

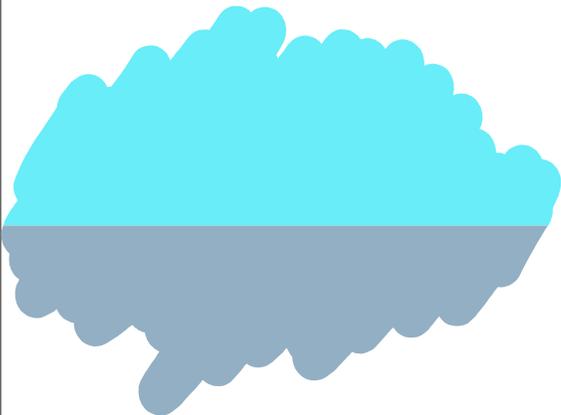
REFLECTIONS / REFRACTIONS

University Lowell
Astronomers

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Lowbrows Featured at Theme Semester

By Sandy Dugan

The University Lowbrow Astronomers mounted a unique presentation for “Water Discovery Day” at the University of Michigan Exhibit Museum of Natural History, Saturday, March 26, 2011. The all-day affair was a Family Event in the U-M College of Literature, Science, and the Arts Winter Theme Semester, entitled “Water.” Several scores of visitors stopped at the Lowbrow exhibit, which showed why water is important to astronomers and how they look for it in the solar system and beyond.



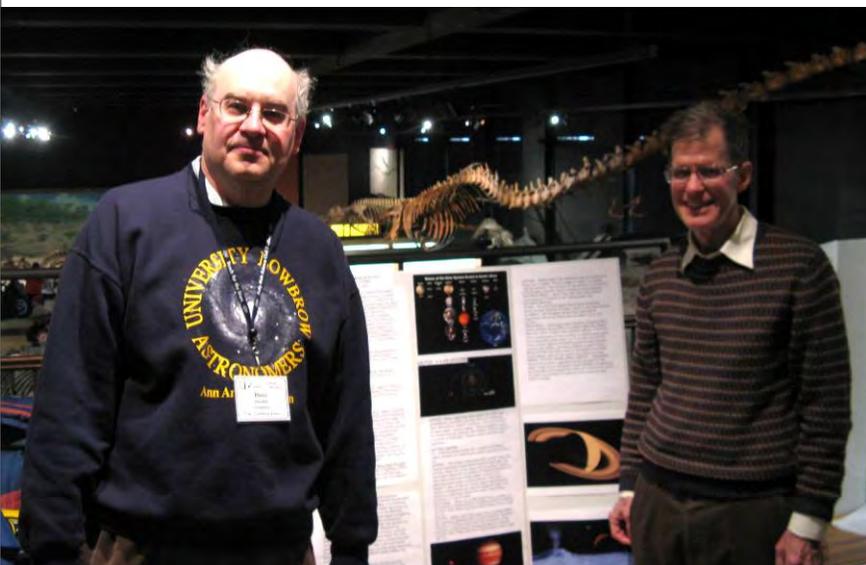
Last fall, Amy Harris, Director of the Exhibit Museum invited the club President, Charlie Nielsen, to have the Lowbrows participate. During the winter, various ideas were tossed around at planning meetings, which included Charlie and club members Dave Snyder, Jim Forrester, Jack Brisbin, and Sandy and Betsy Dugan. Charlie wanted especially to show the importance of water by dissociating H₂O and producing oxygen for breathing and hydrogen for rocket fuel; liability concerns kept that idea lower down the list. With help from Warren Smith, Supervisor of the Physics Department Demonstration Laboratory, Charlie, Dave, Jim, and Jack devised two demonstrations: discovering water by spectrometry and making liquid water

boil away at low pressure, while Dave, Sandy, and Betsy worked on a poster display.

On the day of the event, Lowbrows found themselves to be one of a dozen special exhibits located throughout the museum. We set up on the third-level balcony, overlooking the dinosaur displays.

For the spectrometry demo, a 66 mm (?) telescope was fitted with a sensor in the focuser, with a fiber optic cable leading to a spectrometer, which was attached to a laptop computer; 50 feet away, spectrum tube boxes were plugged in; the tubes included water vapor, helium, and deuterium vapor; an incandescent light was also used as a black body radiation source. When a tube was turned on, the telescope picked up the spectrum of the excited gas, and the characteristic spectral lines were clearly displayed on the computer screen. Viewers saw an important method astronomers use to find water in the solar system and as far away as other galaxies.

