

BBAA Astronomy Club November 1, 2018 (TCC JC-10)

Chuck Jagow (President):

Called meeting to order at 7:30 PM.

Members present include: Chuck Jagow, Shawn Loescher, George Reynolds, Bruce Powers, Jeff Goldstein, Paul Tartabni, George C. Jarvis, Bill Rust, "Bird" Lawrence Taylor, Pat Mangum, Ben Loyola, Kenny Broun, Paul Coppola, Andy Zamlatchan, Robyn Korn, Glen Dozier, and Tom Moore (Guest Speaker).

Chuck opened the meeting announcing xxxxxxxxxxxxxxxx

Vice President Events Report (read by Shawn Loescher):

November:

- 11/01 – BBAA Club Meeting at TCC Room JC-13 (Guest Speaker: Tom Moore on "Dark Matter")
- 11/02 – Virginia Peninsula Astronomy Stargazers (VPAS) at the GAP (1st and 3rd Friday) from sunset.
- 11/03 – Skywatch NWRP (6:00 – 10:00 PM) only a 4 hour event + 1 hour before for telescope help
- 11/03 – BSA Camp Pepsico Birthday Celebration Star Gaze, Spring Grove Virginia (8:00 – 10:00 PM)
- 11/06 – Stargaze Dayz at Old Donation School/Brickell Academy (6:45 – 7:30 PM)
- 11/09 – Corn Watch (Cornland Park Private) Sunset – Dawn. Bring BBAA ID & Cornland Permit
- 11/10 – Nightwatch Chippokes Plantation State Park, Surry, VA (Sunset – Dawn)
- 11/16 – Corn Watch (Cornland Park Private) Sunset – Dawn. Bring BBAA ID & Cornland Permit
- 11/16 – Virginia Peninsula Astronomy Stargazers (VPAS) at the GAP (1st and 3rd Friday) from sunset.
- 11/16 – Camp Strother Boy Scouts Camping (7:00 – 10:00 PM) 961 West Road, Chesapeake, VA
- 11/17 – Saturday "Sun" Day (Elizabeth River Park, Chesapeake) 10:00 AM – 1:00 PM

December:

- 12/01 – Skywatch NWRP (5:00 – 9:00 PM) only a 4 hour event + 1 hour before for telescope help
- 12/04 – Polar Express Literacy Night. John F. Kennedy Middle School in Suffolk, VA (5:30 – 7:30)
- 12/06 – BBAA Club Meeting at TCC Room JC-11
- 12/07 – Corn Watch (Cornland Park Private) Sunset – Dawn. Bring BBAA ID & Cornland Permit
- 12/07 – Virginia Peninsula Astronomy Stargazers (VPAS) at the GAP (1st and 3rd Friday) from sunset.
- 12/08 – Saturday "Sun" Day (Elizabeth River Park, Chesapeake) 10:00 AM – 1:00 PM
- 12/08 – Nightwatch Chippokes Plantation State Park, Surry, VA (Sunset – Dawn)
- 12/11 – Annual Moon Night, Blackwater Regional Library, Carrolton VA (5:00 PM – 7:00 PM)
- 12/14 – Corn Watch (Cornland Park Private) Sunset – Dawn. Bring BBAA ID & Cornland Permit
- 12/14 – Science Play Day (10:00 AM) at TCC Joint Use Library (6:00 – 9:30 PM)
- 12/14 – Muse/Ghent Market Shops Holiday Party, Muse Writers Ctr. Norfolk, (5:00 PM – 9:00 PM)
- 12/15 – Annual BBAA Anniversary Luncheon, Stripers at Waterside 12 Noon – 3:00 PM
- 12/21 – Virginia Peninsula Astronomy Stargazers (VPAS) at the GAP (1st and 3rd Friday) from sunset.

Requests: False Cape State Park (12/19), however 45 minute ride into the state park. We will request setting up telescopes in the parking lot, instead.
By December, Girl Scout Encampment (BBAA volunteer, mentor, not yet found) field trip at NASA to be held in the Summer.

Secretary's Report (Jeff Goldstein)

Jeff started to read the minutes... Moved & seconded to waive reading the minutes.

Treasurer's Report (Bruce Powers): Here is Bruce's report through end of October

General Fund Income: \$ 8,021.71
General Fund Expenses: \$ 5,043.45
General Fund Balance: \$ 2,978.26
Scholarship Fund Inc: \$ 1,923.52
Scholarship Fund Exp: \$ 1,500.00
Total: \$ 423.52

GJ S'ship Fund Income: \$ 2,062.00
GJ S'ship Fund Exp: \$ 500.00

Total: \$ 1,562.00

BBA Financ. Sum'y \$ 4,963.78
Pending PayPal Depos. \$
BBA Checkbook \$ 4,962.34
Checkbook + PP – Fin. \$ 1.44

Membership Data

Honorary Members: 5
Associate Members w/AL: 14
Associate Members: 1
Regular Members: 113
Total Members on Roster: 133

