



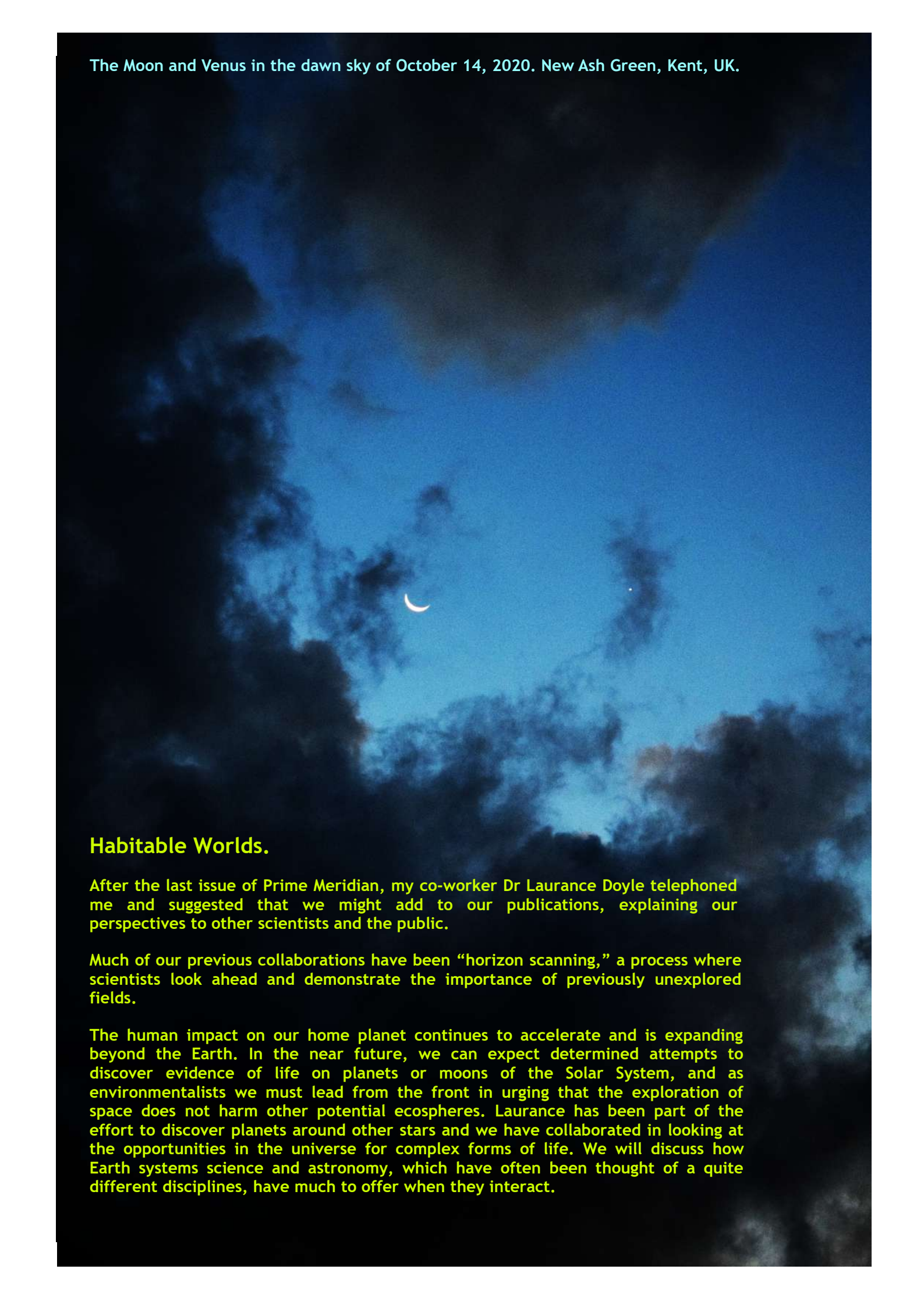
Prime Meridian

(132) November 17, 2020

2020 saw the fourth warmest October on record.

As the dark nights remind us of starry skies, our team is looking ahead to our research and collaboration.

The days are growing shorter and colder in the North Hemisphere. The Sun set behind the trees from the fields of Ash, Kent. November 13, 2020.

A photograph of a dawn sky with a crescent moon and Venus. The sky is a deep blue, and there are large, dark, wispy clouds. A thin crescent moon is visible in the center-left, and a small, bright star (Venus) is visible to its right.

The Moon and Venus in the dawn sky of October 14, 2020. New Ash Green, Kent, UK.

Habitable Worlds.

After the last issue of *Prime Meridian*, my co-worker Dr Laurance Doyle telephoned me and suggested that we might add to our publications, explaining our perspectives to other scientists and the public.

