



A Rainy Day is NO Excuse!

Why Astronomy? Part I

Compiled by Mark S Deprest & Norbert Vance

A few months ago at our Lowbrow meeting, that was held at EMU and hosted by Norbert Vance. We found out what sparked Norbert's interest and subsequent career in Astronomy. During that meeting he passed out 3 x 5 cards to the audience of Lowbrows and guests and asked them to write down a few quick lines about what sparked their interest in astronomy and to my surprise everyone did. Then Norbert handed them all over to me saying, "now you have some material for your newsletter. For that I am eternally grateful to Norbert!

My task then was to do something with this wonderful gift. It took some thought on how I wanted to present these mini stories and as I read through them I noticed a pattern or trend emerging. There were groups of people who shared certain "catalysts", and when I finished reading all of them I notice 5 basic themes:

1. Specific Astronomical Event provided by a Mentor
2. The Space Program
3. Formal Education
4. Books
5. First Scopes (Paying it Forward)

Then there were 3 that just didn't fit or were too special to fold into one of the above themes.

I will attempt to present these mini stories to you in a series of articles, over the next few months that I have titled "Why Astronomy?". If after reading this first article you feel left out or inspired to contribute, please send me your mini story, I would like nothing more than to add it to a wonderful subject that we can all relate to! With all that said, I now present you with the first installment of "Why Astronomy?".

Theme 1. Specific Astronomical Event provided by a Mentor

Jack Underwood from the EMU Astro Club wrote that his interest was sparked by something his uncle Harry had told him about. Namely witnessing (as a boy) the 1910 return of Halley's comet!

Another person wrote that their spark came when they saw the night sky while camping, and although this person didn't say if this happened recently or sometime long ago when they were young. Anyone who sees the night sky from a truly dark site can't help but be moved in some way over the sheer beauty they behold.

Ed Isabel, a Lowbrow remembers that as a boy of 10 years old he saw "Shooting Stars" maybe for the first time and that single event stayed with him 55 years and ignited his interest in astronomy.

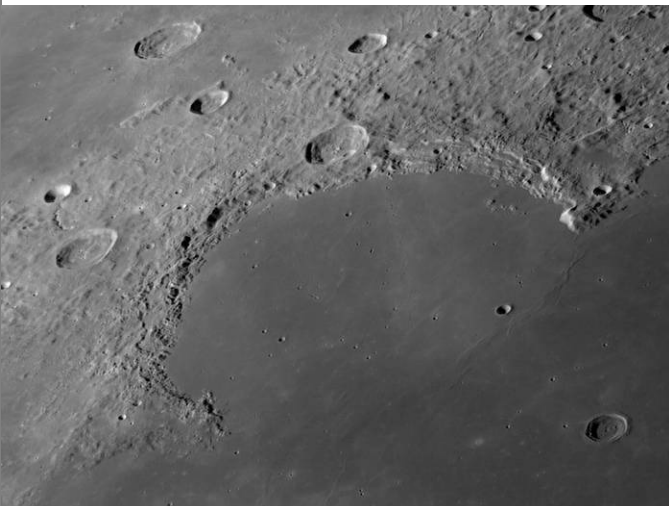
Jack Gibson tells of many nights spent with his father, a member of the Genessee Astronomical Society learning to love and appreciate the wonders of the night sky. Jack says these experiences still drive his interests in astronomy today.

Mary Shindell wrote that her older sister took her the Longway Planetarium in Flint some 40 or 50 years ago when she was in early elementary school and that this experience was particularly entertaining due to a wonderful narrator by the name of Richard Walker, who was there for many years. Sometimes we remember special people and how they touch our lives.

Mike Radwick says that many small things started in his childhood but it wasn't until he was invited to a star party as an adult that his astronomical passion was piqued.

Many of you reading these little anecdotes are probably thinking that is how I got my start or you can relate similar experiences to the answer the question "Why Astronomy?". This is the end of Part I and if you feel you can contribute to future articles in this series, please send them along. I would love to keep this going as long as possible. Part II will be about those inspired by the Space Program and if this sounds like you send me your story.

