



THE STAR

THE NEWSLETTER OF THE
MOUNT CUBA ASTRONOMICAL GROUP

VOL. 4 NUM. 5

CONTACT US AT

DAVE GROSKI

David.M.Groski@Dupont.com

OR

HANK BOUCHELLE

hbouchelle@live.com

302-983-7830

OUR PROGRAMS ARE HELD THE SECOND TUESDAY OF EACH
MONTH AT 7:30 P.M. UNLESS INDICATED OTHERWISE

MOUNT CUBA ASTRONOMICAL OBSERVATORY

1610 HILLSIDE MILL ROAD

GREENVILLE, DE

FOR DIRECTIONS PLEASE VISIT

www.mountcuba.org

PLEASE SEND ALL PHOTOS AND ARTICLES TO

pestrattonmcag@gmail.com

OUR NEXT MEETING
JANUARY 12TH
TUESDAY 7:30 p.m.

ASTRONOMICAL TERMS AND NAMES OF THE MONTH:

The Mission of the Mt. Cuba Astronomy Group is to increase knowledge and expand awareness of the science of astronomy and related technologies.

When reading the articles in the STAR, you will come across various terms and names of objects you may not be familiar with. Therefore, in each edition of the STAR, we will review terms as well as objects related to Astronomy and related technologies. These topics are presented on a level that the general public can appreciate.

CONSTELLATIONS:

Cassiopeia is a constellation in the northern sky, named after the vain queen Cassiopeia in Greek mythology, who boasted about her unrivalled beauty. Cassiopeia was one of the 48 constellations listed by the 2nd-century Greek astronomer Ptolemy, and it remains one of the 88 modern constellations today. It is easily recognizable due to its distinctive 'M' shape when in upper culmination but in higher northern locations when near lower culminations in spring and summer it has a 'W' shape, formed by five bright stars. It is bordered by Andromeda to the south, Perseus to the southeast, and Cepheus to the north. It is opposite the Big Dipper. In northern locations above 34°N latitude it is visible year-round and in the (sub)tropics it can be seen at its clearest from September to early November in its characteristic 'M' shape. Even in low southern latitudes below 25°S it can be seen low in the North.

The four brightest stars of Cassiopeia are all brighter than the third magnitude.

