



Thursday 16 February 2023

**MORNING**

Time of Issue: 0800 hours IST

**ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN**

**Significant Weather Features**

- ◆ Jet Stream Winds of the order of 120 knots are prevailing between Latitudes 33-35°N over the Indian region and are likely to continue during next 2 days. Under their influence:
  - ⇒ **Light isolated rainfall/snowfall** very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 16th & 17th February, 2023.
- ◆ A fresh Western Disturbance likely to affect the Western Himalayan Region from 18th February. Under its influence:
  - ⇒ **Light/moderate scattered rainfall/snowfall** very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad during 18th-20th and isolated rainfall/snowfall over Himachal Pradesh and Uttarakhand on 19th & 20th February, 2023.
- ◆ **No significant weather very likely over rest parts of the country during next 5 days.**

**Main Weather Observations**

- ◆ **Rainfall/snowfall observed** (from 0830 hours IST to 1730 hours IST of yesterday): Nil.
- ◆ **Minimum Temperature Departures (as on 15-02-2023):** Minimum temperatures were **above normal (1.6°C to 3.0°C)** at most places over Punjab; at a few places over Saurashtra & Kutch; at isolated places over Himachal Pradesh and Haryana, Chandigarh & Delhi. They were **markedly below normal (-5.1°C or less)** at a few places over Telangana; at isolated places over Vidarbha; **appreciably below normal (-3.1°C to -5.0°C)** at many places over Marathwada and North Interior Karnataka; at a few places over Gangetic West Bengal, Odisha, Madhya Maharashtra, Rayalaseema and Tamil Nadu, Puducherry & Karaikal; at isolated places over Bihar, East Madhya Pradesh and Coastal Andhra Pradesh & Yanam; **below normal (-1.6°C to -3.0°C)** at a few places over East Uttar Pradesh, Gujarat Region, Coastal Karnataka and Kerala & Mahe; at isolated places over West Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim, West Madhya Pradesh, Konkan & Goa and Andaman & Nicobar Islands and **near normal** over rest parts of the country. Yesterday, the **lowest minimum temperature** of 6.2°C was reported at **Pantnagar (Uttarakhand)** over plains of the country.
- ◆ **Maximum Temperature Departures (as on 15-02-2023):** Maximum temperatures were **markedly above normal (5.1°C or more)** at most places over Himachal Pradesh, West Rajasthan; at many places over East Rajasthan, Saurashtra & Kutch; at a few places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Uttarakhand, Gujarat Region and at isolated places over Punjab, Haryana, Chandigarh & Delhi, West Madhya Pradesh; **appreciably above normal (3.1°C to 5.1°C )** at a few places over Vidarbha, Odisha, Assam & Meghalaya, Konkan & Goa and at isolated places over West Uttar Pradesh, East Madhya Pradesh, Nagaland, Manipur, Mizoram & Tripura, Coastal Karnataka; **above normal (1.6°C to 3.0°C)** at most places over Marathwada, Coastal Andhra Pradesh & Yanam; at many places over Sub-Himalayan West Bengal & Sikkim, Madhya Maharashtra; at a few places over Telangana and at isolated places over Tamil Nadu, Puducherry & Karaikal. They were **below normal (-1.6°C to -3.0°C)** at many places over Bihar, Andaman & Nicobar Islands; at a few places over Sub-Himalayan West Bengal & Sikkim, Interior Karnataka and near normal over rest parts of the country. Yesterday, the **highest maximum temperature** of 37.5°C was reported at **Surendranagar & Bhuj (Saurashtra & Kutch)**.

\* Red color warning does not mean "Red Alert" Red color warning means "Take Action".

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### Meteorological Analysis (Based on 0530 hours IST)

- ◆ The **cyclonic circulation** over Tripura & neighborhood extending upto 3.1 km above mean sea level persists.
- ◆ **Jet Stream Winds** of the order of 120 knots are prevailing between Latitudes 33-35°N over the Indian Region.
- ◆ A fresh **Western Disturbance** likely to affect the Western Himalayan Region from 18th February, 2023.

### Weather Forecast for next 5 days \* upto 0830 hours IST of 21ST February, 2023

- ◆ Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table-1.
- ◆ Gradual rise in minimum temperatures by 3-5°C over many parts of Northwest & East India during next 5 days.
- ◆ Gradual rise in minimum temperatures by 2-4°C over many parts of Central India and Maharashtra during next 5 days.
- ◆ No significant change in minimum temperatures very likely over rest parts of the country during next 5 days.
- ◆ **Moderate to Dense Fog** very likely in isolated pockets over coastal Odisha in night/morning hours during next 24 hours.

### Weather Outlook for subsequent 2 days during 21st-23rd February, 2023

- ◆ Light/moderate scattered to fairly widespread rainfall/snowfall likely over Western Himalayan Region and light isolated rainfall over Arunachal Pradesh and Andaman & Nicobar Islands.
- ◆ Dry weather likely over rest parts of the country.

