Sky News

Merrillville Community Planetarium
Clifford Pierce Middle School
199 East 70th Avenue
Merrillville, Indiana 46410
(219) 650-5486

Gregg L. Williams, Director

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COLOR

Color is visible light energy to the human eye. Wavelengths between 400 and 700 nanometers provide all the colors our eyes can see. The human eye perceives the tiny distinctions in the wavelengths that our brains interpret as different hues of color.

Some animals and insects can see beyond visible light. Their eyes are adapted to perceive beyond what the human eye can, into other wavelengths. Birds can see ultraviolet light, which are shorter than visible wavelengths. Many insects can see into ultraviolet and infrared wavelengths, which are longer wavelengths. These adaptions are related to their survival.

Most organisms produce color pigments. Pigments are chemicals that absorb specific wavelengths. We see the wavelengths that the pigments did not absorb, which are reflected away from the organism. Plants look green because its chlorophyll absorbs the red and blue wavelengths. Greens and yellows are reflected outward and that is what we can see. The most common pigment in plants is chlorophyll and melanin in animals. Melanin gives humans their hair color, gives fungi brown hues, and gives birds their dark-hued feathers. Plants make the red carotenoid pigments, which can be eaten and used by animals to produce reds or pinks, like the red of cardinals and the pink hues of flamingos.

Animal tissues can fold on a nanoscale, producing colors called structural color. No pigments are used, just extremely tiny folding that create the most vibrant colors in nature, including metallic colors, which are especially common in insects.

ISRAELI SPACECRAFT CRASHES

Spacecraft *Beresheet* (Hebrew for "in the beginning") was the first private company spacecraft by SpaceIL and Israel Aerospace Industries to go on a soft landing mission to the surface of the moon in April. The project was paving the way to lower cost lunar exploration, costing only a million dollars.

On April 11, 2019, after seven weeks of traveling through space, just nine miles above the lunar surface, the spacecraft's main engine cut off. Ground communications got the engine restarted just seconds later, but communications were lost shortly thereafter. The spacecraft crashed onto the lunar surface and the mission was over.

SpaceIL has plans for a *Beresheet 2* spacecraft to be launched in 2 to 3 years for a successful moon landing.

7TH DAY OF 7TH MOON

Chinese Valentine's Day occurs on the 7th day of the 7th moon, placing it on different dates. This year it is on August 7, 2019. The Qixi Festival celebrates the romantic meeting of a weaver girl, Zhinu, and a cowherder, Niulang. Niulang is the star Altair in Aquila (the Eagle) and the Zhinu is the star Vega in Lyra (the Harp). The Milky Way separates these two stars of the Summer Triangle. Magpies form a bridge over the Milky Way so the lovers can meet and be together on this very special night on the seventh day of the seventh moon.

The following sources were used
for this issue of Sky News:
www.nasa.gov/newhorizons, www.esa.int,
www.astropixels.com, www.bbc.com,
www.casonline.org,
http://spaceweather.com,
Astronomy, and Sky and Telescope.

MAY PLANETS

Mars can be seen in the western sky after sunset starting in the horns of the constellation Taurus (the Bull), then moving into Gemini (the Twins). Mars is visible for a couple of hours before it sets in the west. Mars is the only visible planet in the western sky. Mars looks like a small, ruddy-colored star.

Jupiter can be seen rising in the southeastern sky just before midnight in the constellation Ophiuchus (the Snake-Bearer). Jupiter rises by 9 p.m. by the end of the month. Jupiter is bright and visible all night long as it passes low through the southern sky until dawn. Jupiter will be in opposition, or opposite the Sun, on June 10th, rising as the Sun sets. Jupiter looks like a very bright, yellow-colored star.

Saturn can be seen rising about an hour after Jupiter in the southeastern sky in the constellation Sagittarius (the Archer), just left (east) of the Teapot. Saturn rises earlier every night, and by 11 p.m. at the end of May. Saturn crosses low through the southern sky until dawn. Saturn looks like a bright, golden-colored star.

Venus can be seen for a short time rising in the eastern sky about 5 a.m. moving from the constellation Pisces (the Fish), through Aries (the Ram), into Taurus (the Bull) by the end of May. Venus rises later every morning and is barely visible in the Sun's glare by the end of May. Venus is the "Morning Star". Venus looks like a very bright white star.

Mercury cannot be seen in May as it moves from the morning sky of April into the early evening sky of June. Mercury will pass behind the Sun as seen from Earth, called superior conjunction, on the 21st. Mercury will return to the evening sky in June. Mercury looks like a small white star.

MAY SUNRISE AND SUNSET (times are for mid-month)

sunrise: 5:30 a.m.
sunset: 8:01 p.m.
length of daylight: 14 hours, 31 minutes
length of darkness: 9 hours, 29 minutes

SKY DATES

May
1 - May Day, halfway point of Spring
2 - Moon passes 3.6º S of Venus
3 - Moon passes 2.9º S of Mercury
4 - New moon at 5:45 p.m.
5 - **Eta Aquarid** meteor shower peaks under excellent conditions; look to Aquarius low in the predawn sky for fast, yellow meteors with persistent trails; 10-15m/hr
6 - Moon passes 2.3º N of Aldebaran
7 - Moon passes 3.2º S of Mars
8 - Crescent Moon/Mars/Hyades/Pleaides
9 - Moon passes 6.3º S of Pollux
10 - Moon occults Beehive cluster
11 - First quarter moon at 8:12 p.m.
- **CAS** hosts FREE telescopic viewing at Conway Observatory at 8:30 p.m.
12 - Moon passes 3.0º N of Regulus
13 - Moon at perigee (closest point to Earth) at 228,790 miles at 4:53 p.m.
18 - Full moon called Green Moon, Milk Moon, or Flower Moon at 4:11 p.m.
20 - Moon passes 1.7º N of Jupiter
21 - Mercury at superior conjunction
22 - Moon occults Saturn
25 - **Kemil Beach** telescopic Viewing Event
26 - Moon at apogee (farthest point from Earth) at 250,563 miles at 8:27 a.m.
28 - Last quarter moon at 11:33 a.m.
- Dwarf planet Ceres in opposition

KEMIL BEACH OBSERVING

This year, free telescopic viewings at Kemil Beach will be held on the 4th Saturday of each month. They begin at dusk and are held in the parking lot. Amateur astronomers from Chicago, Michigan City, and the CAS may be there to reveal the night sky through their telescopes. Kemil Beach is located one mile north of Highway 12 on East State Park Road (300E), in Indiana Dunes National Park.

This edition of the
Sky News
was written by
Linda K. Charnetzky