



*Renew now for 2016. Don't let your membership expire. See page 7 for details.*

## President's Message

*By John Parker*

Welcome to the first FPOA Observer issue for 2016. This year looks to be an exciting year for the Fremont Peak Observatory Association. First of all, we have a new President for the organization and I am very happy and honored to have been elected into this position. I have been an active board member for the last 5 years and was formerly the Vice President. I have big shoes to fill following in Doug Brown's capable footsteps and his efforts and guidance last year are greatly appreciated. My involvement with the FPOA started when Orion Telescopes and Binoculars was invited to co-sponsor the Annual Star-B-Que a number of years ago. Since then, I have been working with the rest of the board keeping the FPOA running and helping out whenever possible.

We are also working to update our internet presence by upgrading our website, adding a Twitter account and updating our Facebook page. The website will have a new look and feel with more guest testimonials and comments as well as providing visitors with general information about the FPOA, useful links and current events. With the implementation of Twitter, we will be able to provide real-time information regarding the current viewing conditions and keep the conversation going with updates on FPOA and observatory activities. We also plan to get more active on Facebook in order to round out our social strategy and encouraging the community to get involved.

Another focus for us this year will be to encourage more member participation in helping out with public programs and our annual Star-B-Que. As you all know, it is the efforts of our volunteers that keep

*Continued Page 2*

## 2016 FPOA Program Dates

### Saturday Evening Programs

**Apr 2, 9, 30      May 7, 14, 28**  
**Jun 4, 11, 25    Jul 2, 9, 30**  
**Aug 6, 27        Sept 3, 10, 24**  
**Oct 1, 8, 29**

### Solar Programs

**Apr 2, 30    May 28    Jun 25**  
**Jul 30    Aug 27    Sept 24    Oct 29**

### Board Meetings

**Jan 9    Feb 6    Mar 12    Apr 9**  
**May 7    Jun 4    Jul 9    Aug 6**  
**Sept 3    Oct 1    Nov 5**

### Special Events

**Member Appreciation Night Aug 6**

*Please check <http://www.fpoa.net/schedule.html> for changes or updates to this schedule.*

## Astronomical Phenomena from Moss Landing

*By Pat Donnelly*

Sometimes astronomical phenomena do not require one to peer through a telescope at an object thousands of light years from the Earth. Sometimes one does not even have to look at the sky to experience astronomy in action. During November 2015 I was able to observe several different astronomical phenomena, while sitting on the beach at Moss Landing. Moss Landing is an excellent location to observe astronomical phenomena. This is in addition to

*Continued Page 2*

## **Astronomical Phenomena**

*from Page 1*

observing a plethora of sea animals there. In fact, Moss Landing may be the best location on Monterey Bay to observe Humpback Whales near the shore.

When one is not watching the sea life, take time to conduct some astronomical observing. One would do well to bring a pair of binoculars to help with the observing. The first observation one should make is to convince oneself that the Earth is not flat. Observe with your binoculars a ship as it approaches Moss Landing. One first sees the top of the ship and no more. Later as the ship gets closer the entire ship is seen above the horizon. From the beach the horizon is about 5.5 miles away, which allows one to see the Earth's curvature. One can also observe the tides rising and falling as the day progresses. There are several fixed objects in the water, including the rocks at the harbor entrance, from which one can gauge the water's height. Observing tides, by the way, are the astronomical phenomena that do not require looking at the sky. Finally, observe the wave action. The waves seen at Moss Landing are partially due to the gravitational attraction of the Sun and Moon, which pull the water across the Pacific Ocean.

All of the above described items are wonderful, but the best events are at sunset. If there are no clouds or fog, several remarkable phenomena are present. The first is the overall sky color. Take time to check the reds, oranges, greens, and blues in the sky at sunset. The next unusual item is the Sun itself. Due to the Earth's atmosphere bending the sunlight, the Sun sets later than it should. In fact, when the bottom tip of the Sun touches the horizon, the Sun is geometrically already below the horizon. This is a real phenomenon. To verify this one should look up the number of hours of daylight on the Autumnal Equinox. There will be approximately 12 hours and 8 minutes of sunlight and 12 hours and 4 minutes on the following day. One other item to observe is the shape of the Sun. During the final 20 minutes before sunset the Sun's light passes through many layers of the Earth's atmosphere with different temperatures and pressures. These differences in temperature and pressure can significantly distort the shape of the Sun. At this time I have observed Sun so distorted it was hard to believe it was a sphere.

