Highlights of the January Sky. . .

- - - 1st - - -
PM: The Waxing Crescent Moon is about 15° above Venus.

Dusk: Mercury is about 2° to the left of Jupiter

- - - 2nd - - -
Dusk: Mercury is about 3° to the left of Jupiter.

- - - 3rd - - -
AM: Quadrantid Meteor Shower peaks after mid-night (40 per hour).

- - - 4th - - -
First Quarter Moon

- - - 10th - - -
Full Moon

- - - 14th - - -
PM: Venus is at greatest elongation, 47° east of the Sun.

- - - 15th - - -
AM: The Moon is about 6° to the right of Saturn.

- - - 17th - - -
Last Quarter Moon

- - - 21st - - -
Dawn: The Moon about 1° from Antares in the SSW.

Venus passes within 1½° of 6th magnitude Uranus (until the 23rd).

- - - 26th - - -
New Moon

- - - 27th - - -
Dusk: Thin Crescent Moon visible low in WSW, far right of Venus.

- - - 29th - - -
Dusk: Waxing Crescent Moon is about 5° lower right of Venus.

Prime Focus

A Publication of the Kalamazoo Astronomical Society

☆ ☆ ☆ January 2009 ☆ ☆ ☆

This Months KAS Events

General Meeting: Friday, January 9 @ 7:00 pm
Kalamazoo Area Math & Science Center - See Page 12 for Details

Board Meeting: Sunday, January 11 @ 5:00 pm
Sunnyside Church - 2800 Gull Road - All Members Welcome

Full Moon Theater: Saturday, January 24 @ 7:00 pm
WMU Main Campus, Rood Hall, Room 1110 - See Page 4 for Details

Inside the Newsletter. . .

December Meeting Minutes

The KAS Annual Meeting, featuring our tenth Holiday Party, began at 6:30 pm on Friday, December 5, 2008. Approximately 39 members and guests were in attendance at the Kalamazoo Area Math & Science Center (KAMSC); about the same as last year's party.

Dinner was served at 6:50 pm. Our potluck hors d'oeuvre and dessert extravaganza was as good as ever. These include the traditional tasty meatballs and more desserts than one could possibly enjoy in a single evening. Our "hostess-with-the-mostess," **Jean DeMott**, supplied the soft drinks and hot wassail again this year and did another terrific job with all the decorations. Thank you, Jean!

Once dinner was complete and everyone had a chance to relax and chit chat we played four rounds of BINGO; featuring our new caller, Jack Price. Here are the lucky winners:

- **Shannon Latimer** - *The Backyard Astronomer's Guide* - *Donated by the KAS SkyShop*
- **Mark Woolf** - Orion 7×35 Explorer Binoculars - *Donated by Orion Telescopes & Binoculars*
- **Greg Sirna** - *NightStar Flashlight Holster* - *Donated by Applied Innovative Technologies*
- **Greg Sirna** - *Your Guide to the Sky* book - *Donated by the KAS*

And yes, that's no typo. "Lucky" Greg Sirna stunned everyone in attendance by winning the last two rounds of BINGO.

Final nominations and elections for 2009 KAS Officers and At-Large Board Members were then held once everyone reconvened in the presentation center. Thanks to Mark Miller and Greg Sirna for counting the ballots. The election results appear on page 11. Jack Price then gave a brief president's report. He read a thank you card we received from the WMU Education Day Team.

A great turn-out and a great time was had by all at the tenth annual KAS Holiday Party.

Greg Sirna had a difficult time choosing the first of two BINGO prizes, while Jack Price checks his winning card.

Several members reported "no report" of the Moon, Venus, and Jupiter conjunction on December 1st due to typical winter conditions. Many member did report seeing Venus and Jupiter together before and after the conjunction. The free-floating tool bag, lost during the recent servicing mission to the International Space Station, was also mentioned. Images of both the conjunction and lost tool bag can be seen by searching the archives on the *SpaceWeather* web site.

Richard Bell then gave a guided tour of our new and completely redesigned web site, *KAS Online*.

We then held the door prize drawings and here are the lucky winners (in order): **Richard Bell** (*Eye on Mars* DVD - donated by Rider's Hobby Shop of Livonia); **Jon Woolf** (NightStar Flashlight; donated by Applied Innovative Technologies); **Bob White** (*Atlas of the Sky* DVD - donated by Rider's); **Dan Morgan** (Astronomy 2009 Calendar - donated by FireFly books); **Molly Williams** (*NightWatch* - donated by the KAS SkyShop); **Susan Bond** (Deep Space Mysteries 2009 calendar - donated by OPT); **Mike Sinclair** (Astronomy 2009 Calendar - donated by FireFly books); **Scott Macfarlane** (*Wheels on Mars* DVD - donated by Rider's); **Rick Mather** (*Stikky Night Skies* book - donated by the KAS); **Amy Lubbert** (Deep Space Mysteries 2009 calendar - donated by OPT); **Ninah Miller**, **Roger Williams**, and **Norm Terry** (all chose the *SOHO Portfolio of Images* - donated by NASA); **Keith Hoekwater** (small Chandra poster - donated by NASA), and **Gary Lubbert** (large Chandra poster - donated by NASA).