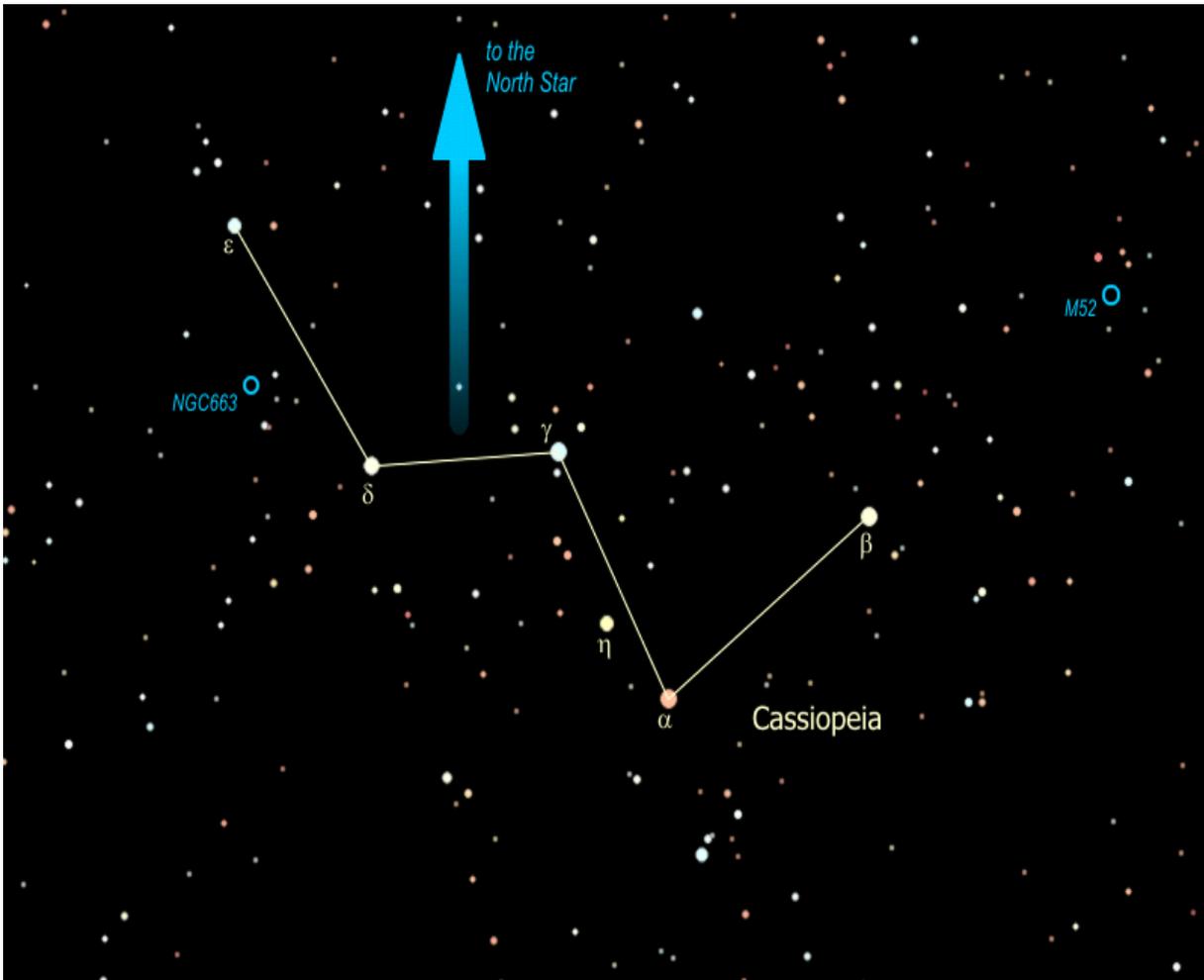
Alpha Cassiopeiae, traditionally called Shedir (from the Arabic Al Sadr, "the breast"), is a double star. The primary is an orange-hued giant of magnitude 2.2, 229 light-years from Earth. The secondary is widely separated from the primary and is of magnitude 8.9.

Beta Cassiopeiae, or Caph (meaning "hand"), is a white-hued star of magnitude 2.3, 54 light-years from Earth. 16th-century Arabian astronomer Al Tizini gave this star the name Al Sanam al Nakah, (The Camel's Hump), referring to the contemporaneous Persian figure.^[2]

The two other notably bright stars in Cassiopeia are both variable stars. Gamma Cassiopeiae is a shell star, a type of variable star that has a very high rate of rotation. This causes the star to be somewhat unstable and periodically eject rings of material.

Gamma Cassiopeiae has a minimum magnitude of 3.0 and a maximum magnitude of 1.6; it is currently approximately magnitude 2.2.

Delta Cassiopeiae, also known as "Ruchbah" or "Rukbat," meaning "knee," is an Algol-type eclipsing variable star. It varies by 0.1 magnitudes around magnitude 2.7; its period is 2 years and 1 month. Ruchbah appears to have a blue-white hue and it is 99 light-years from Earth



FROM THE WORLD OF ASTRONOMY:

Visiting the Planets at the Speed of Light!

The fastest way to get from place to place in our solar system is to travel at the speed of light, which is 300,000 km/sec (670 million miles per hour!). Unfortunately, only radio waves and other forms of electromagnetic radiation can travel exactly this fast. When NASA sends spacecraft to visit the planets, scientists and engineers have to keep in

radio contact with the space craft to gather scientific data. But the solar system is so vast that it takes quite a bit of time for the radio signals to travel out from Earth and back.

