Current Astronomy

AUGUST
2005

RIVER BEND ASTRONOMY CLUB NEWSLETTER

Crepuscular trio: On July 8, 2005, celestial motions aligned the crescent Moon with the planets Venus and Mercury in the evening sky. The sunset's dying embers heralded the approach of a night bejeweled with the summer Milky Way. PHOTO BY MARK BROWN

RIVER BEND ASTRONOMY CLUB

River Bend Astronomy Club serves astronomy enthusiasts of the American Bottom region, the Mississippi River bluffs and beyond, fostering observation, education and a spirit of camaraderie.

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Affiliated with the Astronomical League, dedicated to fostering astronomical education, providing incentives for astronomical observation and research, and assisting communication among amateur astronomical societies.
www.astroleague.org

Affiliated with the NASA Night Sky Network, a nationwide coalition of amateur astronomy clubs bringing the science, technology and inspiration of NASA's missions to the general public.
nightsky.jpl.nasa.gov

Current Astronomy CLUB NEWSLETTER

EDITOR	Eric Young younger@wustl.edu

Monthly Meeting

Saturday, August 6th, 2005 • 7:00 p.m.

Kronk Observatory

132 Jessica Drive, St. Jacob, IL 62281

Looked up lately?

Join River Bend Astronomy Club

Want to learn more about astronomy? The members of River Bend Astronomy Club invite you to join. You won't need expensive tools or special skills — just a passion for observing the natural world.

• Meetings offer learning, peeks through great telescopes and fun under the stars.

• You will receive the club newsletter, *Current Astronomy*, packed with news and photos.

• Get connected with our member-only web site and discussion group.

• Borrow from the club's multimedia library.

• And that's not all! Through club membership you also join the Astronomical League, with its special programs and a colorful quarterly newsletter to enrich your hobby.

We meet monthly, observe regularly, e-mail news and quips constantly, and generally have a good time. Won't you join us?

Name(s) _____

Address _____

City _____ State _____ Zip _____

Phone (Day)_____ (Evening)_____

Email address (to receive club news and information):

_____

Where did you hear of our club?

_____

How long have you been interested in astronomy? _____

Do you have optical equipment? ___ Telescope ___ Binoculars

Are you afraid of the dark? ___ Yes ___ No (just kidding)

I am submitting my application for:

_____ Adult membership(s) @ $20.00/year (18 years or older)

_____ Youth membership(s) @ $15.00/year (under 18)

I enclose a check for a total of $_____
made out to "Mike Veith, Treasurer, RBAC."

Signature _____

Date _____

River Bend Astronomy Club
c/o Gary Kronk, 132 Jessica Drive, St. Jacob, IL 62281
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SEPTEMBER 04

Star Hill seeing

Starstruck couple enjoys Oreos, Obi-Wan and the Milky Way while vacationing at Star Hill Inn, New Mexico.

