

 **Current** FEBRUARY
Astronomy 2005
RIVER BEND ASTRONOMY CLUB NEWSLETTER



Stars in the north sky appear to circle the celestial pole — an imaginary point above our home planet's North Pole. Terry Menz explains this concept in a kid-friendly way as she twirls a black umbrella with the circumpolar constellations drawn inside. PHOTO BY ERIC YOUNG.



RIVERBENDASTRO.ORG

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
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Monthly Meeting

Saturday, February 12th, 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) _____ Youth membership(s)
 @ \$20.00/year @ \$15.00/year
 (18 years or older) (under 18)

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

Signature _____

Date _____



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SEPTEMBER 04

Outreach effort rewarded

Night Sky Network awards RBAC a dream trip to JPL

BY MARK BROWN

On February 18, 2004, RBAC received notification of its acceptance for membership in the NASA Night Sky Network, a partnership of amateur astronomy clubs, NASA, the Astronomical Society of the Pacific, and the Astronomical League. A few weeks later our first NSN outreach toolkit arrived: *PlanetQuest: The Search for Another Earth*.

To remain a member in good standing of NSN, the club was required to use the outreach toolkit in a minimum of five events a year. Nearly a year later we've come full circle and have more than exceeded our membership requirements. To date, we've logged 11 outreach events including club meetings, school presentations, public star parties and also the annual astronomy day celebration.

Membership benefits We knew early on that there were also benefits to our membership — the club would be eligible for “free NASA stuff” including books, posters, and even green laser pointers. Basically, the more events the club logged the better our chances at winning some freebies. Each official outreach event is placed in a prize drawing which is held each quarter throughout the year. At the start of the new year, NSN compiled nearly 800 events that had been logged in 2004. On January 7, 2005, the following e-mail message arrived:

Congratulations! Your club has won the NASA Night Sky Network's Annual Drawing from events held in 2004 by clubs who have logged the goal of five or more NSN events! Your club's name has been

California, here he comes


A tireless promoter of astronomy outreach, Mark Brown got us into this national program, and now he'll get what he deserves! Mark was the logical choice to represent our club at JPL's open house weekend in the Spring. Congratulations, Mark!

drawn to send one of your members to the Jet Propulsion Lab (JPL) in Pasadena, CA, for the JPL Open House Weekend May 14–15, 2005. Roundtrip airfare and three nights hotel accommodations (Friday night through Sunday night, May 13–15) will be paid for by the Night Sky Network.

Certainly this was something I had not anticipated and came as a complete surprise. What's interesting is that our club started out relatively small but has grown. This can partially be attributed to the outreach we conduct in our communities. It's exciting to know that our efforts in this program are being recognized both locally and nationally and we are experiencing some of the benefits offered by this program.

Making a difference Outreach means getting out into our communities to educate and to make a difference in understanding astronomy, the space sciences, and future missions. In my opinion, some clubs live by the idea that this is a competition between clubs and logging the most events is what's important. I see it in a different way — it's the quality of the outreach we do and not necessarily the number of people we reach. Although we've logged 11 events, RBAC has reached out to approximately 600 people through our efforts.

We now have two NSN toolkits for use in our program, *PlanetQuest* and *Our Galaxy, Our Universe*. You do not need to be an educator to use these kits. Simple instructional DVDs show you how to convey the material.

I encourage you to check out the kits from the RBAC library and use them in your local schools, star parties or any other event. In the spring, many schools start incorporating astronomy into their lesson plans, and teachers are always looking for help on the outside — especially from amateur astronomers. Please do your part and help out in any way that you can. In the end, it benefits education, our communities and River Bend Astronomy Club. 

Starry Night

Distant suns shine even with clouds overhead

BY JEFF AND TERRY MENZ

Starry Night, an annual event designed to introduce people to the world of astronomy, was held at the Children’s Museum on Saturday, January 15, 2005. Even though it was bitter cold and cloudy, visitors packed the museum to see River Bend Astronomy Club displays and special presentations.

Using the NASA Night Sky Network kit, the club provided demonstrations, illustrations, and explanations to answer questions such as, “Where are the distant worlds? How do we find planets around other stars? Why do we put telescopes in space? How do we know if there is life on other planets?” Other demonstrations explained why the Sun looks flat at dusk and why the stars seem to move in circles.

The kids appeared genuinely enthusiastic and engaged in the subject. We were glad to hear the kids volunteering the knowledge they had on the Mars rovers and the Huygens probe, which showed that they were interested and informed of current astronomical

events, and were trying to tie all of this information together. The students asked many questions, and it was wonderful to have such a complement of astronomy experts (that is to say, club members!) on hand to field those that were more complex. Having a scout troop there on a quest for a merit badge prompted many of the inquiries.

