

New Year's Comet

*Paolo Candy, Osservatorio
Astronomico dei Monti Cimini, Italy*



Mark Brown, RBAC

Frosty visitor Comet Machholz (C/2004 Q2) traverses winter's glittering constellations. The comet brightened in mid-December to naked-eye visibility under dark skies and should command the attention of amateur astronomers until spring.



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
younger@wustl.edu

Submissions to the newsletter are encouraged. Contact the editor for more information.

Monthly Meeting

Greenville Observatory

Saturday, January 8th, 2005 • 7:00 p.m.

Meet at the Kronk's

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 "Ed Cunnius, Treasurer RBAC."

Signature _____

Date _____



c/o Gary Kronk, 132 Jessica Drive, St. Jacob, IL 62281
 web: riverbendastro.org e-mail: riverbendastro@att.net

SEPTEMBER 04

Frosty freeze

Mother Nature throws an astronomical snowball

BY GARY KRONK

Donald E. Machholz, Jr., was sweeping for new comets with his 15-cm Criterion Dynascope the morning of August 27, 2004. He discovered nine comets from 1978 until 1994, but about ten years had passed without any luck. Just before daybreak he suddenly swept up a diffuse object of magnitude 11 — comet number ten. Its orbit would reveal that this comet was probably last in the Sun's vicinity about 120 thousand years ago when Neanderthal man enjoyed prosperity during one of the warm periods between ice ages.


In 2004, Comet Machholz (C2004 Q2) sat several months in the region of Lepus and Eridanus, making a small loop in the sky, but around mid-December it began moving northward. The alteration in direction occurred because Earth was arcing around the sun and had begun to generally head in the comet's direction.

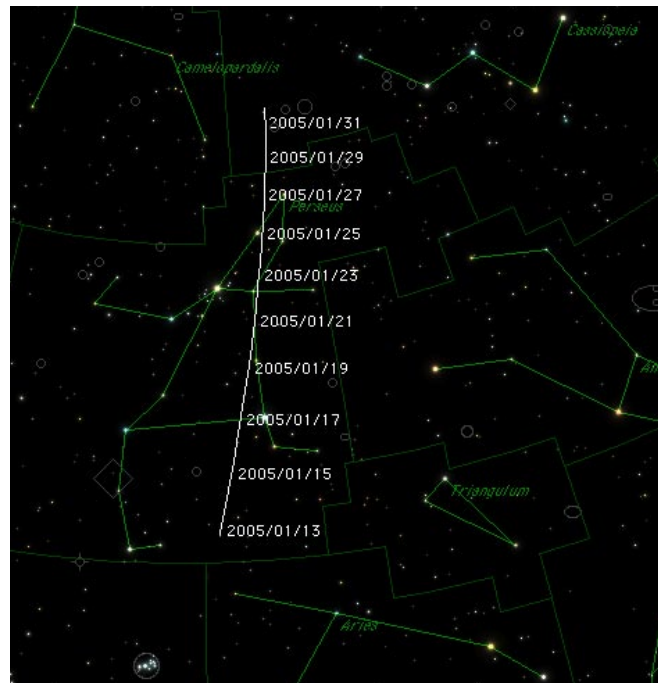
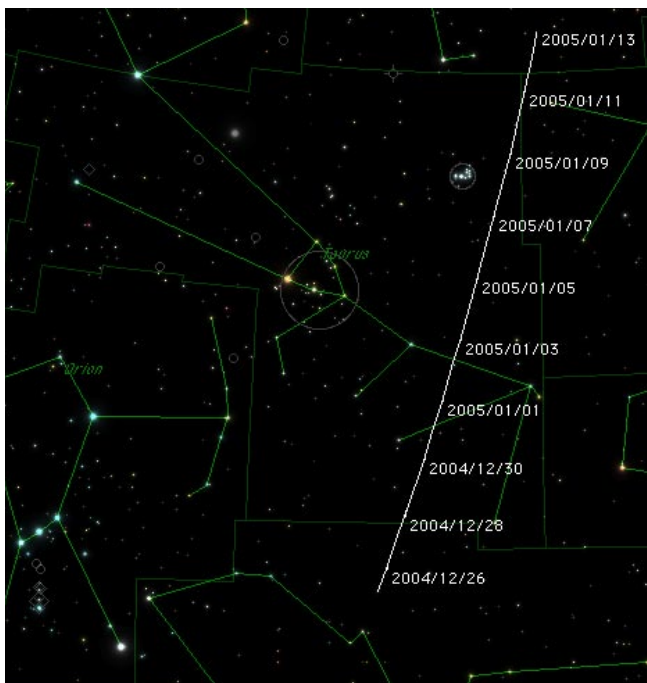
The comet will pass about 32 million miles from Earth on January 5. The total brightness is then expected to be between magnitude 3.5 and 4. The comet

