Veteran Member, Consummate Amateur Astronomer/Astro-photographer, Universal Mentor, and All Around Go-To Guy

Read our lead story on one of our club’s most knowledgeable members - the thoroughly engaging history of Wyck Hoffler’s life-long journeys and adventures in astronomy—P. 2

Meet the Youngest Member of BAS

Not all of you got to meet her when she attended one of our meetings and wowed us with her knowledge of Jupiter—her favorite planet.

Here she is, Honorary Member, Clara Hansen, with her Dob!

A Look Back - some activities and stories from the past year or so

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Of Hope and Dreams Fulfilled
(My Journey with Amateur Astronomy)

By
G. Wyckliffe Hoffler

Quite early in my life the heavens attracted more than my attention. By age 8 they commanded much of my interest and spare time. I would move a porch chair into the yard at night, sit and stare into a clear, starry sky, and wonder… Understand that I was born in 1934 on a farm in northeastern North Carolina which did not receive electrical power till after World War II. Those skies would be the envy of any amateur astronomer in today’s light polluted, urban environments.

My parents recognized my inordinate love with the sky, and though we had virtually no discretionary resources, they supported my pursuit with encouragement. Once my mother spotted a small (64 pages) children’s book by W. B. White, *Seeing Stars* (1942), on a “sale” table and bought it for five cents! With rudimentary seasonal star charts, monochrome pictures, and some tables and text, it became my first formal introduction to the sky. Unfortunately, I had not then developed one of my major obsessions, that of dating everything, but on two of the star maps I had inscribed where the celestial equator and the ecliptic cross (both the northern vernal and autumnal equinoxes). Though crudely drawn, one can almost infer the movement of precession over the past 60+ years. I date my lines to about 1948 (age 14).

Very early I reached the conclusion that I needed more than my two good eyes for further exploration of this fascinating realm of nature. My first optical aid was a 5-section cardboard, telescoping telescope ($2.98) with a 1-inch aperture, simple lens objective and movable eye lenses to make 20x, 40x, or 60x. Holding it steady at even the lowest power proved too difficult, so I built a tripod of plastering laths. With that instrument I marveled to see craters on the Moon, the phases of Venus, the moons of Jupiter and the rings of Saturn. But it disappointed in trying to reach any deep sky objects. So I longed for more light grasp = aperture.

My dad eventually assisted me at age 14 in purchasing a new, more powerful instrument. On the day it arrived via postal mail, he was nearly as excited as I, and we took an extra hour from field work that day to assemble its parts. It was a 3.5-inch Newtonian reflector (Skyscope, for $25), at f/11 with a spherical figure, cardboard tube, mounted on a tripod with a simple, manual equatorial axis. It opened to me enormously exciting vistas, and I proceeded to sketch at the eyepiece such wonders as the Orion Nebula (M42), the nightly changing positions of Jupiter’s four Galilean moons, and the path of asteroid Vesta. Photography then was beyond my technical grasp.
That telescope, however, provoked me into drawing a design for an observatory. It could then be only a purely paper exercise, for we did not possess resources (nor I the technical skills) to erect such a structure. Further, my little Skyscope was truly portable and easy to set-up anywhere for instant observation. A few years later I made the mirror for a 4.25-inch Richest Field telescope (f/3.8) and mounted it in a brass cylinder (from my grandfather’s old closed country store) that pumped a gallon of kerosene. That telescope now serves as a finder for my 24-inch Dobsonian. The huge gap between the technologies which supported my early ventures into astronomy and those available to amateur astronomers today forced me into innovative and inventive avenues of equipment design and construction—while I intimately learned the heavens.

Let some years pass. I entered college at the University of North Carolina in 1952 with the stated study objective on my application: astronomy. I did take a couple of highly enjoyable astronomy courses, but somewhere I became otherwise directed and earned a medical degree there eight years later. This brought me into the 1960’s with Earth’s fledgling efforts at space exploration. I actually saw Sputnik II, but no one believed me till a later pass that others also witnessed. Again, my astronomical interests significantly influenced my life course. After internship, two years as a cold war US Army Battalion Surgeon in Germany, three years residency in internal medicine, and two more of residency in aerospace medicine, I joined NASA as a flight surgeon/research physician at the Johnson Space Center (JSC, then Manned Spacecraft Center) in Houston. For nine years I worked with a fantastic team of multi-disciplined life scientists in a competitive moon race with the Soviets. Of course, there were myriads of engineers, other discipline scientists, technicians, and managers all collaborating and focused on that historic challenge by a young visionary President John F. Kennedy.

We won. On 20 July 1969, The Eagle landed at Tranquility Base, Moon. Five more human lunar landing missions followed, and then the intensive succeeding Apollo Applications Program—the Skylab, with exciting, on-board human studies. The final Apollo mission was a joint rendezvous with a Soviet Soyuz in July 1975.