Mark Brown’s demonstration of how to “cook” a comet captured the interest of both parents and children. They asked about the recipe and wanted to understand how comets differ from meteors. The bubbling, gassy comet and Mark’s lucid explanation — followed by a touch and feel opportunity — was the highlight of the evening.

The display of telescopes and binoculars, the comet demonstration, the planet presentations, and the inside viewing helped make up for the disappointing weather. The audience seemed genuinely pleased with the Children’s Museum/RBAC event. [RB](#)

Starry Night brought the wonders of space down to Earth: Tom Foster, right and center, speaks to a group of scouts. Below, Jace Perham tells how he star-hops his way around the sky using his big telescope.



ERIC YOUNG

MARK BROWN

River Bend Review

BY ERIC YOUNG

Astronomy lite: Tastes great, less filling

Whenever clouds shut me out of my 15-year hobby I turn to *Sky & Telescope* magazine. Perusing its elegant pages and well-written articles I vicariously explore the universe.

Almost a year ago, S&T's staff launched a new magazine, *Night Sky*, aimed at beginners (or should I say, helping to aim beginners skyward). Does it captivate an old warhorse like me? You bet. Here's why.

Good company Authors, artists and photographers of award-winning S&T are lending their talents to the new magazine, including editor Kelly Beatty. "We created *Night Sky*," he says, "because it filled an important need: a magazine truly designed for beginning stargazers (or, as the cover proclaims, '*Backyard Astronomy for Everyone*')."

Everyone?

It's true. Assuming nothing, *Night Sky* makes astronomy approachable. The writing is easy to understand, with unfamiliar terms defined along the way. Beautiful photography and crystal-clear information graphics convey the wonders of the universe.

"One important part of our editorial formula," says Beatty, "is to give newbies a success-oriented, 'you-can-do-it' approach to viewing the heavens." He's right: contagious enthusiasm spills from every page.

The eyes have it *Night Sky* isn't driven by an "aperture fever" mentality — no, far from it. Says Beatty, "We don't assume that readers have telescopes — we make sure that each issue features lots of what I call 'eyeball astronomy,' things you can see in the sky if you've only got a few minutes to step outside and stargaze."

However, once they've purchased optics, *Night Sky* aims to help budding enthusiasts get the most out of their binoculars and telescopes.

Articles recommend unaided-eye, binocular and telescopic objects. Again, something for everyone. A recent issue's report on the Orion Nebula covered




"Backyard Astronomy for Everyone" — Clearly written articles and great images galore

all the basics of appreciating this cradle of star birth. A piece on eyepieces offered a thorough introduction to these essential accessories.

The magazine's heart, two all-sky charts, pair a star and stick-figure constellation diagram with a photo-realistic sky view on facing pages. This comparison gives a sense of scale and helps translate abstract star charts into heavens-above reality.

Down-to-earth "You'll see that there's lots of S&T-type material we've chosen *not* to include in *Night Sky*," says Beatty. "You won't find news items or feature articles about cosmology, for example. Instead, we concentrate on getting readers outside so they can see firsthand everything the sky has to offer, and we strive to do that with a minimum of jargon and complexity."

Clear skies According to Beatty, "We've gotten an incredibly enthusiastic response — not just from our target readers but from veteran observers who're learning some new things themselves. More and more clubs are recommending it to new members."

Now, the sky's the limit. "We're already selling about 50,000 copies of each bimonthly issue," says Beatty. "Yet more than a million telescopes are sold each year, so we hope to reach many, many more newcomers in the years ahead." 

BY PATRICK L. BARRY AND DR. TONY PHILLIPS

Stardust up close

Like discarded lumber and broken bricks around a construction site, comets scattered at the edge of our solar system are left-over bits from the “construction” of our solar system.

Studying comets, then, can help scientists understand how our solar system formed, and how it gave rise to a life-bearing planet like Earth.

But comets have long been frustratingly out of reach — until recently. In January 2004 NASA's Stardust probe made a fly-by of the comet Wild 2 (pronounced “vilt”). This fly-by captured some of the best images and data on comets yet ... and the most surprising.

Scientists had thought that comets were basically “rubble piles” of ice and dust — leftover “construction materials” held together by the comet's feeble gravity. But that's not what Stardust found. Photos of Wild 2 reveal a bizarre landscape of odd-shaped craters, tall cliffs, and overhangs. The comet looks like an alien world in miniature, not construction debris. To support these shapes against the pull of gravity, the comet must have a different consistency than scientists thought.


“Now we think the comet's surface might have a texture like freeze-dried ice cream, so-called ‘astronaut ice cream’: It's solid and can assume odd, gravity-defying shapes, but it's basically soft and crumbles easily,” says Donald Brownlee of the University of Washington, principal investigator for Stardust.

Scientists are currently assembling a 3-D computer model of this surface from the photos that Stardust took. Those photos show the sunlit side of the comet from many angles, so its 3-dimensional shape can be inferred by analyzing the images. The result will be a “virtual comet” that scientists can examine from any angle. They can even perform a virtual fly-by. Using this 3-D model to study the comet's shape in detail, the scientists will learn a lot about the material from which the comet is made: how strong or dense or brittle it is, for example.



