The Morris Museum Astronomical Society

The Heavenly Herald

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Member of

THE MORRIS MUSEUM

PRESIDENT'S MESSAGE

Ron Russo, President

In the history of our organization, we have had many good people as members. Over the years we have witnessed the passing of some of our members. Erwin (Van) Vanderhoof in 2000 and Susan Barry's passing in 2006. This year we lost another very good member and president of the MMAS. As ill as Ted Barker was, he remained in office until he passed away in April.
He served as vice president & president and was a member of the credentials committee, observatory committee and ran the outreach program for the MMAS.
Ted was also a 14 year member of the UACNJ. He served with distinction as the president (2004/05) and vice president (2002/03) of the state organization. He also served on and chaired many of the committees for the state organization.
Because of his dedication to the UACNJ and to show their gratitude, the board of directors has voted to name the new solar observatory at the United Astronomy Clubs of New Jersey the "Ted Barker Solar Observatory." Ted helped with the construction of the 5 observatories at Jenny Jump working on all aspects of the foundation, the building, and the roofs. The observatory will be one of the best amateur solar observatories in the US. It will have an 8" solar telescope with mylar, 1,000 Oaks, & H Alpha filters. The 8" telescope will also be used at night as an astronomical telescope.
We are planning the dedication for May 2009. More information in the spring issue of the *Heavenly Herald*.

CLUB MEETINGS

Dec. 18 <NOTE DATE CHANGE> - Holiday Party
Emails will be sent and calls will be made to members to remind them of the event and ask them to bring some food and drink to share.

--2009--

Jan. 8 - Movie - Explorer 1 : First US Satellite
Feb. 12 - Movie - Cosmic Threat of the Earth
Incase of inclement weather, please call
(973) 386-1848 the afternoon of the meeting night.

Monthly Meetings are the second Thursday of each month at 7:30 p.m.
During July & August check the web site for specific information.

Let it snow - on Mars

NASA - Sept. 30, 2008

In an unprecedented discovery, NASA's Phoenix Mars Lander has found snow falling from clouds on Mars, scientists said Tuesday.

A laser instrument collecting data on how the atmosphere and surface interact on Mars detected snow from clouds about four kilometers (2.5 miles) above the spacecraft's landing site. The date found the snow vaporized before reaching the ground.

"Nothing like this view has ever been seen on Mars," said Jim Whiteway, of York University, Toronto, lead scientist for the Canadian-supplied Meteorological Station on Phoenix. "We'll be looking for signs that the snow may even reach the ground."

Spacecraft soil experiments also have provided dramatic evidence of past interaction between minerals and liquid water, processes that occur on Earth. Phoenix touched down in the Martian arctic on May 25.

Phoenix data also suggested the presence of calcium carbonate, the main composition of chalk, and particles that could be clay. Most carbonates and clays on Earth form only with water on hand. "We have found carbonate," said William Boynton of the University of Arizona, lead scientist for the Thermal and Evolved Gas Analyzer (TEGA). "This points toward episodes of interaction with water in the past."

"We are still collecting data and have lots of analysis ahead, but we are making good progress on the big questions we set out for ourselves," said Phoenix Principal Investigator Peter Smith of the University of Arizona, Tucson.

The Phoenix lander started digging trenches into Martian soil after touching down near the planet's north pole on May 25, revealing a white substance that scientists said was ice in June.
Now scientists want to examine whether that ice ever thaws to assess whether the environment has been favorable for life, a key aim of the mission.

Mission Update

NASA's Phoenix Mars Lander has ceased communications after operating for more than five months. As anticipated, seasonal decline in sunshine at the robot's arctic landing site is not providing enough sunlight for the solar arrays to collect the power necessary to charge batteries that operate the lander's instruments.

Mission engineers last received a signal from the lander on Nov. 2. Phoenix, in addition to shorter daylight, has encountered a dustier sky, more clouds and colder temperatures as the northern Mars summer approaches autumn. The mission exceeded its planned operational life of three months to conduct and return science data.

The project team will be listening carefully during the next few weeks to hear if Phoenix revives and phones home. However, engineers now believe that is unlikely because of the worsening weather conditions on Mars. While the spacecraft's work has ended, the analysis of data from the instruments is in its earliest stages.

Oct. 3, 1947: Birth of Palomar's 'Giant Eye'

Source: Caltech

It was, at the time, the largest telescope mirror ever made in the United States, measuring 200 inches in diameter. Following its completion, the disk was mounted in Palomar's Hale Telescope and first used in January 1949 to take pictures of the Milky Way. Edwin Hubble was the first astronomer to make images using the new scope.

