



# Prime Meridian (120) January 20, 2020

## Earth Crisis - Earth Action

January 20, 2020: A cold day with leafless woods beneath a blue sky. Hartley Bottom, Kent, England.



# Climate and beyond - the Earth Crisis.

Martin Heath, Editor.

Climate has become daily news. Those of us who expressed our concerns decades ago, found ourselves prophets crying out in the wilderness. Today, the message is loud and clear.

There are different ways of averaging the global data, but the implication from meteorological organisations around the world is that 2019 was close to the warmest in history. The USA's National Oceanic and Atmospheric Administration (NOAA) estimated that December 2019 was the second warmest December on record (since 1880) and 2019 was the second warmest year on record.

Meanwhile, as the New Year arrived, bushfires in Australia were watched on our TV screens, with people obliged to be evacuated, homes destroyed and iconic wildlife fleeing and perishing from the blaze. According to forest experts, the overall area of fires was not greater than seen in the middle of 1970's, but the *intensities* had not been experienced before.

2019 and the first month of 2020 brought seemingly endless updates about climate - and even to collect them all here would be a lengthy task.

As we have recognised, however, "Climate" has become something of a shorthand for the entire global threat, yet there is a need to embrace the whole picture of harm created by our species.

During 2020, the Earth Crisis will be one of the key foci of our public and academic work.

Below: Australian bushfires observed from the International Space Station .





Above: One reminder that our world's Crisis is bigger than climate alone. Plastic pollution covering Accra beach, Ghana. October 3, 2018. Author: Muntaka Chasant. Creative Commons Attribution-Share Alike 4.0 International license. Wikipedia.

**To tackle the Earth Crisis, we cannot think in one-dimensional terms. Demands at protest events that something needs to be done about climate are essential - but there are huge challenges to be overcome if we are to safeguard human communities as we save the ecosystems upon which we depend for our existence.**

We cannot fail to recognise, or even dismiss, the enormous problems that face us: agricultural, scientific, technical, medical, economic and societal. We look beyond climate into the complexities of Earth Systems research.

**Are we into a new decade or not? Wait until 2021.**

On New Year's Eve and New Year's Day, some of the media were declaring the arrival of a new decade. Many people have hailed 2020 (a very nice rounded number) as the beginning of a calendar decade. To this a pedantic answer is available.

A much used Roman date, derived by Marcus Terentius Varro from (116-27 BC), was 21 April 753 BC, thought to be the foundation date of the city. Christian Rome used instead a calculation in AD 525 by Dionysius Exiguus "Dionysius the Humble" (about AD 470-544), a monk from Scythia Minor, who worked in Rome by AD 500. Needless to say, there remains cause to argue about the exact dates of Jesus of Nazareth. Various other systems have been devised to avoid faith bias in the calendar, and archaeologists and Quaternary studies often refer to BP (Before Present). One thing that we have found ourselves committed to is the jump from 1 BC to AD 1, however we define the calendar, because there is now no room to introduce the (as some might feel) absent Year 0. This means that 2001 was the opening of a new decade, the opening of the 21<sup>st</sup> Century and the opening of the third millennium. The last decade was 2011 and the next will be 2021.





Above: On December 1, 2019, yellow-green leaves that remained on the trees were part smothered by the silvery appendages on the fruits of the climber travellers' joy (*Clematis vitalba*). This is seen commonly in the fields of South East England during the winter colder months. Hartley Bottom, Kent. Left: Frost being scraped from a car on December 2. New Ash Green, Kent.



Seasons in South East England

## December 2019

A warmer, sunnier and wetter month.

The Met Office stated that the UK's mean temperature was 5.1°C (1.3°C compared to the 1981-2010 long-term average), with England 5.6°C (1.3°C). At 6.3°C (1.5°C) our region, England SE & Central S, was joint warmest with England SW & Wales S.