The Space Shuttle was then well beyond the drawing board, but still years away from first flight. The long interim without human spaceflight activities caused considerable down time for life scientists, and I transferred in 1977 from JSC to KSC—the Kennedy Space Center in Florida. The Space Shuttle Columbia flew its maiden flight 12 April 1981—exactly 20 years to the day of the first human orbital flight of Earth by Soviet Cosmonaut Yuri Gagarin.
The long, arduous, twice disastrous, but still highly successful Space Shuttle program concluded with its 135th mission by Atlantis on 21 July 2011. Probably its crowning achievement was the herculean effort it played in building the International Space Station. However, I had already retired from NASA in 1997 and watched much of the last decade-plus of Shuttle activity from an exterior position—frequently my front yard in Titusville.

Now here is where my story completes itself. It was here in Florida, in the later years of my career with NASA that my dream of a backyard observatory became a reality. In 1985-86 I acquired a fourth-hand 10-foot observatory dome, erected it onto an 11-foot high elevated platform in my back yard, installed a 12-5-inch Newtonian (f/6) reflector on a motorized German equatorial mount, and began my first serious attempts at photography. Later, as the technology evolved, I transitioned to digital imaging. Still later, I purchased a high-end GOTO German equatorial mount, and a 14-inch Schmidt-Cassegrain telescope. With those and other supporting equipment (guide scope and camera, modified DSLR camera, monochrome astro-imaging camera, dedicated computer control for all system components) I came to realize the joys of one’s own fixed astronomical observatory. I chose to name it Οὐρανός (URANOS) Observatory (the Greek word for heavens, from which also the planet Uranus is named).

Although long retired from gainful employment, I have not become a recluse in my observatory, continuing involvement in many other personal and community aspects of life. And though astro-imaging is now my primary astronomical pursuit, I still enjoy visual observation and supporting star parties for public outreach and participation, as well as meetings, outings, and camaraderie with fellow amateur astronomers.

Messenger Creates New Crater on Mercury

A little over a month ago NASA’s MESSENGER spacecraft crashed into the surface of Mercury (April 30, 2015). The ten foot wide, $450 million probe was traveling at about 8,750 mph when it ended its highly productive 4-year research project. Mike Wall, senior writer for Space.com estimated the craft would have created a 52 foot diameter crater. The John Lennon Crater named in 2013, is 59 feet in diameter.

The International Astronomical Union (IAU), the governing body of planetary and satellite nomenclature since 1919, announced the final 5 craters named the day before Messenger’s demise. The IAU’s mandate for names of Mercury’s craters says they must be named for artists, musicians, or writers who have been famous for more than 50 years, and dead for more than three years. Among the other cultural icons honored on Mercury’s surface are Hector Berlioz, Alexander Calder, Diego Rivera, Truman Capote and Enrico Caruso.
Beyond the Scope—Pushing the Limits of Visibility

Past officers and long-time members Bill Manley (right) and Gordon Schafer (below) travelled to the dark sky site of Kissimmee Prairie Preserve to continue Bill’s research into separation limits of uneven double stars, in an effort to test Dawes Limit of Optics in a telescope, which is a theoretical limit of resolving power of any set of given optics governed by the equation of Dawes Limit. The test pairs were chosen by Sissy Haas of Sky and Telescope Magazine. “...with bigger Dobs, the Florida sky, and ‘seeing conditions’ turns out to be the limit without stepping down the aperture (below 1.0 arc sec separation),” said Bill. The link to the Haas Binary Star Observing Project is on our website under Research. Here Gordon gives us his riveting rendition of their nocturnal maneuvers:

Our decision to go to Kissimmee Prairie Preserve State Park (KPPSP) was a mostly spontaneous reaction to building pressure to get out under the stars, as neither Bill nor I had logged any observing hours in many weeks prior. Bill said he wanted to go to KPPSP at the next opportunity, to which I replied that I would like to join him. So we met there in mid-October a year ago, for a one-night session. We kept it simple and brought our own food. Bill reserved a couple of sites on the astronomy pad and I settled up with him when I arrived.

We had the pad all to ourselves that night. I erected my canopy halfway over Bill's truck tailgate, which made a very nice dew-free place to spread out books and maps. We set up our scopes close to our tents, not on the berm. Bill had his excellent 14.5 inch Dobsonian and I brought my new 12.5 inch Dobstuff scope to give it it's first serious workout. (If you're wondering, everything from the collimation to the dew heaters to the digital setting circles performed flawlessly. I was very pleased.) The sky cooperated for the most part, with only a few brief periods when the seeing and/or transparency became mushy. Most of the time, we had at least average seeing, and sometimes above average seeing. Air stability and transparency were important that night because we needed to push both scopes to very high magnifications in order to test the limits of our optics by separating some challenging double star pairs.

