

Sky News

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DISTANT DWARF PLANET?

SOLAR FLARES & ELECTRONS

There may be a new dwarf planet discovered in the outskirts of the Kuiper Belt. It's the second most distant object with a confirmed orbit in our solar system. Dwarf planet Eris is the most distant object.

In 2014, a team of scientists lead by David Gerdes from the University of Michigan discovered the object using the 4-meter Blanco telescope in Chile for the **DES** (Dark Energy Survey). They have published their findings in the *Astrophysical Journal Letters*.

The object, currently known as 2014 UZ224 or DeeDee (short for Distant Dwarf), is a **TNO** (trans-Neptunian Object). Using **ALMA** (Atacama Large Millimeter/submillimeter Array), astronomers have learned quite a bit more about DeeDee. DeeDee is about 394 miles (635 km) across. It's a large enough mass to be a spherical shape, putting it in running for a dwarf planet status. DeeDee's orbit of the Sun takes 1,136 Earth years! Its **perihelion**, or closest point to the Sun is 38 AUs (Astronomical Unit, the distance of Earth to the Sun). DeeDee's perihelion reaches the orbit of Pluto. Its **aphelion**, or farthest point from the Sun is 180 AUs, about 4.5 times farther than Pluto. DeeDee is tilted on its axis at an angle of 26.8°, similar to the tilts of Earth (23.5°) and Mars (25°). DeeDee is very cold, about -405 Fahrenheit (-243° Celsius), and not very light reflective. Only 13% of sunlight is reflected.

DeeDee will reach perihelion within 70 days of January 2, 2142. DeeDee is currently about 92 AUs away, or 8.68 billion miles (14 billion kilometers). Right now, light from DeeDee takes 12.5 hours to reach Earth. To learn more about DeeDee, go to [Astronomy.com](#) article and click on the "discovered by a team of astronomers" link to reach the 2014 UZ224 ("DeeDee") Fact Sheet.

The Sun is always ejecting a solar wind out in all directions. Sometimes the Sun's twisted magnetic bands will burst forth from the Sun's surface as a solar eruption, called a **CME** (coronal mass ejection), spewing a vast cloud of electrically charged particles (like ions and electrons) far into the solar system. They can affect Earth and the other planets in different ways.

When CME materials reach Earth, the protective magnetic field surrounding Earth traps the charged particles. The particles follow the magnetic bands and are channeled to the north and south poles. The charged particles enter Earth's atmosphere, heat up, and glow, like a neon light. The colorful glows are called **auroras**, or aurora borealis (northern lights) and aurora australis (southern lights).

CMEs can affect disrupt communications. New research has discovered that other areas in the atmosphere are depleted of their electrical charge while there is excessive electrical charge in the upper atmosphere over the poles during these events.

LIFE IN ULTRA-DRY DESERT

Harsh environments on Earth are surprisingly teeming with life forms. The driest, non-polar desert on Earth is the Atacama Desert in Chile. Its rocky landscape is exposed to extreme temperatures and radiation from the Sun. It's located at a high altitude with thin air. There are hearty microbes living there! Scientists are realizing that life forms are diverse and capable of living in all the extremes Earth has to offer. If life on Earth is that diverse, life in the extremes of space may thrive as well. Traces of life are easier to detect in water. Scientists are creating ways to test water under icy surfaces on the frozen moons of the outer planets to check for traces of life.

MAY PLANETS

Mars can be seen low in the western sky after sunset passing through the horns of the constellation Taurus (the Bull). Mars sets about two hours after the Sun, but loses a half hour by the end of the month. Mars looks like a small, ruddy-colored star.

Jupiter can be seen low in the southeastern sky after sunset in the constellation Virgo (the Maiden), above its bright blue star Spica. Jupiter is bright and visible all night long. Having reached opposition in April, Jupiter rises just after sunset, crosses medium-high through the southern sky, and is low on the western horizon at dawn. Jupiter looks like a very bright, yellow-colored star.

Saturn can be seen rising in the southeastern sky around midnight in the constellation Sagittarius (the Archer). Saturn rises earlier every night. Saturn crosses low through the southern sky until dawn. Saturn looks like a bright, golden-colored star.

Venus can be seen rising in the predawn eastern sky in the constellation Pisces (the Fish). Venus is extremely bright, having reached its maximum illuminated extent of April 30th. Venus is the "Morning Star". Venus looks like a very bright white star.

Mercury cannot be seen in early May after reaching inferior conjunction, passing between the Sun and Earth on April 20th. Mercury will reappear in the predawn eastern sky late in May. 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

This edition of the
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was written by
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SKY DATES

May

- 1 - May Day (halfway point of spring)
- 2 - Moon passes 3.6° S of Beehive cluster
- First quarter moon at 8:47 p.m.
- 4 - Moon passes 0.5° S of Regulus
- Eta Aquarid meteor shower peaks at 7 p.m.; look to Aquarius low in sky for fast, yellow meteors with persistent trails; 10-15m/hr
- 5 - VU Observatory viewing at 8:30 p.m.
- Mars passes 6.1° N of Aldebaran
- 7 - Moon passes 2.1° N of Jupiter
- 9 - Comet PANSTARRS at perihelion at 1.04 A.U. in Pisces
- 10 - Full moon called Green Moon, Milk Moon, or Flower Moon at 3:43 p.m.
- 12 - Moon at apogee (farthest point from Earth) at 251,851 miles at 1:51 p.m.
- 13 - Moon passes 3.1° N of Saturn
- 17 - Mercury at greatest western elongation at 25.8° at 5:00 p.m.
- 18 - Last quarter moon at 6:33 p.m.
- 20 - CAS hosts FREE telescopic viewing at Conway Observatory at 8:30 p.m.
- FREE telescopic viewing at Kemil Beach in the Dunes National Park
- Moon passes 0.26° N of Neptune
- 22 - Moon passes 2.4° S of Venus
- 23 - Moon passes 1.6° S of Mercury
- 25 - New moon at 1:44 p.m.
- Moon at perigee (closest point to Earth) at 221,470 miles at 7:23 p.m.
- 29 - Moon passes 3.4° S of Beehive cluster
- 31 - Moon passes 0.3° S of Regulus
- SpaceX Falcon 9 rocket to launch the 13th Dragon spacecraft to ISS cargo delivery

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

www.nasa.gov, www.esa.int, www.astropixels.com
www.casonline.org, www.physics.valpo.edu,
<https://in-the-sky.org>, www.astronomy.com,
Astronomy, and Sky and Telescope.

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