Prime Meridian (115) October 31, 2019

Why we need to think beyond a "Climate Crisis" and tackle the full reality of the "Earth Crisis."

2019: As we crossed from summer into autumn, the world saw its warmest September on record.

Yellowing leaves in the woods at Ridley, Kent. October 31, 2019.

From Climate Crisis to Earth Crisis.

Editor: Martin Heath.

The phrase "Climate Crisis" has become widespread on TV and radio and in the newspapers and internet. It has helped to encourage a general recognition that the world is facing potentially disaster of human origin. For those of us who are promoting education and research about the Earth and its defence, we welcome the interest that it has generated for our cause.

The UK's newspaper *The Guardian* must be congratulated for providing a definitive focus on environmental science, which has included *climate change* science. It has turned its environmental news reports up a notch by talking of the "climate crisis," rather than mere "climate change."

On October 17, 2019, its Editor's letter from Katharine Viner, Editor-in-chief explained:

"At the Guardian we believe the climate crisis is the most urgent issue of our times . . . my pledge today is the Guardian will give the climate crisis the attention it demands – and deliver our open independent reporting to everyone" Viner, K. (2019). Today we pledge to give the crisis the attention it deserves. *The Guardian*. Thursday, October 17, 2019.

"Climate Crisis" is one of those phrases that has become a runaway success. After years of relative neglect and obscurity from the world at large, the upturn in public recognition of the growing threat to our planet and our species cannot be underestimated, interest in "Climate Crisis" has given a long-needed boost.

There may well be a case for Climate Crisis being understood as a convenient short-hand for all the complexities of destructive human impact on Planet Earth.

Climate, of course, cannot be separated from those other impacts, and, for that reason, climate must, *de facto*, include them in some way or other.

To emphasis the "Earth Crisis" is necessary because the very real Climate Crisis cannot be addressed meaningfully by itself alone.

One must endorse the phrase "Climate Crisis," yet as we do so, we must hope that it will be a vanguard in an effort to promote further understanding of the broader global threat and how we can respond to protect human communities.

Climate does not exist in a bubble, but it functions within the entire Earth System; our research group tends to use the term "ecosphere," a planetary scale ecological system.

Human-driven climate change, together with both natural and human events, require an holistic view, such as that which builds on that of Sir Patrick Geddes (1854-1932), among others, whose integrated perception of the world has been summed up as "Think global, act local." **Heath, M. (2019).** Our Moon and the Earth Crisis. Prime Meridian (108) July 31, 2019. **Heath, M. (2019).** "Think global, act local" - back to the future. Prime Meridian (101) February 28, 2019.

The Earth Crisis embraces the entire Great Acceleration of human impact, whose importance was recognised by the research of the International Geopheres-Biosphere Programme (1987-2015).

The need to look beyond climate alone was explained powerfully in a TV news report (Oct. 21, 2019) that happened to appear while I was putting several pieces about the Earth Crisis together. This provided a simple and cogent example of the necessity in terms for environmentalists to look beyond climate alone. The rhetoric of the Climate Crisis has become so dominant, with its TV images of burning forests and melting glaciers that we can forget that we are faced by a multi-sided onslaught.

The news item reminded us of a sad and sobering local even. In 2013, a nine year old girl, Ella Kissi-Debrah, whose home had been near London's South Circular road, died after a succession of asthma attacks. It was later shown that she been exposed to vehicle pollution levels exceeded safety limits. In the light of this discovery, a new inquest was sought and is currently awaited. Her mother Rosamund Kissi-Debrah, who has become a fervent and eloquent opponent of pollution, said that it's not just climate, but also pollution that needs to be treated with urgency.

The tragedy of a young girl in South East London is an incident of London's undoubted pollution emergency, which is, in turn, a microcosm of an entire planet whose communities are threatened by human's self-inflicted disasters. This episode calls to mind numerous crises, nested within each other. We must acknowledge that there is a *pollution crisis*, yet this, however, must be seen as part of a larger *internal combustion engine crisis* (which must, among other factors, include road accidents and CO_2 emissions), which in turn, is part of a much greater *technology crisis*. We have create a civilisation that depends on technologies that are enabling, yet at the same time, are threatening to destroy it.

