

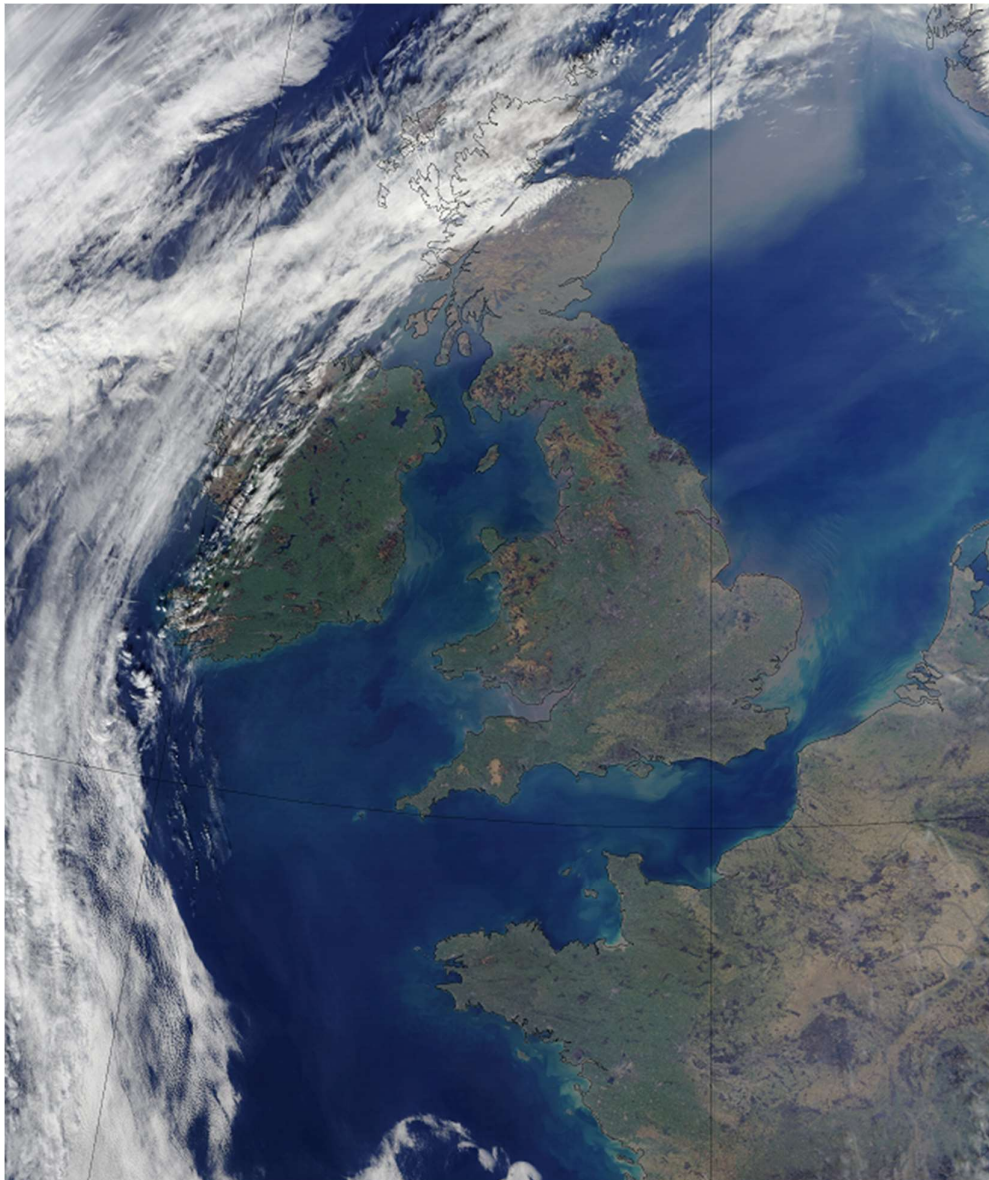
Exceptional warmth February 2019

The UK experienced some exceptionally high temperatures for the time of year in a spell of fine, settled weather during the second half of February. On 26 February a maximum temperature of 21.2 °C was recorded at Kew Gardens (London), the UK's highest temperature on record for a winter month.