The meeting concluded at 9:05 pm. Thanks to the volunteers that helped with clean-up and putting everything away.

Board Meeting Minutes

The KAS Board met on Sunday, December 14th at the Pizza Hut restaurant at 6050 Gull Road. The festivities began at 5:00 pm with stamping and sealing of a membership mailing, after which the meeting was called to order by President Jack Price at 5:38 pm. Present were Richard Bell, Dick Gillespie, Rich Mather, Mike Sinclair, and Roger Williams.

Rich presented a treasurer's report with more complexity than usual, since several CD's in which we had parked funds had come due. The balance was $13,577.23, including $8,314.34 in the Land Acquisition Fund and $5,262.89 operational funds. Since current interest rates offered on savings are so low, Rich was looking for the best place to put the money for the next year. One possibility is to combine the Land Acquisition balance with some of the operational balance to bring the total above $10,000, which might generate a better interest rate. The bookkeeping would be more complicated in allocating the separate principal and interest amounts, but Rich said it could be done. He will look further for the best deal. A few details were also discussed about how to track online sales, since the web site SkyShop is off to a brisk start.

General meetings topics were reported by Richard to be all set for 2009. Richard is polishing his presentation for January, and Mike is doing research for March. Richard has a video in hand for the January Full Moon Theater, and he expects to get the February one soon. The Board expressed kudos for the blue 2009 schedule booklets, and since the supply was now exhausted, it was decided to make enough more booklets to use up the rest of the blue paper that Dick had on hand.

Regarding old business, plans for the International Year of Astronomy and Astronomy Day were reviewed. Richard had contacted the Irving S. Gilmore Foundation, and while they did not flatly reject the idea of a grant for our activities, they said that chances would be better if we had the backing of, e.g., the Air Zoo, the Kalamazoo Valley Museum, and/or the Kingman Museum. Further plans for bringing in Timothy Ferris and Michael Francis (an actor who portrays Galileo) depend on developments in the grant area. Richard is also contacting a jazz group that uses Hubble pictures with their music.

In regard to the worldwide 100 Hours of Astronomy (April 3rd & 4th), Richard did not have confirmation of how KAS will be working with the Museum, but we will plan to be a part of that activity. Dick said that Kingman will definitely be doing something also.

The Board congratulated Richard on the new web site. Jack had obtained the information for nominating it for the Astronomical League Webmaster Award. He will also nominate the newsletter for the A.L. Mabel Sterns Award. In other new business, Jack and Richard summarized their meeting with Kara Haas (Nature Center) about the Hubble pictures that they will be receiving, compliments of NASA, in response to a joint application from KNC and KAS. The unveiling will be February 21, 2009, and the Nature Center will be publicizing the event.

There being no further business or pizza, the meeting was adjourned at about 6:30 pm. The next meeting was set for January 11, 2009, 5:00 pm, at Sunnyside Church

Respectfully submitted by Roger Williams

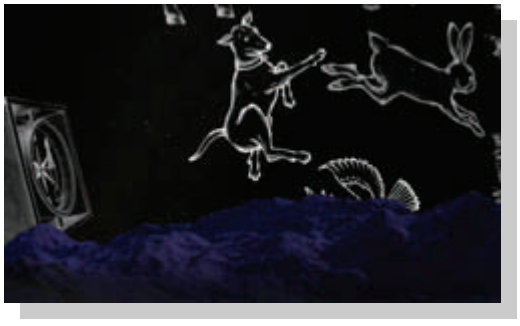
CANIS MAJOR

by Robert Frost

The Great Overdog,
That heavenly beast
With a star in one eye,
Gives a leap in the East.

He dances upright
All the way to the West,
And never once drops
On his forefeet to rest.

I'm a poor Underdog;
But tonight I will bark,
With the Great Overdog
That romps through the dark.



Kalamazoo Astronomical Society

presents

Full Moon Theater

Saturday, January 24 @ 7:00 pm

WMU Main Campus - Rood Hall - Room 1110

GALILEO'S Battle for the Heavens

At a time when heretics were burned alive for dissent, scientist Galileo Galilei risked his life to advance his revolutionary concepts of the universe. British actor Simon Callow brings Galileo to life, humanizing the great thinker's passion, intelligence, and arrogance while depicting his frustrations with fellows philosophers, scientists, and Roman Catholic church leaders.

