October 2024 Monthly Weather Report

This document provides a summary of the UK's weather and climate statistics for October 2024.

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UK overview

October saw a mix of settled conditions due to high-pressure systems as well as wet and windy weather from a succession of low-pressure systems, including the first named storm of the 2024/25 season. The month started with wet weather across the Midlands and East Anglia, followed by a brief interlude of settled weather as high-pressure dominated. A major Atlantic low-pressure system arrived on the 6th and brought rain, especially in southern England. A return to clear and settled weather on the 10th and 11th provided good conditions for viewing the Aurora after another solar geomagnetic storm, before slow-moving weather fronts moved in and brought widespread rain to England and Wales. On the 20th, the first named storm of the season, Storm Ashley, arrived and brought heavy rain and strong winds to Northern Ireland, Scotland, and northern parts of England and Wales. Further frontal systems brought heavy rain to Scotland and Cumbria on the 27th, before high pressure returned to close out the month.

Overall, October saw above average temperatures, with the UK 0.7°C above the long-term average. There was little regional variation, with only a few areas of western Scotland and northern Wales experiencing temperatures closer to average. Despite a brief spell of below-average temperatures early in the month, overall October was a month of mild temperatures for most. October was drier than average, with the UK recording 103.5mm of rainfall, 84% of the long-term average. England, and in particular southern England, were both wetter than average, recording 101% and 103% of the long-term average rainfall, respectively. Sunshine duration was around average for the UK in October, with 89.4 hours recorded (97% of the long-term average). Wales, Northern Ireland and northern England were slightly sunnier than average, while southern England and Scotland were both duller than average.

Reference climatology used for calculating anomalies is the period 1991-2020 unless otherwise stated.

Weather impacts

- **Heavy showers and some thunderstorms on the 7th and 8th led to surface water flooding in southern and northeastern England**
- **The first named storm of the 2024/25 season, Storm Ashley, brought heavy rain and winds to Northern Ireland, Scotland and northern England on the 20th and 21st**

October saw slightly drier conditions than the very wet end to September, but was still changeable in nature, with a mix of anticyclonic and cyclonic regimes.

The month started with wet weather across the east Midlands and East Anglia, but with few impacts. An anticyclonic interlude followed, before a major Atlantic low centre brought rain across the UK on the 6th, followed by heavy showers and some thunderstorms in the south on the 7th. Truro was reported to have had several major roads flood due to surface water excess. Widespread heavy rain on the 8th affected southern England, the Pennines and northeast England, with the Tyne and Wear Metro system reporting disruptions due to flooding. By the morning of the 9th, the A1 was reportedly closed just north of Darlington due to the flooding, as well as the rail line between Darlington and Bishop Auckland.

More settled and clear weather on the 10th and 11th provided good conditions for viewing the Aurora after a solar geomagnetic storm affected Earth. However, unsettled conditions returned on the 15th and 16th as slow-moving weather fronts from the Atlantic moved in, bringing widespread rain to southwest England, the west Midlands, Wales, and northwest England. Impacts from these two days of rain were widespread, stretching from Cheshire and Merseyside down to Devon and Cornwall, with Shropshire and Herefordshire amongst the worst affected counties. Among the incidents reported were the closure of rail lines around Crewe and Shrewsbury, a number of vehicles trapped in floodwater across Herefordshire, the closure of the A49 in Shropshire, and homes and schools in Wales and Herefordshire affected by flooding.

Also on the 16th, the first signs of a potential major low development were confirmed, and by the 18th the system was named Storm Ashley by Met Eireann, the first named storm of the 2024/25 season. In Scotland, various pre-emptive measures were taken on the transport networks with some early ferry service cancellations to Arran and the Western Isles and speed restrictions announced for several rail lines. The Great South Run, scheduled to take place in Portsmouth on the 20th, was cancelled due to fears that the less strong winds forecast for the south coast could threaten the safety of the course.

On the 20th, Storm Ashley delivered a typical range of low to medium impacts across the northwestern half of the UK with maximum gusts generally in the range 60-70mph, though with the most exposed sites in northwest Wales and southeast Northern Ireland recording gusts in excess of 80mph. Across Northern Ireland around 5000 customers were reported to be without power on the afternoon of the 20th. Fallen trees blocked several roads, flights were cancelled, and passengers were reportedly unable to disembark for a time at Belfast City Airport as winds peaked. In Scotland, high waves crashing over the sea defences reportedly curtailed rail services at both Largs/Ardrossan and at Helensburgh. Meanwhile inland, fallen trees and flooding caused numerous issues on the rails and roads with rail services impacted around Glasgow and near Aberdeen. Roads near Aberfeldy and Ballindalloch, Grampian were closed due to fallen trees. In Cumbria, strong winds resulted in almost 1400 customers reportedly without power for a relatively short period, and the A66 trans-Pennine route was reportedly closed for a time due to an overturned HGV.

On the 27th, Atlantic weather fronts brought some heavy rain to southwest Scotland, Cumbria and northwest Wales. There were a few very localised impacts in southwest Cumbria, especially around the Ulverston area. As the month closed out, pressure was building across the UK at the start of what looked like an extended anticyclonic spell that would last well into the first half of November.

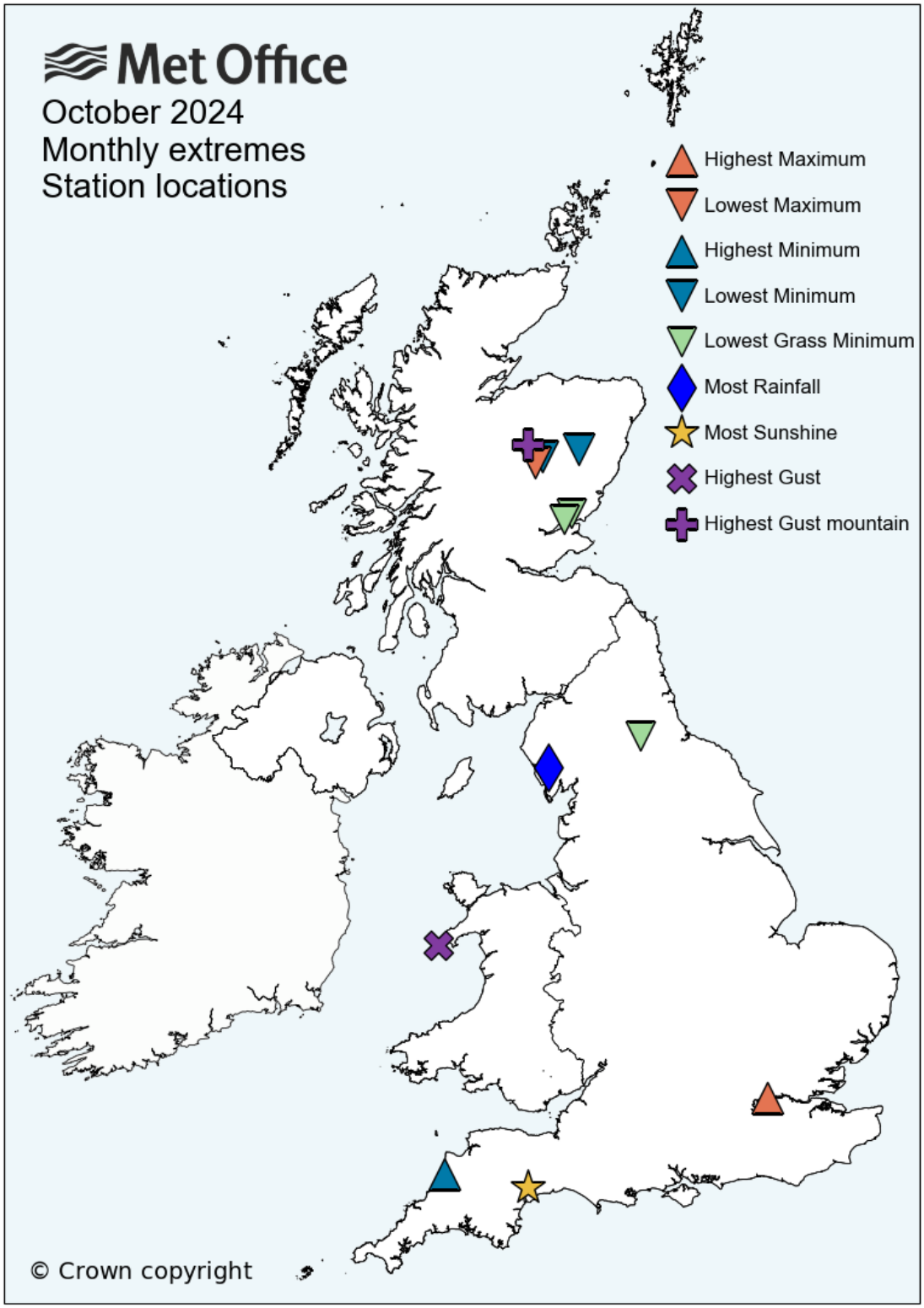
Monthly extremes

The table below lists UK monthly weather extremes recorded at individual weather stations during October 2024 from data available on 03/11/2024. The map shows the location of these stations.