We all know that this is bigger than climate, but this has been an opportunity to remind ourselves of that fact. Some may prefer to talk in turns of an Earth Crisis, or Earth Systems Crisis or a Human Crisis or a Techno Crisis. Here, we shall, in forth coming editions, look at this Crisis, its implications, and what we can do about it, to secure a positive future for the communities of our world.

California's Climate Crisis: NASA's Earth Observatory announced on October 30, 2019 that the "Kincade Fire Grows Overnight." Data was from the California Department of Forestry & Fire Protection.

NASA said: "Fire season in the Western United States stretches from late spring until the winter rains arrive near the end of the calendar year. Climate change has made the past few years warmer and drier, intensifying some natural fire cycles."

"As of the morning of October 30, 2019, the Kincade Fire had grown to more than 76,000 acres (308 kilometers) burned, with much of the activity on the eastern side of the fire. The Visible Infra Imaging Radiometer Suit (VIIRS) on Suomi NPP acquired this image of the fire's smoke in the early afternoon on October 29. As of October 30, the fire was 30 percent contained."

NASA Earth Observatory image by Lauren Dauphin, using VIIRS data from NASA EOS/LANCE and GIBS/Worldview, and the Suomi National Polar-orbiting Partnership. Caption by Kasha Patel.

Seasons in South East England

September 2019

September 19, 2019 was a warm and cloudless day.

At Darenth, Kent, fruits were ripening after a summer that had seen several hot and record breaking days. Below: Rose hips remind us that summer was wearing on.

Above: A waxing Moon appeared in a sky still reddish after the setting of the Sun. Darenth, Kent, England. Sept.1, 2019.

The month was warmer and sunnier, but more rain than usual – with downpours in places.

For the UK as a whole, the provisional mean temperature was 13.1°C, which is 0.5°C above the 1981-2010. The situation for England was 14,2°C (0.5°C). Our region, England SE & Central S, was joint warmest for the UK with East Anglia with 15.0°C (0.5°C). It was sunnier and rainier than usual for this time of the year. September 8 saw the coldest temperature for the UK; namely at Aboyne in Aberdeenshire, Scotland: -1.6°C. The early hours experienced frost at -0.5°C at Benson, in Oxfordshire. The warmest day was on September 22: 27.7°C. It was experienced at Weybourne, Norfolk.

Left; Old Man's Beard (*Clematis vitalba*) in a hedgerow at Hartley Bottom, Kent September 4, 2019.

Above: The harvest had taken place in the precious month and the trees are beginning already to loose their summer colours. Hedgerow along Hartley Bottom, Kent, on September 4.

Below: Hawthorn (*Crataegus* sp.) at Darenth, Kent. September 19.

Left: After harvest under clear blue skies. September 13 at Bean, Kent and piles of straw near West Kingsdown on September 15.

The Harvest Full Moon of September 14, 2019.

Below: Dogwood (*Cornus sanguinea*). North Field, New Ash Green, Kent. September 21.

Next page: Sloes (*Prunus spinosa*) at Darenth, Kent on September 19.

Trees begin to indicate a coming Autumn. Wood above Hartley, Kent. September 21.

Hawthorn and ivy at a hedgerow at Green Street Green, Kent. September 19.

