Messier 17, the Swan Nebula
by LAS member Gary Garzone

Longmont Astronomy Society Newsletter
October 2011
From the President:

LAS Meeting - Thursday, October 20

The October meeting of the Longmont Astronomical Society is this Thursday, October 20th at the IHop Restaurant, 2040 Ken Pratt Blvd., Longmont, CO. A group of us will meet for dinner around 6 pm at the restaurant; you are welcome to join us! The general meeting will begin at 7 pm.

The speaker this month is Bill Tschumy. Bill’s presentation is "An Inside Look at SkySafari". SKySafari is an award winning planetarium program that runs on iPhones, iPads, Macintoshes and soon Android devices. It allows you to simulate the night sky at any location on Earth and at any time or date. Bill is one of the authors of SkySafari and will talk about its history, its development and its use. Learn what's involved in making a large application for mobile devices like the iPhone. See it in action and learn what future directions it will take.

LAS Telescopes
The exec team met at Gary’s barn to discuss status of the telescopes and to come up with a plan for making them available for LAS members and local schools. Bob Spohn will coordinate getting the scopes completed and telrads, eyepieces, etc. purchased for each.

Upcoming Star Parties and Events
Beginning Astronomy Class was cancelled – only two people signed up.

The Greeley Chamber of Commerce/Visitors Bureau event “Star Gazing on the Prairie” at the Crow Valley Campground is on Saturday, Oct. 22nd.

The Centennial Elementary School star party is on Friday, November 4. Address is 10290 Neighbors Parkway, Firestone, CO 80504.

In the sky this month:
Meteor Showers
Orionids night of October 21 – Moon rises after midnight and will get in the way...

Planets
Mercury: becomes visible starting November 11 thru the 20th low in the west
Venus: visible low in the southwest
Mars: rises about midnight in the east
Jupiter: Currently the best in the night sky at near opposition
Saturn: rises in early morning in the southeast
Interesting Stars/Galaxies
Space Telescopes Reveal Secrets of Turbulent Black Hole

An international team of astronomers using five different telescopes has uncovered striking features around a supermassive black hole in the core of the distant galaxy Markarian 509. They found a very hot corona hovering above the black hole and cold gas "bullets" in hotter diffuse gas, speeding outward with velocities over 1 million miles per hour. This corona absorbs and reprocesses the ultraviolet light from the accretion disk encircling the black hole, energizing it and converting it into X-rays. This discovery allows astronomers to make sense of some of the observations of active galaxies that have been hard to explain so far. The heart of the campaign consisted of repeated visible, X-ray, and gamma-ray observations with ESA's XMM-Newton and INTEGRAL satellites, which monitored Markarian 509 for six weeks. This was followed by long observations with NASA's Chandra X-ray Observatory and the Hubble Space Telescope. Prior to these observations short snapshots to monitor the behavior of the source at all wavelengths were taken with NASA's Swift satellite. The combined efforts of all these instruments gave astronomers an unprecedented insight into the core of an active galaxy.

http://www.esa.int/esaCP/SEMAQQ6UXSG_index_0.html

Club Calendar:
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November 4 – Star party at Centennial Elementary School
10290 Neighbors Parkway, Firestone, CO 80504

November meeting: November 17 at IHOP

Fiske Planetarium: Admission costs $3.50 for kids and seniors and $6 for adults
Thursday, October 20 Friday, October 21
7:30 pm Live Faculty Talk: Juno: Mission to Jupiter with Dr. Fran Bagenal
NASA’s Juno mission will be launched August 2011 and will go into orbit over Jupiter’s poles five years later. Juno carries instruments that will probe Jupiter’s deep interior and measure the amount of water - a key component of solar system evolution. Juno is the first spacecraft to fly over Jupiter’s aurora and will measure both the energetic particles raining down on the planet and the bright “northern & southern lights” they excite.

Thursday, October 27
7:30 pm CO Skies: Lunar Science

Friday, October 28
7:30 pm Many Faces of Hubble

Thursday, November 3
7:30 pm CO Skies: Stellar Evolution
**Friday, November 4** – no show, home football game

**Thursday, November 10  Friday, November 11**

7:30 pm Live Faculty Talk: Dark Side of the Universe with Dr. Erica Ellingson
With this multimedia presentation, Prof. Ellingson tells the story of how scientists have come to believe that most of the matter in the universe is in an unknown, invisible form, and that the universe is accelerating its expansion due to a mysterious “dark” energy. Come and find out what we know about the origin and fate of our universe - as well as what we don’t know!

