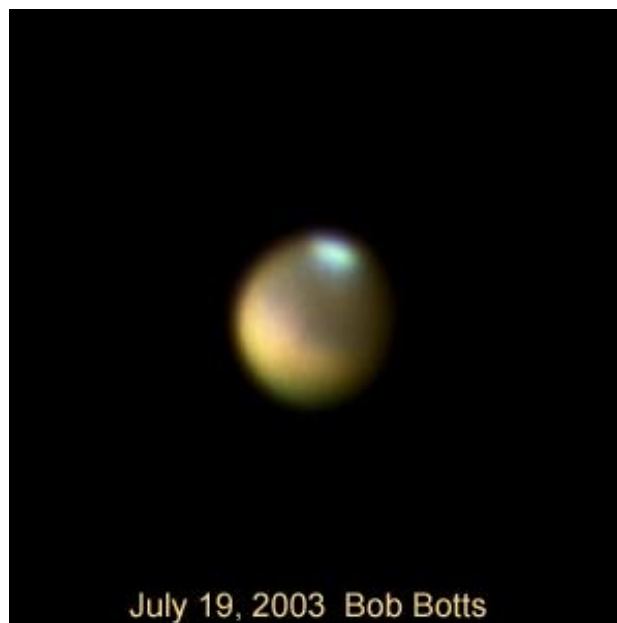
Submitted by Bill Clark

Eye Candy

Photos by Bob Botts



Note: the caldera of the well known lunar dome next to the crater Kies... rima Hippalus is also kind of neat, with it's parallel features.



July 19, 2003 Bob Botts



A daytime image of the Moon, which I snapped through someone else's scope... just basically walked up to the eyepiece and shot a couple of frames, afocally.



A long exposure of people looking through my scope.

MARS ATTACKS!

The article "Get ready for Mars" in the August 2003 issue of Astronomy recommends to the reader a freeware program called Mars Previewer II. However, those quick off the mark have reported the files to be infected with a variant of the Chernobyl virus.

Though detected back in 1998, the CIH virus known as Chernobyl still circulates and will destroy data on unprotected computers. Naturally, the editors of Astronomy are now recommending that you, er, don't download Mars Previewer II.

If you feel that your computer has already been were infected you should visit http://securityresponse.symantec.com/avcenter/venc/data/kill_cih.html for cleaning instructions and, until your system is secure, under no circumstances should you release any doves. Ack. Ack

News

Former HAA member Denise Kaisler has a story on Sky & Telescope webpage which can be viewed at:

http://skyandtelescope.com/news/article_993_1.asp

Upcoming Events

Event StarFest

Date August 21-24

More Info www.nyaa-starfest.com/starfest/

Item Mars observing night

Dates August 30 or 31, 2003

Location Hamilton Bayfront Park

Description The club may be holding a special observing night at the Hamilton Bayfront park sometime during the peak Mars closeness. Anyone who is interested in bringing a telescope or participating please contact observing@amateurastronomy.org. Stay tuned to the HAA website (amateurastronomy.org) for more info as the date approaches.

Item Future Observing dates

Dates August 22,23 (Starfest)

August 29,30

September 19,20

September 26,27 (HAA Fall star party at Silent Lake)

Date August 27th - 31, 2003

Event Great Manitou Star Party

More Info manitouhindarksky.com/starparty/ or 1-800-540-0179 or (705)897-4518

Date October 18th, 2003

Event Mountsberg star party

Date November 8th, 2003

Event HAA Anniversary Party

Location Royal Botanical Gardens



How to Buy a Telescope - A Complete Beginner's Guide to Choosing and Using a First Telescope.

Dear Fellow Astronomy Enthusiast,

Introducing the wonders of the night sky to budding astronomers is the solemn mission and heartfelt pleasure of every astronomy club. An important part of that introduction is educating new astronomers in getting started so that they can avoid the mistakes and pitfalls so many of us have endured.

The greatest stumbling block of the budding amateur astronomer is the proliferation of department store or "junk" telescopes. Their wide availability and misleading advertisement, coupled with the unfortunate ignorance of the general public has been the bane of amateur astronomy for decades. I speak from experience as my own childhood interest in astronomy was snuffed out by the disappointment of just such a junk telescope. It took over 15 years for me to rediscover that spark of interest in exploring the heavens.

