



Government of Pakistan
Pakistan Meteorological Department
Pakistan Monthly Climate Summary
October 2024

In brief

- October 2024 has become the **warmest ever October** in Pakistan with a huge margin of **+2.48 °C** than the country-average and temperatures in all formats falling in the first-tenth range across Pakistan.
- The national mean monthly temperature of 26.07 °C for Pakistan was significantly **warmer by +2.48 °C** than the country-average of 23.59 °C and ranks as **the highest mean temperature** in October (previous record was 25.46 °C in 2013) during the past 64 years.
- The daytime (maximum) temperature at country-level was 33.32 °C also **warmer by +1.80°C** than the country-average of 31.53 °C and stands as the **4th warmest mean maximum temperature** during past 64 years (the record was 33.52 °C in 2017).
- The country-level nighttime (minimum) temperature of 18.79 °C was **warmer (+3.55°C)**, with even higher margin, than the countrywide average of 15.24 °C and ranks as **the highest mean minimum temperature** during past 64 years (the record was 18.17°C in 2013).
- The **hottest** day of the month was observed at Dadu (Sindh) on 3rd October when it recorded a maximum temperature of 44.5 °C. Whereas the station, Shaheed Benazirabad (Sindh) found to be the **warmest** place with a mean monthly maximum temperature of 39.7 °C.
- The **coldest** night temperature of 0.6 °C of the month was recorded at Skardu (GB) on 29th. Coincidentally, the same station happened to be the **coolest** place with mean monthly minimum temperature of 4.5 °C.
- National area-weighted rainfall, 15.0mm, of October 2024 was near average with a negative anomaly of **-8%**.
- The heaviest one-day rainfall of 49.0 mm occurred at Chaklala Airbase (Punjab) on 6th October and Saidu Sharif (KP) on 29th. Whereas the station Malam Jabba (KP) has been the wettest place with monthly total 132.0 mm.
- The El Niño–Southern Oscillation (ENSO) has slightly shifted from neutral to La Niña with sea surface temperatures (SSTs) being around -0.4 °C over the central equatorial Pacific Ocean and likely fall further.
- The Indian Ocean Dipole (IOD) is in neutral phase.

Table-1: National Weather Extremes during October 2024

Hottest day	44.5	Dadu (Sindh) on 3 rd
Coldest day	8.5	Astore (GB) on 14 th
Coldest night	0.6	Skardu (GB) on 29 th
Warmest night	28.5	Bahawalnagar (Punjab) on 1 st
Wettest day	49.0	at Chaklala Airbase (Punjab) on the 6 th and Saidu Sharif (PK) on 29 th
Wettest month	132.0	at Malam Jabba (KP)

Synoptic Summary

October is usually a transitional month of Pakistan after withdrawal of the monsoon in preceding month of September. Month started with dry continental air prevalence over most parts of the country during 1-4 Oct

followed by a westerly wave from 5-14 Oct approached the northern parts of the country with another wave approached on 28-31 Oct over Gilgit-Baltistan (GB), Kashmir, Upper Khyber Pakhtunkhwa (KP) and Northern Punjab that produced some light to moderate rainfall in GB, Kashmir, KP, Punjab, North Balochistan. Also, a westerly trough affected the southeast Sindh from 20-22 Oct giving light rain over there. Meanwhile heat low-pressure area persisted over Northwest Balochistan and Upper Sindh from 7-10 and 23-26 October. Another significant feature was a formation of a Depression over central Arabian Sea during 13-15 Oct 2024. Initially a low-pressure area developed over Lakshadweep, southeast Arabian Sea on 9th Oct, the next day it turned into a well-marked low and moved northwestward and then intensified into a Depression on 13th Oct. Moving on northwestward for next two days it crossed the Oman coast near Duqm on 15th Oct night. Another low-pressure area formed over the Central Arabian Sea and moved in west direction towards the Yemen coast. Blocking the sea breeze, these features raised the daytime temperatures in lower Sindh.

