



Greg Smith – editor

**Volume 25, No.9
January 2020**

Program: Sister Clubs

Meeting: January 15, 2020
Mark Morris LGIC

Solstice Walk Success



Once again, we were blessed with a dry sky to celebrate the longest night of the year. It allowed a good-sized turnout of people to enjoy a time of being together and gaining a perspective on our place in the solar system. It was reported that the attendance was around 400. A great showing for a very chilly evening after so much rain. Our booth sponsors did a great job of showing community spirit and fun for the people who came out. We even had people drive a fair distance to participate in this walk around the park in the dark. Unfortunately, I personally did not get a chance to go and see all the booths. From what I have heard, many of them were quite the show of creativity. I am sure our three judges gave a lot of thought in

deciding who the winners will be.

Those of us at the FOG tent at the Sun [Carolyn, Mark, Ted visible in the picture] plus the Meeks, Becky and myself had a busy time getting passports stamped and handing them out to the crowds that showed up every few minutes.

So, are we going to do it again this next December? You bet! We are finally getting the hang of organizing this program. I am sure we will do even better (i.e. we still need more light at the Sun).

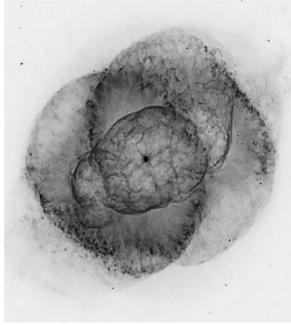
Next year we will have a first quarter moon, and with good luck we may have a clear night to give people the opportunity to view the moon and its craters along with some other night sky gems like the Pleiades.

Here are some interesting facts for the upcoming year:

1. 13 Full Moons
2. 3 Super moons
3. 1 Blue Moon.

October has 2 Full moons; the 1st and on the 31st the Blue Moon. Supermoons will be on March 9th, April 7th and May 7th.

*Every Day is a Star Filled Day,
Every Night is a Starry Night*



There is
a speed
limit.



Jets Blast Out of Famous Black Hole at 99% the Speed of Light

By Elizabeth Howell

The jets emanating from a famous black hole are cruising along at about 99% the speed of light, according to new observations.

Researchers spotted the speedy jets emanating from a black hole in the galaxy Messier 87 (M87) — the same black hole that was imaged directly for the first time last year.

NASA's Chandra X-Ray Observatory imaged knots of material speeding away from the accretion disk, where gas, dust and other material swirl around the black hole. Some of the material falls into the black hole, and some is redirected away into jets of material that follow magnetic field lines.

A first look at the X-ray data appears to show particles in the jets traveling faster than the speed of light, but that is due to a phenomenon known as superluminal motion. "We haven't broken physics," lead author Brad Snios, a postdoctoral researcher at the Harvard-Smithsonian Center for Astrophysics (CfA), said in a statement.

Superluminal motion happens when objects are moving at almost the speed of light while traveling along a direction close to the line of sight between Earth and the object. "The jet travels almost as quickly towards us as the light it generates, giving the illusion that the jet's motion is much more rapid than the speed of light," CfA officials explained in the statement.

The apparent motion seen by Chandra shows two X-ray knots within the jet moving at 6.3 times the speed of light for the knot closer to the black hole, and 2.4 times the speed of light for the knot farther away. (The speed of light is 186,282 miles per second, or 299,792 kilometers per second). The X-ray measurements mark the first time that astronomers could map the speed of the motion, which was previously observed in radio and optical wavelengths.

The faster-moving knot also faded by more than 70% between 2012 and 2017, the two times that Chandra turned its attention to M87. Researchers attribute the fading to particles losing energy through producing radiation as they spiral around the black hole's magnetic field.

Chandra's information provides a different view of the black hole than the Event Horizon Telescope that imaged M87. The EHT looked at M87 over six days in April 2017, while Chandra's examinations of the jet look at material thrown out of the black hole up to thousands of years ago.

The results were presented at the recent meeting of the American Astronomical Society in Hawaii and are also published in *The Astrophysical Journal*.

Minutes of the December Meeting

Ted Gruber called the Christmas Party to order. He thanked Peg Miller for reserving our space and Chuck for coordinating Santa Claus.

Steve Powell has the RCA calendars for anyone who has paid for one but not received it yet.

A group called Cosmos Pacific NW has asked if they can add all our public events to their calendar.

Intermission for dinner.

Ted called meeting back to order and gave the sky report. Venus and Saturn are visible in the early evening as the southwest sky darkens. Mercury and Mars are visible in the pre-dawn sky. Mars rises around 5 am followed by Mercury about 90 minutes later. The Geminids meteor shower is active from December 4-17th, peaking the night of the 13-14th. The Ursids meteor shower is active from December 17-26th, peaking the night of the 22-23rd. The Quadrantids meteor shower is from December 28th through January 12th, peaking the night of the 3-4th.

Roy Gawlick gave a Solstice update. Planets are all sold out plus 2 extra spots. Chuck has done a great job at outreach. The Ripp girls will be judges again.

Ava, Maren, & Noel Ripp entertained us with their music. They are becoming excellent musicians. We can see the improvement each year!

We ended the meeting with the Gift Exchange. As usual it was a great time had by all

☞ **JANUARY 2020 Meeting** ☞

DATE: Wednesday January 11

TIME 7:00 PM

**PLACE: Mark Morris High School
LGIC**

**PROGRAM: - RCA Sister Club
Patricia Ayerza
- Solar System Booth awards**

**Refreshments: Drinks – Shannon Ripp
Snacks – Chuck Ring**

**Bring a little more than usual as we will
have a few more guests than usual.**

Friends of Galileo Club Officers

PRESIDENT	Ted Gruber
VICE-PRESIDENT/ PROGRAM CHAIR	Mark Thorson
SECRETARY	Becky Kent
TREASURER	Steve Powell
WEBSITE	Ted Gruber
NEWSLETTER ED.	Greg Smith
ALCOR	Tom Meek

Next Month's Newsletter Deadline

The deadline for items in next month's newsletter is:

**Wednesday: seven days
before next meeting.**

**Please feel free to send in your
thoughts and experiences about
your astronomical adventure.**

Submit your material by E-mail to:

gryth@msn.com

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