For the boiling water demo, a clear thick lucite chamber with a removable lid was connected to an evacuation pump; about 10 cc of water was added to the chamber. With the lid on and the pump run-



ning, viewers clearly saw water bubbling at room temperature. It was easy to explain how liquid water on the surface of Mars would simply evaporate away, even at low temperatures.

The poster display, featuring notes by Dave Snyder and images of objects in the Solar System, showed how liquid water is rather rare, but H₂O in other states can be found from the sun (vapor in sunspots) all the way out to the Kuiper Belt and Ort Cloud (comets) and at many places in between. It was noted that spectrometry



shows water elsewhere in the Milky Way and in other galaxies.



During the day many friends showed their support, including Charlie's son, Charles, Sandy's wife, Betsy, and daughter, Anne, and club member John Causland. We may have missed a sunny day, but seeing the interest of the children and their parents was worth it. (Pictures courtesy of Anne Dugan)

(Pictures courtesy of Anne Dugan)



Astronomy Day 2011

Saturday, May 7th

KALAMAZOO VALLEY MUSEUM

10 AM - 4 PM | 230 N. ROSE ST.

Solar Observing

View our star close up with safe solar filters (weather permitting).

Displays

Learn about the icy worlds of the outer solar system, Mercury, and the different types of amateur telescopes. Check out the best photographs of the night sky by members of the Kalamazoo Astronomical Society.

Hands-on Activities

Decorate a star or make a fan comet, constellation can and more.

Comet Making Presentations

Help build a comet and learn about their secret lives at the edge of the solar system. This participatory program is ideal for the whole family. *Presentations are at 11am & 3pm.*

Free Planetarium Shows

Showtimes are hourly from 1 - 3 pm. See our website for details.



Meet Dr. Mike Brown

Chat with Caltech astronomer Dr. Mike Brown and get his autograph. Copies of his book, *How I Killed Pluto and Why It Had It Coming*, will be available for purchase.

KALAMAZOO NATURE CENTER

7:00 PM | 7000 N. WESTNEDGE AVE.

Keynote Presentation by Dr. Mike Brown

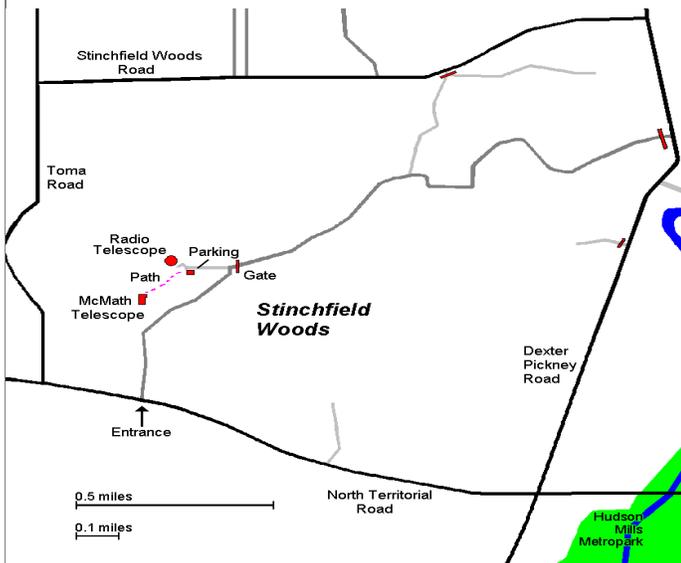
Dr. Brown tells the fascinating true story of the demise of Pluto and a first-hand account of the modern day discoveries of our solar system. **FREE** tickets will be available on May 7th at the museum starting at 11am. Tickets may be reserved with a small donation. See the Astronomy Day website for details. Seating begins at 6:30 pm.

Observe the Moon, Saturn, galaxies and more after the talk.

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.

(See the website

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

for more information on joining the club).

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.



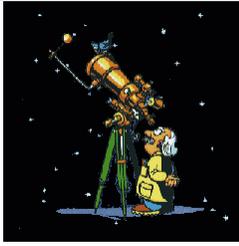
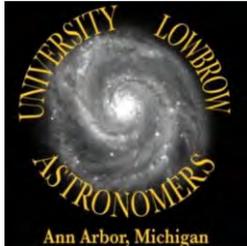
Lowbrow's Home Page

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



University Lowbrow Astronomers

Reflections & Refractions



Lorna Simmons, at Saturday Morning Physics ... I came across this image of Lorna and it brought both a tear and a smile to my face.

I felt like sharing!

Website

www.umich.edu/~lowbrows/