Table-2: New Temperature Records Set in October 2024

S No	Stations	Weather Parameters	New Record		Old Record		No of years examined.
			Value	Date	Value	Date	
1	SHORKOT	Coldest night Temperature (°C)	10.0	10/Oct/2024	11.0	30/Oct/2004	52
2	BAHAWALNAGAR	Hottest night Temperature (°C)	28.5	01/Oct/2024	28.1	01/Oct/1998	64
3	BANNU	Hottest night Temperature (°C)	25.0	01&02/Oct/2024	24.6	01/Oct/2001	26
4	D.I.KHAN(City)	Hottest night Temperature (°C)	26.5	01/Oct/2024	26.0	02/Oct/2021	64
5	DADU	Hottest night Temperature (°C)	27.0	01/Oct/2024	26.0	01&02/Oct/2023	21
6	KHANPUR	Hottest night Temperature (°C)	26.8	01/Oct/2024	26.7	05/Oct/2021	64
7	SUKKUR	Hottest night Temperature (°C)	28.0	25/Oct/2024	27.5	01&02/Oct/2019	28
8	BAHAWALNAGAR	Hottest day Temperature (°C)	42.0	03/Oct/2024	41.5	06/Oct/2002	64
9	DADU	Hottest day Temperature (°C)	44.5	03/Oct/2024	42.2	05/Oct/2006	21
10	MOIN-JO-DARO	Hottest day Temperature (°C)	42.5	03/Oct/2024	42.3	02/Oct/1998	47
11	MULTAN AIRPORT	Hottest day Temperature (°C)	40.8	02/Oct/2024	40.6	01/Oct/1968	73
12	PARACHINAR	Hottest day Temperature (°C)	32.5	01&02/Oct/2024	32.2	08/Oct/1989	126
13	SAKRAND	Hottest day Temperature (°C)	41.0	03/Oct/2024	40.5	10/Oct/2023	10
14	SHORKOT	Hottest day Temperature (°C)	40.2	03/Oct/2024	40.0	08/Oct/2021	54

Rainfall: Near Average in the country.

Climatologically, October is considered as one of the least rainy month with rainfall contribution to the national annual total and Post-monsoon (OND) being only 2.7% and 30.2%, respectively. During the month, Pakistan experienced two light to moderate rain spells. The daily area-averaged rainfall is shown in Fig-1. October 2024 rainfall with 7.4 mm was near average with a negative anomaly of (-8%) for Pakistan as a whole. However, diverse situation have been observed on regional scale i.e. Balochistan with 1.0mm (-66%) recorded excessively below average rainfall, Punjab with 4.8mm (-40%) and Sindh with 3.8mm (-12%) recorded below average rains. The KP with 29.7mm (+19%) and AJ&K with 35.6 (+15%) recorded slightly above average rainfall. The GB with 12.8mm (+64%) was the only region to exhibit excessively above average rainfall (Table-3).

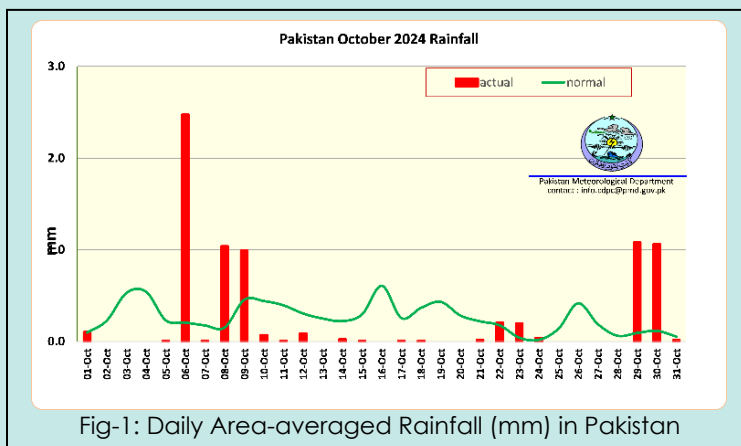


Fig-1: Daily Area-averaged Rainfall (mm) in Pakistan

The heaviest one-day rainfall of 49.0 mm occurred at Chaklala Airbase (Punjab) on 6th October and Saidu Sharif (KP) on 29th. Whereas the station, Malam Jabba (KP) has been the wettest place with monthly total 132.0 mm (Table-1).