The Stardust spacecraft used a grid holding aerogel to capture dust particles from comet Wild 2. In this test, high velocity dust particles are stopped unharmed at the end of cone shaped tracks in a sample of aerogel

Soon, the Stardust team will get their hands on some of that material. In January 2006, a capsule from Stardust will parachute down to Earth carrying samples of comet dust captured during the flyby. Once scientists get these tiny grains under their microscopes, they'll get their first glimpse at the primordial makings of the solar system.

It's heading our way: ancient, hard-won, possibly surprising and definitely precious dust from the construction zone. 

Find out more about the Stardust mission at stardust.jpl.nasa.gov. Kids can read about comets, play the “Tails of Wonder” game about comets, and hear a rhyming story about aerogel at <http://spaceplace.nasa.gov/en/kids/stardust/>. This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

The River's Edge

BY ERIC YOUNG

A comet we wish we'd known

JANUARY 8, 2004 Actually, this is written a week after we'd planned to travel to Greenville College Observatory to enjoy a nice dark-sky view of Comet Machholz (C/2004 Q2). This dazzling 3rd-magnitude comet, perfectly placed for seasonal viewing, proved out-of-reach for most RBACers due to endless clouds and rain. We pretty much don't want to talk about it so let's change the subject, okay?

I MADE IT THROUGH THE RAIN

Our new treasurer, Mike Veith, was on a cruise ship during our cloudy meeting. Maybe Mike and his wife saw a star or two while they danced the night away.

READY TO TAKE A CHANCE AGAIN

Several members/friends haven't been seen in awhile. What're you folks up to these days? Drop us a line even if you can't make the meeting so we know you're still breathin'.

SOMEWHERE DOWN THE ROAD

Perhaps the topic most on people's minds — other than the weather — has been the disheartening news of laser pointer mischief: troublemakers have aimed beams into aircraft cockpits. Now some fear the pointers could be banned... Laser pointers project a concentrated beam of light far into the night sky, making them the perfect teaching tool. When you trace constellations with your hands you never quite know if people "get it" or not, while lasers make it easy for an audience to see what you're aiming at. Visit Sky Online for laser pointer safety tips: skyandtelescope.com/observing/article_1429_1.asp

THIS ONE'S FOR YOU RBAC was one of five winning clubs in the Night Sky Network events contest. (See story, page 3.) This is the perfect opportunity to send Mark Brown packing. He promises to smuggle top-secret souvenirs out of the spacecraft lab. Who knows? Next he may win a free trip to jail.




"Between clouds and long bouts of swearing" is how Ed Cunniss shot this image of Comet Machholz near the Pleiades. "I set up late Saturday night, January 8th — but these were all taken after midnight," says the budding astrophotographer.

LOOKS LIKE (SHE) MADE IT

The certificate's already in a frame... "Probably the only one I'll get for a long, long time," says Lois Butler of her new Binocular Messier Club certificate from the Astronomical League. Binoculars are a rewarding yet easy-to-use optical aid, and Lois made the most of them by traveling to a dark site in quest of as many Messier objects as she could pluck out of the sky. Thus she joins the ranks of amateur astronomers who've participated in this popular observing program. Got some basic binoculars? Give it a try: www.astroleague.org/al/obsclubs/binomess/binomess.html

I WRITE THE SONGS It's time to begin planning for Astronomy Day 2005: April 16th. Mark Brown will start asking vendors for donations.

MANILOW MAGIC All the headlines in this month's River's Edge are Barry Manilow song titles. At the January meeting we learned one of our members is quite a fan of the big-beaked singer-songwriter, although our friend's uncomfortable talking about it and probably a little insecure about his masculinity. That's alright, *loneastronomer*, your secret's safe with us! 

February 2005



January 2005

S	M	T	W	T	F	S
26	27	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	31	1	2	3	4	5

March 2005

S	M	T	W	T	F	S
27	28	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

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

Sun	Mon	Tue	Wed	Thu	Fri	Sat
30	31	1	2 ● Last quarter 1:27 a.m.	3	4	5
6 ● Ast. Rolling Stones closest to Earth	7	8 ● New Moon 4:28 p.m. ● Mercury close to Neptune	9 ● Jovian moons cluster @ 10:00 p.m.	10	11	12 ● RBAC meeting 7 p.m.
13	14 ● Valentine's Day	15 ● Temple 2 at perihelion ● First quarter 6:16 p.m.	16	17	18 ● 75th ann. Pluto's discovery ● Tsuchinsha n 1 closest to Earth	19
20 ● Mercury close to Uranus	21 ● President's Day	22	23 ● Full Moon 10:54 p.m.	24	25	26
27	28	1	2	3	4	5