



The constellation Crux and the Coal Sack in all their glory during Lee Paul's Southern Skies Fiesta Trip in Costa Rica. Page 3.
Photo courtesy of Lee Paul.

INSIDE THIS ISSUE

News: What's going on in our club? Page 3.

NASA Space Place: Some NASA science! Page 6.

Looked Up Lately? Let RBAC prepare your observing list! Page 7.



Monthly Meetings
 Saturday, July 18, 2009 * 7:00 PM
 Saturday, August 22, 2009 * 7:00 PM
 Saturday, September 19, 2009 * 7:00 PM
 Kronk Observatory
 132 Jessica Drive, St. Jacob, IL 62281

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.

Officers and administrators

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VICE-PRESIDENT	Jamie Goggin
TREASURER	Mike Veith
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FOUNDING MEMBERS	Ed Cunnius Kurt Sleeter

Contacts

MAIL River Bend Astronomy Club
 132 Jessica Drive
 St. Jacob, IL 62281

WEB www.riverbendastro.org
 EMAIL rbac@riverbendastro.org



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.astrroleague.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.

Current Astronomy
 EDITOR
 EDITOR EMERITUS

Bill Breeden
 Eric Young

Looked Up Lately?

Join River Bend Astronomy Club

Want to learn more about astronomy? The members of RiverBend 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 online discussion group.
- Borrow from the club's multimedia library.
- Borrow from the club's selection of solar telescopes.
- And that's not all! Through club membership you also join the Astronomical League, with its special programs and colorful quarterly newsletter *The Reflector* to enrich your hobby.
- We meet monthly, observe regularly, email news and quips constantly, and generally have a good time. Won't you join us?

Name _____
 Address _____
 City _____ State _____ Zip _____
 Phone _____
 Email address _____
 Where did you hear of our club? _____

How long have you been interested in astronomy? _____
 Do you have optical equipment? _____
 Are you afraid of the dark? ___Yes ___No (just kidding)
 I am submitted my application for:
 _____Adult Membership(s) _____Youth Membership(s)
 \$20/year each \$15/year each
 (18 yrs. and up) (17 yrs. and under)
 I enclose a check for \$_____ made out to:
 Mike Veith, Treasurer, RBAC
 Signature _____
 Date _____

Mail to: **River Bend Astronomy Club**
 c/o Gary Kronk, 132 Jessica Drive, St. Jacob, IL 62281.
 Email: rbac@riverbendastro.org

News

Southern Skies Fiesta 2009 Trip

By Lee Paul

This year's 8 day Southern Skies Fiesta Tour took place from February 21st to the 28th, 2009. It was sponsored for the seventh time by TravelQuest International Tours (www.travelquest.com) with Gary Seronik, Sky and Telescope Writer, as Tour Guide and on-board astro-aficionado.



Lee Paul at the 8 day Southern Skies Fiesta Tour. Photo courtesy of Lee Paul.

There were 32 participants in all from the U.S. and Canada, and all died-in-the-wool Astronomy devotees just like all of us. Since we were from all over North America, we boarded our various flights and converged on the city of San Jose', Costa Rica Saturday the 21st, meeting for the first time at the San Jose' Marriott. The Traffic Jams on the way from the Airport reminded me of those we see in Los Angeles, except I couldn't read the street signs or understand the cuss words!

After a pleasant evening of socializing and dinner we all went to our rooms to get a good night's rest and take out early Sunday Morning on an 85 mile bus trip to "La Ensenata" Lodge, which doesn't mean anything in Spanish that anyone knows of. I thought that a tad strange, but it could be worse and mean 'place of no return', or 'the end of the road'!

It turned out to be a delightful compound of some 20 Cabanas, a large Dining Center, with no doors or windows, and several mechanical buildings and garages, with staff quarters. The Dining Center has no exterior walls either, because there are only two

Seasons in Costa Rica; The Wet Season and The Dry Season. Every day is 95F and every night is 73F, year round. So if you like today's weather, you're gonna love tomorrow's!

