

Meteorological conditions and effects

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METEOROLOGICAL CONDITIONS AND EFFECTS Many interesting and varied meteorological conditions and effects have been observed over the years. Here are details of some of them.

STORM DAMAGE SEAFORD SEAFRONT - NOVEMBER 1954 My interest in things meteorological started from a very early age. The Lynmouth Flood of 1952 (when I was 8 years old) saw me making a newspaper cutting book of the event (which I still have). Before any by-pass was built the main A259 ran along Seaford seafront with a neon sign, switched on by the police, when rough seas swamped the road especially by The Buckle Inn. In November 1954 gales and heavy seas damaged the Seaford seafront and undermined it, washing part of it away. A visit in the following week - on 26 November 1954 (when I was 10 years old) - led to the drawing of the scene given in the gallery below. [seaford1954{/gallery}](#)

LEWES FLOOD - NOVEMBER 1960 After a very wet spell from 19 October to 4 November 1960 when a total of 202.9 mm of rainfall was recorded at Eastbourne, East Sussex, the town of Lewes and the surrounding Ouse Catchment together with the adjoining Cuckmere Catchment was flooded. The following gallery gives a series of photographs taken mainly on 5 November 1960 when I cycled around the area with a friend. [lewes1960{/gallery}](#)

ST ELMO'S FIRE - STONE CROSS, EAST SUSSEX 4 JUNE 1978 St Elmo's Fire is defined in the Meteorological Glossary (HMSO 1972) as 'a more or less continuous, luminous electrical discharge of weak or moderate intensity in the atmosphere, emanating from elevated objects at the earth's surface (lightning conductors, wind vanes, masts of ship) . . . The phenomenon is usually bluish or greenish in colour, sometimes white or violet. It is accompanied by a crackling sound and occurs when the electrical field in the neighbourhood becomes very strong, as when a cumulonimbus cloud is overhead. The phenomenon is also termed 'corposant' (holy body)'. At 1123 UTC 4 June 1978 about 100 m west of Stone Cross, East Sussex, whilst driving towards Polegate, East Sussex, around four bright flashes of white light were seen, in quick succession, over some trees and a telegraph pole. A light shower was in progress and Altocumulus castellanus was overhead. Meteorological conditions at Mayfair Close, Wannock, Polegate at 1131 UTC were recorded as: SW Force 4, Moderate visibility, Past light rain shower, MSL pressure 1016.6 mb, Dry bulb 20.3°C, Dew Point 15.1°C, vapour pressure 17.2 mb, relative humidity 72%, 7/8 Altocumulus castellanus (Ac cas) 8000 ft. This Ac cas persisted all the afternoon. As thundery conditions were present shown by the Altocumulus castellanus the white flashes seen were considered to be a display of St Elmo's Fire.

PURPLE LIGHT - CHESTNUT DRIVE, POLEGATE, EAST SUSSEX 27 NOVEMBER 1979 Purple light is defined in the Meteorological Glossary (HMSO 1972) as follows. 'Shortly after the sun has set below the western horizon a brighter patch appears on the darkening sky about 25° directly above the position where the sun has disappeared. This patch appears brighter as the sky darkens and takes on a purple tone. The patch expands into a disc and when the sun is about 4° below the horizon it reaches its maximum brilliancy . . .' Around 1600 UTC 27 November 1979 at Chestnut Drive, Polegate, East Sussex, my wife observed a 'pink light at dusk - all around'. A report in the next day's Daily Telegraph under the heading 'Day the sky turned pink and purple' read: 'The evening sky turned bright pink then mauve deepening into purple over a large area of the south-east and East Anglia yesterday (27/11/1979) - "a rare and sensational light" as one weather expert described it. The Weather Centre . . . explained: "It was due to an optical effect more common in northern latitudes and caused by combined effects of atmospheric scattering and diffusion together with the low angle of elevation of the sun"'.

HALO DISPLAY - CHESTNUT DRIVE, POLEGATE, EAST SUSSEX 28 DECEMBER 1979 A particularly fine optical phenomenon display was observed from Chestnut Drive, Polegate, East Sussex on 28 December 1979 through a veil of Cirrostratus cloud. The following is taken from notes made at the time. On 28 December 1979 from Polegate, East Sussex I witnessed a display of halo phenomena associated with the clearing edge of the Cirrostratus sheet which formed part of the front which had brought heavy rain to Wales and the West Country the previous day. I first noticed the display at 1207 UTC and continued watching it until it faded at 1410 UTC. During this time Cirrostratus and Cirrocumulus (formed from contrails) crossed the area of sky containing the sun. From 1207 to 1326 UTC an upper arc of contact to the 22° halo was observed, convex to the sun, being brightest from 1207 to 1234 UTC, around 1246 UTC and from 1312 - 1326 UTC. During these times the colours were strongest forming a 2° wide band red, yellow and blue, going away from the sun. From 1216 to 1234 UTC a circumzenithal arc was visible, strongest at 1225 UTC when it formed about 25% of the circle, was 4° wide and coloured red, orange, yellow, green and blue, going away from the sun. The arc was approximately 25° above the upper arc of contact to the 22° halo. Throughout the display parhelia, coloured, appeared either to the left or right of the sun, about 22° either side. From 1241 - 1302 UTC part of the faint 22° halo appeared to the right of the sun. This returned at 1306 UTC and became strongest from 1312 to 1336 UTC. The halo became complete (to the horizon intercept) from 1326 to 1410 UTC. During part of the latter period the halo and upper arc of contact were both visible. When the 22° halo was strongest it was coloured red, yellow, white going away from the sun with the area of sky contained within the halo being markedly darker. A watch was kept for the 46° and 90° halo, the parhelic circle and other parhelia - but none was seen.

