

Friends of The Observatory Newsletter

September 2003
Phone 513-321-5186

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www.cincinnatiobservatory.org Bill Cartwright, editor

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A Letter From President Huber

Dear "Friends",

Here it is the fall of 2003! This is the season that we've all been waiting for, and what a season it is going to be!

In the next couple of months the Observatory is really going to need your help. So if we can get everyone to pitch in as much as they can, I know we'll have a successful fall of '03.

Here are some of the upcoming highlights:

*MarsOpen House September 6th

*Mars Week Programs Sept 8-13

*StoneLick Weekends

* Scope Out 2003 October 4th

Don't forget about running for FOTO office as well. This year we can use as much involvement as we can get. So come on out and nominate yourself or a friend for an officer position. See you Thursday.

Planning Meeting

We'll meet at 6 PM on Wednesday, September 17th at Indigo's on Hyde Park Square.

Did You Know....

A supermassive black hole is so large it could fill our entire solar system

Monthly Meeting

Come join us for our monthly meeting on Thursday, September 4th at 7:30 PM at the Observatory.

Paul Nohr will be giving one of his famous lectures....but as usual you'll have to come to the meeting to find out exactly *which* famous talk.

Thanks to FOTO member **Rick Hunter** who gave a presentation on the recent launch of the Mars 03 missions at last month's meeting.

Did You Know....

1784: Sir William Herschel writes that dark areas on Mars are oceans and the lighter areas are land. He speculates that Mars is inhabited by intelligent beings who "probably enjoy a situation similar to our own."

Stonelick Lake Star Parties

By Scott Naylor

Our Star Party will be Saturday, **September 20th** with a cloud date of Saturday, September 27th. These parties are held at Stonelick Lake State Park, which is open to the public all night year 'round.

For updates, directions, or information, phone **Scott Naylor** at 513-575-5556.

A Highly Excited Nebula



A near-true color composite image of the highly excited nebula around a hot double star AB7 in the Small Magellanic Cloud.

Mars Madness Events at the Observatory

By Dean Regas

The Cincinnati Observatory will be hosting a number of events to satisfy your Mars Madness. There will be lectures, tours of the buildings, and of course viewing of Mars through the historic telescopes.

Kickoff to Mars Week

Saturday September 6, 10 PM-1 AM

Cost: \$2

No reservations needed.

Mars Week

Each night will focus on a different aspect of Mars. All programs start at 9:30 PM.

Each night will focus on a different aspect of Mars. Reservations are required, call 513-321-5186

Monday, Sept. 8th (Dave Bosse)

Tuesday, Sept. 9th (Chuck Strubbe)

Wednesday Sept. 10th (Lyle Kelly - Mars Society)

Thursday, Sept. 11th (Dean Regas - Mars in History)

Sat., Sept. 13th (Lori Rutherford)

Cost: \$5 each, children 12 and under are free. **Call Dean Regas at 321-5186** for more information or to register.

If you can't wait to see Mars, the (FOTO will be hosting Aug. 30th at Stonelick State Park to view the red planet. For more information on Stonelick nights go to:

www.cincinnatiobservatory.org

Trivia Question

In 1877, Hall discovered two Martian Satellites. Name the satellites. Bonus. Name the observatory where he discovered them.

Last months trivia question:

In 1889, an Italian astronomer, better known for his discovery of canals on Mars, discovered of the synchronous rotations of Mercury and Venus. Name this astronomer.

Answer: Giovanni Sciaparelli was not only famous for the famed canals on Mars but also famous for discovering that Venus and Mercury both have synchronous rotational periods.

Scrutinizing Supernova



Amateur astronomer Berto Monard was the first to spot Supernova 2001el in the galaxy NGC 144. The star was presumably an exploding white dwarf.

Astronomers have observed important new details about the type of supernova that has become crucial to tracking the history of the expanding universe.

