



ECLIPSE



The Newsletter of the Barnard-Seyfert Astronomical Society

Celebrating our 76th Year in 2004

May 2004

Members of the Barnard-Seyfert Astronomical Society

As you all know, the BSAS holds our monthly membership meetings at the Adventure Science Center during the winter months when Dyer Observatory is closed. While there are advantages to this arrangement, it has resulted in a great deal of confusion regarding the location of the meetings, particularly by our newer members.

Over the past couple of years we have had a marked increase in meeting attendance due to increased membership, interesting programs, and improved outreach efforts. While this has not yet become an insurmountable problem, we have now grown to the point that we would benefit from more meeting space year-round. After careful consideration of this and other factors such as parking, access, etc., the Board of Directors voted at its March monthly meeting to accept ASC's invitation to hold all our monthly membership meetings at the Adventure Science Center.

This was not a decision that was made lightly or quickly. It was based on (1) consideration of the additional meeting space which would be available, (2) the abundance of parking, something that is not available at the Observatory, (3) the easier and safer access to the meeting place in a lighted environment, and (4) the fact that the Center is more easily accessible to more of our members.

This change of meeting place does not reflect on our continuing cooperation with Vanderbilt's Department of Physics and Astronomy, with whom we have had a long and fruitful relationship. In fact, we are currently co-sponsoring astronomy-related events with them and hope to increase our involvement in the future.

In making this decision, we would be remiss not to recognize Dyer Observatory and its staff, particularly BSAS member and Observatory Supervisor Rocky Alvey, for the many courtesies and services they have long extended to the BSAS. We hope that while we will not be there each third Thursday, the spirit of cooperation fostered by the BSAS and Dyer for the last half-century will continue, and though we have outgrown the meeting space there, our members will continue to support Dyer's outreach efforts as they continue to support ours.

The Board of Directors meets on the first Thursday of each month at 7:30 P.M. at Jefferson Square Clubhouse in Green Hills. These meetings are open to all BSAS members. Complete minutes of the meetings are kept and published in the Eclip[se], which is published monthly and can be accessed on the BSAS web site at <http://bsasnashville.com>

Respectfully,
The BSAS Board of Directors

FROM THE PRESIDENT

Joseph M. Boyd, Jr.

My remarks will be rather brief this month, since most of what I have to report will be in the separate article relating to the change of place for holding our monthly membership meetings to the Adventure Science Center. There are a few other things I would like to mention.

The turnout of our members for Astronomy Day at the Adventure Science Center was outstanding. As I write this, I know of at least 26 of our members who participated, some of them very actively. Many of our members had their telescopes and other equipment on display and told the viewers about celestial viewing. Spence Buckner did an outstanding job of getting 20 different types of telescopes for display, and brought his Austin Peay astronomy club members to help show them off. The Friday night before Astronomy day, we also had a number of telescopes set up outside to give the public views of the Moon, Venus, and Saturn.

The reenactment of the famous experiment using eight teams of LARGE draft horses to try to separate two hemispheres which were held together only by the air pressure on the outside versus the vacuum on the inside was

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**BSAS membership meeting, May 20, 2004, 7:30 pm
Adventure Science Center**

In less than nine short years since the first discovery of a planet in orbit around a sun-like star, astronomers have detected over 120 planets orbiting other stars. In a few cases, multiple planets in orbit around other stars have been detected. Astronomers have made these discoveries utilizing the "doppler-shift" technique, which looks for tiny variations in stars' spectra caused by planets tugging on the stars they orbit. For the May presentation to the BSAS, we are very fortunate to have our own JanaRuth Ford as our presenter. JanaRuth, who holds a master's degree in astronomy from the University of Western Sydney and who tripled-majored in math, physics and astronomy at Vanderbilt as an undergraduate, will introduce us to NASA's new Night Sky Network and to the PlanetQuest Outreach Toolkit. She will also run the planetarium program In Search of New Worlds, which describes the discovery of extrasolar planets, including a description of current planet-finding techniques, comments by Geoff Marcy (San Francisco State Univ.), one of the leading practitioners of the art, and forecasts of future planet-search projects. She will then lead a discussion on the latest news in planetary detections and the outlook for additional detections in the future with NASA's planned Next-Generation Space Telescope, recently re-named the James Webb Space Telescope and currently scheduled for launch in 2011. Please join us for an exciting discussion on one of the hottest topics in astronomy, the search for extrasolar planets!

