ASTRONOMY CLUB OF AKRON
www.acaoh.org

The Night Sky

The Newsletter of
The Astronomy Club of Akron
www.acaoh.org

Volume 33 Number 8 **August 2011**

SUMMER BREAK! NO MEETING AT KIWANIS THIS MONTH.

Observatory Report

By Ron Kalinoski

We finally got some good weather for our July 30th public star party. This was the first public star party of the year with good observing conditions, and in fact, the sky conditions were excellent. We started with a presentation on spectroscopy with about 35 attendees. We set up a spectrometer before the presentation to show the public emission lines of a fluorescent light bulb and explained why emission and absorption lines appear in the spectrum and how astronomers use those lines to measure distance, discover extrasolar planets, measure magnetic fields, and determine the composition of stars. After the presentation, with six telescopes set up on the observatory grounds, our members got to the task of showing the public the night sky. With the Milky Way visible overhead, we viewed several open clusters, globular clusters, nebulae, and one star cloud. Fred Huffman and Robert Benedict handled the southeastern part of the observatory grounds, while Lew Snodgrass and Rick Burke handled the eastern and northern grounds. Using an OIII filter with the observatory telescope, the Swan Nebula was transformed from a check mark to a swan gliding across a celestial lake. The public really enjoyed this event. Some stayed out past midnight, while others laid down on the observatory floor to keep steady while observing open clusters and double stars through binoculars. Hopefully, we'll have more star parties like this one soon.

Glenn Cameron takes a look at Venus through the 14" observatory telescope at our solar party. Venus was about 15 degrees west of the sun allowing observers to see a fully illuminated disk. Gary Smith and Russ Farrell discuss the perils of String Theory while waiting to view Venus.

On July 10th, we had a solar party at the observatory. Under clear skies, six telescopes were set up to view the Sun and Venus. The position of Venus was about 15 degrees west of the Sun allowing observers to see its disk fully illuminated. Rick Burke, Dave Jessie, and Scott Horstman had their solar telescopes set up to view the Sun at hydrogen-alpha wavelength. We also had a white light glass filter mounted on a Celestron C5 to view sunspots. Jason Shinn set up his Radio Jove telescope to observe parts of the radio spectrum and received a solar burst during the event. All this plus the observatory director cooked hotdogs

(con't page 4)

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2011 - August Activities Calendar - 2011

Club

August 6 - OBSERVATORY: Public Event.
08:30 pm EDT (2011 06 07 00:30 UT)

August 23 - OUTREACH: Camp Wunderlung.
08:00 pm EDT (2011 08 24 00:00 UT)

August 20 - OBSERVATORY: Public Event.
08:00 pm EDT (2011 08 20 00:00 UT)

August 27 - MVAS OTAA Convention.
05:00 pm EDT (2011 08 27 21:00 UT)

Celestial*

August 2 - Moon at perigee (closest) at 21h UT.
August 6 - First Quarter Moon at 11:08 UT.
August 13 - **METEOR SHOWER**: Perseid Meteor Peak between 1h and 13h UT.
August 13 - Full Moon at 18:57 UT.
August 18 - Moon at apogee (farthest) at 16h UT.
August 21 - Last Quarter Moon at 21:54 UT.
August 22 - Neptune at opposition at 23h UT.
August 29 - New Moon at 03:04 UT.
August 30 - Moon at perigee (closest) at 18h UT.

**Source: www.skymaps.com*

FOR SALE

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DO YOU HAVE SOMETHING FOR SALE OR TRADE?

POST YOUR ITEM

HERE!

Contact the newsletter editor with the details of your item for sale or trade at:
truemartian@aol.com

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- PUBLISH YOUR ARTICLES AND IMAGES -

THE NIGHT SKY NEWSLETTER IS LOOKING TO PUBLISH YOUR ARTICLES! SHARE YOUR THOUGHTS, EXPERIENCES, STORIES, OPINIONS, LATEST ASTRO-IMAGES, AND ADVICE WITH YOUR FELLOW AMATEUR ASTRONOMERS.