Supernovae come from two very different kinds of exploding stars. One kind happens when the core of a massive giant star collapses to form a tiny, superdense neutron star or black hole. In this case the explosion energy comes from the core's gravitational collapse. The other kind, known as Type Ia, is a true nuclear bomb; it occurs when the bulk of a carbon-oxygen white dwarf suddenly undergoes a runaway fusion reaction. This happens when the dwarf collects just enough mass to tip it over the brink of nuclear instability. Most astronomers think a closely orbiting companion star provides the trickle of infalling matter that eventually overloads the dwarf.

All Type Ia explosions are very nearly alike, which makes them a wonderful "standard candle" for measuring galaxies' distances independently of their redshifts. This allows astronomers to track how redshifts themselves have changed with cosmic time. Studies of Type Ia supernovae revealed five years ago that the cosmic expansion is speeding up, apparently under the influence of some unknown "dark energy" pervading the cosmos. It was one of the most important scientific discoveries of the last decade.

http://skyandtelescope.com/news/article_1024_1.asp

Nominations for FOTO Officers

By Valerie Niemi

At the August FOTO meeting, nominations were opened for all the officers of FOTO, except FOTO Trustee of the COC. Nominations will remain open until the elections in October.

Please send new nominations to **Chuck Strubbe** at jstrubbe@one.net. The following nominations were put forward:

Secretary

Valerie Niemi

Treasurer

JoAnne Pedersen

Bill Bachelder

Frank Huss

Vice President

Craig Niemi

Valerie Niemi

President

Craig Niemi

(Editors note: Due to impending fatherhood, our longstanding president **Greg Huber**, has withdrawn his name.)

The Sun, Close Up and Personal

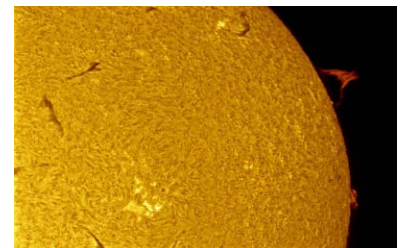
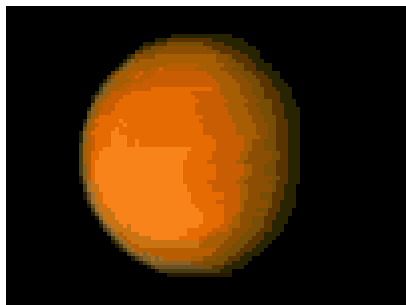


Photo by Jim Neumeister.

Letter from Jim Neumeister: "Marty and I were recently on vacation in British Columbia and spent some time at the Observatory B&B, in Osoyoos, operated by amateur astronomer Jack Newton and his wife (he has his own dome built into his home). Smoke from the area forest fires precluded any good night sky viewing (conditions were even worse than Cincinnati during our visit), nonetheless we did get a chance to do some solar viewing on the morning of July 18th using his H-Alpha filter. Since my astrophotography credentials are virtually nonexistent, I make no claims other than saying that I "pushed the button".

Spotlight on Saturn's Moon Titan



Titan is Saturn's largest moon and it is unique within our Solar System, being the only satellite that possesses an atmosphere. Its atmosphere is smoggy, composed of a hydrocarbon haze, and it is this component that dominates its physical evolution, determining whether the moon ultimately boils or freezes, produces life or remains barren. The haze can also accelerate the formation of an oxygenated atmosphere by catalyzing the removal of hydrogen atoms from a planet's atmosphere and by providing an excellent absorber of harmful UV radiation, protecting fragile macromolecules floating in the haze.

The most interesting point about simulations of Titan's hydrocarbon haze is that this smoggy component contains molecules called tholins that can form the foundations of the building blocks of life. For example, amino acids, one of the building blocks of terrestrial life, form when these red-brown smog-like particles are placed in water. When scientists analyze the building blocks of tholins by pyrolysis, splitting up the tholins using plasma, scientists find a rich array of biomolecular building blocks such as pyrroles, pyrazines, pyridines and pyrimidines. All of these molecules have played an important role in the evolution of life.

Did You Know....

At 4:51 AM EDT on August 27th, the Earth made its closest approach to Mars in nearly 60,000 years.