Table-3: October 2024 Area Weighted Rainfall

Region	Rank (of 64y)	Normal (mm)	Average (mm)	Departure (percent)	Comment
Pakistan	39	8.0	7.4	-8	---
Azad Jammu & Kashmir	44	31.1	35.6	15	---
Balochistan	39	3.0	1.0	-66	---
Gilgit Baltistan	55	7.8	12.8	64	10th highest (record 97.8 mm in 1987)
Khyber Pakhtunkhwa	44	25.0	29.7	19	---
Punjab	26	8.1	4.8	-40	---
Sindh	53	4.3	3.8	-12	---

[RANK RANGES FROM 1 (LOWEST) TO 64 (HIGHEST) IN TERMS OF YEARS FROM 1961]

The other notable rainfalls recorded in the month were; Saidu Sharif 109.0 mm, Lower Dir 85.6 mm, Balakot 79.0 mm, Dir 66.5 mm, Pattan 65.0 mm, Muzaffarabad City 62.5 mm, Muzaffarabad Airport 60.7 mm, Kalam 52.8 mm and Chaklala Airbase 50.0 mm. The stations: Multan Airport, Okara, Sargodha Airbase, Dera Ismail Khan, Chhor, Tando Jam and Dalbandin recorded only traces of rainfall during the month. Whereas, Bahawalnagar, Bahawalpur City, Bahawalpur Airport, Faisalabad Airport, Jhang, Multan City, Sahiwal, Shorkot Airbase, Khanewal, Hyderabad Airport, Jacobabad, Larkana, Shaheed Benazirabad, Padidan, Rohri, Sukkur, Mohenjo Daro, Thatta, Dadu, Mirpur Khas, Sakrand, Khairpur, Gawadar, Jiwani, Kalat, Lasbela, Nokkundi, Panjgur, Pasni, Turbat, Ormara and Masroor remained absolutely dry with no rain during the month.

October 2024 Rainfall maps

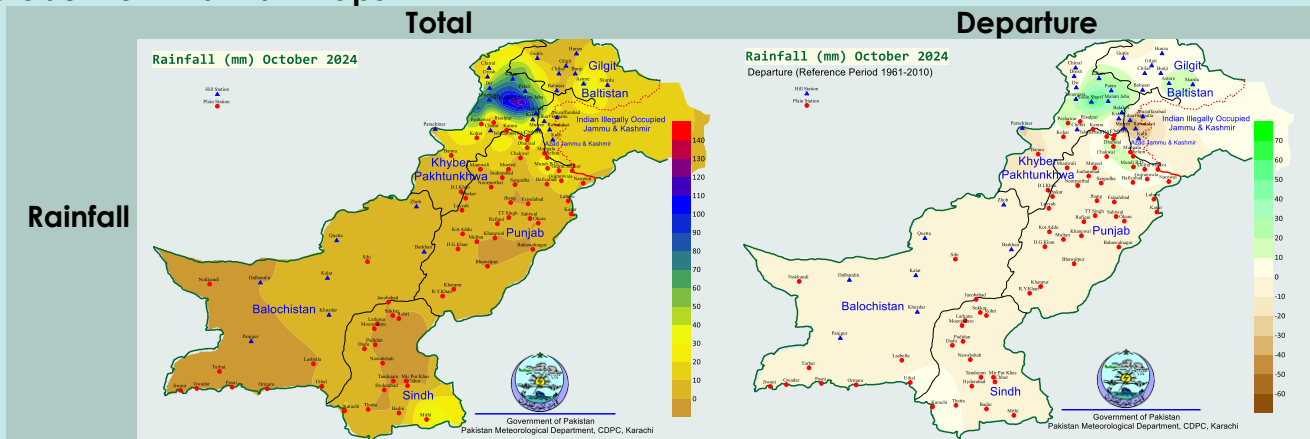


Fig. 2. October-2024 spatial rainfall distribution and departure from normal

Table 4: Significantly Warmer-than-average Temperatures across the country.

