



## LAS Newsletter – October 2015

### LAS Meeting Thursday October 15<sup>th</sup> 7 pm

#### **“Mr. Messiers Neighborhood” by Mike Roos**

To paraphrase an exercise from Dale Carnegie, “I know amateur astronomers in a rut. And they are going to stay in a rut. Why? I’ll tell you why. It’s because they keep looking at the same objects.” There are thousands of galaxies and double stars within the range of modest size telescopes. Several hundred of these objects should be easy to find, yet many of us have never observed them. These objects happen to be located near Messier objects, in Mr. Messier’s Neighborhood, so to speak.

In this presentation, we examine astronomical databases, estimating visual magnitudes of galaxies and lists of objects near the Messier objects.

#### **Biographical Information for Mike Roos**



**Proof that Mike Roos is an Elvis impersonator**

I am from Fort Collins Colorado, where I work in the medical imaging industry. My work is not related to astronomy. Outside of work I have been involved with Dale Carnegie training since 2000, so I would much rather speak in public than go to the dentist. I am also an Elvis impersonator.

My interest in astronomy began as a child. I vaguely remember Apollo 13 and nothing at all about Mercury, Gemini, or Apollo 11. As a child, I expected that we would have landed a man on Mars by now. My first telescope was one of those 60mm refractors with the inexpensive 600 power eyepieces and shaky mount. Later I got one of the orange tube C8’s. I have since acquired several other telescopes and eyepieces and sold only a few of them.

My interest in photography started in high school with a fully manual SLR handed down from my grandfather. At some time during the 1980's astronomy met photography, and I did some piggyback shots with the camera on the C8 and short exposure lunar, solar and planetary photography. The results were mediocre. I never tried deep sky film photography.

My interest in the Messier Marathon started in the late 1990's. On my first attempt I got 60 of the first 65 objects with the C8 and then got clouded out. My best visual result is 108 of 110 objects.

In 2010, I got a DSLR and got back into short exposure astrophotography. In March 2013, I attempted a Messier Marathon by photographing the objects instead of looking at them in the telescope. The results were encouraging. In October 2013, I organized a contest at the Okie-Tex Star Party to photograph 75 Messier and 35 NGC objects in a single night. In March 2014, I photographed all 110 Messier objects **is an** in a single night from the Comanche Springs Astronomy Campus in Texas.

In the late 1990's, I extracted the list of deep sky objects from Skymap Pro and wrote a program to list all objects within a 1 degree circle of a given object. Some members of this audience have looked for objects on this list. This list has since been expanded to include double stars. In 2014, we ran a contest at the Okie-Tex star party to find the most objects in a single night within 1 degree of Messier objects. The winning score was 91 objects, not counting the Messier object.

In 2010, I got a DSLR and got back into short exposure astrophotography at Okie-Tex. In March 2013, I decided to attempt a Messier Marathon by photographing the objects instead of looking at them in the telescope. In October 2013 I organized a Photographic Messier Plus Marathon for Okie-Tex and successfully photographed all 110 objects on the list.

### **Location**

The meeting will be at the IHOP Restaurant, 2040 Ken Pratt Boulevard, Longmont. Please join us for coffee, dinner, or just desert around 6 pm; The general meeting and presentation will begin at 7 pm.

### **Upcoming events in October**

- Oct. 15<sup>th</sup> 7:00 pm LAS meeting at IHop.
- Oct. 16<sup>th</sup> 7:30 pm, Louisville Library Star Party at Louisville Community Park
- Nov. 7 10 am, Louisville Library solar viewing

## September 17<sup>th</sup> Meeting Notes

by Joe Hudson

Vern Raben opened the meeting and announced the agenda and upcoming events. Introduction of Officers: Vern Raben as president, Gary Garzone as vice president, Mike Fellows as treasurer (absent), Brian Kimball as board member, Jim Elkins as board member, Tally O'Donnel board as member, and Joe Hudson as secretary

### **Presentation "The Timely discussion about Time" by Dr. Suzanne Metlay**

Dr. Suzanne Metlay is professor of geodesic sciences at Western Governors University and a longtime member and friend of LAS.