I want to thank everyone who contributed and especially Norbert Vance who grabbed these up and passed them on!



John Kirchoff

Sinus Iridum

Hudson, MI USA



John Kirchoff

Rupes Recta and Birt

Hudson, MI USA

Saturday Morning Physics

Welcome to autumn and a new season of SMP! Our series begins on October 9 with lectures celebrating the 50th anniversary of the Kresge Hearing Research Institute with talks exploring the fascinating process by which our ears can sense mechanical vibrations (sound waves), sensitively distinguish loudness (amplitude), and pitch (frequency). The Kresge Hearing Research Institute is an international leader in research on the prevention and treatment of hearing loss. On October 16, we welcome Brother Guy Consolmagno of the Vatican Observatory, who will tell us how a coffee break helped change the way we understand the solar system. Other topics this semester include the fusion hybrid reactor and particle accelerators. Be sure to note the special lecture on December 11 given by Nobel Laureate Samuel C.C. Ting. This is just one part of a daylong celebration of the U-M Physics Department that will include the dedication of the Physics building as an historical site.

10/09/2010—Physics Meets Physiology: How We Hear and How We Can Lose Our Hearing

Speaker: Professor Jochen Schacht (Director Kresge Hearing Research Institute) Hearing is our most sensitive sense and a basis for human communication. Our ears can pick up the quiet rustling of leaves, recognize the voices of our loved ones (and not so loved ones), and help us enjoy the spectrum of sounds from a bass drum to a violin.

Yet, our ears are also highly vulnerable, and hearing losses of significant severity affect more than 28 million individuals in this country alone. Approximately one-half of such losses are thought to be of hereditary origin. The others are acquired during our life time as the result of a variety of causes, including exposure to work-place or recreational noise, treatment with certain drugs, various diseases and the aging process itself. This lecture will introduce the delicate organization of our inner ears, explore the major sources of acquired hearing loss and outline potential remedies.

10/16/2010—Comets and Cappuccinos: How a Coffee Break Helped Change the Way We Understand the Solar System

Speaker: Br. Guy Consolmagno SJ (Curator of the Vatican Meteorite Collection, Vatican Observatory) Learn how a cappuccino at the Vatican fifteen years ago inspired a new, efficient way of measuring meteorite densities. Startlingly, comparing these measurements to the densities of asteroids and comets has completely shaken up our understanding of small bodies in the solar system. It's altered our way of understanding the formation of planets, our ideas of defending ourselves from killer asteroids, and our definition of dwarf planets like Pluto.

10/23/2010—Cochlear Implants: An Amazing Advancement

Speaker: Professor Hussam El-Kashlan (Otorhinolaryngology) & Professor Teresa A. Zwolan (Otolaryngology) Cochlear implants are considered to be one of the most significant technological achievements in the twentieth century for the treatment of deafness. Prior to the introduction of these implants, treatment options for profoundly deaf individuals included visual communication (lipreading or sign language), tactile devices, or reliance on amplification systems that provided limited auditory information.

Cochlear implants enable most users to detect and recognize speech sounds across the entire speech spectrum even at very soft levels - a great improvement when compared to the limited information deaf patients receive with traditional hearing aids. This increased ability to understand speech has resulted in striking improvements in spoken language skills, academic and vocational achievements, and quality of life for profoundly deaf individuals. This lecture will discuss this amazing technology, including a description of the internal and external components of contemporary devices, outline the surgical procedures to place the electrode array in the inner ear, and present the outcomes obtained with current cochlear implant recipients.

10/30/2010—Maintenance and Repair of Damaged Ears: Challenges for the Biologist and Bioengineer

Speaker: Yehoash Raphael (R. Jamison and Betty Williams Professor of Otolaryngology, U-M) Mammalian ears evolved to provide exquisite sensitivity for detection and discrimination of sounds. Along the evolutionary path, self-repair ability diminished, such that most injuries become irreparable and lead to permanent hearing loss. Innovative therapies are

being developed to restore the inner ear and provide hearing ability to deaf patients. Among the biological options for future therapies are the implantation of stem cells or the induced transformation of non-sensory cells to new sensory (hair) cells.