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attended by less than 300 people from Nashville and Middle Tennessee. I first learned about this experiment in General Science class in high school, and still remember the drawing of the event in my text book. This was the first reenactment ever held in the United States, and was put on by the Germans from Nashville's sister city, Magdeburg, Germany. The only disappointing part of this was the number of spectators for this one time event. One of the Germans even looked around and asked, "Where is the crowd?" The attendance must have been an embarrassment to the Mayor and other city officials of Nashville.

What can we do about the attendance? All of us should make an effort to promote BSAS and astronomy in the local media. Maybe we have been remiss in the past in keeping the media informed of our activities and perhaps we could have done a better job of educating them about astronomy. This is something we must work on in the future, so we can enable them to better promote astronomy in this community.

We have many activities coming up in May and June. I urge you to participate in the star parties during May at Long Hunter State Park, Warner Park, and Adventure Science Center. Most of these will be focused on the comets which should be visible during those star parties. And, of course, we cannot overlook the Venus transit on the morning of the 8th of June.

Thanks for the big turnout on Astronomy Day. Our BSAS membership is a pleasure to work with, and I look forward to seeing you in the coming weeks.

**MAGAZINE SUBSCRIPTIONS FOR
BSAS MEMBERS**

We are always able to accept requests for new and renewal yearly subscriptions to SKY AND TELESCOPE and ASTRONOMY from our members in good standing.

The current yearly rates are as follows:
SKY AND TELESCOPE: \$32.95
ASTRONOMY: \$29.00

Checks or Money Orders should be made out to the Barnard Seyfert Astronomical Society (BSAS) and sent to the following address:

BSAS
P. O. Box 150713
Nashville, TN 37215-0713

DUES INFORMATION

On your Eclipse mailing label is the expiration date for your current membership in the BSAS. There will be a two month grace period before any member's name is removed from the current mailing list. You will be receiving a number of warnings informing you that your membership is expiring.

Dues per year are \$20.00 Regular (1 vote); \$30 Family (2 votes); \$15.00 Student (under 22 years of age)(1 vote); \$15 Seniors (65 years or older)(1 vote); \$25 Senior Family (65 years or older)(2 votes). Please call President, Joe Boyd, (615) 386-3134 if you have questions. Dues can be sent to:

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THE ECLIPSE NEWSLETTER

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Jill Thompson, Secretary
Bob Rice, Asst. Secretary
Lonnie Puterbaugh, Treasurer
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Mike Benson
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JanaRuth Ford
Bill Griswold
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Francisco Diego

**The Barnard-Seyfert Astronomical Society
Minutes of a Regular Meeting of the Board of Directors
Held On Thursday, April 1, 2004**

The Board of Directors of the Barnard-Seyfert Astronomical Society met in regular session at the Jefferson Square Club House in Nashville, Tennessee on April 1, 2004. A sign-in sheet was passed around in lieu of a roll call. President Joe Boyd declared a quorum to be present and called the meeting to order at 7:37 P.M. Board members Mike Benson, Joe Boyd, Tony Campbell, JanaRuth Ford, Bill Griswold, Powell Hall, John Harrington, Kris McCall, and Lonnie Puterbaugh were present. Board members Pam Thomas and Jill Thompson were absent. In addition to members of the Board, Historian Dudley Pitts, Assistant Secretary Bob Rice, and Outreach Chair Heinrich Tischler were also present. The minutes of the previous regular board meeting held on March 4, 2004 were approved as published in the April 2004 issue of the *Eclipse* newsletter.