Highest Maximum	**22.5°C** on **16th** at London, St James's Park (Greater London, 5mAMSL)
Lowest Maximum	**5.6°C** on **13th** at Braemar No 2 (Aberdeenshire, 327mAMSL)
Highest Minimum	**15.8°C** on **16th** at Bude (Cornwall, 15mAMSL)
Lowest Minimum	**-4.1°C** on **3rd** at Braemar No 2 (Aberdeenshire, 327mAMSL) also on **14th** at Aboyne No 2 (Aberdeenshire, 140mAMSL)
Lowest Grass Minimum	**-7.5°C** on **14th** at Copley (Durham, 253mAMSL) and Tealing (Angus, 117mAMSL) also on **15th** at Tealing (Angus, 117mAMSL)
Most Rainfall	**74.2mm** on **27th** at Ulpha, Duddon W Wks (Cumbria, 77mAMSL)
Most Sunshine	**10.6hr** on **3rd** at Exeter Airport No 2 (Devon, 27mAMSL)
Highest Gust	**71Kt 82mph** on **20th** at Aberdaron (Gwynedd, 86mAMSL)
Highest Gust (mountain*)	**105Kt 121mph** on **20th** at Cairngorm Summit (Inverness-shire, 1237mAMSL)
Greatest Snow Depth at 0900 UTC	No non-zero values.

mAMSL refers to station elevation in metres above mean sea level.

*Mountain stations are above 500mAMSL.


Met Office
October 2024
Monthly extremes
Station locations
Highest Maximum
Lowest Maximum
Highest Minimum
Lowest Minimum
Lowest Grass Minimum
Most Rainfall
Most Sunshine
Highest Gust
Highest Gust mountain
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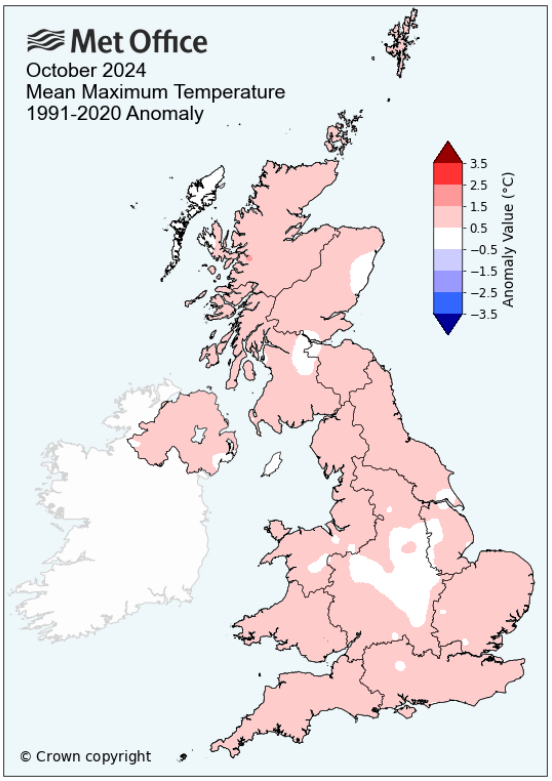
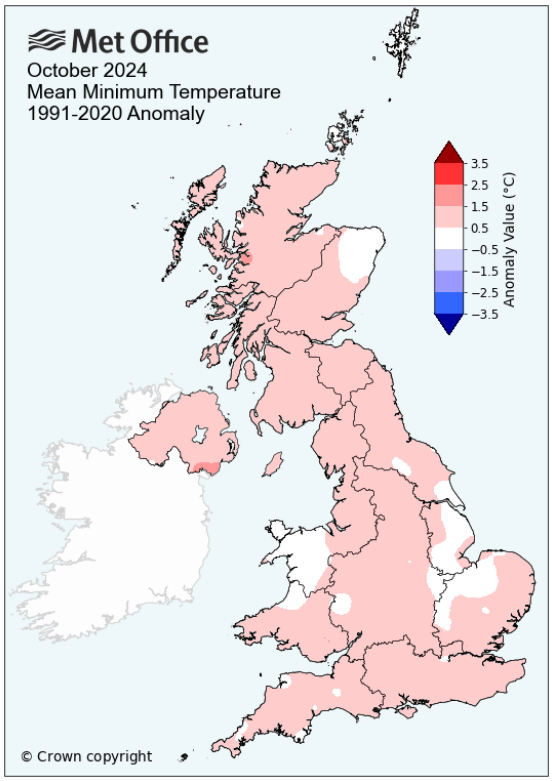
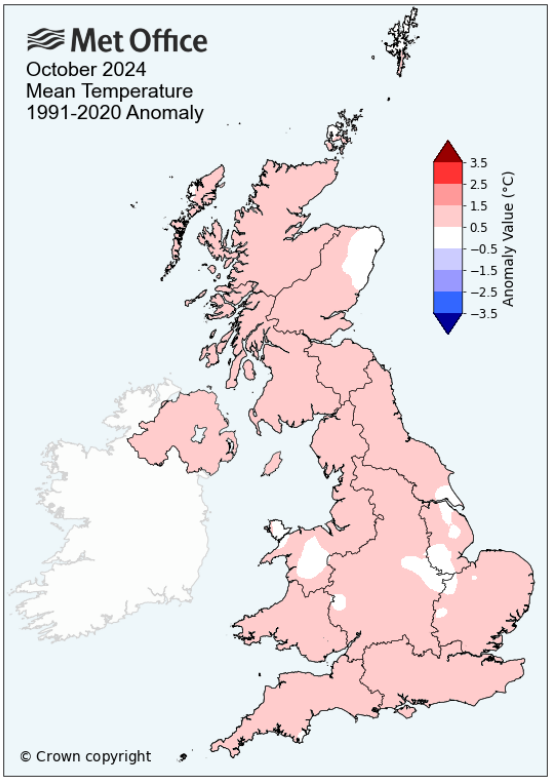
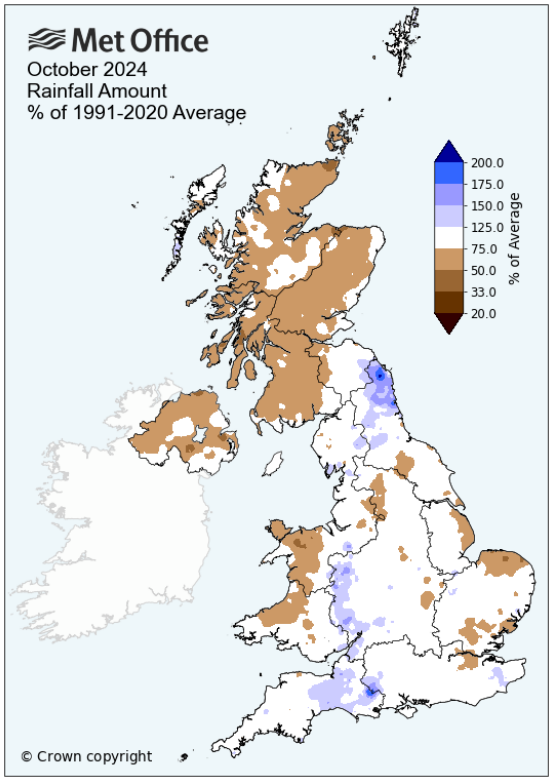
Monthly maps

These maps show monthly average daily maximum, monthly average daily minimum and monthly mean temperature and monthly rainfall for October 2024 as anomalies relative to the October 1991-2020 long term average.