**Tuesday, November 15**

7:30 pm Charlas de las Estrellas: Tormenta Espacial e Introducción al Clima en el Espacio

**Thursday, November 17**

7:30 pm CO Skies: Life after the Space Shuttle

**Friday, November 18**

7:30 pm City of Stars

**Internet Resources:**

http://www.youtube.com/watch?v=0_krMthM_rI  the science of Solar Flares video. History, etc.

http://astronomy101.jpl.nasa.gov/index.cfm   resources for teaching astronomy, but no reason you can't look and teach yourself.

http://hubblesite.org/hubble_discoveries/breakthroughs/  the Hubble's top breakthroughs – it's time to look back over the discoveries...


and 2010 TK7, too! Here's its predicted orbital path for the next thousand years or so

**In the magazines:**
Astronomy magazine for November has the best 100 pictures of the year – nice to see all of them in one place!

And a 16 page section on “How to buy a telescope” So when someone asks, send them off to the local library.

**Upcoming Space Missions:**

Next Launch: October 27 from Vandenburg AFB.

The NPOESS Preparatory Project (NPP) represents a critical first step in building the next-generation Earth-observing satellite system that will collect data on both long-term climate change and short-term weather conditions.

NPP will extend and improve upon the Earth system data records established by NASA's Earth Observing System (EOS) fleet of satellites that have provided critical insights into the dynamics of the entire Earth system: clouds, oceans, vegetation, ice, solid Earth and atmosphere.

The European Space Agency's GAIA mission is working on its gigapixel camera to picture the universe.  http://sci.esa.int/science-e/www/area/index.cfm?fareaid=26

**Current Space Missions:**

Newly formed terrain on Enceladus (contrast enhanced) from the Cassini Mission cameras. Several geological terrains can be distinguished in this image. The youngest is the south polar terrain at bottom. The oldest terrain can be seen in the most heavily cratered plains. Terrains of intermediate age are visible in areas of grooved terrains where craters are visible, but where the cratering is not as dense as the oldest cratered plains. Two "islands" of older terrain are visible in the lower left of the image, separated by wide
lanes of grooved terrain. The geological relationships revealed in this mosaic will help scientists to reconstruct the exotic surface history of Enceladus.


Vesta, composite image from the Dawn Mission

Time to revisit Mars: NASA made a movie from the 3 year trek across the surface by taking a picture at the end of each day. Detours included! Take a peek at [http://www.nasa.gov-multimedia/videogallery/index.html?media_id=114782241](http://www.nasa.gov-multimedia/videogallery/index.html?media_id=114782241) If you missed the Picture of the day back in May, this is the last picture taken from the Spirit Rover at [http://apod.nasa.gov/apod/ap110530.html](http://apod.nasa.gov/apod/ap110530.html)

Comet coming in, CME going out (and no, the impact doesn't cause mass ejections) at [http://www.nasa.gov-multimedia/videogallery/index.html?media_id=114782241](http://www.nasa.gov-multimedia/videogallery/index.html?media_id=114782241)
This month’s Wacky Idea:

Astronomy magazine had an ad in it for this $70 camera. Focus your telescope, remove the eyepiece, then plug the camera and refocus. Attaches to your laptop with a USB cord, and I guess you can view it live on the computer screen. 1.3 megapixels. Oh, and you have to assemble the camera!

Member Pictures:

The Double Cluster in Perseus (also know as Caldwell 14) is the common name for the naked-eye open clusters NGC 884 and NGC 869. They are at distances of 7600 and 6800 light-years away, respectively, so they are also close to one another in space. The clusters' ages, based on their individual stars, are relatively young. NGC 869 is 5.6 million years old and NGC 884 is 3.2 million years old, according to the 2000 Sky Catalogue. In comparison, the Pleiades have an estimated age ranging from 75 million years to 150 million years. There are more than 300 blue-white super-giant stars in each of the clusters. Picture is from LAS member Brian Kimball.
Love that Horsehead!  From Gary Garzone