Monthly means for SE and central S England. Max. temp.: 19.7°C (0.8°C); min. temp.: 10.3°C (0.2°C). Hours of sunshine: 176.6 (118 %). Rain: 83.3 mm (134%). Anomalies re. 1981-2010 norm in brackets. Date obtained from Met Office on-line monthly reports.

https://www.metoffice.gov.uk/climate/uk/summaries/2019/july/regional-values

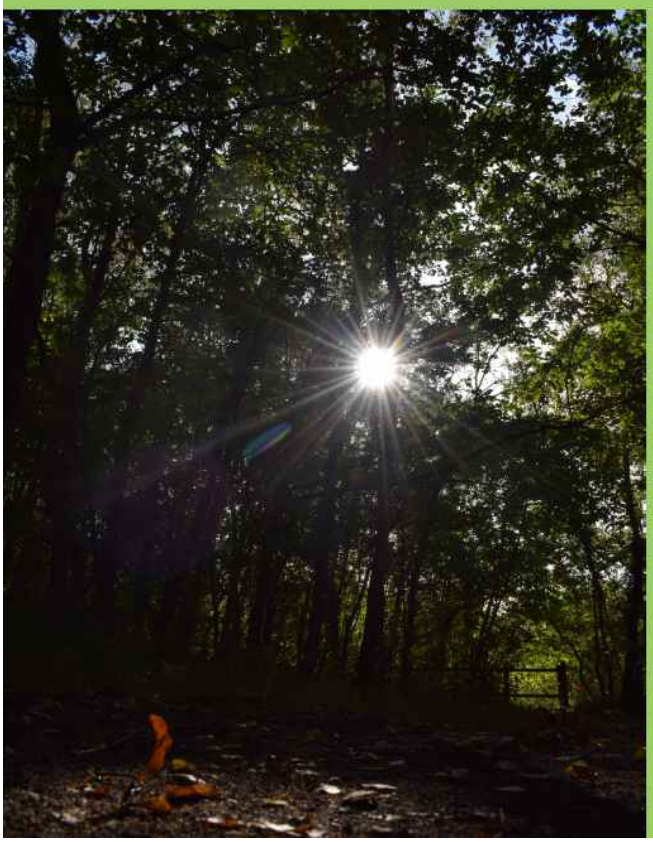
Above: red currant (*Ribes rubrum*) North Field, New Ash Green, Kent. September 21. Fruits of brambles (*Rubus fruticosus agg.*) and elder (*Sambucus nigra*). Hill at Hartley, Kent. September 28.

Above: Old Man's Beard (*Clematis vitalba*) climbing over an oak tree in a hedgerow between fields at Ash, Kent. September 21, 2019.

Below: Trees and hedgerow at Ash, Kent, were continuing to develop their autumn colours. September 21, 2019.

September 24 received intense rainfall in some areas in England. About 27 mm fell at Heathrow, London (*WeatherOnline*), quite unlike the rest of the month. The view above looks towards London, roughly NW, with a rain storm in progress during the afternoon. The view below right close to sunset near the W; this was the day after the Autumn Equinox. Pictures from Darenth, Kent, with London distant. Below left: Afternoon in Beacon Wood, Bean. Sept. 24, 2019.

A set of four pages illustrates the location of the Sun near sunset from mid-August to September 22, the day before the equinox. Over that time, we see the Sun moving from the NW towards the W. On August 18, the Sun was disappearing behind the tall buildings in the distance at Canary Wharf. The highest is One Canary Square at 235 meters. By August 25, the Sun was setting just to the left of the 309.6 m Shard at London Bridge Station. By September 24, the Sun would have been lost behind the trees before sunset.