There is no air conditioning in any building, but there is a nice almost constant breeze off of the Bay of Nicoya just a couple of hundred yards from the Cottages. The Cabanas all have lots of screened windows and ceiling fans that get plenty of use at night. They have full bathroom facilities and are quite pleasantly, but modestly, furnished with only red lighting.



Lee Paul's cabin at the 8 day Southern Skies Fiesta Tour. Photo courtesy of Lee Paul.

So I don't put my readers to sleep, I won't go into too much detail, except to say, your days are either occupied with nature trips, boat or tractor rides, birding walks, interesting conversation, or sleep if you prefer. The nights were all very dark and quite cloudless, except one, with excellent translucence, but only good to marginal seeing with the air currents coming off the Pacific heading up the Mountains. But all in all, well, just look at the pictures! They were all taken there at La Ensenada by folks like us, but maybe with a little more experience behind the camera.

I enjoyed the trip very much. I considered it well worth the \$1495.00 price tag. But I paid an extra \$395.00 for a private room, so I wouldn't be apologizing for my thunderous snoring every day!

Rather than going on at great length about all the marvelous experiences, suffice it to say, ask me if you want more information, and enjoy the pictures, as they do the Sky the justice it deserves. The

Northern Skies are very familiar, but with quite a different and surprising perspective, but the Southern Skies are gloriously fascinating and fresh, leaving you wondering why you waited so long to get there.



Orion from Costa Rica. Photo courtesy of Lee Paul.



The Milky Way. Photo courtesy of Lee Paul.



Eta Carina from Costa Rica. Photo courtesy of Lee Paul.



Alligators! Photo by Lee Paul.



Telescopes set up at the Southern Skies Fiesta 2009 in Costa Rica. Photo by Lee Paul.



Costa Rica coastline. Photo courtesy of Lee Paul.

New RBAC Patches for Members!

By Bill Breeden

Thanks to the efforts of Jeff and Terry Menz, members of the River Bend Astronomy Club now have official patches to show off their membership in our astronomy club! The 4" wide by 2" tall patches sport the River Bend Astronomy Club logo, and are perfect for attaching to a jacket or baseball cap.



New River Bend Astronomy Club patches are perfect for attaching to a jacket or baseball cap. Photo by Bill Breeden.

I Need YOU!

By Bill Breeden

I sincerely hope you are enjoying your revived RBAC newsletter. I am very new at this, so please help me by sharing your astronomy stories! Providing articles and photos will help me share the club's activities with the membership, and will make everyone's membership more fun and productive. Don't be shy – any astronomy news you can share will be appreciated, and will inspire others to observe and dive deeper into this terrific hobby of ours!

Please send your stories (and photos!) to me at williambreeden@sbcglobal.net.

At Your Service,

Bill Breeden, *Current Astronomy* Editor

Edwardsville Children's Museum Outreach: New Time on Oct. 24!

By Bill Breeden

Karla Danford, Director of Exhibits and Events at the museum, has asked that our outreach event scheduled for October 24, 2009, be CHANGED to 1:00 PM in the afternoon. The event will feature safe solar observing and telescope exhibits outdoors, weather permitting. The event will also include indoor presentations of the Night Sky Network kits. The event has been rescheduled for 1 to 3:30PM on October 24. Mark your calendar, and if you can help, please plan on arriving at 12 noon for set up.



Edwardsville Children's Museum, 722 Holyoake Road
Edwardsville, IL 62025.

We usually have quite a few families at the Children's Museum, and they are always happy to see us and our astronomy presentations. We can discuss ideas for activities at the June and July meetings. Perhaps we can even make a comet!



NASA Space Place

The Cool Chemistry of Alien Life

Alien life on distant worlds. What would it be like? For millennia people could only wonder, but now NASA's Spitzer Space Telescope is producing some hard data. It turns out that life around certain kinds of stars would likely be very different from life as we know it.

