

Trips / Events

Ideas for trips and events
always welcome!

events@weymouthastronomy.co.uk

- ◆ 19 Sept CADAS—
Orbital oddities by
James Fradgley
- ◆ 22 Sept WAS—Astro
Open Day — with
Space Detectives As-
tronomy Workshop
- ◆ 2 Oct WAS—AGM &
Zero gravity by John
Ives
- ◆ 17 Oct CADAS Ask the
panel.
- ◆ 6 Nov WAS—Solar
Image Editing by Sheri
Lynn Karl
- ◆ 21 Nov CADAS—
Astrophotography old
and new with
Pete Adshead and
Bob Mizon

Programmes for many local
Societies will be available in the
near future. Check their web-
sites for more details.

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

WAC Upcoming Events:

- 12 Oct—Barry FitzGerald -
Lunar Geology from the
safety of your own home
- 9 Nov—Sheri Karl - Gravity
Waves
- 14 Dec—Christmas Quiz /
Social Evening

More to come!!

Sky Watcher

WAC News—

Last month for the summer social workshop, the WAC members had the opportunity to make Star Clocks. This was under the tutelage of WAC's own Dr John MacDonald. The group had a good time learning about what Star Clocks are and how to use them as well as creating their very own to take home. The workshop was followed by an Astronomical BBQ. What a great way to round out the summer season.

6 Sept at approx. m 7.0 ~ by Chris Bowden



This month viewers have the opportunity to view a binocular bright comet. On Sept. 10th, Comet 21P/Giacobini-Zinner makes its closest approach to Earth in 72 years. The small but active comet is going to be easy to see in small telescopes and binoculars as it glides through the stars of the constellation Auriga about 58 million km from our planet. In the week ahead, it will also pass right in front of a rich star cluster, providing a spectacular photo-op for amateur astronomers. <https://theskylive.com/21p-info#skychart> Until next month! ~SK



A Trip Through the Milky Way

by Jane Houston Jones and Jessica Stoller-Conrad

Feeling like you missed out on planning a last vacation of summer? Don't worry—you can still take a late summertime road trip along the Milky Way!

The waning days of summer are upon us, and that means the Sun is setting earlier now. These earlier sunsets reveal a starry sky bisected by the Milky Way. Want to see this view of our home galaxy? Head out to your favorite dark sky getaway or to the darkest city park or urban open space you can find.

While you're out there waiting for a peek at the Milky Way, you'll also have a great view of the planets in our solar system. Keep an eye out right after sunset and you can catch a look at Venus. If you have binoculars or a telescope, you'll see Venus's

phase change dramatically during September—from nearly half phase to a larger, thinner crescent.

Jupiter, Saturn and reddish Mars are next in the sky, as they continue their brilliant appearances this month. To see them, look southwest after sunset. If you're in a dark sky and you look above and below Saturn, you can't miss the summer Milky Way spanning the sky from southwest to northeast.

You can also use the summer constellations to



Caption: This illustration shows how the summer constellations trace a path across the Milky Way. To get the best views, head out to the darkest sky you can find. Credit: NASA/JPL-Caltech





Perseids (more!)

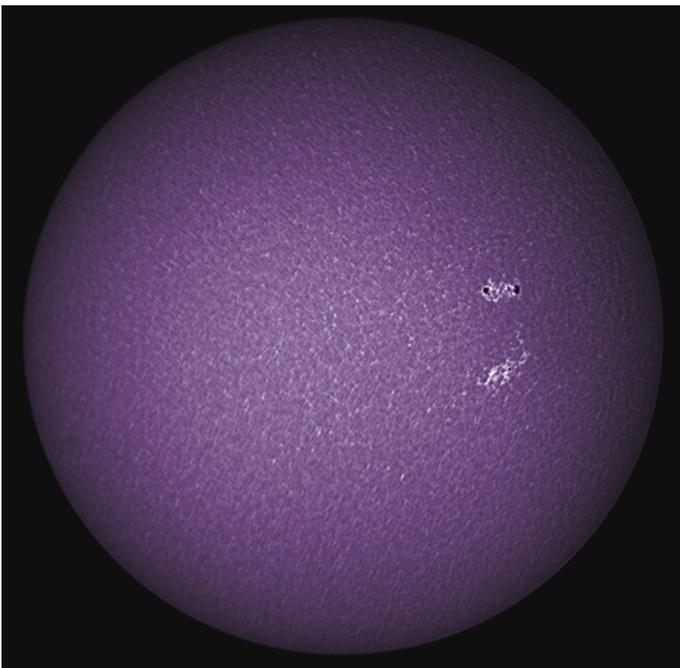
help you trace a path across the Milky Way. For example, there's Sagittarius, where stars and some brighter clumps appear as steam from a teapot. Then there is Aquila, where the Eagle's bright Star Altair combined with Cygnus's Deneb and Lyra's Vega mark what's called the "summer triangle." The familiar W-shaped constellation Cassiopeia completes the constellation trail through the summer Milky Way. Binoculars will reveal double stars, clusters and nebulae all along the Milky Way.

