



# SNAKE RIVER SKIES A PUBLICATION OF THE MAGIC VALLEY ASTRONOMICAL SOCIETY

January 2009

Monthly Newsletter

## **Magic Valley**

### **Astronomical Society**

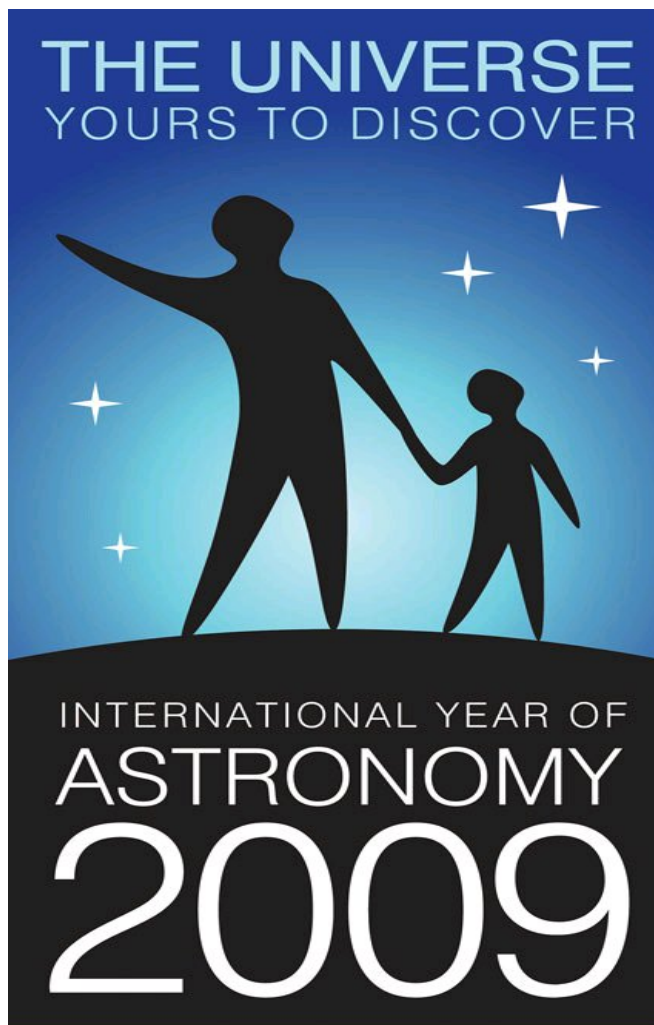
#### **General Meeting**

- Saturday Oct. 11th 2008
- Rick Allen Room, Herrett Center for Arts and Science College of Southern Idaho
- 7:00 p.m.
- Tom Gilbertson presents:

So, you got a telescope for Christmas, now what? Join Society member Tom Gilbertson as he presents information on how to correctly use your telescope you received for Christmas.

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## **Welcome to 2009 the International year of Astronomy**

The International Astronomical Union has designated the year 2009 to be the International Year of Astronomy (IYA2009) with the theme "The universe, yours to discover." Endorsed by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the U.N. General Assembly, IYA2009 marks the 400th Anniversary of Galileo's first telescopic observations.

Events will be held throughout the year with an emphasis on education, public engagement and youth involvement. There will be some opportunities for the members of the Magic Valley Astronomical Society to become involved. As these events approach notification will happen via this newsletter, the website and even our list serve via e-mail. For more information visit [www.astronomy2009.org](http://www.astronomy2009.org)

## Saturday Night Special: Biggest Full Moon of 2009 From Space.com

If skies are clear Saturday, go out at sunset and look for the giant moon rising in the east. It will be the biggest and brightest one of 2009, sure to wow even seasoned observers.

Earth, the moon and the sun are all bound together by gravity, which keeps us going around the sun and keeps the moon going around us as it goes through phases. The moon makes a trip around Earth every 29.5 days.

But the orbit is not a perfect circle. One portion is about 31,000 miles (50,000 km) closer to our planet than the farthest part, so the moon's apparent size in the sky changes. Saturday night (Jan. 10) the moon will be at perigee, the closest point to us on this orbit.

It will appear about 14 percent bigger in our sky and 30 percent brighter than some other full moons during 2009, according to NASA. (A similar setup occurred in December, making that month's full moon the largest of 2008.)



