



Current **SPRING**
Astronomy **2006**

RIVER BEND ASTRONOMY CLUB NEWSLETTER



**Glint of a warrior's sword: dust and gas coalesce, igniting nuclear fires.
The Orion nebula captivates stargazers the world over, a misty patch
of sky heralding the birth of starlight. PHOTO BY ED CUNNIUS**

Northern exposure

Report from the Illinois Dark Skies Star Party

BY DENNIS RIPPELMEYER

It was cold. It was beautiful. It was what I had hoped for. Last October I spent a weekend at the fourth annual Illinois Dark Skies Star Party.

Over 100 people attended the event, sponsored by the Sangamon Astronomical Society and the St. Louis Astronomical Society, held at the Jim Edgar Panther Creek State Park.

The park is very large and well-maintained. The park service turns off all lights in the area during the event. They boast mag 5 to 6 naked-eye visibility and they weren't just bragging.

Saturday night the winds died after sunset but clouds remained after nightfall. Eventually the skies cleared up and the celestial view was all they said it would be. The double cluster and the Andromeda galaxy were quite visible without optical aid. We all started bagging one target after another — visiting neighboring scopes to view “something else”.

After several hours of observing, I decided to grab some shut-eye and return to the scope around 4:00 a.m. to nail the Horsehead Nebula. My timing was perfect as Orion was high in the sky and was “in your face”. My preparation, however, was lacking as I noticed I did not plug in the secondary heater and the mirror was totally covered with dew. I spent some time scanning the heavens with my eyes before turning in for the night.


I jumped at the opportunity when offered a look at the Blue Snowball (an object that kept evading me). I never realized it was so small – that's why I never found it.

Illinois Dark Skies Star Party 2006

The Fifth Annual Illinois Dark Skies Star Party will be held September 21st–24th, 2006, at the Jim Edgar Panther Creek State Fish and Wildlife Area (JEPC), 25 miles northwest of Springfield, Illinois in eastern Cass County. This area boasts some of Illinois' darkest skies. Naked eye views of 5 and 6 magnitude objects are not uncommon. Plans for star party events include guest speakers, presentations and astrophotography contests, and the park has lots of daytime activities. Visit www.sas-sky.org for more information.

I was camped with two members of the River Bend Astronomy Club. On Saturday, two more relocated to our area from an adjacent camping area. There was a lot of discussion Saturday evening as we waited for darkness to fall.

The second night was clear as a proverbial bell and viewing began as night settled in. There was a lot of chatter and sharing of views as some of the more difficult targets were found and some of the old favorites showed up in the eyepiece as never before under those pristine skies. I jumped at the opportunity when offered a look at the Blue Snowball (an object that kept evading me). I never realized it was so small — that's why I never found it. My best contribution to the group for the night was the Veil Nebula. With 18" of aperture and a UHC filter it was more amazing than I have ever seen it before due to the wonderful skies. Direct view — no averted vision — it was almost like the photographs. This will be one of those views that gets burned into my memory for years to come. Later on I decided against retrying for “horsey” in the morning since I was really getting tired and figured I had better get some sleep before hitting the road Sunday morning.

This was a great event and I expect it to grow each year. I know I'll be back. 

Which scope should I buy?

A beginner with \$500 asks, and two members respond

BY BILL BREEDEN AND DENNIS RIPPELMEYER

GO-TO BILL SAYS:

Whoa! Huge question! I perused telescope ads for six months before finally buying. Here is what you want to consider:

1. Aperture (Bigger is better.)
2. Weight (Lighter is better.)
3. Computerized (Tracking is REALLY nice, but computers cost more.)
4. Where you will observe from (portability)
5. Astrophotography (if so, EQ mount is better.)
6. Price (totally up to you)

Then of course, there's the three main different types of optics:

1. Refractors (all lenses, great for moon/planets)
2. Reflectors (all mirrors, great for deep-sky)
3. Cassegrains (lenses and mirrors, great combination compromise)

The Meade LX-90 that I purchased cost several times more than a basic telescope but has everything I wanted (go-to, aperture, features) and is at the upper limit of portability (8-inch aperture).

