



AU AstroNews

The Newsletter of the Astronomical Unit

August 2019

Sponsored by the Santa Barbara Museum of Natural History



The public gathers at the Westmont Observatory for a "Third Friday" outreach. Photo credit: T. Totton

AUGUST GENERAL MEETING

Our speaker for the August general meeting will be UCSB Physics professor, Dr. Claudio Campagnari. The title of his talk this evening is "The Higgs Boson: The what, the how and the why." Claudio summarizes his talk: "The Higgs boson was discovered in 2012. In this talk I will explain what it is, how we discovered it, and why it is important. On one hand, its discovery has been an extraordinary success of both theoretical and experimental physics. On the other hand, its existence, when put together with the most recent results from the CERN experiments, has thrown the field into a state of confusion."

OUTREACH SUMMARY

Since he was out of town for part of July, Chuck was unable to tally the outreach totals for the month. We will include this tally in next month's newsletter.

AUGUST OUTREACH EVENTS

Here are the AU events scheduled so far for August. Events are subject to change, so to get the latest information on schedules, or directions, just contact Chuck at 964-8201 or macpuzl@west.net

The Telescope Workshop meets most Tuesday evenings at 7:30 PM at the Broder Building at SBMNH. Contact Tim Crawford at tcrawf3@cox.net for information. Listen to the AU on the radio at KZSB 1290 AM at 9 AM on the second and fourth Monday of each month.

THURSDAY, AUGUST 1, SETUP 7 PM

Telescopes for the Ritz-Carlton Bacara. We set up on the bluff lawn next to the Angel Oak restaurant.

FRIDAY, AUGUST 2, 7 PM

AU monthly meeting in Farrand Hall at SBMNH. Hear about the Higgs Boson.

SATURDAY, AUGUST 3, SETUP 8 PM

Slide show and telescopes for campers at Cachuma Lake Campground. We set up on the field at Dakota Plains.

THURSDAY, AUGUST 8, SETUP 7 PM

Telescopes for the Ritz-Carlton Bacara. We set up on the bluff lawn next to the Angel Oak restaurant.

FRIDAY, AUGUST 9, SETUP 7 PM

Telescopes for Refugio Beach State Campground, in the day use parking lot, southwest corner.

SATURDAY, AUGUST 10, 6 PM

Planning meeting in the classroom next to Javier's office at SBMNH. Come plan your club's activities. All are welcome.

SATURDAY, AUGUST 10, 8 PM

Monthly Public Star Party, next to Palmer Observatory at SBMNH. Perseids?

TUESDAY, AUGUST 13, SETUP 7 PM

Telescope Tuesday at the Camino Real Marketplace in Goleta. We set up in the plaza next to the theater.

THURSDAY, AUGUST 15, SETUP 7 PM

Telescopes for the Ritz-Carlton Bacara. We set up on the bluff lawn next to the Angel Oak restaurant.

FRIDAY, AUGUST 16, SETUP 7:30 PM

Monthly Public Telescope Night at Westmont College Observatory, next to the baseball field.

SATURDAY, AUGUST 17, SETUP 8 PM

Slide show and telescopes for campers at Cachuma Lake Campground. We set up on the field at Dakota Plains.

THURSDAY, AUGUST 22, SETUP 7 PM

Telescopes for the Ritz-Carlton Bacara. We set up on the bluff lawn next to the Angel Oak restaurant.

FRIDAY, AUGUST 23, SETUP 7 PM

Telescopes for Refugio Beach State Campground, in the day use parking lot, southwest corner.

SATURDAY, AUGUST 24, SETUP 8 PM

Slide show and scopes for Carpinteria State Beach. We set up on the sidewalk toward the ocean from the entry kiosk.

WEDNESDAY, AUGUST 28, SETUP 8 PM

Slide show and scopes for Carpinteria State Beach. We set up on the sidewalk toward the ocean from the entry kiosk.

THURSDAY, AUGUST 29, SETUP 7 PM

Telescopes for the Ritz-Carlton Bacara. We set up on the bluff lawn next to the Angel Oak restaurant.

FRIDAY, AUGUST 30, SETUP 6:30 PM

Telescopes for a star party at Los Flores Ranch Park, in Santa Maria at 6245 Dominion Road. Setup entrance (with signs) will be up Dominion a bit north of the main entrance. Dark skies!

