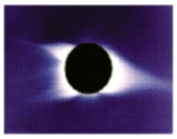

ECLIPSE

The Newsletter of the Barnard-Seyfert Astronomical Society

January 2002

PRESIDENT'S MESSAGE
A WINTER SOLSTICE MEDLEY

It was good to see all the folks at our December BSAS covered-dish supper held December 20 at the Cumberland Science Museum. Plenty of good food, from soup and salad to Korean sushi and cheesecake. And a good planetarium program on galaxies, which I missed because of having to leave early but which I hope to see in January. I was particularly happy to welcome Branson and Betty Thurston. Today, December 21st, 2001, when I write, is Mrs. Thurston's last day as secretary at Dyer Observatory. She has done faithfully and well so much for Barnard-Seyfert Astronomical Society. We express our great gratitude and wish her a happy retirement.

One of the persons at our December BSAS party asked me for an algorithm to enable a computer to come up with dates for solstices and equinoxes. Because of my greenness with computers, I referred him to a BSAS board member more competent with computer than I am. Shortly thereafter, an idea suggested itself to me. For what it may be worth, here it is. One needs to have only two datathe length of the tropical year and the actual time of the solstice in any given year. Today's solstice time is 1:21 p.m. Central Standard Time. Add six hours if one prefers Greenwich Mean Time or Universal Time. The length of the tropical year, i.e., the year of the seasons, is 365.242190 days. Add that or subtract it, multiplied by however many years are involved, and you will have the day and hour of the solstice (or equinox) you desire. In 2002, e.g., the decimal fraction will put the solstice one day later for Universal Time (Dec. 22, 2002) but not for Central Standard Time. If one wishes for technical detail, I suggest Roy Bishop's article on page 30 et seq. in Observer's Handbook 2001.

Skies on Mars are blue for sunrise and sunset and red in midday.

MAY YOUR NEW YEAR

BE GOOD AND GLAD!

Powell Hall

HAPPENINGS & EVENTS

January 1 - January 31, 2001

1/1 Jupiter at Opposition
1/2 Earth at Perihelion; Moon at Perigee
1/3 Quadrantid Meter Shower
1/5 LAST QUARTER MOON
1/9 Conj., Mercury & Neptune
1/10 BSAS Board of Directors Meeting at Cumberland Science Museum 7:00 p.m.
1/11 Mercury at Greatest Elongation
1/12 BSAS Private Starparty at Natchez Trace Site
1/13 NEW MOON
1/15 Conj., Moon & Mercury; Conj., Moon & Uranus
1/17 BSAS Meeting at Cumberland Science Museum 7:30 p.m.; Speaker: Dyer Observatory Director Dr. Douglas Hall, Topic: Interplanetary Navigation With Kepler's Laws
1/18 Conj., Moon & Mars; Moon at Apogee
1/21 FIRST QUARTER MOON
1/23 BSAS and Metro Parks Public Outreach Starparty at Shelby Bottoms Park in Nashville 6:00-8:00 p.m.
1/24 Conj., Moon & Saturn, Occultation
1/26 Conj., Moon & Jupiter, Occultation
1/28 FULL MOON
1/30 Moon at Perigee

MAGAZINE SUBSCRIPTIONS FOR BSAS MEMBERS 2001

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 : $29.95
ASTRONOMY : $29.00
Checks or Money Orders should be made out to the Barnard-Seyfert Astronomical Society (BSAS) and sent to the Treasurer at the following address:
BSAS
Dyer Observatory
1000 Oman Drive
Brentwood, TN 37027

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 are $20.00 per year for Regular and Family membership and $15.00 per year for Seniors (over 60 years of age), and $10.00 for Students (under 22 years of age). Please call the Dyer Observatory (373-4897) if you have questions. Dues can be sent to:

BSAS c/o Dyer Observatory
1000 Oman Drive
Brentwood, TN 37027

THE ECLIPSE NEWSLETTER

Editor: Rocky Alvey
r.alvey@vanderbilt.edu

Minutes of Regular Monthly Meeting of Barnard-Seyfert Astronomical Society

President Powell Hall called the meeting to order on Thursday, 20 December, 2001 at 6:40 pm in the Sky Room (lunchroom) of Cumberland Science Museum. He reminded those who wish to subscribe to "Astronomy" and/or "Sky and Telescope" magazines to contact Treasurer A.G. Kasselberg. He then gave the blessing before the group lined up at the buffet of delicious foods everyone brought for the potluck supper.

