



## President's Message

By John Parker

Summer is almost over and Fall is quickly coming. As of this writing, we have provided what we estimate to be over a thousand visitors with 13 presentations, most followed up with public viewing and 5 solar programs for visitors to the park. I say most because weather can be a factor and the Soberanes fire near Big Sur impacted us as well. As you know, we currently rely on a few board members as well as a number of interns (students from Hartnell College) that work with the FPOA to provide these presentations to the public. Some of our regular members have also provided presentations in the past and we encourage you, as members, to come up and give a talk or help out with the public viewing programs when you are able to. The FPOA is able to do what it does, bringing astronomy to the public, because of the efforts of our volunteers.

To celebrate our membership and take care of regular FPOA business, we are having our upcoming Annual Members Meeting and Barbeque to be held on Saturday, September 24. We are looking forward to having our members, their family and friends gather at Fremont Peak State Park for this event. Just like years past, we will be having a potluck barbeque and the Astro-Gastro challenge as well as the ever challenging Trivia contest. We will have a raffle with some great prizes and this will be followed up by a presentation by Dr. Peter Jenneskins on the CAMS project (of which the observatory is an active participant) and what new insights have been gained into the nature of the zodiacal cloud. We are still working some of the last details for this event and there are a few opportunities for our members to volunteer to help. If you are interested in volunteering for one of these activities, please send an email to [info@fpoa.net](mailto:info@fpoa.net).

We will begin our west ramp replacement project in the spring of 2017 and this will be a major project for the FPOA. Funds for this project have been

Continued Page 4

## 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

Annual Meeting / BBQ      Sept 24

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

## Naked Eye Astronomy

By Patrick Donnelly

I went out early on the morning of August 12 this year to observe some Perseid Meteors. That morning I observed 143 Perseids, 14 sporadic meteors, and 6 satellites. However, that was just the start. During the three (3) hours I watched meteors I was also able to watch the constellations Taurus, Orion, and Gemini rise.

Continued Page 2

# Naked Eye Astronomy

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*From page 1*

I saw Jupiter, Mars, and Mercury pop up over the horizon, and Procyon & Sirius came up too. In addition, the Zodiacal Light was quite obvious. It extended to almost 40 - 50° above the horizon. The Milky Way was traceable from Perseus to Canis Major. Finally, because of the darkness of the location and lack of lights to the northeast I was able to see hints of twilight almost two (2) hours before sunrise. The twilight was visible before the astronomical twilight limit. All in all it was a great experience, and it is one I hope to repeat.

I am telling this story of my naked eye observing session in hopes that more of you will do the same. In this extreme high tech era of computer controlled telescopes and other observing gadgets by the hundreds it seems that we have forgotten why we became interested in astronomy in the first place. I, for one, am interested in the rest of the universe beyond the Earth's atmosphere. Thus, I sometimes like to observe with no more than my glasses corrected naked eyes. Although I do enjoy naked eye astronomy, I should note that I also have more than enough telescopes, binoculars, and camera equipment.

If you believe that naked eye astronomy is not worth the effort, consider the following examples of some of my naked eye sky observations:

- In November 1989 I was able to observe an Aurora Borealis that was so bright it overpowered the brightness of the last quarter moon. All four (4) auroral colors were present – white, red, green, and purple, and the aurora covered essentially the entire sky.
- In June 1995, while in the United Kingdom, I was able to observe twilight due north at local midnight. To make things even better both Capella and Beta Aurigae were visible just above the end on twilight.
- In July 2003 I travelled as far out into the desert of Utah as possible to see a truly dark sky. Not only were stars down to magnitude +6.5 visible to my aged eyes, but the central bulge of the Milky Way was quite apparent. I really felt like was looking at our galaxy finally.

- In 2003 I was able to watch both MIR and the ISS travel across the sky at the same time with both satellites approaching each other within about 5° on the celestial sphere.
- During the Transits of Venus in 2004 and 2012 I was able to see (with the appropriate solar filter) Venus as an extended, not a point source, object.
- Numerous eclipses of the sun & moon, meteor showers & storms, comets, the green flash & once the blue flash, and many bright meteors.

As you can see there are many wonders to observe without the need of some form of optical aid. You should not be dismayed, if you find yourself separated from your telescope. There are still many wonders in the heavens to observe. As a final note here are two (2) naked eye challenges for you. See if you can spot M33 (The Pinwheel Galaxy) and the planet Uranus, now hiding up in Pisces. I believe I have seen them, but I'm not positive.

Pat Donnelly

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## Summer Observing and Imaging at Fremont Peak

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*By Ric Babcock*

Summer is a great time to go up to the clear dark skies of Fremont Peak. Besides the fact that many times you will find the temperature is warmer up at the observatory, than that at the base of the mountain and San Juan Bautista, mostly due to the marine layer of low clouds and temperature inversion, which this area is known for (some call it "Natural Air Conditioning"). When the "layer" is just right, it produces a 'floor' for us, up on the Peak which tends to attenuate the sky glow from Hollister, Gilroy, The Salinas Auto Mall and the Soledad Prison.

