

## Smoky Mountain Astronomical Society

S. C. R. A. P. S.

Society's Chronological Astronomical Papers

From the (new) President - Scott Byers

Volume 31, Number 3  
March, 2008



I am really excited about this upcoming year in SMAS. Thanks to all the new officers:

Michael McCulloch – Vice President  
Dennis Hutchison – Secretary  
Lee Erickson – Treasurer

for volunteering their time this year.

We have a lot of interesting speakers lined up for this year, and I would like to encourage everyone to try to attend. We are also planning to increase our public outreach with more star parties at the Heritage Center. As a parent of younger kids, I would like to encourage increasing our outreach and mentoring of younger persons. They are the amateur astronomers of tomorrow. One thing we may do to help this outreach is have a 'Christmas telescope' program next January focused on people who received a telescope as a gift for Christmas.

Personally, The thing I am looking forward to all the 'Gastronomic' events we have scheduled. I do love to eat. Let's have a good year, and thank you for all your support.

### Tennessee State Star Party      April 4-6 at Fall Creek Falls

Cumberland Astronomical Society will again be hosting TSSP at beautiful Fall Creek Falls State Park near Pikeville, TN, on April 4-6. As in the past, there is no registration fee, but attendees will be responsible for lodging and meals. We will have a great line up of speakers as well as having Jonn Serrie giving a concert on the observing field on Saturday night.

If you would more information, send your browser to  
<http://personal.bna.bellsouth.net/s/p/spsmith/TSSP2008.htm>

## Past President's Message

I wanted to write one last time thanking everyone who contributed to the last two years while I was learning and occasionally learning how not to administer the club. Going forward, I hope the newer members will continue to remind the long time members of the thrill of learning objects in the night sky as they have reminded me.

During these past two years, we have had some very favorable weather for our star parties and the road to Look Rock has remained open. In previous years, we had a string of poor weather and the closure of the Look Rock road hurt our observing momentum. Finally, in 2006 and 2007, we got to use the materials prepared for the Great Smoky Mountain Star Party in Cades Cove. My thanks to the previous administrations for setting this activity in motion and thanks for the planning of 2004 and 2005 from which we benefited. Thanks too to everyone attending the public outreach star parties at the GSMNP, PSTCC, Blount County Library and Townsend.

Thanks to the officers of 2006 and 2007. Bill Dittus was secretary in 2006 and the first half of 2007. Bill was especially good at capturing details of our programs, both reminding those of us who attended of the program's highlights and imparting to members who could not attend, the flavor we, who did attend, enjoyed. Thanks too to Dennis Hutchesen for stepping up to the role of Secretary when Bill had to bow out. (And thanks to Cassi who I often see helping with meeting notes.) Thanks to Treasurer Scott Byers for wrestling with the bookkeeping and his concise reports. I know I will be leaning on Scott further as I figure my way into the role. We all benefited greatly from Vice President Mike Littleton who planned many of the programs and presented many. Mike was always prepared to put on a program at short notice. In addition, Mike has been our principal cook for the summer picnics. Thanks to Pete Bush for publishing SCRAPS in 2006 and to Bob Arr for taking up the pen in 2007. They did a great job of getting my messages into a more readable form.

Thanks to everyone who suggested programs, presented programs, who brought show and tell materials to meetings and who brought their own telescopes and helped get the clubs telescopes to Star Parties. It is all of you who make the **society** of the Smokey Mountain Astronomical Society.

Lee Erickson

## Book Review by Michael Littleton

*Illustrated Guide to Astronomical Wonders*  
By Robert Thompson and Barbara Thompson  
Published by O'Reilly ®, October 2007

One of the advantages to checking SMAS's post office box is being the first to read or play material donated to the Society. Last month we received a free copy of the *Illustrated Guide to Astronomical Wonders*, a DIY Science Book from the publisher. This book is written to deal with the two problems for those new to amateur astronomy: which objects to observe and how to find them. It is divided into three major sections. The first section is an introduction to deep sky observing (DSO). The second section deals with observing equipment. The final and longest section is the constellation guide.