Once everyone had eaten, Powell Hall directed everyone to assemble at 8:00 pm in the Sudekum Planetarium. Powell Hall needed to leave, and Sudekum Planetarium Director Kris McCall presided over the rest of the meeting. The next regular meeting will be at 7:30 pm January 17, 2002 at the Cumberland Science Museum. The program has not yet been decided. Rocky noted that there is a Star Party at Shelby Bottoms on January 23, 2002 from 6:00-8:00 pm that he cannot attend, and some volunteers are needed to bring scopes. Kris McCall announced that Mrs. Betty Thurston is retiring from Dyer Observatory after 20 years. Kris asked for a round of applause for all that Mrs. Thurston has done for the club and the observatory over the years, including reminding volunteers of star parties, and handling club correspondence and phone calls. The group expressed its appreciation enthusiastically. It is hoped Mrs. Thurston will be able to attend more club meetings in the future.

Kris McCall then introduced the planetarium program "Galaxies" by Timothy Ferris, noting that the club was the "perfect audience" for it. The program utilized the central star projector as well as the side projectors, and covered the different types and sizes of galaxies, and the distances between them. One light year being approximately 6 trillion miles, it is hard to comprehend distances on the order of 4.3 light years, which is how far it is to Alpha Centauri, the star nearest to our sun. The program was very interesting, and I hope that the planetarium will put it on for the general public so that I can see it again.

The meeting adjourned with the end of the program around 9:00 pm, and the group went back to restore the Sky Room to its pre-supper condition.

Respectfully submitted,
Evelyn Wright, Secretary

The C-14 Steward List

Our club telescope is available for use by club members on a first-come basis. To use the telescope please call the person who is assigned for that night you choose. Please give the stewards as much notice as possible.

Monday - Mike Benson 615-883-6571
Tuesday - Lonnie Puterbaugh 615-661-9540
Wednesday - A.G. Kasselberg 615-661-0231
Thursday - Lloyd Watkins 615-824-3005
Friday - John Bradford 615-871-9542
Saturday - Jim Reid 615-595-6589
Sunday - Tom Murdic 615-794-6029
Alternate - Dudly Pitts 615-837-2696

Challenge of the Month

The Transit of Jupiter's Great Red Spot

This challenge isn't a very difficult one. Many of you have observed the Great Red Spot time and again. I am promoting this observation because many of the newer members may have never seen this most famous storm. Here are transit times in U.T. taken from Sky & Telescope Magazine.

January 1, 0:06, 10:01, 19:57; **2,** 5:52, 15:48; **3,** 1:43, 11:39, 21:35; **4,** 7:30, 17:26; **5,** 3:21, 13:17, 23:13; **6,** 9:08, 19:04; **7,** 4:59, 14:55; **8,** 0:51, 10:46, 20:42; **9,** 6:37, 16:33; **10,** 2:29, 12:24, 22:20; **11,** 8:15, 18:11; **12,** 4:07, 14:02, 23:58; **13,** 9:53, 19:49; **14,** 5:45, 15:40; **15,** 1:36, 11:31, 21:27; **16,** 7:23, 17:18; **17,** 3:14, 13:09, 23:05; **18,** 9:01, 18:56; **19,** 4:52, 14:48; **20,** 0:43, 10:39, 20:34; **21,** 6:30, 16:26; **22,** 2:21, 12:17, 22:12; **23,** 8:08, 18:04; **24,** 3:59, 13:55, 23:51; **25,** 9:46, 19:42; **26,** 5:38, 15:33; **27,** 1:29, 11:24, 21:20; **28,** 7:16, 17:11; **29,** 3:07, 13:03, 22:58; **30,** 8:54, 18:50; **31,** 4:45, 14:41 (subtract 6 for our local time zone)

A transit of an object is when that object crosses an imaginary center line drawn from pole to pole.

When you are viewing the Great Red Spot this month, spend some time contemplating the fact that two Earths will easily fit inside. You will find a fantastic time lapse movie of the Red Spot's rotation with swirling clouds at this website-
http://antwrp.gsfc.nasa.gov/apod/ap001123.html
Have fun.
Rocky Alvey

Sudekum Planetarium at the Cumberland Science Museum

NOTE: the Cumberland Science Museum and Sudekum Planetarium will be closed on January 1, 7, 14, and 28. We will be open Monday, January 21.