Treasurer Lonnie Puterbaugh reported that the society's February 29th checking account balance was \$7628.99 with total income of \$418.00, total expenses of \$1865.38, and cash on hand of \$30.00 giving total monetary assets of \$6211.61 at March 31st. A detailed written statement was provided to the board.

Joe Boyd reported that the Long Range Planning Committee would meet next Wednesday, April 7th, at Lonnie Puterbaugh's house.

Equipment Committee Chair Lonnie Puterbaugh displayed one of the two recently acquired Johnsonian Type V equatorial platforms. Mr. Puterbaugh commented that both platforms operated on six AA batteries or a supplied AC adaptor and could support instruments up to 140 pounds. He further noted that these platforms could handle anything from a camera to a sixteen-inch dobsonian. BSAS members will be allowed to borrow these units as part of our loaner program once they have received training to use them. Mr. Puterbaugh also reported via a memo that BSAS member Larry Southerland had donated \$100.00 to the Equipment Committee. Mr. Puterbaugh announced that the Equipment Committee would meet next Wednesday, April 7th.

Mentoring Committee Chair JanaRuth Ford reported that she had received 27 responses to the interest survey initiated at the March 15th membership meeting. Outreach Chair Heinrich Tischler commented that, based upon results from this survey, the BSAS would not try to establish fixed 2-3 member outreach teams, but would make the results known to the respondents and let them form teams in whatever arrangement they found to be convenient.

Ms Ford and Mr. Tischler reported that they hoped to conduct the first workshop on "How to use a telescope" for BSAS members at the Warner Park Nature Center on a Saturday during May or June. Both noted that this workshop would be intended for novices. Tony Campbell suggested that the workshop be scheduled around the first quarter moon. Lonnie Puterbaugh volunteered to handle loaner scope certifications. Mr. Puterbaugh also informed the board that BSAS member and former secretary Evelyn Wright had donated \$50.00 to the Mentoring Committee to purchase planispheres for new member kits. Ms Ford also reported that the Mentoring Committee had received three educational modules from NASA's Night Sky Network. She noted that there would be unanticipated printing costs for the module instructional materials and PowerPoint presentations. Ms Ford asked for a volunteer to speak about astronomy to a Brentwood school fourth grade class the next day and Powell Hall agreed to do so.

Joe Boyd reported that new member Pamela Bowman had purchased a family membership as a birthday present for her husband Larry because he had enjoyed attending the March 27th star party at Warner Park. Webmaster Tony Campbell commented that he planned to start a new member profile as a regular feature on the BSAS web site.

Lonnie Puterbaugh informed the board that the Nashville Symphony would perform at Crockett Park on May 23rd from 7:00 P.M. to 8:30 – 9:00 P.M. as part of the Brentwood Summer Concert Series. Mr. Puterbaugh commented that 500 to 1000 people usually attended these concerts and that the BSAS could gain good exposure by setting up telescopes for observing comet Neat after the event was over. Mr. Puterbaugh said that he would contact the Park and the Symphony to work out details for doing this.

Webmaster Tony Campbell reported that the redesigned BSAS web site, which now included a member forum, had received a vastly increased number of user accesses or "hits." Mr. Campbell stated that he planned to add pages for: donation information, thanks for those who had helped the BSAS, a description of BSAS events for

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Astronomy Day on April 24th, upcoming “break-room” or “coffee pot” astronomical events of general public interest, and press releases for the local media. Mike Benson commented that Mr. Campbell should be nominated for the Astronomical League’s Webmaster of the Year recognition and Joe Boyd reiterated this sentiment. Mike Benson put the suggestion into a motion that was seconded by Bill Griswold and passed by unanimous vote.