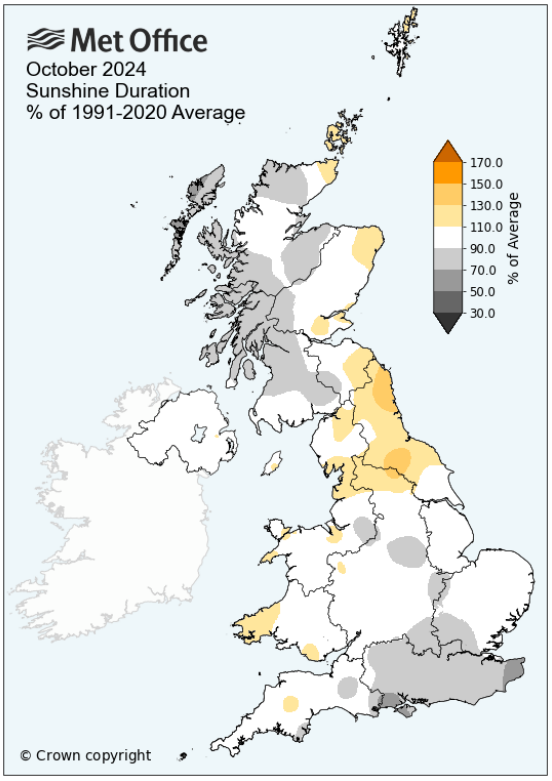


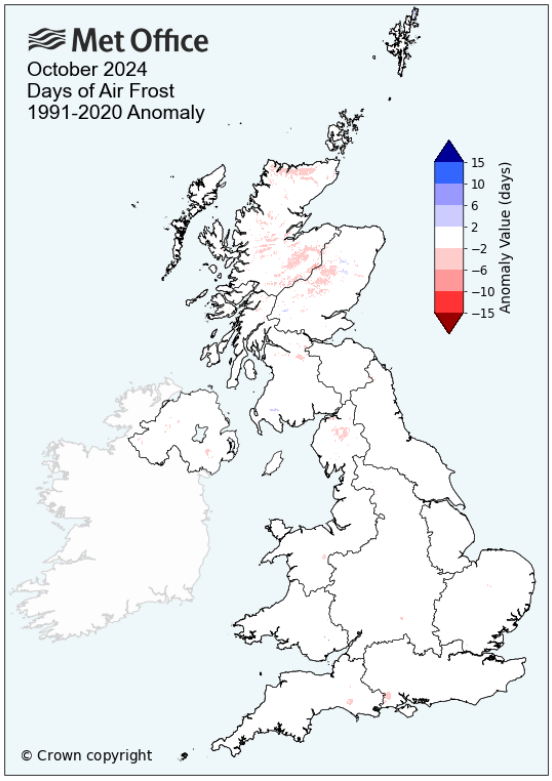


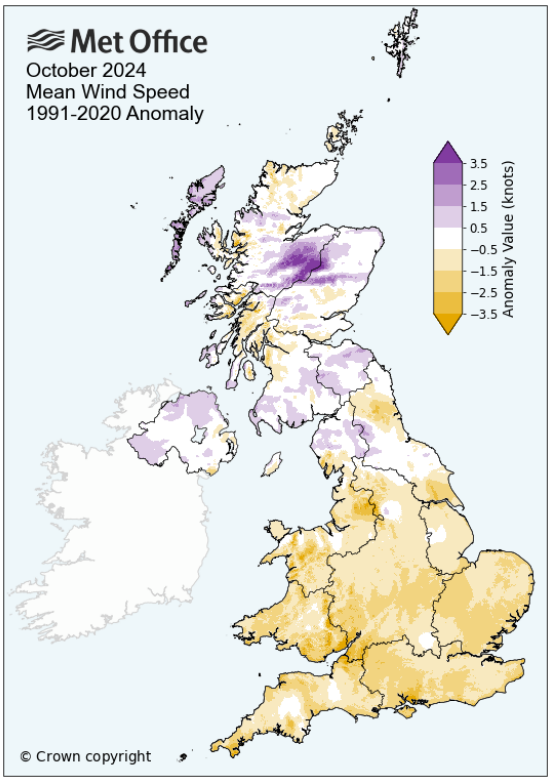


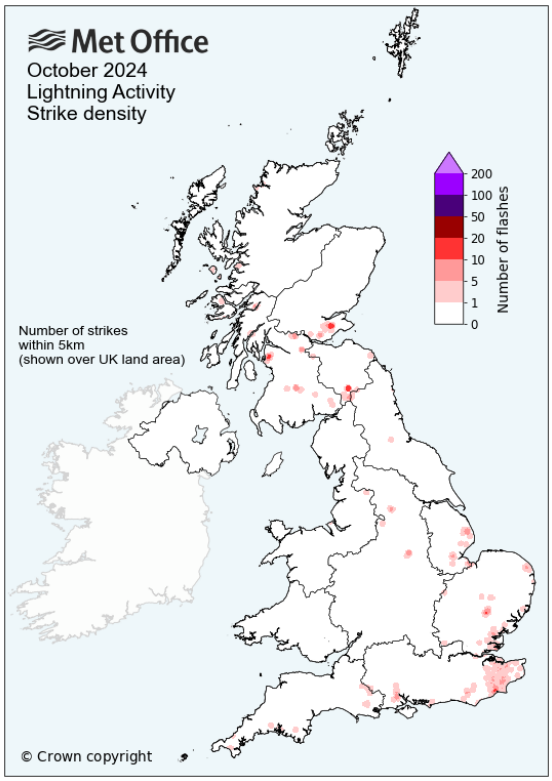


These maps show monthly sunshine, monthly air frost and monthly windspeed for October 2024 as anomalies relative to the October 1991-2020 long term average, plus a map showing lightning activity as the number of strikes within a 5km radius of any land location.









Monthly climate statistics - actuals and anomalies

These tables show the UK and national climate statistics for October 2024 for max, min and mean temperature, rainfall, sunshine and windspeed as actual values and anomalies relative to the October 1991-2020 long term average. The position of the value within the full series (in both ascending and descending order) is shown in the two 'Rank' columns. Central England Temperature (CET) and England & Wales Precipitation (EWP) are also included.

Mean maximum temperature

Region	Maxtemp (°C)	1991-2020 Anomaly (°C)	Rank - warmest	Rank - coldest	Series length (yrs)
UK	13.8	0.7	25	117	141
England	14.8	0.7	23	119	141
Wales	14.0	0.7	22	120	141
Scotland	12.0	0.7	26	116	141
Northern Ireland	13.6	0.7	24	118	141
Central England	14.8	0.7	27	121	147

Mean minimum temperature

Region	Mintemp (°C)	1991-2020 Anomaly (°C)	Rank - warmest	Rank - coldest	Series length (yrs)
UK	7.2	0.8	23	119	141
England	7.8	0.7	19	123	141
Wales	7.5	0.5	26	116	141
Scotland	6.0	0.9	22	120	141
Northern Ireland	7.4	1.1	24	118	141
Central England	8.1	0.7	28	120	147

Mean temperature

Region	Meantemp (°C)	1991-2020 Anomaly (°C)	Rank - warmest	Rank - coldest	Series length (yrs)
UK	10.4	0.7	23	119	141
England	11.3	0.7	23	119	141
Wales	10.7	0.6	27	115	141
Scotland	8.9	0.8	22	120	141
Northern Ireland	10.5	0.9	23	119	141
Central England	11.5	0.7	36	331	366

Rainfall

Region	Rainfall (mm)	% of 1991-2020 Average	Rank - wettest	Rank - driest	Series length (yrs)
UK	103.5	84	113	77	189
England	91.3	101	77	113	189
Wales	126.3	80	123	67	189
Scotland	121.5	72	132	58	189
Northern Ireland	81.2	71	131	59	189
EWP (England and Wales)	102.5	100	111	149	259

