



AU AstroNews

The Newsletter of the Astronomical Unit

May 2017

Sponsored by the Santa Barbara Museum of Natural History



“That’s right! I used this very scope to see, with my naked eye, several Hickson Group Galaxies!” Photo credit: T. Totton.

THE MAY GENERAL MEETING

This evening’s General Meeting will feature a special Members’ Night. At press time Jerry Wilson has volunteered to speak about imaging black holes, and Tony Galvan will be highlighting his new book, “Astrophotography Without a Telescope.” Tony will also provide a brief primer on viewing and imaging a total solar eclipse in preparation of this year’s Great American Solar Eclipse. Our third speaker will be Tom Whittemore who will talk about pulsating variable stars. He will highlight some of his recent work with students using Westmont’s 24” reflector.

OUTREACH SUMMARY

Since the last outreach report, intrepid AU astronomy volunteers Emilio Antonucci, Mike Chibnik, Tim Crawford, Zak Dafaallah & the Quasars, Michael Dilley, Joe Doyle, John Edkins, Mike Farris & Koko, Ruben Gutierrez, Art Harris, Sean Kelly, Pat & Chuck McPartlin, Janet & Martin Meza, Bruce Murdock, Max Neufeldt, Edgar Ocampo, Peggy O’Rork, David Salvia, Colin Taylor, Tom Totton, Tom Whittemore, and Jerry Wilson showed neat stuff in the sky to 1073 people.

MAY OUTREACH EVENTS

The Telescope Workshop meets on Tuesday evenings at 7:30 PM at the Broder Building at SBMNH. Contact Tim Crawford at 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.

Here are the AU events scheduled so far for May. Note that the Star Party at SBMNH has been moved to the third Saturday to avoid a conflict with the Museum Gala. To get the latest information on schedules, or directions, just contact Chuck at 964-820, or macpuzl@west.net

TUESDAY, MAY 2, SETUP 7 PM

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

FRIDAY, MAY 5, 7 PM

Monthly meeting in Farrand Hall at SBMNH. Start with a quick planetarium show, then it’s member’s night presentations.

THURSDAY, MAY 11, SETUP 5 PM

Telescopes for a Science Night at Montessori Center School, in the school complex across Fairview Avenue from the Goleta Public Library.

WEDNESDAY, MAY 17, SETUP 7:30 PM

Telescopes for Anacapa Residence Hall at UCSB. Contact Chuck to arrange for a parking permit if you can come.

THURSDAY, MAY 18, SETUP 5 PM

Telescopes for a Science Night at Isla Vista School, 6875 El Colegio Road. We’ll enter through a gate at the west side of campus. Solar viewing.

FRIDAY, MAY 19, SETUP 7 PM

Telescopes for the monthly Public Telescope Night at Westmont College, at their observatory next to the baseball field.

SATURDAY, MAY 20, 5 PM

Planning meeting at SBMNH, in the classroom next to Javier's office.

SATURDAY, MAY 20, 7 PM

Monthly Public Star Party at SBMNH, next to the Palmer Observatory.

*** NOTE MOVE TO THIRD SATURDAY ***

THURSDAY, MAY 25 - MONDAY, MAY 29

Annual RTMC Astronomy Expo at Big Bear Lake. Hang out with 1000 or so of your favorite amateur astronomers at 7000 feet.

Video Astronomy comes of age...

Bob Richard

There is a new camera on the scene that promises to truly revolutionize deep-sky observational astronomy. This camera effectively multiplies the aperture of a telescope many-fold and allows you to see details of deep-sky objects in almost instantaneous real-time that are completely invisible to the naked eye at the eyepiece. While video cameras *per se* are not new, this camera is built exclusively for astronomical use by a leader in the field of CCD imaging cameras. Using stacking and light/color balance algorithms the camera performs all the typical processing procedures internally and builds an image on the computer screen in minutes that using conventional techniques would take hours of exposure *and* processing. Furthermore, the camera tolerates some deviant polar alignment, so perfect alignment/ tracking, while helpful, is not necessary. While the resolution is not as great as expensive CCD cameras or DSLRs, for observational work it is very adequate. The camera is small (about the size of a pack of cards), lightweight, reasonably priced, and can be used with any telescope. It is reviewed in the October 2016 issue of "Sky and Telescope", pp. 58-62. Below are two images of NGC 891 taken through my C-11 at F/5. The first is the image as it appeared on the computer screen after 18 min. of exposure. The second is after the image has been easily processed further using Photoshop Elements. The second image, if you are interested in using the camera for astrophotography, compares very favorably with an image of this object on p. 74 of the February 2017 issue of Sky and Telescope. That image took 6 hours of exposure! I am very excited about how this camera greatly extends the

observational reach of my telescopes and how it can be used as an effective educational tool in our outreach programs.



From the President...
Fellow SBAU members:

In the day (1920s to 1970s), amateur telescope makers used what was called a "standard" glass blank to make a mirror for their, soon to be, Newtonian telescope. A standard glass blank, whether it was plate glass or Pyrex, was a disk of glass with an aspect ratio of 6 to 1. This means its diameter was no more than six times its thickness. A six-inch blank was one inch thick for example. Or a 12-inch disk was 2 inches thick.

This ratio was used because a glass blank will be rigid enough to maintain its optical correction no matter how it's mounted or tilted. In short, it was easy to mount and use. But standard mirrors got very heavy very quickly as amateur telescopes increased in aperture. An 18-inch mirror was approaching 50 pounds.

In response, bigger mirrors began being made out of thinner blanks. Since these mirrors would not maintain their optical figure as the telescope changed its direction, the mounting method started to become important. Flotation schemes of 9, 18, 27 mirror contact points or more became common. So, the question is: for a given mirror size, how many points of support is right?

If you take any nominally flat object and put it on another nominally flat support it will actually be supported by three points of contact. A six-inch by one-inch needs three points of contact and an eighteen-by-three-inch mirror also needs three. Since three works fine for a standard, the question is how many "standards" is our mirror equivalent to?

Consider the case of an eighteen-inch diameter mirror with a thickness of 1.75 inches. At that thickness, a standard mirror would have a diameter of 10.5 inches with an area of 86.6 square inches. Our 18-inch has an area of 254.5 square inches or just under 3 times that of our "standard." Since the standard requires three support points, our 18-inch (with a thickness of 1.75 inches), should work adequately with a 9-point flotation system.

As I said above, this is a quick and dirty method and becomes inaccurate for much larger or thinner mirrors than an amateur normally deals with. This inaccuracy creeps in because the load that must be supported increases as the cube of the thickness, while the strength that supports it increases as the square of the thickness. It has worked for my scopes.

Next month I'll talk about nothing. Quantum mechanical nothing, that is...

Jerry Wilson

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May 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2 CAMINO REAL MARKETPLACE 7PM	3	4	5 AU GENERAL MEETING 7PM	6
7	8 TECH TALK KZSB (AM 1290) 9-10AM	9	10	11 MONTESSORI SCHOOL 5PM	12	13
14	15	16	17 UCSB 7:30 PM	18 ISLA VISTA SCHOOL 5PM	19 WESTMONT COLLEGE 7PM	20 STAR PARTY 7-10PM SBMNH
21	22 TECH TALK KZSB (AM 1290) 9-10AM	23	24	25 RTMC ASTRONOMY EXPO	26 RTMC ASTRONOMY EXPO	27 RTMC ASTRONOMY EXPO
28 RTMC ASTRONOMY EXPO	29	30	31			

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