

Sky News

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METEORS WITH LIFE CHEMISTRY

Two meteorites came to Earth from the asteroid belt in 1998 at different times and locations had unusual ingredients. Unlike other meteorites, these are the first found with ingredients for life.

These meteorites had a chemical mix of complex organic compounds, like hydrocarbons and amino acids, and they had microscopic traces of liquid water. Scientists believe they date back to the beginning of our solar system, about 4.5 billion years ago.

One meteorite landed near a basketball game in Texas in March, the other landed near Morocco in August. Scientists believe these meteorites had similar origins that gave them their particular mix of chemicals. They could have come from a mix by collisions of Ceres, a dwarf planet located in the asteroid belt, and asteroid Hebe, a major source of meteorites that fall to Earth. The water may have come from Ceres, in the form of water or ice spewed from its volcanoes.

JAPAN REACHES VENUS

The Japanese Aerospace Exploration Agency (JAXA) launched the *Akatsuki* Climate Orbiter spacecraft to explore Venus. In 2010, a crucial engine burn to insert *Akatsuki* into orbit around Venus failed. *Akatsuki* sailed past Venus. JAXA vented extra propellant, lowering the weight of the spacecraft, and developed another plan to insert it into orbit around Venus. JAXA succeeded and has had *Akatsuki* in orbit around Venus since December 9, 2015. The clouds are monitored by five cameras, viewing the clouds in different wavelengths to reach different depths of the thick atmosphere. Different chemical components at different altitudes enabled the camera to focus on several layers of clouds. Read more at http://global.jaxa.jp/projects/sat/planet_c/.

CME WARNING SPACECRAFT

The **solar wind** is a stream of electrically charged atomic particles continuously flowing outward from the Sun in all directions. Sometimes the sun emits a huge amount of material at once called **coronal mass ejections, or CMEs** (created by the Sun's magnetic field lines.) CMEs can cause major disruptions if aimed toward Earth. It can interrupt Earth's protective magnetic bubble and upper atmosphere, affecting satellites in orbit, navigation, land-based power grids, and data and communication networks.

ESA plans to observe these rapid changes in time to alert Earth of an upcoming CME. By placing a spacecraft at the side of the Sun (as seen from Earth), it can view the upcoming side before it rotates toward Earth. There would be time to prepare for a bombardment by a CME.

There are points in space called Lagrange points. A **Lagrange point** is a location in space where the combined gravitational forces of two large bodies, this time the Earth and Sun, equal the centrifugal force felt by a much smaller third body. By positioning spacecraft on any of the Lagrange points, it can maintain its position affected only by gravity of the Sun and Earth. One of these, the 5th Lagrange point, or L5, is located 60° behind Earth in our orbital path. Scientists believe this would be the ideal place for the spacecraft to monitor the Sun's activity before it reaches Earth. There are many spacecraft studying the Sun that are located at L1, located 930,000 miles (1.5 million km) from Earth toward the Sun. The solar observatories are *WIND*, *SOHO*, *ACE*, and *DSCOVR*.

This edition of the
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was written by
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MARCH PLANETS

Venus can be seen setting in the southwestern sky in the constellation Aquarius (the Water-Bearer) into Pisces (the Fishes). Venus is the “Evening Star”. Venus will move higher in the western sky throughout the month, appearing for only an hour early in March then an hour and a half by the end of March. Venus looks like a very bright white star.

Mercury can be seen setting in the western sky for about an hour as it passes by Venus on its way to greatest eastern elongation on March 15th, its highest point in the western sky. Mercury dims and moves lower for the second half of the month, passing by Venus in Pisces (the Fishes). Mercury looks like a small white star.

Jupiter can be seen rising just before midnight in the southeastern sky in the constellation Libra (the Scales). Jupiter rises earlier every night and reaches higher into the southern sky before dawn. Jupiter gets brighter throughout the month. Jupiter looks like a very bright, yellow-colored star.

Mars can be seen rising after Jupiter in the southeastern sky moving from the constellation Ophiuchus (the Serpent-Bearer) into Sagittarius (the Archer), just above the Teapot. Mars will get close to Saturn by the end of March. Mars looks like a dull, ruddy-colored star.

Saturn can be seen rising about an hour after Mars in the southeastern sky in the constellation Sagittarius (the Archer), just above the Teapot. Saturn rises a little earlier every night getting a little higher in the eastern sky before dawn. Saturn looks like a bright, amber-colored star.

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

sunrise:	6:01 a.m.
sunset:	5:56 p.m.
length of daylight:	11 hours, 55 minutes
length of darkness:	12 hours, 5 minutes

SKY DATES

March

- 1 - Full moon called Sap, Crow, Worm, Fish, or Lenten Moon at 6:51 p.m.
- 4 - Mercury passes 1.1° E of Venus
- Neptune in conjunction
- Venus and Mercury close together
- 7 - Moon passes 4.1° N of Jupiter
- 9 - Last quarter moon at 5:20 a.m.
- Moon passes 3.8° N of Mars
- 10 - Mercury at perihelion at 5:00 a.m.
- Moon passes 2.2° N of Saturn
- 11 - **Daylight Saving Time** begins at 2:00 a.m.; set clocks ahead one hour
- Moon at apogee (farthest point from Earth) at 250,902 miles at 3:13 a.m.
- 14 - Mercury at dichotomy
- 15 - Mercury at greatest eastern elongation at 18.4° E at 9:00 a.m.
- 17 - New moon at 7:12 a.m.
- 18 - Moon passes 3.7° S of Venus
- Moon/Mercury/Venus close together
- 19 - Mercury passes 3.8° of Venus
- 20 - Vernal equinox at 10:15 a.m.
- 22 - Moon passes 0.9° N of Aldebaran
- 23 - **VU Observatory FREE viewing 8:30 p.m.**
- 24 - Makemake in opposition
- First quarter moon at 9:35 a.m.
- **CAS Open House at Conway Observatory FREE viewing event at 7:00 to 9:00 p.m.**
- 26 - Moon at perigee (closest point from Earth) at 228,844 miles at 11:17 a.m.
- Moon passes 2.2° S of Beehive Cluster
- 28 - Moon passes 1.0° N of Regulus
- Venus passes 0.04° S of Uranus
- 31 - Blue Moon
- Full moon called Sap, Crow, Worm, Fish, or Lenten Moon at 6:37 a.m.

The following sources were used for this issue of Sky News:

www.nasa.gov, www.esa.int,
http://global.jaxa.jp/projects/sat/planet_c/,
<https://www.timeanddate.com>, <https://in-the-sky.org>,
www.physics.valpo.edu, www.casonline.org,
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