Therapies for nerve regeneration are also being developed in order to enhance performance with the cochlear implant and to innervate stem cells. Bio-engineering approaches which combine such biological therapies with artificial sources of acoustic stimulation are another area of intense development.

11/06/2010—Those Phantom Sounds (Ringing in Your Ears) are Produced by Your
Brain: The Neuroscience of Tinnitus

Speaker: Susan E. Shore (U-M Otolaryngology and Molecular and Integrative Physiology) Tinnitus is a phantom sound (ringing of the ears) that affects quality of life for millions of people around the world and is usually, but not always, associated with hearing impairment. In some cases, insults to the somatosensory system, such as tooth abscesses or disturbances of the temporo-mandibular joint can also result in tinnitus. Connections between these two sensory systems can explain why tinnitus can be modulated in loudness and pitch by somatic maneuvers such as jaw-clenching and eye movements. Evidence will be provided that deafferentation of central auditory structures leads to increased neuron spontaneous firing rates and neural synchrony in the hearing loss regions that signal the phantom sounds. Crossmodal compensations in subcortical structures may contribute to central re-organization of auditory structures by providing aberrant, excitatory connections that result in hyperactivity.

11/13/2010—Meeting the World's Energy Needs with the Fusion Hybrid Reactor

Speaker: Terry Kammash (U-M Nuclear & Radiological Sciences) The World's energy needs by the mid century, when its population is expected to reach 10 billion, is projected to be 10-30 Terrawatts of carbon free power. The fusion hybrid reactor is uniquely suited to meet these needs since it is self-fueling, can produce abundant power safely, and securely for decades.

12/04/2010—Particle Accelerators or Atom Smashers: the Engines of Discovery

Speaker: Professor Emeritus Lawrence Jones (U-M Physics) Research enabled by particle accelerators has led to our discoveries and current understanding of nuclei and elementary particles. This talk will review and explain the operation of these accelerators from the cyclotrons (of the 1930s) to the current colliding beams research facilities, such as the CERN Large Hadron Collider.

12/11/2010—Celebration of Physics!

Please Note: U-M Chemistry Building Auditorium

Speaker: Professor Emeritus of Physics & Nobel Laureate Samuel C. C. Ting (MIT, U-M Physics Alumnus)

The lectures are held on the U-M central campus (Ann Arbor) from 10:30-11:30 a.m. and are preceded by refreshments and followed by Q&A sessions.

The Church Street Parking Structure is available at a cost of \$2.00 per vehicle.

Additional details on SMP: <http://www.ii.umich.edu/physics/seminars/smp>



Comet 103P Hartley2 imaged by Clayton Kessler at the Black Forest Star Party on September 10, 2010