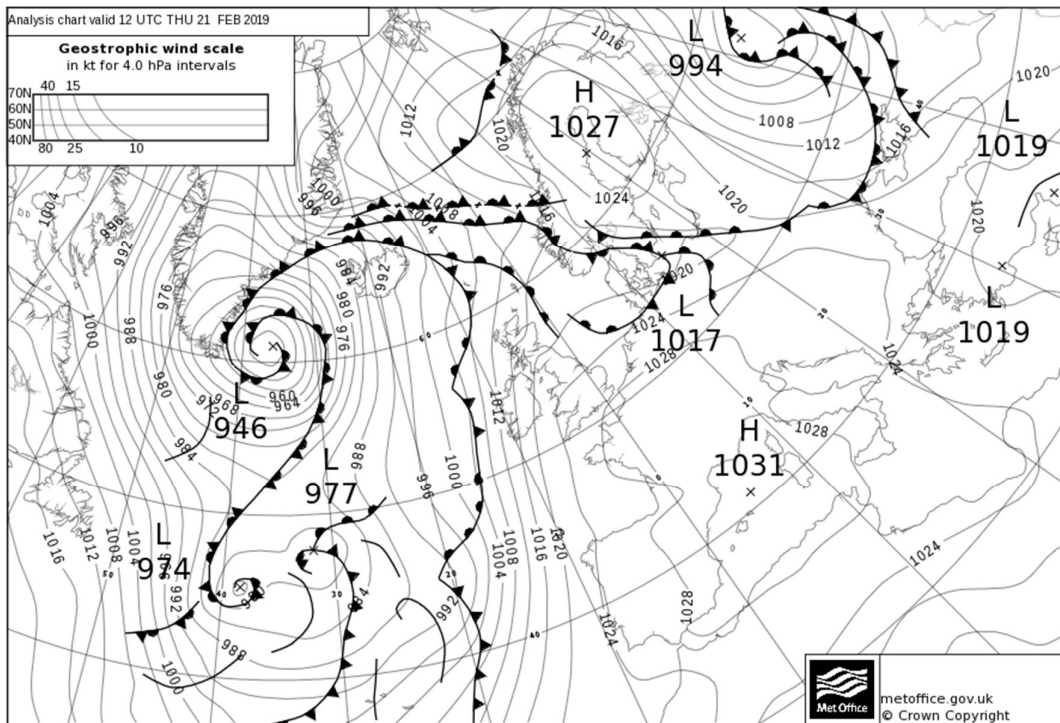
Weather data

The fine, settled weather was associated with a large area of high pressure across the near continent, drawing an exceptionally mild southerly flow of air originating from Iberia and North Africa. Atlantic low pressure systems remained far to the west of the UK.

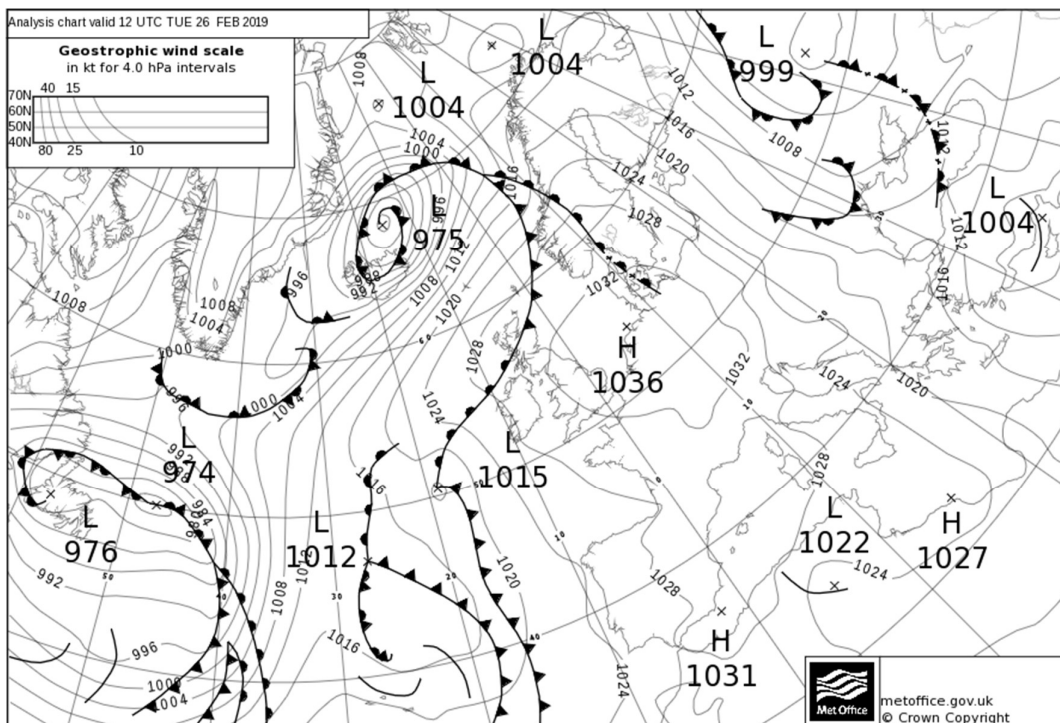
The satellite image at 1336UTC on 26 February 2019, the warmest day of the spell, shows the UK and France largely cloud-free with weak frontal systems affecting the far north-west. Image copyright Met Office / NASA / NOAA.