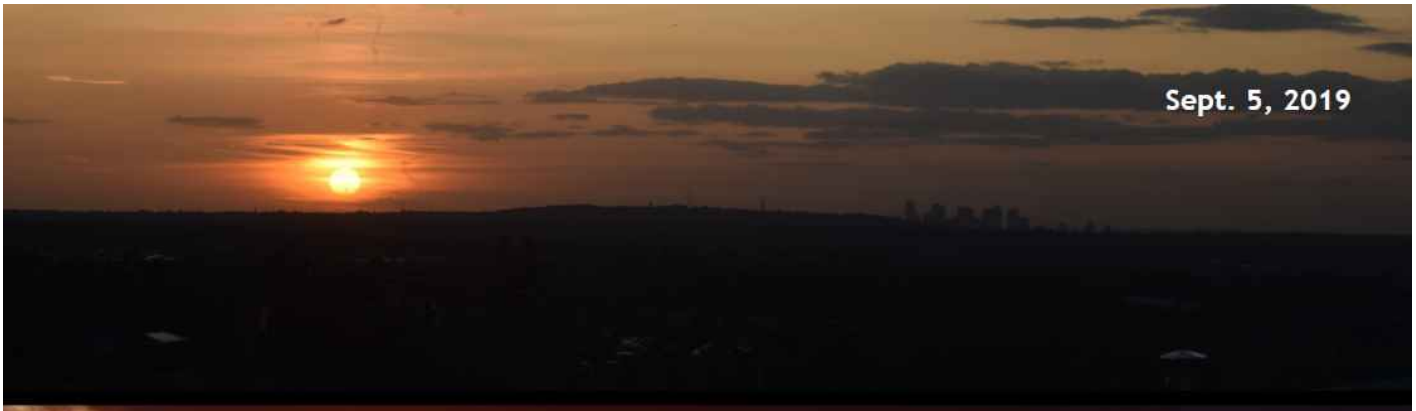

Aug. 18, 2019


Aug. 25, 2019


Aug. 30, 2019


Aug. 31, 2019


Sept. 1, 2019


Sept. 5, 2019


Sept. 6, 2019

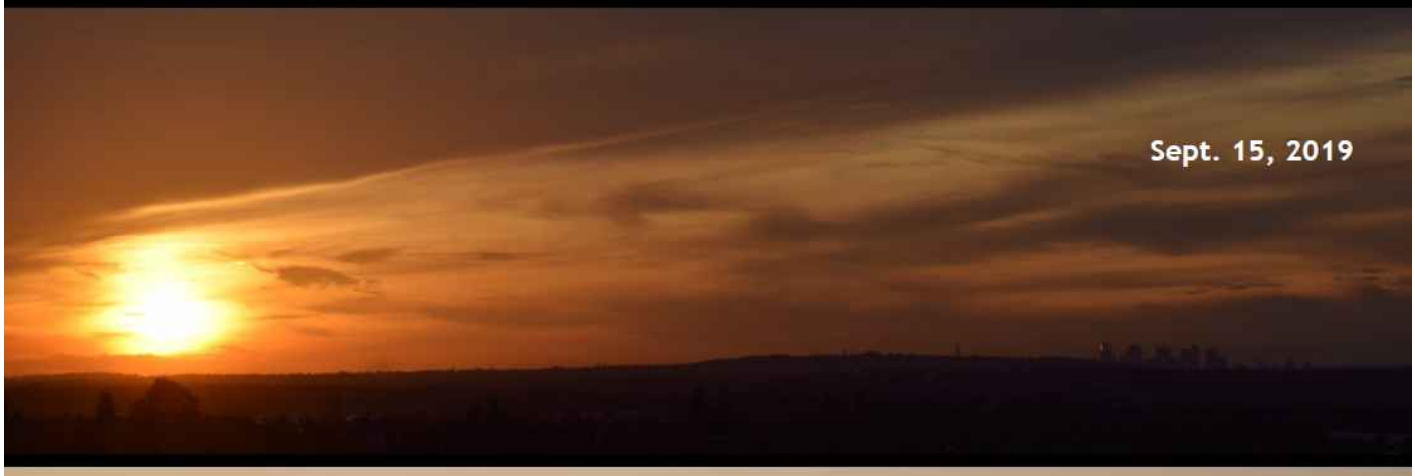

Sept. 7, 2019


Sept. 8, 2019


Sept. 11, 2019

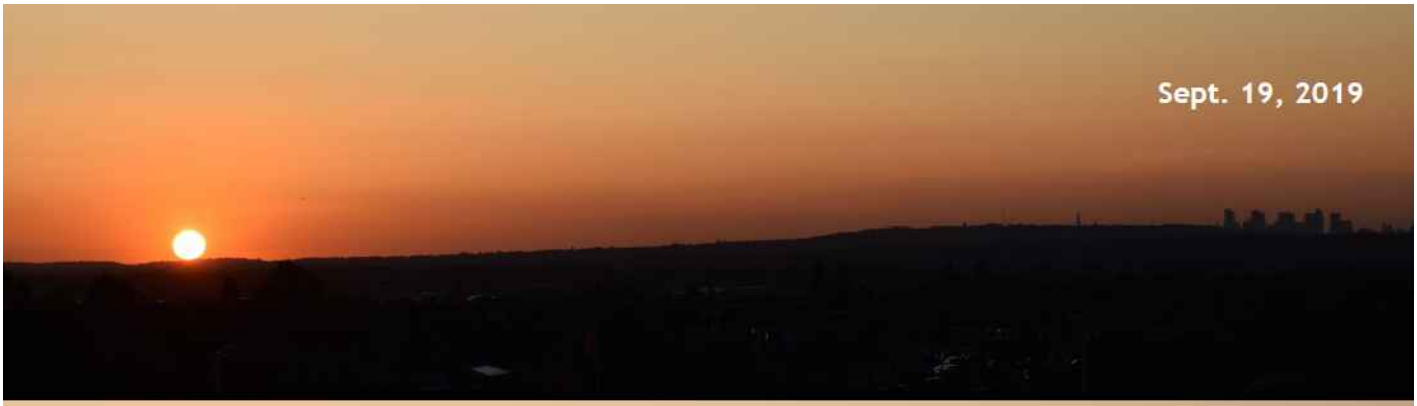

Sept. 13, 2019


Sept. 14, 2019


Sept. 15, 2019


Sept. 17, 2019


Sept. 18, 2019


Sept. 19, 2019


Sept. 20, 2019


Sept. 21, 2019


Sept. 22, 2019

Above: A view of the British Isles taken on September 20, 2019 by the MODIS (or Moderate Resolution Imaging Spectroradiometer) **unit aboard NASA's Terra satellite. The image was published on September 23, the day of the Northern Hemisphere's Autumn Equinox. NASA explained: "It has been said that the British Isles, of all of the** locations in Europe, are the most exposed to the varying weather from the mobile westerly air flow off of the North Atlantic. . . . . On September 20, 2019, the British Isles were enjoying a sunny, warm late summer day between the soakings from North Atlantic systems as the . . . [MODIS] on board NASA's Terra satellite acquired a true-color image the scene. The gray wisps over the North Sea appear more typical of smoke than cloud, but no source for the smoke is readily evident."

Global climate: September 2019 was the joint warmest on record.