Comet Comments

By Mark Deprest

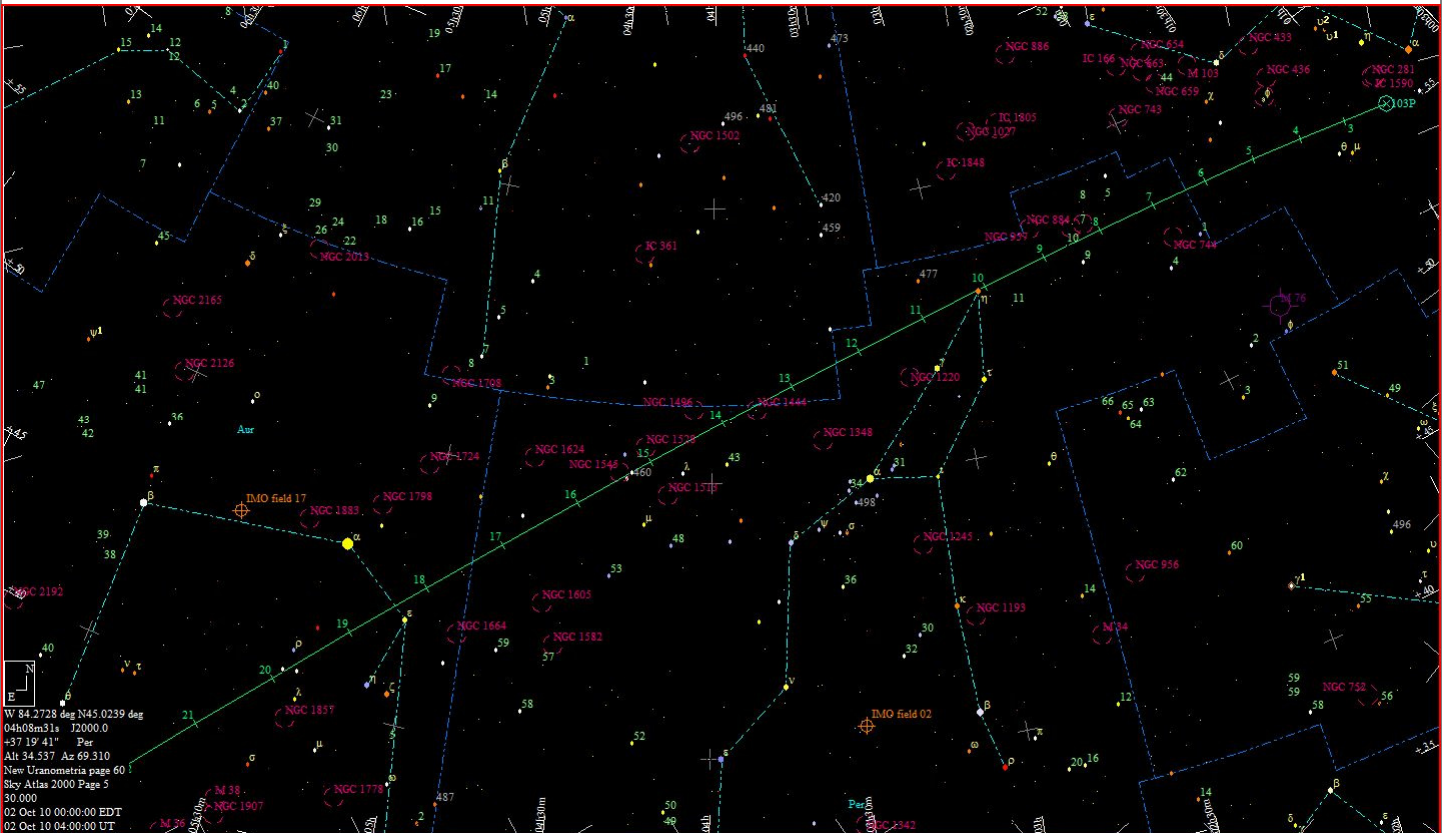
Well, boys and girls its time once again for another installment of my long running series I call Comet Comments. Its fall and moving towards winter quickly and with the cooler temperatures of the seasons comes the icy cold and “frozen dusty snowballs” of our solar system known as Comets. Ah! The site of these should just warm your hearts, I know they always warm mine!

We currently have two of these delightful treats within telescopic view in our night skies and they are fairly easy targets for almost any size scope. Both comets are listed with magnitudes brighter than 9.0 m1 (m1 = total over all magnitude of the comet and coma). Both of these comets are short period comets (orbital periods of less than 200 years) and have been seen before. So their orbits are very well known and a lot of their properties are fairly predictable. To quote a famous comet hunter “comets are like cats, they both have tails and they both do exactly what they want to!” So predicting a comet's behavior is not an exact science, but the professionals are getting better and the amateurs are even better than that ... amateurs contribute most of the data on the cosmic travelers these days and they are the real experts!