will fade very slowly, even after passing closest to the Sun on January 24, with the magnitude dropping to 5 by early February and 6 by early March. The comet will pass about 5 degrees from the north celestial pole on the night of March 10.

It's definitely a nice comet. When I first saw it on December 3rd I didn't even look at a star chart — I just went out with my 20x80 binoculars and scanned the Eridanus region near Lepus. Here I found the comet after less than 10 seconds. It was quite large. I also obtained a few photos with my Canon Digital Rebel camera and the 100mm lens (unguided). These images showed a distinct green color and a hint of a tail.

Comet Machholz continues to attract the attention of RBAC members. Dennis Rippelmeyer also reported easily finding the comet with binoculars: "At 15x the nebulous head occupied a good percentage of the central field of view."

This wintry comet made a wonderful year-end gift that will keep on giving in early 2005. 



BY ERIC YOUNG

Book conveys passion for starlight

Astronomical discovery was once a tale written largely by amateurs. Then, the 20th-century's progression of "world's biggest..." telescopes sidelined the scientific potential of backyard optics.

Or so it seemed. In *Seeing in the Dark*, Timothy Ferris reports how amateur enthusiasm and dogged determination prevailed. With know-how, perseverance, and the ability to keep looking while professionals elbow for precious big-telescope time, amateurs still make significant contributions. Backyard surveys bag galleries of asteroids the pros are too busy to ferret out. (Comets and asteroids, those fender-benders of the solar system, remain hot topics.) And ever-improving digital imaging systems have amateur astronomers picturing planets with the clarity of the best ground-based observatories. Amazing.

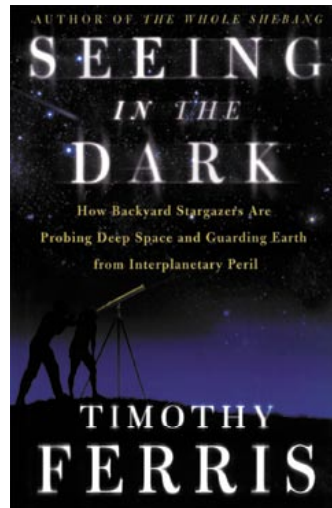
Nocturnal passion. A quote from comet-discoverer David Levy sums up the feelings of those who devote years to reaching for the stars: "Amateur astronomy means you do it from the heart — that you have to do it. It connects you, heart and soul, to the sky."

For some, a glint of starlight grabs hold like a physical addiction.

Some, like Ferris.

Ferris writes of his childhood under (then) dark Florida skies. He fondly remembers how his parents encouraged his love of the natural world and how he came to own his first telescopes. Rooftop stargazing bonded him with teenage friends and even brought the cops to raid his perch one night. Ferris's absorbing recollections are no mere self-indulgence; rather, he conveys some sense of how the bug catches us.