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**Weather Warning during next 5 days \***

**16 Feb (Day 1):** ♦ No Weather Warning.

**17 Feb (Day 2):** ♦ No Weather Warning.

**18 Feb (Day 3):** ♦ No Weather Warning.

**19 Feb (Day 4):** ♦ No Weather Warning.

**20 Feb (Day 5):** ♦ No Weather Warning.

**Kindly download MAUSAM APP for location specific forecast & warning, MEGHDOOT APP for Agromet advisory and DAMINI APP for Lightning Warning & visit state MC/RMC websites for district wise warning.**

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**Table-1**  
**5 Day Rainfall Forecast (MORNING)**  
**16-February-2023**

| Met-Sub-Division               | 16-Feb<br>Today | 17Feb<br>Fri | 18Feb<br>Sat | 19Feb<br>Sun | 20Feb<br>Mon |
|--------------------------------|-----------------|--------------|--------------|--------------|--------------|
| 1. Andaman & Nicobar Islands   | SCT             | FWS          | SCT          | ISOL         | ISOL         |
| 2. Arunachal Pradesh           | ISOL            | DRY          | DRY          | ISOL         | ISOL         |
| 3. Assam & Meghalaya           | DRY             | DRY          | DRY          | DRY          | DRY          |
| 4. N. M. M. & T.               | DRY             | DRY          | DRY          | DRY          | DRY          |
| 5. S.H. West Bengal & Sikkim   | DRY             | DRY          | DRY          | DRY          | DRY          |
| 6. Gangetic West Bengal        | DRY             | DRY          | DRY          | DRY          | DRY          |
| 7. Odisha                      | DRY             | DRY          | DRY          | DRY          | DRY          |
| 8. Jharkhand                   | DRY             | DRY          | DRY          | DRY          | DRY          |
| 9. Bihar                       | DRY             | DRY          | DRY          | DRY          | DRY          |
| 10. East Uttar Pradesh         | DRY             | DRY          | DRY          | DRY          | DRY          |
| 11. West Uttar Pradesh         | DRY             | DRY          | DRY          | DRY          | DRY          |
| 12. Uttarakhand                | DRY             | DRY          | DRY          | ISOL         | ISOL         |
| 13. Haryana, Chd & Delhi       | DRY             | DRY          | DRY          | DRY          | DRY          |
| 14. Punjab                     | DRY             | DRY          | DRY          | DRY          | DRY          |
| 15. Himachal Pradesh           | DRY             | DRY          | DRY          | ISOL         | ISOL         |
| 16. J & K and Ladakh           | ISOL            | ISOL         | SCT          | SCT          | SCT          |
| 17. West Rajsthan              | DRY             | DRY          | DRY          | DRY          | DRY          |
| 18. East Rajasthan             | DRY             | DRY          | DRY          | DRY          | DRY          |
| 19. West Madhya Pradesh        | DRY             | DRY          | DRY          | DRY          | DRY          |
| 20. East Madhya Pradesh        | DRY             | DRY          | DRY          | DRY          | DRY          |
| 21. Gujarat Region             | DRY             | DRY          | DRY          | DRY          | DRY          |
| 22. Saurashtra & Kutch         | DRY             | DRY          | DRY          | DRY          | DRY          |
| 23. Konkan & Goa               | DRY             | DRY          | DRY          | DRY          | DRY          |
| 24. Madhya Maharashtra         | DRY             | DRY          | DRY          | DRY          | DRY          |
| 25. Marathawada                | DRY             | DRY          | DRY          | DRY          | DRY          |
| 26. Vidharbha                  | DRY             | DRY          | DRY          | DRY          | DRY          |
| 27. Chhattisgarh               | DRY             | DRY          | DRY          | DRY          | DRY          |
| 28. Coastal A. P. & Yanam      | DRY             | DRY          | DRY          | DRY          | DRY          |
| 29. Telangana                  | DRY             | DRY          | DRY          | DRY          | DRY          |
| 30. Rayalaseema                | DRY             | DRY          | DRY          | DRY          | DRY          |
| 31. T.N.,Puducherry & Karaikal | DRY             | DRY          | DRY          | DRY          | DRY          |
| 32. Coastal Karnataka          | DRY             | DRY          | DRY          | DRY          | DRY          |
| 33. North Interior Karnataka   | DRY             | DRY          | DRY          | DRY          | DRY          |
| 34. South Interior Karnataka   | DRY             | DRY          | DRY          | DRY          | DRY          |
| 35. Kerala & Mahe              | DRY             | DRY          | DRY          | DRY          | DRY          |
| 36. Lakshadweep                | DRY             | DRY          | DRY          | DRY          | DRY          |

**% Station Reporting Rainfall**

| % Stations | Category                             | % Stations | Category                      |
|------------|--------------------------------------|------------|-------------------------------|
| 76-100     | Widespread (WS/Most Places)          | 26-50      | Scattered (SCT/ A Few Places) |
| 51-75      | Fairly Widespread (FWS/ Many Places) | 1-25       | Isolated (ISOL)               |
| No Rain    | Dry                                  |            |                               |

\* Red color warning does not mean "Red Alert" Red color warning means "Take Action".

