



AU AstroNews

The Newsletter of the Astronomical Unit

June 2023

Sponsored by the Santa Barbara Museum of Natural History



Astronomy Day smiles. Photo credit: Pat McPartlin.

OUTREACH SUMMARY

Thanks to everyone that volunteered at Astronomy Day!

Since the last newsletter, certified AU volunteers Brandy Ackerman, Krissie Cook & Quasars, Raf Cottom, Tim Crawford, Joe Doyle, Owen Duncan, Tessa Flanagan & Duff Kennedy, Art Harris, Sean Kelly & SBCC students, Rocio Kiman & Caltech students, Pat & Chuck McPartlin, Janet & Martin Meza, Bruce Murdock, Edgar Ocampo, Javier Rivera, Charles Schueler, Tom Totton, Tom Whittemore, Jerry Wilson, and Andre Yew showed cool stuff in the sky to **1513** people, helped by Robert Bernstein, Ken Kihlstrom, David Larson, Mike Lawson, Neil Malone, Max Neufeldt, Ron

Nixon, Colin Taylor, Diane Welcenbach, and Tim Wittenberg.

SBAU volunteers must have undergone the SBMNH background check, and conform with the SBMNH policies for dealing with the public, to participate in outreach activities. To get vetted, contact SBMNH Volunteer Manager Rebecca Coulter <rcoulter@sbnature2.org>. It's quick and painless.

School science nights are ending, and our summer events at campgrounds and Bacara are here to keep us busy. We're booked for every Thursday, Friday, and Saturday into September, and some Wednesdays as well, so come join us if you can!

OUTREACH EVENTS

THURSDAY, JUNE 1, SETUP 7 PM

Telescopes for the Ritz-Carlton Bacara. We set up on the blufftop lawn by the Angel Oak restaurant.

FRIDAY, JUNE 2, 7PM

Quick planetarium show, then our monthly meeting at 7:30 in the main **Fleischmann Auditorium** at SBMNH. This will be a hybrid meeting, also on Zoom. Watch your email or find the link on the SBAU web page. Our speaker will be Dr. Robert Antonucci of UCSB on Quasars.

SATURDAY, JUNE 3, SETUP 7:30 PM

Telescopes for campers at Refugio State Beach, setup in the southwest corner of the day use parking lot.

WEDNESDAY, JUNE 7, SETUP 7:30 PM

Telescopes and slide show for campers at Carpinteria State Beach. We set up on the sidewalk towards the beach from the entry kiosk.

THURSDAY, JUNE 8, SETUP 7 PM

Telescopes for the Ritz-Carlton Bacara. We set up on the blufftop lawn by the Angel Oak restaurant.

FRIDAY, JUNE 9, SETUP 7:30 PM

Telescopes for campers at Refugio State Beach, setup in the southwest corner of the day use parking lot.

SATURDAY, JUNE 10, 5 PM

AU monthly planning meeting on Zoom. Watch your email for the link.

SATURDAY, JUNE 10, SETUP 7:30 PM

Monthly Public Star Party at SBMNH, from 8:30 PM to 10 PM at Palmer Observatory.

THURSDAY, JUNE 15, SETUP 7 PM

Telescopes for the Ritz-Carlton Bacara. We set up on the blufftop lawn by the Angel Oak restaurant.

FRIDAY, JUNE 16, SETUP 7 PM

Monthly Public Telescope Night at Westmont's Keck Observatory, next to the athletic fields.

SATURDAY, JUNE 17, SETUP 7:30 PM

Telescopes for campers at Refugio State Beach, setup in the southwest corner of the day use parking lot.

WEDNESDAY, JUNE 21, SETUP 7:30 PM

Telescopes and slide show for campers at Carpinteria State Beach. We set up on the sidewalk towards the beach from the entry kiosk.

THURSDAY, JUNE 22, SETUP 7 PM

Telescopes for the Ritz-Carlton Bacara. We set up on the blufftop lawn by the Angel Oak restaurant.

FRIDAY, JUNE 23, SETUP 7:30 PM

Telescopes for campers at Refugio State Beach, setup in the southwest corner of the day use parking lot.

SATURDAY, JUNE 24, SETUP 7 PM

Slide show and telescopes for campers at Lopez Lake, at the nature theater at the marina. Contact Chuck if you want to camp overnight.

TUESDAY, JUNE 27, SETUP 7 PM

Telescope Tuesday in the plaza by the theater at Camino Real Marketplace.

