



Astronomy Club News

April, 2004

John Kocijanski, Editor

Jim McKeegan,	President
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Catskills Astronomy Club News

4/1/04

Jim McKeegan and Alvin Schultheis submitted the following observing summaries for the observation session that was held on March 20th.

A club observation night was held on Saturday, March 20, at Walnut Mountain. Three members braved the wind and chilly temperatures to attend. Alvin brought his C11, Howie had his Coulter dob, and Jim came with his small refractor. A double shadow transit of Jupiter was observed, which showed up very nicely on the big scopes. At one point Jupiter was iframedî by a small moon just to each side of the planet - ilike earringsî to quote Howie. Saturn also was observed. During moments of especially good seeing, subtle banding and shading was seen on Saturn. A few galaxies and open clusters were observed in Alvinís C11, as well as some wide field views of open clusters (M44, and the Pleiades) in Jimís refractor. Due to the cold, the session ended around 10:30, but all participants were satisfied with an evening of iversity not quantityî.

Jim

Three members attended the observing session- Howie Glatter with his 10 inch Dobsonian, Jim Mckeegan with his Televue TV76 and myself with my C11. At first, the wind which was supposed to subside ,didnít and it was only our dedication to the hobby which kept us there. Also the transparency was another factor in our perseverance . Although we missed the GRS we were treated to a double shadow transit on Jupiter with the fainter shadow expertly found by Howie. S ATURN showed us Cassiniís division ,nice cloud banding in the atmosphere and several moons (during moments of steadier seeing) We also observed M42,M35, M1,M81,82(low power made for a wonderful view of both in the same field of view in the 10 and 11 inch), M51,MI,M46(open cluster with planetary),M36,M37,M38.Through the TV76 we were treated to exquisite view of the Double Cluster showing several

orange colored stars, plus M103, M44, Jupiter's shadow transits, etc. Fortunately as time went on the wind finally died down to make the cold more bearable. We all traded views and they were made all the better with the great sky clarity. A little after 10pm we decided to call it a night, packed up and left with me as the gatekeeper making sure all was secure. Naturally it would have been more enjoyable with more members but warmer weather I believe will correct that. (APOLOGIES FOR ANY OBSERVED OBJECTS WHICH WERE OMITTED)

Reported By: Alvin Schultheis

The Northeast Astronomy Forum will be held at Rockland County Community College on April 17th and 18th. Our club has been offered a free space for a table on the balcony for the show. We plan to be there on Saturday the 17th. Last year we went on Saturday. Anyone wishing to volunteer to man the table can contact John at kocis@verizon.net. The table worked out well for us last year and gave the club some exposure. We handed out observing schedules, newsletters, as well as NASA literature.

The March 13th observation session was canceled due to poor weather. The April observation sessions are scheduled for the 10th and the 24th. The session originally scheduled for April 17th was moved to the 10th due to NEAF.

I would like to give a special thanks to the members of the Catskills Astronomy Club for the flowers that were sent to my family and kind words of support in recognition of my brother's recent passing.

John Kocijanski

Anyone interested in submitting an astronomical observation or photograph for the newsletter, please contact John at kocis@verizon.net.

Each month the photo section of our newsletter will highlight the telescopes and equipment of club members. If you have a photo of your scope or equipment and a brief description of it that you

would like to contribute please send it to John at
kocis@verizon.net.

The club has selection of astronomy books, Stardate audio CDs, a Macintosh computer with astronomy software, and a Meade eight inch reflector for members to borrow. Please contact John at 791-5240 or kocis@verizon.net if you are interested in borrowing any of these.

Astronomy News:

Here are some articles from various sources that might be of interest.

NEWS RELEASE: 2004-080 March 8, 2004

NASA Creates Portrait of Life and Death in the Universe

In a small nearby galaxy lies a luminous cloud of gas and dust, called a nebula, which houses a family of newborn stars. If not for the death of a massive star millions of years ago, this stellar nursery never would have formed.

The nebula, Henize 206, and the remnants of the exploding star that created it, are pictured in superb detail in a new image from NASA's Spitzer Space Telescope. Henize 206 sits just outside our own galaxy, the Milky Way, in a satellite galaxy 163,000 light-years away called the Large Magellanic Cloud. It is home to hundreds and possibly thousands of stars, ranging in age from two to 10 million years old.

The image is a wonderful example of the cycle of birth and death that gives rise to stars throughout the universe, said Dr. Varoujan Gorjian, a scientist at NASA's Jet Propulsion Laboratory, Pasadena, Calif., and principal investigator for the latest observation.