Based on Dava Sobel's best-selling biography Galileo's Daughter, this two-hour film offers a vivid re-imagining of Galileo's incredible achievements that forever changed the way we view our place in the universe. It also investigates the momentous personal and spiritual conflicts Galileo faced - particularly defending his controversial theory that the Earth revolves around the Sun.

Join noted Galileo authorities and experience the remarkable life behind the discoveries, and see how letters from his illegitimate daughter, Maria Celeste, a cloistered nun, have shed new light on Galileo's pioneering telescopic observations, his fateful Inquisition trail for heresy, and life in the seventeenth century.

Admission is FREE! The KAS will provide the popcorn and soft drinks. You just need to show up and have a great time! For more information and directions to Rood Hall, please visit our web site: www.kasonline.org

Looking Up in 2008

by Richard S. Bell

The Kalamazoo Astronomical Society has completed its 72nd lap around the Sun in grand old fashion on spaceship Earth. Yes, 2008 was another great year for your favorite astronomy club and 2009 shows much promise. Please indulge me as I look back on the past 12 months and look ahead to some of our plans for the International Year of Astronomy.

One thing that continually amazes me about the KAS is the number of members that are capable of giving top quality presentation. I honestly don't know of another astronomy club in Michigan that has such vast talent. Mike Sinclair, our humble Vice President, got us off to a great start on January 11th with his presentation on *Simon Newcomb: The Unknown Astronomer*. Mike will take a break from his biographical lecture series and switch to a history of our understanding of black holes in March.

The KAS's resident professional astronomer, Dr. Kirk Korista finally settled a long-standing debate on February 1st. Kirk's latest presentation was called *Pluto: What's in a Name?* His case against Pluto's planetary status was so overwhelming that Mike Sinclair finally and publicly admitted defeat to our infamous debate at Astronomy Day 2006. Mike's a brave man for finally admitting the obvious and just goes to show that I'm always right (except when I'm wrong, which may or may not occur more often than I'm willing to admit). Kirk will again give the feature presentation at the February General Meeting, so reserve your seats now.

Former KAS President Mark Miller gave the first presentation at a general meeting in...well...a while. This year we celebrate the 400th anniversary of the first astronomical use of the telescope. Mark celebrated the 400th anniversary of the *invention* of the telescope with his talk *BIG: History of the World's Largest Telescope* at our meeting on March 7th. I used the guilt-trip approach to convince Mark to give us a presentation, since it has been a while. It was well worth the wait.

We started 2008 off with a new KAS President. Here's the man himself, Jack Price, at the general meeting on February 11th.

Norm Terry, Yours Truly, Jean DeMott, and Rich Mather (from left to right) meeted and greeted parents, teachers, and students at Vicksburg Middle School's Science Night on March 12th.

Rookie Member-at-Large Dan Morgan gave his first-ever presentation at a general meeting on April 4th. Dan's talk was called *What it Takes to Build a Large Telescope* and was the result of hundreds of hours of work on his 18-inch truss tube Dob. Building your own telescope is a major accomplishment in amateur astronomy and Dan did a great job. Make sure you attend a Public Observing Session in 2009 if you haven't looked through Dan's Dobsonian yet.

WMU Professor Emeritus of Geology, Dr. John Grace, was our first guest speaker of 2008, but he soon became a member of the KAS. John's called his enjoyable lecture *Visitor's from Space: Meteorites and Comets* and presented it on May 2nd.

We were forced to cancel the general meeting on June 6th due to severe weather. This has never happened in the 15 years I've been a KAS Member. Fortunately, Dr. Arunav Kundu (Assistant Professor of Astronomy at MSU) was able to speak at the September 12th meeting instead. I really enjoyed his presentation *Tales from the Many Tales of Comets.*

As good as the 2008 meetings were, 2009 has the potential to be the best ever. Take a look at this year's list of member and guest speakers on our web site. Some of them are world renowned astrophysicists or respected amateur astronomers. Plan to attend *every* general meeting this year. You won't want to miss even one. There's not a stinker in the bunch!

KAS Members enjoyed some pleasant nights under the stars in 2008, but the weather did put a hamper on some sessions. The

February Freeze Out was canceled, but we did have clear skies for the February 20th Total Lunar Eclipse. A handful of KAS Members and several KAMSC students enjoyed the bright red Moon at the Nature Center. The view was great, but it sure was cold. Mike Sinclair's diet coke froze solid! It was also clear for the Messier Marathon, but the wind was blowin' something fierce. Dave Woolf and I enjoyed a few glimpses of Saturn through Jack Roach's telescope before we called it quits.

The Public Observing Sessions had about a 50% success rate in 2008 (June was a complete shut-out and that includes the general meeting). However, the skies were very transparent on August 9th (same day as the Perseid Potluck Picnic). Many of as stayed until at least 3:00 am. Wish we could have conditions like that more often!