The first and most favorably placed of these current comets is 103P Hartley 2 at 7.0 m1. It is currently zipping thru Cassiopeia and moving into Perseus. On October 20th it will pass within 0.12 AU of Earth or about 11.1 million miles ... that is pretty close and this little (1.6 km diameter) comet may reach 5.0 m1 at that time. Of course by then it will have moved thru Perseus, Auriga and half way thru Gemini, quick little snowball isn't it! 103P Hartley 2 has an orbital period of 6.46 years and was discovered in 1986 by Malcolm Hartley at Siding Springs, Australia. On November 4th the Deep

Impact space craft will pass within 700 kilometers of Comet 103P Hartley 2 as part of the EPOXI mission: *EPOXI combines two targets: the Deep Impact Extended Investigation (DIXI), and the Extrasolar Planet Observation and Characterization (EPOCh). Deep Impact will conduct both missions, the Extrasolar Planet Observation and Characterization during the cruise phase to Hartley 2, and the Deep Impact Extended Investigation at fly-by.*

Below is a finder chart for 103P Hartley2 and a couple of recent images to kind of give you an idea how fast this comet is moving and what it looks like.

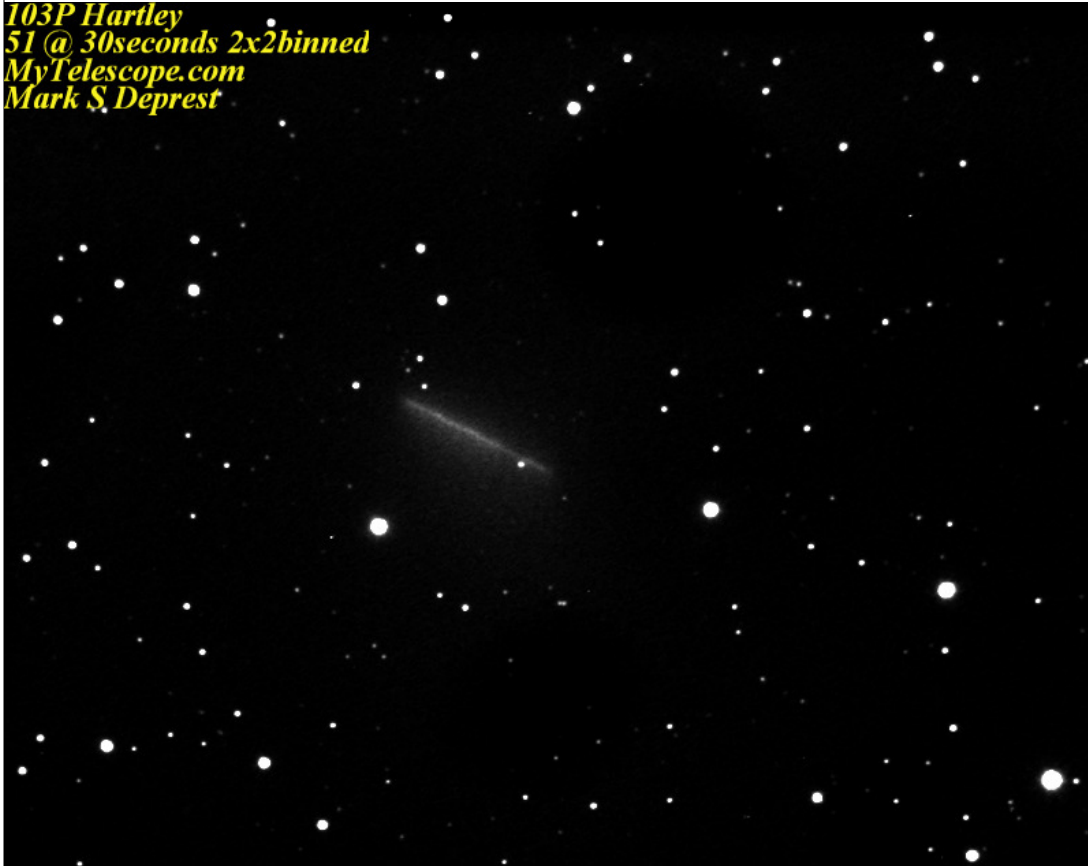


This chart is made for midnight local time for October 2nd thru 20th as you can see the comet is moving thru a very star rich area of the northern sky and night after night it passes by some very great open clusters.