I have been a newsletter editor and active member of our local astronomy club for over 15 years. During that time I have become an avid observer, telescope builder, and astro-photographer. But my greatest enjoyment of this wonderful hobby has been in sharing my passion for the wonders of the universe with others, hosting observing sessions for local public schools, high schools, cub scouts, girl guides, summer camps, neighborhood and other non-profit groups. I have spent countless hours dispensing advice on getting started in astronomy in person and by phone, mail, newsgroups, websites and email to new astronomers from North and South America to Europe and Australia. I have spent over 10 years lecturing on selecting a first telescope and an equal number showing confused telescope owners how to use their new purchase. Over the years I have done extensive research to put together lecture materials and handouts on the subject.

My research has lead to the following conclusion; There is no single source where a novice or parent can turn, to get the basic information needed to choose and use a first telescope. There are many books form The Backyard Astronomers Guide to Astronomy for Dummies which contain much of this information but it takes a basic knowledge of the subject to extract it. Many of the basic concepts are skipped and the novice or parent is intimidated by the thickness of the tome and it's extensive scope.

In an effort to remedy this situation I have spent the past 2 years putting together a simple but complete guide to choosing a first telescope and accessories that suit the buyer's interest, location and budget, setting it up and aligning the finder, locating a constellation, reading a star chart and locating double stars, nebula and galaxies. The result is a 35 page book containing an introduction to naked eye astronomy, binoculars, the basic types of telescopes and mounts, how they work and the importance of their various features. Also included are samples of common beginners telescopes, a guide to selection and use of accessories, a 10 year planet locator, step-by-step guides to testing mounts and optics, observing techniques, cleaning optics and reading the included set of basic star charts. It is rounded out by an in-store shopper's quick reference, frequently asked questions and recommended reading and reference materials. I believe that I have compiled an excellent and comprehensive source for anyone bringing observational astronomy to the public.

I am sure that all avid astronomers share my dismay each time they see a parent walk out of a department store with a Christmas telescope for a child. Strive though we might, we happy few cannot personally reach every well intentioned telescope shopper to guide them to a choice that will enrich rather than extinguish a new astronomers experience of the heavens. Through this book I hope to reach as many of them as possible.

Getting any kind of book published today, especially one which is considered special interest, is an overwhelming challenge. In order to bring this book to the public I have undertaken publishing, printing and binding it myself in my spare time. It is my hope that I can distribute enough copies, not only to make a difference and break even on the cost of production, but convince a publisher of it's marketability. I would consider it a great legacy to get it onto enough bookshelves to educate the public and put some of those junk scope manufacturers out of business while increasing astronomy club memberships across North America.

I hope that you will consider looking at my website where you may see sample pages of the book and that you will help me in my mission by allowing me to help you in yours, in bringing our wondrous hobby to the people.

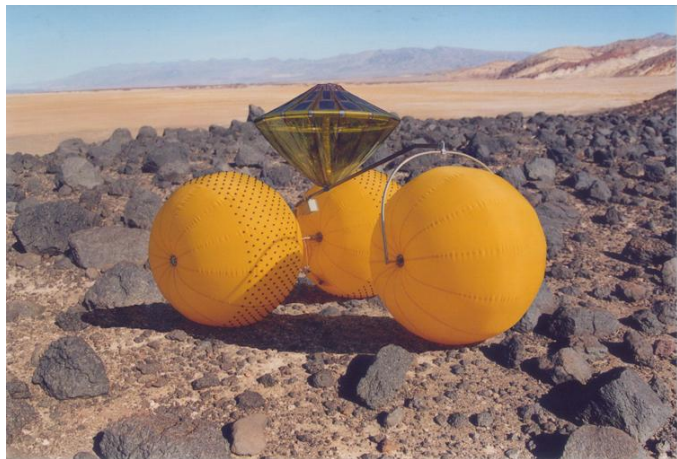
Thank you kindly for your time and consideration,
by *Gregory M. Lisk CET*

Website: www.first-light-publishing.com

If you would like copies of my poster or have any questions please email me at urlglisk@magma.ca



Monster Trucks on Mars by Patrick L. Barry and Dr. Tony Phillips



The "Big Wheels" inflatable rover doesn't mind a few boulder-sized rocks, no matter what planet they're on!

