Focal Point

September, 2011

Next Membership Meeting: September 16th

After the summer break the first General Membership Meeting is going to be held on September 16th at the MAS Observatory, with an invited guest speaker.

Karri Farron, one of the editors of the Astronomy Magazine will give her specialty presentation on how Astronomy puts the magazine together (specific balance of the science and hobby), an insight into plans for the future, and in magazine's new focus on getting the younger generations more involved and how the current astronomy community can help.

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Public Observing Nights

The view of the MAS Observatory after sunset during the preparation for the stargazing.

The fifth Public Observing Night was held with the record turnout (over100 persons) under perfectly clear sky. Henry gave a slideshow presentation about the Milky Way. Later in the night the guests were able to observe thru variety of telescopes. We collected $170 from parking fee ($5/car) for the MAS . The sixth public observing night is scheduled for September 23th at 7:30PM at the MAS Observatory. Topic: **Galaxies**. The kind help of MAS members during the night is encouraged and highly appreciated.

2011 Public Observing Nights	
August 19	The Milky Way Galaxy
September 23	Galaxies
October14	The Fall Constellations

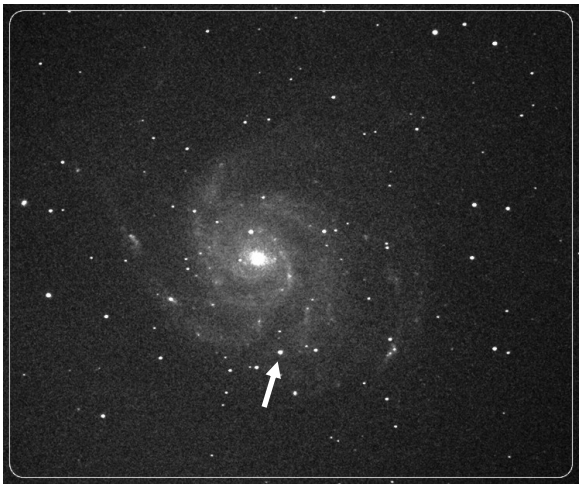
Member's Stories

Supernova Eruption in Pinwheel Galaxy

The new supernova (designated SN 2011fe) is located in the face-on spiral M101, the Pinwheel Galaxy. It was discovered on August 24th by the Palomar Transient Factory (PTF), an automated supernova search being conducted with the 1.2-m Oschin Schmidt Telescope at Palomar Observatory in southern California. Initially spotted at magnitude 17.2, but it is rapidly brightening. The supernova was up to magnitude 13.8 on the 25th, 13.2 on the of the 26th, and 12.4 on the evening of the 27th. Spectra taken on 25th show broad, blueshifted absorption lines from ionized calcium and silicon blasting outward at 14,500 to 16,500 km per second — and no hydrogen lines. These are characteristics of a Type Ia supernova: the complete thermonuclear destruction of a carbon-oxygen white dwarf star that had been collecting mass in a binary system. A Type Ia supernova at this distance (23 million light years) should reach 11th magnitude or slightly brighter at its peak. That's within visual reach of a 6-inch telescope.

MAS member Scott Jamieson managed to get one 60 second exposure of M101 through the clouds and the haze, using his own equipment in his observatory in Eagle, WI.

Telescope:
7.5 inch F5.3 Mak/Newt (A newtonian with a glass corrector on the front to flatten out the field for field imaging.) The mount is a homemade modified fork complete with GOTO capability.



The nova is very obvious (at the end of the arrow) when this image is compared to any images taken before the eruption. It is now brighter than the stars to either side by almost a magnitude.

Camera:
SBIG 8300 CCD imager
Image:
60 seconds through a hole in the clouds. The image is about 1/3 of the original field.

Scott is encouraging anyone to try and image this nova and any telescope set up for imaging at the MAS can get a much better image of this field than the one he used for taking this photo. It would be fun to take images at every opportunity to capture the light curve of this nova!!!

Work Party

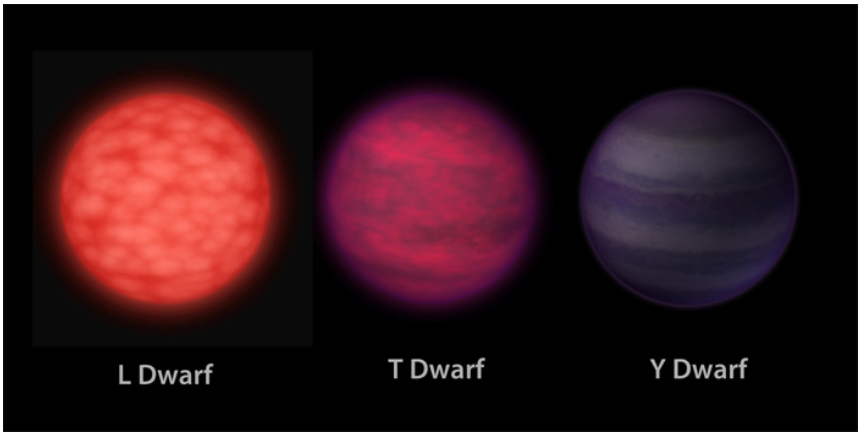
On Sunday, Aug 21, Neil and Russell mowed the lawn, edged around buildings & killed wasps at the MAS observatory.