Dick Gillespie started a great new tradition with the Kiwanis Star Party. The first such event was held on August 2nd. Conditions were overall great that night, but it was pretty damp. The crowd made it worthwhile and I'm looking forward to more sessions in 2009. We've got three planned in all (one for members only and two for the public).

Outreach has become an important part of our mission and 2008 was a prime example. We returned to four community events last year. These include Science Night activities at both Vicksburg Middle School and Kellogg Elementary on March 12th and April 22nd, respectfully. We also attended a very rainy Kindleberger Festival on July 12th and WMU's Education Day on November 1st.

Our flagship outreach event, Astronomy Day, was another success. However, for the first time in many years, solar observing was clouded out (along with the observing session later that night). As you may have read in the Board Meeting Minutes, I've been trying to organize an extra-special Astronomy Day this year. All the plans are in place, but we need cash. My hopes are diminishing, but we still have a chance to pull something off. Ideas are welcome.

Dick Gillespie was the brainchild of the Kiwanis Star Party; held on August 2nd. Here's Dick collimating his hand-crafted 18-inch truss-tube Dobsonian.

You never know who you're going to meet when you take astronomy on the road. Buster Bronco paid a visit to our setup at WMU's Education Day on November 1st. Buster told us that his favorite constellations are Pegasus and Monoceros. Go figure!

KAS Members took a couple of field trips together in 2008. Three members, myself, Scott Macfarlane, and Jack Price, attended the Great Lakes Star Gaze (held near Gladwin, MI) from September 25th - 28th. The weather was overall good, but pretty damp at night. Several of us also enjoyed another show at Abrams Planetarium on November 8th. A few small field trips and one big trip are being discussed for 2009. The big one is to the National Air & Space Museum in Washington, D.C. Not sure how that'll turn out, but we'd love to hear your thoughts (as always).

We lost our oldest member in July, 2008. Allen Buskirk (and his wife, Phyllis) first joined the Kalamazoo Amateur Astronomical Association in 1954. There aren't many members left from the KAAA era. Allen and Phyllis became the first-ever lifetime members of the KAS in 2006. To me, Allen was always the best example of a KAS Member. He never held a spot on the Board, couldn't attend every meeting, but he loyally maintained his membership. (Phyllis, I hope you're doing well. You'll always be welcome at a meeting. You're still a lifetime member, after all!)

I'm happy to report that the State of KAS Membership is good. Membership rose in 2008 after taking a dip in 2007. There are 112 KAS Memberships as I write this; up from 108 at the end of 2007. It's my hope that membership will continue to increase a result of our International Year of Astronomy celebration and our new web site, which debuted on December 1st. After all, it's never been easier to join the KAS thanks to the brand new Online Application Form!

The key to our success in 2009 and beyond will come from the continued support of folks like you. Please do all you can to spread the word about all our International Year events. Let's make this year one to remember.

Astronomy: Hobby or Obsession?

by Mike Simonsen

I've often wondered if astronomy is still a hobby for me, or if it has evolved into something much more serious. Have I become ***obsessed***?

To begin my quest for the truth, I looked up the definition of astronomy in several sources. The one that seems the most sensible is:

> *The scientific study of the universe and of objects which exist naturally in space, such as the moon, the sun, planets and stars.*

So, what then, is a hobby? Research yielded these results:

> *A pursuit outside one's regular occupation engaged in especially for relaxation.*
>
> *An activity which someone does for pleasure when they are not working.*

Adding them together I'm not sure what to think about this concept.

> *The scientific study of the Universe for relaxation and pleasure.*

Sounds kind of crazy, doesn't it?

I was sure I was in trouble when I looked up the definitions of obsession. The first definition wasn't so bad:

> *A compelling motivation.*

Yes, I think I have been compelled and motivated by astronomy in many ways. But then I read:

> *A **persistent disturbing preoccupation** with an often unreasonable idea or feeling.*

Eeew, that's creepy.

> *Something or someone that you think about all the time.*

Double eeew, that's really creepy. I may have a problem. I do think about it all the time. I'm thinking about it right now! How do we tell the difference between a nice, well-adjusted hobby and ***astronomy obsession***? What are the signs of ***astronomy obsession***? Is there a cure?

Apparently, my search for the truth had just begun.

The evolutionary path that many amateur astronomers take seems benign at first glance. But as you will see, this path is fraught with danger at every step.

Stars

The imagination and curiosity of individuals is often sparked by their first experience seeing the stars overhead from a very dark sky. This can happen on a camping trip or a vacation to a remote part of the world, far away from city lights. Most city dwellers, about 60% of the world's population now, never see the Milky Way from their homes. In fact, so few stars can be seen with the unaided eye from the city that most people just don't bother to look up any more.