We all know what Mars rovers look like now: Robotic platforms, bristling with scientific instruments, trundling along on small metallic wheels. Planetary rovers of the future, however, might look a little different-like miniature monster trucks!

Enormous, inflatable tires can easily roll right over the rocks and rugged terrain of alien planets, just as they bound over old cars like as many speed bumps.

That's the idea behind a novel concept for robotic planetary rovers known as the "big wheels inflatable rover." Unlike rovers similar to the Sojourner robot that explored the surface of Mars in 1997 that depend on instructions sent from Earth or complex programmed intelligence to steer through rough terrain, this rover has three beach ball-like tires roughly five feet across that make it a true off-road vehicle.

"We sent this rover out to Death Valley, to a place called Mars Hill that has a general geological formation like Mars, and nothing could stop it," says Jack Jones, the mastermind of the inflatable rover concept at JPL. "It just kept going and going and going."

Lots of current research is devoted to developing advanced robotic intelligence that allows rovers to detect rocks in their path and maneuver around them. The alternative to such on-the-spot intelligence is tedium: Ground controllers on Earth working out the maneuvers

by hand and waiting an hour or more for the instructions to travel to the distant planet.

A "big wheels" rover would need such computer intelligence to avoid very large boulders, but Jones asks, "Why worry about every little rock, pebble, and crack when you can just roll right over most of them?"

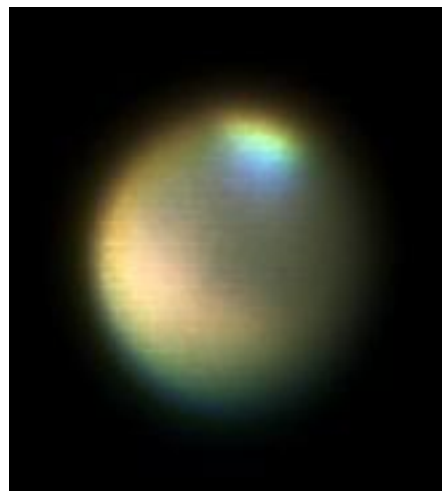
Jones imagines a scenario where multiple inflatable-wheel rovers could be sent out to explore the Martian terrain-easily and quickly traversing the rugged terrain. Samples gathered by the rovers could be returned to a central, stationary laboratory module for detailed analysis.

"The Martian surface is really very, very rough with a lot of rocks, and to be banging this laboratory equipment up and down over all of these rocks aboard the rovers doesn't make much sense," Jones says. "I suspect it might be better to leave it in a central location."

At the moment it's all very speculative; NASA currently has no definite plans to send inflatable rovers to Mars. But who knows, one day monster truck-like vehicles could be zipping over Mars' rough, red surface.

Kids can baffle their friends with a robot puzzle (including a "Big Wheels" rover) they make themselves at http://spaceplace.nasa.gov/robots/robot_puzzle.htm . For adults, find out more about NASA's inflatable rover program at http://www.jpl.nasa.gov/adv_tech/rovers/summary.htm .

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.



Mars shows off its southern polar cap. Photo by Bob Botts.



From the Belly of an Airplane: Galaxies *By Dr. Tony Phillips*



L-1011 "Stargazer" takes off to carry Pegasus rocket on the first 39,000 feet of its climb to deliver a spacecraft to orbit.

On April 28th a NASA spacecraft named GALEX left Earth. Its mission: to learn how galaxies are born, how they grow, and how they die.

"GALEX-short for Galaxy Evolution Explorer-is like a time machine," says Caltech astronomer Peter Friedman. It can see galaxies as far away as 10 billion light years, which is like looking 10 billion years into the past. The key to the mission is GALEX's ultraviolet (UV) telescope. UV rays are a telltale sign of hot young stars, newly formed, and also of galaxies crashing together. By studying the ultraviolet light emitted by galaxies, Friedman and colleagues hope to trace their evolution spanning billions of years.

This kind of work can't be done from the ground because Earth's atmosphere absorbs the most energetic UV rays. GALEX would have to go to space. To get it there, mission planners turned to Orbital Science Corporation's Pegasus rocket.