Using Spitzer, astronomers have discovered the organic chemical acetylene in the planet-forming discs surrounding 17 M-dwarf stars. It's the first time any chemical has been detected around one of these small, cool stars. However, scientists are more intrigued by what was *not* there: a chemical called hydrogen cyanide (HCN), an important building block for life as we know it.

"The fact that we do not detect hydrogen cyanide around cool stars suggests that that prebiotic chemistry may unfold differently on planets orbiting cool stars," says Ilaria Pascucci, lead scientist for the Spitzer observations and an astrophysicist at Johns Hopkins University in Baltimore, Maryland.

That's because HCN is the basic component for making adenine, one of the four information-carrying chemicals in DNA. All known life on Earth is based on DNA, but without adenine available, life in a dwarf-star solar system would have to make do without it. "You cannot make adenine in another way," Pascucci explains. "You need hydrogen cyanide."

M-dwarf and brown dwarf stars emit far less ultraviolet light than larger, hotter stars such as our sun. Pascucci thinks this difference could explain the lack of HCN around dwarf stars. For HCN to form, molecules of nitrogen must first be split into individual nitrogen atoms. But the triple bond holding molecular nitrogen together is very strong. High-energy ultraviolet photons can break this bond, but the lower-energy photons from M-dwarf stars cannot.

"Other nitrogen-bearing molecules are going to be affected by this same chemistry," Pascucci says, possibly including the precursors to amino acids and thus proteins.

To search for HCN, Pascucci's team looked at data from Spitzer, which observes the universe at infrared wavelengths. Planet-forming discs around M-dwarf stars have very faint infrared emissions, but Spitzer is sensitive enough to detect them.

HCN's distinctive 14-micron emission band was absent in the infrared spectra of the M-dwarf stars, but Spitzer did detect HCN in the spectra of 44 hotter, sun-like stars.

Infrared astronomy will be a powerful tool for studying other prebiotic chemicals in planet-forming discs, says Pascucci, and the Spitzer Space Telescope is at the forefront of the field. Spitzer can't yet draw us a picture of alien life forms, but it's beginning to tell us what they could—and could not—be made of. "That's pretty wonderful, too," says Pascucci.

For news of other discoveries based on Spitzer data, visit www.spitzer.caltech.edu. Kids can learn Spitzer astronomy words and concepts by playing the Spitzer "Sign Here!" game at spaceplace.nasa.gov/en/kids/spitzer/signs.



Do alien planets around other stars have the right ingredients for a pre-biotic soup?

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

Looked Up Lately?

Moon & Planets

Moon	Full 7/7, LQ 7/15, New 7/21, FQ 7/28, Full 8/5, LQ 8/13, New 8/20, FQ 8/27
Mercury	July: Not visible. August: Evening sky.
Venus	Morning sky.
Mars	Morning sky.
Jupiter	July: Late evening and morning sky. August: Up all night.
Saturn	Early evening.
Uranus	Late evening and morning sky.
Neptune	July: Late evening and morning sky. August: Up all night.

Asteroids & Comets

Asteroid 4 Vesta	5° north of Venus 8/25
Asteroid 27 Euterpe	8° south of Saturn 7/20
Comet C/2006 W3 Christensen	In Vulpecula 8/1 - 816
Comet 22P/Kopff	In Aquarius during July and August

Source: Astronomical Calendar 2009 by Guy Ottewill.