Super stars. Meet the popularizers of our discipline, the celebrated observer/imager/authors through whom we vicariously view the universe when we're holed up on cloudy nights. *Seeing in the Dark's* cover price is far less than we might splurge to get some one-on-one with these folks. Chapters offer engaging portraits of



Seeing in the Dark
Timothy Ferris

400 pages
Simon & Schuster
(September 5, 2002)
ISBN: 0684865793
9.6 x 6.4 x 1.3 inches

the men and women behind the telescopes, illuminating their loves — or manias. Meet people who've devoted their lives: Kingsley Wightman, Patrick Moore... invested a fortune: Edgar O. Smith... imaged the sky: Don Parker... seen more clearly: Stephen James O'Meara, Barbara Wilson... made thrilling discoveries: David Levy... and merged art with science: James Turrell. Ferris even conjures the ghost of legendary Mars-watcher Percival Lowell.

Space travel. A multi-part tour carries the reader from the solar system out to distant quasars, more than a dozen of which are visible in personal telescopes. Anticipating a neophyte's urge to see the sky, Ferris included basic stargazing information, simple star charts and observing techniques.

A must-read cosmic companion. *Seeing in the Dark* culls the musings, observations and analysis of a sensitive, intelligent mind, a worthy traveling companion on our journey through the cosmos. Ferris's words enlighten, and, like favorite astronomical targets, repay with fresh insight time and again. Dedicated "to stargazers everywhere," *Seeing in the Dark* inspires the stargazer in us all. [↗](#)

BY PATRICK L. BARRY AND DR. TONY PHILLIPS

Galactic surprise

Open an old astronomy textbook. The basic sketch you'll find there of galaxy formation is fairly simple: a vast cloud of diffuse hydrogen and helium gas condenses under gravity, and dense spots in the cloud collapse to form stars. *Voilà!* A galaxy.

But real galaxies are much more complex than that. A galaxy is a swirling "soup" of billions of stars and roaming black holes, scattered clouds of gas and dust, random flashes of star birth and exploding supernovas, and an unseen and mysterious substance called "dark matter." Over time, all these ingredients mix and interact — pulling and compressing and colliding — and somehow that interplay leads to the galaxies we see today. No wonder it's such a hard problem to solve!

Just over one year into its three-year mission, GALEX is already shedding some new light on the problem.

"Some of the discoveries GALEX has made will change our understanding of how galaxies develop and when, where, and why stars form in galaxies," says Peter Friedman, a researcher at Caltech and Project Scientist for GALEX.

This small space telescope, called the Galaxy Evolution Explorer (GALEX for short), makes its discoveries by taking pictures of millions of galaxies scattered over the whole sky. Some of these galaxies are close by (at least by astronomical standards of "close"), while others are as much as 10 billion light-years away. Because light takes time to travel through space, we see these distant galaxies as they appeared

Looking at these pictures, scientists were surprised to find many newborn stars in the outer parts of old, mature galaxies.



MCGRAW-HILL OBSERVATORY, KITT PEAK, ARIZONA, GREG BOTHUM, UNIV. OF OREGON

M81 is 10 million light years away. The image on the left was made from GALEX data and shows UV light from hot, new stars. These star forming regions are not detectable in the visible light image on the right.

billions of years ago. Comparing young galaxies from the distant past with older, modern galaxies will teach scientists about how galaxies change over time.

Looking at these pictures, scientists were surprised to find many newborn stars in the outer parts of old, mature galaxies. Scientists had assumed that as a galaxy ages, the clouds of gas needed to form new stars in these outer reaches either got used up or blown away. Finding so many new stars in these regions of old galaxies (such as Centaurus A, Messier 101, and Messier 81) shows that, apparently, they were wrong.

Friedman says that astronomers don't know yet how to explain these new findings. Rethinking and improving theories to explain unexpected discoveries has always been the way science makes progress — and GALEX is certainly making progress.

One thing is certain: It's time to re-write some old textbooks. [fb](#)

For more information, see <http://www.galex.caltech.edu/>. Kids can do a galaxy art project and learn more about galaxies and GALEX at <http://spaceplace.nasa.gov/en/kids/galex/art.shtml>

The River's Edge

BY ERIC YOUNG

Slow roasting by an open fire

DECEMBER 11, 2004 Good food, good friends, a good fire (until it went out) and good conversation. Isn't this what they mean by "Happy Holidays"?