**Introduction to DSO:** Introduces the reader to multiple stars and the concepts of separation and position angle. It invites the reader to find Polaris, split it, and sketch it. The section contains a table of Greek letters both upper and lower case and their pronunciation. This table introduces the beginning astronomer to Bayer star nomenclature (e.g. Vega is  $\alpha$ -Lyrae) and then to the Flamsteed designator (e.g. Vega is 3-Lyrae). Knowledge of the stellar nomenclature is essential to finding objects in the Constellation Guide Section of the book.

In DSO, the reader is introduced to open and globular clusters, nebulae, planetary nebulae, and galaxies with description of some of the more prominent members of each class. Scattered throughout the main text are text boxes containing related information such as "DSO Sizes" and "All About DSO Magnitude". DSO encourages participation in the Astronomy League Clubs and recommends the Messier Club as "the best starting point for nearly any novice DSO Observer." A valuable recommendation in the section is to observe interesting objects in particular constellation during an observing session and makes best use of the structure of the Constellation Guide Section. Finally, the section lists constellations by season.

**Observing Equipment:** This section describes binoculars, their use and various attributes such as power, field of view, exit pupil and coating. The authors identify binoculars by brand for those on a tight budget. Binoculars are described as an integral part of locating objects after the acquisition of a telescope. Their method is to move from chart to naked eye to binocular to zero-power finder to optical finder to telescope,

The rest of the section describes the various types of telescopes and mounts, eyepieces, charts, planetary software, nebular filters and all the other accessories on which we spend our "excess" cash. The authors do a really thorough job on eyepieces and discuss characteristics of the various brands, price ranges and their opinion on the brands.

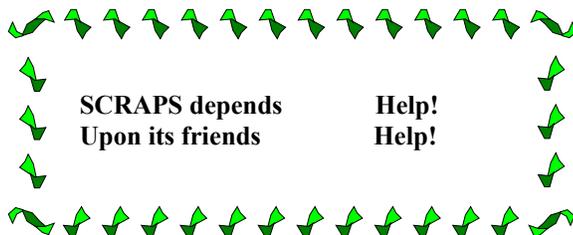
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*Illustrated Guide to Astronomical Wonders*  
By Robert Thompson and Barbara Thompson

**Constellation Guide:** The bulk of the book is the Constellation Guide from Andromeda to Vulpecula. It does not feature constellations for southern observers. Each constellation has a section on the mythological lore related to the Constellation. It also has a table of featured star clusters, nebulae, galaxies and a table for multiple stars and a number of charts to assist the user to locate the objects.

I tried to locate objects in Andromeda using only the book. There was no problem locating M 31 and its satellite galaxies M 32 and M 110. The next object was NGC 224, an open cluster. This was relatively easy to find by putting  $\gamma$ -Andromeda and 50-Andromeda in the field of binoculars or an optical finder and find NGC 224 by imagining a triangle with each object at an apex. The charts contained sufficient information to go from the large-scale chart of the constellation to the smaller scale chart containing  $\gamma$ -Andromedae, 50-Andromedae, and NGC 224. The next deep-sky object in Andromeda was the 10.8 magnitude galaxy, NGC 891. At a magnitude of 10.8, this galaxy would not be visible in binoculars or an optical finder. I could not locate it using only the charts in the book. One landmark to find the galaxy was 60-Andromedae, which was only named on the small-scale chart used to find the galaxy and not on the large-scale chart of the constellation. There were similar problems with the last object, NGC 7662, a magnitude 9.1 planetary nebula.

**My Take on the Book:** This is a great aid in educating, maintaining interest and gaining proficiency in astronomy for the novice and not so novice, but it cannot be used alone to find some of the deep-sky objects. It must be supplemented by a good star chart or planetary program. The book will be available for loan from SMAS's library at our meeting in March.



## **Smoky Mountain Convention & Visitors Bureau**

Blount Partnership  
7906 E. Lamar Alexander Parkway  
Townsend, TN 37882

February 13, 2008

Lee Erickson  
3433 Ridgeway Trail  
Maryville, TN 37801-9536

Dear Lee,

Thank you so very much for your participation in our second annual Winter Heritage Festival! Your stargazing presentation was enjoyed by all and was in keeping with our themes for the event. Please express our appreciation to other members of the Smoky Mountain Astronomical Society for taking the time to speak to our group. People were fascinated by the telescopes and by the interpretations you gave of the night sky.

