



The Night Sky

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

Volume 42 Number 5

May 2020

ACA NEWS AND NOTES MAY 2020

Future ACA Meetings

As you know, the ACA Board has cancelled the membership meetings scheduled for April and May due to the stay-at-home policy implemented by Ohio Governor DeWine. As Ohio begins to open, the anticipated result is a flux in the rise and fall of COVID-19 cases. The Board will look into the feasibility of holding web meetings in the event meeting in person this fall is not possible or in our best interest. Please be patient as the Board works for a resolution to the current situation. Keep an eye on your email and the ACA website for announcements.

Annual Summer Picnic

The next ACA Members Social is our summer picnic scheduled for Sunday, August 30th. The ACA Board will discuss and soon decide if this event will take place. Again, check your email and the ACA website for the final decision. Below are details for the social in the event the Board decides to continue with plans for the picnic:

What: Members Annual Summer Picnic

When: Sunday, August 30th at 3:00 pm

Where: Portage Lakes Big Oaks Shelter
Portage Lakes State Park

ACA will provide the burgers and dogs. Members attending will bring a dish to share.

Elections Scheduled for Fall

Since the ACA April and May meetings were cancelled, the proposed slate of officers up for election was presented to membership via this newsletter:

Thankfully, under the current circumstances, the present ACA Board has agreed to stay in office until membership can vote at the September meeting. If the fall meetings are held virtually, the ACA Board will announce via newsletter, email, and the ACA website the mode by which elections will take place. Details are soon to follow. The complete slate of officers is noted below:

ACA Slate of Officers
President - Gregg Crenshaw
Vice President - Glenn Cameron
Treasurer - Dave Hartsook
Secretary - Gary Smith
Assistant Secretary/Treasurer - Jim Swift
Newsletter Editor - Marissa Fanady

Star Parties

Until further notice, Observatory Director Ron Kalinoski has suspended all Star Parties scheduled at the ACA observatory. Stay connected with ACA by visiting the ACA website. Star Parties and other ACA events will be posted as club activities resume in the future.

Carbonaceous Chondrite Rains Down In Costa Rica

By Marissa Fanady



Once in a while, on the order of decades to centuries, scientists and space rock enthusiasts are gifted with a freshly fallen meteorite of a rare class. These rare types could be a lunar meteorite, an iron type, a eucrite, a pallasite, or one of the other many more scarce classifications of meteorites. On April 23, 2019 in Costa Rica this is exactly what happened, the residents of Aguas Zarcas were startled by a massive fireball. The incoming meteoroid was about the size of a washing machine and fell at 9:07pm local time. Meteorite hunters were on the scene within twenty-four hours in a new type of gold rush to be the first person to find newly fallen space rocks. The locals were very much involved with the search for meteorites having learned that people were paying for these stones. In just a matter of a few days scientists were given samples directly from the meteorite hunters and the classification came out to be a very rare type, a Carbonaceous Chondrite. This event was a perfect combination of a rare class of meteorite, cooperation from the locals and the country of where the stones landed, and a stroke of luck with the weather. The Aguas Zarcas fall was a scientist and meteorite lovers dream.

This is an actual piece of the Aguas Zarcas meteorite. A fragment was cut and polished to reveal the interior. Weight of the specimen is 0.3g, in the private collection of Marissa Fanady. Image by Marissa Fanady.

A witnessed fall of a space rock is rare to begin with, the world might see and hunters could subsequently recover meteorites from three to five Bolide events per year. On top of that the country and city/village the rocks land in may not allow the space rocks to be recovered, sold, and taken out of the country. So the odds greatly diminish for many different factors playing against the space rock for the chances of being found and brought to scientists and collectors. In the case of the Aguas Zarcas, hunters, scientists, and collectors were able to purchase many kilograms of meteorites from the locals. The residents of Aguas Zarcas, after hearing about how people were paying for meteorites, became a meteorite hunting community. They learned the appearance of the meteorites and they took off searching for space rocks in their town and surrounding areas. The government had no restrictions on deporting the meteorites and in a matter of days scientists were given freshly fallen meteorites.

The speedy recovery also allowed meteorite hunters to gather up space rocks that were not contaminated by rain. Some space rocks contain water within them. Aguas Zarcas is one such a meteorite that holds water. There's a theory that asteroids played a huge roll in not only delivering the ingredients necessary for life but that they also delivered water to the young Earth. Collecting pre rain samples of Aguas Zarcas was extremely important to determine how much water this meteorite held. Any rain would have made it impossible to determine how much water was originally inside the stone.

Oxygen and water begin to immediately contaminate and weather meteorites, they are the worst enemy of space rocks. Once the meteorite enters Earth's atmosphere weathering begins to terrestrialize the stone by a chemical process called oxidation. Water speeds up this process. Hunters are racing against the clock of mother nature to save as many meteorites as possible from rainfall, if the rocks fell in a wet environment. Luckily, and perhaps amazingly, in Costa Rica the rain held off for five days. This gave meteorite hunters time to gather as pristine as possible meteorite samples for scientists to analyze. Now they can classify the new space rock and perform other analysis on them.