The analysis chart at 1200 UTC on Thursday 21 February 2019 shows an area of high pressure across the near-continent with the UK in a mild airflow originating from near the Canary Islands.

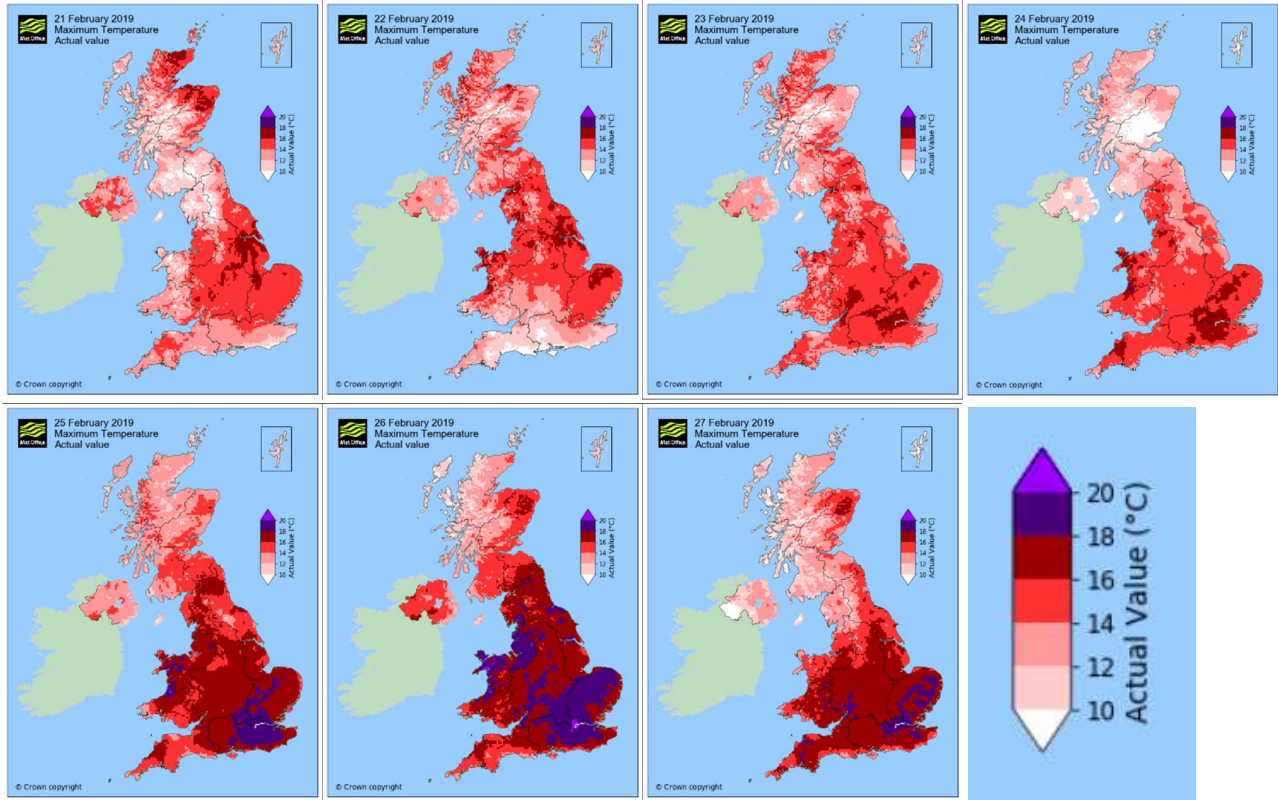


The analysis chart at 1200 UTC on Tuesday 26 February 2019 shows the UK still under the influence of high pressure across the near-continent, with the airflow from Iberia.