BELOW IS A BRAIN TEASER CONTEST.

Problem 1

– Earth has a radius of 6378 kilometers. What is the circumference of Earth to the nearest kilometer?

Problem 2

– At the speed of light, how long would it take for a radio signal to travel once around Earth?

Problem 3

– The Moon is located 380,000 kilometers from Earth. During the Apollo-11 mission in 1969, engineers on Earth would communicate with the astronauts walking on the lunar surface. From the time they asked a question, how long did they have to wait to get a reply from the astronauts?

Problem 4

– In the table below, fill in the one-way travel time from the sun to each of the planets. Use that fact that the travel time from the Sun to Earth is 8 ½ minutes. Give your answer to the nearest tenth, in units of minutes or hours, whichever is the most convenient unit.

PLANET	DISTANCE FROM SUN	LIGHT TRAVEL TIME
MERCURY	0.38	_____
Venus	0.72	_____
Earth	1.00	8.5 minutes
Mars	1.52	_____
Jupiter	5.20	_____
Saturn	9.58	_____
Uranus	19.14	_____
Neptune	30.20	_____

Answers will be posted in the February STAR.

Those who supply the correct answers will be given credit in the Feb. STAR.

ASTERISMS

Asterism is a pattern of stars recognized in the Earth's night sky. It may be part of an official constellation or it may be composed of stars from more than one constellation.

Colloquial usage does not draw a sharp distinction between "constellation" in the sense of an asterism (pattern of stars) and "constellation" in the sense of an area of the sky surrounding an asterism. The modern system of constellations used in astronomy employs the latter concept. For example, the asterism known as the Big Dipper comprises the seven brightest stars in the IAU constellation that is called Ursa Major.

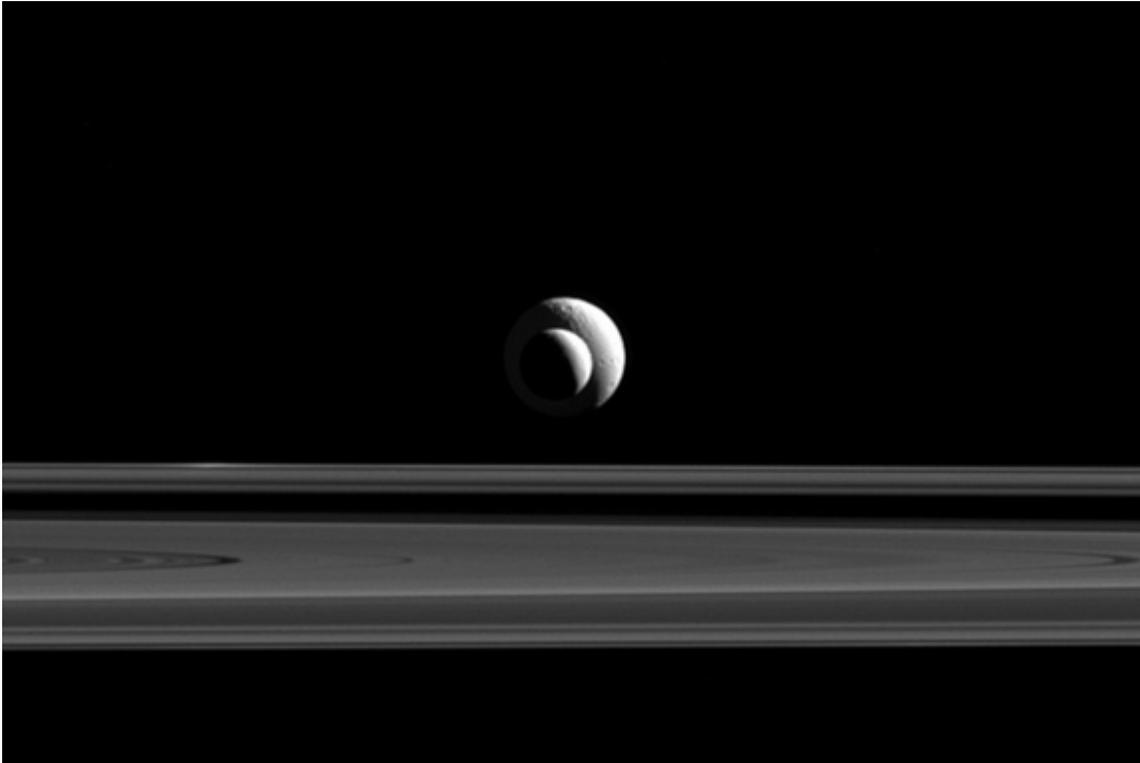
Like constellations, asterisms are in most cases composed of stars which, although visible in the same general area, are often located at very different distances from Earth.

