ASTRONEWS

March 2015

To our skies and beyond!

The Dawn of Ceres

In 1801, yet another planet was discovered.

An Italian astronomer by the name of Guiseppe Piazzi observed what appeared to be a natural satellite orbiting the sun between Mars and Jupiter. A breakthrough, this planet was named after the Roman Goddess of harvest and corn and was hence called Ceres.

Over the years, however, many Ceres-like planets were discovered in the same region. This region came to be known as the asteroid belt and suddenly Ceres was no longer so special, no longer a planet but an asteroid.

Centuries went by and in 2006, scientists once again reversed what Ceres was. They had discovered "planet-like properties" and they lifted Ceres back into the ranks, only this time as a dwarf planet.

Today, Ceres is the largest object in the asteroid belt at 950 km wide. It has a dusty outer crust and a thick layer of water ice underneath. In January of last year, the ESA's Herschel Space Observatory also discovered several water vapor emissions in Ceres's atmosphere.

And that brings us to this month. NASA's Dawn mission launched in 2007 hopes to "characterize the conditions and processes of [the Solar System's] earliest history." Its goal: to study two space objects, one of which is Ceres.

On the 6th of March, Dawn will reach Ceres. As Marc Rayman, the mission director, says "[Ceres] is not only the largest object between Mars and Jupiter, it is the largest object between the sun and Pluto that a spacecraft has not yet visited."

Europa!

Martians? That's a thing of the past. According to NASA, astronomers now believe that extraterrestrial life in our Solar System may actually be on Europa.

Courtesy of Bill Wright

Europa is one of Jupiter's moons. Orbiting Jupiter once every three and a half days, Europa spans 3100 km. The moon does have liquid water, one of the conditions for life as we know it to exist. However, this water is buried deep under a frozen exterior and it would be difficult to get an accurate measurement. Or at least it was difficult until a recent discovery in 2012.

In 2012, the Hubble Telescope picked up an image of a plume that began at Europa's southern polar region and blasted outwards. According to analysis, the plume was made of water vapor similar to what was hidden under the ice. And this vapor would be easy to collect in a spacecraft flyby.

As of now, NASA's Europa mission would enter Jupiter's orbit and then make 45 flybys of Europa over the next three and a half years at altitudes as close as 25 kilometers. The mission, dubbed the "Europa Clipper," would then collect samples from the water vapor and study it for salinity and other characteristics that would determine its potableness and its usefulness to life. The Clipper would also measure and map the icy surface in the hopes of learning more about what's underneath it.

The Europa Clipper has been in the works for years and the White House has even allocated $30 million of its 2016 budget to the project. NASA is now coming up with spacecraft designs and tools that could be deployed during the flyby, and is collaborating with scientists from around the world.

According to the plan, the earliest that the Clipper will take to the skies is in 2022. It will be at least 2030 before the Clipper arrives at Europa... and before we learn if "Europaians" actually exist.

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FUN FACT

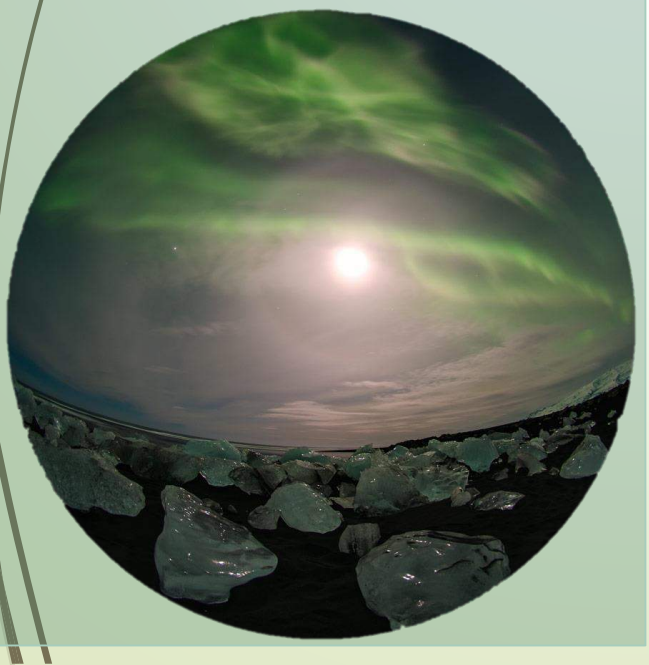
- What are White holes?