Constellations

Once they can actually see stars, patterns in the sky become obvious and the curious newbie astronomer will learn the bright constellations like Orion, Ursa Major, Leo, Scorpio and others, until they know their way around the sky fairly well. In order to see fainter objects the amateur may purchase her first pair of binoculars and learn the sky to more depth.

First Telescope

The acquisition of the first telescope can be the first real dangerous step on the road to destruction. The first look at the Moon through a telescope is often all it takes to get a person hooked on astronomy. Seeing Jupiter and the Galilean satellites for the first time stirs feelings in most people they didn't know existed. The first look at Saturn and its rings is nearly 100% fatal. I think there should be a warning label on every telescope box saying, "WARNING: Looking through this telescope may change your life forever!"

Messier Objects

It is the quest to observe all the Messier objects that is the event horizon for most amateur astronomers. Once this boundary is crossed, there is no escape for the unwary amateur. It begins simply enough with casual peeks at the Orion nebula or the Pleiades. Then many of the other bright Messiers become well known to them, and oft visited. Most of the passionate amateurs I know can literally kick their Dob and land it on M81 and M82, after years of showing these two fine galaxies to everyone they know.

This journey usually ends in frustration trying to eek out detail in M108 or the madness of trying to view all the Messier objects in one night, an exercise in futility known as the Messier Marathon.

Aperture Fever!

The frustration experienced by amateurs, trying to see faint, fuzzy objects with their first pair of binoculars or their first modest sized telescope, leads to the first obvious symptom of astronomy obsession- Aperture Fever.

This is the unquenchable thirst for larger and larger telescopes and binoculars with which to view fainter and fainter objects.

The history of astronomy in the last 400 years is littered with the wreckage of amateur and professional astronomers investing their hearts, minds, souls and money into the quest for larger and larger telescopes!

NGC and other faint object catalogs
Once hopelessly obsessed with viewing fainter and fainter galaxies, clusters and nebulae, the amateur discovers the New General Catalog and other catalogs and observing lists from which to satiate their appetite for photons emanating from faint, distant sources. As if this weren't madness enough, many take the next step into astrophotography or photometry!

Deep sky photography and CCD imaging
It is with complete reckless abandon that the amateur dives head first into deep sky imaging and photometry. Once she has gone this far there is no stopping her until she hits rock bottom. Nothing else matters anymore, and there is little hope for intervention or salvation until the amateur is insane or bankrupt.

Other sure signs of impending ***astronomy obsession*** for the concerned spouse, relative or friend to look for are:

- *Observing alone*
- *Making excuses, finding excuses to observe*
- *Daily or frequent astronomy fix needed to function*
- *Inability to reduce or stop astronomy activities*
- *Becoming angry when confronted about astronomy habit*
- *Poor eating habits, increased coffee intake*
- *Failure to care for physical appearance*
- *Inability to remember or function properly the next morning*

Misery loves company, so inevitably the obsessed astronomer will end up joining mysterious, secret societies and organizations of similarly afflicted astronomers. The danger these organizations pose to you or your loved ones is directly proportional to the number of letters in the acronym associated with them.

AL - Astronomical League (relatively benign)

ASP - Astronomical Society of the Pacific (could be trouble)

ALPO - Association of Lunar and Planetary Observers (time for concern)

AAVSO - American Association of Variable Star Observers ("Houston, we have a problem")

BAAVSS - British Astronomical Association Variable Star Section (it may be too late)

BAAVSSSSC - British Astronomical Association Variable Star Section Supernovae Search Committee (these people are completely mad, avoid any contact whatsoever!)

Where to go for help
If you or a loved one has succumbed to astronomy obsession or addiction there is help, Astronomy Addicts Anonymous (AAA).

The Seven Step Program of AAA is very similar to many twelve step programs for other addictions. Astronomy addiction is not nearly as serious as most addictions, people rarely die from it, so only seven steps are required for the recovering astronomer.

1. We admitted we were powerless over astronomy.
2. Came to believe that only a power greater than ourselves could restore us to sanity.
3. Made a decision to turn our will, our lives and our pocketbooks over to the study of the Universe, as we understand it.
4. Made a list of all persons we had ignored or taken for granted, and became willing to make amends to them all.
5. Made direct amends to such people wherever possible, except when to do so would cause us to miss a clear night.
6. Seek through prayer, meditation, observations and Internet connection to improve our conscious contact with the Universe, as we understand it, seeking only knowledge and good weather.
7. Having had a spiritual awakening as the result of these steps, we tried to carry this message to other obsessed astronomers, and to practice these principles in all our affairs.

If followed faithfully, the astronomer may once again become a functioning member of society, but he will never return to a completely normal life. The best we can hope for is some inner peace and an acceptance of our relationship with the cosmos, as we understand it.