Area Averaged Temperatures (°C) in October 2024 and anomalies from normal 1961-1990						
Regions	Maximum Temperature		Minimum Temperature		Mean Temperature	
	Actual	Anomaly	Actual	Anomaly	Actual	Anomaly
Pakistan	33.32	+1.80	18.79	+3.55	26.07	+2.48
Azad Jammu & Kashmir	26.53	+1.99	12.21	+1.94	19.38	+1.96
Balochistan	33.61	+2.07	18.33	+3.75	25.98	+2.65
Gilgit-Baltistan	24.13	+1.64	8.12	+0.82	16.17	+1.25
Khyber Pakhtunkhwa	29.90	+1.66	15.30	+2.14	22.61	+1.91
Punjab	35.02	+1.59	21.25	+4.15	28.16	+2.56
Sindh	37.59	+1.37	24.46	+4.64	31.02	+3.00

The October 2024 national mean temperature of 26.07 °C was significantly warmer, +2.48 °C, than the country-average of 23.59 °C and ranked as the highest mean temperature in the month (previous record was 25.46°C in 2013) during the past 64 years. A similar trend prevailed at regional scale too i.e. Sindh with 31.02 °C (+3.00 °C), Balochistan with 25.98 °C (+2.65 °C), Punjab with 28.16°C (+2.56 °C), AJ&K with 19.38 °C (+1.96 °C) and KP with 22.61 °C (+1.91 °C) all ranked at October highest mean temperatures since 1961 (previous records were 29.87°C in 2017, 25.62°C in 2002, 27.45 in 1965, 19.11°C in 2001 and KP 22.48°C in 2017 respectively). The GB with 16.17°C (+1.25 °C) observed 8th highest mean temperature (record being 16.93 °C in 2013).

The monthly mean maximum (daytime) temperature of 33.32 °C at country-level was also positively anomalous (+1.80 °C) than the country average of 31.53 °C and ranked as the 4th highest of the month (record being 33.52 °C in 2017). This falls in the first-tenth highest range (Table-4, Fig. 3 upper panel). The Mean maximum temperature anomalies were ranged from -0.5 to +4.0 °C in the country with those being considerably higher over GB & adjoining AJ&K and western Balochistan.

The monthly night-time (minimum) temperature of 18.79 °C (with +3.55 °C anomaly) too was significantly warmer than average of 15.24 °C and ranks now as the highest mean minimum temperature of the month since 1961 (record was 18.17 °C in 2013). A very similar trend was found across all the regions: Sindh with 24.46°C (+4.64 °C), Punjab with 21.25 °C (+4.15°C), Balochistan with 18.33 °C (+3.75°C), KP with 15.30 °C (+2.14 °C) and AJ&K with 12.21 (+1.94 °C) all experienced significantly warmer than average temperatures and ranked as the highest mean minimum temperatures of October during past 64 years (the records were 23.54°C in 2013, 20.69°C in 2013, 17.64°C in 2006, 15.25°C in 2013 and 11.79°C in 1977 respectively). The GB with 8.12 °C (+0.82 °C) was the only region to have ranked the 10th warmest mean minimum temperature (record is 9.43 °C in 1980) (Table-4, Fig-3, middle panel).

The hottest day of the month was 44.5 °C recorded at Dadu (Sindh) on 3rd October. Whereas the station Shaheed Benazirabad happened to be the warmest place with 39.7 °C average maximum temperature during the month. The lowest night (minimum) temperature of the month was 0.6 °C recorded at Skardu (GB) on 29th October, which, coincidentally was the coolest place with 4.5 °C average night (minimum) temperature.