Suzanne welcomed new members and visitors as she got to LAS by attending her 'first' meeting, and out of professional need. Suzanne expressed her sincere thanks to Longmont Astronomical Society for the warm welcome and education she received.

Suzanne began her talk by reviewing the 'natural' measurements of time that we employ. IE sun rise, lunar cycle, our use of equinoxes and solstices, and the analemma. Suzanne explained the phenomenon of the figure 8 (with images) that scribe the sun's 'pattern' in the sky when imaged at solar noon over the course of a year.

Suzanne then posed the question 'How long is a day'? Well, it starts to get light well before sun appears over horizon, this being simple refraction of sunlight through the atmosphere. Then we might surmise... how do I define sunrise? Is it by the solar limb or equator?

Synodic time is what humans can see and care about, and in times past knowing the time (of the seasons) was just as critical as today, Chankillo are example of towers erected to demarcate the seasons / solstice (Stonehenge as well ed.).

But our perceptions of time are separate and different than actual clock activity. Sometimes what we find is confusing – the Ishango bones are a monthly marking for some unspecified human event. Ancient Native American and Europeans also erected monuments to mark the solstice and equinox, and thereby know when to plant, harvest, or move south before winter.

Modifications were performed by many cultures to even up the year as they observed it, as example the Jews who added a second month of Purim to get the calendar righted to the seasons again. The church later made adjustments to Julian and Gregorian calendars by the addition of leap days.

Of more recent example, Samoa requested placement of the International Date Line so that Samoa could remain in the same time zone / on the same day as Australia, its

primary economic partner. American Samoa, less than one hundred miles away, is one day less an hour behind Samoa. And North Korea voted a new time zone simply to note a state anniversary.

Gravitationally massive objects will 'drag' space time (frame dragging) by rotation. Satellite orbits are affected by these minute variations in the shift in space time, and accurately clocking is needed to measure and correct these impacts.

US Master clock is at the US Naval Observatory in Washington, DC, and the alternate is here in Colorado at Schriever AFB near Colorado Springs (most accurate clock uses the excitation of strontium 90 atoms by red light lasers of specific wavelength).

Earthquakes can alter the distribution of mass in the earth, thus impacting earth's rotational rates.

Suzanne closed her talk with mention of the Lunar eclipse coming on the 27th of September as a venerable 'old school' example of time and how humans measure and perceive its passage.

## **Business Meeting**

Treasurer's report was given by Vern, reviewed, and voted / accepted as submitted.

LAS Club Telescope update by Gary. He is attempting to pick up the rest of the parts – scheduling is difficult. Possibly a work day could be scheduled to assemble and distribute (charitably or commercially) the built telescopes. We still need to collect parts, purchase telrads, and eyepieces.

Longmont Library telescope update by Vern. In the first two weeks there were 14 checkouts, 23 people on wait list. Project is going very well.

New club projects were proposed. Vern suggested an all sky camera upgrade. There is a possibility we might use tower at Marr Lab mountain research station. Internet might be available to us there. Requirements need to be established such as adding weather information, inside temperature, and higher resolution camera.

Jim Elkins suggested a radio astronomy project. The Astronomy League now has a Radio Astronomy award. Jim also mentioned high altitude balloon project during the solar eclipse in Aug 2017.

## Celestial Highlights

### ***Moon***

Third quarter moon: Oct. 4 3:07 pm  
 New moon: Oct. 12 6:07 pm  
 First quarter: Oct. 20 2:32 pm  
 Full moon: Oct. 26 6:06 am

### ***Mercury***

Mercury is visible low in the eastern sky before sunrise after about October 7th. It begins the month at +3.8 magnitude and 9.7 arc sec across. It brightens to magnitude -1 at 5.2 arc across at the end of October.

### ***Venus***

Venus rises around 3:30 am in the east before sunrise. It begins the month at magnitude -4.5 and is 35 arc sec across. By the end of the month that decreases to 31 arc sec across and magnitude -4.4.

### ***Mars***

Mars is visible before sunrise in the constellation Leo. It is currently magnitude 1.8 in apparent brightness and 3.9 arc sec across. At the end of the month it will be magnitude 1.7 and 4.2 arc sec across. Mars opposition will be next year on May 22<sup>nd</sup>.