Sunshine

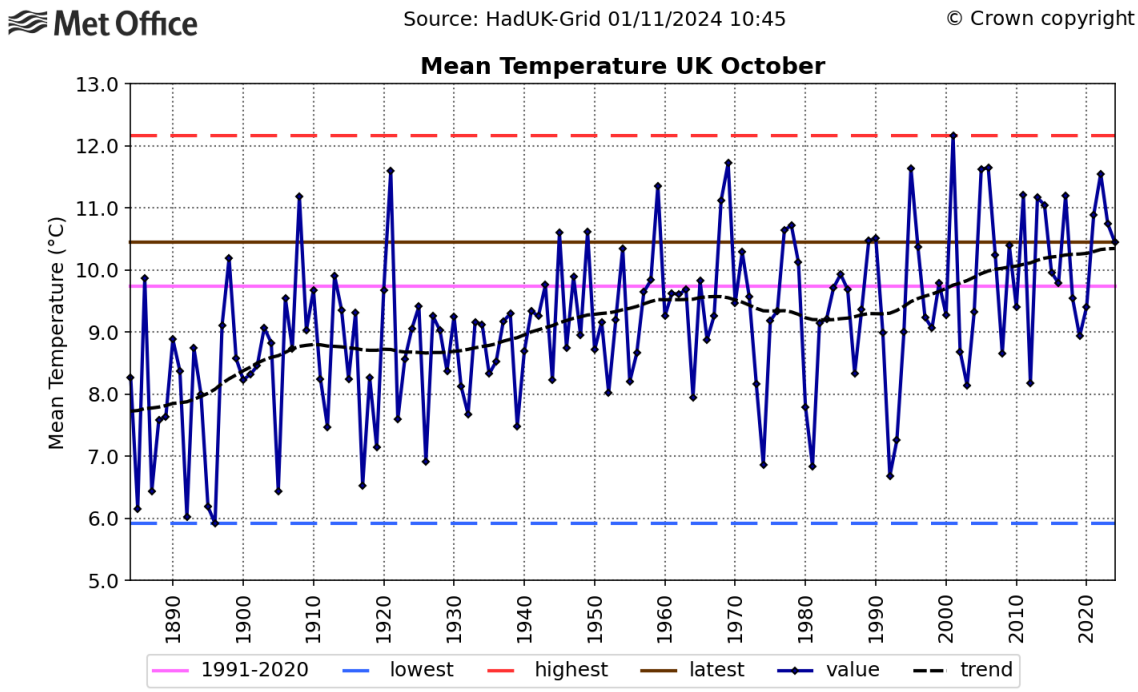
Region	Sunshine (hours)	% of 1991-2020 Average	Rank - sunniest	Rank - dullest	Series length (yrs)
UK	89.4	97	56	60	115
England	99.8	97	52	64	115
Wales	96.8	106	39	77	115
Scotland	70.1	94	63	53	115
Northern Ireland	87.4	102	48	68	115

Windspeed

Region	Windspeed (knots)	1991-2020 Anomaly (knots)	Rank - windiest	Rank - calmest	Series length (yrs)
UK	8.6	-0.7	43	14	56
England	7.0	-1.2	52	5	56
Wales	8.6	-1.6	51	6	56
Scotland	11.1	0.3	28	29	56
Northern Ireland	8.9	0.4	27	30	56

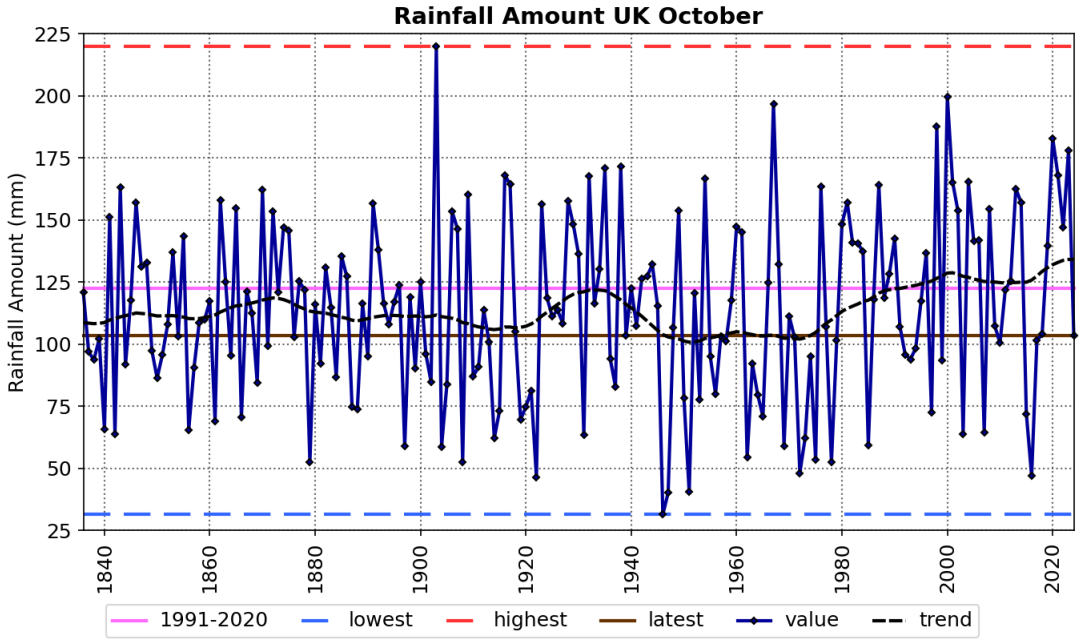
Monthly time-series

These charts show time-series for the UK for October for monthly mean temperature (from 1884), monthly rainfall (from 1836) and monthly sunshine (from 1919). The brown line shows the latest (2024) value. The hatched black line is a smoothing filter which shows the long-term trend. The tables below show statistics for the latest year, latest 10 years 2015-2024, the most recent 30-year climate reference period 1991-2020 and the 30-year baseline climate reference period 1961-1990.



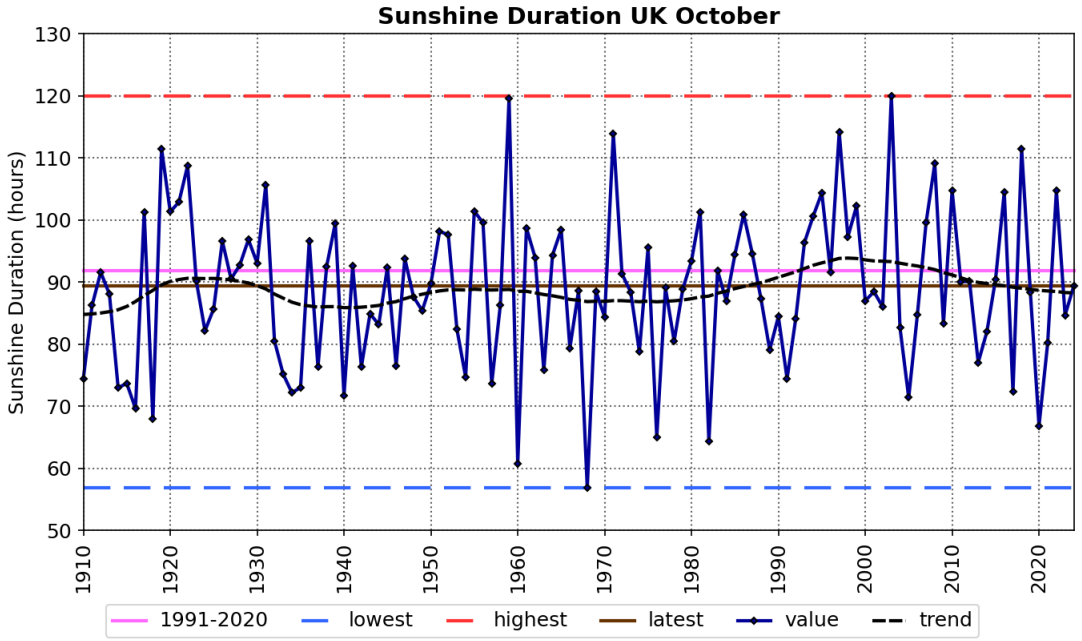
Period	1961-1990	1991-2020	2015-2024	2024
Meantemp (°C)	9.4	9.7	10.2	10.4