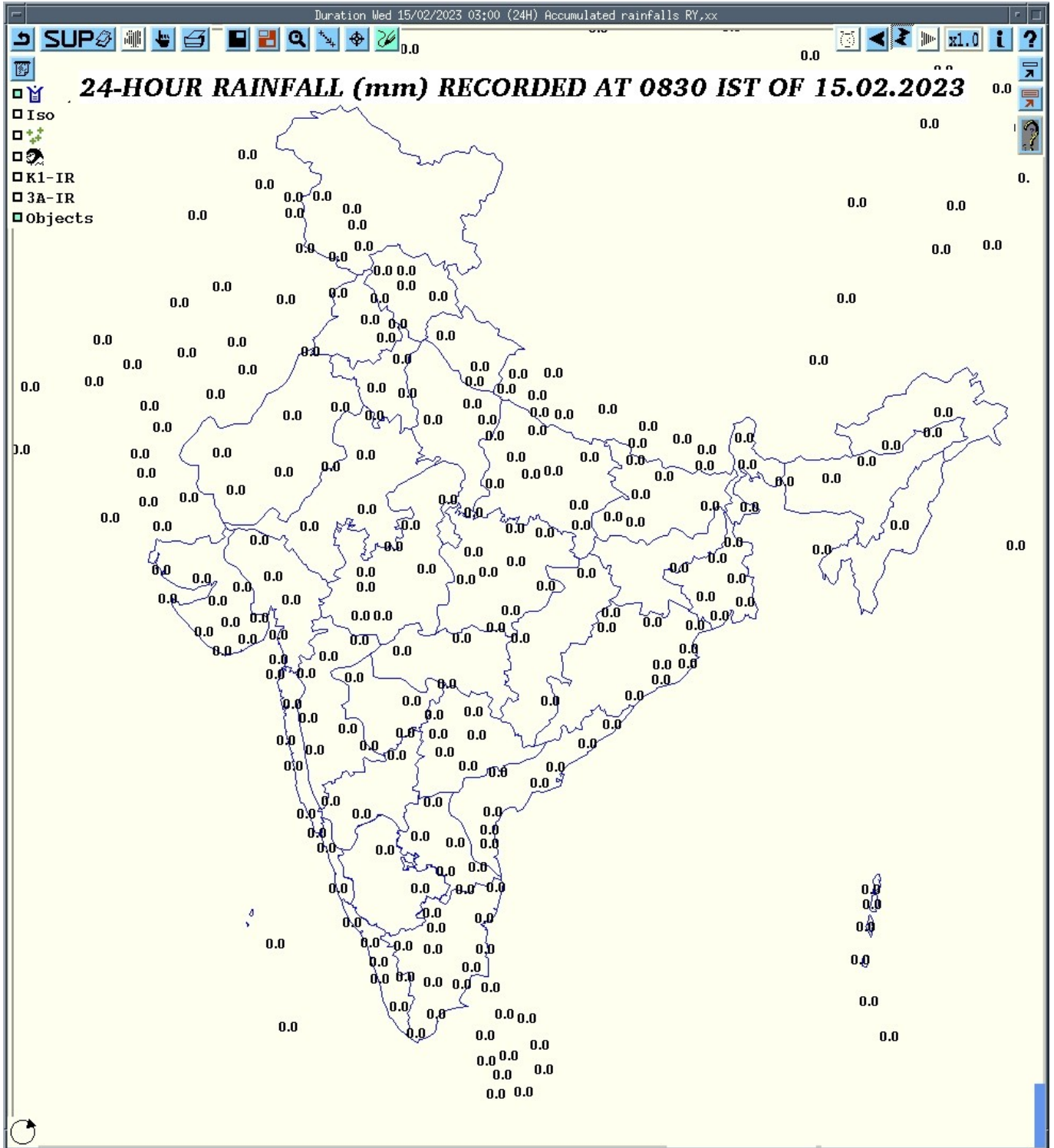
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Fig. 1: Accumulated Rainfall (mm) during past 24 hours



