



# AU AstroNews

## The Newsletter of the Astronomical Unit

April 2023

Sponsored by the Santa Barbara Museum of Natural History



Edgar Ocampo sets up for outreach at the Ritz-Carlton Bacara Resort. Photo credit: Tom Totton.

### BEAT THE CLOUDS!

Roaring back in the astronomy business after the pandemic, Ocular Industries of Noleta is proud to announce our new Tethered Optical Aerostat System for Telescopes (TOAST). This balloon system with an optical-grade upper window, buoyed by optical-grade hydrogen, will lift any telescope weighing less than 67 kilograms to a height of 60,000 feet, enough to get you above any pesky clouds. Available starting April 1. Not suitable for tripods with pointy feet. Ocular Industries is not liable for any damage to your scope from Sidewinder missiles.

### INTERNATIONAL ASTRONOMY DAY

We'll be setting up at the Camino Real Marketplace on Saturday, April 29, to celebrate International Astronomy Day by bringing astronomy to the public (see below). We'll have safely filtered solar viewing, astro gift giveaways, and activities during the day, and a star party that evening. Volunteers are needed to help with setup and tear down, run telescopes, and man tables. Please contact Chuck if you can help, at <[macpuzl@west.net](mailto:macpuzl@west.net)> or leave a message at 805-964-8201.

### OUTREACH SUMMARY

Since the last newsletter, certified AU volunteers Pat & Chuck McPartlin showed cool stuff in the sky to 800 people, helped by Dr. Kihlstrom at Westmont.

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](mailto:rcoulter@sbnature2.org)>. It's quick and painless.

### OUTREACH EVENTS

#### THURSDAY, APRIL 6, SETUP 7:30 PM

Telescopes for a Moon Night for fifth graders at Monte Vista Elementary School, 730 N Hope Ave. We'll set up on their playground blacktop.

#### FRIDAY, APRIL 7, 7PM

Quick planetarium show, then our monthly meeting at 7:30 in Farrand 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. Daniel Gilman of the University of Toronto, speaking on strong gravitational lensing as a probe of dark energy and dark matter.

#### SATURDAY, APRIL 8, 5 PM

SBAU Monthly Planning Meeting on Zoom. Watch your email or find the link on the SBAU web page.

#### SATURDAY, APRIL 8, SETUP 7 PM

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

#### THURSDAY, APRIL 13, SETUP 4:30 PM

Telescopes for Science Night from 5:30 PM to 7:30 PM at Vieja Valley Elementary School, 434 Nogal Drive, Santa Barbara. It won't be dark, so show the Sun and Venus, or just talk about astronomy.

#### FRIDAY, APRIL 21, SETUP 7 PM

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

#### TUESDAY, APRIL 25, SETUP 7 PM

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

#### SATURDAY, APRIL 29, SETUP 9 AM AND 6 PM

International Astronomy Day at Camino Real Marketplace, in the plaza by the theater. Astronomy activities and solar observing from 10 AM to 4 PM, then a star party from 7 PM to 10 PM. Come on out and help get the public hooked on astronomy!

#### NEWS FROM ARIZONA

SBAU member Bob Richard is celebrating his observatory's first anniversary, and will have an article in the July Sky & Telescope. Here's a link to an interview he did with a local TV station: <https://wvresortliving.org/blog/scottsdale-observatory/>

#### A MESSAGE FROM LUKE

A message from Luke Swetland, President & CEO of SBMNH, regarding the Astronomy Programs Manager:

Krissie Cook, who had jumped in to help us with our Programs, needs to get back to her full time day job as a teacher, so we are looking for a new Manager.

<https://www.sbnature.org/connect/careers/current-opportunities/astronomy-programs-manager>

The perfect person would be someone nuts about astronomy, a good communicator, and willing to manage volunteers and learn how to upkeep the equipment.

Please pass this on to anyone you think might be interested or let me know please and I will reach out to them directly.

This is a very important piece of the Museum's exceptional portfolio of natural history programming.

Thank you, Luke Swetland

#### FROM THE PRESIDENT

Jerry Wilson

A recent article published in AstroPhysics Letters present a possible source of Dark Energy. The proposed approach is supported by observational data on black hole growth. See Duncan Farrah et al 2023 ApJL 944 L31. An edited version of the abstract follows:

“Observations have found black holes spanning 10 orders of magnitude in mass across most of cosmic history. Black hole models with realistic behavior at infinity predict that the gravitating mass of a black hole can increase with the expansion of the universe independently of accretion or mergers, in a manner that depends on the black hole's interior solution [to Einstein's gravitational equation]. We test this prediction by considering the growth of supermassive black holes in elliptical galaxies over  $0 < z \leq 2.5$ . We find evidence for cosmologically coupled mass growth among these black holes, with zero cosmological coupling excluded at 99.98% confidence. The redshift dependence of the mass growth implies that, at  $z \leq 7$ , [13.5 billion years ago] black holes contribute an effectively constant cosmological energy density to Friedmann's equations. The continuity equation then requires that black holes contribute cosmologically as vacuum energy. We further show that black hole production from the cosmic star formation history gives the value of  $\Omega\Lambda$  measured by Planck while being consistent with constraints from massive compact halo objects. We thus propose that stellar remnant black holes are the astrophysical origin of dark energy, explaining the onset of accelerating expansion at  $z \sim 0.7$ .”

I'm sure we will be hearing more on this proposed nature of dark energy.

## ARTS CORNER

IN THE VICINITY OF WONDER

Suzanne Spillman

(Near the John Day Fossil Beds National Monument)

Another landscape has appeared  
days after departing the oak habitat.

I arrive in conifer territory  
laid gently upon undulating hills  
tinted in a palette so soft and dreamlike.

Is it possible I am still in the same longitude?

The topography leads me around and  
through every compass point.

The trees are perfect accents on every hill.

I savor each moment while racing the sun  
towards the horizon where it will reveal  
the Cascade Range in silhouette.

Its only competition is the moonrise  
which provides a pastel backdrop

only an artist could imagine.

Oregon is a surprise.



“You’re kidding, Tim. You rolled all the way to Westmont on your skateboard to help out at the outreach?” Photo credit: Tom Totton.

### **AU Information Box**

**President:** Jerry Wilson 252-2206  
[jerryawilsonphd@gmail.com](mailto:jerryawilsonphd@gmail.com)

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

**Secretary:** Pat&Chuck McPartlin 964-8201  
[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 Whitemore 687-2025  
[kometes@aol.com](mailto:kometes@aol.com)

**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 Specialist**

Krissie Cook 682-4711 ext. 164

[kcook@sbnature2.org](mailto:kcook@sbnature2.org)

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**AU annual membership rate: \$20**

### **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

APRIL 2023						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4	5 FULL MOON	6 MONTE VISTA ELEMENTARY 7:30PM	7 "HYBRID" AU MONTHLY MEETING 7PM	8 ZOOM PLANNING MEETING 5PM STAR PARTY 7PM
9	10	11	12 LQ MOON	13 VIEJA VALLEY ELEMENTARY 4:30PM	14	15
16	17	18	19 NEW MOON	20	21 WESTMONT PUBLIC STAR PARTY 7PM	22
23	24	25 CAMINO REAL MARKETPLACE 7PM	26	27 FQ MOON	28	29 INTERNATIONAL ASTRONOMY DAY 9AM AND 6PM CAMINO REAL MARKETPLACE
30						