To the left is a wonderful image of comet 103P Hartley 2 by Martin G. with a Canon 30D modified and ED80/600 plus a Vixen 0.67x reducer. ISO1600, 4 min. Pacman nebula & Comet 103P Hartley

**103P Hartley
51 @ 30seconds 2x2binned
MyTelescope.com
Mark S. Deprest**



This is a stacked image of (51) 30 second exposures over a period 45 minutes. This shows just how fast the comet is moving!

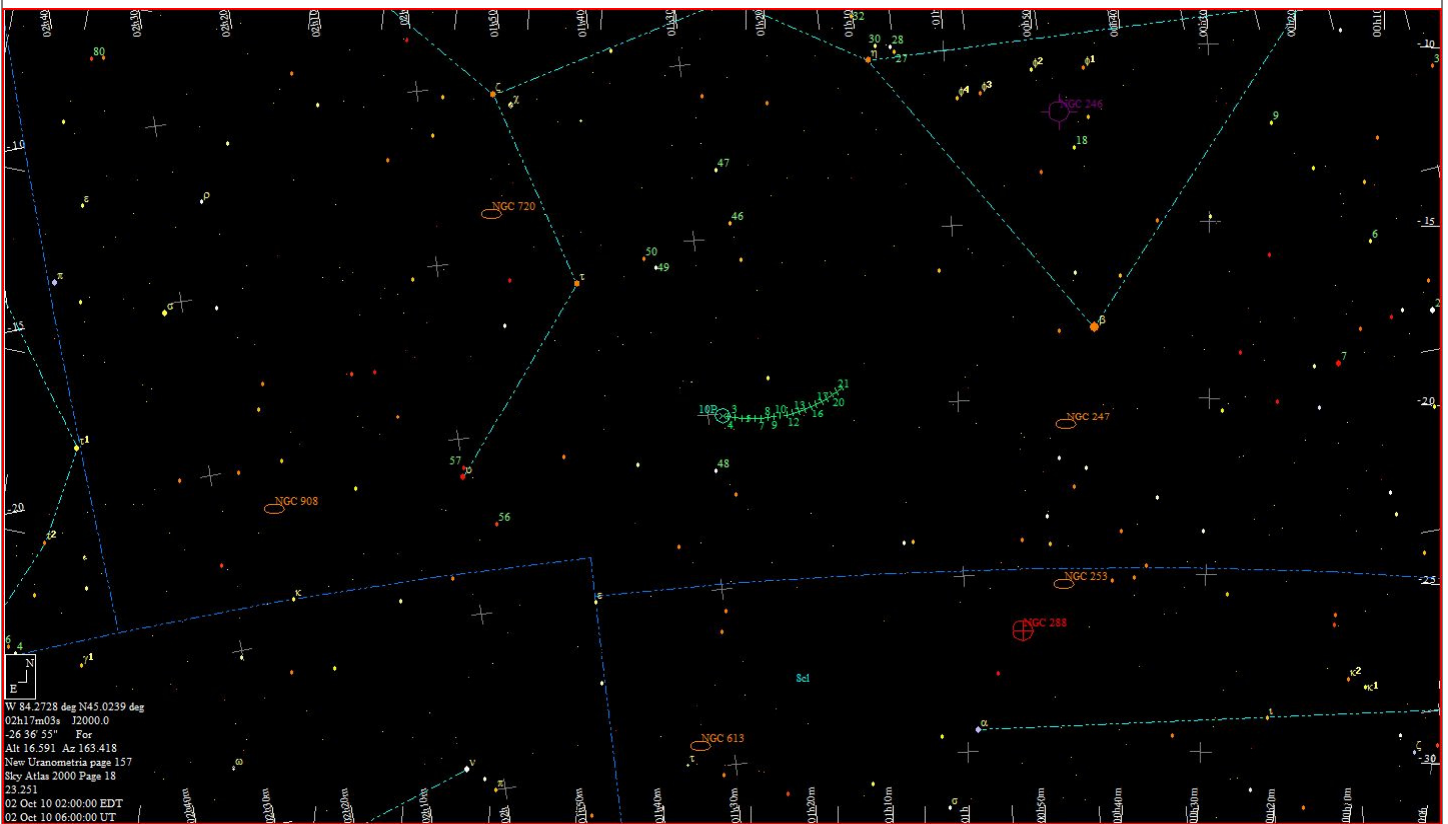
This was taken remotely on September 27, 2010 with a scope in New Brunswick, Canada.