October 2024 Temperature maps

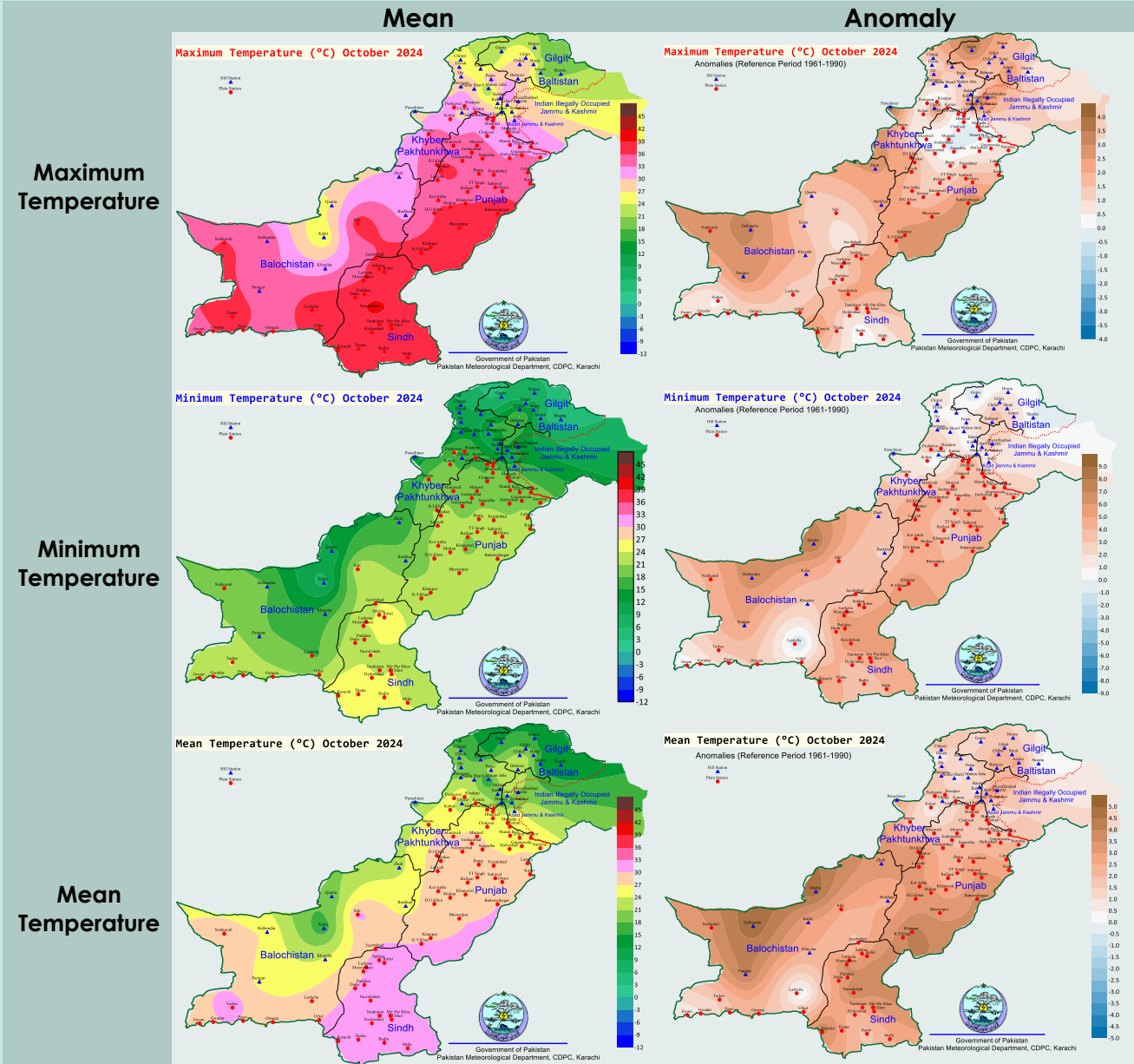


Fig. 3. October-2024 Temperatures (Maximum, Minimum & Mean) and their anomalies.