### High tides

Tides will be higher, too. Earth's oceans are pulled by the gravity of the moon and the sun. So when the moon is closer, tides are pulled higher. Scientists call these perigean tides, because they occur when the moon is at or near perigee. (The farthest point on the lunar orbit is called apogee.)

This month's full moon is known as the Wolf Moon from Native American folklore. The full moon's of each month are named January's is also known as the Old Moon and the Snow Moon.

A full moon rises right around sunset, no matter where you are. That's because of the celestial mechanics that produce a full moon: The moon and the sun are on opposite sides of the Earth, so that sunlight hits the full face of the moon and bounces back to our eyes.

At moonrise, the moon will appear even larger than it will later in the night when it's higher in the sky. This is an illusion that scientists can't fully explain. Some think it has to do with our perception of things on the horizon vs. stuff overhead.

Try this trick, though: Using a pencil eraser or similar object held at arm's length, gauge the size of the moon when it's near the horizon and again later when it's higher up and seems smaller. You'll see that when compared to a fixed object, the moon will be the same size in both cases.

### More lunacy

If you have other plans for Saturday night, take heart: You can see all this on each night surrounding the full moon, too, because the moon will be nearly full, rising earlier Friday night and later Sunday night.

Interestingly, because of the mechanics of all this, the moon is never truly 100 percent full. For that to happen, all three objects have to be in a perfect line, and when that rare circumstance occurs, there is a total eclipse of the moon.

A departing fact: The moon is moving away as you read this, by about 1.6 inches (4 centimeters) a year. Eventually this drift will force the moon to take 47 days to circle our world.

## Mystery Roar from Faraway Space Detected

By [Andrea Thompson](#)

LONG BEACH, Calif. -- Space is typically thought of as a very quiet place. But one team of astronomers has found a strange cosmic noise that booms six times louder than expected. The roar is from the distant cosmos. Nobody knows what causes it. Of course, sound waves can't travel in a vacuum (which is what most of space is), or at least they cannot very efficiently. But radio waves can.

Radio waves are not sound waves, but they are still electromagnetic waves, situated on the low-frequency end of the light spectrum. Many objects in the universe, including stars and quasars, emit radio waves. Even our home galaxy, the Milky Way, emits a static hiss (first detected in 1931 by physicist Karl Jansky). Other galaxies also send out a background radio hiss.

But the newly detected signal, described here today at the 213th meeting of the American Astronomical Society, is far louder than astronomers expected. There is "something new and interesting going on in the universe," said Alan Kogut of NASA's Goddard Space Flight Center in Greenbelt, Md.

A team led by Kogut detected the signal with a balloon-borne instrument named ARCADE (Absolute Radiometer for Cosmology, Astrophysics, and Diffuse Emission). In July 2006, the instrument was launched from NASA's Columbia Scientific Balloon Facility in Palestine, Texas, and reached an altitude of about 120,000 feet (36,500 meters), where the atmosphere thins into the vacuum of space.

ARCADE's mission was to search the sky for faint signs of heat from the first generation of stars, but instead they heard a roar from the distant reaches of the universe.

"The universe really threw us a curve," Kogut said. "Instead of the faint signal we hoped to find, here was this booming noise six times louder than anyone had predicted."

Detailed analysis of the signal ruled out primordial stars or any known radio sources, including gas in the outermost halo of our own galaxy. Other radio galaxies also can't account for the noise – there just aren't enough of them.

"You'd have to pack them into the universe like sardines," said study team member Dale Fixsen of the University of Maryland. "There wouldn't be any space left between one galaxy and the next."

The signal is measured to be six times brighter than the combined emission of all known radio sources in the universe.

For now, the origin of the signal remains a mystery. "We really don't know what it is," said team member Michael Seiffert of NASA's Jet Propulsion Laboratory in Pasadena, Calif.

And not only has it presented astronomers with a new puzzle, it is obscuring the sought-for signal from the earliest stars. But the cosmic static may itself provide important clues to the development of galaxies when the universe was much younger, less than half its present age. Because the radio waves come from far away, traveling at the speed of light, they therefore represent an earlier time in the universe.

"This is what makes science so exciting," Seiffert said. "You start out on a path to measure something – in this case, the heat from the very first stars – but run into something else entirely, some unexplained."

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## Quote

**I've loved the stars too fondly to be fearful  
of the night" Galileo**

## Trivia

**The Mars rovers, Spirit and Opportunity,  
have been on the surface of mars for 5  
years now. Originally they were planned  
for only a 90 day mission.**