'RED RAIN' - EAST SUSSEX 11 FEBRUARY 1982 Sometimes dust, picked up and carried from the Sahara, gives a fall of 'coloured' rain. Such an event occurred in East Sussex on 11 February 1982. Rain which fell during the morning of 11 February 1982 was coloured by such a 'dust' carrying event. At Burwash, East Sussex between 0930 and 1230 UTC the rain which fell contained red and brown dust. My mother, at Dudley Road, Eastbourne, reported a grey dust in the morning and more brown dust in the rain around 1600 UTC. The rain collected in the rain gauge at Chestnut Drive, Polegate, East Sussex at 2343 UTC, and measured at 1.6 mm, contained a fine grey dust.

STORM - EAST SUSSEX 15-16 OCTOBER 1987 The storm and subsequent devastation which occurred on the night 15/16 October 1987 in South East England has been widely reported. The following gives my own recollections whilst at Chestnut Drive, Polegate, East Sussex of that eventful night. By 2201 UTC 15 October 1987, when we went to bed, the wind was SW Force 6, slight continuous rain was falling and the MSL pressure was 974.9 mb. The storm broke around 0130 UTC and continued to 0530 UTC 16 October 1987. Two things were at first evident (1) the

continuous very loud 'roar' of the wind and (2) flashes of light when looking out of the front bedroom window. These flashes were first thought to be lightning - but there was no thunder. They were flashes from electrical overhead cable touching and shorting in the wind! At 0330 UTC one glass panel of the front bedroom window blew in and the rest of the night was spent by my wife and I looking after our two young children and holding the interconnecting door between the upstairs bedrooms closed so as to prevent the rear windows from being blown out. The noise of the wind, estimated at the time to be Force 11 (and confirmed later by the Herstmonceux Met Office data), was incredible. At 0330 UTC the MSL pressure had fallen to 969.8 mb. Next morning a temporary repair was made by fixing wood across the broken window, covering it by a plastic sheet and placing lead flashing at the top. We suffered no injuries and the only damage caused was to a dolls-house roof in the front bedroom hit by glass! Others, whose houses had sustained considerable damage - often from falling trees - were less fortunate. In the morning I made my way to the office at the Eastbourne Water Company in Upperton Road, Eastbourne. Some of the office windows had been blown in and the internal office partitions on the second floor had collapsed. It was hard-hats all round! Many trees had been felled by the storm - in The Avenue, Eastbourne, King's Drive and Willingdon Road, Eastbourne to name a few. During the day I made a tour of some of the recently constructed timber framed buildings built by the water company. We wanted to see how they had survived the storm. All had - but the journey through Boreham Street and Ashburnham, East Sussex was one of driving around fallen tree upon fallen tree. In the following week I contacted the meteorological office observation station at Herstmonceux, East Sussex (which was then situated in a building that was part of the Observatory Complex) in order to obtain the wind speed records in case they were needed for insurance claims by the water company. The following is an extract from a memo that I made to the Company's New Works Engineer: Herstmonceux Met. Office TQ 645 099 1987-10-15 2350 UTC 170/20 kts QNT (max gust) 35 kts 1987-10-16 0050 UTC 170/27 kts QNT 40 kts 1987-10-16 0150 UTC 190/43 kts QNT 63 kts 1987-10-16 0250 UTC 190/53 kts QNT 78 kts 1987-10-16 0350 UTC 200/58 kts QNT 83 kts 1987-10-16 0450 UTC 200/60 kts QNT 88 kts 1987-10-16 0550 UTC 230/44 kts QNT 90 kts 1987-10-16 0650 UTC 230/34 kts QNT 71 kts 1987-10-16 0750 UTC 230/34 kts QNT 58 kts 1987-10-16 0850 UTC 230/29 kts QNT 49 kts 1987-10-16 0950 UTC 230/26 kts QNT 43 kts 1987-10-16 1050 UTC 220/22 kts QNT 47 kts 1987-10-16 1150 UTC 220/18 kts QNT 38 kts Period of Gale 0115 - 0755 UTC. Maximum gust 90 kts at about 0455 UTC. Details were also obtained for the Royal Sovereign Light Tower in the English Channel: 1987-10-16 0001 UTC 160/40 kts 1987-10-16 0300 UTC 180/75 kts QNT 90+ kts 1987-10-16 0500 UTC 200/75 kts QNT 90+ kts 1987-10-16 0600 UTC 220/70 kts QNT 85 kts 1987-10-16 1100 UTC 200/35 kts The whole area of South East England suffered massive tree loss. One example, that of Gildredge Park, Eastbourne, is given below. {gallery}storm1987{/gallery} RED RAIN' - 11 OCTOBER 1991 Sometimes dust, picked up and carried from the Sahara, gives a fall of 'coloured' rain. The rain which fell on 11 October 1991 and which was measured as 9.9 mm at 1010 UTC 12 October 1991 at Chestnut