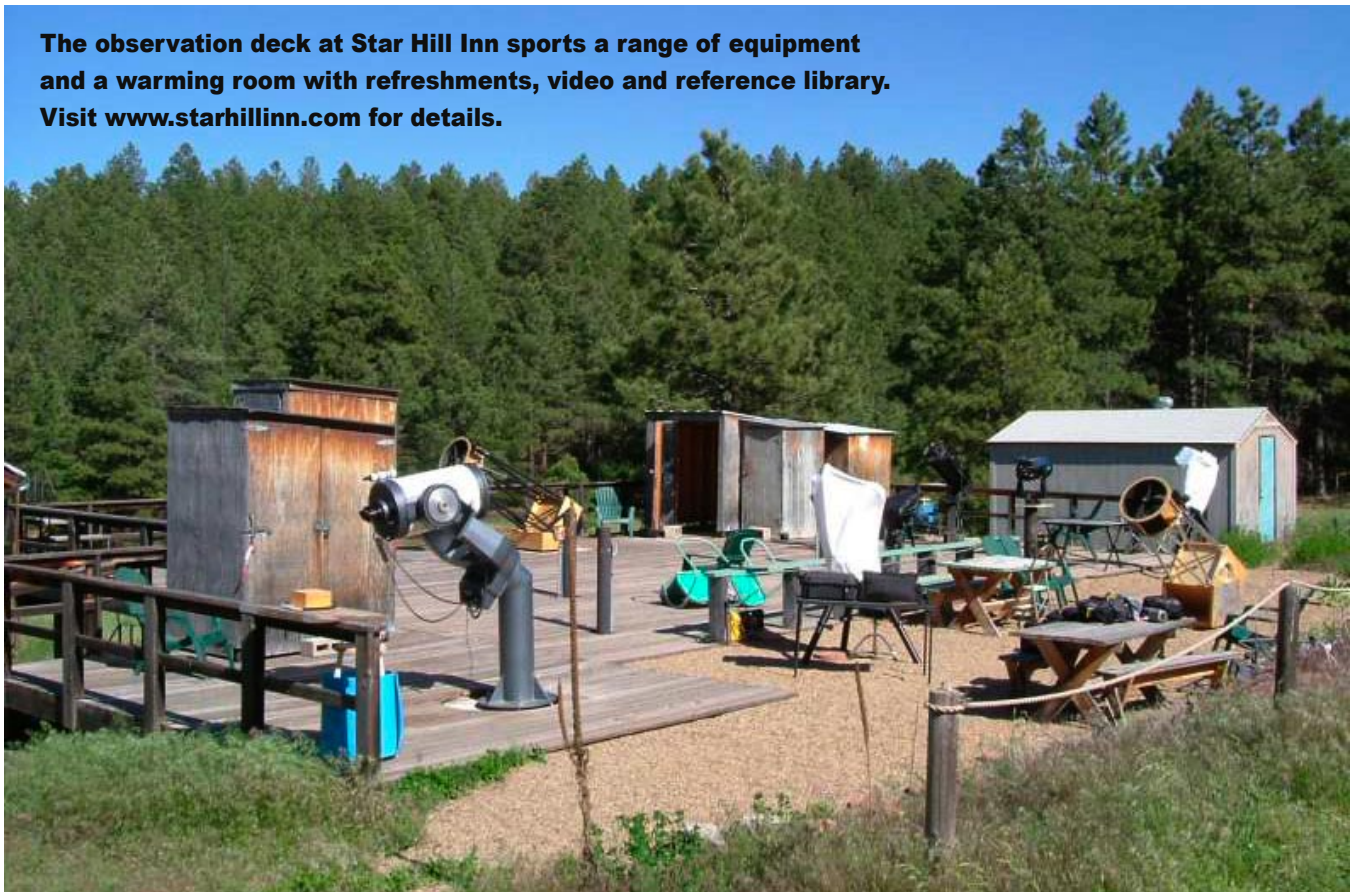
BY BILL BREEDEN

Bill and Rita Breeden vacationed from June 5–9, 2005, at Star Hill Inn, Sapello, New Mexico.

Just 25 minutes after sunset the sky was perfectly clear, a beautiful deep-blue. This was going to be a great night! The moon phase was a waning crescent, just one day before the New Moon. The owner of Star Hill Inn, Phil Mahon, set up the 17.5" Dobsonian telescope for me and Rita, as this was our instrument for the night.

Rita and I practiced moving the telescope to familiar objects. Jupiter's bands were clearly visible, as were all four Galilean moons. Saturn, low in the western sky, appeared wavy, swimming in the poor seeing of low altitude in the sky.

Next, we moved to Pollux in Gemini. This star appeard very, very bright yellow in the quickly darkening twilight of 9:15 p.m. We swung over to Spica in Virgo. This star appeared bright and blue-white. By this time, we decided to just sit and watch the sky for a while until it was totally dark. As the last hint of twilight faded into darkness, the Milky Way became clearly visible, from Cygnus in the northeast to Serpens Cauda in the southeast. The sky was inky black and absolutely spectacular. We were now ready for some astronomy.



The observation deck at Star Hill Inn sports a range of equipment and a warming room with refreshments, video and reference library. Visit www.starhillinn.com for details.