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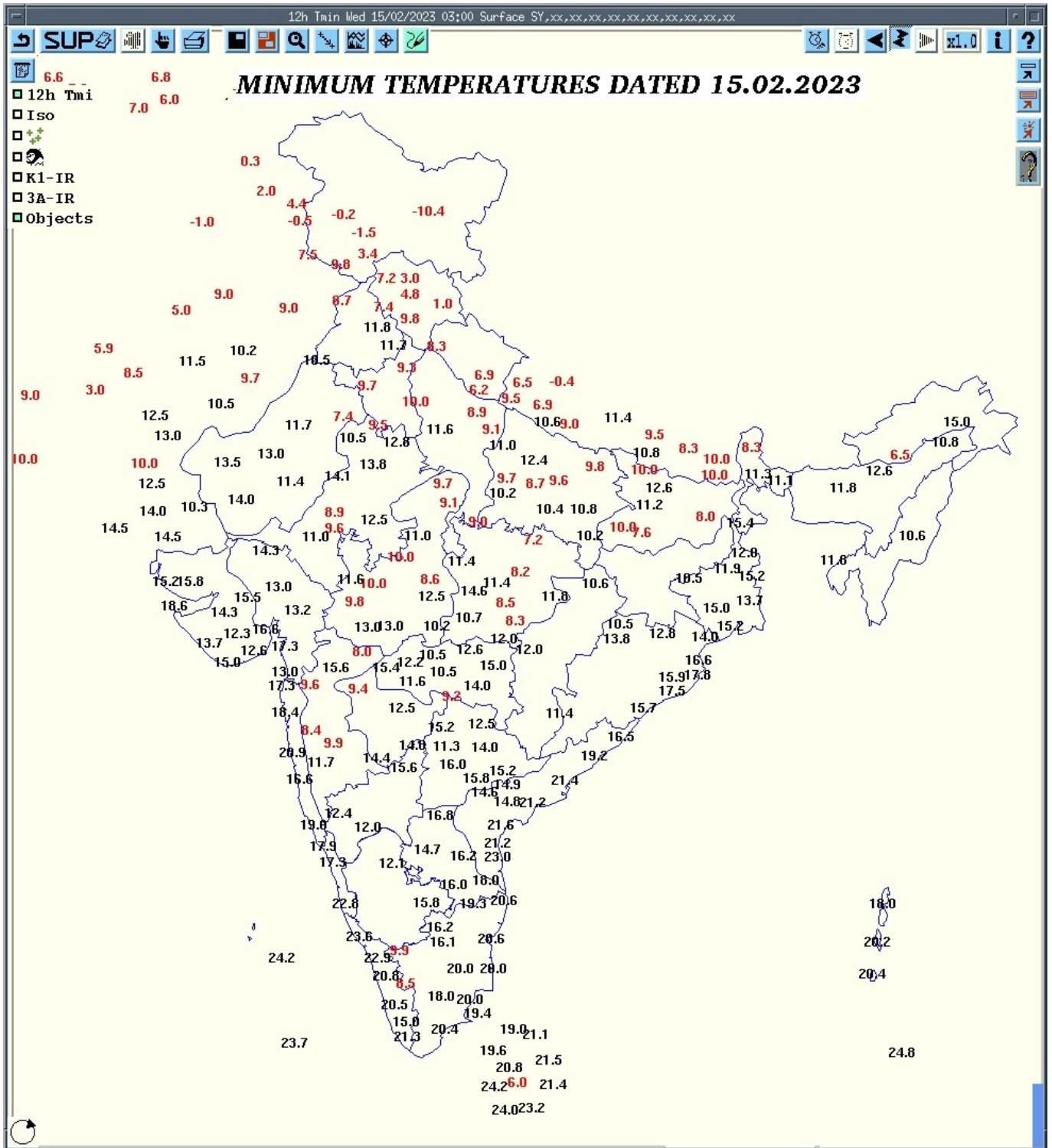
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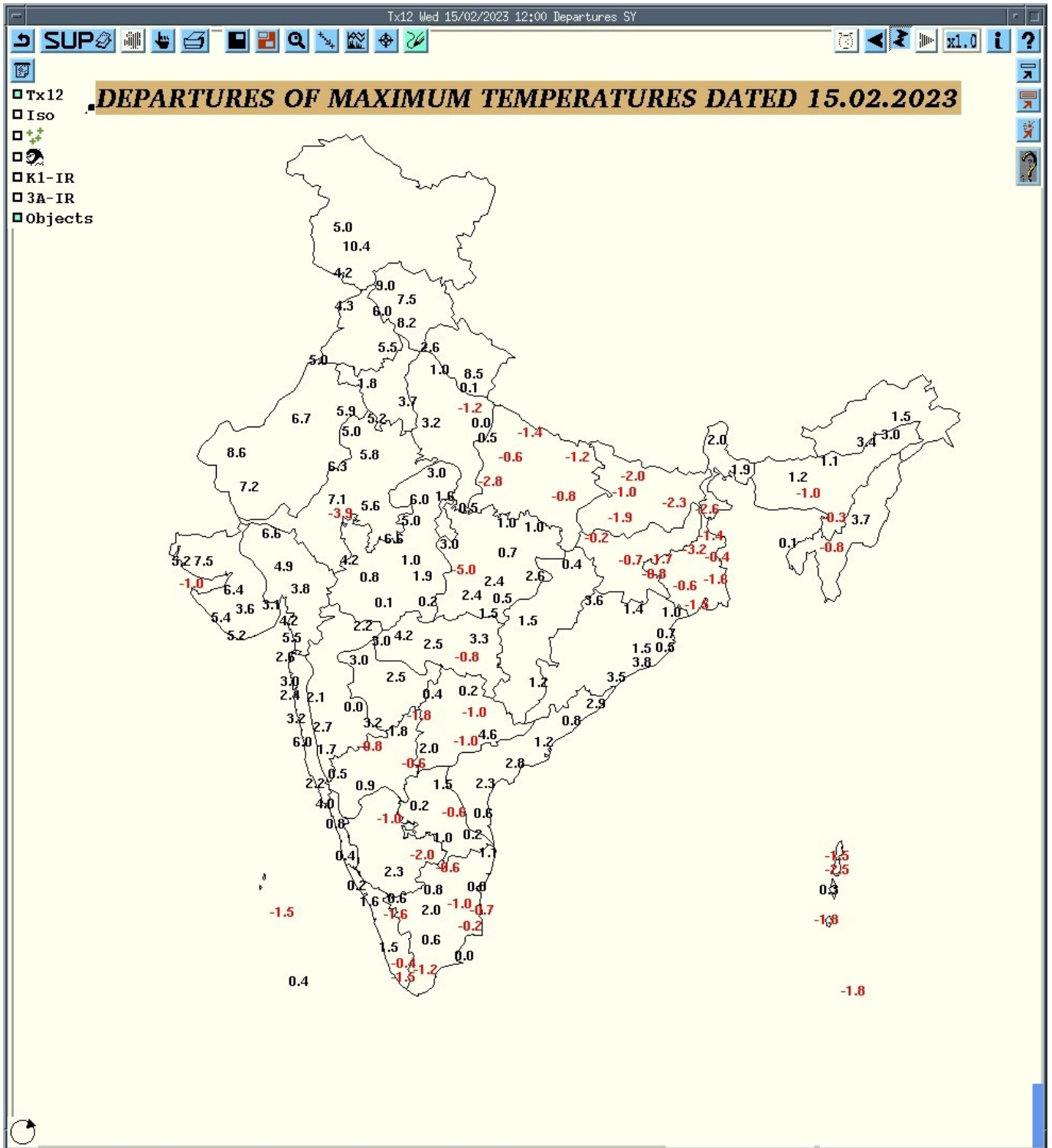
Fig. 3: Minimum Temperature during past 24 hours