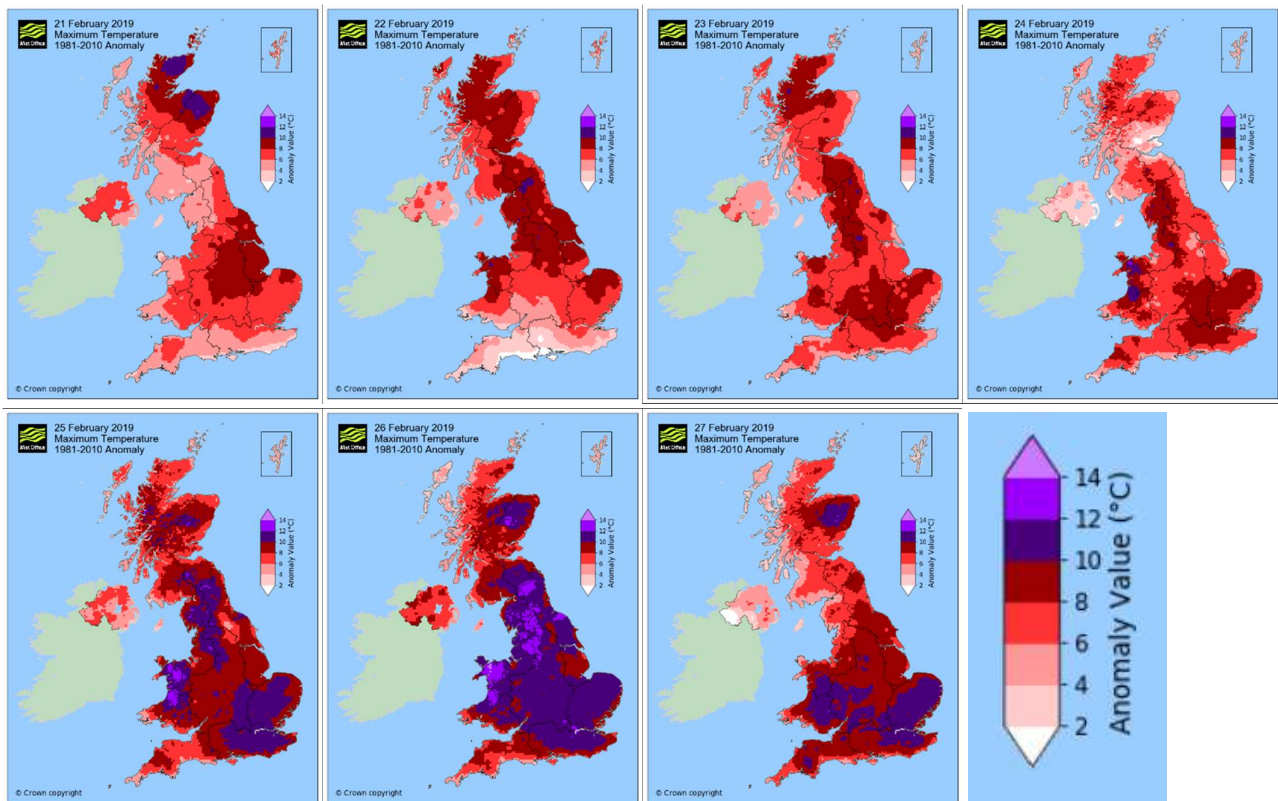


Daily maximum temperatures responded to clear skies and long spells of early spring sunshine, with 18 °C reached somewhere in the UK every day from 21 to 27 February and exceeded fairly widely on 25th to 27th. On 25 and 26 February, temperatures exceeded 20 °C in the London area and parts of west Wales, including the Manchester area on the 26th. This was the first time 20 °C had been recorded in the UK in a winter month.