Met Office Source: HadUK-Grid 01/11/2024 10:45 © Crown copyright



Period	1961-1990	1991-2020	2015-2024	2024
Rainfall (mm)	110.2	122.5	124.3	103.5

Met Office Source: HadUK-Grid 01/11/2024 10:45 © Crown copyright

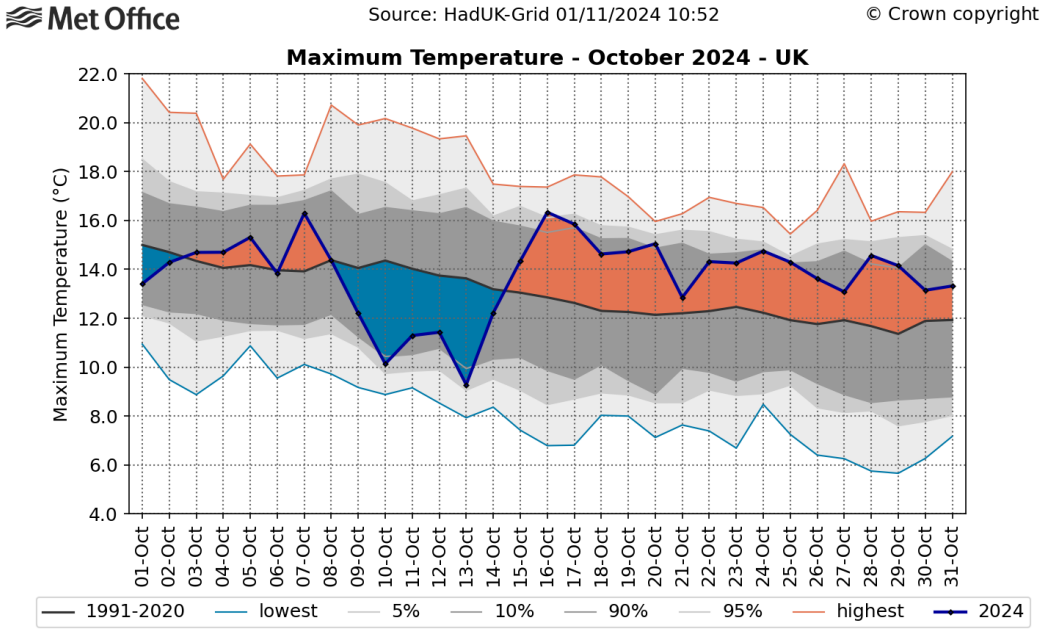


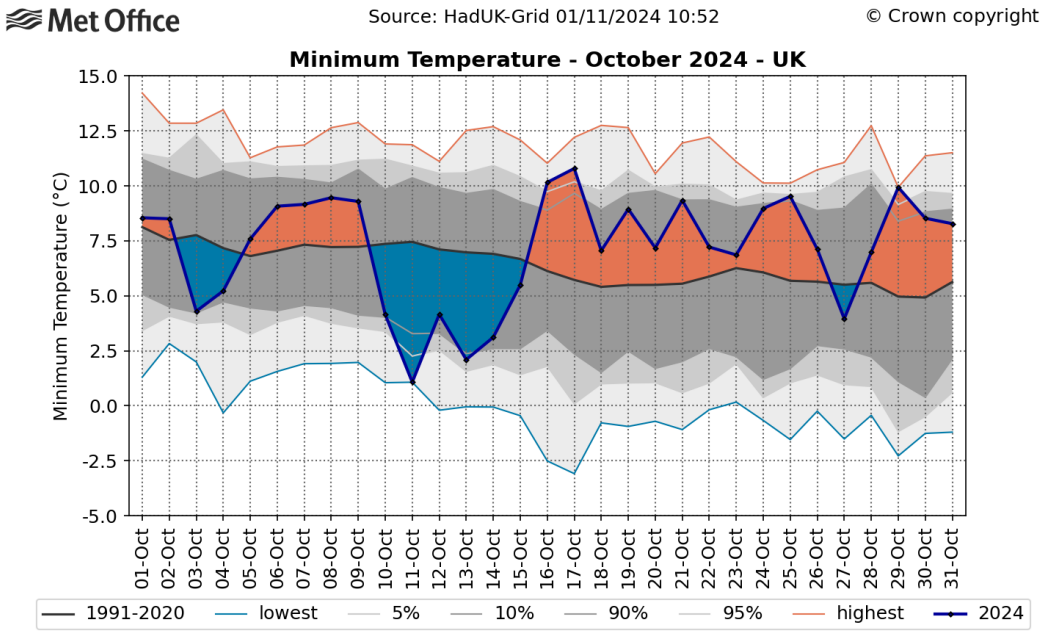
Period	1961-1990	1991-2020	2015-2024	2024
Sunshine (hours)	87.6	91.8	89.3	89.4

Daily time-series

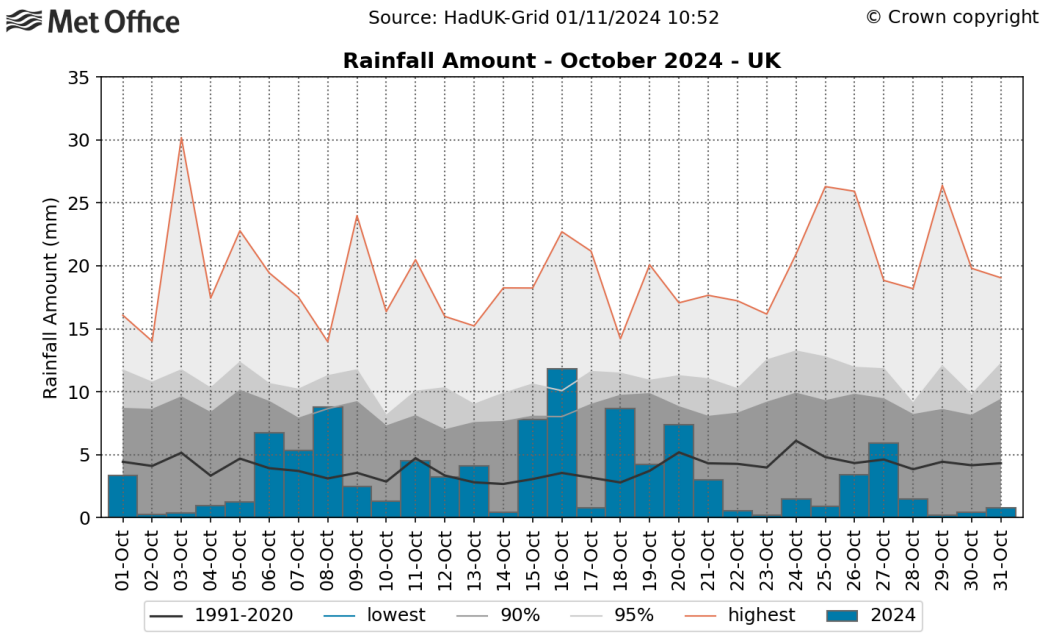
These charts show time-series of UK area-average daily maximum and daily minimum temperature and daily rainfall for each day of October 2024. The areas shaded in grey show the highest and lowest values in the daily temperature series (from 1960) and daily rainfall series (from 1891) together with percentiles and the 1991-2020 long term averages for each day. The rainfall accumulation chart shows the daily rainfall series as an accumulation through the month.

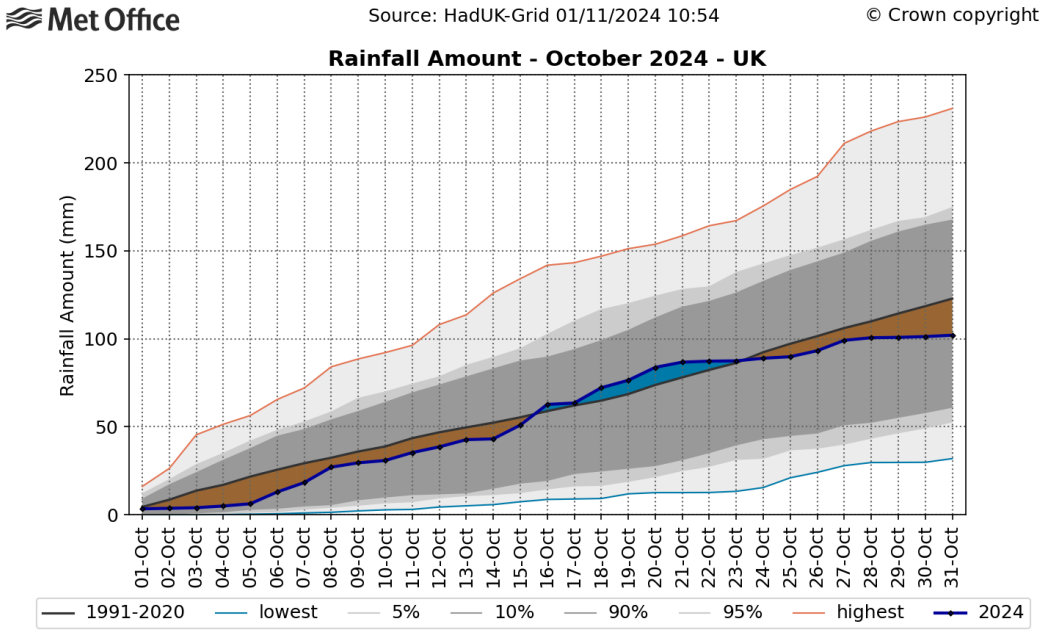
Daily maximum and daily minimum temperature