Simple shapes composed of a few stars make asterisms easy to identify. Thus they are particularly useful to people who are familiarizing themselves with the night sky.

Saturn Moons Align (Almost) to Perfection: Photo

Old news but still interesting

By Ian O'Neill, Discovery News



NASA's Cassini spacecraft has been in Saturn orbit for over a decade and it has seen the whole spectrum of ringed planet delights. But there are few views in Saturnian orbit that are more satisfying than seeing two or more moons in the same frame — particularly when they align.

In this stunning example of celestial good timing on Sept. 24, Cassini snapped Enceladus drift in front of larger moon Tethys in near-perfect alignment. Interestingly, the size difference between the two moons closely reflect their relative differences in diameter. Enceladus is 313 miles (504 kilometers) across whereas Tethys is 660 miles (1,062 kilometers) across.

PUBLIC NIGHTS AT MCAO:

Monday Jan. 11 th	8:00 PM	Judy Provencal	New Horizons-Visit Pluto
Monday Jan. 25 th	8:00 PM	Jack Fisher	The Drake Equation-Probability of Life Elsewhere
Monday Feb. 8 th	8:00 PM	Scott Jackson	What's New about Exoplanets
Monday Feb. 22 nd	8:00 PM	Rob Lancaster	To Be Determined
Monday Mar. 07 th	8:00 PM	Stan Owocki	Cosmic Evolution From Big Us.
Monday Mar. 21 st	8:00 PM	Billie Westergard	Hubble Ultra Deep Filled-The Most Distant Planets
Monday April 11 th	8:00 PM	Carolyn Stankiewicz	To Be Determined
Monday April 18 th	8:00 PM	Lynn King	Asterisms, What are They? Where can I find them?
Monday May 9 th	8:00 PM	Hank Bouchelle	Light and Stars
Monday May 23 rd	8:00 PM	Hank Bouchelle	Motions in the Solar System
Monday June 13 th	8:00 PM	Greg Lee	Moonstruck
Monday June 27 th	8:00 PM	Greg Weaver	To Be Determined

If you know of anyone who is interested in Astronomy or someone who would like to learn more, please do not hesitate to extend an invitation to them to attend our meetings. If they have an interest in joining, our application is below.

Mount Cuba Astronomical Group
Membership Form

The Mission of the Mt. Cuba Astronomy Group is to increase knowledge and expand awareness of the science of astronomy and related technologies. Benefits include:

Monthly newsletter that includes details about the groups activities and articles on astronomy as well as other related subjects.

Monthly programs on subjects and topics of astronomical interest.

Free or discounted subscriptions to astronomy related publications.

Free registration to MCAG workshops and classes.

Mention Mount Cuba Astronomical Group and receive a 5% discount at Manor Books in New Castle (<http://www.yelp.com/biz/manor-used-books-New Castle>)



Name _____

Email Address _____

Home Address _____

Phone (optional) _____

Mail to: Carolyn Stankiewicz
Mount Cuba Astronomical Observatory
1610 Hillside Mill Road
Greenville, DE 19807