The two worlds, center-to-center, were just 56 million kilometers apart--a short distance on the scale of the solar system. The last people to come so close to Mars were Neanderthals!

Word of the Month

“Ablation”

Answer to last month's word

“Reseau”

Reseau is an array of small dots or crosses on exposed photographs before processing to provide a standard for measurement of astronomical objects.

Did You Know....

Strange temperature anomalies were picked up by the Mars orbiter are in an area of Hellas Basin, a massive impact basin about the size of Australia in the southern Hemisphere of Mars.

Debate continues about the anomalies which might only be odd rock formations, but they are definitely 8 to 12 degrees warmer than the surrounding materials both day and night, so warmth from the sun cannot be responsible for their anomalous temperature.

Scope Out 2003 Volunteers Needed

By Greg Huber

Scope Out this year is going to be on October 4th and runs from noon to 5 PM.

Then there is a dinner and lecture to follow the day's activities. Weather permitting there will be evening observing.

Volunteers will receive set-up doughnuts and juice starting at 9:00 AM, free admission to the event and lecture. (You'll have to pay for dinner.) Other benefits will be named later.

We're going to try to run the volunteer sign-up the same as last year.

If you can volunteer that day, please sign-up with your name, phone number, e-mail address (if available).

Let us know if you want early time, Noon-3 PM, or late, 2 PM - 5 PM, or all day. Also what is your preferred activity? (Kids Area, Mitchell Scope H-alpha, FOTO information Table, Registration and Check-in-Table, Phone Duty, History Booth, ATM, Ask the Astronomer, Raffle Booth, Astronaut Pictures, or no choice.)

Mitchel Relatives to Visit Observatory

The relatives of Ormsby MacKnight Mitchel, the founder of the Observatory in 1842, will visit the Observatory on Tuesday afternoon, September 30. Most of the surviving relatives are in the "great, great, great" category.

The relatives are gathering in Mitchell, Indiana, which was named for O.M. Mitchel, to help celebrate the 150th anniversary of the city's founding. Following the celebration in Mitchell, IN on Sunday and Monday, they will be bussed to Cincinnati. They will be shown the original Mt. Adams site of the observatory, Ft. Mitchell Kentucky, and spend a couple of hours at the Observatory learning about their famous relative.

If you want to join the welcoming committee at the Observatory please let **John Ventre** know, at 513-321-5186 extension 4.

Hubble Sees One Galaxy Consuming Another



A new image taken by the Hubble Space Telescope shows a large galaxy gobbling up a smaller one; a process anticipated by astronomers, but never directly seen before. Astronomers used the Keck Telescope in Hawaii to confirm that the dwarf galaxy is being consumed by measuring the rate that stars are streaming towards the larger galaxy. The stars of the smaller galaxy will eventually form a spherical halo surrounding the flattened disk of the larger galaxy.

Need Volunteers for Mars Week

We're already getting a lot of calls for Mars viewing - and we haven't even advertised anywhere! Our programs were listed next to Dean's article in the Enquirer, so we're expecting to fill many nights at the Observatory. We are going to need some help with this demand. Please look over the dates listed below, and if you can spare a night or two to help with programs, pointing the telescope, answering questions, parking cars, or greeting people, we would appreciate it. Let **Dean Regas** know if you have questions or what night(s) you can help.

We will definitely need help for September 6, 8, 9, 10, and 11. Plus maybe more. We are also looking for people to be at the Observatory (in case people drop in, which they will) on August 26, September 1, 2, and 3.

If you'd like to volunteer, contact Dean at dobservatory@juno.com

Scope Out

The date for the September ScopeOut meeting is not available at press time.

FOTO-SETI Update

FOTO's 31 dedicated members have completed 25,401 SETI studies, an increase of 746 studies in the past month, representing over 54 years of computer time!

It's time to sign up to become part of the greatest search in history!
<http://www.space.com/searchforlife>

Stonelick A Huge Success!