Table 5: October 2024 Monthly Averages & Normals

Station	Pressure (mb)		Temperature (°C)			Vapour Pressure	Precipitation	
	Station	Sea	Mean	Maximum	Minimum		Total	Days
Drosh	854.7	1511.3	18.9	26.9	10.9	9.5	27.4	4.0
	855.3	1515.5	19.2	26.7	11.6	7.0	31.1	5.1
Peshawar	974.1	1011.2	25.2	32.4	17.9	21.0	43.0	4.0
	970.1	1010.5	23.7	31.6	15.9	16.0	19.0	3.2
Parachinar	830.4	1524.3	19.7	27.0	12.3	10.6	8.5	1.0
	829.4	1516.1	16.1	23.3	8.8	7.3	31.8	5.8
Rawalpindi	954.4	1011.0	24.8	30.8	18.8	16.7	50.0	2.0
	952.9	1010.9	22.3	30.9	14.0	15.0	29.8	3.8
Sargodha	988.3	1009.0	28.1	34.5	21.6	23.4	1.0	1.0
	989.4	1010.6	25.1	33.5	17.4	18.1	9.7	1.9
Jhelum	983.0	1009.4	26.3	33.0	19.6	23.9	35.0	1.0
	983.5	1010.3	24.7	32.7	16.6	17.8	18.5	3.3
Sialkot	980.9	1009.6	25.8	32.1	19.4	24.9	23.0	1.0
	981.8	1010.6	23.7	31.2	16.2	18.8	18.2	2.2
Zhob	858.1	1487.3	23.2	30.5	15.8	9.6	4.0	1.0
	859.0	1494.9	20.0	28.0	12.1	7.8	6.0	0.9
D.I.Khan	989.4	1008.8	28.7	35.6	21.9	23.9	0.0	0.0
	990.3	1009.9	25.2	33.2	17.1	17.8	5.8	1.6
Lahore	985.4	1009.5	28.0	34.0	22.0	22.6	6.8	1.0
	985.9	1010.2	25.7	32.8	18.5	18.1	14.8	2.0
Quetta	844.8	1536.0	19.4	26.9	11.9	6.2	2.0	1.0
	843.0	1518.6	15.1	25.5	4.7	6.2	6.5	1.1
Multan	994.8	1008.6	29.6	36.0	23.2	22.2	0.0	0.0
	996.1	1010.2	26.3	34.4	18.2	18.3	5.2	0.9
Barkhan	890.6	1504.8	25.4	32.2	18.6	10.9	3.0	1.0
	891.3	1505.1	23.0	29.8	16.0	9.4	8.9	0.5
Nokkundi	933.5	1007.2	28.1	36.1	20.1	6.6	0.0	0.0
	935.6	1010.5	24.3	33.1	16.0	8.2	0.3	0.1
Dalbandin	918.0	1521.9	26.7	35.2	18.2	9.3	0.0	0.0
	918.4	1533.8	22.0	31.4	10.5	5.8	0.1	0.2
Jacobabad	1002.6	1008.8	29.7	35.8	23.6	28.1	0.0	0.0
	1003.4	1009.7	27.6	35.1	20.2	18.8	2.2	0.1
Khanpur	998.6	1008.6	29.8	37.5	22.0	25.8	0.2	0.0
	999.4	1009.6	25.6	34.7	16.5	18.6	2.6	0.5
Panjgur	903.7	1515.3	26.3	33.7	18.8	9.4	0.0	0.0
	904.8	1513.1	22.2	30.3	14.0	5.8	2.8	0.3
Khuzdar	877.8	1512.1	24.4	31.8	16.9	8.5	1.0	1.0
	876.5	1494.7	21.8	29.9	13.8	3.7	7.4	0.5
Sh. Benazirabad	1005.6	1008.9	31.9	39.7	24.2	29.0	0.0	0.0
	1006.3	1010.2	27.6	37.1	18.2	20.6	4.9	0.1
Jiwani	1003.7	1010.2	27.6	33.2	21.9	29.0	0.0	0.0
	1004.7	1011.1	27.1	32.7	21.5	24.2	1.5	0.2
Pasni	1009.3	1009.9	29.0	35.3	22.6	29.0	0.0	0.0
	1009.3	1010.2	26.4	33.7	20.2	20.6	3.4	0.1
Hyderabad	1003.8	1008.6	31.8	37.9	25.7	24.8	0.0	0.0
	1005.8	1009.7	29.6	36.8	22.4	18.7	2.9	0.2
Chhor	1008.1	1008.8	31.1	38.6	23.5	28.9	0.0	0.0
	1008.7	1009.5	27.9	37.3	18.5	19.4	6.2	0.4
Karachi	1006.8	1009.4	31.8	37.3	26.3	27.2	12.0	2.0
	1008.0	1010.3	28.3	35.1	21.4	21.0	2.3	0.3