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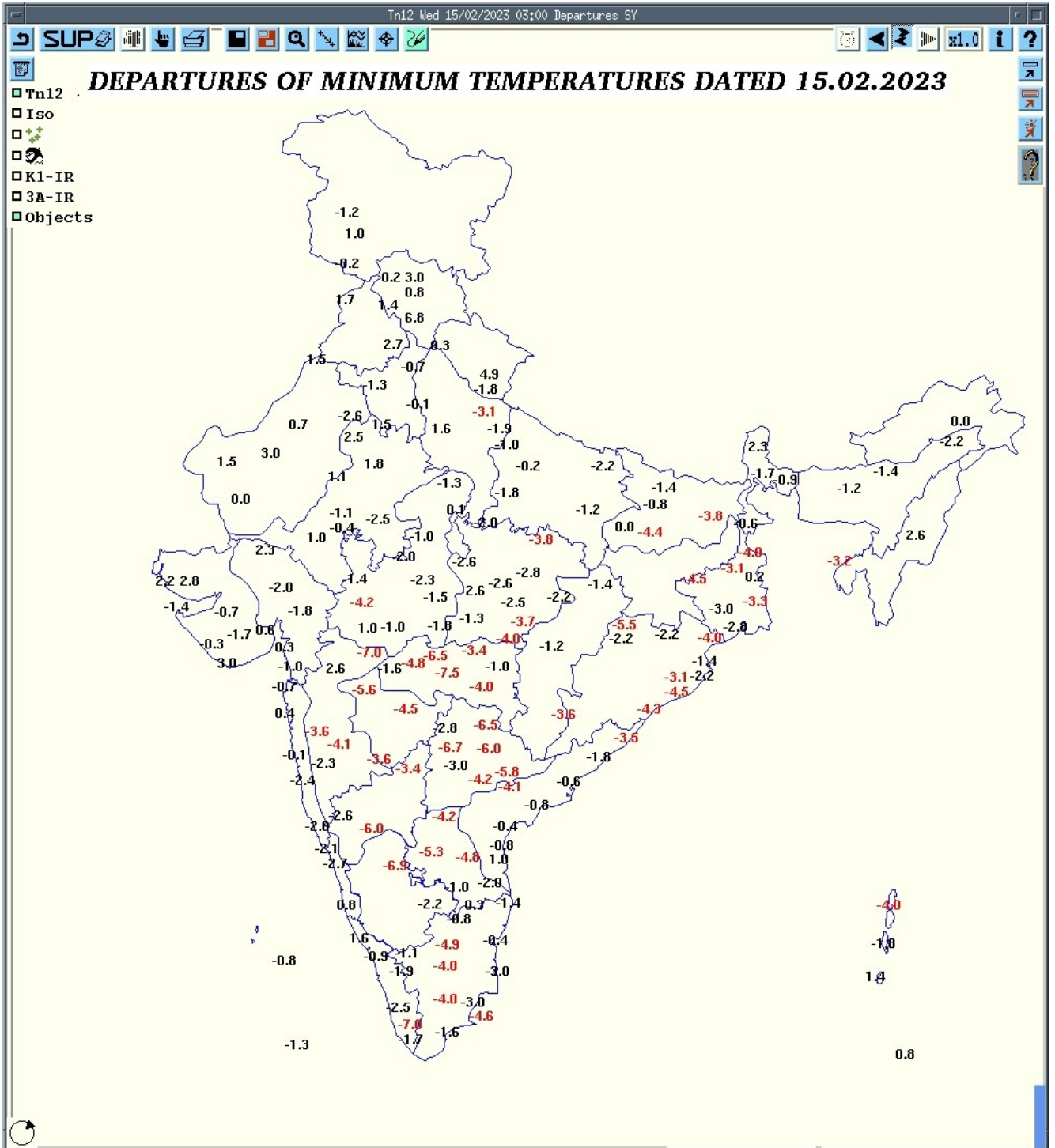
Fig. 4: Departure from Normal of Maximum Temperatures



