



INSIDE THIS ISSUE:

President's Message	1
Club Meetings	1
Mars	2
UACNJ Schedule	3
Asteroid Belt	4

**THE MORRIS MUSEUM
ASTRONOMICAL SOCIETY**

President - Anthony Pisano
 VP - Bob Caccaro
 Secretary - Bill Eberly
 Treasurer - Ron Furia
 Webmaster & Newsletter Editor
 Anthony Pisano

The *Heavenly Herald* is produced quarterly for the membership of the Morris Museum Astronomical Society

CONTACT INFORMATION

Address:
 6 Normandy Hts. Rd.
 Morristown, NJ. 07960
 (973) 637-0178
 Email:
mmastrosociety@gmail.com
 Web Address:
www.mmastrosociety.org
[Facebook.com/mmastrosociety](https://www.facebook.com/mmastrosociety)

Member of



Message from the President

Anthony Pisano, President

I'm happy to say welcome to summer, even though it feels like winter just end 3 weeks ago. This has been a very strange year for weather in the north eastern US. Not many cloudless nights, let alone warm night so far this year. With the summer weather we can hope for some time to look up and not freeze. To recap the first half of the year, we had a rare cancelation of our monthly meeting in March due to a snow storm. Our yearly Astronomy Day at the Museum went off on March 24 and the subsequent monthly meetings that followed were enjoyed by our attending members. We had a record turn out this year for our pizza party and we even finished all the pizza! That's a first! Thanks to Bob C. for all his hard work and scheduling of the speakers for both spring and fall 2018 as well as our Astronomy Day speakers.

Please check the calendar below for the upcoming club activities for the

summer and fall seasons. I hope to see you all at our annual picnic at the UACNJ in August. This is a great event and opportunity to meet the members of our partner club NNJAG.

We have also included in this issue the schedule of talks and public nights at UACNJ. I do hope our members will take advantage of the great talks that UACNJ offers. These are completely free and take place rain or shine on every Saturday night in the summer and into fall. Weather permitting, the observatories open up after the talks for your viewing pleasure.

Out Reach Observing

- 7/16 - Denville Lib. - Night (7/23 rain)
- 7/17 - Hackettstown Lib. - Night (7/20 rain)
- 7/18 - Roxbury Lib. - Night
- 8/18 - Schiff Nature Preserve - Night
- 10/27 - Morris Museum - Day

Please contact Joe Molnar for more info.: josephmolnar@gmail.com

Club Meetings

- Aug. 18 - MMAS / NNJAG / SSG picnic at UACNJ - 4PM
- Sept. 13 - Ron Furia "Exoplanets"
- Sept 22 - National Chemistry Week : Science is Out of this World
(MMAS Participation at the Morris Museum)
- October 11 - Krishnadas Kootale "Everything You Need for a Trip to Mars"
- November 8 - Lonny Buinis "Is the Universe Curved?"

**Monthly Meetings are the second Thursday of each month at 7:00PM.
 No meetings Jan., Feb., Jul., & Aug. check the website for specific information.**

A Close-Up View of Mars

By: Arizona State University

In July 2018, skywatchers can get an up close view of Mars—even without a telescope! In fact, on July 31, Mars will be closer to Earth than it has been in 15 years.

Why is that?

Like all the planets in our solar system, Earth and Mars orbit the Sun. Earth is closer to the Sun, and therefore it races along its orbit more quickly. Earth makes two trips around the Sun in about the same amount of time that Mars takes to make one trip.

Sometimes the two planets are on opposite sides of the Sun and are very far apart. Other times, Earth catches up with its neighbor and passes relatively close to it. This is called Mars's closest approach to Earth, and it's happening this year on July 31. The Moon will be near Mars on that night, too!

Keep in mind that even during its closest approach, Mars is still more than 35 million miles away from Earth. That's really far. So, Mars won't appear as big as the Moon in the sky, but it will appear bigger than it usually does.

July and August will be a great time to check out Mars. Through a telescope, you should normally be able to make out some of the light and dark features of the Red Planet—and sometimes even polar ice. However, a huge Martian dust storm is obscuring these features right now, so less planetary detail is visible.

There is another important Mars date in July: Mars opposition. Mars opposition is when Mars, Earth and the Sun all line up, with Earth directly in the middle. This event is happening on July 27 this year.

Although you may see news focusing on one of these two dates, Mars will be visible for many months. For about three weeks before and three



Caption: In 2018, Mars will appear brightest from July 27 to July 30. Its closest approach to Earth is July 31. That is the point in Mars' orbit when it comes closest to Earth. Mars will be at a distance of 35.8 million miles (57.6 million kilometers).

weeks after opposition and closest approach, the planet will appear the same size to a skywatcher.

From July 7 through September 7 Mars will be the third brightest object in the sky (after the Moon and Venus), shining even brighter than Jupiter. The best time to view Mars during this time is several hours after sunset, when Mars will appear higher in the sky.

Mars will still be visible after July and August, but each month it will shrink in size as it travels farther from Earth in its orbit around the Sun.