Tuesday through Friday
3:15 The Explorers

Saturday
11:30 The Explorers
1:00 Skies Over Nashville
2:30 The Explorers
3:30 Galaxies

Sunday
1:30 The Explorers
3:30 Galaxies

NOTE: Monday, January 21
12:30 The Explorers
3:15 The Explorers

What on Earth are these shows about ???

The Explorers This program focuses on the human spirit of exploration throughout time and space. By identifying constellations and studying changes in the sky as the observer's latitude changes, visitors discover how to navigate from Tahiti to Hawai'i - just as the Polynesians have done for thousands of years.

Galaxies From our own Milky Way to the edge of observable space, renowned author Timothy Ferris leads the audience on a fascinating exploration of the very building blocks of the universe, Galaxies.

Skies Over Nashville Many people are intimidated by astronomy and the night sky. This show highlights those constellations and planets that can be seen from backyards throughout Middle Tennessee and across the United States. If you can "connect the dots", you can draw star pictures. Skies Over Nashville is an excellent way for the entire family to get ready to go out and look at the real sky.

NOTE: Our monthly star charts and related articles can be downloaded from www.SudekumPlanetarium.com

Warner Park star party 7:30 to 9:30 pm Friday, 1 February 2002
Warner Park star party 8:00 to 10:00 pm Friday, 19 April 2002
(tentative) Warner Park star party 8:00 to 10:00 pm Saturday, 10 August 2002

For additional and updated information: call AstroLine at 615-401-5092

OR go to www.SudekumPlanetarium.com

HOT FLASH

by Jerry Lappin

Doc Zarkov has been having a long run of bad luck with his business ventures. There was his brilliant plan to deploy large satellites bearing commercial messages or groups of small ones, which would spell out PEPSI or BUD or IBM. Just as interest was building among advertisers along came those pop-up web ads, which were much cheaper than Zarkov's satellites and even more annoying so his ads never got off the ground. Then there were his sports-related enterprises, winter sports, deep-sea fishing and scenic cruises on various water or ice covered moons. New studies of these showed that they suffered from ice quakes or had virulently toxic atmospheres or were bathed in deadly radiation. Although Zarkov thought he could overcome all these problems the negative publicity frightened his investors away. Now ill luck has fallen on his latest project, announced only last month, in which he proposed using a black hole to supply all of Earth's energy needs. Just this week Prof. David Criswell of the University of Houston announced his plan to solve the energy problem by installing solar collectors on the moon, converting that energy to microwaves, and beaming them back to earth. All this, he says could be done with a mere $60 billion. He assures us that the project would be perfectly safe, only increasing incoming radiation by 20% of that of a sunny day. Maybe he's right but I'm not sure that adding 20% to a torrid 100 degree summer day will be all that pleasant though it might be welcome during the winter months. Perhaps we could all carry aluminum umbrellas or perhaps microwave blocks similar to the present sun blocks would give adequate protection. I'm still worried, though, about the fact that microwaves are notorious for being reflected and concentrated by such things as mountain ridges. It seems probable to me that certain locations would be turned into geographical microwave ovens with dire consequences to the inhabitants. Perhaps all is not lost for Dr. Zarkov's black hole project after all.

Royal Astronomical Society of Canada Observer's Handbook 2002 now available for $16.00
See Powell Hall to purchase a copy, first-come first-served.

Happy Birthday Harold Babcock

by Robin Byrne

This month, we look at the life of a man who helped us to better understand our nearest star. Harold Babcock was born January 24, 1882 in Edgerton, Wisconsin. He went to school at the University of California.

At the age of 27, Babcock joined the staff of the newly built Mt. Wilson Observatory. He remained at the observatory for the next 39 years. One of his first accomplishments at Mt. Wilson was to measure the magnetic field of the star 78 Virginis. His observations helped to provide a link between relativity and electromagnetism.

Babcock was renowned for his precise laboratory work, especially in the studies of atomic spectra. His precision allowed others to identify the first "forbidden lines" in the laboratory. His work also led to the discovery of the rare isotopes of oxygen.

Babcock was also involved in solar research and collaborated with George E. Hale and C. E. St. John. With St. John, Babcock improved the accuracy of the measurement of spectral lines in the solar spectrum by comparing them to newly-determined standards. They also extended the measurement of the solar spectral lines into both the ultraviolet and infrared portions of the spectrum.

Although he semiretired in 1948, Babcock continued working, especially with his son, Horace. The two of them, working together, built large gratings that were known for their quality. Among the gratings that they built were the ones used in the coude' spectrographs of the 100 and 200-inch telescopes.

