

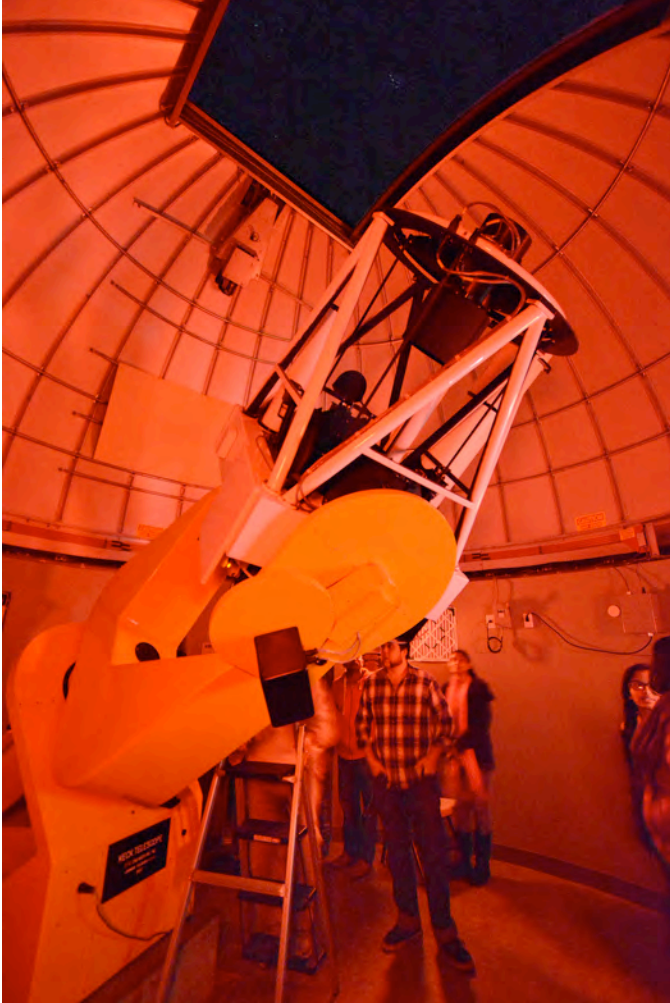


AU AstroNews

The Newsletter of the Astronomical Unit

March 2014

Sponsored by the Santa Barbara Museum of Natural History



Westmont student, Sam Goodwin, shows the public the skies at February's "Third Friday" outreach. Photo: Bruce Murdock.

OUR MARCH MEETING

Remember that our March general meeting will occur on the second Friday! The meeting will start promptly at 7:30PM. There will NOT be the traditional planetarium show at 7PM! Our speaker this month will be Professor Jordi Puig-Suari of Cal Poly, SLO. Dr. Suari will talk about the CubeSats and their use in education. The CubeSat Project was developed by California Polytechnic State University, San Luis Obispo, and Stanford University's Space Systems Development Lab. This joint program creates launch opportunities for universities previously unable to access space and with over 60 universities and high schools

participating in the CubeSat program, the educational benefits are tremendous. Students, through hands-on work, will develop the necessary skills and experience needed to succeed in the aerospace industry. Don't miss this one!

OUTREACH SUMMARY

Since the last newsletter, AU volunteers Sabine & Marciano Chan, Tim Crawford, Art Harris, Chris Larson, Sergio Lopez, Pat & Chuck McPartlin, Janet & Martin Meza, Bruce Murdock, Max Neufeldt, Nancy Rohrer, Tom Totton, Javier Rivera, Chris Ulivo, and Tom Whittemore & Sam Goodwin showed the sky to **1310** viewers.

MARCH EVENTS

Here are the AU events scheduled for March. To get the latest information on schedules, or directions, just contact Chuck at 964-8201 or macpuzl@west.net Remember, events are subject to cancellations and changes, like this month's meeting!

THURSDAY, MARCH 6, SETUP 5 PM

Telescopes for Science Night at Hollister Elementary School, 4950 Anita Lane in Goleta. We'll set up on their playground, entering through a gate on the eastern side.

FRIDAY, MARCH 7, SETUP 6:30 PM

Telescopes for a Jupiter Night at the Goleta Public Library, 500 North Fairview Avenue in Goleta. Scopes will be in the back parking lot of the Christian Science place next door.

SATURDAY, MARCH 8, 5 PM

AU planning meeting in the classroom outside Javier's office at SBMNH. All members are welcome to help plan your club's activities for 2012.

SATURDAY, MARCH 8, 7 PM

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

SUNDAY, MARCH 9, 2 AM

Don't forget to switch to Daylight Saving Time!

TUESDAY, MARCH 11, 7 PM

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

THURSDAY, MARCH 13, SETUP 5:30 PM

Telescopes for Science Night at Santa Barbara Charter School, on the east end of the campus of Goleta Valley Junior High, 6100 Stow Canyon Road in Goleta.

FRIDAY, MARCH 14, 7:30PM

Monthly AU meeting in Farrand Hall at SBMNH. **NOT FIRST FRIDAY!** Hear about CubeSat mini satellites.

SATURDAY, MARCH 15, SETUP 7 PM

Telescopes for Bacara Resort and Spa. We set up on the Miro Lawn.

THURSDAY, MARCH 20, 9:57 AM

Vernal Equinox - It's Spring!