**Monthly means for SE and central S England. Max. temp.: 9.5°C (1.6°C); min. temp.: 3.1°C (1.0°C). Hours of sunshine: 64.9 (127%). Rain: 125.8 mm (150%). Anomalies re. 1981-2010 norm in brackets. Date obtained from Met Office on-line monthly reports.**

**Above: Frosty leaves on Dec.3. Below: Trees losing autumn leaves. Dec. 7. New Ash Green, Kent.**







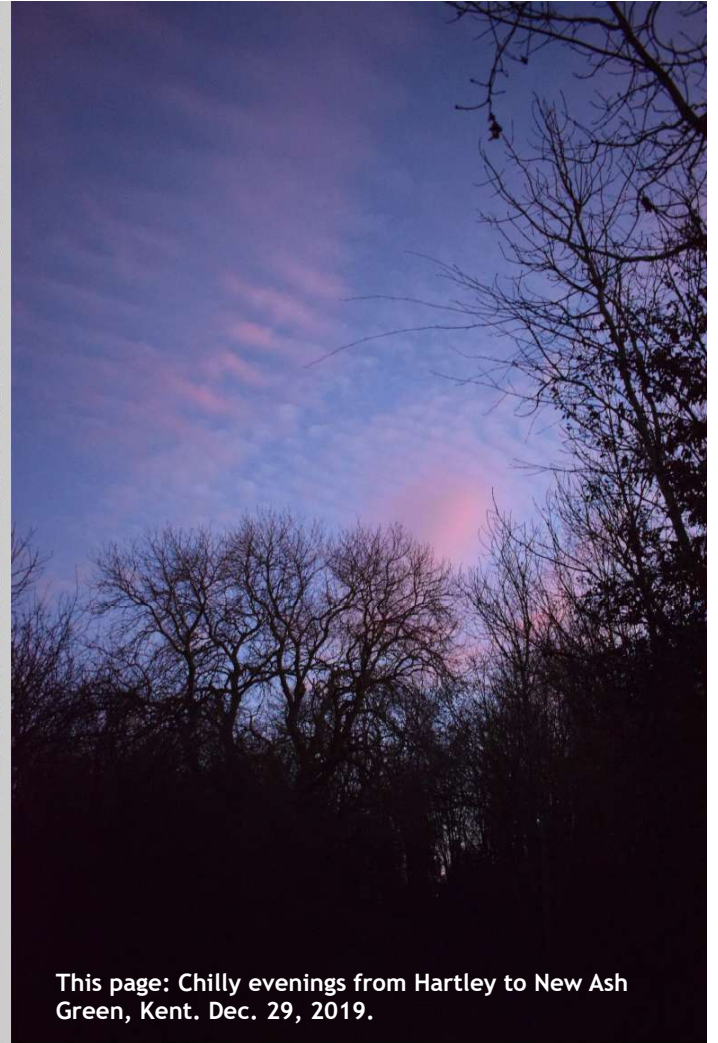
Above left: A waxing half Moon beside Nelson's Column in Trafalgar Square, London. (Dec. 3). Advent preparation, the Chapel of King's College London (Dec. 4).

Centre right: Moon above cold sky and trees. Church year of St Peter & St Paul. Ash, Kent. Dec. 8.

Below left Approaching Full Moon, late on Dec. 11. Full occurred at 05:14:52 on Dec. 12. Below right: Early on the evening of Dec. 11, the Moon created the 22° halo, which is a common optical effect produced by ice crystals in high altitude clouds. New Ash Green, Kent.







This page: Chilly evenings from Hartley to New Ash Green, Kent. Dec. 29, 2019.



None of the coldest and warmest days of the month were found in our region, but in Scotland, at Tulloch Bridge, Inverness-shire on the Dec. 1 ( $-10.3^{\circ}\text{C}$ ) and Achfary, Sutherland, on Dec. 28 ( $18.7^{\circ}\text{C}$ ).

The UK Met Office stated that: "December began with transient high pressure close to the UK, but by the 4<sup>th</sup> low pressure and the regular passage of frontal systems resumed, with some very large daily rainfall totals during the next three weeks. The final week brought rather drier weather to most areas, and became particularly mild at times."