The next stop on your adventure is to check for the "Green Flash." Because the colors blue and green are refracted by the Earth's atmosphere more than the red, orange, and yellow colors, something strange happens. As the last little bit of the Sun sinks below the horizon its color can turn green. Thus, it is called the "Green Flash." The Green Flash lasts about 1 to 3 seconds. Most times the sunlight turns a bright emerald green. However, the Sun can also turn blue at the last instant. (Take extra care when looking for the Green Flash. The Sun is usually too bright to view directly until just before sunset.) On November 14, 2015, Chris Angelos, Rob Hawley, and I observed the Green Flash and possibly a blue flash from the Moss Landing beach.

Two weeks later at the same location on the beach my wife and I definitely observed a vivid blue flash. I am not sure I shall ever see so obvious a blue flash again in my life. The best times of the year to observe the "Green Flash" are the months of November to February. The angle of descent of the sun is shallower, and one has the best chance to have a clear, fogless sky. After you enjoy the sunset one should turn around and look to the east. In clear, calm weather the shadow of the Earth on the atmosphere is quite obvious. The sky to the east will be bright down to some point and then changes abruptly to relatively dark. The dark area is the shadow of the Earth.

In summary, if one wishes to do some nonconventional astronomical observing and see lots of sea life, Moss Landing is the place to go.

---

## **From The President**

*from page 1*

---

the FPOA running - providing content and instruction during the public programs and assisting our guests by operating one of our telescopes once viewing has started. There are a couple work parties held over the course of the year where volunteers do light maintenance and keep the Observatory and the surrounding area clean and safe for the public. As they say, many hands make for light work. There are a number of studies that have found that volunteering makes us feel better - emotionally, mentally and even physically. I know that after full evening of working with the public, making sure everyone has had a turn observing and the crowd has gone, I feel really good. I think I can speak for the other members who regularly participate in our public programs that they feel the same way. There is something special about what we offer at the FPOA and all of our members are encouraged to get more involved. *Continued Page 3*

## President's Message *from page 2*

---

We will also begin the process of replacing the west ramp at the observatory. This will be a major effort as we are looking to redesign the approach to the building which will hopefully include more storage and possibly an information kiosk and video projection system. This will be an ongoing effort and will take some time. We will provide updates through the observer and our website so you can see what progress we are making. I am pretty confident that there will be volunteer opportunities with this project as well.

There are quite a few astronomical events taking place this year including a number of very cool conjunctions, a Mercury transit of the Sun in May, meteor showers and outstanding solar system observing opportunities. We are looking forward to hosting another successful Star-B-Que this year and we will be soliciting members to become more involved in this event as well. Our mission is to provide free public outreach provided by our volunteer members in a wonderful dark-sky location. Please remember that being a member of the FPOA can, and should be, more than just an annual financial contribution. We hope to increase participation from the membership over the course of the year so keep an eye on the website, Twitter and Facebook for opportunities to get more involved. If you have any ideas, comments or suggestions, please feel free to send them to [info@fpoa.net](mailto:info@fpoa.net). Thank you for your continued support of the Fremont Peak Observatory Association and I am looking forward to an eventful and successful 2016.

---

## Early Winter Observing/Imaging With El Niño in California

---

*By Ric Babcock*

As I approach my ten year anniversary of moving to Central California from South Florida, I recall how many stories I heard of the Salinas River rising to nearly overflowing its banks in the recent years past. My experience has mostly been to witness the Salinas River as a trickle producing mud in the summer and maybe seeing a small creek flowing toward Monterey Bay in the winter. I also recall my distain in past summers when I complained of the lack of clear skies in Salinas due to the Pacific Layer of low clouds and my friends would always say to me "just wait till September, October and November, and you'll get your clear skies". So I wondered what all the fuss was about when earlier this year, I began hearing

of the fortification efforts being put forth in anticipation of this year's El Niño event and its consequences for California.

With California experiencing the wet winter effects of the El Niño, coupled with my passion to view and image the night sky, I tend to become anxious at times to get out and up to Fremont Peak so that I can again look through my scope and if conditions permit, attach my Canon 60Da and image objects that are in favorable positions for viewing.