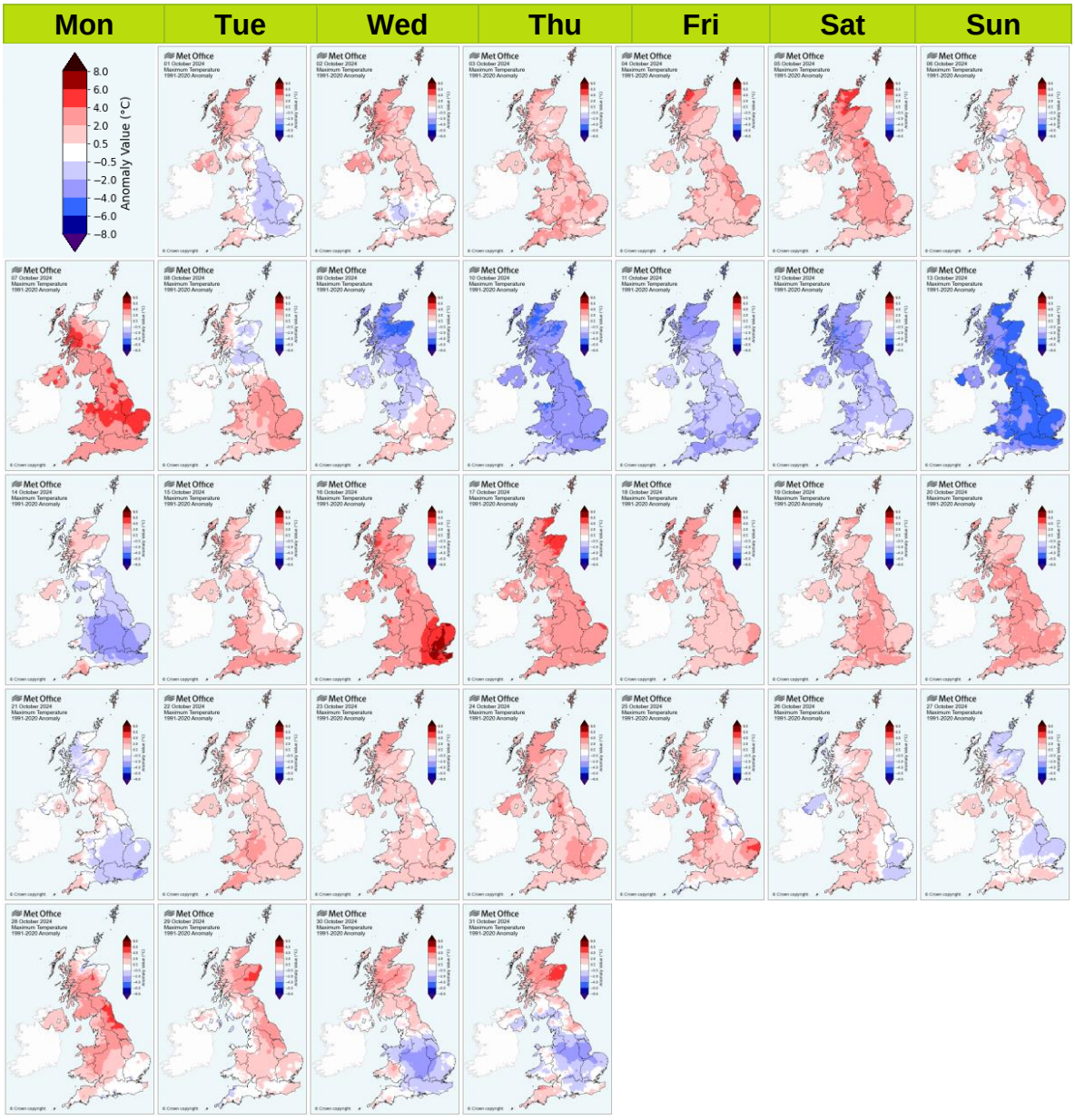
Daily rainfall and rainfall accumulation





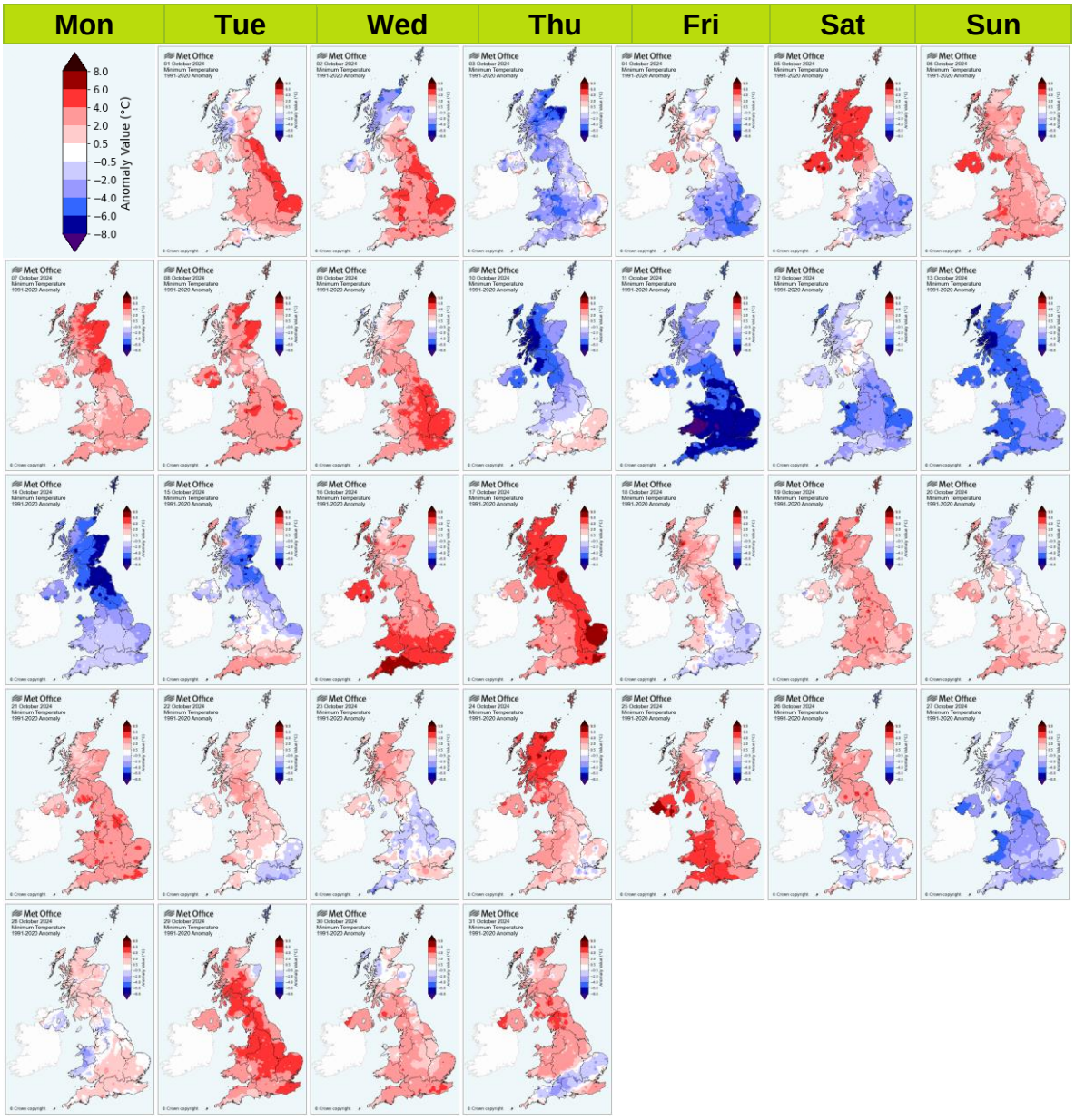
Daily maximum temperature maps - calendar view

These maps show daily maximum temperatures for each day of October 2024 as anomalies relative to the October 1991-2020 long term average. The daily maximum temperature is the maximum from 0900UTC on the day in question to 0900UTC the following day. Normally, the maximum occurs in the early afternoon.