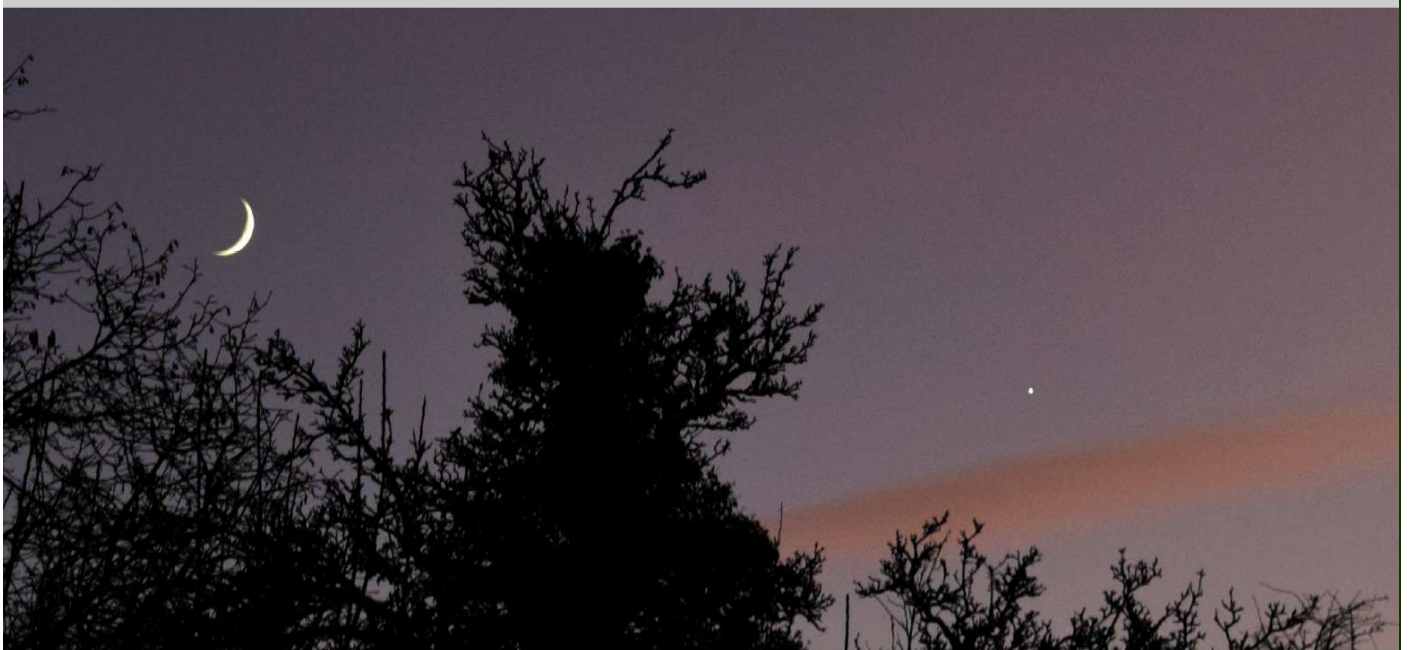
Wettest days at Heathrow were 10 mm (Dec. 12), 11 mm (Dec. 14) and 14 mm (Dec. 20).  
<https://www.weatheronline.co.uk/weather/maps/city>

<https://www.metoffice.gov.uk/research/climate/maps-and-data/regional-values>

<https://www.metoffice.gov.uk/research/climate/maps-and-data/summaries/index>Next page:

The planet Venus had become a brilliant object in the winter sky. Top: Dec. 18. Ash, Kent. Middle: A waxing Moon and Venus above trees bare except for ivy. Dec. 29. Hartley, Kent. Below left: After rain, a puddled road in Hartley Bottom. Kent. Dec. 22, the day of the Winter Solstice. Below right: Cold, cloudless sky after sunset, Dec. 30, Ash, Kent.









Above; Spectacular sunset on Dec. 13 from hills at Hartley, Kent.

### Global climate: December was the second warmest on record.

The USA's National Oceanic and Atmospheric Administration (NOAA) reported that: "The December 2019 global land and ocean surface temperature was  $1.05^{\circ}\text{C}$  . . . above the 20th century average, resulting in the second highest December temperature departure from average in the 140-year record"

<https://www.ncdc.noaa.gov/sotc/global/201912>

"The year 2019 was the second warmest year in the 140-year record, with a global land and ocean surface temperature departure from average of  $+0.95^{\circ}\text{C}$  . . . This value is only  $0.04^{\circ}\text{C}$  . . . less than the record high value of  $+0.99^{\circ}\text{C}$  . . . set in 2016 and  $0.02^{\circ}\text{C}$ . . . higher than the now third highest value set in 2015 ( $+0.93^{\circ}\text{C}$  . . .).

<https://www.ncdc.noaa.gov/sotc/global/201913>

Above: On the evening of Christmas Day, 2019, the planet Venus gleamed across the fields at Ash, Kent.





# 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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Below: A sunny day in the woods at Ridley, Kent on Christmas Day, 2019.