Mike Simonsen is a self-described variable star junky living in Imlay City, Michigan. Since 1999, he has submitted over 50,000 observations to the AAVSO. Mike has given presentation to the KAS in March 2001 and September 2007.

Superstar Hide and Seek

by Dr. Tony Phillips

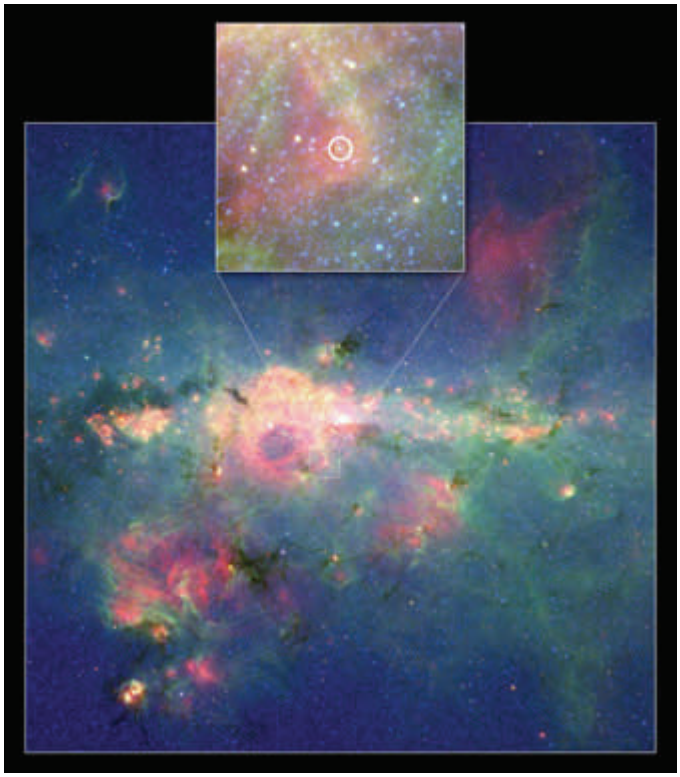
It sounds like an impossible task: Take a star a hundred times larger in diameter and millions of times more luminous than the Sun and hide it in our own galaxy where the most powerful optical telescopes on Earth cannot find it.

But it is not impossible. In fact, there could be dozens to hundreds of such stars hiding in the Milky Way right now. Furiously burning their inner stores of hydrogen, these hidden superstars are like ticking bombs poised to 'go supernova' at any moment, possibly unleashing powerful gamma-ray bursts. No wonder astronomers are hunting for them.

Earlier this year, they found one.

"It's called the Peony nebula star," says Lidia Oskinova of Potsdam University in Germany. "It shines like 3.2 million suns and weighs in at about 90 solar masses."

The star lies behind a dense veil of dust near the center of the Milky Way galaxy. Starlight traveling through the dust is attenuated so much that the Peony star, at first glance, looks rather dim and ordinary. Oskinova's team set the record straight using NASA's Spitzer Space Telescope. Clouds of dust can hide a star from visible-light telescopes, but Spitzer is an infrared telescope able to penetrate the dusty gloom.



The "Peony Nebula" star is the second-brightest found in the Milky Way Galaxy, after Eta Carina. The Peony star blazes with the light of 3.2 million suns.

"Using data from Spitzer, along with infrared observations from the ESO's New Technology Telescope in Chile, we calculated the Peony star's true luminosity," she explains. "In the Milky Way galaxy, it is second only to another known superstar, Eta Carina, which shines like 4.7 million suns."

Oskinova believes this is just the tip of the iceberg. Theoretical models of star formation suggest that one Peony-type star is born in our galaxy every 10,000 years. Given that the lifetime of such a star is about one million years, there should be 100 of them in the Milky Way at any given moment.

Could that be a hundred deadly gamma-ray bursts waiting to happen? Oskinova is not worried.

"There's no threat to Earth," she believes. "Gamma-ray bursts produce tightly focused jets of radiation and we would be extremely unlucky to be in the way of one. Furthermore, there don't appear to be any supermassive stars within a thousand light years of our planet."

Nevertheless, the hunt continues. Mapping and studying supermassive stars will help researchers understand the inner workings of extreme star formation and, moreover, identify stars on the brink of supernova. One day, astronomers monitoring a Peony-type star could witness with their own eyes one of the biggest explosions since the Big Bang itself.

Now *that* might be hard to hide.