Between Sept. 12 and 20, watch the Moon pass from near Venus, above Jupiter, to the left of Saturn and finally above Mars!

This month, both Neptune and brighter Uranus can also be spotted with some help from a telescope. To see them, look in the southeastern sky at 1 a.m. or later. If you stay awake, you can also find Mercury just above Earth's eastern horizon shortly before sunrise. Use the Moon as a guide on Sept. 7 and 8.

Although there are no major meteor showers in September, cometary dust appears in another late summer sight, the morning zodiacal light. Zodiacal light looks like a cone of soft light in the night sky. It is produced when sunlight is scattered by dust in our solar system. Try looking for it in the east right before sunrise on the moonless mornings of Sept. 8 through Sept 23.

Solar Cycle Activity compiled by S L Karl



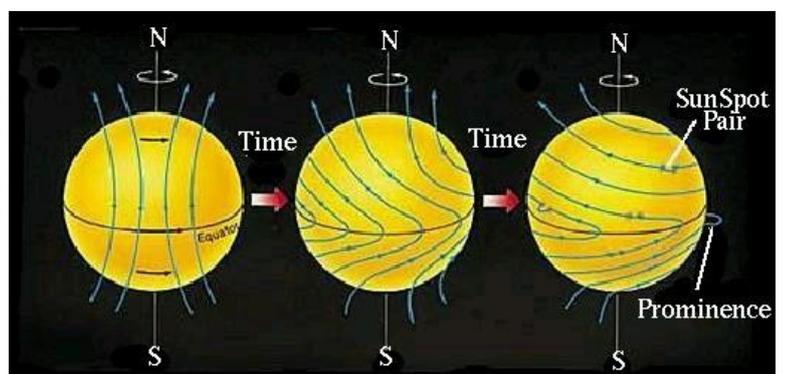
REVERSE POLARITY SUNSPOT: New sunspot AR2720 is not only large, but also strange. Its magnetic polarity is reversed. The North and South ends of its enormous magnetic field are backwards compared to the norm for sunspots in the current solar cycle, decaying [Solar Cycle 24](#). What does this mean? AR2720 may be the first big sunspot of the next solar cycle, [Solar Cycle 25](#), popping up now in the middle of solar minimum. Solar cycles always mix together at their boundaries. The slow transition between Solar Cycle 24 and Solar Cycle 25 appears to be underway. <http://www.spaceweather.com>

What is the reversal cycle of the sun's magnetic polarity (the solar magnetic activity cycle)? The magnetic north and south poles of the sun reverse once in about 11 years. The magnetic north pole at the beginning will become the magnetic south pole later. Similarly, the magnetic south pole at the beginning will become the magnetic north pole later. The sun's magnetic north and south poles will reverse twice and resume to their original positions in about 22 years. So, the reversal period of the sun's magnetic poles or magnetic field is about 22 years.

Why does the sun's magnetic field change? When the sun spins, the lines of magnetic force beneath the sun's surface will also rotate. The sun is a fluid. Unlike the earth having a crust, the sun does not have a hard shell. The sun's spinning speed decreases as its latitude increases

(i.e., differential rotation). The sun rotates relatively slowly near the poles. The sun's rotational period at the equator is about 25 days. The sun's rotational period at latitude 60 degrees is about 29.3 days, which is relatively long. Because the sun has differential rotational speeds, the embedded lines of magnetic force beneath sun's surface near the equator rotate fastest. The early longitudinal lines of magnetic force in the sun will become curly and twist gradually. Hence, the magnetic fields gradually change.

What is the relationship between sunspot activity and the reversal of the sun's magnetic polarity? The relationship is explained by the Babcock's model of the Sun's magnetic cycle. During the period of peak solar activity (solar maximum), the outward projected annular lines of magnetic force between two sunspots will grow up, which will later rupture and separate from the sunspots. The detached annular lines of magnetic force will then get in touch and join with the nearby lines of magnetic force outside the sun, forming an independent loop of lines of magnetic force outside the sun. On the other hand, some lines of magnetic force in the sun will neutralize the lines of magnetic force from some groups of sunspots, weaken, re-connect and organize into a new solar magnetic field with reversed magnetic north and south poles gradually. So, sunspot activity and the reversal of the sun's magnetic polarity are related. If the change of solar magnetic field is also taken into consideration, the period of a sunspot cycle should be about 22 years.



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