Computerized go-to is nice, but trust me, it is *no substitute* for learning the sky and using star charts. The computer tracks, which means it follows the object and keeps it centered for you, even if you walk away. Non-computerized telescopes give you more aperture for the price, but you have to nudge them every 30 seconds to keep the object in view.

Meade, Celestron, and Orion make *very nice* telescopes in the \$500 range, but your choices really open up if you can spend \$1000 – \$1500.

Check out the Intelliscope by Orion (non-tracking), and the Meade 8 inch LX-90 (fully computerized go-to and tracking.)

Most of all, enjoy the research! No matter what you buy, you'll want something else anyway! Also, see the Orion catalog (www.telescope.com). It has *lots* of information to get you started.

BIG-DOB DENNIS SAYS:


Bill has some very good points to consider. Also, if you want to stick to \$500, there are always a couple of accessories you'll want.

The 30mm finders supplied on most scopes are not too good and, since they invert the image, tend to add confusion and frustration. I'm partial to the non-magnifying finders like the Telrad, Red Dot or Orion's EZ Finder II. If you want to stick with a finder with some magnification, try a 50mm correct image finder. Anyway, if a scope comes standard with a 25 or 30mm "frustrator", call the seller and see if you can upgrade.

You will be wanting additional eyepieces or a barlow to give you a wider range of magnifications and viewing field. Most scopes are sold with two or three eyepieces. They used to be of marginal quality, but lately I've seen a lot of Plössls packed with new units: not high-end Plössls but still a step up from what used to be standard (Kellners & modified achromats).

Bill pretty well summed up scope choices. The prime directive here is "The best scope for you is the one you will use the most". The second is "Aperture Rules". The larger aperture will show dimmer objects and will allow greater detail at higher magnification. It's always a compromise. That's why after a few years, most amateurs have more than one scope. I have an 18" dobsonian which I love. The views are awesome. It, however, is not the most used. I have a 4" refractor sitting at the ready on the sunporch that gets me outside under the stars most often.

You'll have to choose whether you want to put more money into optics or electronics. Go-to is nice but I prefer the huntand yes, sometimes frustration.

If I were to recommend a starter setup, I would stick with a dobsonian reflector with reasonable aperture and f-ratio — 6" to 10" mirror at f/6 to f/8 — and a few accessories. Looking at the Orion website: XT-8 8" f5.9 Telescope with 25mm and 10mm eyepieces: \$360; 2x Barlow: \$40; EZ Finder: \$35 (or 50mm Correct Image Finder \$80), collimation eyepiece: \$40. 

BY PATRICK L. BARRY

Micro-sats with macro-potential

Future space telescopes might not consist of a single satellite such as Hubble, but a constellation of dozens or even hundreds of small satellites, or “micro-sats,” operating in unison.

Such a swarm of little satellites could act as one enormous telescope with a mirror as large as the entire constellation, just as arrays of Earth-bound radio telescopes do. It could also last for a long time, because damage to one micro-sat wouldn't ruin the whole space telescope; the rest of the swarm could continue as if nothing had happened.

And that's just one example of the cool things that micro-sats could do. Plus, micro-sats are simply smaller and lighter than normal satellites, so they're much cheaper to launch into space.

NASA plans to launch its first experimental micro-sat mission, called Space Technology 5. As part of the New Millennium Program, ST5 will test out the technologies needed for micro-sats — such as miniature thrust and guidance systems — so that future missions can use those technologies dependably.

Measuring only 53 centimeters (20 inches) across and weighing a mere 25 kilograms (55 pounds), each of the three micro-sats for ST5 resembles a small television in size and weight. Normal satellites can be as large and heavy as a school bus.

“ST5 will also gather scientific data, helping scientists explore Earth's magnetic field and space weather,” says James Slavin, Project Scientist for ST5.


