

The Fremont Peak Observer

— Bringing Astronomy to the Public —

Vol 35 No. 4

Winter 2018

President's Message

By Patrick Donnelly

The year 2019 is here. Astronomically, this year has started spectacularly. On January 3 the Earth reached perihelion (the closest point to the Sun on the Earth's Orbit), and on Sunday January 20 there was a total eclipse of the Moon. I know that the weather was less than optimal, but I hope that each of you got to observe some part of the eclipse. In addition, there has been a very close conjunction of Venus, Jupiter, the Moon, and Antares (Alpha Scorpio). It was quite a sight to see these bright objects next to each other in a dark sky. There will be several close planetary and planetary/Moon conjunctions this year, but the highlight of the year will be the transit of Mercury on November 11. In California we will get to see the last three hours of the event. Also, while we are celebrating our independence of the United States on July 4 and sweating in 97°F heat, consider that on this day in 2019 the Earth is farther from the Sun than at any other time of the year.

Our public programs begin this year on March 30 with both a solar viewing program and an evening observing program. As always, the programs will be on Saturdays through October. Please consult the web site for the schedule. The FPOA Annual Members Meeting will be held on August 24, and the springtime Hartnell general astronomy observing lab will be at the observatory on April 6th with a backup weather date of April 27th. If you would like to volunteer for one or more of these programs, please let Ron Dammann or I know. We can always use volunteers for these events.

If you haven't visited the FPOA web site lately, you are in for a treat, when you do. The web site has been completely reworked with a much more professional appearance. All of the important features of the old web site are contained in the new web site, and several new features have been added. One of the new features, which is rather subtle, is the daily phase of the moon. This feature can be found on the home page.

Continued Page 3

2019

FPOA Program Dates

Saturday Evening Programs

**Mar 30 Apr 6, 27 May 4, 11, 25
Jun 1, 8, 29 Jul 6, 27
Aug 3, 24, 31 Sept 7, 21, 28
Oct 5, 19, 26**

Solar Programs

**Mar 30 Apr 27 May 25 Jun 29
Jul 27 Aug 24 Sept 21 Oct 19**

Board Meetings

**Jan 5 Feb 2 Mar 9 Apr 6
May 4 Jun 1 Jul 6 Aug 3
Sept 7 Oct 5 Nov 2**

Special Events

Annual Meeting / BBQ Aug 24

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

What a Wonderful Night for a Moon Dance

By Ric Babcock

It's 4:00pm EST, Sunday the 20th of January, 2019. The tail end of a somewhat powerful winter storm moving east and off of the New England shore, is just clearing South Florida southward. The ground is rapidly drying, which prompts me to begin to meticulously set up my TeleVue 76 mm refractor atop of my Atlas EQ-G mount. I'm aware that as long as clear skies prevail this evening, I'll be in for a celestial show.

Continued Page 2

Moon Dance

from Page 1

This is the night of the Total Lunar Eclipse to be visible across the entire continental U.S., weather permitting. The last time I witnessed a total Lunar Eclipse was April 4th, 2015, from a ranch on the western edge of Salinas, Ca.

I was able to take advantage of darkness descending upon my location, at least two hours before the Moon was to move into the Penumbra of Earth's shadow, which gave me the opportunity to properly polar-align my mount using Polaris. I periodically took quick snapshots of the lunar orb as stray, light clouds were still rapidly passing by.



Then, around 10:40pm, I noticed the slightest hint of the eclipse beginning.



By 11:10pm it was well under way.

Totality began at my location at 11:50pm and lasted until 12:52.

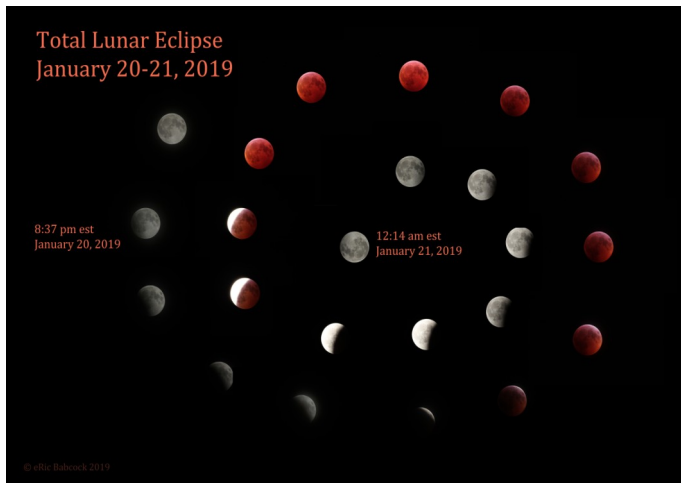


I noticed that the northern edge of the Moon remained somewhat light, as if it were skimming the northern edge of Earth's shadow, but the eclipse was sufficient to bring into view stars in the Moon's otherwise bright glow.