### ***Jupiter***

Jupiter becomes visible in the eastern sky before sunrise in constellation Leo as well. It is magnitude --1.8 in brightness and 38 arc sec across.

### ***Saturn***

Saturn is currently visible in the SW after sunset in the constellation Libra. It moves into constellation Scorpio on Oct. 15<sup>th</sup>. It is magnitude +0.6 in brightness and its disk is 15 arc sec across.

### ***Uranus***

View Uranus is visible in the late evening in constellation Pisces. It is magnitude 5.7 in brightness and is 3.7 arc sec across.

### ***Neptune***

View Neptune in the late evening in the constellation Aquarius. Its apparent magnitude is +7.8 and it is 2.3 arc sec across.

### ***Comets***

C/2014 Q2 (Lovejoy) is currently in the constellation Corona Borealis and moves to Hercules on Oct 9. It is magnitude +11.2 at the first of the month and it is expected to dim to magnitude +11.7 by month's end.

Periodic comet 88P (Howell) begins the month at magnitude 12.2 and will dim to magnitude 12 at the end of this month. It is in the constellation Aries all month.

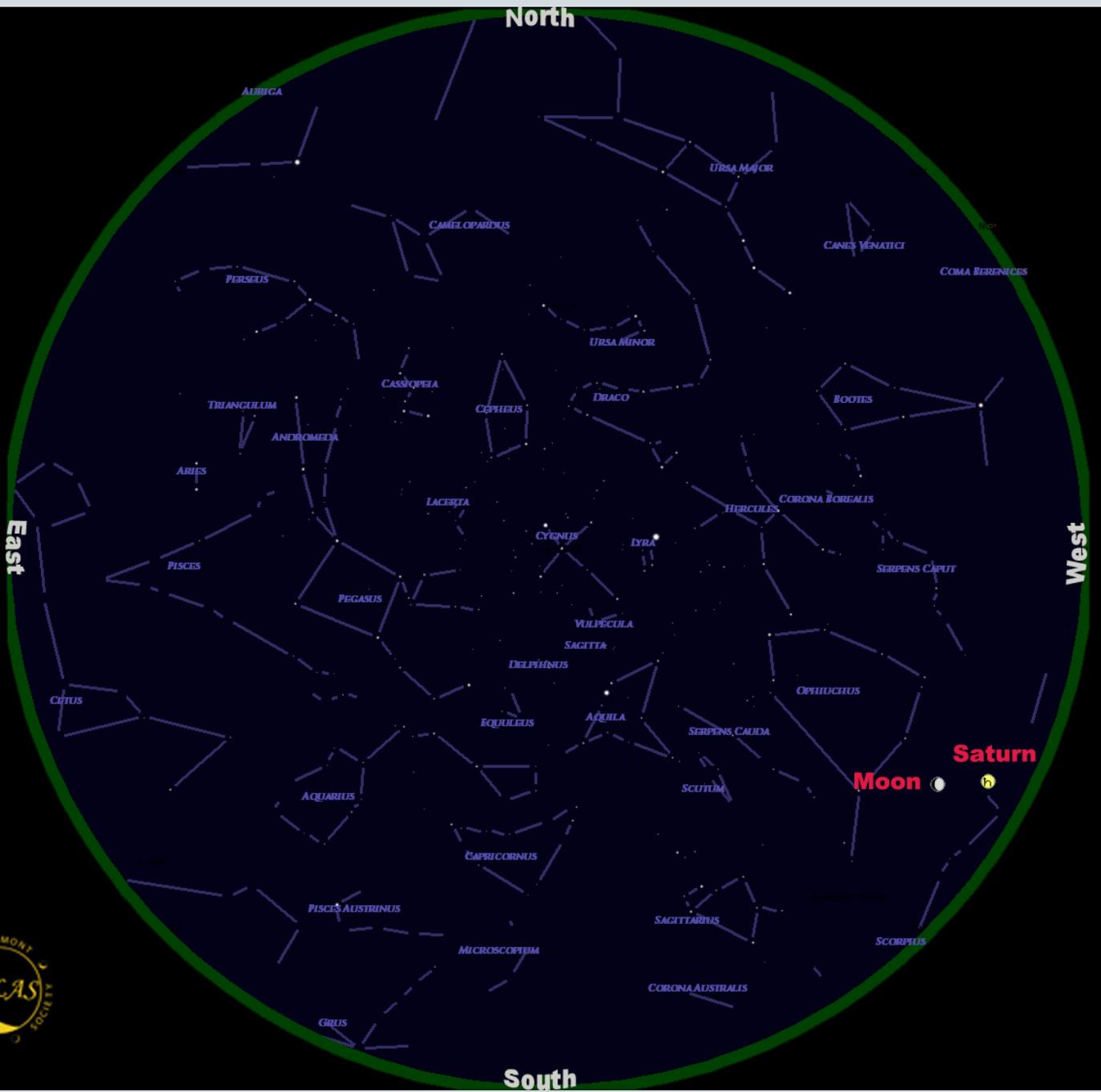
### ***Darkness***

On October 1<sup>st</sup> astronomical darkness begins at 8:19 pm and ends at 5:33 am MDT. (9h 14m of astronomical darkness).

On October 31<sup>st</sup> astronomical darkness begins at 7:36 pm and ends at 6:03 am (10h 27m of darkness).

### ***Meteor Showers***

Best meteor shower this month is the Orionids which peaks on the Oct 21<sup>st</sup>. In most years about 20-25 per hour are visible from a dark location. Radiant is at RA 6h 21m and Decl +15.5°