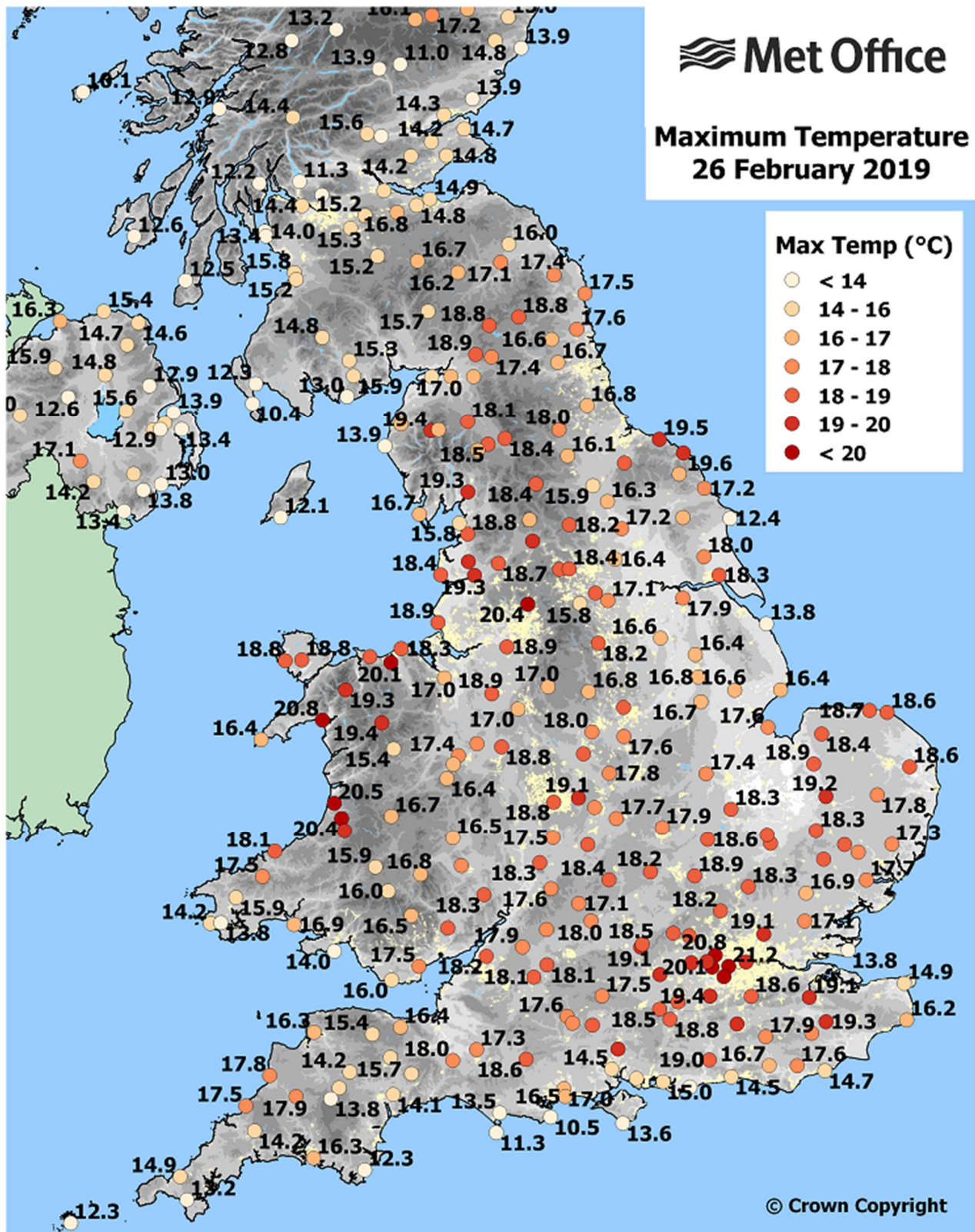
The maps below show daily maximum temperatures across the UK from 21 to 27 February, indicating the spatial extent of the warmth.



The maps below show daily maximum temperature anomalies relative to the February 1981-2010 long-term average from 21 to 27 February.



The map below shows daily maximum temperature on 26 February 2019, the warmest day of the spell. Daily maximum temperatures included 21.2 °C at Kew Gardens (London), 20.8 °C at Porthmadog (Gwynedd), 20.4 °C at Rochdale (Greater Manchester) and 19.4 °C at Keswick (Cumbria). Temperatures in these areas were more than 14 °C above the February long-term average – around 20 °C compared to 6 °C which might be expected at this time of year.



Historical context

This spell set several new February maximum temperature records for the UK, with over 20 stations breaking previous national records; and for several stations on more than one occasion. New February maximum temperature records were set for the UK, England, Wales and Scotland - the latter a long-standing 100+ year record – while the Welsh record was broken by a margin of more than 2.0 °C.

While daily maximum temperatures were exceptionally high, the clear skies meant that temperatures fell away at night and daily minimum temperatures were generally much closer to normal for the time of year. From 25 to 27 February, the warmest days of the spell, there were widespread air frosts at night resulting in a very large diurnal temperature range of around 20 °C. Nevertheless, minimum temperatures remained much higher with cloud-cover across north-western parts of the UK and on 23 February, Achnagart (Highland) recorded a new UK daily minimum temperature record for February.