In 1951, the Babcocks invented the solar magnetograph. With this, they discovered magnetically variable stars. Also with the magnetograph, they were able to measure the magnetic field across the entire surface of the Sun to a precision never before seen. In 1959, Babcock announced the discovery that the Sun reverses its magnetic polarity on an average of every 22 years.

Babcock continued to study the Sun, and in 1961 proposed a model to explain the sunspot cycle. According to what is now known as the Babcock Cycle, the combination of the Sun's magnetic field and differential rotation drive the cycle. Because the Sun rotates faster at the equator than at the poles, the magnetic field at the equator gets pulled ahead of the field at the poles. This leads to the field getting pulled and stretched. Interaction between field lines eventually causes sections to buckle and form kinks. At the base of the kink, the magnetic field prevents the Sun's heat from rising, creating a cooler region, which looks dark - a sunspot The more distorted the lines, the more sunspots we see. Eventually the field lines become so concentrated that lines of opposite polarity begin to interact and cancel each other out. This is when solar activity begins to decrease, until the field lines are back to their original state, except that the polarity has reversed. This process takes an average of 11 years. Over the course of 22 years, the Sun's magnetic polarity returns to its starting point.

Harold Babcock died on April 8, 1968. It seems fitting that we honor Babcock during this current solar maximum. The recent spectacular appearances of sunspots, solar flares, prominences, and even the aurora we have been fortunate to see in the past few months, can all be tied to the Babcock cycle. Now with spacecraft like SOHO peering into the Sun's inner workings, we know more about the Sun and the forces that drive its activity than ever before. But our first glimpse at the process that powers all of the Sun's interesting, and sometimes violent, activity would not be possible if it weren't for this month's honoree: Harold Babcock.

References:

The Bruce Medalists: Harold D. Babcock Web Page
http://www.phys-astro.sonoma.edu/BruceMedalists/BabcockHD/
Today in Science History Web Page
http://todayinsci.tripod.com/cgi-bin/indexpage.pl?http://todayinsci.tripod.com/1/1_24.htm
Eclipse History Web Page
http://members.aol.com/kcstarguy/blacksun/echistory.htm
Biography.com Web Page
http://search.biography.com/print_record.pl?id=4010
Britannica Australia.com Web Page
http://www.britannicaaustralia.com/alpha.asp?qt=B&navigation=5
Science Net = Physics & Astronomy - What is the sunspot cycle? Web Page
http://www.sciencenet.org.uk/database/Physics/Sun/p01181c.html
Mt. Wilson 150-Foot Solar Tower Magnetograph Information
http://www.astro.ucla.edu/~obs/150_magn.html

Deadline for articles and news items for January ECLIPSE: 24 January
The Eclipse will be published on January 28 due to the editor taking vacation January 29 through February 10.

Minutes of Barnard-Seyfert Astronomical Society Board of Directors Meeting on December 06, 2001

Board Chairperson Kris McCall called the meeting to order at 7:15 PM in the Cumberland Science Museum Volunteer Lounge. Other board members in attendance were Mike Benson, Joe Boyd, Doug Hall, and Lloyd Watkins. Officers attending were President Powell Hall, Vice President John Bradford, and Treasurer A.G. Kasselberg. Others present were Eclipse Editor Rocky Alvey, WebMaster Bill Collins, past Vice President Lonnie Puterbaugh, and club members Larry Southerland and Evelyn Wright.

Kris McCall asked Joe Boyd if there had been any progress in the search for a replacement secretary for BSAS. Joe Boyd said that the nominating committee recommended Evelyn Wright be nominated to serve as secretary until the next club election meeting in September 2002. A motion was so made and approved by the Board members.

Kris McCall then asked Joe Boyd about the status of the BSAS obtaining 501(c)(3) (non-profit) status. Joe Boyd needs a financial report for the last three years in order to turn in the application, and past Treasurer Powell Hall has the forms to provide this information.

The status of upcoming BSAS programs was discussed next. The Christmas potluck supper will be followed by a still-to-be-determined Sudekum Planetarium show. January's program may be by asteroid discoverer Doug Durig. Nothing has been decided for the February program. Tut Campbell will be giving an astro-imaging demonstration in March.

Under old business, Kris McCall said Tom Murdick had suggested a budget plan which included an operating budget and a capital budget that would help accessorize the club's C-14 telescope. After much discussion, the following steps were suggested.