Find out the latest news on discoveries using the Spitzer at:

http://www.spitzer.caltech.edu/

Kids (of all ages) can read about "Lucy's Planet Hunt" using the Spitzer Space Telescope at:

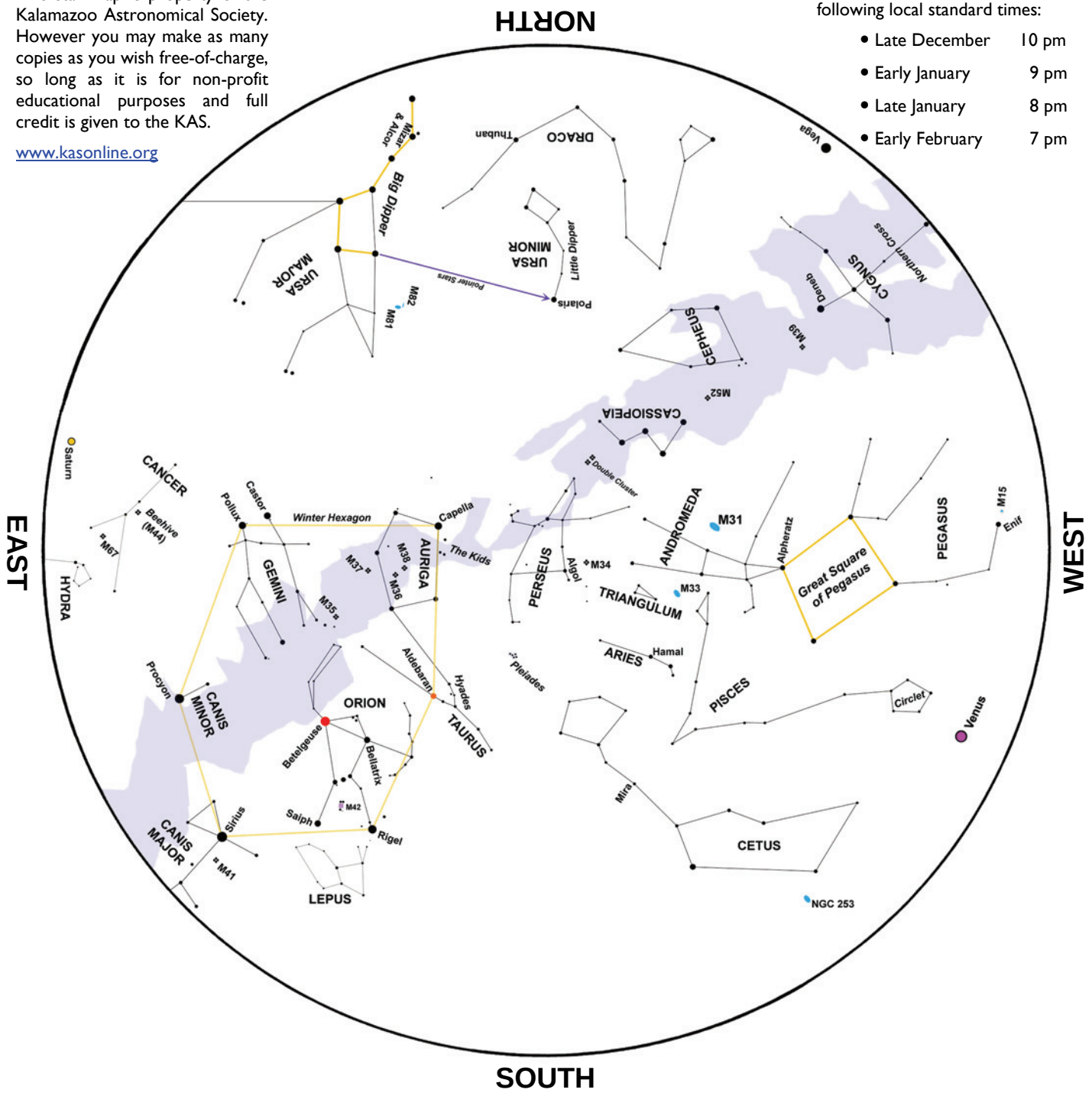
http://spaceplace.nasa.gov/en/kids/spitzer/lucy/

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

January Night Sky.....

This map represents the sky at the following local standard times:

- Late December 10 pm
- Early January 9 pm
- Late January 8 pm
- Early February 7 pm



Look for Mercury through bright twilight from January 1st - 10th. It'll be about 8º or 10º above the southwestern horizon one-half hour after sunset. Mercury will be 2º or 3º to the upper left of brighter Jupiter on January 2nd and 3rd, making it easier to spot.

Venus is at greatest elongation, 47º east of the Sun, on January 14th. Through a telescope the evening star will look like a small, featureless First Quarter Moon.

Venus then has a close encounter with Uranus from January 21st-23rd. Brilliant Venus will pass within 1½º of the much more distant and fainter world.

The Waxing Crescent Moon will be about 5º to the lower right of Venus on January 29th and about 8º above the planet on the 30th.