Historian Dudley Pitts reported that he had reviewed approximately two thirds of the BSAS’ records and documents that were turned over to him. Mr. Pitts said that he was organizing these items by category (newsletters, financial records, etc.) and planned to write a chronology of the society with everything burned to CD by the end of the year. He commented that he didn’t have a scanner that could accommodate newspaper-sized items and the board recommended that he check with Nashville Blueprint for this service. When asked, the board also suggested Mr. Pitts store all the old financial records in boxes.

Bob Rice reported that the Finance & Budget Committee would meet soon to consider potential revisions to the 2004 budget. Treasurer Lonnie Puterbaugh, a member of this committee, suggested that he could prepare a six-month comparison of budgeted items with expenditures to assist this effort.

Mike Benson reported that the BSAS would award no prizes for the Middle Tennessee Science and Engineering Fair at Austin Peay State University (APSU) on April 12th because no astronomy related projects were entered. Mr. Benson noted that Austin Peay had offered the BSAS its mailing list and asked us to speak at their fall workshop for the next fair’s potential student participants. Lonnie Puterbaugh suggested that we should establish a page on our web site to inform students about science fairs. Tony Campbell added that we could also award a free student membership to a worthy science fair participant. Bill Griswold put these two suggestions into a motion; Tony Campbell seconded, and the board passed the measure by a unanimous vote.

Program Committee Chair John Harrington reported that Powell Hall would present the April program on the upcoming transit of Venus. Mr. Harrington stated that the May program was open and that Marvin Berwin would present the June program on Tennessee impact craters. JanaRuth Ford suggested that she might be willing to lead hiking trips to some of these sites. Mr. Harrington said that Professor Higgins at Middle Tennessee State University was tentatively scheduled to present the August program. Powell Hall suggested that, with the predicted arrival of NEAT and LINEAR, finding someone to speak about comets would be a good program for May. Mr. Harrington handed out a summary of web searches he had performed on the topic of mobile observatories.

Mr. Harrington suggested that the BSAS invite Scott Davis from the International Dark-Sky Association to speak at the July membership meeting. Noting that Mr. Davis was an excellent speaker, Powell Hall offered to provide his local transportation and lodging. Mr. Harrington then moved that the BSAS provide up to \$250.00 for Mr. Davis’ airfare and Mike Benson seconded the motion. Following a very lengthy discussion, President Boyd asked for a roll call vote. Mike Benson, Joe Boyd, Bill Griswold, Powell Hall, and John Harrington voted in favor of the motion; Tony Campbell, JanaRuth Ford, Kris McCall, and Lonnie Puterbaugh voted against. The motion thus passed by a margin of five to four.

Kris McCall commented that some of the many hits on the BSAS’ web site may have originated from the Adventure Science Center that provided a link to the BSAS’ site. She also suggested that the society might contact the speaker’s bureau in Huntsville about a speaker on comets. In addition, she expressed support for the idea of a “water cooler” astronomy page on the BSAS’ web site to list easily visible events in the sky of general public interest. She further stated that she might be able to present a program on comets for May.

Ms McCall reported that everything was coming together well for the Astronomy Day celebration at the Adventure Science Center on April 24th. She noted that draft horses from Missouri or Minnesota would be provided for the hemispheres demonstration. She additionally reported that APSU’s Dr. Spencer Buckner was handling the telescope display and that there would be video astronomy and daytime planetary observing activities. She pointed out that APSU students and members of the Clarksville astronomy club would also assist.

Joe Boyd reported that an attendee at the March 27th star party at Warner Park had suggested that the BSAS should ask visitors to register at such events. Mr. Boyd noted that we could obtain email addresses or phone numbers in this manner for future contacts. Mr. Boyd also suggested that the BSAS consider acquiring a permanent but re-routable telephone number. This arrangement would allow us to reallocate the same number printed in our

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informational brochure to different individuals as the society's officers changed over time. Mike Benson commented that this service was available from Bell South for approximately \$75.00 per month.