Continued page 3

Moon Dance

I did stay with this event until it's conclusion and tried my hand at a bit of artistic summary of it.



Our next Lunar eclipses will occur June 4-5, 2020 and November 29-30, 2020, however these will be Penumbral eclipses. A total Lunar eclipse may be seen in North America, in progress at day break on May 26, 2021 and then on November 18-19, 2021 which will be a partial eclipse. The next opportunity to view another Total Lunar Eclipse, in North America, similar to this January's, will be May 15- 16, 2022, but that will be seen as a complete eclipse east of the Mississippi River whereas west of the Mississippi, the eclipse will be in progress when the Moon rises.

Not to fear or fret, remember that on November 11, this year (2019) there will be a Mercury Transit across the Sun.

President's Message *From Page 1*

If you look at the top left of the page on the FPOA title, the present phase of the moon is shown inside of the "O." I want to thank Windell Oskay and Rob Hawley for their hard work to make the new web page a reality.

At the last board meeting the officers for 2019 were elected. These include:

Eric (Thor) Eglund	Vice-president
Chris Angelos	Secretary
Rob Hawley	Treasurer
Pat Donnelly	President

In addition to the officers Ron Dammann will continue as Director of Instruments, Loren Dynneson will continue as Director of Facilities, and Windell Oksay & Rob Hawley will be our website caretakers. The FPOA Board also voted to extend invitations to Lenore Edman, Ryan Clark, and Windell Oksay to be alternate board members. Lenore and Windell will become alternates immediately, and Ryan will be eligible to be an alternate board member in September. These three (3) individuals, along with John Parker, are now the alternate FPOA Board Members.

On January 12, 2019, the FPOA met with Joy Cowden to discuss having interns from Hartnell for 2019. Joy indicated that she is in the process of getting 4 to 6 interns for 2019. The intern program is tentatively scheduled to begin on April 27 with intern training and initial public program participation.

I would like to mention that the CAMS meteor tracking program continues. The program began at Fremont Peak on October 2, 2010 and has continued since then. The program was originally scheduled to last only two (2) years, and now the program is in its the ninth year with no indication of stopping the program.

Let me conclude this column by indicating that there may be some disruption in the programs this year. The FPOA is planning to have the siding on the observatory replaced. The new siding will be fire resistant and should give a better look to the building. Hopefully, this project will not impede the other activities at the observatory.

50 Years Later

By Patrick Donnelly

This year marks the 50th anniversary of the first landing of astronauts on the Moon. I can remember vividly watching the astronauts wonder around on the moon on that warm Sunday evening. The picture was not that good (very fuzzy and in black & white), but I was seeing people walking on the moon. At that time I felt bad for those that did not get to see the event, including Galileo, Newton, President Kennedy, and Albert Einstein. I also remember the words of William Pickering, a British astronomer, who in 1894 proclaimed that going to the Moon will always be a fantasy.

Now it is 50 years later, and much has changed since that time. Back in 1969 there were no pictures from the surfaces of other planets, asteroids, or comets. We did not know about active volcanoes on other objects in our solar system, and Pluto had no moons. Today Pluto is (unofficially) a double dwarf planet. There are robots crawling around Mars, and there are pictures from the surface of Venus, the Moon, Mars, Eros, Titan, and a few other asteroids and comets. We have identified thousands of planets orbiting other stars, and our galaxy, the Milky Way, is actually a barred spiral. We know of the existence of Dark Matter and Dark Energy but have no idea of their composition. The General Relativity predictions of Black holes and Gravity Waves have been verified. Finally, as difficult as it is to believe, there are space probes sending back data from interstellar space.

I probably will not be writing this article 50 years from now, but it would be awesome to see what the state of astronomy is at that time. My vision for then is a permanent base on the moon, several trips to Mars, trips to near earth asteroids, and detection of other advanced civilizations in our galaxy. Stay Tuned!

1970 Visit to Cape Kennedy

By Rob Hawley

Most of my time in the Air Force in the 70's consisted of routine office work punctuated by lots of flights on commercial aircraft and arguing with the likes of IBM, Hughes Aircraft, and MITRE. Within that rather ordinary existence were some of the highlights of my life. These include a visit to the SAC underground in Omaha, experiencing a 2 sec decompression from sea level to 29,000 feet, and a ride on the [Vomit Comet](#). Another event, which is

the subject of this article, was my visit to Cape Kennedy at the height of the Apollo program.