I have been able to make some arrangements with The Fremont Peak Observatory Association (FPOA) at [schedule@fpoa.net](mailto:schedule@fpoa.net), and a couple of those successful, and at time frustrating, arranged nights were November 19-20 and December 31<sup>st</sup> into January 1<sup>st</sup>, 2016. On both of those dates, I was aware that Comet Catalina should be visible and available for viewing during the early morning hours before sunrise, so I'd be sure to be "looking" as Virgo and Arcturus began to rise in the east after 3 am.

I began my night in November by visiting an old friend in Canis Major as it was well above the southeastern horizon and focused on NGC 2359, known as Thor's Helmet.



An emissions nebula with a central Wolf-Rayet star (WR7)), a very hot giant star believed to be in a brief supernova stage of evolution. Whenever I come to this object, I really appreciate the time I can let my camera soak in the photons, hoping to catch the faint filaments of extending gas radiating from the nebula.

After spending a couple of hours, I then moved over to the constellation Gemini and tried a different

*continued Page 4*

## Early Winter Observing *from page 3*

tactic from previous attempts of imaging NGC 2392, known as the Eskimo.



Let me say here that in these autumn and winter months of 2015, I have brought out my Orion 8 inch R/C astrograph with an f-ratio of f/8, a Field of View of 48 x 32 Arc Minutes as compared to my 8 inch Newtonian f/4 with a FOV of 1.6 x 1.1 Degrees, so I have paid more attention to colorful Planetary Nebulae rather than expansive emission and reflection nebulae.

What I had noticed was the Eskimo is a rather easy target to find but in the past I'd always think that more was better and I'd put a minimum of 240 seconds to this object then try stacking to bring out the finer "Hubble (HST) Image". I'd always blow out the center of the nebula. So this time I simply took eighteen 60 second frames and stacked them. I didn't blow out the core of the nebula but did achieve in the

detail in the outer shell of the surrounding nebulosity of this neutron star that had completed its life as a main sequence star.

After taking these images, I surmised it was time that I begin my search for Comet Catalina. The problem I discovered was that it was not readily visible to the unaided eye and I was using a chart that I'd downloaded from the internet showing its approximate position. So I did some sky scanning for a fuzzy ball but the morning sun began to lighten the eastern sky along with the morning fog wall creeping over the Peak where the radio antennas are mounted so it was time to "know when to fold".

On my New Year's Eve excursion, I prepared ahead of time and loaded the comet coordinates into my planetary program "Cartes du Ciel" and thought I'd be ready and not make the same mistake this time.

My image closing out 2015 was NGC 1535, Cleopatra's Eye, (see Page 5) which I had noticed in the January issue of Sky & Telescope.

This was a moist air night. The Clear Sky Chart (located on [www.FPOA.net](http://www.FPOA.net) home page), the National Weather Service and a supplemental chart I discovered "[www.ClearOutside.com](http://www.ClearOutside.com)", all warned me that the dew point would get close to the outside temperature causing condensation beginning around 2am. I thought I was ready. I have dew heaters around my guiding lens and around my scope's objective mirror along with two battery packs to power them.

While waiting for the night to progress, I targeted M 101 and then M 97, the Owl, but soon discovered that my number one battery pack had died and what I had of the Owl was a mesh of turquoise as my guiding lens did begin to fog up, and as for the sky, well you could see the moisture in the lower levels obscuring the view. I connected my backup battery pack and cleaned my guiding lens, (gratefully my mirror had not fogged up), and I pointed south to NGC 3242 the Ghost of Jupiter planetary (see Page 5), again using short 60 second frames capturing about 20 minutes' worth.

After taking the NGC 3242 image I checked and Comet Catalina and Arcturus were still below the horizon so I jumped into my car with heater on and warmed up for a while.

*Continued Page 5*



NGC 1535 Cleopatra's eye Dec 31, 2015



NGC3242 Jupiter's Ghost, Jan 1, 2016

Continued Page 6



## Early Winter Observing *from Page 5*

---

Upon getting toasty, inside my car, I checked my planetary program and slewed my scope to the Comet and 'There it Was'! My preparation prior to coming up with my planetary program was fruitful. As I took some preliminary images to hopefully capture the two tails of the comet, I was getting a fuzzy image. It didn't quite measure up to my friend and co-imager's capture from Arizona two days prior (Rick Burke-Comet Catalina\_Dec 29, 2015).