The Aguas Zarcas meteorite was classified as a CM2 Carbonaceous chondrite. Classification is determined by petrology and geochemistry. Petrology is more of a basic classification that some, with many years of experience, can identify a particular class that the meteorite may belong. This method is more observational, what the interior of the meteorite looks like. Geochemistry requires sophisticated scientific equipment such as a Mass Spectrometry laser. Mass Spectrometry identifies the composition of the meteorite. Aguas Zarcas is a CM2, the CM represents the composition of the meteorite and the number represents the degree of alteration that the space rock has undergone during its time in the depths of space. A 1 or 2 indicates aqueous transformations, meaning that the meteoroid was altered or affected by water. A 3 represents a meteorite unaltered by aqueous or thermal processes, essentially the meteorite is pristine and has not been changed since its formation 4.6 billion years ago. Numbers from 4 through 6 are thermal transformations, the object has undergone a heating event that has transformed the rock. There are some meteorites that are a 7 and some possible 8 categories in terms of thermal processes. A CM2 classification tells us that the Aguas Zarcas contains water. But water is not the only special characteristic of this meteorite, of all CM2 meteorites. These amazing space rocks also hold organic compounds, hydrocarbons, and amino acids. They hold the ingredients necessary for life to evolve.



This is an actual piece of the Aguas Zarcas meteorite. A fragment was cut and polished to reveal the interior. Weight of the specimen is 0.3g, in the private collection of Marissa Fanady. Image by Marissa Fanady. (Reverse side).

Scientists are still searching for the answer to the origins of life on Earth. There are many theories and right now any one of them could be correct. We do know one fact, that meteorites have been found to contain water, sugars, salts, and amino acids. Meteorites delivered the ingredients necessary for life to evolve. Carbonaceous chondrites, especially CM2 meteorites, deliver the most organic matter of any other class of meteorites. The Murchison meteorite has been studied for the last 51 years. Murchison is another witness fall CM2 and its timing was incredibly perfect. NASA had just finished preparing a new method of preservation to store the moon rocks that were being returned to Earth by the Apollo astronauts. Murchison has been studied for the last 50 years and was recently found to contain the most organic compounds in any meteorite in history, about 50,000 organic compounds in one sample. Scientists speculate that this single meteorite could contain millions of possible organic compounds. Aguas Zarcas may be very similar, only further analysis will reveal the truth. These space rocks are exceedingly rare, there are only 112 officially classified CM2 meteorites and only 18 of those are witnessed falls. They are once in a lifetime, especially if they are seen to have fallen, and for us they may have been a once in a lifetime for life itself.

Information credited:

<https://meteorites.asu.edu/news/aguas-zarcas>

<https://www.scientificamerican.com/article/murchison-meteorite/>

[https://www.lpi.usra.edu/meteor/metbull.php?](https://www.lpi.usra.edu/meteor/metbull.php?sea=Aguas+Zarcas&sfor=names&ants=&nwas=&falls=&valids=&stype=exact&lrec=50&map=ge&browse=&country=All&srt=name&categ=All&mblst=All&rect=&phot=&strewn=&snew=0&pnt=Normal%20table&code=69696)

[sea=Aguas+Zarcas&sfor=names&ants=&nwas=&falls=&valids=&stype=exact&lrec=50&map=ge&browse=&country=All&srt=name&categ=All&mblst=All&rect=&phot=&strewn=&snew=0&pnt=Normal%20table&code=69696](https://www.lpi.usra.edu/meteor/metbull.php?sea=Aguas+Zarcas&sfor=names&ants=&nwas=&falls=&valids=&stype=exact&lrec=50&map=ge&browse=&country=All&srt=name&categ=All&mblst=All&rect=&phot=&strewn=&snew=0&pnt=Normal%20table&code=69696)

For more information about meteorites contact the author at mfanady@yahoo.com

*Article By ACA Publications Secretary
Marissa Fanady*

May Astronomical Events

Day Hour (UT)

01 00 Venus 38° E
04 15 Eta Aquarids 15:21
04 17 Mercury Super 17:22
05 23 Moon Perigee 23:03
07 06 Full Moon 06:45
10 05 Moon D Node 05:01
11 02 Moon S Dec 02:13
12 05 Moon-Jupiter 05:40
12 14 Moon-Saturn 14:18
14 10 Last Quarter 10:03
14 22 Moon-Mars 22:01
17 21 Jup-Sat 21:13
18 03 Moon Apogee 03:45
22 05 Mercury-Ven 05:37
22 13 New Moon 13:39
23 22 Moon-Venus 22:40
24 06 Moon-Mercury 06:53
24 17 Moon A Node 17:34
25 17 Moon N Dec 17:16
27 14 Moon-Beehive 14:44
29 23 First Quarter 23:30