But the best advantage of summer is the position and movement of Earth around the celestial globe. Summer is the time to view the rich, colorful and relatively big nebula nestled within the Milky Way. This is the time of year that we best can view the border between Scorpio and Sagittarius which happens to be the location of the center of our home galaxy. We aren't going to see many galaxies along the "steam" of stars arching from the spout of the teapot asterism which we can identify as Sagittarius. This is due to the obscuring effect of viewing the Milky Way through its 'plane' of stars and molecular dust of which stars are

made. But we are able to see objects relatively close and in our vicinity within the Milky Way that are not hidden from us.

As we look just above the two stars which form the top handle of the teapot and the spout itself (Kaus Borealis and Al Nasi, respectively), we see a cloud of Hydrogen rivaling the Orion Nebula (M42) in it's star forming capabilities. Messier 8 The Lagoon Nebula.



M8 The Lagoon

Now look about 6-7 degrees north and directly over Kaus Borealis (the top of the Teapot), and there is Messier 17, the Swan or Omega Nebula.



M17 The Swan

About three more degrees north, we can find the iconic Eagle Nebula (M16) and the Hubble Space Telescope made famous "Pillars of Creation".



M16 The Eagle Nebula

As we follow the "River of Light" produced by the concentration of billions of stars within the disk of the Milky Way, and find ourselves looking toward the sky above us, toward the zenith, we find that we're looking at the constellation of Vulpecula (The Fox) and there we see the Dumbbell Nebula (M27). Observationally, this object appears as a white cloud, but let some of its photons soak into the backside CCD of your camera and you see the colors of a planetary nebula at the end of a star's life, not unlike our Sun will proceed at its life's end some 5 billion years from now.



M27 The Dumbbell

Looking northwest from M27, about 7-9 degrees, there is the double star Albireo (Golden and Blue) which marks the "Head of the Swan" Cygnus, flying south easterly across the celestial sky. Now look at the big picture and Albireo also marks the bottom star of the asterism "The Northern Cross", with the top of the Cross being Deneb (the Tail of the Swan),

*Continued Page 4*

the center of the Northern Cross is the star Sadr. A quarter of the distance from Sadr to Albireo, we see another famous planetary nebula as we look at it from its side, the Crescent Nebula, NGC 6888.



NGC 6888 Crescent Nebula

Yes, the Summer Sky does hold beautiful riches for us Earthlings to partake, We but need to find the time and smell the roses and then look up, Guaranteed, you'll feel better!

Ric Babcock, FPOA

( All images in this article were taken at Fremont Peak by Ric Babcock )

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## President's Message

*from page 1*

been set aside, plans drawn and the project coordinators selected. There will be volunteer opportunities for this project - from helping with the demolition of the existing deck, helping with the construction of the new deck and finally putting on the fresh coat of paint on the newly constructed deck. As I mentioned in a previous Observer, many hands make for light work and we could use some additional help. If you are interested in being involved in this project please contact us to let us know.

I am happy to announce that we now have 14 followers on twitter! Yep, 14 - which is a huge increase from where we were last year! I am hopeful that we can double that number by the end of the year and if you or your family and friends use Twitter, we would love to have you follow us [@fpoa\\_info](#). We have been using Twitter to provide the public with real-time updates on our program schedules and what the current weather and viewing conditions at the observatory. We are also more active on Facebook and we are working to make this a more informative and real-time resource for the public as well as our members. If you or your family and friends use Facebook, we would appreciate your liking the page ([www.facebook.com/fpoa.observatory/](http://www.facebook.com/fpoa.observatory/)) and joining our growing community there.

The Summer is almost over and the Fall season will provide us with different opportunities to view discuss the night's offering of celestial objects - the cycle continues just as it has for billions of years. For almost 30 years now, the FPOA has relied on the volunteer efforts provided by many dedicated individuals to keep us running. Some of you reading this newsletter may recall, hopefully with fondness, your own efforts to support the organization beyond just paying your annual membership fee. As we look to the future, we recognize that we will need to bring on new members - those that may help us to ensure that the FPOA will be around for another 30 years or more. If you know of friends or family that may be interested in getting involved, please encourage them to become members and to become regular participants in our programs and as possible members of the board. This will help to ensure that the FPOA continues to be relevant and meaningful.

We look forward to seeing you at the Annual Members Meeting and Barbeque.

## Eclipse photography

By Rob Hawley

I will be doing a presentation on eclipse photography to SJAA on November 15 at 7:30 PM at their meeting place as Houge Park in San Jose. This will cover all aspects such as exposure times, telephoto vs telescope, site selection, how to control the camera, an introduction how to process the images, some low risk alternatives to high resolution photos, and some thoughts on how to reduce the risk of high resolution photos. I will also be presenting some of my past work as examples. FPOA members would be welcome.

Rob

## 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  
**Facebook:** [www.facebook.com/fpoa.observatory/](http://www.facebook.com/fpoa.observatory/)  
**Twitter:** [twitter.com/fpoa\\_info](https://twitter.com/fpoa_info).

### 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

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### Officers and Directors—2016

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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.