In other sky news, there will be a partial solar eclipse on July 13, but it will only be visible from Northern Antarctica and southern Australia. On July 27 (beginning at 20:21 UTC), a total lunar eclipse will be visible in Australia, Asia, Africa, Europe and South America. For those viewers, Mars will be right next to the eclipsing Moon!

If you're wanting to look ahead to next month, prepare for August's summer Perseid meteor shower. It's not too early to plan a dark sky getaway for the most popular meteor shower of the year!

MMAS Hats

We are currently looking for members that are interested in getting MMAS baseball style hats. The color of the hat would be dark blue with MMAS embroidered on the front. If you are interested in a hat please contact Joe Molnar at josephmolnar@gmail.com or (973) 538-6294. Cost \$12.00



UACNJ Saturday Speaker Program 2018

6/30/18	Photographing Dark Sky and Urban Landscapes	Stan Honda, AAA
7/7/18	What's Up in the July Sky?	Lonny Buinis, RVCC
7/14/18	Ancient Astronomy (Aliens not included)	Sean Post, NWJAA
7/21/18	The Life (and Death) of Stars	Walt Windish, NJAG & RAC
7/28/18	Looking for Another Earth	Karl Hricko, AAI & NWJAA
8/4/18	What's Up in the August Sky?	Lonny Buinis, RVCC
8/11/18	Meteor Showers	Tony Fadoul, AAA
8/18/18	You've got a telescope! Now what?	Paul Fischer, NWJAA
8/25/18	Family Field Day - details coming soon	
9/1/18	What's Up in the September Sky?	Lonny Buinis, RVCC
9/8/18	Exoplanets	Mary Lou West, NJAG
9/15/18	Meteorites and the Formation of the Earth	Mark Zdziarski, NJAG
9/22/18	Astronomy for Beginners	Ken Taylor, NWJAA
9/29/18	Northern Lights	Gregg Waldron, NWJAA
10/6/18	What's Up in the October Sky?	Lonny Buinis, RVCC
10/13/18	Some of the Strangest Objects in Our Universe	Walt Windish, NJAG & RAC
10/20/18	Everything to Know Before Flying to Mars	Krishnadas Kootale, MMAS
10/27/18	How to Choose Your First Telescope	Bill Murray, AAAP

Night Sky Network

Astronomy Clubs bringing the wonders of the universe to the public



The Moon

JULY 2018

	Last Quarter	06
	New Moon	12
	First Quarter	19
	Full moon	27

AUG. 2018

	Last Quarter	04
	New Moon	11
	First Quarter	18
	Full moon	26

SEPT. 2018

	Last Quarter	02
	New Moon	09
	First Quarter	16
	Full moon	24

Links

www.badastronomy.com

www.heavens-above.com

www.nightskynetwork.com

www.space.com

www.amsky.com

www.skyandtelescope.com

www.scopereviews.com

www.darksky.org

www.cloudynights.com

www.nightskiesnetwork.com

www.uacnj.org

What Is the Asteroid Belt?

There are millions of pieces of rocky material left over from the formation of our solar system. These rocky chunks are called asteroids, and they can be found orbiting our Sun. Most asteroids are found between the orbits of Mars and Jupiter. They orbit the Sun in a doughnut-shaped region of space called the asteroid belt.

Asteroids come in many different sizes—from tiny rocks to giant boulders. Some can even be hundreds of miles across! Asteroids are mostly rocky, but some also have metals inside, such as iron and nickel. Almost all asteroids have irregular shapes. However, very large asteroids can have a rounder shape.

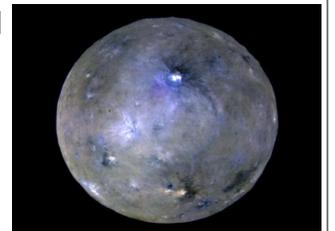
The asteroid belt is about as wide as the distance between Earth and the Sun. It's a big space, so the objects in the asteroid belt aren't very close together. That means there is plenty of room for spacecraft to safely pass through the belt. In fact, NASA has already sent several spacecraft through the asteroid belt!

The total mass of objects in the asteroid belt is only about 4 percent the mass of our Moon. Half of this mass is from the four largest objects in the belt. These objects are named Ceres, Vesta, Pallas and Hygiea.

The dwarf planet Ceres is the largest object in the asteroid belt. However, Ceres is still pretty small. It is only about 587 miles across—only a quarter the diameter of Earth's moon. In 2015, NASA's Dawn mission mapped the surface of Ceres. From Dawn, we learned that the outermost layer of Ceres—called the crust—is made up of a mixture of rock and ice.

The Dawn spacecraft also visited the asteroid Vesta. Vesta is the second largest object in the asteroid belt. It is 329 miles across, and it is the brightest asteroid in the sky. Vesta is covered with light and dark patches, and lava once flowed on its surface.

The asteroid belt is filled with objects from the dawn of our solar system. Asteroids represent the building blocks of planets and moons, and studying them helps us learn about the early solar system.



This image captured by the Dawn spacecraft is an enhanced color view of Ceres, the largest object in the asteroid belt.