Slavin suggests some other potential uses for micro-sats:

A cluster of micro-sats between the Earth and the Sun — spread out

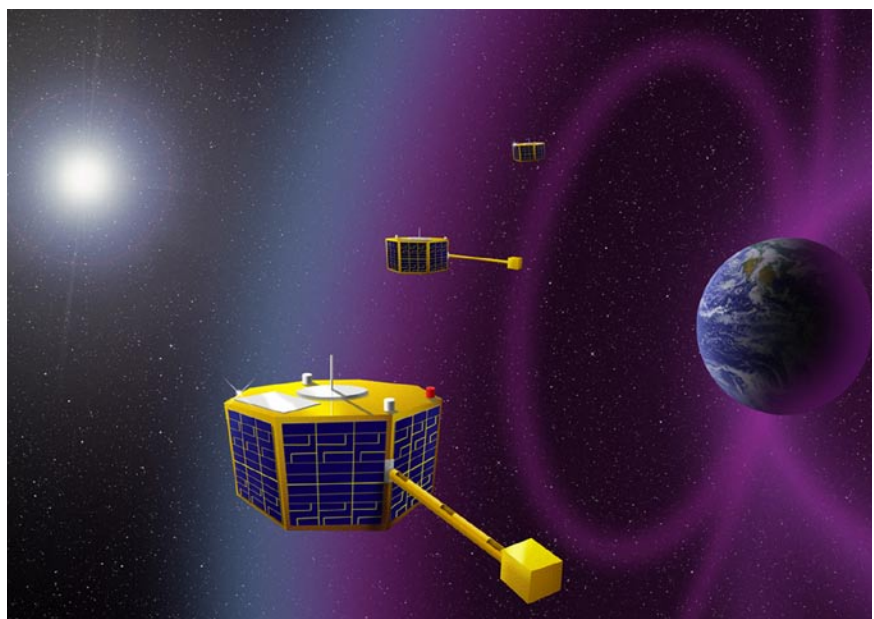
The Space Technology 5 mission will test micro-satellite technologies.

in space like little sensor buoys floating in the ocean — could sample incoming waves of high-speed particles from an erupting solar flare, thus giving scientists hours of warning of the threat posed to city power grids and communications satellites.

Or perhaps a string of micro-sats, flying single file in low-Earth orbit, could take a series of snapshots of violent thunderstorms as each micro-sat in the “train” passes over the storm. This technology would combine the continuous large-scale storm monitoring of geosynchronous weather satellites — which orbit far from the Earth at about 36,000 kilometers' altitude — with the up-close, highly detailed view of satellites only 400 kilometers overhead.

If ST5 is successful, these little satellites could end up playing a big role in future exploration. The ST5 Web site at nmp.jpl.nasa.gov/st5 has the details. Kids can have fun with ST5 at spaceplace.nasa.gov, by just typing ST5 in the site's Find It field. 

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.



BY MISSA LAYNEUS

From the Big Bang to Boötes

UPON THE COVER Taking a break from his usual monkey business, Ed Cunnius captured his first — and stunning — astrophotos, including this view of M42 alive with rich color. These were his specifications: Canon 10D camera, AstroPhysics 105mm f/6 refractor and a Tele Vue 0.8x Photo Reducer/Field Flattener, hand guided on a Losmandy GM-8. ISO was set to 200. M42 is a composite of a 5 minute, a 1 minute, and a 15 second exposure — each with a dark frame subtracted before they were masked together in PhotoShop. Sky was a Bortle Class 1, with seeing ranging from very good to excellent. *Way to go, Ed!*

PERFECT EVENING “Saturday night, January 14, 2006, was absolutely perfect for the Starry Starry Night Event at the Children’s Museum in Edwardsville, Illinois,” reported Bill Breeden. “Four more members of RBAC were also there: Mike Veith with his Meade ETX Maksutov-Cassegrain telescope, Jamie Goggin with his large Dobsonian reflector, and Jeff Menz with his Schmidt-Cassegrain telescope (SCT). I brought my LX-90 8-inch SCT, and got it set up at dusk for an evening of outreach and observing. The museum offered all sorts of astronomy activities for kids and their parents, including the NASA Night Sky Network program presented by Terry Menz. The kids were given a list of objects to observe, such as solar system objects, nebulas, star clusters, and galaxies, so they arrived at our telescopes with an observing plan. Maybe in a few short years these kids will be checking off M-objects as they work on their Messier certificates!”

NETWORKING The new coordinator for the NASA Night Sky Network, Dawn Baird, dropped us a line: “I wanted to let you know that I really enjoyed reading about your latest event. I even featured one of your experiences on the Night Sky Network website (See *Black Holes: Get Sucked In!* at nightsky.jpl.nasa.gov). Keep up the great work. I look forward to reading more about your exploits in astronomy!”