THURSDAY, JUNE 29, SETUP 7 PM

Telescopes for the Ritz-Carlton Bacara. We set up on the blufftop lawn by the Angel Oak restaurant.

FRIDAY, JUNE 30, SETUP 7:30 PM

Telescopes for campers at Refugio State Beach, setup in the southwest corner of the day use parking lot.

FROM THE PRESIDENT

Jerry Wilson

New and exciting issues for the science of Astrophysics are currently being explored. Contrary to many unspoken beliefs about science, science is a process rather than a goal. It revels in apparent contradictions popping up where we thought things were understood. Oh boy, a problem to solve! Here's a couple.

JWST has imaged bright objects with large redshifts that imply an early date for their existence. If these objects are interpreted as early galaxies, there will be new problems. If they are galaxies, then they are very big galaxies. Our current thinking has been that it takes time for galaxies to grow that large, but maybe this is not the case. There may be a fast track to getting big that we don't know about. Maybe they aren't really galaxies, but very large black holes. We must wait for definitive data or a new theory.

In addition, what causes the increasing universal growth in the Hubble Constant that we see? Dark Energy? One Phys Rev Letter presents observational data on Black Hole mass increase over time that exceeds the rate predicted by simple mass accretion. The paper suggests the extra rate correlates with the increasing rate of expansion. Black Holes, they speculate, are not only absorbing mass but also the fabric of space-time itself and are the source of dark energy. Our recent speaker has doubts about that proposal.

An alternate proposal is that dark energy is somehow related to the Young's Modulus for vacuum space-time, that is, the elasticity of empty space. It is clearly an elastic medium, because it supports gravitational waves, and the expansion of the universe can be considered to be a very low frequency gravitational wave.

There is so much activity on these new and interesting physics problems, I'm sure we'll see results in the near future. More to come!

ARTS CORNER

"Ladder to the Pleiades"

Michael P. Branch

(continued from "Let There be Night")

Questions are the waypoints along which Hannah's orbit around things can be plotted, and she has asked so many questions about stars for so many nights in a row that at last I've been compelled to learn enough to answer some of them. In doing so I've stumbled into placing myself, my family, my home, on the cosmic map whose points of reference wheel across the sky. We've learned a surprising number of stars and constellations together, and we each have our favorites. Now that we are in our second year of performing this unfailing nightly ritual, we're also having the gratifying experience of seeing our favorite summer stars, long gone in the high-desert winter, come around again on the year's towering, dark clock of night.

The other evening after supper my wife, Eryn, asked Hannah to make a wish. Without hesitating she replied. "I wish that I could have a ladder tall enough to reach the stars." As usual, I didn't know what to say. I long since became too grizzled to flash on sappy-isms of the Maya Angelou Hallmark card variety, but it is impossible to dismiss a three-year-old kid – who, among other things, discovered the cosmos without much help from me – when she articulates hopes that are at once so perfectly reasonable and so beautifully impossible. Before she goes to sleep, Hannah and I look at the six-dollar cardboard starwheel I bought to help us identify constellations. Too tired to make much of it, I toss the disc down on her bed in mild

frustration. She picks it up, holds it upright in front of her in both hands, stares earnestly out beyond the walls of her room, and begins to turn it left and right as if it were a steering wheel. "Where are you going?" I ask. "Pleiades," she says. "You want to come?"

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The Astronomical Unit

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JUNE 2023

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 RITZ-CARLTON BACARA 7PM	2 "HYBRID" AU MONTHLY MEETING 7PM	3 FULL MOON REFUGIO STATE BEACH 7:30PM
4	5	6	7 CARPINTERIA STATE BEACH 7:30PM	8 RITZ-CARLTON BACARA 7PM	9 REFUGIO STATE BEACH 7:30PM	10 LQ MOON ZOOM PLANNING MEETING 5PM STAR PARTY 7:30PM
11	12	13	14	15 RITZ-CARLTON BACARA 7PM	16 WESTMONT PUBLIC STAR PARTY 7PM	17 NEW MOON REFUGIO STATE BEACH 7:30PM
18	19	20	21 SUMMER SOLSTICE CARPINTERIA STATE BEACH 7:30PM	22 RITZ-CARLTON BACARA 7PM	23 REFUGIO STATE BEACH 7:30PM	24 LOPEZ LAKE 7PM
25 FQ Moon	26	27 "TELESCOPE TUESDAY" AT CAMINO REAL MARKETPLACE 7PM	28	29 RITZ-CARLTON BACARA 7PM	30 REFUGIO STATE BEACH 7:30PM	