



Messier 82 imaged by LAS member Gary Garzone

Longmont Astronomy Society Newsletter
July 2012

From the President:

LAS Meeting – Thursday July 19th

The June meeting of the Longmont Astronomical Society is 7 pm this Thursday, July 19th, at the La Vita Bella Coffee House, 475 Main in downtown Longmont. Please come early (maybe around 6:15), and join us for sandwiches, coffee, and desert.

The presentation this month is by Daniel Greenidge who give a presentation "Front Range Sky Measurement Initiative". Jeremy White from the U.S. National Park Service Natural Sounds & Night Skies Division will be available to answer questions.

No business meeting this week as we also have star party for City of Longmont Children and Teen Services at Sandstone Ranch – scopes and volunteers needed as always!!

Front Range Sky Measurement Initiative

Chad Moore and Jeremy White of the National Park Service Night Skies Team are looking for capable astronomy volunteers in support of National Geographic's upcoming BioBlitz, which will be held in Rocky Mountain National Park during August 24-25, 2012.

As part of BioBlitz, teams of volunteers will inventory sky quality conditions along the Front Range during August, prior to the BioBlitz weekend. Our preliminary findings about light pollution will then be reported at the public BioBlitz weekend event on August 24-25, and the collected data will be used for further scientific study.

Currently we are organizing volunteers for the transect teams which will be taking the sky quality measurements. The majority of our volunteer needs will be for the Sky Brightness Transect which will be conducted on one or two evenings between Sunday August 12 and Friday August 17 (weather dependant).

This is a great opportunity for Colorado astronomers to gather scientific data about the impact of light pollution in our cities and in the parks. We hope that following BioBlitz we will be able to work toward Rocky Mountain National Park's designation as an International Dark Sky Park!

Upcoming Star Parties and Events

- Star party for Children and Teen Services, Longmont Public Library on Thursday July 19th at Sandstone Ranch
- Astronomy in the Park at Rocky Mountain National Park, July 27, 8:30 pm
- Astronomy in the Park at Rocky Mountain National Park, Aug 10, 8:30 pm
- Annual WUTS star party Aug 16-19 has been cancelled.

In the sky this month:

Delta Aquarids* originating in the constellation Aquarius (S) July 28 from comet 96P/Machholz, 20 meteors / hour estimated. They're going now, and there is a new Moon, so start looking tonight around 3 AM

Perseids originating from the constellation Perseus (NE) Aug. 12 from comet 109P/Swift-Tuttle, 60-80 meteors / hour estimated. Crescent moon rises at about 1 AM, but shouldn't interfere with the bright Perseids.

For those of an adventurous bent, Ted Floyd, the editor of Birding magazine, is offering a Migrants & Meteors party on that morning at 3 A.M. In between the meteors, Ted is good at identifying the migrant birds flying over in the dark...

Planets

Mercury: hugging the eastern horizon at dawn starting around August 11, greatest elongation on August 16

Venus: in conjunction with Jupiter in the E at sunrise

Mars: in the SW as sunset falls

Jupiter: in conjunction with Venus at sunrise

Saturn: in the SW as sunset falls

Interesting Stars/Galaxies

Comet Linear is in Bootes at magnitude 11 and the current brightest in the sky.

Club Calendar:

Astronomy in the Park at Rocky Mountain National Park, July 27, 8:30 pm

Astronomy in the Park at Rocky Mountain National Park, Aug 10, 8:30 pm

August meeting Thursday the 16th

Fiske Planetarium: Admission costs \$3.50 for kids and seniors and \$6 for adults

Friday, July 27 8:00 pm The Crowded Sky

Friday, August 3 8:00 pm City of Stars

Friday, August 10 8:00 pm Many Faces of Hubble

Closed weekends for summer vacations – they do have some kids programs going during the week. All of the programs above are repeats.