Drive, Polegate, East Sussex contained red-brown dust. SUSSEX - AUTUMN 2000 - FLOODS AND HIGH GROUNDWATER CONDITIONS Autumn 2000, from September 2000 onwards was a very wet spell with widespread flooding in many areas. This event has been widely reported and included severe flooding at Lewes, Uckfield and Robertsbridge. Given here are just two events that I personally witnessed. (1) In November 2000 whilst taking and collecting my daughter to and from Winchester where she was at university I used the A272 to the east of Winchester. For several miles through Bramdean the road was flooded to a depth of several inches. There are no rivers in the immediate vicinity - the water was groundwater that had 'come out of the ground' as the groundwater levels had risen so high. This condition persisted for several weeks and ultimately the road was closed. (2) Called to investigate local flooding in the Gorrington Road area of Eastbourne by the local Federation of Small Businesses it became evident that the main source of water was again very high groundwater levels that had 'come out of the ground'. The following gallery gives the cumulative rainfall measured at Eastbourne Road, Lower Willingdon, Eastbourne and a series of photographs of the temporary spring line at the base of the Chalk outcrop at Gorrington Road, Eastbourne, East Sussex. {gallery}rain20002001{/gallery} CUCKMERE FLOODING, EAST SUSSEX - JANUARY 2003 A very wet spell through the second half of December 2002 led to flooding in the Cuckmere valley, East Sussex. The total rainfall measured at Eastbourne Road, Lower Willingdon, Eastbourne, East Sussex for the period 14-12-2002 to 01-01-2003 was 178.3 mm with 35.4 mm falling on 21-12-2002 and 66.6 mm in the period 28-12-2002 - 01-01-2003 inclusive. The gallery below shows the flooding as seen from High & Over on 4 January 2003. {gallery}cuckmere2003{/gallery} SKY COLOUR AFTER SUNSET - 26 OCTOBER 2004 The following picture taken 1637 UTC 26 October 2004 from Lower Willingdon, East Sussex shows the sky colour after sunset. This seems like an example of the 'purple light' which may have been caused by previous volcanic eruptions - currently being researched. [Mount St Helens is reported to have suffered steam and ash explosions from 1 - 5 October 2004]. Herstmonceux 03882 observations: 2004-10-26 1500 UTC AAXX 26154 03882 45967 /2305 10126 20068 30059 40124 57010 91450 333 55303 20761 8//99=2004-10-26 1800 UTC AAXX 26184 03882 17756 /2001 10090 20082 30058 40123 55001 69982 723// 91750 333 10134 55300 20000 87/50= {gallery}20041026sky{/gallery} GALES AT WHITBY - SEPTEMBER 2007 {gallery}generalmet{/gallery} EASTERLY WIND BRING MANURE SMELLS FROM EUROPE - 18 APRIL 2008 Many reports on the BBC website were given of a manure smell being noticed over a wide area of England. Taken from the BBC news report: The Met Office's Sarah Holland said: "Basically, over the last few days, we've had fresh, strong winds from an easterly direction. As a result some of our air is coming from continental Europe."

She added that while members of Met Office staff were trying to trace the exact source of the "apparent atmospheric aroma", the likely explanation was either agricultural or industrial works in western Europe.

"Normally, our winds are westerly, coming off the Atlantic Ocean, which bring little or no pollution with them."

At Lower Willingdon this manure smell was noticed during the evening 18 April 2008.

A report in The Sunday Telegraph dated 20 April 2008 gave the source of the smell - Der Gestank - as the results of German pig farmers spreading pig manure in the region around Hamburg.

The following gallery gives the synoptic charts for 0000 UTC 17/18/19 April 2008 taken from <http://www.wetterzentrale.de/topkarten/tkfaxbraar.htm> {gallery}eustink{/gallery} DUST ON CARS AT WÜRZBURG, GERMANY 14 SEPTEMBER 2008 An overnight stop in Würzburg, Germany on 14 September 2008 allowed the following photograph to be taken of dust covering cars after overnight rain 13/14 September 2008. At first this was thought to be Sahara dust, but a closer inspection of the synoptic situation and website research suggested that the Ukraine might have been the source of the dust. See reports of previous Ukraine dust events in Europe given on: <http://unian.net/eng/news/news-249899.html><http://www.sciencedaily.com/releases/2008/05/080506105139.htm>[use cut and paste to retrieve articles]
Helmholtz Association of German Research Centres (2008, May 8). Farmland Dust Cloud From Ukraine Impact Air Quality As Far As Germany. ScienceDaily. Retrieved October 21, 2008, from <http://www.sciencedaily.com/releases/2008/05/080506105139.htm>
{gallery}wurzburg{/gallery}