ARTICLES MUST BE SUBMITTED BY THE SIXTH OF EACH MONTH. ARTICLES MUST BE RELEVANT TO OUR FORUM. ALL TEXT FILES SHOULD BE SAVED IN PLAIN ASCII FORMAT OR ANY VERSION OF WORD TO MINIMIZE IMPORT PROBLEMS. ALL IMAGES MUST BE SAVED IN .JPG FORMAT. SUBMIT YOUR ARTICLES VIA E-MAIL TO:

truemartian@aol.com

OR VIA SNAIL-MAIL:

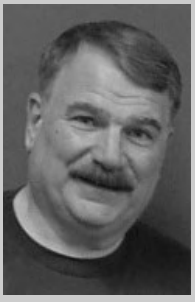
JASON SHINN
1025C Hemlock Hills Dr.
Akron, OH 44313

July Treasurer's Report

By Lew Snodgrass

7/1/2011 Through 7/31/2011

Checking Beginning Balance	**$3,638.81**
Income	
	0.00
Total Income	**$0.00**
Expenses	
	0.00
Total Expenses	**$0.00**
Income Less Expenses	**$0.00**
Outstanding Checks	**$92.49**
Checking Ending Balance	**$3,546.32**
Charter One Ending Balance	**$3,546.32**
Difference	**$0.00**
Savings Opening Balance	**$6,432.02**
Earned Interest	0.27
Savings Closing Balance	**$6,432.29**
Petty Cash	50.00
ACA Savings	6,432.29
ACA Checking	3,546.32
Total	**$10,028.61**



Article by Lew Snodgrass
ACA Treasurer.

Observatory Report Con't

for all; can't beat that for a good afternoon.

On July 25th and August 1st we held impromptu star parties. The July 25th star party was well attended and on both nights observing conditions were excellent. Rick Burke tried his new diffraction grating on August 1st. The system worked pretty well displaying the spectrum of Vega optically and graphically on his computer screen. The upcoming autumn observing season will enhance our opportunity to view the heavens during these types of star parties by providing cooler temperatures and much earlier sunsets. I hope to see more members come out to these events.

Astronomy Club of Akron got some great news this month. Lou Poda decided to donate his 14" Celestron to the club. Lou requested the telescope be used for ACA outreach programs. This addition of a large aperture telescope will greatly enhance our effort to show the public the wonders of the night sky. Thanks Lou for your generous donation.

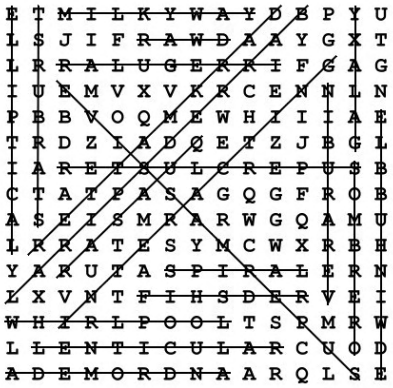
Article by Ron Kalinoski,
ACA Observatory Director.

Members observe the sun at hydrogen alpha, white light, and radio frequencies during our July 10th solar party.

Jason Shinn verifies his observation of a solar burst by checking other radio frequency observing sites.

ANSWERS TO JULY'S WORD SEARCH:

All About Galaxies



"Living on Earth may be expensive, but it does include a free annual trip around the Sun!" - unknown

Mystical Mauna Kea

By Tom and Leigh Alexander

The Big Island of Hawaii—home to Mount Kilauea, an active volcano and therefore the current home of Pele, the Hawaiian goddess of Volcanoes, fire, and lightning. The island is also home to the southernmost point in the United States; famous beaches made of either green or black sand; Mauna Loa, well-known home of macadamia nuts; Mauna Kea, home of Poli'ahu, Goddess of snow and platform of 13 observatories. Wait--13 observatories? With the promise of clear skies at almost 14,000 feet above sea level? And no light pollution up there because Hawaii has legislation that all public lights must be yellowed to help prevent it! We're going!