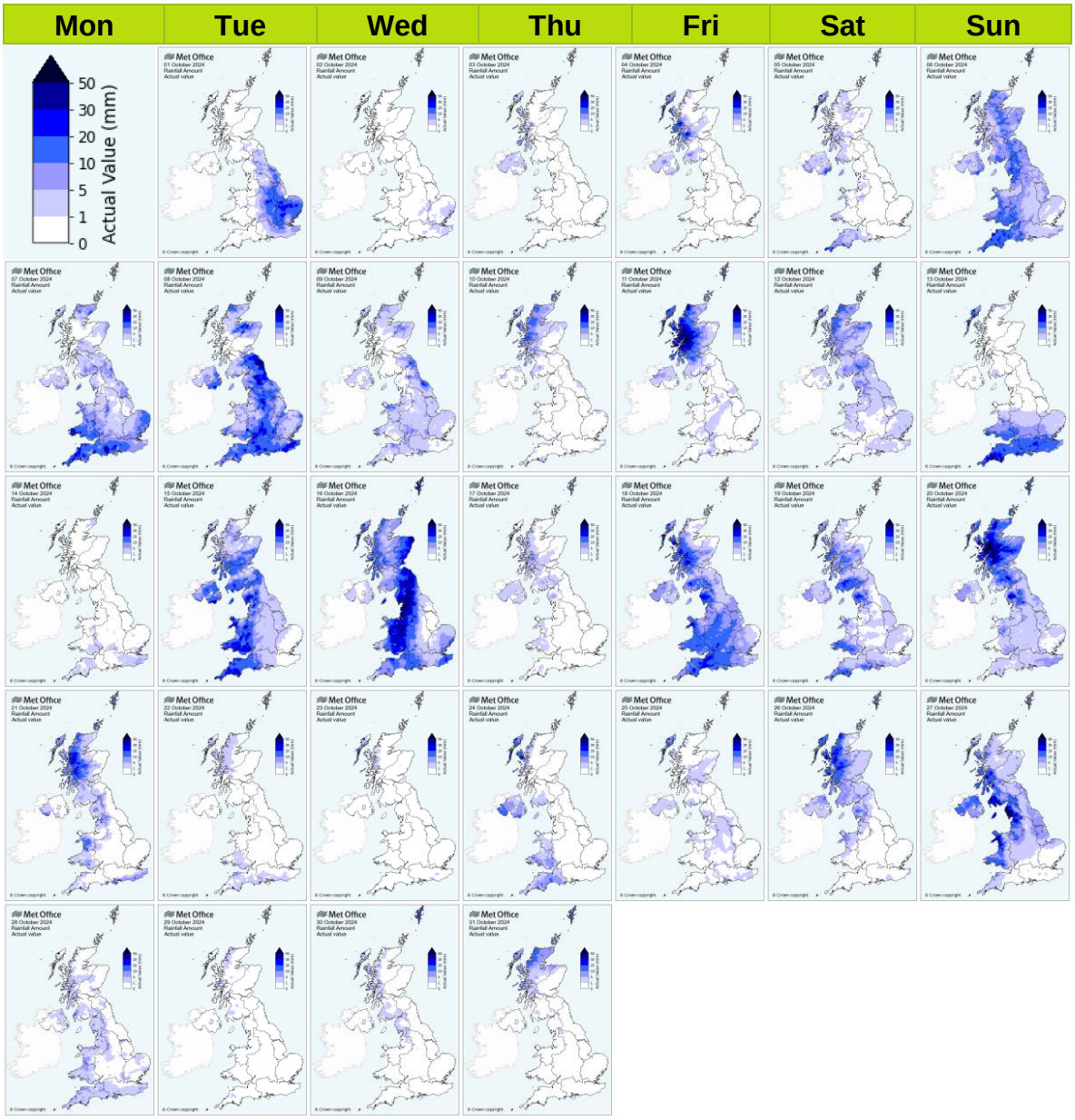
Daily minimum temperature maps - calendar view

These maps show daily minimum temperatures for each day of October 2024 as anomalies relative to the October 1991-2020 long term average. The daily minimum temperature is the minimum from 0900UTC the previous day to 0900UTC on the day in question. Normally, the minimum occurs in the early morning.



Daily rainfall maps - calendar view

These maps show daily rainfall for each day of October 2024 as daily totals. The daily rainfall is the total from 0900UTC on the day in question to 0900UTC the following day.

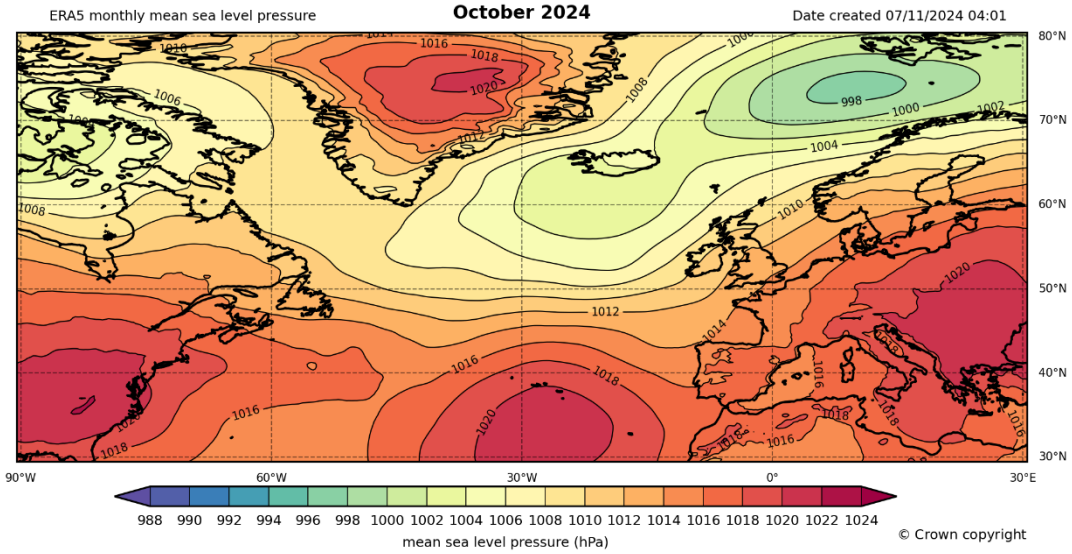


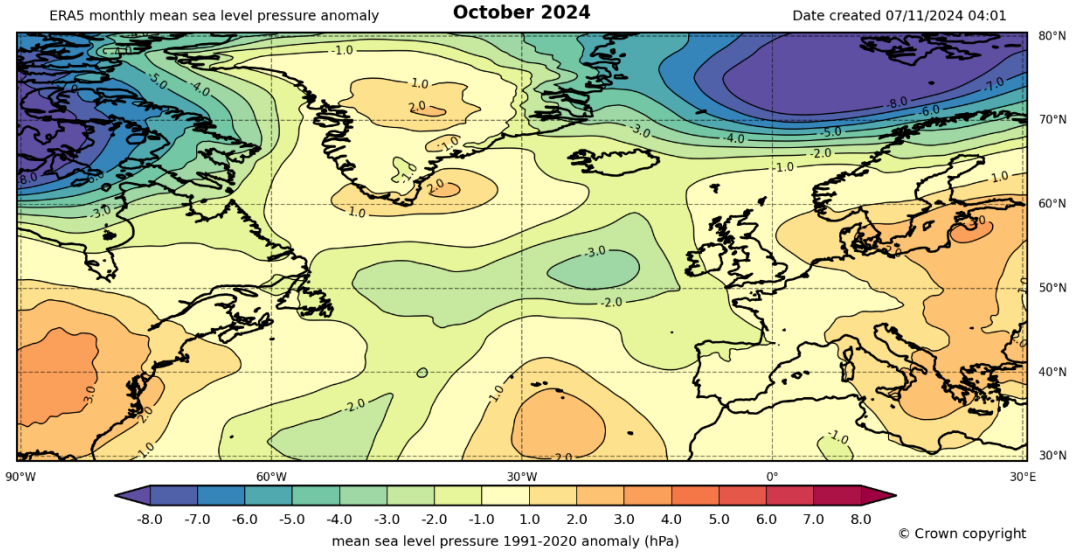
Monthly atmospheric circulation

Mean sea level pressure

These charts show the monthly mean sea level pressure for October 2024 for the UK and north Atlantic, based on the ERA5 reanalysis (Hersbach et al, 2019), both as actual values and as an anomaly relative to the October long term average. These charts provide an indication of the weather characteristics of the month overall i.e. whether the weather type has been generally settled (high pressure) or unsettled (low pressure) during the month.

High pressure dominated over the Azores and eastern Europe in October, with the UK experiencing high pressure in the south and a slight gradient northwards. Consequently, mean surface pressure was around average across the UK.