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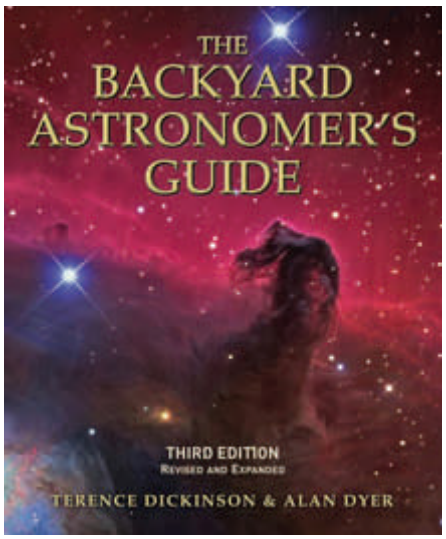


First published in 1991and revised a decade later in 2002, the new 2008 "Third Edition" of *The Backyard Astronomer's Guide* keeps pace with a hobby that is changing at an ever-increasing rate.

In preparing the new edition, Terence Dickinson & Alan Dyer rewrote material on nearly ever page, revising and expanding every topic to cover new equipment and techniques. More than 200 new photos and illustrations accompany these changes.

***only* $49.95**

Order Online: **skyshop.kasonline.org**

Kalamazoo Valley Museum

Planetarium Show Schedule

In My Backyard
Saturdays, 11:00 am; Sundays, 1:30 pm

Orion Nights
Wednesdays 3:00 pm; Saturdays, 2:00 pm

Hubble Vision
Saturdays & Sundays, 3:00 pm

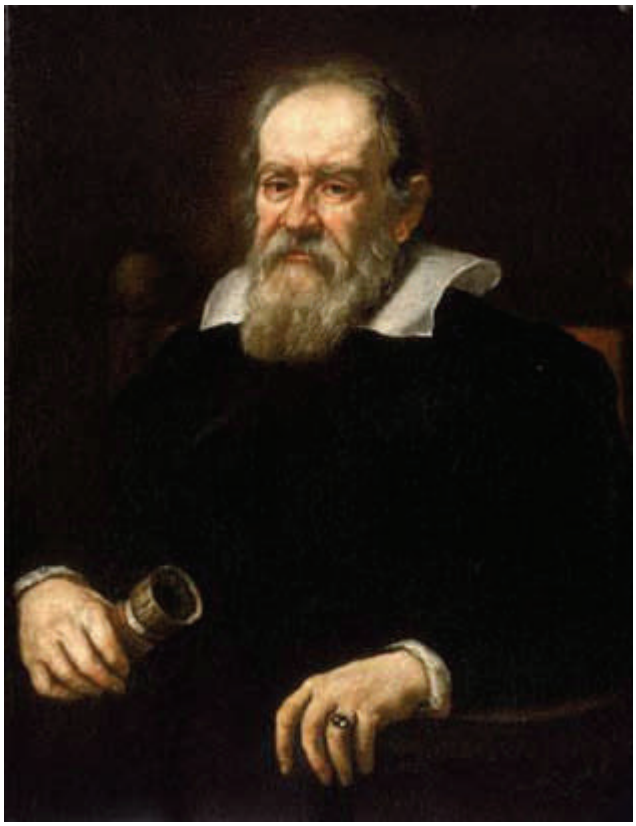
*Planetarium admission is $3.00 per person. The Kalamazoo Valley Museum is located at **230 North Rose Street** in downtown Kalamazoo. For more information please call (269) 373-7990 or visit us on the web at www.kalamazoomuseum.org*

S&T Subscription Discount

One of the many benefits of KAS membership is a ***$10 discount*** on a one year subscription to the premiere astronomical magazine, *Sky & Telescope*. A regular one year subscription costs $42.95; you pay only **$32.95**. It's like receiving two free issues!

To take advantage, bring a check (made payable to Sky Publishing) to the next general meeting or contact KAS Treasurer **Rich Mather** (629-5312) for more information. First-time subscribers must pay through the KAS to receive the discount.

General Meeting Preview



The 99 Years That Changed Astronomy

Presented by **Richard Bell**

The story of modern astronomy begins with the death of the great Polish astronomer Nicolaus Copernicus in May 1543 and the almost simultaneous publication of his heliocentric model of the universe. That model revolutionized not only astronomy but all science, and it inspired a new consideration of humanity's place in nature. This presentation will trace this story over the 99 years from 1543 and Copernicus's death to 1642, the year that saw both the death of another great astronomer, Galileo, and the birth of one of the greatest scientists in history, Isaac Newton.

Friday, January 9 @ 7:00 pm

Kalamazoo Area Math & Science Center
600 West Vine, Suite 400 • Use Dutton St. Entrance
- Dutton Entrance Locked by 7:15 pm -

Kalamazoo Astronomical Society
c/o KAMSC
600 West Vine, Suite 400
Kalamazoo, MI 49008

STAMP

THE UNIVERSE YOURS TO DISCOVER
INTERNATIONAL YEAR OF ASTRONOMY 2009