



Newsletter of the Pomona Valley Amateur Astronomers

Volume 33 Number 1

nightwatch

January 2013

## Second Notice ! Upcoming Change of Bylaws Vote

The PVAA board has proposed that changes be made to the club bylaws. The purpose of these changes is to bring the PVAA year into better alignment with the Astronomical League year. The Astronomical League is the organization through which PVAA is able to buy liability insurance at an affordable rate. Liability insurance is required for PVAA to meet on the campuses of the Claremont Colleges.

At present the PVAA year begins on September 1<sup>st</sup> when the new board takes office after August's elections. PVAA dues for the year are due September 1<sup>st</sup>. The Astronomical League dues are based on the number of PVAA members. Astronomical League dues for the new year are due July 1<sup>st</sup>. Because of this our treasurer has to either guess how many members we will have in September or stall and pay the Astronomical League late. By amending the bylaws the PVAA year will begin June 1<sup>st</sup> allowing the treasurer to know which members are renewing their membership before paying the Astronomical League.

The proposed changes will be voted on by the membership at the March 1<sup>st</sup> general meeting.

*Ron Hoekwater*

Dec. 1, 2012. Changes are *italicized* and underlined.

### Article IV - Election of Officers

#### SECTION 1

1.0 The Board of Officers shall nominate candidates for all offices at the regular March meeting of the Board of Officers. Nominees are to be announced to the membership at the next regular meeting and in the April newsletter. Additional nominations will be accepted from the membership at the next regular meeting of the membership following the March meeting of the Board of Officers. A member may nominate him or herself by declaration.

#### SECTION 2

2.0 Members in good standing as of May 1 shall be eligible to vote for club officers. Voting shall be by secret ballot and each eligible member shall have one vote. Ballots are to be mailed to all current members with the April newsletter, before April 15, and made available to any member at the May general membership meeting or upon request up until the time declared for counting of the ballots. Instructions are to be included for returning ballots by mail to the

official club mailing address. The outside of the envelope containing the ballot shall be signed by the member, but the ballot itself shall not be signed or identified in anyway. The April newsletter containing the ballots shall be posted on or before April 15. All ballots returned by mail shall be received at the post office box by the day of the May general meeting. The President shall be responsible that all ballots are collected from the post office box and delivered to the Treasurer in person. Folded ballots may also be presented to the Treasurer in person at the end of the May meeting but prior to the time set aside for opening of ballots. Hand delivered ballots presented to the Treasurer at the May meeting shall make any duplicate mailed in ballots invalid.

2.1 The Treasurer shall compile and present an alphabetical list of members whose dues are current as of May 1 to be used as an eligibility list to verify the ballots.

2.9 Each officer except the Board Members at Large shall serve a term of office of 12 calendar months beginning on June 1. The June general meeting shall be opened by the outgoing president and shall begin with the introduction and installation of the new officers. The new officers shall then preside.

## PVAA Officers and Board

### Officers

President .....Mathew Wedel .....909-767-9851  
 Vice President ..Joe Hillberg.....909/949-3650  
 Secretary .....Bill Connelly.....714/329-4080  
 Treasurer .....Gary Thompson.....909/935-5509  
 VP Facilities .....Jeff Felton.....

### Board

Lee Collins (2014).....626/852-9442  
 Ron Hoekwater (2014).....909/391-1943  
 Jim Bridgewater (2014).....909/599-7123  
 Karl Rijkse (2013).....

### Directors

Membership ...Gary Thompson.....909/935-5509  
 Publicity.....Laura Jaoui.....  
 Outreach.....Jeff Schroeder.....818/298-3965  
 Programs .....Ron Hoekwater.....909/391-1943  
 Nightwatch .....John Stover.....909/988-9747

## Club Events Calendar

**January 25 - General Meeting**

**February 9 - Star Party – Mecca Beach, Salton Sea**

**February 21 - Board Meeting, 6:15**

**March 1 - General Meeting**

**March 9 - Star Party**

**March 14 - Board Meeting, 6:15**

**March 22 - General Meeting**

**April 6 - Star Party**

**April 18 - Board Meeting, 6:15**

**April 26 - General Meeting**

**May 9 - Board Meeting, 6:15**

**May 14 – Ontario Library Main Branch 7 – 9 PM**

**May 17 – General Meeting**

**May 22-27 - RTMC**

**June 8 - Star Party**

**June 13 - Board Meeting, 6:15**

**June 21 - General Meeting**

**July 6 - Star Party**

**July 11 - Board Meeting, 6:15**

**July 19 - General Meeting**

## Ray's photos

Our cruise to Australia, for the Solar eclipse was great. The day started out cloudy and the sun was in and out most of the time, but totality was great. It was 8:00 in the morning, weather cloudy, windy and cold. Here is the link to more of Ray's photos: <http://www.flickr.com/photos/mugjug>