My lenses and mirror were still dry although I did see my backup battery pack was blinking "Low", I looked up again and saw that the "seeing" of the sky had deteriorated to a point that I was unable to capture any better image that night, AND, the dawn was beginning to break which signaled me to break my setup down.

Since that evening, at the time of this posting, the clouds, winds and rains of El Niño have prevented me from getting out again. Since that time also I have invested into a 12 volt power supply so I'll no longer have to depend on an enclosed lead acid batteries to warm my optics and prevent dew from condensing.



Ric's fuzzy Comet Catalina



Ric's Lunar Occultation of Venus on the morning of December 7th, 2015

---



Rick Burke's Comet Catalina  
December 29-2015

I can't change the weather, but I can hope for clear sky opportunities. I can learn from my mistakes and SNAFU's and improve my equipment and techniques as time progresses. I love so much seeing and imaging all that the Cosmos has to offer that I'm sure that sooner or later, we'll meet if you can make it up to Fremont Peak some clear starry, starry night. Provided I have the time, I've got the passion, and we'll look together and exchange notes on what we see.

Ric Babcock, FPOA

## Challenger Training

The 30" Challenger telescope is used for Evening Public programs and for members with Observer Class membership to reserve for personal use. The telescope training required for those wishing to help out with Public programs and personal use will be held in May on a date TBD. Please read the requirements for personal use on the Members page of the FPOA website. Members without the Observer class membership and wishing to volunteer to assist in telescope operation during Saturday Public nights can also attend this class for Challenger training.

Please contact Ron Dammann at <schedule at fpoa.net > to be added to the training list or if you have questions.

## 2016 Membership Renewal

Renewals are easy. You can use the forms on the membership page <http://www.fpoa.net/membership.html> to pay with either PayPal or via a credit card. For those preferring paper you can just send a check (that has your current correct address) to : FPOA Membership, c/o Rob Hawley, 1233 Hillcrest Dr, San Jose CA 95120

If your email has changed, then please be sure to include that in either the PayPal payment as a comment or a note with your check.

### FPOA on the Internet

**Phone Number:** 831-623-2465  
**Email Address:** info at fpoa.net  
**Website:** www.fpoa.net  
**Members Only Page:** members.fpoa.net  
**Members List Signup:** <http://fpoa.net/mailman/listinfo/fpoa-members>

### EMAIL DELIVERY OF THE OBSERVER

Dear FPOA Members,  
We have been delivering the Observer via email for the past several years. This obviously saves the Association postal expenses, and assures the quickest delivery to you. However, several of you no longer have valid email addresses, due to ISP changes, moves, etc. If you would like to continue to receive, or begin to receive, notification of the Observer via email, please send your current email address to membership at fpoa.net

**Fremont Peak Observatory Association**  
PO Box 1376, San Juan Bautista, Ca. 95045  
Observatory 831-623-2465

### Officers and Directors—2015

**President** John Parker  
*jparker81621 at yahoo.com*

**Vice President** Pat Donnelly 408 778-2741  
*kungfugina at aol.com*

**Secretary** Ric Babcock 831 262-2223  
*gentlehart at gmail.com*

**Treasurer** Rob Hawley 408 997-6526  
*treasurer at fpoa.net*

**Directors** Chris Angelos 831 688-3562  
*chris.angelos at plantronics.com*

Ron Dammann 408 255-1863  
*schedule at fpoa.net*

Daniel Dynneson 831 269-3544  
*dynnesond@gmail.com*

Loren Dynneson 831 443-8631

**Director of Instruments** Ron Dammann 408 255-1863  
*schedule at fpoa.net*

**Membership and Newsletter Distribution:**  
Rob Hawley 408 997-6526  
*treasurer at fpoa.net*

**Website** John Parker  
*jparker81621 at yahoo.com*

**Directors Emeritus** Kevin Medlock  
Denni Medlock  
*epoch at majornet.com*

The *Fremont Peak Observer* is published four times a year (Winter, Spring, Summer, Fall). Articles from members are encouraged and should be emailed to <schedule at fpoa.net > Articles should be in plain text or MS Word format. Deadlines are Feb. 1, May 1, Aug. 1 and Nov 1, respectively.