FRIDAY, MARCH 21, 7:30 PM

Monthly Public Telescope Night at Westmont College observatory. Look through the big scope!

SATURDAY, MARCH 22, SETUP 7 PM

Telescopes for Bacara Resort and Spa. We set up on the Miro Lawn.

TUESDAY, MARCH 25, SETUP 5 PM

Telescopes for a science night at St. Raphael School, 160 St. Joseph Street in Noleta, by Hollister and 217. We set up in the parking lot to the east. Pat & Chuck can't make this one, so come if you can!

TUESDAY, MARCH 25, SETUP 7 PM

Telescopes for an astronomy night at Midland School, at 5100 Figueroa Mountain Road, past Los Olivos in the Santa Ynez Valley. Dark skies!

FRIDAY, MARCH 28, SETUP 7 PM

Telescopes for Bacara Resort and Spa. We set up on the Miro Lawn.

SATURDAY, MARCH 29

All night Messier Marathon at the Shotgun Range of the Winchester Canyon Gun Club, at the end of West Camino Cielo.

From the Workshop...

Tim Crawford

From the first two issues of "From the Workshop" we now know what it takes to begin grinding a mirror blank against its tool: the center of the mirror deepens and the edges of the tool wear as they become a perfect complement to the mirror. Now you may ask yourself "How deep do I make the center of my mirror?" In other words, "When should I stop grinding?" This, of course is up to you! What focal length do you want mirror to have? The focal length, F, is the distance from the mirror where parallel (distant) light comes into focus. Moreover, the depth of your mirror at its center determines F. It will also drive some of the design characteristics of your finished telescope, as we will see in future issues. In short, when you reach the desired depth at the mirror's center, it is time to stop deepening your mirror! What follows are some straightforward "mirror mathematics."

(1) The Focal Ratio. This number is nothing more than the ratio your mirror's focal length, F, to your mirror's diameter. For example, if you are working on an 8" (200mm) diameter blank and you want a focal length of 1000mm, the focal ratio is $1000/200 = 5$. You would say that the focal ratio of your desired mirror is 5. Or, equivalently, you are crafting an F/5 mirror.

This ratio has a number of important consequences. One is that a smaller-focal-ratio mirror will have a shorter focal length and, as a result, a deeper center. It may not be obvious at this point, but this type of mirror will have a wider field-of-view. When used with shorter focal length eyepieces, a short focal length mirror will capture larger areas of the night sky. And it will do so with low power. Often this kind of mirror is used in what's called a "richest field" telescope. Open star clusters are wonderful targets for this kind of telescope!

On the other hand, if you plan to do a lot of planetary viewing, a longer focal ratio mirror will suit you better. Here, with a comparable eyepiece, the longer focal length will supply the higher power needed in seeing details in, say, Jupiter or the Moon.

Keep in mind that there is no focal ratio that “does it all.” A comfortable focal ratio of F/4 to F/6 with focal lengths between 750mm to 1500mm both (a) keep you off tall ladders and (b) allow you to enjoy both ends of the “Planet-to-Cluster” viewing spectrum. I crafted and use a 10" f/5.2 scope and find it easy to use and carry about. It yields fine views of planets and deep sky objects that are within its grasp. So...you pick a number! How about an 8" mirror with an f/6 focal ratio?

In my next essay, I will discuss the mirror’s “radius of curvature” and some other terms that define how our finished mirror will behave optically. Till then, I wish you "clear skies," but only after we get some much needed rain!

Arts Corner...

I am like a slip of comet,
Scarce worth discovery, in some corner seen
Bridging the slender difference of two stars,
Come out of space, or suddenly engender'd
By heady elements, for no man knows:
But when she sights the sun she grows and sizes
And spins her skirts out, while her central star
Shakes its cocooning mists; and so she comes
To fields of light; millions of traveling rays
Pierce her; she hangs upon the flame-cased sun
And sucks the light as full as Gideon's fleece:
But then her tether calls her: she falls off,
And as she dwindles shreds her smock of gold
Amidst the sistering planets, till she comes
To single Saturn, last and solitary;
And then goes out into the cavernous dark.
So I go out: my little sweet is done:
I have drawn heat from this contagious sun:
To not ungentle death now forth I run.

Gerard Manley Hopkins, September 13, 1864

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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 rates:

Single = \$15 Family = \$25

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March 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
2	3	4	5	6 HOLLISTER ELEMENTARY 5PM	7 GOLETA PUBLIC LIBRARY 6:30PM	8 PLANNING MEETING 5PM STAR PARTY 7PM SBMNH
9 DST! 2AM	10	11 CAMINO REAL MARKETPLACE 7PM	12	13 SB CHARTER SCHOOL 5:30PM	14 SBAU GENERAL MEETING 7:30PM	15 BACARA RESORT 7PM
16	17	18	19	20 SPRING HAS SPRUNG! 9:57AM	21 WESTMONT COLLEGE 7:30PM	22 BACARA RESORT 7PM
23/30	24/31	25 ST. RAPHAEL SCHOOL 5 PM MIDLAND SCHOOL 7PM	26	27	28 BACARA RESORT 7PM	29 MESSIER MARATHON AT THE GUN CLUB ALL NIGHT!

The Astronomical Unit

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