



Taken by Gary Garzone  
(Don't know which scope he used)

Weather has been real nice for Astronomy lately, eh?

**Longmont Astronomy Society Newsletter**  
**June 2009**

### **From the President:**

The next meeting is this Thursday, June 18 in the Community Room at Front Range Community College. Dr. Suzanne Metlay's presentation will be "Your Eyes on the Sky – NEOs, Satellites & More – How amateur astronomers aid discovery and do much of the detailed work to confirm orbits". Dr. Suzanne Metlay is operations director of Secure World Foundation, a private non-profit organization dedicated to improving space governance.

Our subsolar point reaches 23.44 degrees north latitude on Saturday, June 20 at 11:45 pm. At summer solstice the Sun remains above the horizon longer and the duration of astronomical darkness is shorter than any other-- only 4 hours 57 minutes this Saturday according to my star chart program.

The summer solstice was a joyous time for our ancestors in the northern hemisphere. The snows had disappeared and the crops had been planted. Since June was between planting and harvest time, it was the favorite time for young couples to wed. Feasts were scheduled, torch lit parades were held, and bonfires burned through the night. The objective was to insure adequate rain and plentiful sunshine for the crops. Sounds like fun -- but since we've had lots of rain this year we don't need to light any bonfires to celebrate the solstice. A clear night in the darkness with our scopes would suffice.

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

Meteor Showers

## **Moderate Activity:**

Recommended experience level: Intermediate and up

### **Radiant**

[June Lyrids](#)

### **Duration**

June 10-21

### **Maximum**

Jun. 15/16

## **Minor Activity**

Recommended experience level: Expert

### **Radiant**

[June Aquilids](#)

[June Boötids](#)

[Corvids](#)

[Ophiuchids](#)

[Phi Sagittariids](#)

[Chi Scorpiids](#)

[Omega Scorpiids](#)

[June Scutids](#)

### **Duration**

June 2-July 2

June 27-July 5

June 25-July 3

May 19-July 2

June 1-July 15

May 6-July 2

May 19-July 11

June 2-July 29

### **Maximum**

Jun. 16/17

Jun. 28/29

Jun. 27/28

Jun. 20/21

Jun. 18/19

May 28-Jun. 5

Jun. 3-6

Jun. 27/28

Planets:

Mercury: rising 4:27 in the East

Venus: rising 2:59 in the East

Mars: rising 2:54 in the East, but a lot dimmer than Venus.

Jupiter: rising at 12:04, this beauty is straight south at dawn

Saturn: rising at 11:56 AM, sets after midnight

### **Club Calendar:**

Meeting this Thursday at 7:00 in the Community Room at FRCC.

Other Clubs:

[RMSS \(Rocky Mountain Star Stare\)](#)

Gardner, CO Wed, 06/17/2009 for 5 days

[Western Colorado Astronomy Club 2009 Star Party](#)

Fri, 06/19/2009 for 3 days

### **Fiske Planetarium:**

**Colorado Skies: Summer Skies**

**Thursday, 6.18.09, at 8:00 pm**

Enjoy this guide to the night sky under the Fiske Planetarium dome, presented by one of our astronomers. Come for a current look at Colorado's skies with a special focus on the constellations of summer

**The Milky Way: A City of Stars**

**Friday, 6.19.09, at 8:00 pm**

Look into the night sky and see the lights shining from our cosmic neighbors. In this original presentation produced at Fiske, learn about our city of stars-The Milky Way-and galactic neighbors that include nebulae and clusters

**Space Odyssey**

**Tuesday, 6.23.09, at 1:00 pm**

This musical tour of the universe is a dazzling display of music and lasers inspired by the moon, planets and stars. Enjoy music from movies and popular artists, all with an outer-space theme.

**Space Storm**

**Wednesday, 6.24.09, at 1:00 pm**

Explore the Sun-Earth connection with Fiske's newest original production funded by NASA/TIMED and CU's Laboratory for Atmospheric and Space Physics. Learn how sunspot cycles and solar flares affect you!

### **Space News:**

Betelgeuse Shrinking? I thought it was looking a little smaller....

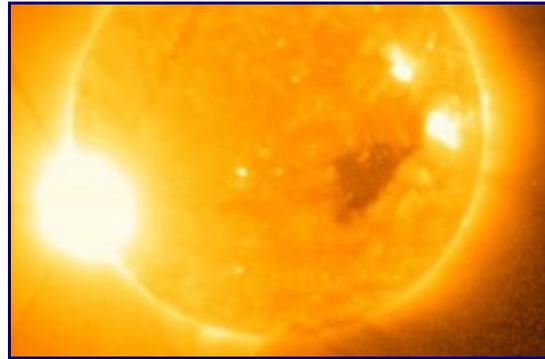
The red supergiant star Betelgeuse, the bright reddish star in the constellation Orion, has steadily shrunk over the past 15 years, according to University of California, Berkeley, researchers.

Long-term monitoring by UC Berkeley's Infrared Spatial Interferometer (ISI) on the top of Mt. Wilson in Southern California shows that Betelgeuse (bet' el juz), which is so big that in our solar system it would reach to the orbit of Jupiter, has shrunk in diameter by more than 15 percent since 1993.

Betelgeuse's radius is about 5 astronomical units, or five times the radius of Earth's orbit, so the recent measurements mean the star's radius has shrunk by a distance equal to the orbit of Venus.