SATURDAY, AUGUST 31, SETUP 8 PM

Slide show and telescopes for campers at Cachuma Lake Campground. We set up on the field at Dakota Plains.

From the President
Jerry Wilson

The topic of the day is “the neutron.” Big deal, ‘eh? Everyone’s known about it since tenth grade science. But it is one of the most recent indicators that we may need some new physics. It’s one of the three primary subatomic particles along with the proton and the electron. In fact it is made up of a proton, an electron, plus an antineutrino. Inside the

nucleus of an atom, the neutron is a stable particle, but interestingly, a free neutron, that is one outside of the nucleus of an atom, will spontaneously decay with a lifetime of about 15 minutes.

There are two techniques used to measure the free neutron lifetime: the “bottle” method and the “beam” method. Each technique gives different answers. The bottle gives 14 minutes, 39 seconds while the beam gives 14 minutes, 47 seconds. Fifteen years ago the two methods were imprecise enough to not notice the eight-second difference. It was lost in the error bars. But now both techniques have improved enough that the difference is real...and unexplained by current physics.

The bottle method counts the number of neutrons per time, while the beam method counts the number of protons produced by neutron decay per time. They should give the same result unless there a new process or particle involved. The speculation de jour is of course that neutron decay also produces a dark matter particle in an unknown process that takes 8 seconds to occur.



“I’ll wake him up with an unfiltered view of the Full Moon with this baby!” Photo credit: T. Totton.



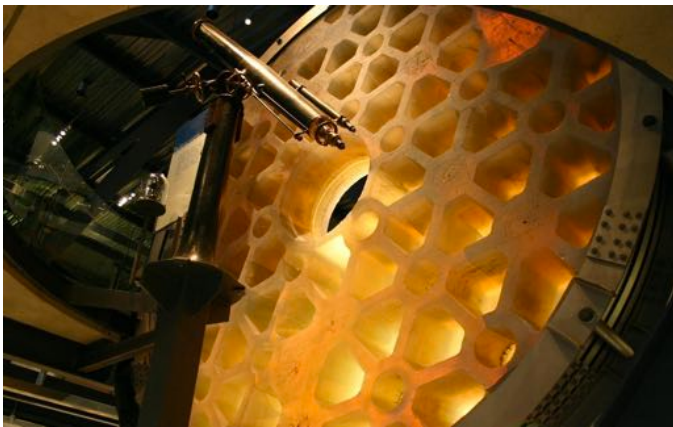
“This is the last time I set up under a pelican’s nest....” Photo credit: Bruce Murdock.

Tom Piatek and the Hale Mirror

(Editor's Note: I received the following from Tom Piatek after I gave a talk on mirror making at the May general meeting)

"I loved your talk on mirror making last meeting. It brought memories of when I visited the Corning Glass works in Corning, NY a few years ago. They made the 200" mirror for the Hale telescope at their site and, have a test blank that they made on exhibition at their museum. The first mirror blank had a lot of problems. They made columns out of fire brick in the mold to create the honeycomb structure on the back of the mirror. This reduced weight and provided mounting points for the mirror. The story goes that some of the columns dislodged from the base of the mold while the glass was cooling. You can see that some of the voids in the honeycomb are filled in from the pictures.

With all they learned on this first mirror, the second is the one that was used for the final mirror blank. I took some pictures and thought you might like to see them."



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August 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 RITZ-CARLTON BACARA 7PM	2 GENERAL MEETING 7PM	3 CACHUMA LAKE 8PM
4	5	6	7	8 RITZ-CARLTON BACARA 7PM	9 REFUGIO STATE BEACH 7PM	10 PLANNING MEETING 6PM SBMNH STAR PARTY 8PM
11	12 TECH TALK KZSB (AM 1290) 9-10 AM	13 CAMINO REAL MARKETPLACE 7PM	14	15 RITZ-CARLTON BACARA 7PM	16 WESTMONT COLLEGE 7:30PM	17 CACHUMA LAKE 8PM
18	19	20	21	22 RITZ-CARLTON BACARA 7PM	23 REFUGIO STATE BEACH 7PM	24 CARPINTERIA STATE BEACH 8PM
25	26 TECH TALK KZSB (AM 1290) 9-10 AM	27	28 CARPINTERIA STATE BEACH 8PM	29 RITZ-CARLTON BACARA 7PM	30 LOS FLORES RANCH PARK 6:30PM	31 CACHUMA LAKE 8PM