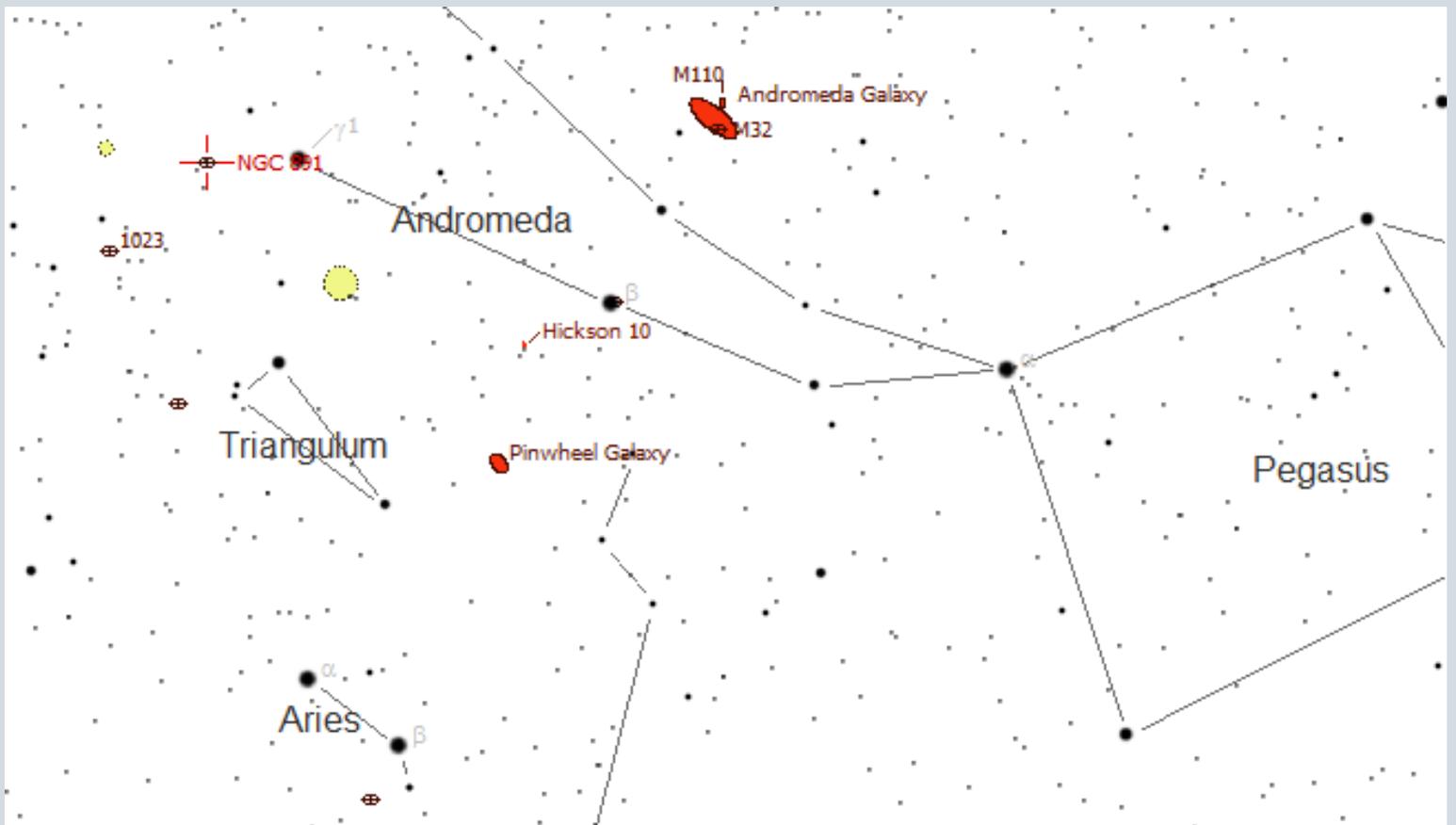
## Our Night Sky October 16 at 9 pm MDT





NGC 891 edge on galaxy

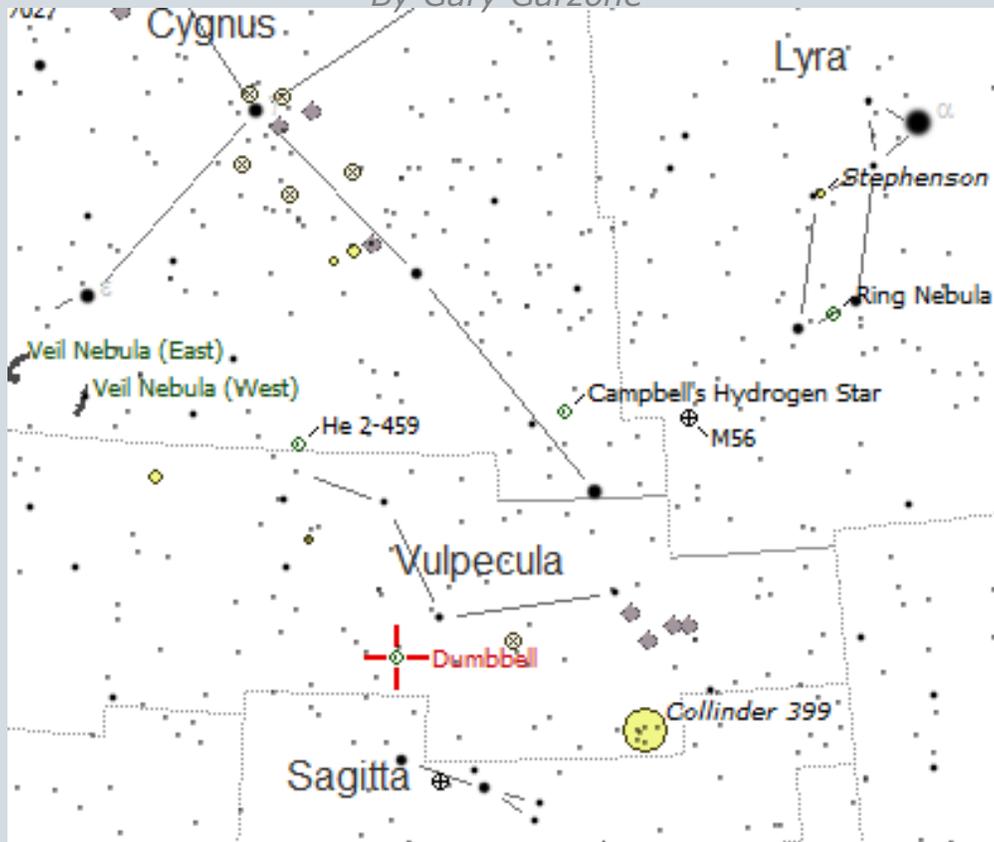
NGC 891 by Gary Garzone on September 22





M 27 Dumbbell nebula

M27 Dumbbell Nebula  
By Gary Garzone





*Aurora near Ault Co  
By Paul Robinson  
September 20*