By Greg Huber

A huge thank you to all who went out to Stonelick State Park on August 24-25th. Over 250 people came out to view Mars and other celestial objects. Because of all of this hard work we hope that more and more people will learn the wonders of the heavens.

Paul Nohr's Astronomy Classes

By Paul Nohr

Monday Classes

The introductory astronomy classes will not be continued. In place of those classes, two or three times each year a brief series of meetings to introduce members and assistants to telescopes, the sky and observing techniques will be offered.

Each series should run two or three months on alternate Mondays. The first class will begin October 13th at 7 PM.

Tuesday Classes

These classes will resume Oct. 7th at 7 PM. We will begin investigating properties of waves and light; and for the rest of the year discuss atomic spectra, astronomical spectroscopy and optics.

We will try some experiments measuring the speed of light, wavelengths of different colors (and possibly radio waves too) and explore the spectra of a few stars.

Paul Nohr: 513-321-5186.

Hourglass Nebula



A planetary nebulae, like this one, is the glowing relic of a dying, Sun-like star. They are misnamed because early astronomers thought they looked like Jupiter when seen in crude telescopes.

Lagoon Nebula



Eerie funnels and twisted-rope structures in the upper left are at the heart of the Lagoon Nebula (M8), about 5,000 light-years from Earth. A hot, central star illuminates the nebula's gas.

FOTO Imaging

FOTO Imaging will meet September 17th at 7:30 PM at the Observatory. While no program has been set, we'll undoubtedly be reviewing shots of Mars.

Mars Stargaze

By Scott Naylor

Saturday August 30th at Stonelick State Park.

If you can't wait to see Mars, the Friends of the Observatory (FOTO) will be hosting two nights at Stonelick State Park to view the red planet. FOTO members will be meeting just before the beach parking area from dusk to dawn. There will be plenty of telescopes and, hopefully, clear skies. For more information on Stonelick nights, see: www.cincinnatiobservatory.org/stonelick.html or contact scottnaylor@fuse.net

DIRECTIONS: Turn left on 131 off US 50 in Milford, and go 132. Look for a tractor dealer on the right (about 2 miles past 132), there's a road to the left 727 that will take you to Stonelick Lake State Park. Turn at the Stonelick sign on your right and go toward the Beach. We meet at a parking lot just before the beach area, on the left.

Liquid Water Likely Supports Life On Mars Today



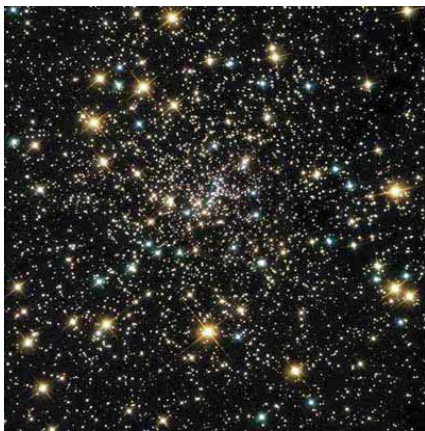
Even on the present-day cold and dusty surface of Mars, liquid water may be sustaining a world of Martian microbes.

Data churned out by NASA's Mars Odyssey suggests that the nearby planet is waterfront property -- at least in the form of below surface deposits of water ice. Odyssey scientists report that the soil very close to the surface over much of the planet contains large amounts of ice.

Now a father and son science team argue that ice near Mars' surface means liquid water in its "topsoil", thereby strengthening the case for life on the red planet.

http://www.space.com/scienceastronomy/mars_life_030806.html

Hubble View of Globular Cluster



This Hubble Space Telescope view of the core of one of the nearest globular star clusters, called NGC 6397, resembles a treasure chest of glittering jewels. The cluster is located 8,200 light-years away in the constellation Ara.

<http://spaceflightnow.com/news/n0308/08clusters/>

John to John

(Email from John Ventre to John Bevan who has moved to the east coast)

"While I know that you are very passionate regarding your new dark skies, I really didn't think that you would pull off that neat trick of darkening the whole north-east section of the US just to improve your dark skies!"