The table below provides details of new national temperature records set in February 2019.

Station	Value	Date	National record	Previous station	Previous value	Previous date
Kew Gardens (London)	21.2 °C	26/02/2019	Feb and winter maxtemp record for UK and England	Greenwich Observatory (London)	19.7 °C	13/02/1998
Porthmadog (Gwynedd)	20.8 °C	26/02/2019	Feb maxtemp record for Wales	Velindre (Powys)	18.6 °C	23/02/1990
Aboyne (Aberdeenshire)	18.3 °C	21/02/2019	Feb maxtemp record for Scotland	Aberdeen	17.9 °C	22/02/1897
Achnagart (Highland)	13.9 °C	23/02/2019	Feb mintemp record for UK and Scotland	Aboyne (Aberdeenshire)	13.7 °C	13/02/1998

Over 200 stations (the majority of the real-time network) set new maximum temperature station records for February. These included ten stations with 100+ year records. For the majority of these, the previous record was in February 1998. The table below provides details. The map below shows the spatial extent of the February daily maximum temperature records set at individual stations across the UK.

Station	Value	Date	Previous value	Previous date	Record length
Armagh (County Armagh)	17.1 °C	26/02/2019	15.9 °C	13/02/1998	153
Sheffield (South Yorkshire)	18.2 °C	26/02/2019	17.6 °C	14/02/1998	136
Bradford (West Yorkshire)	18.4 °C	26/02/2019	16.7 °C	13/02/1998	110
Rothamsted (Hertfordshire)	18.2 °C	26/02/2019	17.2 °C	13/02/1998	105
Morpeth, Cockle Park (Northumberland)	17.6 °C	26/02/2019	16.1 °C	29/02/1960	105
Wisley (Surrey)	18.9 °C	27/02/2019	18.0 °C	13/02/1998	105
Balmoral (Aberdeenshire)	17.2 °C	26/02/2019	15.1 °C	21/02/2008	105
Eskdalemuir (Dumfriesshire)	15.7 °C	26/02/2019	14.8 °C	13/02/2008	105
Woburn (Bedfordshire)	18.9 °C	26/02/2019	17.7 °C	13/02/1998	104
Cromer (Norfolk)	18.6 °C	26/02/2019	18.3 °C	23/02/1990	102