Joe Boyd reported that he had reviewed documentation provided by Vanderbilt University regarding a lost check that the BSAS issued to the school on January 7, 2003 as reimbursement for printing the *Eclipse* newsletter and other expenses. Mr. Boyd noted that this instrument was now stale dated and suggested that Treasurer Lonnie Puterbaugh meet with former Treasurer A. G. Kasselberg to verify the details of this transaction. Mr. Boyd further suggested that the BSAS needed to contact Dr. Rick Chappell, Director of the Vanderbilt Dyer Observatory. Powell Hall moved that the BSAS reissue a check to Vanderbilt University for \$1003.00, the amount originally agreed upon. Kris McCall amended this motion to also stipulate in writing that this amount constituted payment in full; the amendment passed by a majority vote. Kris McCall then seconded the amended motion which also passed by a majority vote.

Dudley Pitts reported that he had been contacted by a few members who expressed concern about changing our membership meeting location from Dyer Observatory to the Adventure Science Center. Mr. Pitts suggested that the board should emphasize the positive features of relocating to a more central location along with the pressing need for a larger meeting place to accommodate our growing 140+ membership. Mr. Pitts also suggested that the BSAS formally recognize - perhaps with plaques - both the institution of Dyer Observatory and Rocky Alvey, Dr. Doug Hall, Dr. Arnie Heiser, and other staff that had so graciously assisted the society over many years. Kris McCall moved that this recognition be carried out and that President Boyd write an article in the next *Eclipse* newsletter in addition to addressing the members at the April 15th meeting to explain the reasons for the above change. Bill Griswold seconded the motion which passed by a unanimous vote.

Joe Boyd recommended that the BSAS' bylaws be changed to allow notice of board meetings and the polling of board members to be performed electronically. Mr. Boyd and John Harrington agreed to draft this change for consideration at the next board meeting.

Public Relations Committee Chair Kris McCall reported that the BSAS logo had been modified to include prototypes with both refractor and reflector telescope designs. She mentioned that pictures were still needed for the new BSAS brochure and asked for any other suggestions.

Joe Boyd expressed his appreciation to Tony Campbell, JanaRuth Ford, Dudley Pitts, and Heinrich Tischler for their work. There being no further business, President Boyd declared the meeting adjourned at 10:42 P.M.

Respectfully submitted,
Bob Rice
Assistant Secretary

**Barnard-Seyfert Astronomical Society
Minutes of the Monthly Membership Meeting
Held on Thursday, April 15, 2004**

President Joe Boyd called the meeting to order at 7:40 P.M. at the Adventure Science Center and welcomed new members and visitors. Program Committee Chair John Harrington introduced BSAS past president Powell Hall who gave an informative lecture on the predicted June 8th, 2004 transit of Venus. Mr. Hall cited excerpts from Eli Maor's recent book Venus in Transit to provide several anecdotes about the few previously observed Venusian transits. Mr. Hall also passed out a helpful reference sheet on the June 8th transit. Mr. Harrington then presented a brief follow-up of the March program on "Nervous Neutrinos" to illustrate the origin of neutrinos and various devices used in their detection.

President Boyd recalled the meeting to order at 8:37 P.M. The minutes of the previous membership meeting held on March 18th, 2004 were approved as published in the April 2004 issue of the *Eclipse* newsletter. Mr. Boyd reported that the BSAS had received a number of cash and equipment donations due to its non-profit corporate structure and tax-exempt status. He stated that all members were welcome to attend the board meetings and that

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the minutes of these meetings were available on our web site in addition to being printed in the monthly *Eclipse* newsletter. Mr. Boyd also commented that the Mentoring Committee would soon offer a session on basic telescope use for members who wished this training. In addition, he mentioned that TNSP Co-chair Lloyd Watkins needed a volunteer to understudy the procedures and operation of that event.

Treasurer Lonnie Puterbaugh reported that the society's February 29th checking account balance was \$7628.99 with total income of \$418.00, total expenses of \$1865.38, and cash on hand of \$30.00 giving total monetary assets of \$6211.61 at March 31st. A detailed written statement was provided to the members.