Sky Events Calendar by Fred Espenak and Sumit Dutta (NASA's GSFC)

June Astronomical Events

Day Hour (UT)

01 00 Venus 3.7° E
02 23 Moon Perigee 23:36
03 13 Venus Infer 13:42
04 08 Mercury East 08:59
05 15 Full Moon 15:12
05 15 Pen Lunar Ec 15:25
06 14 Moon D Node 14:10
07 12 Moon S Dec 12:22
08 13 Moon-Jupiter 13:19
08 22 Moon-Saturn 22:19
12 19 Moon-Mars 19:53
13 02 Last Quarter 02:24
14 20 Moon Apogee 20:56
19 04 Moon-Venus 04:52
20 17 Summer Sol 17:43
21 00 Moon A Node 00:24
21 02 Ann Solar Ec 02:40
21 02 New Moon 02:41
21 23 Moon N Dec 23:56
23 20 Moon-Beehive 20:33
28 04 First Quarter 04:16
29 22 Moon Perigee 22:09
30 22 Mercury Infer 22:45

Sky Events Calendar by Fred Espenak and Sumit Dutta (NASA's GSFC)

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Lou Poda

April Treasurer's Report

By Nick Mihiylov

4/1/2020 Through 4/30/2020

Checking Beginning Balance	\$1,754.91
Income	
Memberships	40.25
Total Income	\$40.25
Expenses	
Total Expenses	-\$0.00
Income Less Expenses	\$40.25
Checking Ending Balance	\$1,795.16
<hr/>	
Savings Beginning Balance	\$2,567.72
Earned Interest	0.04
Savings Ending Balance	\$2,567.76
<hr/>	
Petty Cash Beginning Balance	\$50.00
	0.00
Petty Cash Ending Balance	\$50.00
<hr/>	
Petty Cash	50.00
Savings	2,567.76
Checking	1,795.16
Grand Total	\$4,412.92

Article by Nick Mihiylov
ACA Treasurer.

SWAP & SHOP



FOR SALE:

Orion Sirius 40mm Plossl

Asking: \$25

Contact: Glenn Cameron

Phone: 330-737-1472

Email: glenn@cameronclan.org

FOR SALE:



Televue Radian 12 mm Eyepiece

- Excellent condition.

Asking: \$180 (cash)

Contact: Fred Fry

Email:

riverfry@gmail.com

FOR SALE:



Televue Radian 18 mm Eyepiece

- Excellent condition.

Asking: \$180 (cash)

Contact: Fred Fry

Email:

riverfry@gmail.com

FOR SALE:

Celestron CPC Deluxe 800 HD Telescope with tripod.

Accessories:

- Celestron 1.25" eyepiece and filter kit.
- Tele Vue nebula filter.
- Celestron UHC/LPR filter.
- Celestron 15mm 1.25" 82 degree wide field eyepiece.
- Stellarvue 1.25" Dielectric Diagonal.
- Stellarvue 1.25" erecting prism.
- Celestron power tank and dew shield.
- Astrozap sun filter.
- Celestron AC adaptor.
- JMI custom hard shell case for telescope.

All 8 months old, brand new condition.

Asking: \$2200

Contact: Jim Hall

Phone: 330-268-8695

FOR SALE:



Pentax XW 20mm Eyepiece

- Excellent condition.
- Small mark on 1.25" barrel.
- Always used in a compression clamp.

Asking: \$220 (cash)

Contact: Fred Fry

Email: riverfry@gmail.com

FOR SALE:

Celestron NexStar 8i computerized to go 8" F/10 Schmidt-Cassegrain

Focal length 2032 mm with 406x highest useful power.

Includes:

- GPS module.
- Five multicoated Plössl eyepieces.
- 2X Barlow lense.
- Seven filters.
- A/C adaptor.
- Night vision flash.
- Celestron star pointer.

All rarely used and in new condition.

Cost \$1,689 new.

Asking: Best Offer

Contact: Nick Bade

Email: nb@tribco.com

Phone: 216-486-2000 weekdays and

440-585-8687 evenings and weekends.

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editor:

mfanady@yahoo.com

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Yes! I want to become a member of the Astronomy Club of Akron

www.acaoh.org

(PLEASE PRINT)

NAME: _____ PHONE: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

EMAIL ADDRESS: _____

Astronomy Club of Akron annual memberships renew in the month of September.

ADULT (ages 18 and older) ___\$30.00

JUNIOR (ages 12 to 17) _____\$15.00

ADDITIONAL ADULT member _____\$15.00

FAMILY MEMBERSHIP _____\$40.00

Visit us on the Web at www.acaoh.org,