Note: The first row against each station contains the actual values while second row for normal values

Table 6: October 2024 extreme values

STATION	Mean Temperature (°C)				Temperature (°C)				Highest (mm & knots)			
	Highest	Date	Lowest	Date	Highest	Date	Lowest	Date	Rain	Date	Wind Speed	Date
Drosh	23.5	04	14.7	08	33.3	03	8.5	24	12.4	08	8.0	04*
Peshawar	29.2	01	22.5	23	38.0	01	14.2	25	25.0	06	10.0	05
Parachinar	25.3	02	15.3	08	32.5	01*	8.0	21*	8.0	08	6.0	06*
Rawalpindi	27.8	02*	22.7	27	34.1	02	15.1	27	49.0	06	16.0	29
Sargodha	32.2	01	25.9	27	37.8	01	17.5	31	1.0	06	12.0	05
Jhelum	29.9	02	24.9	08*	37.0	02	16.9	25	35.0	06	10.0	05
Sialkot	29.1	01*	23.7	26	34.5	02*	15.5	25	23.0	06	6.0	05
Zhob	28.0	03	21.0	23	34.5	03	13.0	25*	4.0	08	6.0	01*
D.I.Khan	33.0	01	27.0	23	39.5	01	19.5	15	0.0	00	6.0	07
Lahore	31.5	01	25.6	06	37.0	02*	19.5	25	6.8	06	16.0	05
Quetta	23.3	06	14.5	31	31.0	04	6.5	31	2.0	08	20.0	02*
Multan	33.8	01	26.9	30	40.8	02	19.7	31	0.0	00	8.0	01*
Barkhan	28.8	03	23.5	10	36.0	04	16.5	10*	3.0	01	4.0	01*
Nokkundi	31.8	04*	23.3	29	40.5	04*	16.0	30	0.0	00	12.0	06*
Dalbandin	31.0	02	21.5	29	40.0	05	15.0	29*	0.0	00	8.0	07
Jacobabad	33.0	02	28.3	13*	40.0	27	22.0	13*	0.0	00	15.0	07
Khanpur	33.5	01	27.6	30	40.2	01*	19.0	14	0.2	21	6.0	01
Panjgur	29.5	02*	21.5	29	37.5	03*	14.5	29*	0.0	00	12.0	03
Khuzdar	27.8	02	22.5	29	35.5	02*	14.5	29*	1.0	08	8.0	02*
Sh.Benazirabad	34.5	03	30.1	30	42.5	27	21.0	24*	0.0	00	10.0	04*
Jiwani	29.0	28	26.3	07*	36.0	28	20.0	08	0.0	00	12.0	15
Pasni	32.3	17	27.0	31	39.5	17*	20.0	30	0.0	00	14.0	01
Hyderabad	33.0	26	29.9	31	41.5	26	23.0	24	0.0	00	22.0	02
Chhor	33.0	09	29.3	24	40.5	08*	19.0	25	0.0	00	12.0	03*
Karachi	33.7	09	30.0	30*	39.9	09	23.5	24*	11.0	12	12.0	01*

* means value occurred multiple times

Note

Monthly Climate Summary is produced by Pakistan Meteorological Department, Climate Data Processing Centre, Karachi to provide the main features of weather events occurred in the country during the month. The summary contains detailed data information of 25 climate stations of Pakistan. The extremes & analysis is based on 110 numbers of stations. The information in the summary is based on real time data and/or electronic reports, therefore, the above results can be considered only preliminary. Climate Summaries are usually published in the first week of each month. Long term average for rainfall is for 1961-2010 (50 years) while normal period for temperature is 1961-1990 (30 years).

Contact

Director, Climate Data Processing Centre, Pakistan Meteorological Dept
 Meteorological Complex, Gulistan e Jauhar, Block #5, Karachi-75290
 Webpage: <http://www.pmd.gov.pk/cdpc/home.htm>; Email: info.cdpc@pmd.gov.pk

Published on November 4, 2024