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Fig. 5: Departure from Normal of Minimum Temperatures



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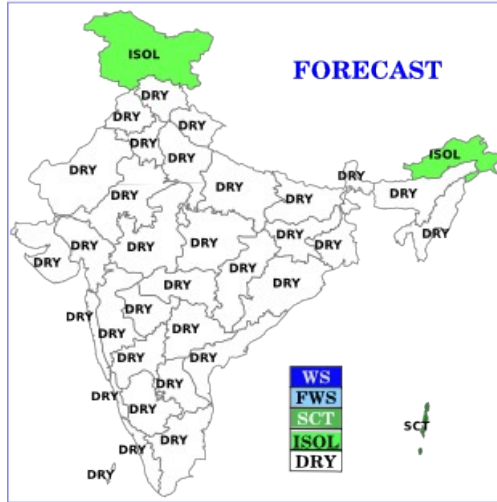
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## Thursday 16 February 2023



**16 Feb (Day 1):** ♦ No Weather Warning.



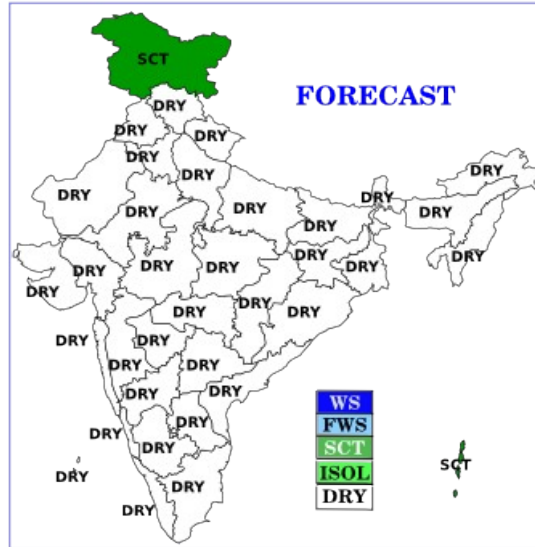
## Friday 17 February 2023



17 Feb (Day 2): ♦ No Weather Warning.



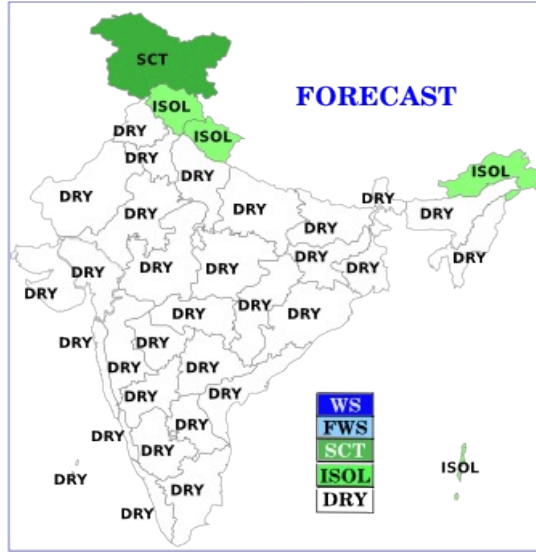
## Saturday 18 February 2023



18 Feb (Day 3): ♦ No Weather Warning.



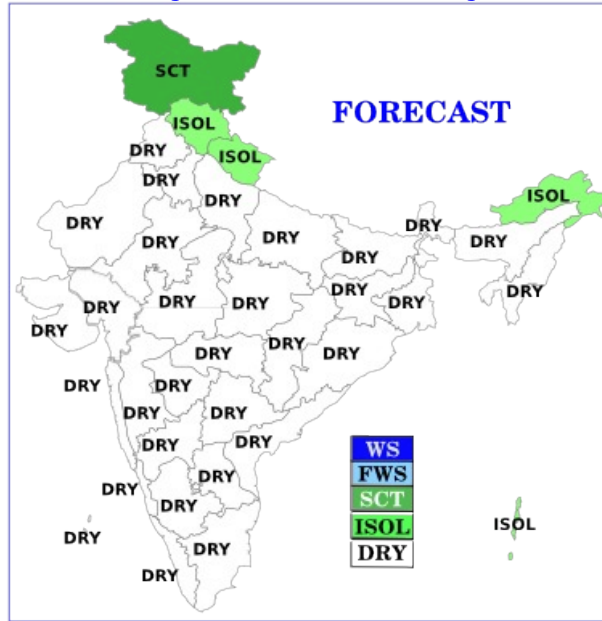
## Sunday 19 February 2023



19 Feb (Day 4): ♦ No Weather Warning.



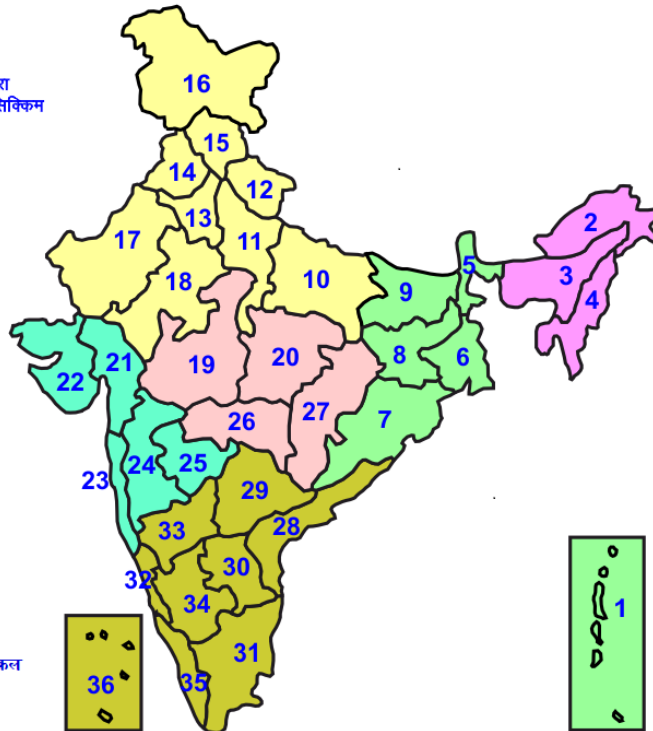
## Monday 20 February 2023



20 Feb (Day 5): ♦ No Weather Warning.

## LEGENDS

- 1 अंडमान और निकोबार द्वीप समूह
- 2 अरुणाचल प्रदेश
- 3 असम और मेघालय
- 4 नागालैंड मनीपुर मीजोरम और त्रिपुरा
- 5 उप हिमालय पश्चिम बंगाल एवं सिक्किम
- 6 पश्चिम गंगोय बंगाल
- 7 ओडिशा
- 8 झारखंड
- 9 बिहार
- 10 पूर्वी उत्तर प्रदेश
- 11 पश्चिम उत्तर प्रदेश
- 12 उत्तराखंड
- 13 हरियाणा चंडिगढ़ एवं दिल्ली
- 14 पंजाब
- 15 हिमाचल प्रदेश
- 16 जम्मू एवं कश्मीर एवं लद्दाख
- 17 पश्चिम राजस्थान
- 18 पूर्वी राजस्थान
- 19 पश्चिम मध्य प्रदेश
- 20 पूर्वी मध्य प्रदेश
- 21 गुजरात क्षेत्र
- 22 सौराष्ट्र एवं कच्छ
- 23 कोंकण एवं गोवा
- 24 मध्य महाराष्ट्र
- 25 मराठावाडा
- 26 विदर्भ
- 27 छत्तीसगढ़
- 28 तटीय आंध्र प्रदेश एवं यनम
- 29 तेलंगाना
- 30 रायलसीमा
- 31 तमिलनाडु, पुदुचेरी एवं कराईकल
- 32 तटिय कर्नाटक
- 33 आंतरिक उत्तरी कर्नाटक