Dark Sky Committee Chair Powell Hall reported that this committee was meeting regularly. Joe Boyd reported that the Long Range Planning Committee was well underway in its planning developments and would welcome suggestions from all members.

Grants Committee member Deborah Paschall reported that with the legal precursors in place and the many skills within our society, the BSAS was well positioned to obtain grants. She pointed out that our purpose in pursuing grant money for projects should be to complement, but not to compete with the work of other organizations. Asking for suggestions, Ms Paschall emphasized that we were all in this together when it came to forming dreams and projects for the BSAS

Outreach Committee Chair Heinrich Tischler reported that a daytime training session for new telescope users would be held on May 15th at Warner Park's lower model airplane field. Mr. Tischler explained that inclement weather would not hinder this get-together because a park shelter was available.

Webmaster Tony Campbell used a projector equipped PC to demonstrate some of the new features on our web site that included recognition of student member Danika Wellington, current astronomy news, a 3 year *Eclipse* newsletter archive, an event calendar, society organization structure, bylaws, how to join or make donations, and interactive directions with mapping. Mr. Campbell commented that the new member forum was "a way of meeting when we weren't meeting."

JanaRuth Ford, a former full-time Sudekum Planetarium employee, announced that she would run the planetarium program "In Search of New Worlds" at the adventure Science Center for our May meeting. Although not produced by NASA, Ms Ford stated that this program about extra-solar planets should increase our awareness of the type of material that was available through our association with that agency's Night Sky Network.

Kris McCall passed around sheets for volunteers to sign-up for the upcoming April 23rd star party and April 24th Astronomy Day activities at the Adventure Science Center. She also passed around the Astronomy Day press release and commented on comet parties scheduled for May.

Several members, officers, and directors entered into a spirited discussion of the board's recent decision to change our monthly meeting location from Dyer Observatory to the Adventure Science Center. A number of comments were made regarding the BSAS' accomplishments, historic relationships, future plans, and involvement of members in decision making. President Boyd acknowledged these comments and explained that he had already initiated a discussion with Dyer Observatory staff. He promised to report the results at the next board meeting, which, he reiterated, BSAS members were always welcome to attend.

Joe Boyd asked member Danika Wellington, an eighth grade student at Martin Luther King Magnet Middle School, to come forward and be recognized for winning first place in the "Reach for the Stars" event at the recent Tennessee Science Olympiad in Knoxville. Ms Wellington received a hearty and well-deserved standing ovation from everyone present.

There being no further business, the President declared the meeting adjourned at 10:12 P.M.

Respectfully submitted,
Bob Rice
Assistant Secretary

VENUS IN TRANSIT

By Powell Hall

The terms eclipse, occultation, and transit are all used in astronomy to name the cutting off or lessening of light from one celestial object shining on another because a third celestial object comes directly between them. Now eclipses and occultations have been known since history began. The oldest mention of any astronomer relates how two Chinese astronomers His and Ho got into trouble four thousand years ago because they got drunk and failed to predict an eclipse of the sun. And one of the most famous lunar eclipses was ingeniously employed by Christopher Columbus to save himself and his crew on February 29, 1504, when they were stranded and starving on the island of Jamaica.

But transits, although they have been taking place as long as eclipses, were only brought to the world's attention by the astronomer Kepler. After discovering the laws of planetary motion, Kepler finally published in 1627 his Rudolphine Tables, which along with other planetary positions indicated transits of Mercury and Venus four years later, in 1631. A transit occurs when Mercury or Venus, at inferior conjunction, passes across the face of the sun as seen from the earth. Inferior conjunctions are commonplace, but transits, especially of Venus, are very infrequent.