1. Treasurer A.G. Kasselberg and past Treasurer Powell Hall will define ongoing items for the operating budget.
2. A.G. and Lloyd Watkins will discuss what is needed to accessorize the C-14 telescope.
3. A.G. and Lonnie Puterbaugh will research possibilities for acquiring or leasing land for a dark site.
4. A.G. and Doug Hall will research available grants.
5. A.G. and Tom Murdic will come up with a budget plan, including how to apportion the budget, and when to save or spend.
6. Lonnie noted that the whole club should vote on the budget plan.

Kris McCall asked about the status of TNSP 2002. Rocky Alvey's latest plan is to hold TNSP 2002 at Dyer Observatory since our normal date at Fall Creek Falls occurs on a full moon. Rather than viewing, the emphasis would be on learning and workshops since the skies are rather light-polluted around Dyer Observatory. Some proposed workshops were mirror grinding, telescope making, astrophotography, and how to buy telescopes. If clear nights occur, the Natchez Trace Dark Site could serve for viewing. There was some discussion about other sites, whether camping would be allowed, capacity, and what set of people would be more likely to come to this kind of event rather than the dark sky event held at Fall Creek Falls the past two years. On hearing there was no proposed date yet, Kris McCall asked Lonnie Puterbaugh to find out already taken dates to avoid. Joe Boyd made a motion to endorse in principal the proposal that TNSP 2002 be held in conjunction with Dyer Observatory with the programs Rocky Alvey had outlined. Doug Hall seconded the motion which passed the Board vote. Kris McCall noted that TNSP 2002 will be held in Nashville with the date still to be determined. Rocky Alvey mentioned that he and Lloyd Watson are in charge of TNSP 2002 and will decide on a date that is not a full moon.

Kris McCall asked if there was any other business. Mike Benson needs to send an updated membership list to the Astronomical League by the end of December. A.G. Kasselberg will work on this. Mike Benson also noted that he can order five of the Ottewell Astronomical Calendars for $19.00 each, and several present were interested.

Powell Hall suggested that the officers of BSAS pool their money and buy a ham for the Christmas party. The officers agreed. Powell Hall also suggested that there be a program about how to buy or use a telescope at the beginning of the year. It was decided that it was better to pair new users with more experienced users after the normal meetings to impart learning on a more individual basis. Doug Hall asked if there was any one beginner's book to recommend to the public on subjects like which telescope to buy. Rocky Alvey likes **Nightwatch** by Terence Dickinson. **The Backyard Astronomer's Guide** by Terence Dickinson and Alan Dyer is at a more intermediate level.

Kris McCall asked if there were any other items. Joe Boyd produced a membership application form that he based on the blue BSAS brochure. After much discussion, it was decided that the treasurer would record the membership fee and turn the forms over to the secretary. Powell Hall thanked Joe Boyd for creating the form, and Kris McCall suggested that Rocky Alvey and Doug Hall review the form and make changes as needed. Joe Boyd then made a motion that the secretary and he be authorized to purchase an official minutes book and minute book paper. The motion was seconded, and passed with no further discussion.

Joe Boyd also noted that Rocky Alvey had prepared a nice fold-out display about the Barnard Seyfert Astronomical Society that Rocky should bring to the Christmas meeting. Mike Benson also has a similar display. They will get together to see if the displays can be combined.

Joe Boyd recommended that President Powell Hall appoint a phone calling tree so that all members can be efficiently contacted if necessary, and Powell Hall agreed to do so.

Kris McCall mentioned that Betty Thurston is retiring from Dyer Observatory, and it would be nice to give her an award at the Christmas meeting since she has been answering phone calls for BSAS for several years. Joe Boyd so moved and Doug Hall seconded the motion which passed without further discussion.

Kris McCall noted that the next board meeting will be the second Thursday in January due to travel plans, and mentioned the following upcoming events.

Dec 13 Thu Stevenson Building Room 4327 Vanderbilt University	4 pm	T.S.U. Astronomic Research Colloquium Dr. Greg Henry
Dec 14 Fri Warner Parks (model airplane field) Will restrooms be open?	3-4:30pm	partial solar eclipse
Dec 14 Fri Warner Parks (model airplane field)	7-9pm	star party
Jan 10 Thu Cumberland Science Museum	7pm	board meeting
Feb 01 Fri Warner Parks		star party
Feb 07 Thu Cumberland Science Museum	7pm	board meeting

The meeting adjourned with a flurry of updates on email, telephone numbers, and addresses of those present.

