

#### National Weather Forecasting Centre India Meteorological Department Ministry of Earth Sciences

Sunday 20 June 2021 NIGHT

Time of Issue: 2000 hours IST

## ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

## **Significant Weather Features**

- Further advance of southwest monsoon into remaining parts of Rajasthan, west Uttar Pradesh, Haryana, Chandigarh & Delhi and Punjab is likely to be slow as large scale features are not favourable and the forecast wind pattern by the numerical models do not indicate any favourable condition for sustained rainfall over the region during the forecast period.
- Under the influence of a Low pressure area over southeast Uttar Pradesh & neighbourhood; fairly widespread to widespread rainfall with isolated **heavy to very heavy falls** very likely over East Uttar Pradesh & Bihar during next 24 hours and significant reduction in rainfall activity thereafter.
- ♦ Under the influence of a Western Disturbance as a trough in mid tropospheric levels and monsoonal easterlies; widespread rainfall with isolated **heavy falls** very likely over Uttarakhand during next 24 hours and significant reduction in rainfall activity thereafter.
- ♦ Moderate to severe thunderstorms accompanied by frequent cloud to ground lightning very likely over East Uttar Pradesh and Bihar during next 24 hours. This may cause injuries leading to casualties to people and animals staying outdoors.at most places over Uttarakhand, West Bengal & Sikkim, Bihar, East Uttar Pradesh, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Gujarat state, Chhattisgarh, Kerala & Mahe, Lakshadweep and Coastal & North Interior Karnataka; at many places over West Uttar Pradesh, Jharkhand, Vidarbha, Chhattisgarh, South Interior Karnataka; at a few places over Himachal Pradesh, Odisha, Madhya Maharashtra,Madhya Pradesh and at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Punjab, Haryana, Chandigarh & Delhi, Rajasthan, Marathawada, Coatsal Andhra Pradesh, Telangana, Rayalaseema and Tamilnadu, Puducherry & Karaikal.

#### **Main Weather Observations**

- ♦ Rain/Thundershowers observed (from 0830 hours IST to 1730 hours IST of today):at most places over Uttrakhand, Bihar, Sub-Himalayan west Bengal & Sikkim, Gangetic West Bengal, Saurashtra & Kutch and Coastal Karnataka; at many places over Gujarat Region, and Kerala & Mahe; at a few places over East Uttar Pradesh, Assam & Meghalaya, West madhya Pradesh, Vidarbha and Saurashtra & Kutch and at isolated places over west Uttar Pradesh, Nagaland, Manipur, Mizoram & Tripura, Odisha, Jharkhand, Chhattisgarh, East Madhya Pradesh, Rajasthan, south interior Karnataka, Lakshadweep and Telangana.
- Rainfall recorded (from 0830 hours IST to 1730 hours IST of today)(2 cm or more):Patna, Baroda (AP), Supaul, Bhagalpur, Krishna Nagar, Ranchi, Valprai, and Hanovar-2 each; Motihari, Kalimpong and Shanti Niketan-3 each; Raikot and Bhaunagar-5 each.
- ♦ Thunderstorm observed (from 0830 hours IST to 1730 hrs IST of today)): at many places over Gangetic west Bengal; at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Odisha, Coastal Karnataka, Jharkhand, West Rajasthan, East Uttar Pradesh and Kerala & Mahe.
- ♦ Maximum Temperature Departures as on 20-06-2021: Maximum temperatures are above normal (1.6°C to 3.0°C) at most places over Tamil Nadu and Kerala & Mahe; at many places over Konkan & Goa and Andaman & Nicobar Islands; at a few places over Odisha and at isolated places over Assam & Meghalaya and Coastal Andhra Pradesh & Yanam. They are markedly below normal (-5.1°C and less) at most places over Bihar and East Uttar Pradesh; at many places over Uttarakhand and West Uttar Pradesh; appreciably below normal (-3.1°C to -5.0°C) at many places over West Madhya Pradesh and Gujarat Region; at a few places over Gangetic West Bengal and at isolated places over Saurashtra & Kutch and below normal (-1.6°C to -3.0°C) at most places over Haryana, Chandigarh & Delhi, Sub-Himalayan West Bengal & Sikkim and East Rajasthan; at many places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Himachal Pradesh and East Madhya Pradesh and at a few places over West Rajasthan and Coastal Karnataka and near normal over rest parts of the country. Today, the highest maximum temperature of 41.4°C is reported at Ganganagar (West Rajasthan).
- ♦ Minimum Temperature Departures as on 20-06-2021: Minimum temperatures are above normal (1.6°C to 3.0°C) at isolated places over Odisha, Coastal Andhra Pradesh & Yanam and Andaman & Nicobar Islands. They are appreciably below normal (-3.1°C to -5.0°C) at isolated places over Haryana, Chandigarh & Delhi, Uttar Pradesh, Saurashtra & Kutch, East Madhya Pradesh, Telangana; below normal (-1.6°C to -3.0°C) at most places over Coastal Karnataka, Gujarat Region and Bihar; at many places over East Rajasthan, Chhattisgarh and Vidarbha; at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Gangetic West Bengal, Tamilnadu, Puducherry & Karaikal and Nagaland, Manipur, Mizoram & Tripura and near normal over rest parts of the country. The lowest minimum temperature of 17.6°C reported at Seoni (East Madhya Pradesh) over the plains of the country.