As in other stellar nurseries, the stars in Henize 206 were created when a dying star, or supernova, exploded, shooting shock waves through clouds of cosmic gas and dust. The gas and dust were subsequently compressed, gravity kicked in, and stars were born.

Eventually, some of the stars will die in a fiery blast, triggering another cycle of birth and death. This recycling of stellar dust and gas occurs across the universe. Earth's own Sun descended from multiple generations of stars.

The new Spitzer picture provides a detailed snapshot of this universal phenomenon. By imaging Henize 206 in the infrared, Spitzer was able to see through blankets of dust that dominate visible light views. The resulting false-color image shows embedded young stars as bright white spots, and surrounding gas and dust in blue, green and red. Also revealed is a ring of green gas, which is the wake of the ancient supernova's explosion.

“Before Spitzer, we were only seeing tantalizing hints of the newborn stars peeking through shrouds of dust,” Gorjian said.

These observations provide astronomers with a laboratory for understanding the early universe, and stellar birth and death cycles. Unlike large galaxies, the Large Magellanic Cloud has a quirk. The gas permeating it contains roughly 20 to 50 percent of the heavier elements, such as iron, possessed by the Sun and gas clouds in the Milky Way. This low-metallicity state approximates the early universe, allowing astronomers to catch a glimpse of what stellar life was like billions of years ago, when heavy metals were scarce.

Henize 206 was first catalogued in the early 1950s by Dr. Karl Henize (pronounced Hen-eyes), an astronomer who became a NASA astronaut. He flew aboard the Challenger Space Shuttle in 1985. He died in 1993 at age 66 while climbing Mount Everest.

Launched on August 25, 2003, from Cape Canaveral, Fla., the Spitzer Space Telescope is the fourth of NASA's Great Observatories. The program includes the Hubble Space Telescope, Chandra X-ray Observatory and Compton Gamma Ray Observatory. JPL manages the Spitzer Space Telescope mission for NASA's Office of Space Science, Washington. Science operations are conducted at the Spitzer Science Center at the California Institute of Technology in Pasadena, which manages JPL.

For information about NASA and agency exploration programs on the Internet, visit

<http://www.nasa.gov> . The Spitzer picture is available at <http://www.spitzer.caltech.edu> and <http://photojournal.jpl.nasa.gov/catalog/PIA05517> . For information about the Spitzer Space Telescope, visit <http://www.spitzer.caltech.edu> .

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NEWS RELEASE: 2004-085 March 15, 2004

Most Distant Object In Solar System Discovered

NASA-funded researchers have discovered the most distant object orbiting Earth's Sun. The object is a mysterious planet-like body three times farther from Earth than Pluto.

The Sun appears so small from that distance that you could completely block it out with the head of a pin, said Dr. Mike Brown, California Institute of Technology, Pasadena, Calif., associate professor of planetary astronomy and leader of the research team. The object, called Sedna for the Inuit goddess of the ocean, is 13 billion kilometers (8 billion miles) away, in the farthest reaches of the solar system.

This is likely the first detection of the long-hypothesized Oort cloud, a faraway repository of small icy bodies that supplies the comets that streak by Earth. Other notable features of Sedna include its size and reddish color. After Mars, it is the second reddest object in the solar system. It is estimated Sedna is approximately three-fourths the size of Pluto. Sedna is likely the largest object found in the solar system since Pluto was discovered in 1930.

Brown, along with Drs. Chad Trujillo of the Gemini Observatory, Hawaii, and David Rabinowitz of Yale University, New Haven, Conn., found the planet-like object, or planetoid, on Nov. 14, 2003. The researchers used the 48-inch Samuel Oschin Telescope at Caltech's Palomar Observatory near San Diego. Within days, telescopes in Chile, Spain, Arizona and Hawaii observed the

object. NASA's new Spitzer Space Telescope also looked for it.

Sedna is extremely far from the Sun, in the coldest known region of our solar system, where temperatures never rise above minus 240 degrees Celsius (minus 400 degrees Fahrenheit). The planetoid is usually even colder, because it approaches the Sun only briefly during its 10,500-year solar orbit. At its most distant, Sedna is 130 billion kilometers (84 billion miles) from the Sun, which is 900 times Earth's solar distance.

Scientists used the fact that even the Spitzer telescope was unable to detect the heat of the extremely distant, cold object to determine it must be less than 1,700 kilometers (about 1,000 miles) in diameter, which is smaller than Pluto. By combining available data, Brown estimated Sedna's size at about halfway between Pluto and Quaoar, the planetoid discovered by the same team in 2002.

The elliptical orbit of Sedna is unlike anything previously seen by astronomers. However, it resembles that of objects predicted to lie in the hypothetical Oort cloud. The cloud is thought to explain the existence of certain comets. It is believed to surround the Sun and extend outward halfway to the star closest to the Sun. But Sedna is 10 times closer than the predicted distance of the Oort cloud.