Rita Breeden at their Star Hill cabin, Cosmos.

It was June, so Hercules was nearly overhead. We went for M13. We positioned the Telrad finder between Eta Herculis and Zeta Herculis, just a little closer to Zeta. Nothing. Darn! Where's my Goto now? So, we tried again. This time, we used the 50mm eyepiece for a wide field of view. (I use "we" here because Rita and I each searched for M13 individually.) Voila! There's M13!! Once M13 was centered in the 50mm eyepiece, we tried a 17mm Nagler. Unbelievable. Staring at M13 for awhile, I was able to resolve stars very deep within M13, though not all the way to the core.

Our next object was M92 in Hercules. This required more patience to find than M13, and also the use of my *Cambridge Star Atlas*. Rita sat down to admire the sky, and I proceeded to find M92.

We spent the rest of the night hunting for Messier objects and just sky watching. This was a terrific night of observing. We had to locate objects by star-hopping, which is a skill we are still learning. We also spent some time observing with another guest, Norm, and his ETX-90 Maksutov-Cassegrain, and a gentleman named Martin who shared his view of M51 in a 22" Starsplitter Dobsonian. The spiral arms were clearly visible, as well as the companion galaxy.

At 1:30 am, we closed up our telescope and headed back to the cabin for the night.

The next night, Star Hill Inn had extraordinarily clear skies and mild temperatures in the 60s, dropping into the low 50s after midnight. We were scheduled to use the 17.5" Dobsonian telescope again, so we set out to hunt more Messier objects and simply enjoy the stars with unaided eyes.

As darkness fell, I swung the big Dob toward Jupiter to find out how good the seeing would be. Jupiter looked very clear and steady with the 27mm Panoptic 2" eyepiece. The seeing was terrific, even better than the previous night. Three Galilean moons were in a pretty curve on one side of Jupiter, and the 4th moon stood alone on the other side.

Next, we moved the Dob to Saturn, setting low in the western sky. Saturn was remarkably clear, despite the sporadic waviness caused by it's low position in the sky. Titan was clearly visible.

As I waited for the sky to darken completely, I wandered around looking at the other telescopes in use. Norm was using his ETX-90 again. Norm's son-in-law, Bill, was using a 16" LX-200 Schmidt-Cassegrain telescope. Martin was at the 22" Dobsonian Starsplitter, and a young man named Brad was using a 12" SCT. An astrophotographer was set up with a 4" Takahashi refractor. We all enjoyed some friendly astronomy conversation, and some Oreo cookies courtesy of Star Hill Inn library's endless supply.

The first Messier object we set out to find was M5 in Serpens Caput. I attempted to locate it by star hopping directly from Alpha Serpentis, but this proved to be difficult. So, I formed an equilateral triangle with Alpha and Mu Serpentis. It worked! M5 appeared dead-center in the 27mm eyepiece. It was spectacular. As I stared at M5, it seemed to become three-dimensional, with stars near the core appearing further away than stars around the outside. I inserted a 50mm Plössl eyepiece, which showed M5 smaller in a very rich star field. I tried a 17mm Nagler eyepiece, which provided a great view deep into the core of M5.

Rita and I were invited to look at M51 through Martin's 22" Dob. Not to miss this opportunity, we queued up for climbing a ladder (M51 was very high in the sky) to take a look. Wow! M51's spiral arms were clearly visible with direct vision against the totally dark background, while fine detail was visible with direct and averted vision.

Cygnus had risen from the eastern sky to very near the zenith, a symbol of how long we had been outside observing.

Next, we returned to our 17.5" Dob to find NGC 4361, a planetary nebula in Corvus. Located just below the midpoint between Gamma and Delta Corvi, NGC 4361 was easy to find. It appeared very small but surprisingly bright.