In the Astronomical News

Coldest 'Missing Link' Brown Dwarf Discovered

Brown dwarfs are strange celestial objects. They're not stars, they're not planets, yet they exhibit characteristics of both. And now astronomers using NASA's Wide-field Infrared Survey Explorer (WISE) have discovered the coolest of a cool class of brown dwarfs, potentially providing some answers as to what makes a planet and what makes a star.

It seems simple enough; you get a huge cloud of gas, let it collapse under its mutual gravity for millions of years, and if there's enough mass, perhaps a star will be born. But say if there isn't quite enough mass contained in the nebula to spark the sustained nuclear fusion in the core? Well, it's possible that a brown dwarf will be born.



A comparison of the brown dwarf classes (NASA/JPL-Caltech)

Although there might be some nuclear fusion in its core for a short period of time, a brown dwarf is commonly referred to as a "failed star." Its atmosphere will have more similarities with the gaseous atmosphere of Jupiter than that of the hot plasma of the sun. However, because a brown dwarf's atmosphere is constantly driven by convective currents by its hot core, the chemicals in its atmosphere do not settle and do not differentiate by height -- a very star-like quality.

Despite the "failed star" designation, astronomers still classify brown dwarfs by their spectral type (a scale of letters assigned to the luminosity of stars), which relates to their temperature. At the lowest, coolest end of the scale, radiating in infrared wavelengths, are the oddball brown dwarfs.

Until recently, the coolest brown dwarfs confirmed to exist are at the lowest end of the scale, with a spectral class of "T." However, there is a theoretical class "Y" that is even cooler than the T-class brown dwarfs, thought to be the "missing link" that bridges the largest planets from the smallest stars -- predicted to have a temperature less than 225 degrees Celsius.

But Y-class brown dwarfs are theoretical no more.

Where brown dwarf science gets really interesting is that because they are naturally very dim, conventional astronomy has a hard job spotting them. However, sophisticated infrared space telescopes are the best brown dwarf hunters out there, and WISE is the best there is. Astronomers using WISE have spotted six Y-class brown dwarfs close to our sun -- within a distance of 40 light-years. The space telescope has spotted 100 brown dwarfs previously unknown to astronomy.

"WISE scanned the entire sky for these and other objects, and was able to spot their feeble light with its highly sensitive infrared vision," said Jon Morse, Astrophysics Division director at NASA Headquarters, in a NASA release. "They are 5,000 times brighter at the longer infrared wavelengths WISE observed from space than those observable from the ground."

But the best news is that WISE has found a record-breaking Y-class dwarf. It's called WISE 1828+2650, and it has a positively comfortable surface temperature of 25 degrees Celsius (80F) -- that's *room temperature*.

"The brown dwarfs we were turning up before this discovery were more like the temperature of your oven," said Davy Kirkpatrick, a WISE science team member at the Infrared Processing and Analysis Center at Caltech in Pasadena, Calif. "With the discovery of Y dwarfs, we've moved out of the kitchen and into the cooler parts of the house."

by Ian O'Neill

Adopt a Telescope Program - Signup Sheet

	Adoptee	Scope	Location
1	Sue Timlin	18" F/4.5 Obsession	D Shed
2	Neil Simmons	12.5" F/7.4 Buckstaff	B Dome
3		12.5" F/9 Armfield	A Dome
4	Dan Yanko	10" F/6 Newtonian	Albrecht Observatory
5	Tamas Kriska	25" F/15 Zemlock	Z Dome
6	Henry Gerner	12" LX 200	Tangney Observatory
7		14" Z-Two scope	Ray Zit Observatory
8		10" LX 200	Jim Toeller Observatory

- Telescopes still waiting for adoption

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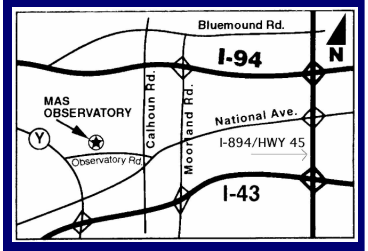

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September/October Key Holders

9/10	Scott Jamieson	262-896-0199
9/17	Lee Keith	414-425-2331
9/24	Scott Laskowski	414-421-3517
10/1	Jill Roberts	414-587-9422
10/8	Tom Schmidtkunz	414-352-1674
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