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## Meteorological Analysis (Based on 1730 hours IST)

- ♦ The northern Limit of southwest monsoon (NLM) continues to pass through Lat. 26°N / Long. 70°E, Barmer, Bhilwara, Dholpur, Aligarh, Meerut, Ambala and Amritsar.
- Further advance of southwest monsoon into remaining parts of Rajasthan, West Uttar Pradesh, Haryana, Chandigarh & Delhi and Punjab is likely to be slow as large scale features are not favourable and the forecast wind pattern by the numerical models do not indicate any favourable condition for sustained rainfall over the region during the forecast period.
- ♦ The Low pressure area over southeast Uttar Pradesh & neighbourhood with the associated cyclonic circulation extending upto mid tropospheric levels persists.
- ♦ The trough from northwest Rajasthan to northeast Bay of Bengal across south Haryana, center of low pressure area over southeast Uttar Pradesh & neighbourhood, north Jharkhand and Gangetic West Bengal extending upto 1.5 km above mean sea level persists.
- ◆ The off shore trough at mean sea level from south Maharashtra coast to north Kerala coast persists.
- $\bullet$  A fresh Western Disturbance as a trough in mid & upper tropospheric westerlies with its axis at 5.8 km above mean sea level runs roughly along Long. 64°E to the north of Lat. 28°N.
- ♦ The cyclonic circulation over Haryana & neighbourhood extending upto 1.5 km above mean sea level persists.
- ♦ The cyclonic circulation over south Gujarat & neighbourhood between 3.1 & 5.8 km above mean sea level tilting southwestwards with height persists.
- ♦ The Western Disturbance as a trough in mid & upper tropospheric westerlies with its axis at 5.8 km above mean sea level roughly along Long. 72°E to the north of Lat. 25°N has moved away east-northeastwards.

## Weather Forecast for next 5 days \* upto 0830 hours IST of 25th June, 2021

- ♦ Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table-1.
- ♦ No significant change in temperatures over most parts of Northwest India during next 2 days and gradual rise by 2-3° C thereafter
- ◆ No significant change in temperatures over remaining parts of the country during next 5 days.

## Weather Outlook for subsequent 2 days from 25th June 2021 to 27th June 2021

- ♦ Scattered to Fairly widespread rainfall likely over most parts of Northeast and East India, along the west coast and Andaman & Nicobar islands.
- ♦ Isolated rainfall over remaining parts of the country.



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## Weather Warning during next 5 days \*

**20** June (Day 1): ♦ Heavy to Very Heavy Rainfall very likely at isolated places over East Uttar Pradesh and Bihar and Heavy Rainfall at isolated places over Uttarakhand, Jharkhand, West Bengal & Sikkim, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Gujarat State, ghat areas of Madhya Maharashtra, Konkan & Goa, Coastal & South Interior Karnataka and Kerala & Mahe.