Okay, so much for that one, but I said that there are two comets telescopically visible in our night sky right now, and here is the info on Comet 10P Tempel 2. As you may have already figured out from the lack of “press coverage” comet 10P Tempel 2 is not as spectacular as 103P Hartley 2 as it has already made its closest approach on July 4th and is now beginning to fade. However, this is still a very bright comet at 8.8 m1 and should remain telescopically as it steadily fades out of view in December. Its current position is in southern Cetus and will remain in Cetus thru December looping northward. Comet 10P Tempel 2 was discovered by Ernst Wilhelm Leberecht Tempel on July 4, 1873 and is a rather large comet estimated at 10.6 kilometers in diameter, however it has a low albedo of 0.022, it made a very close approach to Earth back in 1925 when it came with 0.35 AU. With an orbital period of 5.382 years it will make three more passes before it gets really close (0.41 AU) to Earth in August of 2026.

Below is a finder chart for 10P Tempel 2 and a couple of images.



comet 10P/Tempel 2010 Oct. 01.59 UT m1=9.9 Dia.=6.8'
Takahashi Epsilon 180mm f/2.8 corrected Newtonian reflector + CCD (ST-2000)
(c) A. Novichonok & D. Chestnov Exposure = 1x300 sec 3.1"/px
Tzec Maun observatory - D96 (remotely Moorook, S. Australia)



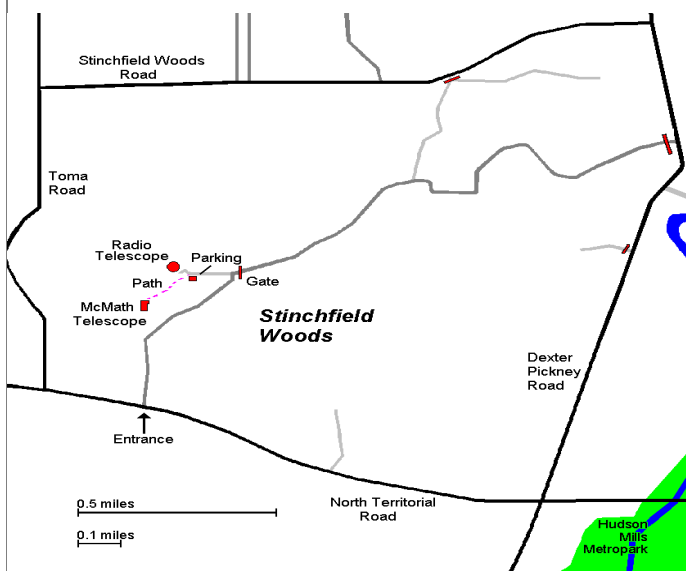
This chart is made for 2:00 am local time for October 2nd thru 20th and as you can see Comet 10P Tempel 2 is very low in the southern sky. Below is another image by Clayton Kessler taken at BFSP of the Veil Nebulae complex.



Places & Times

Dennison Hall, also known as The University of Michigan's Physics & Astronomy building, is the site of the monthly meeting of the University Lowbrow Astronomers. Dennison Hall can be found on Church Street about one block north of South University Avenue in Ann Arbor, MI. The meetings are usually held in room 130, and on the 3rd Friday of each month at 7:30 pm. During the summer months and when weather permits, a club observing session at the Peach Mountain Observatory will follow the meeting.