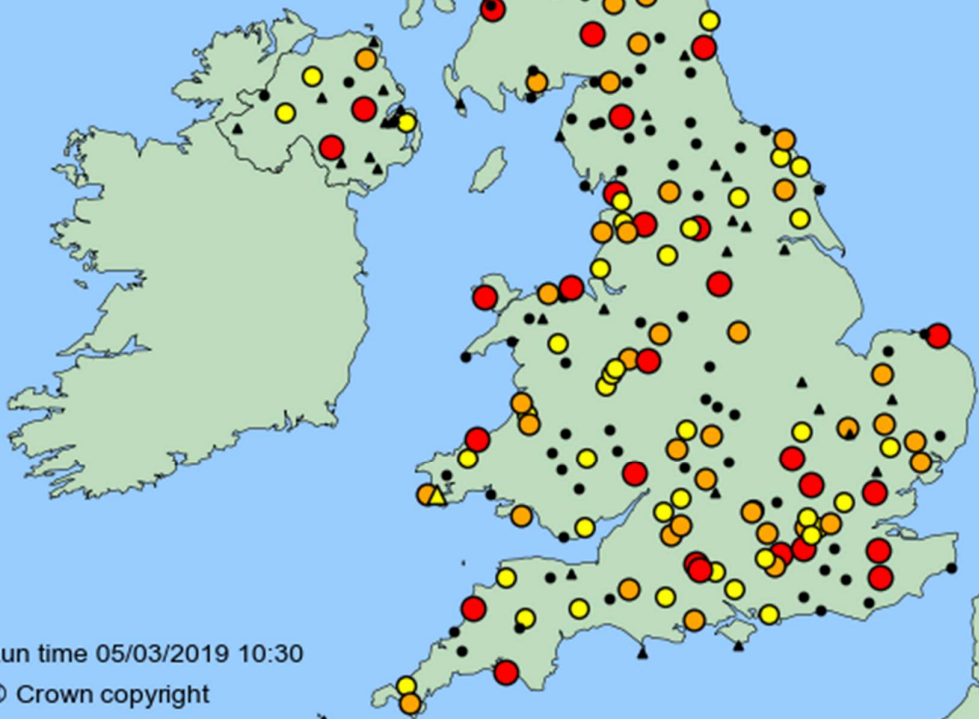


February 2019 Highest Maxtemp Highest on record or highest since



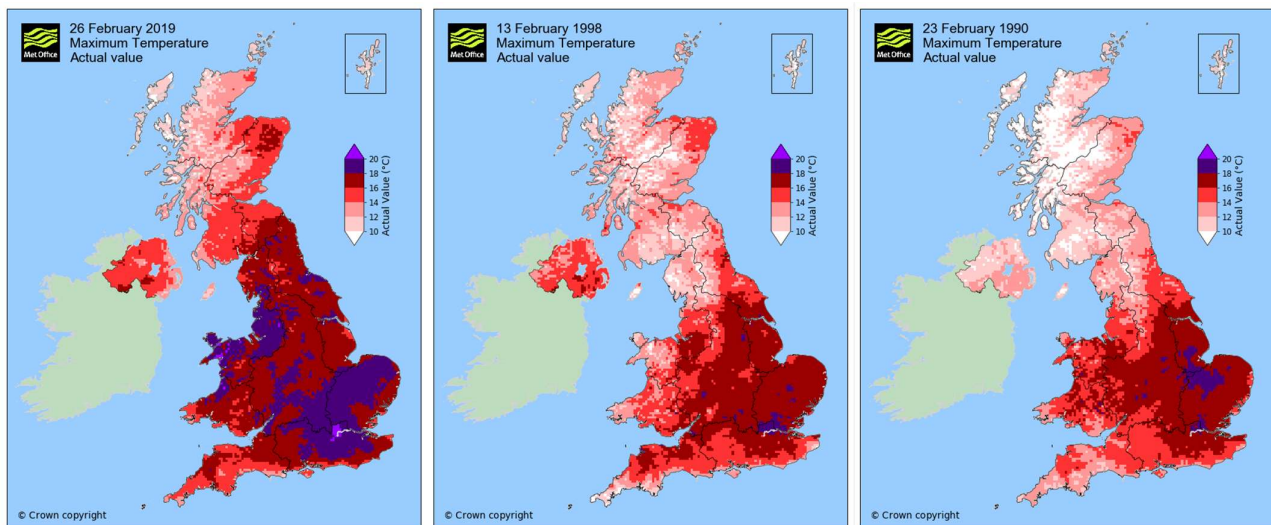
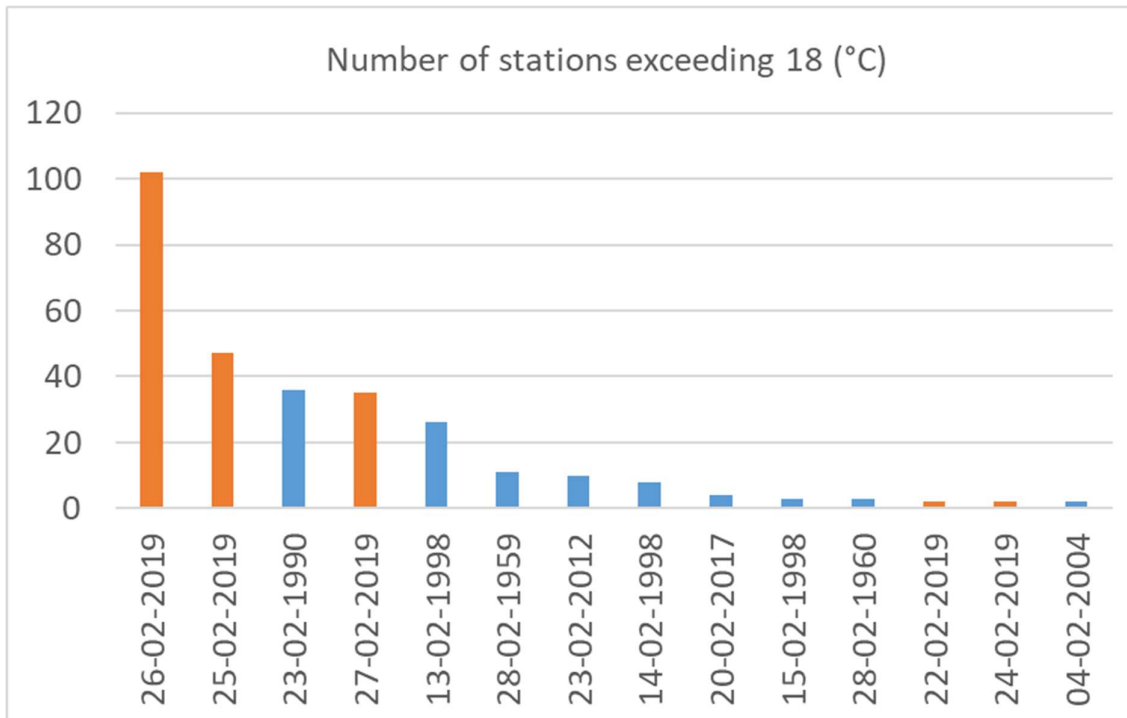
- 75+ years
- 50+ years
- 30+ years
- 10+ years
- highest on record
- △ highest since