I'm grateful to Bill Manley for leading the charge on this and for inspiring enthusiasm for what seemed on first blush to be a rather dull pursuit. We persevered and our efforts paid dividends. We both learned a lot about what can be expected from optics in our size categories, and we learned what an arc second of separation actually looks like. This is really a valuable thing to know. It was fun to have a specific goal to pursue in our observing. At the end of the session, I had a sense of accomplishment I know I would have otherwise missed, had we spent the night only looking at the usual short list of all-too-familiar Messier and NGC objects. Our work that night reminded me how much there is to do in amateur astronomy if we will take the trouble to plan ahead and create simple observing goals. Visual astronomy can be so much more than simply chasing eye candy. It was a night to remember. Bill is a great observing partner. Gordon Schafer ☼

As a result of the observations made at KPPSP by Bill and Gordon, visual separation findings of three star test pairs were sent in to the project to be used in the overall analysis.
The Giant Magellan Telescope (GMT) project announced this week, (June 3, 2015) that its construction phase will now begin. The project’s 11 international partners have secured more than US$500 million to begin work on what they say will be the first of a new generation of large ground-based telescopes and the largest optical telescope in existence. The decision to begin construction initiates final design and fabrication of the GMT, which will be located at Las Campanas Observatory in Chile’s Atacama Desert.

The Giant Magellan Telescope will have a 25.4-meter (82 feet) primary mirror comprised of seven separate 8.4-meter (27 feet) diameter segments. Each mirror segment weighs 17 tons and takes one year to cast and cool, followed by more than three years of surface generation and meticulous polishing. Resolution will be ten times that of Hubble.

GMT collaborators said in a June 3 statement that this new telescope is designed to:

… discover Earth-like planets around nearby stars and the tiny distortions that black holes cause in the light from distant stars and galaxies. It will reveal the faintest objects ever seen in space, including extremely distant and ancient galaxies, the light from which has been traveling to Earth since shortly after the Big Bang, 13.8 billion years ago.

The telescope, which will be housed in a dome 22 stories high, is expected to see first light in 2021 and be fully operational by 2024.

Funding for the project comes from the partner institutions, governments and private donors.

EarthSky.org 6/4/15

Copy and paste the URL at the top for a very informative video, and for more info go to WWW.GMTO.org
Apollo sent his water bearer, Corvus the crow to fetch a cup of water. En route, Corvus became distracted eating figs. It was only after much delay that he finally remembered his mission. Correctly assuming that Apollo would be angry, the crow plucked a snake from the water and concocted a story about how it had attacked and delayed him.

Apollo was not fooled and angrily flung the Crow, Cup and Snake into the sky, placing the Crow and Cup on the Snake’s back.

Then the god ordered Hydra to never let the Crow drink from the Cup. As a further punishment, he ordered that the Crow could never sing again, only screech and caw.

On any June evening, look in the sky around nightfall. The first “stars” you’ll likely notice are really the planets Venus and Jupiter. These brilliant beauties light up the west as soon as the sun goes down. Then look nearly due south for sparkling blue-white Spica, in the constellation Virgo. This post tells you how to find Spica. Okay … got Spica? Now, as nightfall deepens into later evening, watch for a number of fainter stars to become visible. Below and to the right of Spica are the constellations of Corvus the Crow, Crater the Cup, and Hydra the Water Snake.

None of these constellations has any bright stars, but Hydra holds the distinction of being the longest constellation in the heavens. (Byrd, D. 2015, EarthSky.org)
Three objects stand out in this telescopic image, a view toward the mostly stealthy constellation Lynx. The two brightest (the spiky ones) are nearby stars. The third is the remote globular star cluster NGC 2419, at distance of nearly 300,000 light-years. NGC 2419 is sometimes called “the Intergalactic Wanderer,” an appropriate title considering that the distance to the Milky Way’s satellite galaxy, the Large Magellanic Cloud, is only about 160,000 light-years. Roughly similar to other large globular star clusters like Omega Centauri, NGC 2419 is itself intrinsically bright, but appears faint because it is so far away. NGC 2419 may really have an extragalactic origin as, for example, the remains of a small galaxy captured and disrupted by the Milky Way. But its extreme distance makes it difficult to study and compare its properties with other globular clusters that roam the halo of our Milky Way galaxy.

-APOD, NASA.gov

Brevard Astronomical Society
P.O. Box 410092
Melbourne, FL 32941

Email: info@brevardastro.org

www.brevardastro.org

Meetings: 3rd Wed. of month
At Eastern Florida State College Planetarium & Observatory (Bldg. 19) at 1519 Clear Lake Rd, Cocoa, FL 32922