Peach Mountain Observatory is the home of the University of Michigan's 25 meter radio telescope as well as the University's McMath 24" telescope which is maintained and operated by the Lowbrows. The observatory is located northwest of Dexter, MI; the entrance is on North Territorial Rd. 1.1 miles west of Dexter-Pinckney Rd. A small maize & blue sign on the north side of the road marks the gate. Follow the gravel road to the top of the hill and a parking area near the radio telescopes, then walk along the path between the two fenced in areas (about 300 feet) to reach the McMath telescope building.



Public Open House / Star Parties

Public Open Houses / Star Parties are generally held on the Saturdays before and after the New Moon at the Peach Mountain observatory, but are usually cancelled if the sky is cloudy at sunset or the temperature is below 10 degrees F. For the most up to date info on the Open House / Star Party status call: (734)332-9132. Many members bring their telescope to share with the public and visitors are welcome to do the same. Peach Mountain is home to millions of hungry mosquitoes, so apply bug repellent, and it can get rather cold at night, please dress accordingly.

Membership

Membership dues in the University Lowbrow Astronomers are \$20 per year for individuals or families, \$12 per year for students and seniors (age 55+) and \$5 if you live outside of the Lower Peninsula of Michigan.

This entitles you to the access to our monthly Newsletters on-line at our website and use of the 24" McMath telescope (after some training).

A hard copy of the Newsletter can be obtained with an additional \$12 annual fee to cover printing and postage. Dues can be paid at the monthly meetings or by check made out to University Lowbrow Astronomers and mailed to:

The University Lowbrow Astronomers

c/o Liz Calhoun

P.O. 4465

Ann Arbor, MI 48106

Membership in the Lowbrows can also get you a discount on these magazine subscriptions:

Sky & Telescope - \$32.95 / year

Astronomy - \$34.00 / year or \$60.00 for 2 years

For more information contact the club Treasurer. Members renewing their subscriptions are reminded to provide the renewal notice along with your check to the club Treasurer. Please make your check out to: "University Lowbrow Astronomers"

Newsletter Contributions

Members and (non-members) are encouraged to write about any astronomy related topic of interest.

Call or Email the Newsletter Editor: **Mark S Deprest (734)223-0262 or msdeprest@comcast.net** to discuss length and format. Announcements, articles and images are due by the 1st day of the month as publication is the 7th.

Telephone Numbers

President:	Charlie Nielsen	(734) 747-6585
Vice Presidents:	Jim Forrester	(734) 663-1638
	Jason Maguran	
	Paul Walkowski	
	Belinda Lee	(313)600-9210
Treasurer:	Liz Calhoun	
Observatory Director:	Mike Radwick	
Newsletter Editor:	Mark S Deprest	(734) 223-0262
Key-holders:	Jim Forrester	(734) 663-1638
	Fred Schebor	(734) 426-2363
	Charlie Nielsen	(734) 747-6585
Webmaster	Dave Snyder	(734) 747-6537

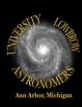
Lowbrow's Home Page

<http://www.umich.edu/~lowbrows/>

Email at:

Lowbrow-members@umich.edu



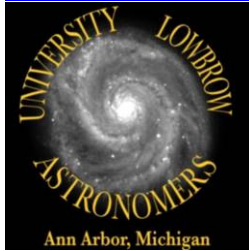


University Lowbrow Astronomers

University Lowbrow Astronomers
c/o Liz Calhoun
P.O. Box 4465
Ann Arbor, MI 48106

lizcal@umich.edu

Reflections & Refractions



Website

www.umich.edu/~lowbrows/

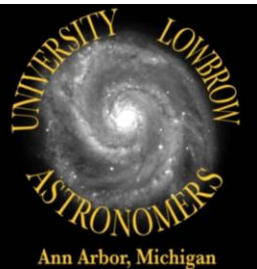


Jupiter, Callisto and Europa

John Kirchoff

July 27, 2010 10:12UT

Hudson, MI USA



University Lowbrow Astronomers
P.O. Box 4465
Ann Arbor, MI 48106

Check your membership expiration date on the mailing label