- 34 आंतरिक दक्षिणी कर्नाटक
- 35 केरल एवं माहे
- 36 लक्षद्वीप



1. Andaman & Nicobar Islands
2. Arunachal Pradesh
3. Assam & Meghalaya
4. Nagaland, Manipur, Mizoram & Tripura
5. Sub-Himalayan West Bengal & Sikkim
6. Gangetic West Bengal
7. Orissa
8. Jharkhand
9. Bihar
10. East Uttar Pradesh
11. West Uttar Pradesh
12. Uttarakhand
13. Haryana, Chd & Delhi
14. Punjab
15. Himachal Pradesh
16. Jammu & Kashmir and Ladakh
17. West Rajasthan
18. East Rajasthan
19. West Madhya Pradesh
20. East Madhya Pradesh
21. Gujarat
22. Saurashtra
23. Konkan & Goa
24. Madhya Maharashtra
25. Marathawada
26. Vidharbha
27. Chhattisgarh
28. Coastal Andhra Pradesh & Yanam
29. Telangana
30. Rayalaseema
31. Tamilnadu, Puducherry & Karaikal
32. Coastal Karnataka
33. North Interior Karnataka
34. South Interior Karnataka
35. Kerala & Mahe
36. Lakshadweep

## SPATIAL DISTRIBUTION (% of Stations reporting)

| % Stations | Category                             | % Stations | Category                      |
|------------|--------------------------------------|------------|-------------------------------|
| 76-100     | Widespread (WS/Most Places)          | 26-50      | Scattered (SCT/ A Few Places) |
| 51-75      | Fairly Widespread (FWS/ Many Places) | 1-25       | Isolated (ISOL)               |

## WARNING

|                                |
|--------------------------------|
| <b>WARNING (TAKE ACTION)</b>   |
| <b>ALERT ( BE PREPARED)</b>    |
| <b>WATCH (BE UPDATED)</b>      |
| <b>NO WARNING ( NO ACTION)</b> |