In January 1970 I was a freshman at Case in Cleveland and first year cadet. The ROTC unit arraigned for a local reserve unit to fly us to Florida and for a "congressional level" tour of the facilities. The flight down was in a WWII DC-3 that was itself an adventure. I would describe the accommodations as "Luggage Class". Flying low the DC-3 managed to find every bit of turbulence between Ohio and Florida. The bags we were issued were well used.

[This](#) is a map of the cape in the 1970s.



As we got close we were treated to spectacular views of the Apollo (later Shuttle) complex, ICBM row, the runway later used by the Shuttle, and the new (in 1970) Titan III complex being used by the Air Force.

1970 Visit to Cape Kennedy

From page 4

ICBM row was the series of sites of the first rockets. Even by 1970 most of the southern part of the cape was now a museum. We started our tour in the south and worked our way north to Apollo.

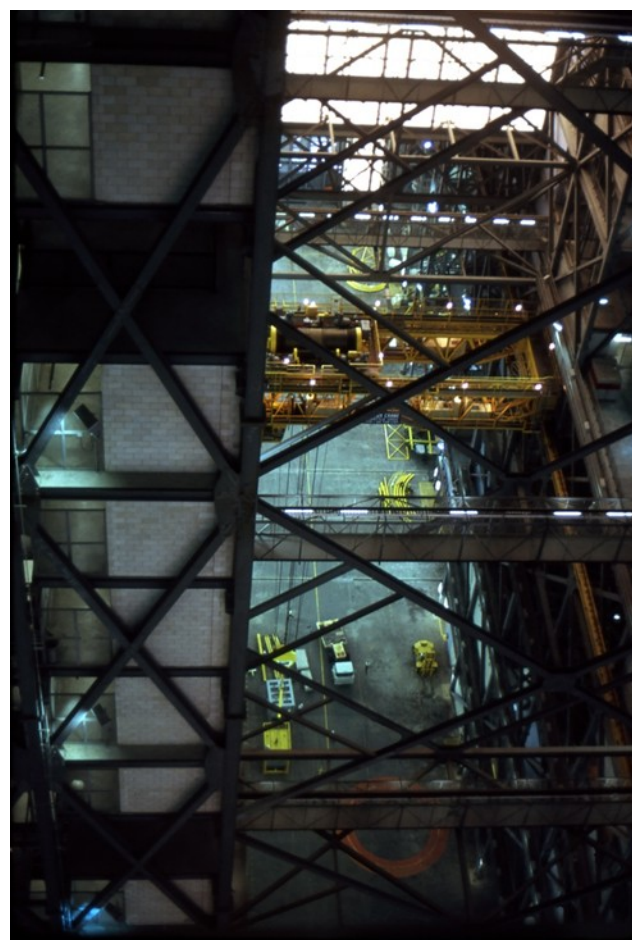


We began with the site of the first American in space and the Mercury-Redstone. Further north were the sites of the Mercury Atlas (pictured above) and Gemini-Titan.

North of ICBM row is the new (in 1970) Titan III Complex. In many ways this was a mirror of the much larger VAB seen on the left. The Air Force used the Titan to launch classified payloads. Its Vertical Integration Building (right) was set back from the launch areas.



Shown in the foreground was the crawler used to transport the rocket to the pad.



This is a view from one of the top platforms. The VAB was in the process of assembling Apollo 14 when we visited.

The last stop was to visit Apollo 13 on the pad. At the point the bus stopped we were 1600 feet away. This picture simply does not convey the size of this thing. A Saturn V is HUGE.

Continued Page 6



Next was the Vertical Assembly Building that assembled the Apollo rocket stages. It is hard to convey the size of this building as cars next to the building are not visible on this scale.

Cape Kennedy

From Page 5



Of course, I did not know that in three months the astronauts would be fighting for their lives in a crippled space craft.

I still remember this visit and have preserved the slides for 50 years. Fortunately, at the time I also made good notes so that sitting here in the

21st century I could identify what I saw when America went to the moon.

For more pictures of Cape Kennedy in 1970 see my website <https://robhawley.net/1970CapeKennedy/>

2019 Membership Renewal

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

FPOA on the Internet

Phone Number: 831-623-2465
Email Address: info at fpoa.net
Website: www.fpoa.net
Facebook: www.facebook.com/fpoa.observatory/

EMAIL DELIVERY OF THE OBSERVER

Dear FPOA Members,
The Observer is now only delivered electronically. New editions are posted on our website. If you would like to be notified when a new edition is available please be sure we have your current email address. Since most annual memberships are now renewed via PayPal we will use that address by default. If you would like us to notify you at a different address or your email changes then please send your new email address to membership at fpoa.net

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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.