Respectfully submitted,
Evelyn Wright, Secretary

Book Review
The Star of Bethlehem

Three recent books which all have The Star of Bethlehem as their title or subtitle will be briefly reviewed:

M. R. Molnar, The Star of Bethlehem (Rutgers Univ. Press, 1999)
Mark Kidger, The Star of Bethlehem, An Astronomer's View (Princeton University Press, 1999)
Ernest L. Martin, The Star That Astonished the World (ASK Publications, 1996; 2nd ed. 1998)

Now when Jesus was born at Bethlehem in Judea in the days of King Herod, stargazers came from the East to Jerusalem and asked, "Where is He that is born King of the Jews? We saw His star when it rose and have come to worship Him."

- Matthew, chapter 2
Charles B. Williams translation

Michael Molnar, an astronomer at Rutgers University, came upon a first-century coin from the city of Antioch in Syria that showed a ram looking back over his shoulder at a bright star. Molnar believes this star to be the planet Jupiter. In the year 6 B.C. in the month of April, Jupiter had a heliacal rising in the sign of Aries. When a star or planet, hidden in the glow of the Sun, is first seen again because the Sun has moved east in the sky and separated far enough from the star for it to rise before the Sun and be seen in the sky at dawn, this initial reappearance is called a heliacal rising. The ancient Egyptians used the annual heliacal rising of the star Sothis, which we call Sirius, as a key day in their calendar. Molar says that for the story of the star seen by the Wise Men to be properly understood, the astrology prevalent at the time must be fully taken into account. He concludes that when all the favorable astrological aspects are considered, this heliacal rising of Jupiter must have been seen as a signal that one who would be king of the Jews had been born. Molnar also clarified for me a detail in the Matthew pericope that had always puzzled me. Matthew's mention of the star's motion and standing, which I always thought rather odd, simply employs the first-century Greek terminology of astronomers and astrologers to describe a planet's becoming stationary, retrograde, etc.

Mark Kidger, a British astronomer working in the Canary Islands and writing for both English-speaking and Spanish-speaking readers on a regular basis, is the author of The Star of Bethlehem: An Astronomer's View. He assumes, as Molnar does, that the conventionally accepted date for the death of King Herod- 4 B.C.- is correct. Hence, the search for astronomical phenomena around the time of Jesus' birth must focus on the years just prior to that date, since Herod was still alive when Jesus was born. After patiently examining various theories - comets, meteors, supernovas, triple conjunctions of planets - Kidger concludes that the Star of Bethlehem was not a single occurrence in the sky but a cluster of things, all astrologically significant, culminating in a nova mentioned in ancient Chinese and Korean writings and only lately available to western researchers. A reader getting started in astronomy would learn much from this lucid expositor. Kidger's discussion of the various supernovas and of Betelgeuse as a red giant star ripe to exemplify one of those types is an example of popularization of science at its best and most readable. Kidger made this reviewer aware of the enormous amount of research and publication which scholars have done concerning the Star of Bethlehem. And his irenic, generous tone even when he is presenting views with which he differs I found most attractive.

Ernest Martin's book, The Star That Astonished the World, may perhaps astonish that part of the world which thought it knew about when Jesus was born. He does so by saying Herod died, not in 4 B.C. but in 1 B.C., and that the birth of Christ took place nearer the ancient chronological point of 1 A.D. than has been recently acknowledged. According to Martin, the star of Bethlehem was a conjunction of Jupiter and Venus, so close that the two planets appeared to become one very bright star, "the star that astonished the world." This very close conjunction occurred twice - in 3 B.C. in the morning and in 2 B.C. in the evening. Like Molnar and Kidger, Martin insists on the importance of astrology in the 1st-century Roman world, most of which took the heavenly signs to be divine approval of Augustus Caesar. Certain eastern stargazers, however, had other ideas and came to Bethlehem rather than to Rome. Martin draws on various parts of the Bible in making his case. And he even suggests that a certain passage in the last book of the Christian Bible indicates positions of the Sun and Moon with respect to the constellation Virgo which could only have taken place on one particular day and only at a particular time of day - early evening on September 11, in 3 B.C. This was when the Messiah was born, according to Martin. Among others, the respected authority on Biblical chronology Jack Finegan and the astronomers at the Griffith Observatory in Los Angeles have endorsed his interpretation of the Star of Bethlehem, the Star that astonished the World.

- Powell Hall

Three years ago, in the January 1999 issue of Eclipse, I published a short editorial featuring the commonly accepted interpretation of the Star of Bethlehem - the triple conjunction of Jupiter and Saturn in 7 B.C.