

Trips / Events

Ideas for trips and events
always welcome!

events@weymouthastronomy.co.uk

- ◆ 17 Jan CADAS—Pole stars of other planets—Bob Mizon
- ◆ 6 Feb WAS—Night-scapes: the Earth & Sky in context—Nigel Ball
- ◆ 21 Feb CADAS—Early misconceptions in astronomy - Bill Read
- ◆ 6 Mar WAS—Radiation Protection: How to survive a journey to Mars—Dr Elizabeth Cunningham
- ◆ 21 Mar CADAS—The International Space Station—Bill Combes

Programmes for many local Societies will be available in the near future.

Check their websites for more details.

If you are interested in giving a talk or workshop, let the organisers know. They like to offer new titles in their programme line-up.

WAC Upcoming Events:

Please see the reverse of this issue of the Sky Watcher for the full programme listing for 2018!

Plans for informal viewing nights will take place after the monthly meetings, weather permitting.

Sky Watcher



WAC News—

Happy New Year! As always a brand new year brings the anticipation of surprise, intrigue and visits with 'old friends' regarding celestial events. Over the holidays I spotted an interesting article on the Rosetta Stone of solar variability. Have a look at the article on <https://www.sciencedaily.com/releases/2018/01/180105124010.htm>

Summary: Scientists have found a star that can help shed light on the physics underlying the solar dynamo. Researchers combined observations from the Kepler spacecraft with ground-based observations as far back as 1978, thereby reconstructing a 7.4-year cycle in this star. The star is almost identical to the Sun, except for the chemical composition. That makes it a Rosetta Stone for the study of stellar dynamos.

If you get a chance to read this, I am curious to hear your thoughts. Feel free to drop a line at sherikarl@rocketmail.com and I'll aim to use your comments in an upcoming issue. As always, please send your photos, articles and astronomical inspirations to Sky Watcher for inclusion in the newsletter. Until next month... ~ SK



Image of our sun showing dark sunspots and bright diffuse faculae (best seen around the edges). A new study shows how the larger mix of heavy elements leave such spots unchanged, while increasing the contrast of the bright diffuse faculae.

Credit: NASA/SDO

Snowy Worlds Beyond Earth by Linda Hermans-Killiam



There are many places on Earth where it snows, but did you know it snows on other worlds, too? Here are just a few of the places where you might find snow beyond Earth:

Mars

The north pole and south pole of Mars have ice caps that grow and shrink with the seasons. These ice caps are made mainly of water ice—the same kind of ice you'd find on Earth. However, the snow that falls there is made of carbon dioxide—the same ingredient used to make dry ice here on Earth. Carbon dioxide is in the Martian atmosphere and it freezes and falls to the surface of the planet as snow. In 2017, NASA's Mars Reconnaissance Orbiter took photos of the sand dunes around Mars' north pole. The slopes of these dunes were covered with carbon dioxide snow and ice.



NASA's Mars Reconnaissance Orbiter captured this image of carbon dioxide snow covering dunes on Mars. Credit: NASA/JPL/University of Arizona

A Moon of Jupiter: Io

There are dozens of moons that orbit Jupiter and one of them, called Io, has snowflakes

made out of sulfur. In 2001, NASA's Galileo spacecraft detected these sulfur snowflakes just above Io's south pole. The sulfur shoots into space from a volcano on Io's surface. In space, the sulfur quickly freezes to form snowflakes that fall back down to the surface.



A volcano shooting molten sulfur out from the surface of Io. Credit: NASA/JPL-Caltech

A Moon of Saturn: Enceladus

Saturn's moon, Enceladus, has geysers that shoot water vapor out into space. There it freezes and falls back to the surface as snow. Some of the ice also escapes Enceladus to become part of Saturn's rings. The water vapor comes from a heated ocean which lies beneath the moon's icy surface. (Jupiter's moon Europa is also an icy world with a liquid ocean below the frozen surface.) All of this ice and snow make Enceladus one of the brightest objects in our solar system.



Enceladus as viewed from NASA's Cassini spacecraft. Credit: NASA



Snow (more!)

A Moon of Neptune: Triton

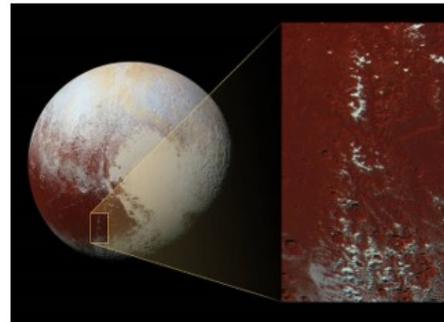
Neptune's largest moon is Triton. It has the coldest surface known in our solar system. Triton's atmosphere is made up mainly of nitrogen. This nitrogen freezes onto its surface covering Triton with ice made of frozen nitrogen. Triton also has geysers like Enceladus, though they are smaller and made of nitrogen rather than water.



The Voyager 2 mission captured this image of Triton. The black streaks are created by nitrogen geysers. Credit: NASA/JPL/USGS

Pluto

Farther out in our solar system lies the dwarf planet Pluto. In 2016, scientists on the New Horizons mission discovered a mountain chain on Pluto where the mountains were capped with methane snow and ice.



The snowy Cthulhu (pronounced kuh-THU-lu) mountain range on Pluto. Credits: NASA/JHUAPL/SwRI



This is an artist's illustration of what Kepler-13Ab might look like. Credit: NASA/ESA/G. Bacon (STScI)

Beyond Our Solar System

There might even be snow far outside our solar system! Kepler-13Ab is a hot, giant planet 1,730 light years from Earth. It's nine times more massive than Jupiter and it orbits very close to its star. The Hubble Space Telescope detected evidence of titanium oxide—the mineral used in sunscreen—in this planet's upper atmosphere. On the cooler side of Kepler-13Ab that faces away from its host star, the planet's strong gravity might cause the titanium oxide to fall down as "snow."

Want to learn more about weather on other planets? Check out NASA Space Place: <https://spaceplace.nasa.gov/planet-weather>



Weymouth Astronomy Club 2018 Programme

12th January	10 Minute Talks by Members
9th February	Sandsfoot Castle Observing Evening
9th March	Paul Spurr - Celestial Mechanics #Pt 2
13th April	David Whitehouse -
11th May (AGM)	AGM + James Fradgely - Birth of the Solar System
8th June	Ask the Panel
13th July	Geoff Kirby - Quirky Astronomy
10th August	Summer Social
14th September	Open Evening / Viewing Evening
12th October	Barry FitzGerald - Lunar Geology from the safety of your own home
9th November	Sheri Karl - Gravity Waves
14th December	Christmas Quiz / Social Evening