"Pegasus rockets are unusual because of the way they're launched-from the belly of an airplane," says GALEX Project Engineer Frank Surber of JPL.

It works like this: a modified L-1011 airliner nicknamed Stargazer carries the rocket to an altitude of

39,000 feet. The pilot pushes a button and the Pegasus drops free. For 5 seconds it plunges toward Earth, unpowered, which gives the Stargazer time to get away. Then the rocket ignites its engines and surges skyward. The travel time to space: only 11 minutes.

"The aircraft eliminates the need for a large first stage on the rocket," explains Surber. "Because Stargazer can be used for many missions, it becomes a re-useable first stage and makes the launch system cheaper in the long run." (To take advantage of this inexpensive launch system, GALEX designers had to make their spacecraft weigh less than 1000 lbs-the most a Pegasus can carry.)

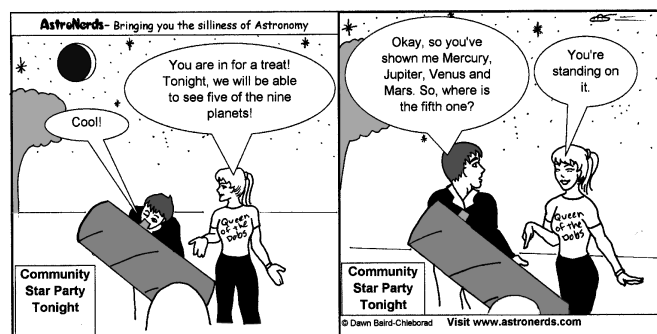
A Pegasus has three stages-not counting the aircraft. "Its three solid rocket engines are similar to the black powder rockets used by amateurs. The main difference is that the fuel is cast into a solid chunk called a 'grain'-about the consistency of tire rubber. Like black powder rockets, once the grain is lit it burns to completion. There's no turning back."

In this case, turning back was not required. The rocket carried GALEX to Earth orbit and deployed the spacecraft flawlessly. On May 22nd, the UV telescope opened its cover and began observing galaxies-"first light" for GALEX and another success story for Pegasus.

For adults, find out more about the GALEX mission at <http://www.galex.caltech.edu/>. Kids can read and see a video about Pegasus at <http://spaceplace.nasa.gov/galex/pegasus.html>.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Humour



Comic provided free of charge by www.astronords.com. Be sure to visit them.

August 2003

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
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					Perseids meteor shower until the 15th	
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				StarFest	StarFest	StarFest
24	25	26	27	28	29	30
StarFest					Observing Night	Observing Night
31						
			For observing info, call Stewart Attlesey 827-9105, Rob Roy 692-3245, Glenn and Gail Muller 945-5050, http://amateurastronomy.org/events.php			
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September 2003

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The Hamilton Amateur Astronomers

proudly announce:

THE HAA 10TH YEAR ANNIVERSARY BANQUET

When: Saturday, November 8th, 2003, 6:00 p.m.

Price: \$40 up to and including October 10th - \$45 thereafter

Where: Royal Botanical Gardens
680 Plains Rd. West, Burlington

Who: Everyone welcome! (spouses, friends, non-members etc.)

What: Cash bar, dinner, guest speaker and door prizes

Speaker: Bob McDonald, Quirks and Quarks (CBC)

Bonus: Total lunar eclipse that night!



HAA BANQUET REGISTRATION FORM

NAME: _____ #TICKETS: E-MAIL: _____
TELEPHONE #: () _____

ADDRESS: _____

Please mail your cheque or money order to: Hamilton Amateur Astronomers

c/o Margaret Walton

114 Cameron Avenue

Dundas, Ontario L9H 1J3

**Tickets are \$40.00 up to and including October 10th and \$45.00 after October 10th to November 4th, the cut-off date.

I will pick up my tickets at our general meeting I will pick up my tickets at the door I would like acknowledgement by e-mail/phone

*If you are paying by mail, you have a choice of picking up tickets at one of our general meetings or at the door on the date of the event. We will acknowledge receipt by e-mail or telephone. If you have any questions, please contact us by e-mail at: secretary@amateurastronomy.org or call Margaret Walton at (905) 627-7361. Please visit our website at www.amateurastronomy.org for details