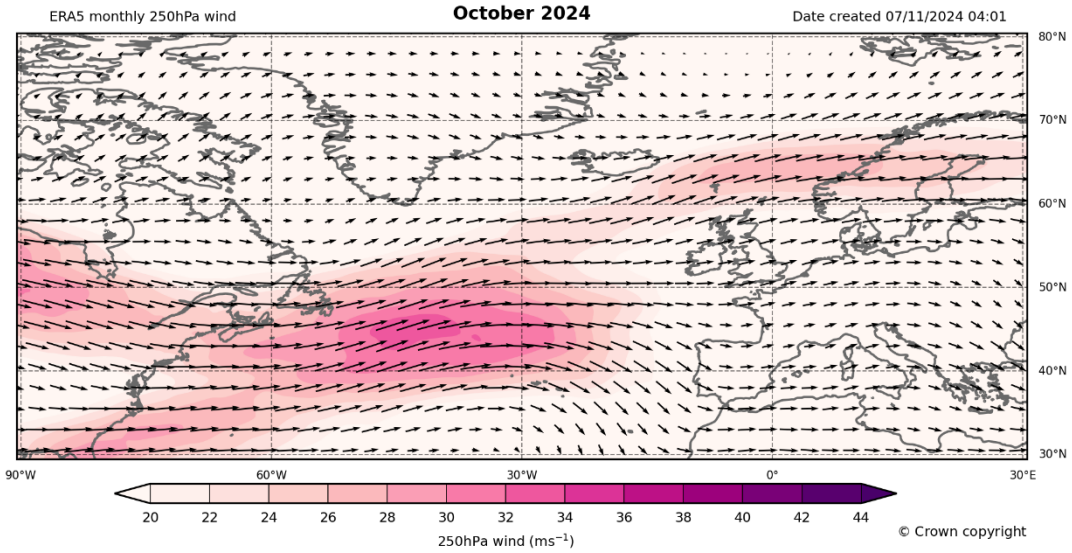


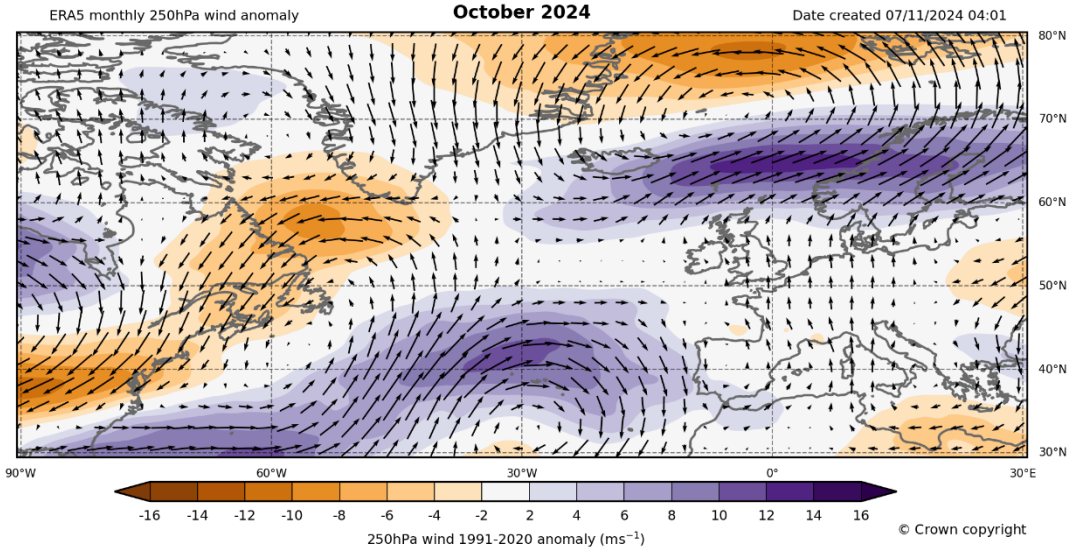


250hPa wind speed and direction

These charts show the monthly 250hPa wind speed and direction for October 2024 for the UK and north Atlantic, based on the ERA5 reanalysis (Hersbach et al, 2019), both as actual values and as an anomaly relative to the October long term average. This provides an indication of the mean strength and position of the jet stream compared to normal. The wind anomaly map shows shaded (scalar) wind speed anomalies with arrows as (vector) wind anomalies.

The jetstream in October was strongest slightly to the north of the UK. Flow over the UK was around normal.





Weather diary

- **First named storm of the season, otherwise dull, mild, but relatively dry**

  High pressure was well established over the country from the 1st to the 6th, giving all regions some belated dry, sunny and relatively mild weather, with temperatures widely hitting the mid to high teens Celcius, and with clear skies over Scotland, allowing nighttime temperatures to fall well below zero in places. Wales and Northern Ireland experienced their mildest conditions on the 6th and 7th, with maximums hitting between 18 and 19°C.

  From the 7th to the 12th, as the high moved away east into Europe, a series of depressions off the Atlantic influenced conditions over the UK. Initially, with winds from the south, temperatures everywhere but particularly in England reached nearly 20°C, but as the depressions moved to the east, winds swung round to the north, cooling things down significantly, with maximums generally limited to the low teens, and barely reaching double figures over the north.

  The UK entered a changeable period from the 13th to the 19th and with winds mainly from the south once again bringing very mild air up from the near continent, we saw the warmest period of the month. All regions recorded temperatures into the high teens, and southeast England seeing maximums reach as high as 22.5°C in London.

  Things spiced up a touch with the arrival of Storm Ashley on the 20th. The main feature of Ashley was the wind with gusts hitting over 80mph across the whole of the UK. There was also some significant rainfall for western parts of Scotland with totals touching nearly 60mm in places.

  The weather for the rest of the month was characterized by changeable conditions with a series of Atlantic low pressure systems mixed with transient ridges of high pressure, but it was always mild, breezy at times and, with calm cool nights, fog was very much in evidence especially across the Midlands and southeastern England. A particularly active set of fronts crossed the UK on the 27th, producing some significant rainfall particularly over the northwest of England, with totals hitting 70mm in parts of Cumbria. The 30th and 31st saw a large area of high pressure become established across the country, resulting in dull, overcast and drizzly weather.

Notes

The Met Office National Meteorological Library and Archive holds a near-continuous record of monthly weather reports from 1884, and this report forms a continuation of that series. The purpose of each report is to provide an overview of the weather conditions across the UK for that month. The emphasis is mainly based on observations from the surface network of weather stations. Climate series based on from data from these stations are used to provide long term context.

This summary was produced on 07/11/2024 09:05. The statistics are a provisional assessment of the observational data available at the time of production. Ongoing data receipt and quality assurance processes may result in subsequent updates to the statistics presented.

If you have any questions or feedback about this product, spot any data errors or omissions, or wish to obtain further data, please contact the Met Office.

For historical monthly weather reports please visit the Library and Archive.

- The land-surface observations presented in this report are from the Met Office official weather station network which includes both automatic weather stations and manual climate stations operated by volunteer observers. Rainfall data are from the official registered rain-gauge network which includes rain-gauges operated by a number of key partners including the Environment Agency, Scottish Environmental Protection Agency and Northern Ireland Water.
- The observations are carefully managed such that they conform to current best-practice observational standards as defined by the World Meteorological Organization (WMO). The observations also pass through a range of quality assurance procedures at the Met Office before application for climate monitoring.
- Daily and monthly maps, monthly statistics and monthly time-series are primarily based on the HadUK-Grid dataset of 1km resolution UK gridded climate data (Hollis et al, 2019). Monthly statistics from the monthly Central England temperature series 1659 (Manley, 1974) and England and Wales precipitation series from 1766 (Wigley et al, 1984) provide long term context.
- The monthly lightning activity map is based on data from the Met Office LEELA (Lightning Electromagnetic Emission Location by Arrival time difference) system. This is an automatic lightning location network comprising around ten lightning outstation sensors located across Europe.
- The monthly maps of mean sea level pressure and 250hPa wind speed and direction are based on the ERA5 reanalysis (Hersbach et al, 2019). ERA5 is the fifth generation ECMWF reanalysis for the global climate and weather for the past 4 to 7 decades. Reanalysis combines model data with observations from across the world into a globally complete and consistent dataset using the laws of physics.

Hersbach, H., Bell, B., Berrisford, P., Biavati, G., Horányi, A., Muñoz Sabater, J., Nicolas, J., Peubey, C., Radu, R., Rozum, I., Schepers, D., Simmons, A., Soci, C., Dee, D., Thépaut, J-N. (2019): ERA5 monthly averaged data on single levels from 1959 to present. Copernicus Climate Change Service (C3S) Climate Data Store (CDS). https://doi.org/10.24381/cds.f17050d7

Hollis, D, McCarthy, MP, Kendon, M, Legg, T, Simpson, I. HadUK-Grid - A new UK dataset of gridded climate observations. Geosci Data J. 2019; 6: 151-159. https://doi.org/10.1002/gdj3.78

Manley, G. (1974), Central England temperatures: Monthly means 1659 to 1973. Q.J.R. Meteorol. Soc., 100: 389-405. https://doi.org/10.1002/qj.49710042511

Wigley, T.M.L., Lough, J.M. and Jones, P.D. (1984), Spatial patterns of precipitation in England and Wales and a revised, homogeneous England and Wales precipitation series. J. Climatol., 4: 1-25. https://doi.org/10.1002/joc.3370040102