## What's Up? - Galactic Neighbors

There are thousands of galaxy groups in the Universe, but our Local Group is the one we know the most about. This Local Group is dominated by a large spiral M31 (NGC 224) or the Andromeda Galaxy (pictured). It's the farthest thing visible by the unaided eye at 2.5 million light years. The next largest spiral is our own Milky Way Galaxy. The third big spiral is M33 (Triangulum or Pinwheel) at 3 million light years. It can also be eyeballed when conditions are really dark. They are galactic neighbors, part of the Local Group which contains an additional 50 dwarf galaxies

The Triangulum Galaxy or M33 (NGC 598) is more diffuse than the Andromeda because it is not as tilted. It does look like a fireworks pinwheel. Unfortunately that name is also applied to M101 in Ursa Major. Both were among the first to be seen as "spiral shaped nebula" by early telescope observer Lord Rosse in 1850. The Triangulum Galaxy and the Andromeda were also the first to be proven by Edwin Hubble at Mt. Wilson to be independent galactic systems outside the Milky Way. Hubble used Cepheid variable stars to estimate their distances. Hubble introduced the concept and name "Local Group" to emphasize that galaxies do come in groups. The Group is itself part of the larger Virgo Supercluster which contains some two thousand galaxies.



The fourth and fifth largest in the Local Group and also the closest are the two irregular Magellanic Clouds. Close because they're satellites bound to the Milky Way. Irregular because disturbed by our Milky Way's gravity.

Easily seen in the southern sky, The Large Magellanic Cloud spreads across the very dim constellations of Dorado (golden fish) and Mensa (table). It should be noted that Mensa is named after Table Mountain making it the only constellation named after a geographical feature. The French astronomer Nicolas Louis de Lacaille loved Table Mountain Observatory near Cape Town (South Africa) where he did pioneer work charting the

southern sky. He also loved making up new tiny constellations. Mensa, near the south pole, is one of the smallest and dimmest of all the constellations.

But to return to the Large Magellanic Cloud. Its huge Tarantula Nebula, the notably the largest star nursery in the Local Group. The LMC is about 160,000 light years away.

Not far away is the slightly smaller Small Magellanic Cloud at 190,000 light years in the constellation of Tucana (toucan bird). It is notable for a large globular cluster in front of it which is actually in the Milky Way. This globular cluster is so bright it was originally classified as a star, 47 Tucanae. Some astronomers see big globular clusters as related to dwarf galaxies.

Both the Magellanic Clouds were named after explorer Ferdinand Magellan when he sailed dangerously fatal southern seas in 1520 and recorded them as south polar markers

There are some 54 other small oval and shapeless galaxies in the Local Group. Closest to the Milky Way is the Sagittarius Dwarf at 80,000 light years. The Milky Way Galaxy also has eleven other satellite galaxies named after their constellations. They are Canis Minor, Ursa Minor, Draco, Carina, Sextans, Sculptor, Fornax, Leo I, II, and Ursa Major I, II. All dwarfs, just like characters in *The Hobbit*. Dwarf galaxies may be leftovers splashed out by tidal forces produced when huge galaxies collided.

Andromeda itself has two smaller satellite galaxies, M32 and M110. They're both bright enough to have been seen by Messier in his modest telescope. It also has twenty two additional dwarf galaxies in its domain.

Andromeda is undoubtedly the biggest of the Local Group with a trillion stars. It's six times the width of the full Moon but only its bright central core makes it eyeball visible at 3rd magnitude. Its presence was first noted in 964 A.D. by an Arab observer, Al-Sufi. He called it "little cloud" easily visible without a telescope. William Huggins in 1864 did an early spectrum of Andromeda and found it to have the chemical composition of a mass of stars rather than the gaseous nebula it was believed to be at the time. Huggins was confused and concluded that M31 was "something special." Vesto Slipher at

the Lowell Observatory did a radial velocity with respect to our solar system in 1912. The result was the largest known velocity, 300 kilometers a second, hurtling toward our Sun. Both these studies puzzled astronomers who were still convinced M31 was part of the Milky Way. When the Andromeda Galaxy was proven to be another "island universe" it all made sense. Astronomers were only beginning to see that far beyond Andromeda the Universe expands into infinity.





2012 Holiday Dinner



Photos by Ron Hoekwater