Get with the programs

A After finally finding some time under the stars, have you ever thought, “What should I observe? There’s so much up there!”

The Astronomical League offers nearly 30 observing programs to help in just that situation. Some are designed for the novice, such as Constellation Hunters, Universe Sampler, and Lunar Clubs. Other programs, including the Messier, Urban, and Planetary Observer Clubs, are better suited for intermediate observers. More experience deep sky hunters can hone their skills with the tougher selections of the Herschel, Arp Peculiar Galaxies, and Galaxy Groups and Clusters Clubs. Truly, there is a program for everyone!

Upon completion of each club, the observer is presented a certificate suitable for framing and a nifty lapel pin. These lists offer a low-stress way to enjoy the many wonders of the night sky.

Check out which program is right for you! Visit www.astroleague.org/observing.html

John Jardine Goss

Astronomical League Secretary

PLEIADS MEET THE MOON SpaceWatch reports: “During the next several years, skywatchers around the globe will periodically get a chance to watch the Moon pass in front of the most beautiful of all star clusters, the Pleiades. It will happen thirteen times in 2006 alone, beginning in January.” Visit: www.space.com/spacewatch/051202_night_sky.html

OPEN UP The Astronomical League has a new observing club, the Open Cluster Observing Club. Study 125 open clusters, classify all of them according to Trumpler classifications, and draw 25 of them. Go-to telescopes are permitted. For more information, contact Bill Breeden or visit the League website.

COLD FEET Bruce Kryka has acquired his Celestron Nexstar 11 telescope. "But it still hasn't been outside yet," says Bruce. "I'm not a winter person..."

CHANGES "I may have left the Hoyleton School and gone to Coulterville," says Lou Oberneufemann, "but I carried some fun with me. I now have a team of teachers involved in astronomy and they are: 1) receiving training from Hoyleton & Yerkes Observatory; 2) putting together star parties for the students; and 3) working on acquisition of additional observation equipment. Our last star party was a huge success!"

BIG BANG THEORY While driving to a star party on October 14th, 2005, Bill Breeden's T-Bird was totaled by a stop-sign runner. Bill (who's irreplaceable) survived, but what about his costly optics? "Miraculously," says Bill, "my LX-90 survived unscathed inside it's JMI case. I called the JMI company to tell them how terrific their case is, and how glad I am that I purchased it." JMI was pleased enough to feature Bill's story in an ad in *Sky & Telescope*. Insurance paid to replace Bill's damaged battery pack and tripod, and Astronomics agreed to replace a brand-new (now broken) solar filter. Now that's service!

STARS IN THEIR EYES Congratulations to Rita Breeden for receiving her binocular Messier certificate, and husband Bill for getting his telescopic Messier award. The Suburban Journals ran a story about the happy couple's popular public stargazing nights in Francis Park.

Messier Marathon 2006

Saturday, March 25th

(Rain date: Saturday, April 1st)

Sunset to sunrise at
Greenville College Observatory

Contact Jamie Goggin for more information.

AAAS FAMILY DAYS




The American Association for the Advancement of Science (AAAS) held its annual meeting in St. Louis. At Family Days, Eric Young tried his hand at a Segway (left) and Mark Young learned about the Mars rover.

UP IN THE CLOUDS Back from a whirlwind tour, Jeff Sjoquist reports: "In 7 days I visited 2 states and 3 foreign countries, added several new countries on my "fly-over" list and logged 42 flight hours (more than I usually get in 3 months) including about 4 hours of "combat support" time. On our way from Germany to Qatar, I flew over countries that a few short years ago would have shot me down if I had flown over them."

YOU DON'T SAY Can you say "Boötes"? Yeah, didn't think so. Lee Paul recommends the pronunciation guides on the Astronomical League web site for those hard-to-pronounce star names and constellations.

NEW DEMO Check out the latest NASA Night Sky Network kit, an introduction to how telescopes gather and focus light: perfect for your next event.

HEY, TEACH The Children's Museum in Edwardsville asked Terry Menz to teach astronomy at their summer camp in June, 2006. The four-day class will include peeks through our club's solar telescope.

IF YOU LOVED ME... Who has the nicest, most generous significant other when it comes to buying pricey astro-equipment? We'd say, but it would just start fights... 