3:30pm: Hawaii Forest and Trail picks us up at our Kona Coast hotel at sea level. We're some of the few people standing around the hotel lobby in long sleeves and pants. Throw in the fact we're carrying bags full of hats, sweatshirts, and gloves, and you can understand the many strange looks from the tourists in shorts and tank tops enjoying the Oceanside Hawaiian summertime! We join sixteen others in the I'iwi, our bus, for the adventure, heading inland. We drive on Saddle Road. This is a famous road that we have not been on in our previous trips to the Big Island of Hawaii because car rental companies insist that you stay off this road. It was built as a single lane road across the island of Hawaii in the 1940s by the Army Corp of Engineers. They built it in a big hurry as they wanted a cross island route for the military in case of a Japanese invasion. . Once we were on the road, it was obvious why car rental companies forbid you to travel it--we doubt that many car suspensions can take the pounding! The road is being modernized slowly but surely. The western section of the road helps chiropractors stay in business, but the eastern half is currently a modern, smooth 2-lane highway. As we drive through the Parker Ranch, the largest private cattle ranch in the United States, our guide, Greg, gives us a good historical feel for the area. Our destination, Mauna Kea, rises 13,796 feet above sea level to our north; Mauna Loa rises 13, 677 feet to our south. We are in Saddle Valley between the two monoliths. We learn that the Goddess Pele, using Mauna Loa, and the Goddess Poli'ahu on Mauna Kea had epic battles in this valley, as the lava flowed from Mauna Loa to be stopped by the snow and ice that Poli'ahu sent from Mauna Kea. We stop at an old cowhand barracks at about 7500 feet in altitude for a dinner of beef or vegetarian stew; a great choice as the temperature has dipped into the 50s. We all piled back into the minibus for the trip up Mauna Kea Road. Before we left, however, parkas were handed out. The temperatures were supposed to be in the 30s or less once we reached our destinations.

Figure 1- Start of excursion; the Kona Coast of the Big Island of Hawaii.

6:00pm: We arrived at the Mauna Kea Visitor's Center which also houses the Onizuka Center for International Astronomy at 9,500 feet above sea level; the last rest stop before the trek to the summit. The observatories were about half an hour away on a path that made Saddle Road look like the smoothest patch of cement on earth. This summit road is gravel and dirt for the first seven miles, and paved for the last seven in order to keep road dust away from the telescopes. A little ways behind the visitor center sit the dorms that visiting scientists and maintenance workers live in during their tour on the summit. Living at this altitude conditions them to function for 12 hour shifts at the summit which is close to 14,000 feet high. Most of the research astronomers, however, choose to sit in their offices or at home and monitor the scopes on their computers. A night of observing on the biggest scopes can cost over $50,000 a night! Once on the path to the summit, the bus switches to four-wheel drive. The path has no guard rails, even though some of the drop-offs are quite impressive! We stop at about 10,000 feet for a picture session. Looking out over the mountains, ocean, clouds and Maui, the views were literally breathtaking (although the lack of oxygen might have had some part in that). There is currently no snow on Mauna Kea, even though the name translates to "White Mountain". This name is based on the 6-8 inch snowfalls that are common in the winter, so it is no misnomer. We pass a garage that has the only snow removal equipment in all of Hawaii—two tired looking

snowplows enjoying their summer vacation.

6:30pm: The Summit--wow! we wish we could utter a more acute word to describe the awe and insignificance we felt, but it left us quite speechless. The observatories glistened in the setting sun, casting fantastic glares and shadows upon the surroundings. There are thirteen telescopes, including a radio telescope array, at three different levels. The naked eye view as twilight approaches is awesome. 75 miles to our north, Maui Island's 10,000-foot peak Haleakala poked through the clouds below us. The active volcano Kilauea and inactive Mauna Loa sit to our southeast and south, and to the southwest rises the somewhat shorter inactive Hualalai volcano. Although Mauna Loa has not erupted for over 4500 years, geologists do believe it will become active at some point. Hopefully not tonight! Looking off toward the east side of the peak past where the observatories are perched, a cinder cone and a giant black behemoth await. This cinder cone is a sacred place for Hawaiians. The black leviathan seems to go on for miles, but though it looks solid, the way it flows across the landscape is too ethereal to be as compact as the mountains around it. Greg informs the group that the black goliath is, in fact, the shadow of Mauna Kea, which stretches for over 100 miles! We are not alone on top of the mountain. Many Jeeps, tour busses, and people milling about the observatories distract from the otherwise beautiful view. The treacherous path to the summit is public, so many of the locals with 4 wheel drives have made the trek up here to watch the sunset. The peak will seem calm compared with the frenzied, yet still careful dash down the mountain soon after sunset. Hawaii mandates