Rita and I walked across the observation deck to the library/warming house to warm up a little and have some hot chocolate. When you enter the library, dimly lit in soft red light in order to preserve your dark-adapted vision, you are greeted by Luke Skywalker, Ben Kenobi, and Han Solo — life-size cardboard stand-up figures wearing Star Hill Inn jackets. Even when there is no one in the library, you get the feeling of walking into a friendly group of people in the midst of conversation, until you quickly remember that these are cardboard cut-outs. The soft red silhouettes you see when first entering the warm library is, somehow, comforting. Norm and his son-in-law Bill joined us, and we sat around and discussed astronomy, our lives outside this place, and some general wisdom and experiences.

After warming up for a few minutes, we ventured back out onto the observation deck and into the night. The stars and the Milky Way were simply a beautiful sight as we emerged from the building. It almost felt like walking into a planetarium.

We continued our Messier object search. We star-hopped to and successfully found several objects. M20 and M21 appeared in the same field of view in the 27mm eyepiece! I invited others to enjoy the breathtaking view.

Rita and I returned to M51, The Whirlpool Galaxy in Canes Venetici, for a view using the 17mm Nagler eyepiece. It seemed to float in three-dimensional space! It was truly amazing.

After returning the eyepieces to Star Hill Inn's library, we gazed at the Milky Way overhead. By 1:30 a.m., the sky was still totally clear. Cygnus had risen from the eastern sky to very near the zenith, a symbol of how long we had been outside observing. We headed back to our cabin to talk about all of the amazing things we had seen.

That night we enjoyed the clearest, darkest skies I've ever seen, no humidity at all, no light domes anywhere, a few mosquitoes, hot chocolate, a pleasantly cool night, a great telescope, friendly conversation, limitless Oreo cookies, peaceful silence, and the Milky Way stretching from Cassiopeia to Sagittarius. It just doesn't get any better than this.

Coming in September: More from Star Hill Inn.

Author and stargazer Bill Breeden outside Star Hill's observatory which houses a 24" Ritchey-Chretien f/8 telescope with an ST-8 CCD camera. Star Hill's web site claims that "You may lean on the scope while viewing and focusing with no observed image shift."

NASA Space Place

BY PATRICK L. BARRY

Newest weather sentry takes up watch

Today, we've become accustomed to seeing images of the Earth's swirling atmosphere from space every night on the evening news. Before 1960, no one had ever seen such images. The first-ever weather satellite was launched that year, kicking off a long line of weather satellites that have kept a continuous watch on our planet's fickle atmosphere — 45 years and counting!

The high-quality, extended weather forecasts that these satellites make possible have become an indispensable part of our modern society, helping commercial aircraft, recreational boaters, and even military operations avoid unnecessary risk from hazardous weather. But satellites don't last forever. Parts wear out, radiation takes its toll, and atmospheric drag slowly pulls the satellite out of orbit. Many weather satellites have a design life of only 2 years, though often they can last 5 or 10 years, or more. A steady schedule of new satellite launches is needed to keep the weather report on the news each night.

In May 2005, NASA launched the latest in this long line of weather satellites. Dubbed NOAA-N at launch and renamed NOAA-18 once it reached orbit, this satellite will take over for the older satellite NOAA-16, which was launched in September 2000. "NOAA always keeps at least two satellites in low-Earth orbit, circling the poles 14 times each day," explains Wilfred E. Mazur, Polar Satellite Acquisition Manager, NOAA/NESDIS. "As Earth rotates, these satellites end up covering Earth's entire surface each day. In fact, with two satellites in orbit, NOAA covers each spot on the Earth four times each day, twice during the day and twice at night," Mazur says.

By orbiting close to Earth (NOAA-18 is only 870 km above the ground), these "low-Earth orbit" satellites provide a detailed view of the weather. The other type of weather satellite, "geosynchronous," orbits much farther out at 35,786 km. At that altitude, geosynchronous satellites can keep a constant watch on whole continents, but without the kind of detail that NOAA-18 can provide. In particular, low-Earth orbiting satellites have the ability to use microwave radiometers to measure temperature and moisture in the atmosphere — two key measurements used for weather prediction that, for technical reasons, cannot be sensed by distant geosynchronous satellites.