Much of our previous collaborations have been “horizon scanning,” a process where scientists look ahead and demonstrate the importance of previously unexplored fields.

The human impact on our home planet continues to accelerate and is expanding beyond the Earth. In the near future, we can expect determined attempts to discover evidence of life on planets or moons of the Solar System, and as environmentalists we must lead from the front in urging that the exploration of space does not harm other potential ecospheres. Laurance has been part of the effort to discover planets around other stars and we have collaborated in looking at the opportunities in the universe for complex forms of life. We will discuss how Earth systems science and astronomy, which have often been thought of a quite different disciplines, have much to offer when they interact.



Global climate: 2020 saw the 4th warmest October on record.

According to NOAA, the USA's National Oceanic and Atmospheric Administration "The October 2020 global land and ocean surface temperature was the fourth highest for October since global records began in 1880 at 0.85°C . . . above the 20th century average of 14.0°C The ten warmest Octobers have occurred since 2005, while the seven highest October temperature departures from average have occurred in the last seven years (2014-2020). October 2020 also marks the 44th consecutive October and the 430th consecutive month with temperatures, at least nominally, above the 20th century average."

The only warmer Octobers on record were in 2015 (+1.03°C above the 20th Century norm), 2019 (+0.95°C), and 2018 (+0.93°C).

Data is provisional. All the anomalies quoted are positive.

Check out NOAA data on: <https://www.ncdc.noaa.gov/sotc/global/202010>

Above: This was a view of our planet during the middle of the month, on October 15, 2020. Last month, we passed through the Northern Hemisphere's Autumnal Equinox; we were now in colder, darker days. 12:44:50 UT. The image was taken by the DSCOVR (Deep Space Climate Observatory) space craft (NASA/NOAA), using its EPIC (Earth Polychromatic Imaging Camera) system.



Above: On the first day of the month, the autumnal colours continued to develop among the trees along the hedgerows on Hartley Hill, Kent.

Seasons in South East England **OCTOBER 2020**

Duller, wetter and not a warm month.

The provisional UK mean temperature was 9.4°C, which is 0.1°C above the 1981-2010 long-term average. The mean temperature for England was 10.3°C (0.1°C). As is often the case, it was our region England SE & Central S that was the warmest mean temperature for the UK at 11.1°C (0.0°C). It also had the warmest maximum temperature over the month, yet it was cooler than expected for the 1981 to 2010 average.

The UK's highest temperature was 19.1°C was at Writtle, Essex, England on Oct. 8 and the coldest at -3.3°C was recorded at Tyndrum, Perthshire, Scotland on October 15.

Left: A view along the Prime Meridian on October 1 at 12:44:49. This was taken by the DSCOVR satellite, which is held in a position between the Earth and the Sun.





Above: Rain and wide puddles at New Ash Green, Kent, Oct. 4. Above left: Rainbow near Hartley on Oct. 6. Right: Fallen leaves and duckweed in a horse trough at Ash. Below: Beside Ash Road, Hartley, a common wasp (*Vespula vulgaris*) on the flowers of ivy (*Hedera helix*). Oct. 7.

Max. temp.: 14.4°C (-0.4°C); min. temp.: 7.9°C (0.5°C);
Hours of sunshine: 68.7 (61%). Rain: 174.3 mm (188%).
Anomalies re. 1981-2010 norm in brackets. Date obtained
from Met Office online monthly reports.

[https://www.metoffice.gov.uk/research/climate/
maps-and-data/regional-values](https://www.metoffice.gov.uk/research/climate/maps-and-data/regional-values)





The annual appearance of the toadstools *Amanita muscaria* in Beacon Wood, Bean, Kent, attracts numerous members of the public. Above: Oct. 19. Left: Oct. 18. Below: Oct. 18, 2020.





Amanita muscaria, Beacon Wood, Bean, Kent. Above: Oct. 22. Below: Oct. 19, 2020.





Above: Elders (*Sambucus nigra*) losing leaves on Hartley Hill, Kent. Oct. 7. Below left: Fallen leaves of black poplar (*Populus nigra*) Belair Park, South London. Oct. 28. Below right: The day before Halloween. Roger's Wood Road. Kent. Oct. 30.





October 31, 2020. Above: Driven rain across a field at Old Terrys Lodge Lane. The Sun had emerged but was descending below the trees at Ash, Kent. Below: Water is flooding down a road towards Hartley Bottom, Kent. The traditional Christian service of All Souls Day was conducted (with social distancing) in St Peter's and St Paul's Church at Ash, Kent (contrast enhanced to illustrate the mood of the event). A Full Moon rose that night, the second that month. New Ash Green, Kent.