Deep Sky

July Observing List

Prepared by Bill Breeden

Double Stars

- _____ 16 / 17 Draconis SAO 30012 Const. DRA Type DS RA 16 36.2 Decl. +52° 55' Mag. 5.4 6.4 5.5
- _____ 36 Ophiuchi SAO 185199 - Const. OPH Type DS RA 17 15.3 Decl. -26° 36' Mag. 5.1 5.1
- _____ Alpha Herculis SAO 102680 Rasalgethi Const. HER Type DS RA 17 14.6 Decl. +14° 23' Mag. 3.5 5.4
- _____ Beta Scorpii SAO 159682 Graffias Const. SCO Type DS RA 16 05.4 Decl. -19° 48' Mag. 2.6 4.9
- _____ Delta Herculis SAO 84951 Sarin Const. HER Type DS RA 17 15.0 Decl. +24° 50' Mag. 3.1 8.2
- _____ Kappa Herculis SAO 101951 Const. HER Type DS RA 16 08.1 Decl. +17° 03' Mag. 5.3 6.5
- _____ Mu Draconis SAO 30239 - Const. DRA Type DS RA 17 05.3 Decl. +54° 28' Mag. 5.7 5.7
- _____ Nu Draconis SAO 30447 Kuma Const. DRA Type DS RA 17 32.2 Decl. +55° 11' Mag. 4.9 4.9
- _____ Nu Scorpii SAO 159763 Const. SCO Type DS RA 16 12.0 Decl. -19° 28' Mag. 4.3 6.4
- _____ Omicron Ophiuchi SAO 122387 - Const. OPH Type DS RA 17 18.0 Decl. -24° 17' Mag. 5.4 6.9
- _____ Psi Draconis SAO 8890 - Const. DRA Type DS RA 17 41.9 Decl. +72° 09' Mag. 4.9 6.1
- _____ Rho Herculis SAO 66000 Const. HER Type DS RA 17 23.7 Decl. +37° 09' Mag. 4.6 5.6
- _____ Sigma Coronae Borealis SAO 65165 Const. COB Type DS RA 16 14.7 Decl. +33° 52' Mag. 5.6 6.6
- _____ Struve 1999 SAO 159670 - Const. Type DS RA 16 04.4 Decl. -11° 27' Mag. 7.4 8.1
- _____ Xi Scorpii SAO 159665 - Const. SCO Type DS RA 16 04.4 Decl. -11° 22' Mag. 4.8 7.3

Messier Objects

- _____ M4 NGC6121 Const. SCO Type GC RA 16 23.6 Decl. -26 32 Mag. 6.4
- _____ M6 NGC6405 Const. SCO Type OC RA 17 40.1 Decl. -32 13 Mag. 5.3

_____ M7 NGC6475 Const. SCO Type OC RA 17 53.9 Decl. -34 49 Mag. 4.1
 _____ M9 NGC6333 Const. OPH Type GC RA 17 19.2 Decl. -18 31 Mag. 7.3
 _____ M10 NGC6254 Const. OPH Type GC RA 16 57.1 Decl. -04 06 Mag. 6.7
 _____ M12 NGC6218 Const. OPH Type GC RA 16 47.2 Decl. -01 57 Mag. 6.6
 _____ M13 NGC6205 Great Hercules Cluster Const. HER Type GC RA 16 41.7 Decl. +36 28 Mag. 5.7
 _____ M14 NGC6402 Const. OPH Type GC RA 17 37.6 Decl. -03 15 Mag. 7.7
 _____ M19 NGC6273 Const. OPH Type GC RA 17 02.6 Decl. -26 16 Mag. 6.6
 _____ M23 NGC6494 Const. SGR Type OC RA 17 56.8 Decl. -19 01 Mag. 6.9
 _____ M62 NGC6266 Const. OPH Type GC RA 17 01.2 Decl. -30 07 Mag. 6.6
 _____ M80 NGC6093 Const. SCO Type GC RA 16 17.0 Decl. -22 59 Mag. 7.7
 _____ M92 NGC6341 Const. HER Type GC RA 17 17.1 Decl. +43 08 Mag. 6.5
 _____ M107 NGC6171 Const. OPH Type GC RA 16 32.5 Decl. -13 03 Mag. 9.2