Figure 2- Leigh in winter garb at app 10,000 feet. Mauna Loa is in the background across Saddle Valley. The volcanic crater of Mauna Loa is visible as an indentation in the mountain past Leigh's left shoulder.

that there are to be no headlights on the top of the mountain more than thirty minutes after sunset to ensure dark skies for the scopes. Most people want to make the thrillingly dangerous ride down the half-paved path with as much light as possible, thus one can encounter a mini-rush hour right after sunset. If only Portage Lakes State Park could institute that rule, maybe there wouldn't be the chorus of groans and angry yells we've all come to know and love every time a non-astronomer drives past.

Figure 3- Part of the Very Long Baseline Array of Radio Telescopes. Jason - eat your heart out!

7:00pm: As the sun set, all eyes turned toward the west, hoping for the elusive green flash, which occurs when the sun goes down over a distinctly flat horizon, like an ocean. According to Greg, one occurs about once a month, and none had happened so far this month. Although the sky along the western horizon had a distinctly greenish tinge, no flash was seen that night. The moment the sun dropped beyond the horizon, the temperature dropped quickly. True to astronomical form, we immediately began to scan the sky for stars, remembering our latitude. The altitude was playing with us, though. The group could not see much from the peak, due to our oxygen starved eyes not functioning as well as they do at lower altitudes. The first two stars Tom sees are due south, about 10-15 degrees up from the horizon. His excitement builds as he observes what he believes to be Alpha and Beta Centauri, the pointer stars for the famous Southern Cross. The last time he saw these stars was July of 2007, when he was at about 30 degrees south in latitude in Lesotho, and they were almost directly overhead. But to be sure, he asked Greg to confirm his suspicions, which Greg did with a look that implied he had underestimated Tom's knowledge of the night sky. As the observatory shields began to open, we piled into the bus with a bit more difficulty due to the fact most of us were wearing parkas that Hawaii Forest and Trail had provided, for the ride back to the visitor center for a rest stop and our observing session. On the way down, we are able to see the Southern Cross just above Kilauea to our south. Greg is busy

Figure 4- From left- Gemini North 8.1 M Cassegrain; U. of Hawaii 2.2 M Scope; United Kingdom 3.8 M Infrared telescope.

ensuring we make it down the hill on the road, so we take on the job of introducing the night sky to our fellow passengers on the way down since our companions are unfamiliar with the stars.

9:00pm: We unloaded from of the bus just below the visitor center at 9,000 feet, everyone except Leigh wearing a parka now that the chill had set in. Greg served us some hot chocolate and chocolate chip cookies (no John Shulan Chili, however!) and started to set up a Celestron C-11. Since Tom can't eat chocolate, he began to try to get his bearings in the unfamiliar sky. The Big Dipper was quite visible now, and as was Polaris, low in the North. We tried to find Vega, which would really help us figure out where we were in the sky. With all the stars, however, it took quite a while to find it! Vega too, was low in the northern sky, just rising above the observatories behind us. Leo is standing on his head in the west. Then, as we found Deneb and Cygnus, we started to follow the Milky Way south into Sagittarius which was almost directly overhead. Tom frowned at this point, because there seemed to be clouds in our view! How frustrating it was, to have come all this way, only to… Wait a moment… Those were no vapor clouds; they were the starry clouds of the Milky Way! Tom had been in some dark sky sites and seen the Milky Way clearly before, but never like this! He then started to point out some sights to our fellow tour group members, giving them a precursor to the mini-lesson then given by Greg.

9:15pm: Once Greg had the scope set up, he began his star tour/party. Through the scope we saw Alpha Centauri, Omega Centauri, Saturn, and M8 (Lagoon Nebula). Using his (unfortunately dying) green laser, he pointed out virtually all of the visible constellations and gave a somewhat humorous folklore history of how each constellation was named. Often, his story revolved around a Hawaiian native named Bob sitting around a campfire drinking hot chocolate. I'll leave to your imagination how he said Virgo was named! Now, that is not the way it's taught anywhere I've learned about before, but after all, we were in Hawaii! After about an hour and a half, the hot chocolate had run out, Greg was out of constellations to point out and comments to make, and it was getting truly cold (less than 30° F). After a quick trip back to the visitor center to use the facilities and grab a last cup of hot cocoa, and we were off down the mountain back to our hotels.