They occur in pairs, eight years apart, with more than a century between each pair. Only three pairs have taken place since Kepler predicted them. Kepler died before the 1631 transits of Mercury and Venus. Gassendi, basing his observation on Kepler's computations, observed a November transit of Mercury in 1631 but failed on account of bad weather to see the transit of Venus a month later. (Transits of Venus always, in our time, happen in either December or June.) In 1639, eight years later, the Englishmen Horrocks and Crabtree were the first recorded observers of a Venusian transit.

By the time the next pair occurred, the scientific world was expecting them. Various nations sent expeditions to India and the Pacific. Various nations sent expeditions to India and the Pacific. Captain Cook led one such voyage. It was hoped that the timing of the entrance and exit of Venus would provide data for a more exact calculation of the astronomical unit. This is the distance from the earth to the sun and is basic to attaining not only the dimensions of the solar system but also, when stellar parallax was determined, the distances to the stars.

Another pair of Venus transits took place in 1874 and 1882, with even more nations competing but without the scientific incentive attending transits in the 1760's.

No one now living has yet seen a transit of Venus, but the first of a new pair will take place on June 8, 2004, when Venus passes between the sun and the earth and changes from an evening to a morning star.

OBSERVER'S HANDBOOK 2004 gives a map of the world for this transit. Every part of the globe is in one of four sections. Areas where the sun is going down when the transit occurs will see the beginning of the transit. The next westerly part of earth will see the entire transit (weather permitting) because the sun will be above the horizon from the start to the finish of the transit. The part still farther west, in which we happen to live, will see only the end of the transit; the earlier part of it will take place before the sun rises for us. And, finally, even farther west will not see the transit at all. It will occur entirely in their nighttime.

Here are two websites:

<http://sunearth.gsfc.nasa.gov/eclipse/transit/venus0412.html>

<http://www.transitofvenus.org/>

Activities and Events

May 1 — 31, 2004

- 5/2 Venus at gr. Brilliancy
 5/4 FULL MOON; Dark-sky committee, 7:30 p. m., at 4343 Lebanon Pike, Rm. 201
 5/5 Jupiter stationary
 5/6 BSAS Bd. of Dir., 7:30 p. m., Jefferson Square Clubhouse
 5/8 Comet party, 8:15-10:15 p. m., Long Hunter State Park
 5/10 Conj., Moon & Neptune
 5/11 LAST QUARTER
 5/12 Conj., Moon & Uranus
 5/14 Gr. elong. of Mercury (in morning sky)
 5/15 Comet party, 8:30-10:30 p. m., at Adventure Science Center
 5/16 Conj., Moon & Mercury
 5/17 Neptune & Venus stationary
 5/18 NEW MOON
 5/20 BSAS monthly mtg., 7:30 p. m., at Adventure Science Center ;
 5/22 Comet party, 8:30-10:30 p.m., at Long Hunter State Park; Conj., Moon & Mars; Moon & Saturn (in Gemini)
 5/24 Conj., Mars & Saturn (in Gemini)
 5/27 FIRST QUARTER; Conj., Moon & Jupiter
 5/29 Comet party, 8:30-10:30 p. m., Adventure Science Center

June 1 — 30, 2004

- 6/1 Dark Sky committee of BSAS, 7:30 pm at 4343 Lebanon Pike, Room 201
 6/3 BSAS Board of Directors, 7:30 pm at Jefferson Square; FULL MOON
 6/7 Conj. Neptune and Moon
 6/8 Conj. Uranus and Moon, Venus in inferior conjunction transits the face of the Sun; only the final part of tis transit visible from Nashville, within an hour after sunrise.
 6/9 LAST QUARTER
 6/11 Pluto at opposition
 6/17 BSAS membership meeting, 7:30 pm.; NEW MOON
 6/18 Mercury in superior conjunction with the sun; Private Star Party, Natchez Trace site.
 6/19 Conj., Saturn with Moon
 6/20 Summer Soltice 7:57 CDT; conj., Mars & Moon
 6/23 Conj., Jupiter and Moon
 6/25 FIRST QUARTER

Note: all dates & hours according to Central Time

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