Caldwell Objects

_____ C006 NGC6543 Cat's Eye Nebula Const. DRA Type PN RA 17 58 36.00 Decl. +66 38 00.0 Mag. 8.8
 _____ C069 NGC6302 Bug Nebula Const. SCO Type PN RA 17 13 42.00 Decl. -37 06 00.0 Mag. 12.8
 _____ C075 NGC6124 Const. SCO Type OC RA 16 25 36.00 Decl. -40 40 00.0 Mag. 5.8
 _____ C076 NGC6231 Const. SCO Type OC RA 16 54 00.00 Decl. -41 48 00.0 Mag. 2.6
 _____ C081 NGC6352 Const. ARA Type GC RA 17 25 30.00 Decl. -48 25 00.0 Mag. 8.1
 _____ C082 NGC6193 Const. ARA Type OC RA 16 41 18.00 Decl. -48 46 00.0 Mag. 5.2

Royal Astronomical Society of Canada Objects

_____ RASC88 NGC6503 Const. DRA Type G-Sb RA 17 49.4 Decl. +70 09 Mag. 10.2
 _____ RASC89 NGC6543 Cat's Eye Nebula Const. DRA Type PN RA 17 58.6 Decl. +66 38 Mag. 8.8
 _____ RASC90 NGC6210 Const. HER Type PN RA 16 44.5 Decl. +23 49 Mag. 9.3
 _____ RASC91 NGC6369 Const. OPH Type PN RA 17 29.3 Decl. -23 46 Mag. 10.4
 _____ RASC102 NGC6445 Const. SGR Type PN RA 17 49.2 Decl. -20 01 Mag. 11.8

August Observing List

Prepared by Bill Breeden

Double Stars

_____ 40 / 41 Draconis SAO 8994 Const. DRA Type DS RA 18 00.2 Decl. +80° 00' Mag. 5.7 6.1
 _____ 57 Aquilae SAO 143898 - Const. AQL Type DS RA 19 54.6 Decl. -08° 14' Mag. 5.8 6.5
 _____ 70 Ophiuchi SAO 123107 Const. OPH Type DS RA 18 05.5 Decl. +02° 30' Mag. 4.2 6.0
 _____ 95 Herculis SAO 85647 Const. HER Type DS RA 18 01.5 Decl. +21° 36' Mag. 5.0 5.1
 _____ Beta Cygni SAO 87301 Albireo Const. CYG Type DS RA 19 30.7 Decl. +27° 58' Mag. 3.1 5.1
 _____ Beta Lyrae SAO 67451 Sheliak Const. LYR Type DS RA 18 50.1 Decl. +33° 22' Mag. 3.4 8.6
 _____ Epsilon Lyrae SAO 67310 Double Double Const. LYR Type DS RA 18 44.3 Decl. +39° 40' Mag. 5.0 6.1 5.2

5.5

_____ Otto Struve 525 SAO 67566 Const. Type DS RA 18 54.9 Decl. +33° 58' Mag. 6.0 7.7
 _____ Struve 2404 SAO 104170 - Const. Type DS RA 18 50.8 Decl. +10° 59' Mag. 6.9 8.1
 _____ Theta Serpentis SAO 124068 Alya Const. SER Type DS RA 18 56.2 Decl. +04° 12' Mag. 4.5 5.4
 _____ Zeta Lyrae SAO 67321 Const. LYR Type DS RA 18 44.8 Decl. +37° 36' Mag. 4.3 5.9

Messier Objects

_____ M8 NGC6523 Lagoon Nebula Const. SGR Type EN RA 18 03.8 Decl. -24 23 Mag. 6
 _____ M11 NGC6705 Wild Duck Cluster Const. SCT Type OC RA 18 51.1 Decl. -06 16 Mag. 6.3
 _____ M16 NGC6611 Eagle Nebula Const. SER Type OC RA 18 18.8 Decl. -13 47 Mag. 6.4