Figure 5- Canada-France-Hawaii Telescope Dome housing a 3.58 M scope.

Tom's Epilogue

This tour was a highlight of the Hawaii trip. Positives included the trip up the mountain, actually seeing the observatories, watching the sunset and seeing the Southern Cross and the sky from a dark, pristine, low latitude-high altitude site. Greg's narration during the trip to from sea level up the mountain was instructive and fun. I was a little less enamored with his narration at the observing site. This is likely because I was familiar with what he was discussing and I really wanted to observe more through the C -11. That hour and a half at 9500 feet under a pristine dark sky was about 75 minutes of talk and 15 minutes of observing, spread among all of us. It's not that his talk wasn't interesting and humorous; it's just that I would have preferred to be observing. I used the time for much naked eye scans of the sky, however, taking in all I could. My recommendation to ACA members who visit the islands and are debating taking this tour (list price for the tour was $186 with some discounts available) are to contact the tour agencies to see if any has a tour specifically for amateur astronomers.

Nantucket is like Akron

By John Shulan

Well on my favorite trip to Nantucket, where the sky is black, I discovered that in many ways I felt as if I were home. Sunny and clear all day, cloudy at night. The one clear night, a patch of fog rolled thru at a clip and dewed up everything.

The cool part was attending the weekly astronomy lecturers being given by astronomers or physicists from across the country. My favorite was about the interferometers being expanded to look for gravitational waves on earth. Way cool to say the least.

The Maria Mitchell Association is a nature study program of which astronomy is an important part. Their programs are geared for both visitors and students doing research internships. Their program has won a Presidential citation and seems doing quite well in the grant department. They are getting ready to build a beautiful planetarium with lecture hall.

But at least I feel on an equal footing with them because CLOUDS HAPPEN THERE TOO!
Clear Skies!

Article by ACA Member
John Shulan

Mauna Kea Con't

While it's nice to hear some of the stories, you will likely want more observing time than this tour provided. Of course, there is nothing to stop you from carefully packing your own scope or big binoculars (a pair of 70-100 mm would be great for the Milky Way!), renting a 4 wheel drive and driving up to the visitor center area on your own for an evening's observing. This is a public facility, and although it is crowded, the crowds thin as the evening rolls on. If you're headed to the Big Island of Hawaii, I strongly urge you to take advantage of the island's astronomical opportunities!

Further information on visiting Mauna Kea, including hours to tour the Keck 1 and University of Hawaii telescope observatories can be found at http://www.ifa.hawaii.edu/mko/visiting.htm.

Article by ACA Members
Tom and Leigh Alexander

Figure 6- Sunset over the Subaru and Keck 1 and 2 domes. Haleakala, a 10,000 foot peak on the island of Maui, 75 miles away, is visible above the clouds on the right side of the picture. The greenish tinge above the sun is not a green flash, but is the actual sky color.

All About Telescopes

G Q H W A N R G F L E C L B H
O A B T L R A A R P A R A R A
R X L X U M D A A T P E I I N
V E R I M M M N A D P Z R N S
H A F A L O I D A O K T O F L
Y U R R L E I Z C H J I T R I
T A B A A O O S A X C P A A P
Y R P B P C E G Z T M S U R P
J A N T L L T S A Q L Z Q E E
P D R Z E E R O U L U A E D R
T I J T K C E K R X I C G V S
C O T E L O I V A R T L U O H
R E F L E C T O R B V A I O E
O X K B K A E P T T I K Q E Y
A R E C I B O J A H S E J A U

ALTAZIMUTH
ARECIBO radio observatory
CATADIOPTRIC
CHANDRA x-ray telescope
EQUATORIAL
GALILEO GALILIE
GAMMA RAY
HANS LIPPERSHEY
HUBBLE space telescope
INFRARED
KECK telescope
KITT PEAK observatory
PALOMAR observatory
RADIO
REFLECTOR
REFRACTOR
SPITZER space telescope
TELESCOPE
ULTRAVIOLET
XRAY

Answers in next month's newsletter.

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