



# AU AstroNews

## The Newsletter of the Astronomical Unit

April 2018

Sponsored by the Santa Barbara Museum of Natural History



*The Tuesday Mirror-making Workshop group. Mike Chibnik, recently retired, (second from the right) was a valued contributor to the group over the last several years. He will be sorely missed. Photo credit: Tom Totton.*

### THE APRIL GENERAL MEETING

Our speaker for the April meeting is Isabel Lipartito, a National Science Foundation Fellow graduate student researcher in astrophysics at UCSB. Her lecture topic this evening is “Exoplanet Direct Imaging with Superconducting Detectors.” Isabel continues: “The number of detected exoplanets, or planets that orbit a star outside our solar system, is currently in the thousands. With refined methods of exoplanet discovery comes a new research question: how can we directly image and characterize these planets? In this talk, I will discuss the history of exoplanet detection and the state of the art of exoplanet direct imaging. I will talk about the development of superconducting detectors at UCSB that will push the limits of exoplanet imaging and obtain reflected-light images of exo-Jupiters.”

### OUTREACH REPORT

Despite all the rain and clouds, since the last newsletter AU volunteers Karl Blasius, Mike Chibnik, Tim Crawford, Zak Dafaallah, Ruben Gutierrez, Art Harris, Baron Ron Herron, Sean Kelly, Pat & Chuck McPartlin, Janet & Martin Meza, Bruce Murdock, Max Neufeldt, Peggy O'Rork, Tom Totton, Tom Whittemore, and Jerry Wilson showed cool stuff in the sky to 1383 people.

### APRIL OUTREACH EVENTS

Our big event of Spring is International Astronomy Day on April 21. Come out and help!

Here's what's scheduled so far for April. Remember, events are subject to change, so for the latest updates, contact Chuck at 964-8201 or [macpuzl@west.net](mailto:macpuzl@west.net).

The Telescope Workshop meets on Tuesday evenings at 7:30 PM in 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.

### FRIDAY, APRIL 6, 7 PM

Monthly AU meeting in Farrand Hall at SBMNH. Start with a short planetarium show, then hear about new exoplanet detectors being made at UCSB.

### TUESDAY, APRIL 10, SETUP 5 PM

Telescopes for Science Night at Mountain View School, 5465 Queen Ann Lane in Noleta. We set up on the blacktop out back. Food for volunteers.

### THURSDAY, APRIL 12, SETUP 5 PM

Telescopes for a Science Night at Montessori Center School, 401 North Fairview Avenue in Goleta, across from the Library. Food for volunteers.

### SATURDAY, APRIL 14, 5 PM

AU planning meeting in the classroom outside Javier's office at SBMNH.

### SATURDAY, APRIL 14, 7 PM

Monthly Public Star Party at the Santa Barbara Museum of Natural History.

### TUESDAY, APRIL 17, SETUP 7 PM

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

THURSDAY, APRIL 19, SETUP 4 PM

Telescopes for a Science Night at Vieja Valley School, 434 Nogal Drive in Santa Barbara. We set up on the blacktop on the NW side of campus. Food for volunteers.

FRIDAY, APRIL 20, 7:30 PM

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

SATURDAY, APRIL 21, SETUP 9 AM

**International Astronomy Day** at Camino Real Marketplace, in the plaza by the theater. Solar scopes, demonstrations, activities, and giveaways during the day, followed by a star party in the evening.

WEDNESDAY, APRIL 25, SETUP 7:30 PM

Telescopes for fifth graders at Hope School, 3970 La Colina Road..

THURSDAY, APRIL 26, SETUP 4:30 PM

Telescopes for a Science Night at Washington School, 290 Lighthouse Road in Santa Barbara. We set up on the playground on the east side of campus. Food for volunteers.

*From the President...*

*Jerry Wilson*

I want to say a few words about telescope collimation. Telescopes need to be collimated, no matter what type they are. The optical components must point the right way and be aligned in order to work well as a single unit and to give the highest performance the design is capable of. Some types of scopes are easier than others to collimate. At one point I decided to build a 14.5 inch Ritchey-Chretien, because of its performance advantage of producing nice round, coma-free stars over a wide field of view. At one of the Advanced Imaging Conferences I took a class in how to collimate an R-C scope. It turns out to be an unforgiving task and fairly intensive. Since I do not have a permanent set up, but travel and camp under dark skies, I could see a lot of collimation touch up in my future. As this clashed with my usual minimum possible effort approach to astroimaging, I changed my goal to the much more forgiving Corrected Dahl-Kirkham design.

There are a growing number of cool looking aids to help one collimate their telescope and I have quite few of them. Again I find, consistent with my minimal effort approach, they are really more trouble than they are worth. They really do look cool, though.

I learned to make, use and collimate telescopes in a class held in the basement of the Griffith Observatory by the LA Astronomical Society (LAAS). The technique I learned, which I use even today, is faster, just as accurate and much more efficient. It is basically centering everything. See, already it sounds simpler. There are three steps:

The first is mechanical. Using an eyepiece tube with a pinhole at one end and cross hairs at the other, make sure the eyepiece focuser is accurately perpendicular to the tube (for a Newtonian) or aimed up the center of the tube (for a Cassegrain). Next make sure the spider or other secondary support is exactly in the center of the tube.

The second step is to tilt the primary. Put the telescope tube level, back up about one or two tube lengths and, using one eye, look at the back of the secondary, the primary, the annulus of the blackened tube interior, and the reflection of the secondary in the primary. Tilt the primary until they are all concentric.

Step three is to adjust the secondary tilt and rotation while looking in the eyepiece focusing tube.

It's fast, easy and accurate. I still have Howie Glatter's collimating laser though, because it's a good laser, but I use it mostly to frustrate my cats.



*The Eskimo Nebula, imaged by Bob Richard. Bob took this detailed shot using an 11" SCT with his new Atik video camera. Total exposure time was 9.3 minutes.*



Bruce Murdock took this spooky image of the recent January 31<sup>st</sup> Lunar Eclipse.



"You're kidding, Chris. I put a huge scratch in my first mirror, too!" Photo credit: Tom Totton.



Tim works his mirror magic at the Marymount Maker Fair. Photo credit: Tom Totton.



"Come. Take a look! The moon is THIS BIG in my scope!" Photo credit: Tom Totton.

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# The Astronomical Unit

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## April 2018

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6 GENERAL MEETING 7 PM	7
8	9 TECH TALK KZSB (AM 1290) 9-10 AM	10 MOUNTAIN VIEW SCHOOL 5PM	11	12 MONTESSORI CENTER SCHOOL 5PM	13	14 PLANNING MEETING 5 PM STAR PARTY 7 PM SBMNH
15	16	17 CAMINO REAL MARKETPLACE 7 PM	18	19 VIEJA VALLEY SCHOOL 4PM	20 WESTMONT COLLEGE 7:30PM	21 ASTRONOMY DAY ALL DAY
22	23 TECH TALK KZSB (AM 1290) 9-10 AM	24	25 HOPE SCHOOL 7:30PM	26 WASHINGTON SCHOOL 4:30PM	27	28
29	30					