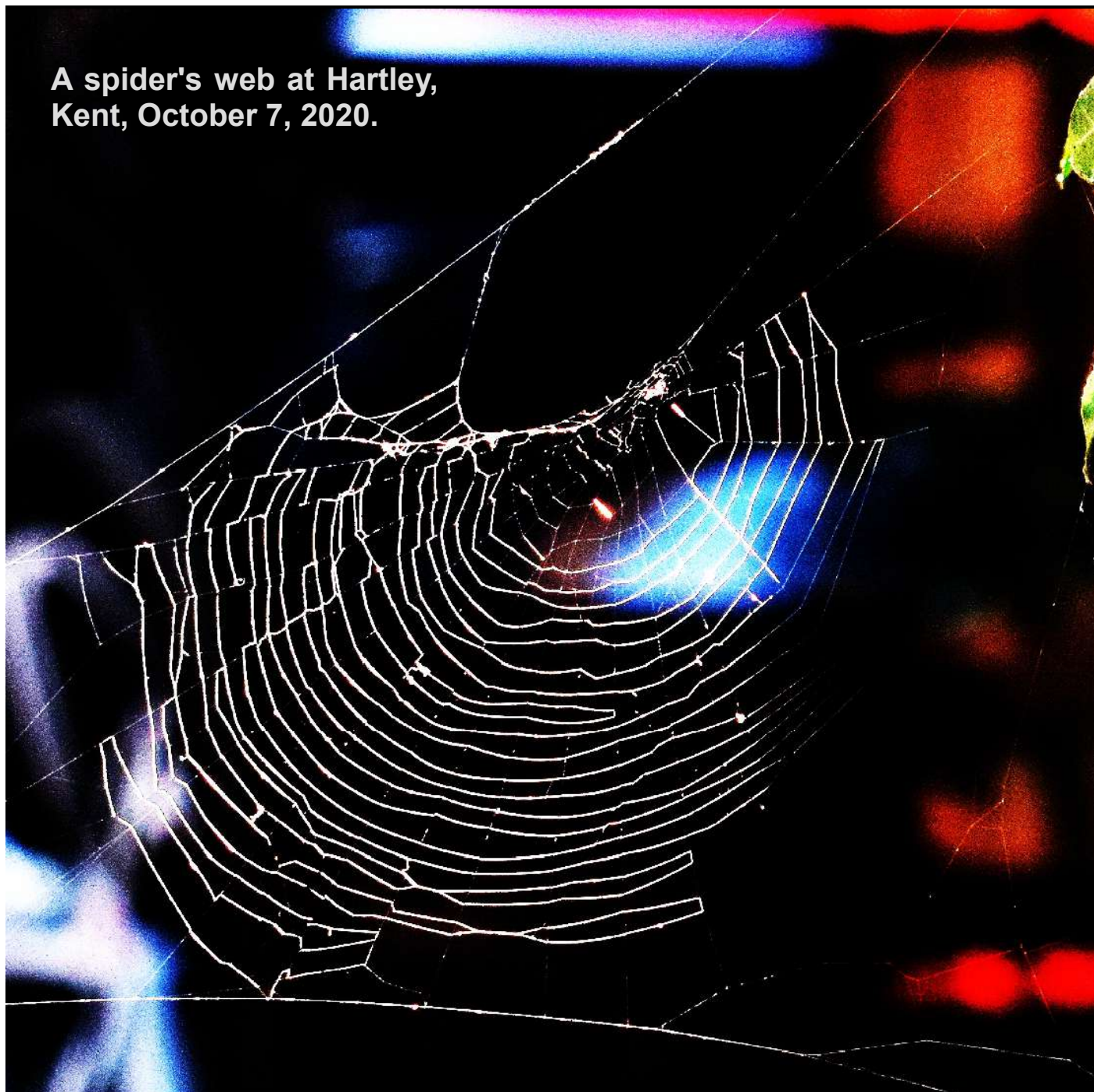


From top down: The Full Moon rose on Oct. 1, seen close to Mars in the sky. The waning Moon caught in Earthshine as the sky became brighter as dawn was arriving. On Oct. 14, the Moon lay close to the planet Venus. A closer look at the Moon on Oct. 15.

By Oct. 20, the Moon was waxing again, seen here from Hartley Hill, Kent, shortly after sunset.

The Halloween Moon was the unusual second Full Moon in the month.

**A spider's web at Hartley,
Kent, October 7, 2020.**



Prime Meridian.

Published by the Ecospheres Project, a research and media collaboration. This newsletter looks outwards from the Prime Meridian. It follows the cycle of the seasons in South East England alongside global environmental issues. At the same time, it steps back to look at the Earth in its astronomical perspective and the search for other habitable worlds, which help us to understand the Earth in its larger context.

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