Response from John Bevan: "I'm not admitting anything but there were many reports from New York City that people appreciated seeing a dark sky for once in their lives. So, it may have been worth it, after all. Plus the fact that many workers had a day off, next day - a "snow day", they called it - to lower the electrical load while they were getting the grid back on. Accusations have been flying around as to the cause. One of them says the problem started in Ohio. So, whoever you are, own up!"

At least, I had one of my favorite experiences on the night of the blackout: showing the Moon and Mars to a young person. One of our Cincinnati friends was staying with us at our daughter's house in the Hudson Valley while she and her 17 year-old daughter looked at colleges in the region. It was only when we got home late after a long day in Massachusetts, not once turning on the car radio, that we discovered that there was no power in New York. However, it was clear, the waning Moon was rising and Mars was shining in the south east so I set up the scope on the driveway.

After seeing the ice cap and the Mare Sirenum on Mars, Katherine continued to sit, "glued" to the eyepiece, exploring the Moon while we discussed various features along the terminator (not that one in California!). Her sharp eyes even picked out Schroter's Valley in the bright "high noon" area around Aristarchus.

All this, plus the fact that we saved millions of kWh of electricity."

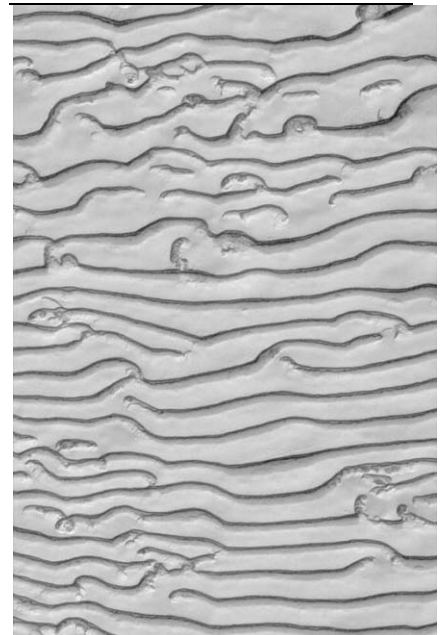
John Bevan

I hope to see you when I pay a visit to Cincinnati in early September.

Formation of Stars is On the Decline

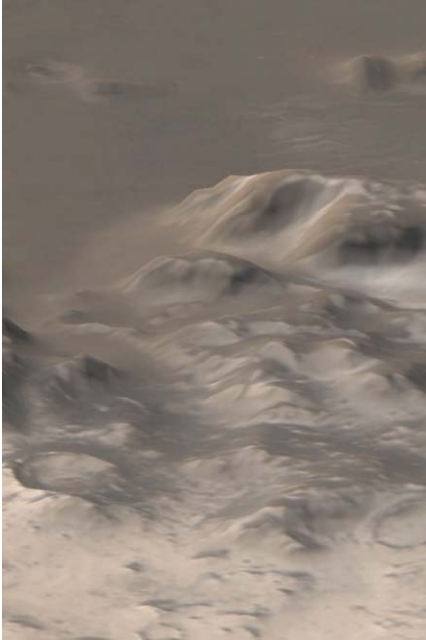


The age of star formation in the Universe is drawing to a close, according to a new report from the Sloan Digital Sky Survey. A team of astronomers analyzed the colour of an enormous number of nearby galaxies and found that they contained less young stars than more distant galaxies. Since light takes so long to travel, the more distant galaxies are seen as they appeared many billion years ago. The number of new stars being formed has been on the decline since about 6 billion years ago, when our own Sun formed.



Wormholes on Mars?

Frosty Martian Mountains



It is summer in the southern hemisphere of Mars, and ice there is melting. Even the south polar cap of the red planet (which [you can see](#) with a large backyard telescope) is shrinking to a vestige of its winter self. These mountains on Mars are seen as they were in June, Earth-time, before the melting got fully underway.

Skiing would be a lot different on Mars.