Brown said this "inner Oort cloud" may have been formed by gravity from a rogue star near the Sun in the solar system's early days.

"The star would have been close enough to be brighter than the full moon, and it would have been visible in the daytime sky for 20,000 years," Brown explained. Worse, it would have dislodged comets farther out in the Oort cloud, leading to an intense comet shower that could have wiped out some or all forms of life that existed on Earth at the time.

Rabinowitz said there is indirect evidence that Sedna may have a moon. The researchers hope to check this possibility with NASA's Hubble Space Telescope. Trujillo has begun to examine the object's surface with one of the world's largest optical/infrared telescopes, the 8-meter (26-foot) Frederick C. Gillett Gemini

Telescope on Mauna Kea, Hawaii. "We still don't understand what is on the surface of this body. It is nothing like what we would have predicted or what we can explain," he said.

Sedna will become closer and brighter over the next 72 years, before it begins its 10,500-year trip to the far reaches of the solar system. "The last time Sedna was this close to the Sun, Earth was just coming out of the last ice age. The next time it comes back, the world might again be a completely different place," Brown said.

NASA's Jet Propulsion Laboratory, Pasadena, Calif, manages the Spitzer Space Telescope. For more information about the research and images on the Internet, visit <http://www.spitzer.caltech.edu/Media/releases/ssc2004-05> . For information about NASA on the Internet, visit <http://www.nasa.gov> .

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for sustaining life.

JPL, a division of the California Institute of Technology in Pasadena, manages the Mars Exploration Rover project for NASA's Office of Space Science, Washington, D.C. Images and additional information about the project are available from JPL at <http://marsrovers.jpl.nasa.gov> and from Cornell University, Ithaca, N.Y., at <http://athena.cornell.edu> .

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Donald Savage (202) 358-1547
NASA Headquarters, Washington, D.C.

NEWS RELEASE: 2004-081 March 8, 2004

NASA Rovers Watching Solar Eclipses by Mars Moons

NASA's Mars Exploration Rovers have become eclipse watchers.

Though the Viking landers in the 1970s observed the shadow of one of Mars' two moons, Phobos, moving across the landscape, and Mars Pathfinder in 1997 observed Phobos emerge at night

from the shadow of Mars, no previous mission has ever directly observed a moon pass in front of the Sun from the surface of another world.

The current rovers began their eclipse-watching campaign this month. Opportunity's panoramic camera caught Mars' smaller moon, Deimos, as a speck crossing the disc of the Sun on March 4.

The same camera then captured an image of the larger moon, Phobos, grazing the edge of the Sun's disc on March 7.

Rover controllers at NASA's Jet Propulsion Laboratory, Pasadena, Calif., are planning to use the panoramic cameras on both Opportunity and Spirit for several similar events in the next six weeks. Dr. Jim Bell of Cornell University, Ithaca, N.Y., lead scientist for those cameras, expects the most dramatic images may be the one of Phobos planned for March 10.

Scientifically, we're interested in timing these events to possibly allow refinement of the orbits and orbital evolution of these natural satellites," Bell said. "It's also exciting, historic and just plain cool to be able to observe eclipses on another planet at all."

Depending on the orientation of Phobos as it passes between the Sun and the rovers, the images might also add new information about the elongated shape of that moon.

Phobos is about 27 kilometers long by about 18 kilometers across its smallest dimension (17 miles by 11 miles). Deimos' dimensions are about half as much, but the pair's difference in size as they appear from Mars' surface is even greater, because Phobos travels in a much lower orbit.

The rovers' panoramic cameras observe the Sun nearly every martian day as a way to gain information about how Mars' atmosphere affects the sunlight. The challenge for the eclipse observations is in the timing. Deimos crosses the Sun's disc in only about 50 to 60 seconds. Phobos moves even more quickly, crossing the Sun in only 20 to 30 seconds.

Scientists use the term *transit* for an eclipse in which the intervening body covers only a fraction of the more-distant body. For example, from Earth, the planet Venus will be seen to transit the Sun on June 8, for the first time since 1882. Transits of the Sun by Mercury and transits of Jupiter by Jupiter's moons are more common observations from Earth.

From Earth, our Moon and the Sun have the appearance of almost identically sized discs in the sky, so the Moon almost exactly covers the Sun during a total solar eclipse. Because Mars is farther from the Sun than Earth is, the Sun looks only about two-thirds as wide from Mars as it does from Earth. However, Mars' moons are so small that even Phobos covers only about half of the Sun's disc during an eclipse seen from Mars.