K.C. CONVENTION Mark your calendar — the Astronomical League Convention and Expo will be held in Kansas City on August 12–13, 2005. There will be an astronomical trade show and vendor expo, a star-b-que at Powell Observatory, and a private exhibition at the Linda Hall Library where you can hold a Galileo first edition and read Herschel's journal. Information: Carroll-lorg@kc.rr.com

STARRY NIGHT The annual event will be held 5:30 p.m. to 7:30 p.m. on January 15, 2005, at the Children's Museum. Come and share your optics and your enthusiasm with area families. Information: loneastronomer@charter.net



Above: RBAC regulars (including Cookie the dog) gathered for the annual Holiday Star Party on December 11, 2004. Right: An RBAC irregular? Lois Butler models the latest in elf-wear — a flashing red star Santa hat.



WHERE'S THE MONEY? Just how did Mike Veith become our new treasurer? Mike claims we drugged his soda or maybe he just plain fell asleep during the November meeting when he was voted into office. Tough it up, Mike — be a man about it, okay? Please send your checks, money orders, and credit card numbers to Mike for "processing." Mike takes over this month from the old embezzler, Ed "Greenbacks" Cunniss.

GREENVILLE TRIP We're headed to Greenville College Observatory on January 8th to get up close and personal with Comet Machholz and other delights of the winter sky. Meet at the Kronk's at 7:00 p.m. and we'll form a caravan if you don't know the way.

WINNING ROSTER Please review your personal data in the club roster. Visit the RBAC Yahoo! Groups site and look in the Files folder: Members. The password is our club mascot, "stickman." E-mail changes to our Astronomical League correspondent, Jamie Goggin at jamie.goggin@ugsplm.com. Jamie updates this info. to ensure delivery of the *Reflector*.

PST BLUES Sure glad we got a solar telescope so we can watch the clouds go by. Someday it will clear, though. The popular PST has been featured in hot products issues of *Popular Science* and *Sky and Telescope*. In other PST news, the maker of these telescopes, Coronado Technology Group, was recently acquired by Meade Instruments Corporation: www.meade.com/nasdaq/news/coronado2.html

PAR FOR THE COURSE Some of the gang had a spare \$99 lying around when Meade offered a set of its multi-coated, parfocal, 4-element Plossl eyepieces at a bargain price. Parfocal means you're able to switch between eyepieces with little or no adjustment to the focus — a handy feature appreciated by serious observers.

AD ASTRA? The St. Louis Science Center planetarium made the news recently, and not the *good* news. The space portion of the Science Center was cited as a local “underachiever” by the St. Louis Post-Dispatch. A well-intentioned but maybe misguided remodeling of the planetarium several years back removed the seats, signaling a change in focus for the center’s astronomical shows and leaving star-theater traditionalists pondering the fate of the universe.



FIREFLY You’d expect an up-to-date guy like Jamie Goggin to have nothing less than the finest in planispheres. He recently acquired the *Firefly Planisphere Deluxe* by Storm Dunlop and Wil Tirion. This baby

plots all the Messier objects and has a declination chart to help you get your bearings. Jamie says he bought it to help plan his observing sessions. Although well-reviewed, the planisphere’s information is a little too tiny for comfortable night-time use.