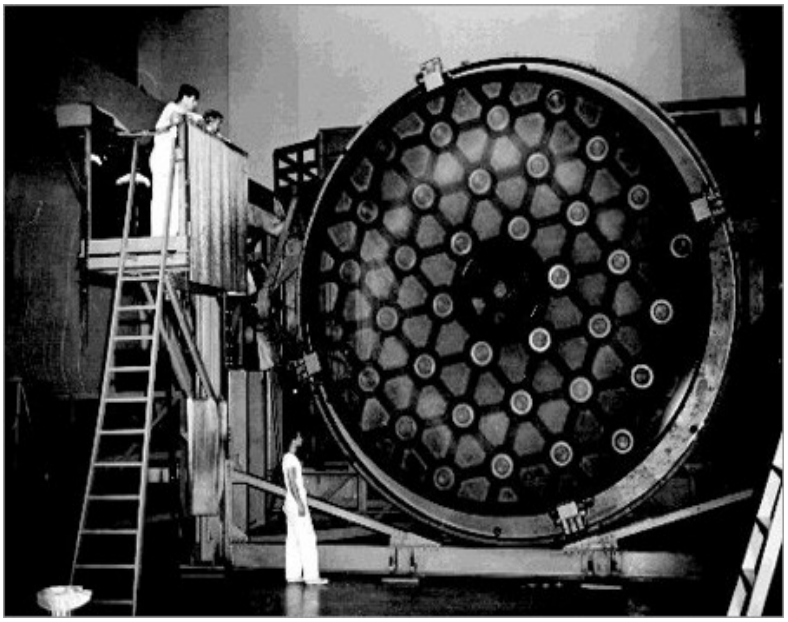
The mirror began as a 20-ton piece of molten Pyrex, a new glass blend, at the Corning Glass Works in upstate New York. Pyrex expands and contracts far less than regular glass, making it less prone to distortion, a problem that plagued the 100-inch mirror already in operation at Palomar.

After being heated to 2,700 degrees Fahrenheit, the Pyrex was poured into a ceramic mold. It was carefully cooled at an average rate of one or two degrees per day for 11 months, then allowed to reach room temperature.1 After that it was shipped west to Caltech in Pasadena, where the glass was painstakingly ground to perfection in a process lasting more than a decade.

The era of giant telescopic lenses began in the 1700s, when astronomers recognized that the bigger the lens (or reflecting mirror), the better the image. In 1774, English astronomer William Herschel mounted several 9-inch mirrors in a 10-foot-long telescope and recorded, with satisfaction, that he had spent the first night looking at "Saturn's rings and two belts in great perfection."

Herschel followed that up with a 48-inch behemoth, requiring a telescope so large that it could no longer be manually operated. This led to the building of the world's first observatory, a 60-foot high, wood-framed structure that looks nothing like a modern observatory.

The Palomar Observatory opened in the 1930s after astronomer George Hale (for whom the telescope is named) determined that the Mt. Wilson Observatory was no longer an ideal site because of the encroaching lights of a growing Los Angeles. The new site he chose was atop Mount Palomar, 100 miles southeast of Pasadena.



The Hale Telescope is one of seven operational scopes at Palomar. It was the largest optical telescope in the world until completion of Hawaii's 10-meter Keck I telescope in 1993.

1947: After 13 years of grinding and polishing, the Palomar Observatory mirror is completed at Caltech.

Article submissions for future issues.
Please send to Anthony at
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Night Sky Network

Astronomy Clubs bringing the wonders of the universe to the public

The Moon

Dec. 2008

First quarter	5
Full moon	12
Last quarter	19
New moon	26

Jan. 2009

First quarter	3
Full moon	10
Last quarter	17
New moon	24

Feb. 2009

New moon	2
First quarter	9
Full moon	16
Last quarter	23

Links

www.badastronomy.com

www.heavens-above.com

www.nasa.gov/audience/forkids/kidsclub/flash/index.html

www.space.com

www.astronomycafe.net

www.amsky.com

www.skyandtelescope.com

www.scopereviews.com

Astronomers have taken what they say are the first-ever direct images of planets outside of our solar system, including a visible-light snapshot of a single-planet system and an infrared picture of a multiple-planet system.

Earth-like worlds might also exist in the three-planet system, but if so they are too dim to photograph. The other newfound planet orbits a star called Fomalhaut, which is visible without the aid of a telescope. It is the 18th brightest star in the sky.

The massive worlds, each much heftier than Jupiter (at least for the three-planet system), could change how astronomers define the term "planet," one planet-hunter said.

Until now, scientists have inferred the presence of planets mainly by detecting an unseen world's gravitational tug on its host star or waiting for the planet to transit in front of its star and then detecting a dip in the star's light. While these methods have helped to identify more than 300 extrasolar planets to date, astronomers have struggled to actually directly image and see such inferred planets.

The four photographed exoplanets are discussed in two research papers published online today by the journal Science.

"Every extrasolar planet detected so far has been a wobble on a graph. These are the first pictures of an entire system," said Bruce Macintosh, an astrophysicist from Lawrence Livermore National Laboratory in California, and part of the team that photographed the multi-planet system in infrared light. "We've been trying to image planets for eight years with no luck and now we have pictures of three planets at once."

Astronomers have claimed previously to have directly imaged a planet, with at least two such objects, though not everybody agreed the objects were planets. Instead, they may be dim, failed stars known as brown dwarfs.

University of California, Berkeley, astronomer Paul Kalas led the team of astronomers who took the visible-light snapshot of the single-planet system. The exoplanet has been named Fomalhaut b, and is estimated to weigh no more than three Jupiter masses.

The Hubble Space Telescope's Advanced Camera for Surveys was used to make the image. The camera is equipped with a coronagraph that blocks out the light of the host star, allowing astronomers to view a much fainter planet.

"It's kind of like if driving into the sun and suddenly you flip down your visor, you can see the road easier," Kalas said during a telephone interview. In fact, Fomalhaut b is 1 billion times fainter than its star. "It's not easy to see. That kind of sensitivity has never been seen before," he added.

Fomalhaut b is about 25 light-years from Earth. Photos taken in 2004 and 2006 show the planet's movement over a 21-month period and suggest the planet likely orbits its star Fomalhaut every 872 years at a distance of 119 astronomical units (AU), or 11 billion miles (nearly 18 billion km). That's about four times the distance between Neptune and the sun.