JPL, a division of the California Institute of Technology in Pasadena, manages the Mars Exploration Rover project for NASA's Office of Space Science, Washington, D.C.

Images of the March 4 and March 7 eclipses are available online at <http://marsrovers.jpl.nasa.gov/gallery/press/opportunity/20040308a.html> . Other images from the rovers and additional information about the project are available from JPL at <http://marsrovers.jpl.nasa.gov> and from Cornell University at <http://athena.cornell.edu> .

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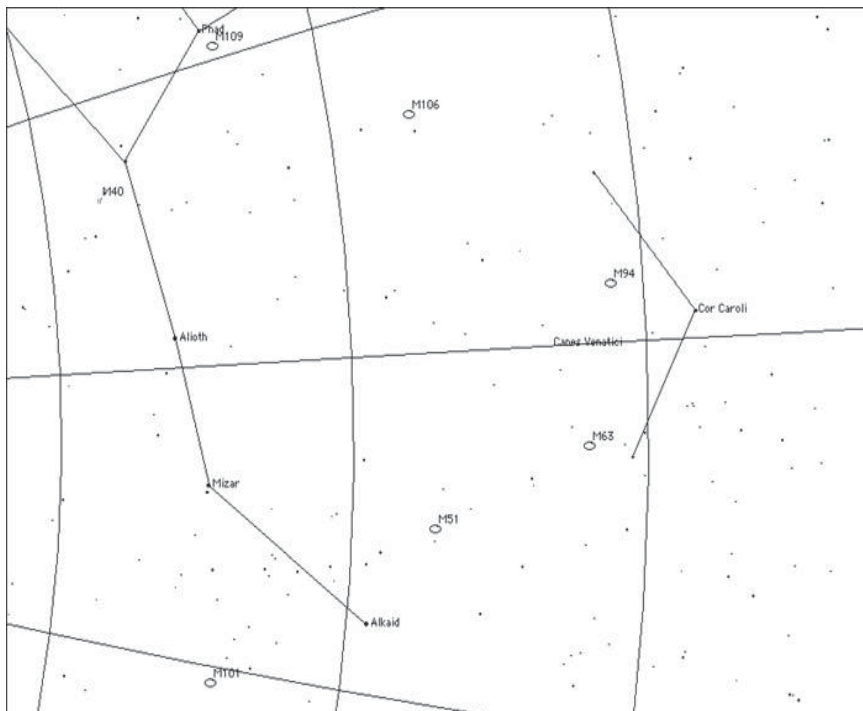
Mid Evening Observing Highlights for April

Jupiter is high in the eastern sky in Leo. The open cluster M44 otherwise known as the Beehive Cluster in Cancer is high in the southern sky. Saturn is high in the western sky. Orion is setting in the west. The bright star Arcturus and the globular star cluster M3 are rising in the eastern sky. The bright star Spica is rising in the southeast. The constellations Virgo, Coma Berenices, Ursa Major, and Leo have many observable galaxies within their boundaries.

New moon will occur on April 19th and full moon will occur on April 5th. On April 1st the planets Mercury, Venus, Mars, Saturn,

and Jupiter will all still be in the evening sky at dusk. On April 29th the moon will be very close to Jupiter under the constellation Leo.

The following image of Ursa Major and Canes Venatici shows the locations of the galaxies M51, M94, M106, M101, and M63.



BARLOW BOB'S CORNER

Barlow Bob is a member of the Rockland Astronomy Club.

CELESTIAL SYMBOLS

Use a planisphere to create the sky, as it would appear on May first at 10 PM,

after Easter and Passover. The large Northern Cross in Cygnus is rising in the northeast. Three of the six bright stars of the winter hexagon: Capella, Castor and Procyon in Auriga, Gemeni and Canis Minor, are setting in the northwest. The

remaining three stars: Sirius, Rigel and Aldeberan in Canis Major, Orion and Taurus, have set below the horizon. You can create a Star of David using these six stars. Between the Constellations of Gemini and Leo, is a beautiful star cluster called M44 in Cancer. In the dark Moonless sky, M44 looks like a fuzzy patch. In binoculars, M44 is breathtaking. M44 is also called Praesepe, a Latin word, meaning 'Manger'. If a crescent Moon also appeared in the sky at the same time, you would have celestial symbols of the Christian, Jewish and Muslim religions.

On December 25th at 8:00 PM, at Christmas and Chanukah, the large upright image of the Northern Cross is setting on the western horizon. The stars of the winter hexagon and M44 are setting on the eastern horizon.

The 2004 dues are due

Please snip off the voucher and return it as soon as possible. Thank you,

Bud Wertheim, Treasurer

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