



# AU AstroNews

## The Newsletter of the Astronomical Unit

October 2024

Sponsored by the Santa Barbara Museum of Natural History



*The SBMNH's observatory is all aglow for another Second Saturday Viewing. Photo: T. Totton.*

### ANNUAL AU CAMPOUT

The AU campout will take place at the Mohawk Shores group site at Cachuma Lake, with arrival on Friday, October 25 after 1 PM, and checkout on Sunday, October 27 by 1 PM. To see their rules and regulations for pets and activities, visit <https://www.countyofsb.org/637/Cachuma-Lake>. The campout is free to SBAU members, but we are limited to parking for 22 vehicles, after which there is a \$10 entry fee per vehicle. Keep your receipt if you pay for parking and you will be reimbursed.

If you see a sign saying the camping area surrounding Mohawk Shores, on the East side of the park, is closed, you can ignore it. It's open for us.

We will have a potluck dinner on Saturday at 5 PM. The potluck will have a catered main dish (tri-tip, chicken, garlic bread). Bring drinks and a salad or dessert dish to share.

If you are interested in taking the wonderful Nature Cruise, be sure to reserve a slot (2 to 3:30PM Friday, 10 to 11:30 AM on Saturday or Sunday) by

calling 805-688-4515. Adults \$18 (ages 13 and up), Kids \$10 (ages 5 to 12 year old; please no children under 5).

### SBAU ELECTION

Our annual election is coming up in December. If you are interested in serving as an officer in the club, contact Vice President Ronnie Herron at [brherron@gmail.com](mailto:brherron@gmail.com). Positions and their duties are detailed on the SBAU web page. We need new blood!

### OUTREACH SUMMARY

Since the last newsletter, certified SBAU/SBMNH volunteers Brandy Ackerman, Andy Allen, Tim Crawford, Joe Doyle, Tessa Flanagan, Art Harris, David Larson, Pat & Chuck McPartlin, Bruce Murdock, Edgar Ocampo, Charles Schueler, Tom Totton, Chuck Watson, Tom Whittemore, Lee Wilkerson, and Andre Yew showed the sky to **730** guests. We were also helped out by Liz & Daryl Ross of the Local Group from Santa Clarita.

### OUTREACH EVENTS FOR OCTOBER

***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.***

### FRIDAY, OCTOBER 4, 7 PM

Quick planetarium show, then at 7:30, our monthly meeting in 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 Liam Brennan of UCSB. His topic is the search for dark matter.

**TUESDAY, OCTOBER 8, SETUP 7 PM**

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

**SATURDAY, OCTOBER 12, 4:30 PM**

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

**SATURDAY, OCTOBER 12, SETUP 7 PM**

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

**THURSDAY, OCTOBER 17, SETUP 5 PM**

Telescopes for Science Night at Kellogg School, 475 Cambridge Dr, Goleta, on the playground blacktop.

**FRIDAY, OCTOBER 18, SETUP 7 PM**

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

**THURSDAY, OCTOBER 31 HALLOWEEN**

Share some eye candy with trick-or-treaters!



*“Gosh... and to think that I can bring in the Deer Lick Group in Pegasus with my little telescope!” Photo credit: Tom Totton.*

**FROM THE PRESIDENT**

*Jerry Wilson*

When we observe two bodies obviously orbiting a common center in the sky, we can apply Newton’s law of gravitation and his three other laws in order to derive the properties of motion of the two objects. We can extend the system dynamics to write an equation that predicts the bodies’ individual behavior at any future time. With three bodies, we cannot do that. The system dynamics for the three individual bodies cannot be determined analytically in a closed form solution. The key here is “in closed form.” In closed form means to write a single set of equations that describe the system at any future time. But the problem itself is not insoluble. We *can* analyze the dynamics of the three body system through finite element analysis (AKA numerical analysis) using a computer.

In fact, two members of our club demonstrated that they could determine the future motions and orbit stability of our solar system. Bruce Murdock and Farshad Barman analyzed an N-body system via two different coding systems, and presented the result some years ago at one of our “members night” monthly public meetings. They will be presenting some expanded versions of that analysis at the SBAU meeting on the first Friday in December.

It turns out that the Earth will be participating in an actual three body system at the time of their presentation! A recently discovered asteroid, 2024 PT5, will pass close to the earth-moon system and perform a near-capture dance between September 29 and November 25, 2024. A two body system can, in principle, capture a third body, but this time the dynamics only allow a temporary “capture.”

So for a two month period the Earth will officially have a second natural moon!

## **GREETINGS SBAU MEMBERS!**

*Diane Welcenbach*

It's time for the annual campout and potluck at Cachuma Lake Oct 25 - 27. For details, please view the flyer by clicking the link below:

[https://www.sbau.org/events/Cachuma\\_Camp\\_and\\_PL\\_2024\\_Rev2.pdf](https://www.sbau.org/events/Cachuma_Camp_and_PL_2024_Rev2.pdf)

To sign up, send an e-mail to [Events@SBAU.org](mailto:Events@SBAU.org)  
Hope to see you all there!

## **MERCHANDISE AVAILABLE, 10/4/24!**

Pat McPartlin, the SBAU Merch Manager, will have all merchandise for selling before and after the club meeting on Friday, October 4, 2024. Come early at 6pm-7pm to Fleischmann Auditorium at the Santa Barbara Museum of Natural History and buy club merchandise to support the club! There will be a little time after the speaker finishes until 9:15pm, then, clean up, because the hall closes at 9:30pm. Look on the [SBAU.org/Store](http://SBAU.org/Store) tab for all items that the club sells. If you have any questions, you can reach Pat by email to: [merchmgr@sbau.org](mailto:merchmgr@sbau.org)

## **ARTS CORNER**

*Rosie King*

In the Raspberry Patch  
The earth is soft after rain.  
My small pitchfork digs in, uprooting  
the oxalis. I toss its clovery  
greens, flimsy yellow blossoms, thrill  
to uncover, at the base of stiff brown  
canes, each new sprig of the saw-toothed  
raspberry. And at the fringes, in the path,  
even under the fence invading the iris -  
all the little renegades!  
They could easily take over. I leap  
to transplant them, fumbling for the trowel, almost  
in summer now  
tasting raspberries.

### **AU Information Box**

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### **SBMNH Astronomy Programs Manager CURRENTLY VACANT**

**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 rate: \$20**

### **AU mailing address:**

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

# The Astronomical Unit

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OCTOBER 2024						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2 NEW MOON	3	4 SBAU HYBRID MEETING 7PM	5
6	7	8 CAMINO REAL MARKETPLACE 7PM	9 FQ MOON	10	11	12 ZOOM PLANNING MEETING 4:30PM STAR PARTY 7PM
13	14	15	16	17 FULL MOON KELLOGG SCHOOL 5PM	18 WESTMONT PUBLIC STAR PARTY 7PM	19
20	21	22	23	24 LQ MOON	25	26
27	28	29	30	31		