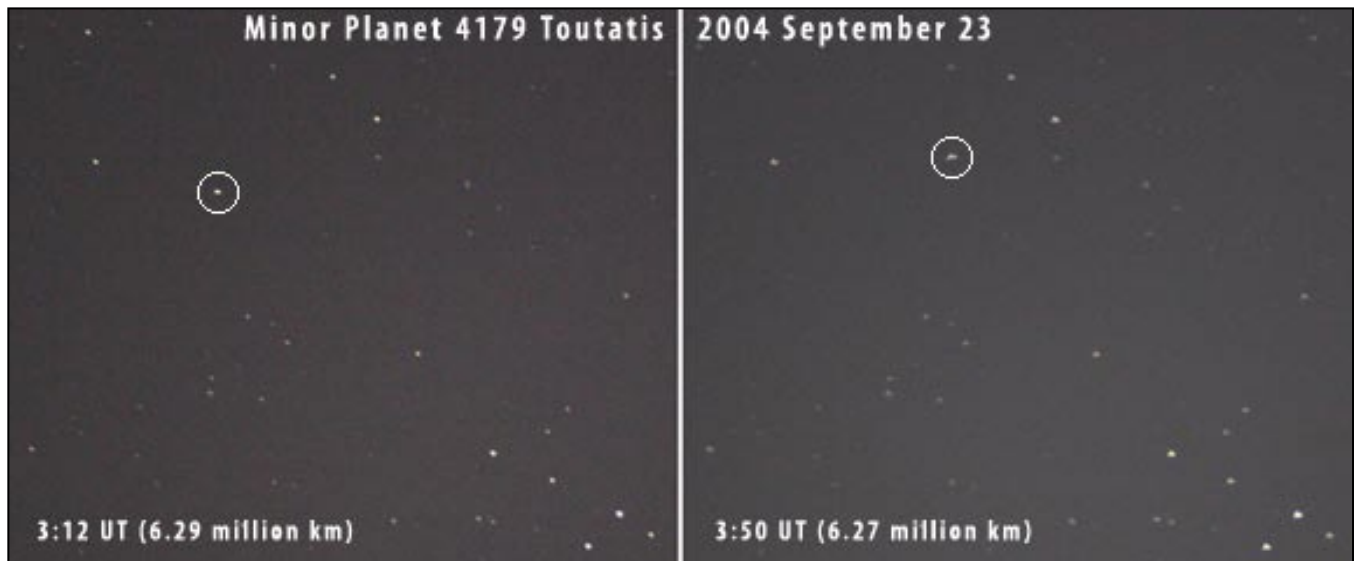
RBAC library list online

1. Visit the Yahoo! Groups web site.
2. View the selections in the Files folder, “Library.”
3. Decide what you’d like to borrow.
4. E-mail your choices to librarian Lois Butler... She’ll bring the material to the following meeting.
5. Read, view and enjoy.
6. Return.

Contact: lbutler@starband.net

PASSING FANCY An occultation of Jupiter by the Moon got Deb Wagner out of bed before rooster-rise on December 7th, only to find the sky socked-in. She waited and checked again. A hole in the clouds left no time to set up her telescope — Deb grabbed her binoculars just in time to see our familiar natural satellite pass in front of the planet.

AROUND THE SUN, AGAIN A comet in the sky, a yearful of celestial prospects ahead... we’re grateful for the good times we enjoyed in 2004 and anticipate many clear skies in the New Year. 🌌



Asteroid Toutatis whizzed through Capricornus last fall, passing 1.5 million kilometers from Earth on September 29th, when the asteroid was moving 30 degrees per day. RBAC members fielded questions from anxious folks who’d heard news reports of a dangerous close encounter. Never fear...Toutatis was still four Earth-Moon distances out of harm’s way. Photos by Gary Kronk.

January 2005



December 2004

S	M	T	W	T	F	S
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

February 2005

S	M	T	W	T	F	S
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	1	2	3	4	5

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

Sun	Mon	Tue	Wed	Thu	Fri	Sat
26 ● Full moon 9:06 a.m.	27	28	29	30	31	1 ● New Year's Day
2 ● Leslie Peltier b. 1900	3 ● Last quarter 11:46 a.m.	4	5 ● Comet Machholz closest to Earth	6	7	8 ● Greenville ● Kronk's @ 7:00 p.m.
9	10 ● New moon 6:03 a.m.	11	12	13 ● Saturn at opposition	14 ● Huygens Probe lands on Titan!	15 ● Starry Night 5:30-7:30 p.m.
16	17 ● First quarter 12:57 a.m. ● MLK Day	18	19	20 ● Buzz Aldrin b. 1930	21	22
23	24 ● Comet Machholz perihelion	25 ● Full moon 4:32 a.m.	26	27	28	29
30 ● Ast. Monty Python closest to Earth	31 ● No, not making this up.	1	2	3	4	5