The hypothetical opposite of black holes that release matter/light and cannot be entered from the outside.

PICTURE OF THE MONTH

- **Aurora on Ice – Winter display over Iceland**

© Stéphane Vetter



THE ASTRONOMY AWARDS

BEST PICTURE:
E.T.

Ask anyone for a sci-fi movie and they will point to E.T. While we haven't found any signs of extra-terrestrials (and if we did they'd probably be nothing like the one in this movie), we can safely nominate this one. Overlooking some inaccuracies, E.T. develops the relationship between humans and aliens and what may happen if they ever decide to visit us in the future.

BEST ANIMATED FEATURE FILM:
Mars Needs Moms

What if Mars really had Martians? Like most other astronomical films, this one focuses on aliens. Unlike other such films, this one also focuses on a mother-son relationship. The story plot? Mars needs moms and Martians are willing to go as far as to kidnap them from Earth. And the real catcher? Mars doesn't just have Martians: it also has a mega- underground society.

BEST COSTUME DESIGN:
Star Trek

We won't even try to convince you of the scientific accuracy of Star Trek. However, we will say that badges don't get cooler and better than the communicator pin. This pin is so classic (not to mention chic) that we can overlook the Enperprise crew's suits that even make 90s fashions look glorious.

BEST DOCUMENTARY FEATURE:
Cosmos: A Space Time Odyssey

Hosted by Neil deGrasse Tyson, Cosmos is a continuation of a previous series by Carl Sagan in the 1980s. In Cosmos, Tyson introduces viewers to the "Ship of Imagination." From electromagnetism to the speed of light, he makes the matters of the universe easy (and sometimes funny) for everyone. As President Obama says in the first episode, things are truly done with the "spirit of discovery."

Please post a list of your favorite astronomy movies to www.evc-cit.info/astronews

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Please comment at:
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Written and designed by Janani Mohan
Data Courtesy of various Internet websites/ newspapers/ databases

Stargazing in San Jose

March 5: Full Moon, MiniMoon

A full moon is always gorgeous… but what about a minimoon? 2015's minimoon is the point at which the moon will appear the smallest from the Earth.

March 14 – 18: Corona Australid Meteors

The Southern Crown will be sparkling. These meteors will put on their display in the constellation Corona Australis aka. "Southern Crown". They will be moving from South to North and will peak at about 15 meteors per hour on March 16.

March 20: New Moon, Vernal Equinox, and….

The 20th is a very big day. The start of spring, there will be no moon in the sky. There will also be 2015's only total Solar Eclipse but much of the world including people enjoying the Sun in San Jose will be unable to see it. (It is only observable from the Arctic.)

March 22: Camelopardalids Meteors

The Camelopardalids will be near to the Northern celestial pole. The slowest of meteors, they will only be travelling at 7 km per hour and should be easy to spot throughout the night.

Astronomy Anagrams

1. Farthest from the Sun: PILEHONA
2. Having to do with the skies: TELLSACEI
3. A comet's atmosphere: CAOM
4. Sun's apparent path: LITEPICC
5. Point directly overhead: TNEIHZ
6. Intersection of #2 Equator and #4: NEOUIQX
7. Unit of brightness: UNMEDAIGT
8. Bright streaks in the sky: STEEROM
9. Closest to the Earth: GRPEEEI
10. Point directly below: ANDRI

Answers to last month's puzzle: 1-Vela; 2-Taurus; 3-Ursa Major; 4-Orion; 5-Hydra; 6-Crux; 7-Canis Major; 8-Auriga; 9-Cancer; 10-Leo; 11-Libra