For starters, the surface layer of white stuff it typically made of frozen carbon dioxide, or dry ice. Underneath the southern polar cap and often exposed in summer is a thick layer of water ice. The northern polar region is mostly water ice.

Given temperatures that average about -58 Fahrenheit (-50 Celsius) *at the equator*, slope conditions are probably much more like the frequently miserable U.S. Northeast than the fluffy powder of the West. In fact, a study in 2001 suggested that Mars' snow near both poles is more dense and hard than what earthlings are used to.

It gets worse. The frigid Martian temperatures and higher doses of [radiation](#) would require gear even Lands' End never puts on sale. Oh, and then there's that troublesome lack of air. Martian skiers would no doubt see Earth as their ultimate destination.

Dog Days and the Star Behind the Phrase

Despite how hot it might be where you live, the Dog Days just came to an official end. Everyone talks about "dog days of summer," but few know what the expression means. You might be surprised to learn the story behind the phrase.

Some say it signifies hot sultry days "not fit for a dog." Others claim it's the weather in which dogs go mad.

But the dog days are defined as the period from July 3 through Aug. 11 when the Dog Star, Sirius, rises in conjunction (or nearly so) with the Sun. As a result, some felt that the combination of the brightest luminary of the day (the Sun) and the brightest star of night (Sirius) was responsible for the extreme heat that is experienced during the middle of the summertime.

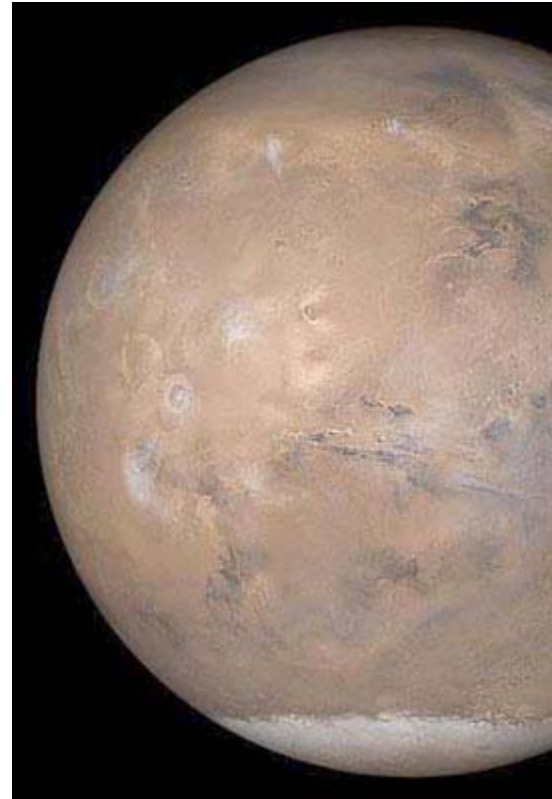
Other effects, according to the ancients, were droughts, plagues and madness.

A more sensible view was put forward by the astronomer Geminus around 70 B.C. He wrote: "It is generally believed that Sirius produces the heat of the Dog Days, but this is an error, for the star merely marks a season of the year when the Sun's heat is the greatest."



Spiral Galaxy NGC 1232

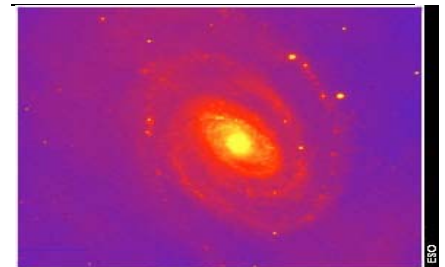
New Findings Could Dash Hopes For Past Mars Oceans



The view of Mars shown here was assembled from daily global images obtained on May 12, 2003 by Mars Global Surveyor

After a decades-long quest, scientists analyzing data from NASA's Mars Global Surveyor spacecraft have at last found critical evidence the spacecraft's infrared spectrometer instrument was built to search for: the presence of water-related carbonate minerals on the surface of Mars.

http://spaceflightnow.com/news/n0308/2_1marsocean/



Spiral Galaxy NGC 5364