- ♦ Thunderstorm with lightning & gusty winds (speed reaching 30-40 kmph) very likely at isolated places over Uttarakhand, Punjab, Haryana, Chandigarh & Delhi; with lightning at isolated places over Jammu Division, Himachal Pradesh, Uttar Pradesh, Bihar, Jharkhand, Gangetic West Bengal, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Odisha, Madhya Pradesh, Vidarbha, Chhattisgarh, Coastal & North Interior Karnataka and Tamilnadu, Puducherry & Karaikal.
- ◆Duststorm/Thunderstorm with lightning & gusty winds (speed reaching 30-40 kmph) very likely at isolated places over Rajasthan.
- ◆ Strong Winds (speed 40-50 kmph gusting to 60 kmph) very likely over Southwest, Westcentral & adjoining Eastcentral Arabian Sea and Squally Weather (speed 50-60 kmph) over North Bay of Bengal; (speed 50-60 kmph) along & off Kerala-Karnataka-Goa-south Maharashtra-Gujarat coasts and Lakshadweep area. Fishermen are advised not to venture into these areas.
- 21 June (Day 2): ♦ Heavy Rainfall very likely at isolated places over Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Konkan & Goa Coastal Karnataka Tamilnadu, Puducherry & Karaikal and Kerala & Mahe.
- ♦ Thunderstorm with lightning & gusty winds (speed reaching 30-40 kmph) very likely at isolated places over Uttarakhand and Andaman & Nicobar Islands and

with lightning at isolated places over Himachal Pradesh, Uttar Pradesh, East Madhya Pradesh, Haryana, Chandigarh & Delhi, Chhattisgarh, Bihar, Jharkhand, Odisha, Assam & Meghalaya, Coastal Karnataka and Tamilnadu, Puducherry & Karaikal.

- ◆Duststorm/Thunderstorm with lightning & gusty winds (speed reaching 30-40 kmph) very likely at isolated places over Rajasthan.
- ♦ Strong Winds (speed 40-50 kmph gusting to 60 kmph) very likely over Southwest, Westcentral & adjoining Eastcentral Arabian Sea. Fishermen are advised not to venture into these areas.
- **22 June (Day 3): ♦ Heavy Rainfall** very likely at isolated places over Chhattisgarh, Bihar, Odisha, Andaman & Nicobar Islands, Assam & Meghalaya and Tamilnadu, Puducherry & Karaikal.
- ♦ Thunderstorm with lightning & gusty winds (speed reaching 40-50 kmph) very likely at isolated places over Andaman & Nicobar Islands and with lightning at isolated places over East Madhya Pradesh, Chhattisgarh, Bihar, Gangetic West Bengal, Odisha, Coastal Andhra Pradesh & Yanam, Rayalaseema and Tamilnadu, Puducherry & Karaikal.
- ◆ Strong Winds (speed 40-50 kmph gusting to 60 kmph) likely over Southwest, Westcentral & adjoining Eastcentral Arabian Sea. Fishermen are advised not to venture into these areas.
- 23 June (Day 4): ♦ Heavy to very Heavy Rainfall likely at isolated places over Assam & Meghalaya and Heavy Rainfall at isolated places over Chhattisgarh, Gangetic West Bengal, Odisha, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Coastal Andhra Pradesh & Yanam and Tamilnadu, Puducherry & Karaikal.
- ♦ Thunderstorm with lightning & gusty winds (speed reaching 40-50 kmph) likely at isolated places over Andaman & Nicobar Islands and with lightning at isolated places over East Madhya Pradesh, Vidarbha, Chhattisgarh, Gangetic West Bengal, Odisha, Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema and Tamilnadu, Puducherry & Karaikal.
- ◆ Strong Winds (speed 40-50 kmph gusting to 60 kmph) likely over Southwest, Westcentral & adjoining Eastcentral Arabian Sea. Fishermen are advised not to venture into these areas.
- **24 June (Day 5): ♦ Heavy Rainfall** likely at isolated places over Chhattisgarh, Bihar, West Bengal & Sikkim, Odisha, Arunachal Pradesh, Assam & Meghalaya, Coastal Andhra Pradesh & Yanam, Telangana and Tamilnadu, Puducherry & Karaikal.
- ♦ Thunderstorm with lightning & gusty winds (speed reaching 30-40 kmph) likely at isolated places over Andaman & Nicobar Islands and with lightning at isolated places over East Uttar Pradesh, East Madhya Pradesh, Vidarbha, Chhattisgarh, Sub-Himalayan West Bengal & Sikkim, Coastal Andhra Pradesh & Yanam, Telangana and Rayalaseema.
- ◆ Strong Winds (speed 40-50 kmph gusting to 60 kmph) likely over Southwest, Westcentral & adjoining Eastcentral Arabian Sea. Fishermen are advised not to venture into these areas.

