



The Center of the Milky Way

*ESO/S. Gillessen et al*

**Longmont Astronomy Society Newsletter  
December 2008**

### **From the President:**

Annual banquet: currently planned for Johnny Carino's, on the diagonal across from the Twin Peaks Mall on January 18th. Social at 4:30( cash bar) , Food at 5:30 (Italian with bread and salad), Speakers at 6:30.

Dave Gingerich will be updating us on the Stardust mission. Stardust is scheduled to pass Earth on January 14<sup>th</sup>, so we should be seeing pictures before they go to the newspapers! Cutting edge astronomy. Then Dr. Bob will be doing the astronomy summary for the year.

### **In the sky this month:**

Meteor Showers The Geminids are fading, but can still be seen. They peaked a couple of days ago.

Ursids: The point from where the Ursid meteors appear to come from is located within the constellation Ursa Minor, also known as the "Little Dipper". This meteor shower is active during the period spanning December 17 to 25, but it peaks on December 22/23. At maximum, rates can normally reach 10 per hour. The meteor shower is produced by the periodic comet [8P/Tuttle](#) and can occasionally experience short-lived outbursts of up to 100 meteors per hour.

The Leonids in November, 2009 are predicted to be a decent storm – make your plans now to be at home in that lawn chair around sunset.

Planets: Jupiter is diving toward the sunset, but Venus is still shining brightly (mag -4.4, and brighter by the end of the month) in the southwest at sundown. The conjunction of Venus, Jupiter and the Moon the first of the month was very cool

Mercury will reach greatest elongation on January 4 of 19 degrees, better than average. Southwest horizon at sunset, and magnitude of -0.7. As it approaches the Earth, it fades quickly and will be hard to spot by the 15<sup>th</sup> of the month. Inferior conjunction on the 20<sup>th</sup>. Saturn is visible at sunrise in Leo straight south and rises around midnight – the rings are tilted a mere 1 degree, so good luck on spotting them.

Mars – far side of the Sun, won't be visible until February.

Interesting Stars/Galaxies

[Hyades star cluster, open cluster M37, and NGC 1275 are the suggested targets on the Astronomy magazine podcast for this week. Why not give them a try?](#)

### **Club Calendar:**

December meeting at FRCC community room at 7:00 Thursday 12/18. Election of officers. We have contested elections, so show up early and maybe they'll be some bribes! Me, I'll give a cookie if you DON'T vote for me....

Annual banquet on the patio at Johnny Carino's on January 18.

With those crisp nights (-17 in MY backyard), it's a good time for reading an astronomy book.

**Fiske Planetarium:** Holiday Shows & Schedule

**10am Tuesday December 16: "Season of Light"**

**1pm Tuesday December 16: "Laser Nutcracker"**

**10am Wednesday December 17: "Season of Light"**

**1pm Wednesday December 17: "Laser Nutcracker"**

**10am Thursday December 18: "Season of Light"**

**1pm Thursday December 18: "Astronomical Star of Bethlehem" with Gil Buller**

**7:30pm Thursday December 18: "Astronomical Star of Bethlehem" with Gil Buller**

**\*\*No Friday night laser shows\*\* -- Recommended for ages 15 & up: **\*\*Laser shows will continue Jan. 16th\*\*****

**Sommers-Bausch Observatory is OPEN for FREE [stargazing & planet-watching!](#) on Friday nights after 8:30pm (weather permitting)!**

**No Saturday afternoon family shows: Saturday Matinee's will continue Jan. 17th**

**Internet Resources:**

The astronomy story this week was on the black hole at the center of our galaxy. You can view a map of the center of the Milky way at <http://www.nrao.edu/pr/2000/vla20/background/galcenter/galcenter.90cm.jpg> The ESO has taken enough data that shows the movement of the stars in the center – one of the stars has nearly completed one orbit – and can narrow down the question of the exact size of the black hole. That honor belongs to a black hole that weighs between 4,250,000 and 4,370,000 times the Sun's mass and lies somewhere between 26,028 and 27,169 light-years from Earth. (Nothing like some hard data, eh?) Observations of other galaxies show some real whoppers, with the champs up into the 100 million solar mass range. (From Wikipedia: As of November 2008[[update](#)], another binary pair, in [OJ 287](#), contains the most massive black hole known, with a mass estimated at 18 billion [solar masses](#).) Since the formation and sizes of galaxies depend on the gravity in the galaxy, this stuff is important.

The study also raises some more questions (typical of science) – the stars they tracked are far too young, and the formation of new stars in the high gravity environment of a black hole is not understood, So? How did they get there.....

Also on the internet is another story about a large hole in the magnetic field of Earth that's going to revise a few theories about solar wind and magnetic fields. Although the radiation leaking through that hole might account for the glow around Gary's work van. You can read the story at

[http://science.nasa.gov/headlines/y2008/16dec\\_giantbreach.htm?list937934](http://science.nasa.gov/headlines/y2008/16dec_giantbreach.htm?list937934) and they have a video at [http://www.nasa.gov/mpg/297403main\\_THEMIS\\_svsLG.mpg](http://www.nasa.gov/mpg/297403main_THEMIS_svsLG.mpg) that animates the collapsing fields.

## Upcoming Space Missions:

Story of the James Webb telescope mirrors at [http://science.nasa.gov/headlines/y2008/10dec\\_mirror.htm?list937934](http://science.nasa.gov/headlines/y2008/10dec_mirror.htm?list937934) and <http://www.skyandtelescope.com/community/skyblog/newsblog/35965684.html>  
They're getting done, but we have to be careful – the James Webb is going to be parked in a LaGrange orbit, and no shuttle fixes will be possible.

## This month's Wacky Idea:

### Humor Dept: How Gary does pictures **BREWSTER ROCKIT: SPACE GUY!**

**BY TIM RICKARD**