The Skies Ahead

BY ED CUNNIUS

Times are changing here at Current Astronomy's Washington Bureau. The old monthly calendars are being replaced by a seasonal summary, and we hope members will find this new format more interesting and useful. I don't want to duplicate the tons of reference material available, so this space will now focus on local and club-related events, as well as things that might otherwise go overlooked: stuff like astronomy-related anniversaries,

current space mission landmarks, and reminders for celestial goings-on such as meteor showers.

The days are getting longer and the constellations seem to change faster this time of year due to the encroaching daylight — a week lost to cloudy weather can leave you with a very different evening sky. So give your winter favorites one last look, then slew your telescopes east toward the wonders of spring as a fresh season spins into view.

APRIL

- 1 **RBAC general meeting** at 7 p.m., Kronk Residence. NOTE: The meeting will be held at the Greenville Observatory *if* the Messier Marathon of March 25th gets clouded out.
Photo Op: The crescent moon slides close to the Pleiades.
- 2 Finally got the kids on a schedule? Time to start over: **Daylight Saving Time** begins. Set your clocks ahead one hour.
- 8 **Mercury** at Greatest Western Elongation (28 degrees).
- 11 Venus Express orbital insertion. The European Space Agency's Venus Express mission will be the first spacecraft to visit our nearest planetary neighbor in more than 10 years.
- 12 25th Anniversary (1981) 1st Space Shuttle Launch and 45th Anniversary (1961) 1st Man in Space, Yuri Gagarin
- 22 **Lyrid Meteor Shower peak.** The maximum hourly rate typically reaches 10, except for occasional outbursts that can reach 100.*
- 30 Cassini: Titan flyby. Cassini is scheduled to fly within 1,153 miles of Titan's surface at 20:58:00 UT.

MAY

- 5 **Eta Aquarids Peak.** Maximum hourly rates are about 10 for Northern Hemisphere observers.*
45th Anniversary (1961), 1st American in Space, Alan Shepard
- 6 **Astronomy Day**
- 20 Cassini: Titan flyby. Cassini is scheduled to fly within 1,168 miles of Titan's surface at 12:18:00 UT.

- 25 45th Anniversary (1961), John F. Kennedy's Moon Goal Speech.
- 30 40th Anniversary (1966), Surveyor 1 launch. Surveyor 1 achieved the first soft landing on the Moon by the United States. One of its important contributions was demonstrating that the lunar surface was dense enough to support a lander. (Speculation was that a lander would sink into the fine powder like quicksand.)

JUNE

- 3 **RBAC general meeting** at 8 p.m. Kronk residence.
- 40th Anniversary (1966), Gemini 9 Launch, with astronauts Thomas Stafford & Eugene Cernan
- 11 The Full Moon nearest the Summer Solstice is known as the Honey Moon. Watch for it today at 1:03 p.m. Unknown whether Alice and Ralph Kramden ever saw their famous namesake.
- 15 **June Lyrids Peak.** This shower produces mostly blue and white meteors at a maximum hourly rate of 8. About a third of the meteors leave trains.*
- 21 **Summer Solstice 12:26 UT.** The sun is directly overhead at the Tropic of Cancer.
- 24 **RBAC general meeting** at 8 p.m., Kronk residence. The club has opted for two June meetings due to the New Moon shifting to the end of the month, rather than have 7 weeks lapse between meetings.
- 30 35th Anniversary (1971), Death of three cosmonauts in Soyuz 11. Georgi Dobrovolsky, Vladislav Volkov, and Viktor Patsayev were found dead in their capsule after an otherwise successful re-entry. A faulty valve in the Soyuz capsule had let all the air escape 30 minutes before landing. The capsule's cabin was not large enough to let the cosmonauts wear space suits.

*All meteor shower information drawn from Gary Kronk's Comets and Meteor Showers website.

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
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2006 Meetings

March 4	June 3	Sept. 23
March 25	June 24	Oct. 21
April 1	July 22	Nov. 18
May 6	Aug. 19	Dec. 16

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Looked up lately?

Join River Bend Astronomy Club

Want to learn more about astronomy? 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 _____



River Bend Astronomy Club

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AUGUST 05