Internet Resources:

World's biggest telescope: this week (June 20) the European Southern Observatory's governing council approved construction of the European Extremely Large Telescope, or E-ELT. It's the no-nonsense moniker for an instrument destined to become the world's largest optical instrument, with a primary mirror 129 feet (39.3 m) across. That's 60% more aperture than the [Giant Magellan Telescope](#) now under construction and a third bigger than the proposed (but iffy) [Thirty Meter Telescope](#).

Most distant galaxy discovered! A team of astronomers led by Takatoshi Shibuya from the Graduate University for Advanced Studies, Japan; Nobunari Kashikawa from the National Astronomical Observatory of Japan; Kazuaki Ota from Kyoto University, Japan; and Masanori Iye from the National Astronomical Observatory of Japan has used the Subaru and Keck telescopes to discover the most distant galaxy ever found, SXDF-NB1006-2, at a distance of 12.91 billion light-years from Earth. This galaxy is slightly farther away than GN-108036, which the Subaru Telescope discovered last year, and was the most distant galaxy discovered at the time. In addition, the team's research verified that the proportion of neutral hydrogen gas in the 750-million-year-old early universe was higher than it is today. These findings help scientists understand the nature of the early universe during the "cosmic dawn," when the light of ancient celestial objects and structures appeared from obscurity.

Milky Way's Giant Black Hole to Eat Space Cloud in 2013

A humongous gas cloud is on a collision course for the Milky Way's core — the home of [Sagittarius A*](#) (pronounced "Sagittarius A-star"), which scientists suspect is a supermassive [black hole](#) with the mass of 4 million suns.

When the [huge gas cloud arrives](#) in the vicinity, which it will appear to us to do in mid-2013, it will surely be swallowed up by the hungry black hole, scientists say.

Astrophysicist Stefan Gillessen of the Max Planck Institute for Extraterrestrial Physics in Munich, Germany, has been observing the Milky Way's center for about 20 years. So far, he's seen only two stars come as close to Sagittarius A* as the cloud will.

"They passed unharmed, but this time will be different: the gas cloud will be completely ripped apart by the tidal forces of the black hole," Gillessen said in a statement.

The cloud is due to pass within about 36 light-hours (about 25 billion miles, or 40 billion kilometers) of the black hole. Its speed, which is now more than 5 million mph (8 million km per hour), has nearly doubled in the last seven years as it approaches its doom. It has already started to shred, and is likely to break up completely before it hits the black hole.

While black holes themselves are impossible to see — they are objects whose gravitational pull is so strong, even light cannot escape — astronomers can watch what happens when matter falls into one. The areas around some active supermassive black holes are so bright, in fact, that they are visible across the universe.

Scientists are looking forward to the rare chance to see something fall into our own galaxy's black hole. As it falls nearer and nearer, the cloud is expected to heat up and release bright X-ray radiation that should be visible from Earth.

The collision-bound cloud was discovered by a team of astronomers led by Reinhard Genzel at the European Southern Observatory.

New Mars pictures released by NASA

<http://mars.jpl.nasa.gov/multimedia/images/> for the stills.

http://www.nasa.gov/images/content/665600main_pia15689-full2_full.jpg for the 360 degree.

Current Space Missions:

Is Voyager gone yet? "From January 2009 to January 2012, there had been a gradual increase of about 25 percent in the amount of galactic cosmic rays Voyager was encountering," said Stone. "More recently, we have seen very rapid escalation in that part of the energy spectrum. Beginning on May 7, the cosmic ray hits have increased 5 percent in a week and 9 percent in a month."

This marked increase is one of a triad of data sets, which need to make significant swings of the needle to indicate a new era in space exploration. The second important measure from the spacecraft's two telescopes is the intensity of energetic particles generated inside the heliosphere, the bubble of charged particles the Sun blows around itself. While there has been a slow decline in the measurements of these energetic particles, they have not dropped off precipitously, which could be expected when Voyager breaks through the solar boundary.

Member Photos:

<http://spaceweather.com/gallery/index.php?title=aurora&title2=light> aurora gallery on spaceweather.com, including our own Robert Arn with



Finally got one of his that's in the public domain....