The USA's National Oceanic and Atmospheric Administration (USA) stated: "The average global land and ocean surface temperature for September 2019 was 0.95ºC . . . above the 20th century average and tied 2015 as the highest September temperature departure from average since global records began in 1880. Septembers of 2015, 2016, and 2019 were the only Septembers with a global land and ocean surface temperature departure from average of 0.90ºC . . . or higher." The land along was the warmest ever on record and the ocean the second (with 2015 as the warmest).

"The most notable warm temperature departures from average were observed across much of Alaska, western Canada, the southern and southeastern contiguous U.S, the North Pacific Ocean as well as the Bering and Barents seas, central South America, Mongolia, and northern Russia, where temperatures were at least 2.0°C (3.6°F) or higher. Record warm temperatures were observed across parts of the North and Western Pacific Ocean, the Barents Sea, the south-central contiguous U.S., the Atlantic and Indian oceans, the Middle East, Mongolia and northern China, and Africa."

https://www.ncdc.noaa.gov/sotc/global/201909

Above: A hedgerow between fields at Ash, Kent has been cut and lost its leaves after an annual pruning. September 21, 2019.

Prime Meridian.

Prime Meridian is published by the Ecospheres Project, a research and media collaboration. It follows global environmental issues alongside the cycle of the seasons in South East England. It steps back to look at the Earth in its astronomical context and it pursues the search for other habitable worlds.

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