Paid up Members:
Members' Dues (due this month)
Delinquent in dues:
Anticipated 2018 Dues: \$

Anticipated Expenses for 2018

AL Dues	\$ 605.00	Paid June 2018
Insurance	\$ 320.00	Paid May 2018
Fees PO Box	\$ 102.00	Paid January 2018
August Picnic	\$ 125.00	Paid August 2018
Mailings	\$ 150.00	Newsletter Snail Mail Mailings
Charitable	\$ 150.00	
<u>Misc.</u>	<u>\$ 1,000.00</u>	Eyeieces, Legal Fees, Dark Sky Donations, Outreach Supplies, etc.
Total:	\$ 2,452.00	

Scholarship Committee Report: (Ben Loyola). No report other than we have money.

RRRT Report (“Bird” Lawrence Taylor & Ben Loyola) Looking for \$6,000 donations for filter wheels, mirrors, drive adjustments, etc., for maintenance. Dr. Salgado has turned over the leadership to the other universities.

Alcor Report (Bill McLean not present) No report.

Old Business:

- BBA Luncheon will be held at Noon, December 15th at Stripers (in Norfolk). Thank you, George Reynolds.
- ALCON next summer at the Kennedy Space Center. July 25 – 29th, 2019.

New Business:

- November is our election month for new officers: Treasurer, Secretary, and President are open for nominations.
- Jeff Goldstein nominated Kayla Robinson for Secretary.
- Chuck Jagow self-nominated for Treasurer
- George Reynolds nominated Shawn Loescher for President
- Chuck Jagow nominated George Reynolds for Vice President
- Nominations were closed, and the following officers were elected this evening:
 - **Shawn Loescher – President**
 - **George Reynolds – Vice President**
 - **Chuck Jagow – Treasurer**
 - **Kayla Robinson - Secretary**

Observing Reports & Announcements: Chuck and Shawn tried to show Mars and Saturn (respectively) to the Halloween Trick-Or-Treaters in their neighborhoods. However, the evening sky deteriorated. “Bird” tried to pose as

Galileo with a beard and his telescope for Halloween and the kids through he was a “Pilgrim”! Bill Rust tried to create a program to calculate the New Moons.

Paul Coppola (just joined last month) just got a 120 mm refractor. Glen Dozier, visitor is interested in buying a telescope for him and his wife. He is asking advice on buying a telescope. It was suggested that Glen comes to our Sky Watch Event and view others scopes to decide which one to start with. Also, Andy Zamlatchan recently joined and wants to come to our events to decide on which telescope to buy.

Shawn Loescher announced the loaner telescope will be available for outreach events or donated to schools. Please let Shawn know if you would like one of these.

Program: “Black Marbles & Bright Energy: Dark Matter and Dark Energy Explained” presented by Tom Moore. (Introduced by Chuck Jagow)

When Tom Moore was younger, he became interested in Cosmology and a few years ago, he had several ideas that explained the universe and dark matter and dark energy. This is based on the idea that the universe is exactly what we see through our telescopes.

What we think we know about the universe: Matter, Energy, and Space. These all have relationships between each. Galileo and Newton did many observations and research paving the way for us.

Einstein had his General Theory of Relativity. Matter contracts space, such that space itself is curved (warped). Objects follow each other as if there were an actual force between objects.

Energy has the opposite effect on space, whereby it expands space. Matter wants to contract it and energy wants to expand it. The energy from the sun’s nuclear reactor is trying to expand the sun, but an equilibrium is between the energy and matter.

Tom expounded on matter, atoms, and even smaller particles. As matter is mostly empty space, there is plasma in many areas that happens as a result of fusion.

Tom explained energy in relation to thermodynamics. Tom explained the “E” energy. Ordinary matter is converted to energy through nuclear fusion. Chemical energy such as leaves absorbing sunlight is possible through fossil fuels with combustion (even burning) or detonation (rapid energy release).

He expounded on explosions (detonation) that contains filaments from uneven combustion as residues. These expanded residues appear in large items such as the Crab Nebula and even in the Cosmic Background Radiation. The temperature variations have been measured and mapped in our near universe. This was the result of the Big Bang.

14 billion years ago the Big Bang created “Space”. This energy has expanded into dark matter and ordinary matter. A small percentage of the explosion has resulted in important things to us. Only 5% of the visible matter is ordinary matter, but there is more than that. He mentioned the “standard model” of 16 fundamental particles, including the Higgs particle.

The energy vibrations create waves and there is some interference. Some of these have been described as quantum mechanics. However, there is no quantum mechanical behavior associated with dark matter. It has no quantum behavior at all.

Tom discussed the inflation model and related it to the discoveries of Edwin Hubble. His graphs generated many questions. Tom calls the energy created from the stars’ supernova and black holes causing the expansion.

The presentation was well received, and a question and answer period followed the presentation.

Tom sold and autographed several of his books to club members with the same title as his presentation.

Meeting adjourned at 9:46 PM.