**May 29, 2009:** An international panel of experts led by NOAA and sponsored by NASA has released a new prediction for the next solar cycle. Solar Cycle 24 will peak, they say, in May 2013 with a below-average number of sunspots.

"If our prediction is correct, Solar Cycle 24 will have a peak sunspot number of 90, the lowest of any cycle since 1928 when Solar Cycle 16 peaked at 78," says panel chairman Doug Biesecker of the NOAA Space Weather Prediction Center.



**Gaining Weight:** The most massive black hole yet weighed lurks at the heart of the relatively nearby giant galaxy M87.

The supermassive [black hole](#) is two to three times heftier than previously thought, a new model showed, weighing in at a whopping 6.4 billion times the mass of the sun. The new measure suggests that other black holes in nearby large galaxies could also be much heftier than current measurements suggest, and it could help astronomers solve a longstanding puzzle about galaxy development.

Higher black hole masses could also solve a paradox of the masses of faraway, developing galaxies called [quasars](#). These mysterious denizens of the early universe are very bright, developing galaxies with black holes surrounded by gas and dust, all rife with star formation. Quasars are colossal, around 10 billion solar masses, but the black holes in the resulting galaxies were never that big.

### Upcoming Space Missions:

#### **LRO/LCROSS Pre-launch Webcast Set for June 16, 2009**

NASA has set the launch date for the LRO (Lunar Reconnaissance Orbiter) and the LCROSS (Lunar Crater Observation and Sensing Satellite) missions. These missions will launch together on June 17, 2009, aboard an Atlas V rocket from Cape Canaveral Air Force Station in Florida.

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This date has been anticipated by not just the NASA mission scientists, but by students and teachers who are engaged in the operations and science of this very special return-to-the-moon effort.

Join NASA for a Launch Minus One webcast where viewers will be introduced to some of these crucial participants. Viewers will also learn how to become involved in the project firsthand.

The webcast will take place on June 16, 2009, at 11:00 a.m. EDT (8 a.m. PDT and 1500 GMT).

For more information about the webcast, visit <http://lcross.arc.nasa.gov/webcast.htm>

### **Where's the new Hubble pictures?** Give it a couple of months....

When the crew of the Space Shuttle Atlantis released the Hubble Space Telescope to return to orbit, concluding the final astronaut mission to upgrade and repair Hubble, astronomy fans around the world rejoiced. Hubble, renewed and equipped with new cameras, would now return to its work of revealing the universe.

But after the furor and high-profile feats of a servicing mission, Hubble sinks into silence. This time, a three-month hiatus will take place between the mission and any new images.

The quiet belies the intense activity going on behind the scenes. Engineers and scientists are conducting a slow, painstaking process of bringing the telescope to full functionality, making the adjustments and gathering the information that will allow them to provide the best, clearest, cleanest images.

The process is known as Servicing Mission Observatory Verification (SMOV). Teams at the Space Telescope Science Institute in Baltimore, Md., and Goddard Space Flight Center in Greenbelt, Md., work together to make sure the telescope is pointing correctly and that its instruments are working with their intended precision.

Hubble's pointing is adjusted with the help of six gyroscopes, all of which were replaced during Servicing Mission 4. To ensure that the telescope is pointing accurately, engineers change the direction of the telescope in a measured way, and then examine the data generated from the gyroscopes. The data is then used to calibrate the gyroscopes to ensure precise pointing.

Next, engineers and scientists look at Hubble's instruments. The instruments are in the natural process of "outgassing" — the extra, unwanted molecules within them from their time on Earth are floating away due to the lack of atmospheric pressure.

Outgassing is important for a couple of reasons: the molecules can interfere with the instrument when high voltages are present, possibly damaging it; and they can absorb wavelengths of light, preventing the instrument from collecting all the information it could. To avoid these dangers, engineers wait until the outgassing is complete before bringing the instruments to full power.

The new instruments — weightless for the first time, and now in the vacuum of space — will be out of alignment. But that's expected, so the instruments are built with mechanisms that allow engineers to adjust them from the ground, often by moving small mirrors within the instrument itself. Each instrument needs a few weeks to go through the alignment process.

Finally, engineers take the instruments through a calibration process. Calibration is the process of identifying and dealing with data that belongs to the instrument, versus data that belongs to the sky.

Engineers observe a familiar astronomical object and compare the data they receive with the data they know should be there. They can then adjust the instruments to remove the data that comes from the instrument itself, or, more frequently, arrange to have it removed on the ground. Finding and identifying this erroneous data is a major part of the SMOV process. (copied from Hubblesite.org)

**This month's Wacky Idea:**

## **New York Teen Finds Wimpiest Supernova**

On November 7, 2008, 14-year-old Caroline Moore of Warwick, New York, discovered a supernova in the galaxy UGC 12682, making her the youngest person ever to find an exploding star. She made the discovery in an image taken by a 16-inch Meade LX200 telescope in Arizona that is part of the [Puckett Observatory World Supernova Search](#), led by amateur astronomer Tim Puckett.

Why not have a look at those images yourself? Maybe get YOUR name in the record books?

The editor is off to Sicily (great dark skies) and London/Paris (nice cloudy skies) for a couple of weeks. Maybe I'll visit Greenwich Observatory again, maybe not...