This map compares the highest daily maximum temperature 09-09UTC values from 01/02/2019 to 28/02/2019 at each station against the highest such values for February on record



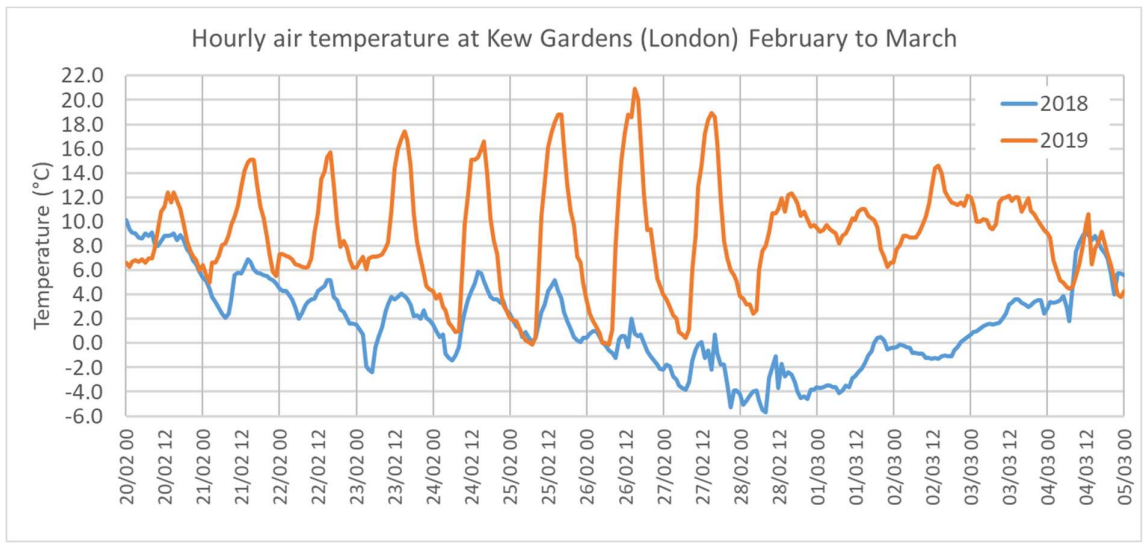
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The chart below lists days where at least two stations in the UK have recorded temperatures exceeding 18 °C in February, including a count of the number of stations on each day. The maps below compare actual daily maximum temperatures on three of these days 26 February 2019, 23 February 1990 and 13 February 1998. Maximum temperatures across the UK on 26 February 2019 easily exceeded those for these previous two dates. The UK monthly mean maximum temperature for February 2019 was the highest in a series from 1910, ahead of February 1998.



The large annual variability in the UK's climate may be emphasised by comparing temperatures in late February 2019 with those from a year earlier, when the UK was affected by widespread snow and freezing temperatures associated with a bitterly cold easterly airflow. The chart below shows hourly air temperature recorded at Kew Gardens (London) in late February to early March – comparing 2018 and 2019. The daily maximum temperature of 21.2 °C on 26 February 2019 compares with -0.6 °C on 28 February 2018 – a difference of over 20 °C. The diurnal temperature range in late February 2019 at this station was 15 to 20 °C – with day-time temperatures responding to the late spring sunshine. In contrast, in 2018 this diurnal temperature range was

greatly suppressed due to a strong easterly wind – with temperatures from late February to early March 2018 generally around or slightly below freezing.



The fine, settled weather brought plenty of sunshine. February 2019 was the second-sunniest February for the UK in a series from 1929. For east and north-east England and East Anglia this was the sunniest February in the series with 150 to 170% or more than average hours of bright sunshine.