With the continuing involvement of knowledgeable people like you who care about the cultural history, traditions, and beauty of our region, the Winter Heritage Festival will provide education, entertainment, and inspiration! It has been a pleasure working with you and we look forward to your involvement in other events for our community. Please don't hesitate to contact our office with your suggestions for the future.

Herb Handly  
Executive Vice President of Tourism  
Smoky Mountain Convention and Visitors Bureau

Jeanie Hilten  
Special Events Coordinator  
Smoky Mountain Convention and Visitors Bureau

## Invisible Spiral Arms

by Patrick Barry

At one time or another, we've all stared at beautiful images of spiral galaxies, daydreaming about the billions of stars and countless worlds they contain. What mysteries—and even life forms—must lurk within those vast disks?

Now consider this: many of the galaxies you've seen are actually much larger than they appear. NASA's Galaxy Evolution Explorer, a space telescope that “sees” invisible, ultraviolet light, has revealed that roughly 20 percent of nearby galaxies have spiral arms that extend far beyond the galaxies' apparent edges. Some of these galaxies are more than three times larger than they appear in images taken by ordinary visible-light telescopes.

“Astronomers have been observing some of these galaxies for many, many years, and all that time, there was a whole side to these galaxies that they simply couldn't see,” says Patrick Morrissey, an astronomer at Caltech in Pasadena, California, who collaborates at JPL.

The extended arms of these galaxies are too dim in visible light for most telescopes to detect, but they emit a greater amount of UV light. Also, the cosmic background is much darker at UV wavelengths than it is for visible light. “Because the sky is essentially black in the UV, far-UV enables you to see these very faint arms around the outsides of galaxies,” Morrissey explains.

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These “invisible arms” are made of mostly young stars shining brightly at UV wavelengths. Why UV? Because the stars are so hot. Young stars burn their nuclear fuel with impetuous speed, making them hotter and bluer than older, cooler stars such as the sun. (Think of a candle: blue flames are hotter than red ones.) Ultraviolet is a sort of “ultra-blue” that reveals the youngest, hottest stars of all.

“That’s the basic idea behind the Galaxy Evolution Explorer in the first place. By observing the UV glow of young stars, we can see where star formation is active,” Morrissey says.

The discovery of these extended arms provides fresh clues for scientists about how some galaxies form and evolve, a hot question right now in astronomy. For example, a burst of star formation so far from the galaxies’ denser centers may have started because of the gravity of neighboring galaxies that passed too close. But in many cases, the neighboring galaxies have not themselves sprouted extended arms, an observation that remains to be explained. The Galaxy Evolution Explorer reveals one mystery after another!

“How much else is out there that we don’t know about?” Morrissey asks. “It makes you wonder.”

Spread the wonder by seeing for yourself some of these UV images at

[www.galex.caltech.edu](http://www.galex.caltech.edu)

Also, Chris Martin, principle scientist for Galaxy Evolution Explorer —or rather his cartoon alter-ego—gives kids a great introduction to ultraviolet astronomy at

[spaceplace.nasa.gov/en/kids/live#martin](http://spaceplace.nasa.gov/en/kids/live#martin).

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



# March 2008

SUN	MON	TUE	WED	THU	FRI	SAT
		UTK—roof of Neilson Physics Building on The Hill at UT 1st & 3rd Fridays TAO—Tamke-Allan Observatory Public Stargaze Watts Bar Lake, Roane County 1st & 3rd Saturdays				1
2	3	4	5	6	7 New Moon  UTK	8 Daylight Savings Time Begins TAO
9	10	11	12	13	14 SMAS Meeting PSTCC 7 pm	15
16	17	18	19	20 Vernal Equinox	21  UTK	22  TAO
23	24	25	26	27	28	29
30 Five days Til the TSSP	31	SCRAPS depends Upon its friends	Help! Help!		4 April  TSSP	