



# AU AstroNews

## The Newsletter of the Astronomical Unit

June 2019

Sponsored by the Santa Barbara Museum of Natural History



Tessa and Edgar pose in front of the "goodie table" at a recent general meeting. Photo credit: T. Totton

### JUNE POTLUCK!

Mark your calendars for our annual June potluck at 6PM on June 7<sup>th</sup>. This year we will meet under the big oak tree where the raptors hang out at the SBMNH, near the creek footbridge.

### OUTREACH SUMMARY

Thanks to everyone who helped out at our two big recent events, the Girl Scout Kaleidoscope gathering and International Astronomy Day! It's June - we're done with school events, and the campground events are ramping up, along with the Bacara. Since the last AU newsletter, volunteers Brandy Ackerman, Krissie Cook, Tim Crawford, Joe Doyle, John Edkins, Mike Farris, Tony Galvan, Ruben Gutierrez, Art Harris, Sean Kelly, Ken Kihlstrom, Janet & Martin Meza, Pat & Chuck McPartlin, Bonnie & Bruce Murdock, Max Neufeldt, Edgar Ocampo, Ray Ogella, Peggy O'Rork, Javier Rivera, Diane & Russell Ruiz, David Salvia, Cez & Tom Totton, Tom Whittemore, Jim Williams, Jerry Wilson & Patricia Forgey, and Andre Yew shared astronomy with 2386 people.

### JUNE OUTREACH EVENTS

Here are the AU events scheduled so far for June. 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](mailto:macpuzl@west.net)

The Telescope Workshop meets on most Tuesday evenings at 7:30 PM at the Broder Building at SBMNH. Contact Tim Crawford at [tcrawf3@cox.net](mailto: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.

### SATURDAY, JUNE 1, 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, JUNE 6, SETUP 7 PM

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

### FRIDAY, JUNE 7, 6 PM

Annual AU potluck dinner under the big oak tree where the raptors hang out at SBMNH.

### SATURDAY, JUNE 8, 6 PM

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

### SATURDAY, JUNE 8, 8 PM

Monthly Public Star Party, next to Palmer Observatory at SBMNH. A group of Girl Scouts will attend.

### TUESDAY, JUNE 11, SETUP 7 PM

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

### WEDNESDAY, JUNE 12, 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, JUNE 13, SETUP 7 PM

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

FRIDAY, JUNE 14, SETUP 8 PM

Telescopes for Refugio State Beach, in the SW corner of their day use parking lot.

THURSDAY, JUNE 20, SETUP 7 PM

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

FRIDAY, JUNE 21, 08:54 AMPDT

Northern Hemisphere Summer begins with the Solstice.

FRIDAY, JUNE 21, 8 PM

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

SATURDAY, JUNE 22, SETUP 8 PM

Slide show and telescopes for campers at Lopez Lake, up by Arroyo Grande. Contact Chuck if you want to come, so we can arrange camping for Friday and Saturday night. Space is limited.

WEDNESDAY, JUNE 26, 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, JUNE 27, SETUP 7 PM

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

SATURDAY, JUNE 29, SETUP 8 PM

Telescopes for Refugio State Beach, in the SW corner of their day use parking lot.

SUNDAY, JUNE 30 - Asteroid Day, on the anniversary of the Tunguska Event.

**A Poem: Santa Barbara Lightning Show 2019**

Ibrahim Ibn Salma

Etheric luminous fingers with

A divine covenant,

As the heavens shook its glowing hands

With the mother earth

To sign

A mystical contract.



Photo credit: Ibrahim Ibn Salma

**From the President**

Jerry Wilson

This Month's Column is the introduction to an Editorial: "Solving the eternal mystery that is time" by Jakob Aron, Appearing in New Scientist, 25 October 2013.

"Time is an illusion – at least in a toy model of the universe made of two particles of light. The experiment shows that what we perceive as the passage of time might emerge from the strange property of quantum entanglement. The finding could assist in solving the long-standing problem of how to unify modern physics. Physicists have two ways of describing reality; quantum mechanics for the small world of particles, and general relativity for the larger world of planets and black holes. But the two theories do not get along; attempts to combine their equations into a unified theory produce seemingly nonsensical answers. One early attempt in the 1960s was the Wheeler-DeWitt equation, which managed to quantize general relativity – by leaving out time altogether.

"It means that the universe should not evolve. But of course, we see evolution," says Marco Genovese at the National Institute of Metrological Research in Torino, Italy. In 1983 theorists Don Page and William Wootters suggested that quantum entanglement might provide a solution to the Wheeler-DeWitt "problem of time." When quantum objects are entangled, measuring the properties of one changes those of the other. Mathematically, they showed that a clock entangled with the rest of the universe would appear to tick when viewed by an observer within that universe. But if a hypothetical observer existed outside the universe,

when they looked in, everything would appear stationary.”

The full article is at:

<https://www.newscientist.com/article/dn24473-entangled-toy-universe-shows-time-may-be-an-illusion/>. It will flesh out the claims of the intro and is very readable.



“An alien, a priest, and a rabbi walk into a bar...” Photo credit: T. Totton.



“Gee, Tim. You sure have a knack for turning edges!” Photo credit: T. Totton.



Tom Totton sets up for Astronomy Day. Photo credit: Bruce Murdock.

### AU Information Box

**President:** Jerry Wilson 968-4056  
[jerryawilsonphd@gmail.com](mailto:jerryawilsonphd@gmail.com)

**Vice President:** Ron Herron  
[vicepresident@sbau.org](mailto:vicepresident@sbau.org)

**Secretary:** Carol Moore  
[secretary@sbau.org](mailto:secretary@sbau.org)

**Treasurer:** Colin Taylor 967-8140  
[dancingmagpie@cox.net](mailto:dancingmagpie@cox.net)

**Equipment:** Art Harris 968-4017  
[n6is@cox.net](mailto:n6is@cox.net)

**Outreach:** Chuck McPartlin 964-8201  
[outreach@sbau.org](mailto:outreach@sbau.org)

**Newsletter:** Tom Whittemore 687-2025  
[kometes@aol.com](mailto:kometes@aol.com)

**Refreshments:** Tom and Cezanne Totton  
562-8795  
[tomcez@cox.net](mailto:tomcez@cox.net)

**Webmaster:** Tom Totton 562-8795  
[webmaster@sbau.org](mailto:webmaster@sbau.org)

**Merch Manager:** Pat McPartlin 964-8201  
[parsnip7@yahoo.com](mailto:parsnip7@yahoo.com)

### SBMNH Astronomy Programs Manager

Javier Rivera 682-4711x173  
[jrivera@sbnature2.org](mailto:jrivera@sbnature2.org)

AU **AstroNews**, the monthly publication of the **Astronomical Unit (AU)**, is mailed to the AU membership. For publishing consideration for the next month, submit astronomical items by the 20th of the current month!

**AU annual membership rates:**  
**Single = \$20 Family = \$25**

### AU mailing address:

Astronomical Unit  
c/o Santa Barbara Museum of Natural History  
2559 Puesta Del Sol Road  
Santa Barbara, CA 93105-2998

**On the Web:** <http://www.sbau.org>

# The Astronomical Unit

c/o Santa Barbara Museum of Natural History  
 2559 Puesta Del Sol Road  
 Santa Barbara, CA 93105-2998

## June 2019

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