With NOAA-18 successfully placed in orbit, the 45-year legacy of high-tech weather forecasts that we're accustomed to will go on.

Find out more about NOAA-18 and the history of polar-orbiting weather satellites at http://goespoes.gsfc.nasa.gov/poes. For kids and anyone else curious about the concept, the difference between polar and geosynchronous orbits is explained at http://spaceplace.nasa.gov/en/kids/goes/goes_poes_orbits.shtml. This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

NOAA-18, the newest in a long line of weather and environmental satellites, launched May 20, 2005.

The River's Edge

BY ERIC YOUNG

Suckers for a supernova

JULY 9, 2005 Following a week of earth-bound holiday sky shows and the success of the Deep Impact space mission, we gathered to watch for our own celestial fireworks. Summer sky-muck and haze had the firmament dancing and sparkling in our optics, yet we persevered into the night.

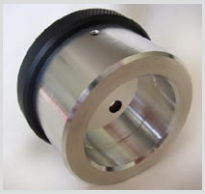
CANDID CAMERA Who's that guy on TV? Why, if it isn't our own Mark Brown, representing the McDonnell Planetarium at the St. Louis Science Center. Mark was on local TV and radio talking up the Deep Impact mission. He gave a great vocal impression of the impactor smashing into comet Tempel 1.

WHO LOVES YA, BABY? Night owls enjoyed Tootsie-Pops courtesy of club sweetheart Rita Breeden.

PLUGGED VS. UNPLUGGED In the ongoing battle of the GoTo's vs. the traditional starhoppers, Mike Veith is experimenting with controlling his ETX using his laptop computer. Mike said he'd tested it indoors and it worked perfectly — a comment just asking for eye-rolls and snickers. (How can you tell if it's aimed correctly *indoors*?) Mike also connected his laptop to the ignition in his car, which promptly started and headed back to Edwardsville without him.

Mike Veith connects his laptop to his ETX telescope.

TIME FOR A TUNEUP



Keeping the optics in line is an ongoing challenge for owners of Newtonian reflectors. Dennis Rippelmeyer aligned Deb Wagner's telescope using his recently purchased Infinity 2" Autocollimator. The Infinity, which shows multiple images of the center dot in a Newtonian's primary mirror, allows the user to more precisely adjust the telescope's collimation. Visit the web site at www.catseyecollimation.com.

EASY, PAVLOV Salivating profusely, Jamie Goggin said he found a secret spot for gathering wild raspberries — enough for his wife to make a delicious pie. Like a good fisherman, Jamie refused to reveal the origin of his abundant harvest.

SUPER-DUPER Folks with bigger scopes looked for a supernova visible in M51, the Whirlpool Galaxy, but the "new star" was beyond the reach of even the biggest scope we had on hand. Mark Brown was taking photos and his images clearly showed the supernova just outside the galaxy's bright core. (In recent weeks the supernova has begun to fade. Ah, fleeting fame!)

August 2005

RIVER BEND ASTRONOMY CLUB

July 2005

S	M	T	W	T	F	S
26	27	28	29	30	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	1	2	3	4	5	6

September 2005

S	M	T	W	T	F	S
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	1

Holidays | Moon Phases | RBAC | Space Mission | Observing | Trivia

Sun	Mon	Tue	Wed	Thu	Fri	Sat
31	1	2 Messenger: Earth flyby	3	4 New Moon 10:05 p.m.	5 Neil Armstrong's 75th birthday	6 RBAC meeting 8 p.m.
7 Neptune at opposition	8	9	10 Launch of Mars Recon. Orbiter	11	12 Perseids peak First quarter 9:38 p.m.	13 ALCON Expo in Kansas City
14	15	16 Mars Winter Solstice	17	18	19 Full Moon 12:53 p.m.	20 30th ann. of Viking I launch (1970)
21	22 Cassini: Titan flyby	23	24 Mercury at greatest elongation	25 Northern Iota Aquarids	26 Last quarter 10:18 a.m.	27
28	29	30	31 Uranus at opposition	1	2	3

CALENDAR BY ED CUNNIUS