## Probabilistic Forecast

| Terms       | Probability of Occurrence (%) |
|-------------|-------------------------------|
| Unlikely    | < 25                          |
| Likely      | 25 - 50                       |
| Very Likely | 50 - 75                       |
| Most Likely | > 75                          |



Heavy Rain



Heavy Snow



Thunderstorm



Dust Storm



Strong Winds



Visibility



Cyclone



Squall/ Hail



Frost



Cold Wave



Heat Wave



Sea State

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## LEGENDS

### WARNING

|                         |
|-------------------------|
| WARNING (TAKE ACTION)   |
| ALERT ( BE PREPARED)    |
| WATCH (BE UPDATED)      |
| NO WARNING ( NO ACTION) |

### Probabilistic Forecast

| Terms       | Probability of Occurrence (%) |
|-------------|-------------------------------|
| Unlikely    | < 25                          |
| Likely      | 25 - 50                       |
| Very Likely | 50 - 75                       |
| Most Likely | > 75                          |



Rain/ Snow \*

Heavy: 64.5 to 115.5 mm/cm \*  
Very Heavy: 115.6 to 204.4 mm/cm \*  
Extremely Heavy: > 204.4 mm/cm \*



Heat Wave

When maximum temperature of a station reaches  $\geq 40^{\circ}\text{C}$  for plains and  $\geq 30^{\circ}\text{C}$  for hilly regions

(a) Based on Departure from normal

Heat Wave: Maximum Temperature Departure from normal  $4.5^{\circ}\text{C}$  to  $6.4^{\circ}\text{C}$ .

Severe Heat Wave: Maximum Temperature Departure from normal  $\geq 6.5^{\circ}\text{C}$

(b). Based on Actual maximum temperature

Heat Wave: When actual maximum temperature  $\geq 45^{\circ}\text{C}$ .

Severe Heat Wave: When actual maximum temperature  $\geq 47^{\circ}\text{C}$

(c) Criteria for heat wave for coastal stations

When maximum temperature departure is  $> 4.5^{\circ}\text{C}$  from normal. Heat Wave may be described provided maximum temperature  $\geq 37^{\circ}\text{C}$



Warm Night

When maximum temperature remains  $40^{\circ}\text{C}$

Warm Night: When minimum temperature departure  $4.5^{\circ}\text{C}$  to  $6.4^{\circ}\text{C}$ .

Severe Warm Night: When minimum temperature departure  $> 6.4^{\circ}\text{C}$ .



Cold Wave

When minimum temperature of a station  $\leq 10^{\circ}\text{C}$  for plains and  $\leq 0^{\circ}\text{C}$  for hilly regions.

(a). Based on departure

Cold Wave: Minimum Temperature Departure from normal  $-4.5^{\circ}\text{C}$  to  $-6.4^{\circ}\text{C}$ .

Severe Cold Wave: Minimum Temperature Departure from normal  $\leq -6.5^{\circ}\text{C}$

(b) Based on actual Minimum Temperature (for Plains only)

Cold Wave : When Minimum Temperature is  $\leq 4.0^{\circ}\text{C}$

Severe Cold Wave: When Minimum Temperature is  $\leq 2.0^{\circ}\text{C}$

(c) For Coastal Stations

When Minimum Temperature departure is  $\leq -4.5^{\circ}\text{C}$  & actual Minimum Temperature is  $\leq 15^{\circ}\text{C}$



Cold Day

When minimum temperature of a station  $\leq 10^{\circ}\text{C}$  for plains and  $\leq 0^{\circ}\text{C}$  for hilly regions

Based on departure

Cold Day: Maximum Temperature Departure from normal  $-4.5^{\circ}\text{C}$  to  $-6.4^{\circ}\text{C}$ .

Severe Cold Day: Maximum Temperature Departure from normal  $\leq -6.5^{\circ}\text{C}$



Fog

Phenomenon of small droplets suspended in air and the horizontal visibility  $< 1\text{km}$

Moderate Fog: When the visibility between 500-200 metres

Dense Fog: when the visibility between 50- 200 metres

Very Dense Fog: when the visibility  $< 50$  metres



Thunderstorm

Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)



Dust/Sand Storm

An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.



Frost

Ice deposits on ground

Air temperature  $\leq 4^{\circ}\text{C}$  ( over Plains)



Squall

A strong wind that rises suddenly, lasts for atleast 1 minute.

Moderate: Wind speed 52-61 kmph

Severe: Wind speed 62-87 kmph

Very Severe: Wind speed  $> 87$  kmph



Sea State

Effect of various waves in the sea over specific area

Rough to very rough: Wind speed 41-62 kmph (22-33 knots) & Wave height 2.5-6 metre

High to very high: Wind speed 63-117 kmph ( 34-63 knots) & Wave height 6-14 metre

Phenomenal: Wind speed  $> 117$  kmph ( $> 63$  knots) & Wave height  $> 14$  metre



Cyclone

Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)

Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)

Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots)

Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots)

Super Cyclone Strom: Wind speed  $> 220$  kmph ( $> 119$  knots)

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