_____ M17 NGC6618 Swan Nebula Const. SGR Type EN RA 18 20.8 Decl. -16 11 Mag. 7.5
 _____ M18 NGC6613 Const. SGR Type OC RA 18 19.9 Decl. -17 08 Mag. 7.5
 _____ M20 NGC6514 Trifid Nebula Const. SGR Type EN RA 18 02.6 Decl. -23 02 Mag. 9
 _____ M21 NGC6531 Const. SGR Type OC RA 18 04.6 Decl. -22 30 Mag. 6.5
 _____ M22 NGC6656 Const. SGR Type GC RA 18 36.4 Decl. -23 54 Mag. 5.9
 _____ M24 NGC>6603 Sagittarius Star Cloud Const. SGR Type RA 18 16.9 Decl. -18 29 Mag. 4.6
 _____ M25 IC4725 Const. SGR Type OC RA 18 31.6 Decl. -19 15 Mag. 6.5
 _____ M26 NGC6694 Const. SCT Type OC RA 18 45.2 Decl. -09 24 Mag. 9.3
 _____ M27 NGC6853 Dumbbell Nebula Const. VUL Type PN RA 19 59.6 Decl. +22 43 Mag. 7.4
 _____ M28 NGC6626 Const. SGR Type GC RA 18 24.5 Decl. -24 52 Mag. 7.3
 _____ M54 NGC6715 Const. SGR Type GC RA 18 55.1 Decl. -30 29 Mag. 8
 _____ M55 NGC6809 Const. SGR Type GC RA 19 40.0 Decl. -30 58 Mag. 5
 _____ M56 NGC6779 Const. LYR Type GC RA 19 16.6 Decl. +30 11 Mag. 8.2
 _____ M57 NGC6720 Ring Nebula Const. LYR Type PN RA 18 53.6 Decl. +33 02 Mag. 8.8
 _____ M69 NGC6637 Const. SGR Type GC RA 18 31.4 Decl. -32 21 Mag. 8.9
 _____ M70 NGC6681 Const. SGR Type GC RA 18 43.2 Decl. -32 18 Mag. 9.6
 _____ M71 NGC6838 Const. SGE Type GC RA 19 53.8 Decl. +18 47 Mag. 9

Caldwell Objects

_____ C015 NGC6826 Blinking Planetary Const. CYG Type PN RA 19 44 48.00 Decl. +50 31 00.0 Mag. 9.8
 _____ C057 NGC6822 Barnard's Galaxy Const. SGR Type IG RA 19 44 54.00 Decl. -14 48 00.0 Mag. 9.3
 _____ C068 NGC6729 R CrA Nebula Const. CRA Type BN RA 19 01 54.00 Decl. -36 57 00.0 Mag. 9.7
 _____ C078 NGC6541 Const. CRA Type GC RA 18 08 00.00 Decl. -43 42 00.0 Mag. 6.6

Royal Astronomical Society of Canada Objects

_____ RASC92 NGC6572 Const. OPH Type PN RA 18 12.1 Decl. +06 51 Mag. 9
 _____ RASC93 NGC6633 Const. OPH Type OC RA 18 27.7 Decl. +06 34 Mag. 4.6
 _____ RASC94 NGC6712 Const. SCT Type GC RA 18 53.1 Decl. -08 42 Mag. 8.2
 _____ RASC95 NGC6781 Const. AQL Type PN RA 19 18.4 Decl. +06 33 Mag. 11.8
 _____ RASC96 NGC6819 Const. CYG Type OC RA 19 41.3 Decl. +40 11 Mag. 7.3
 _____ RASC97 NGC6826 Const. CYG Type PN RA 19 44.8 Decl. +50 31 Mag. 9.8
 _____ RASC103 NGC6520 Const. SGR Type OC RA 18 03.4 Decl. -27 54 Mag. 8.1
 _____ RASC104 NGC6818 Const. SGR Type PN RA 19 44.0 Decl. -14 09 Mag. 9.9
 _____ RASC105 NGC6802 Const. VUL Type OC RA 19 30.6 Decl. +20 16 Mag. 8.8