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.



# Table-1 5 Day Rainfall Forecast (NIGHT)

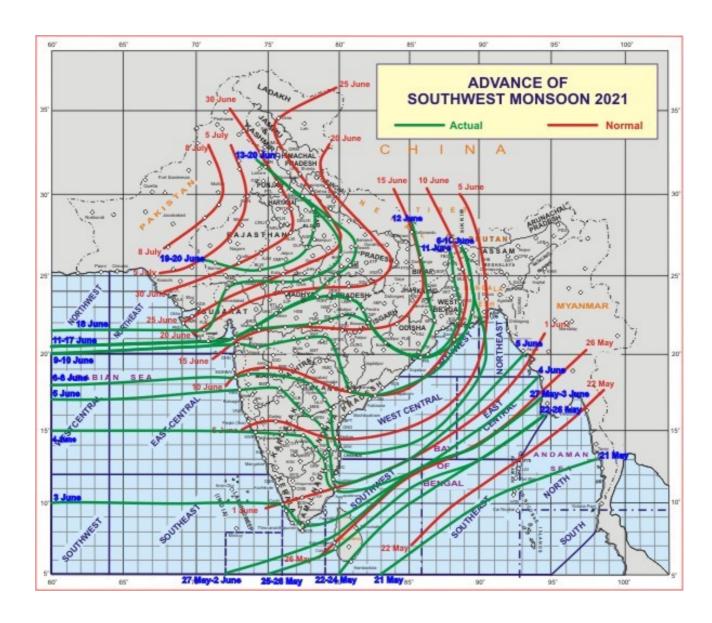
20-June-2021

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

#### % Station Reporting Rainfall

70 State of Teleporting Tallians					
% Stations	Category	% Stations	Category		
76-100		26-50	Scattered (SCT/ A Few Places)		
51-75	Fairly Widespred (FWS/ Many Places)	1-25	Isolated (ISOL)		
No Rain	Dry				







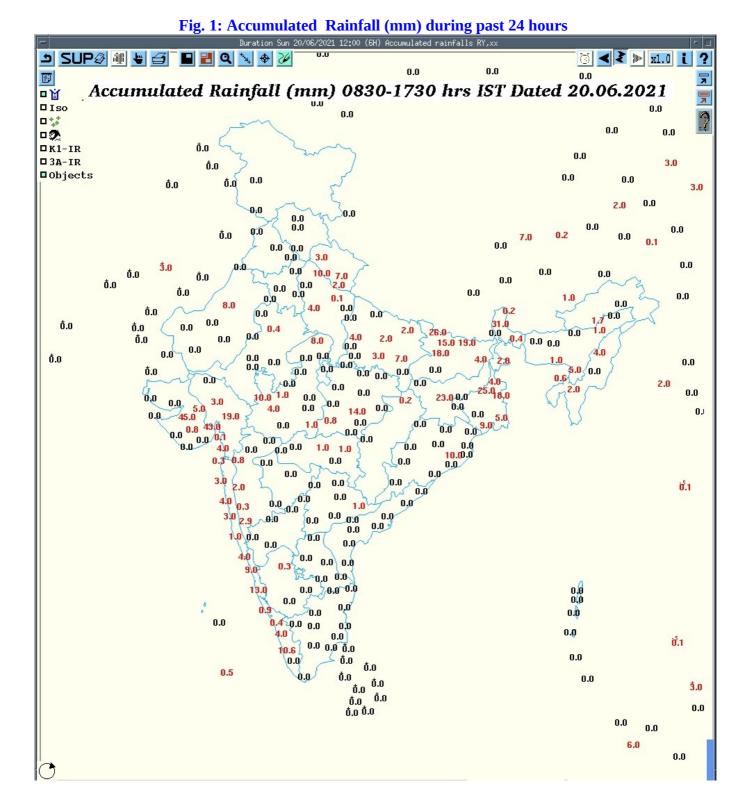




Fig. 2: Maximum Temperature during past 24 hours

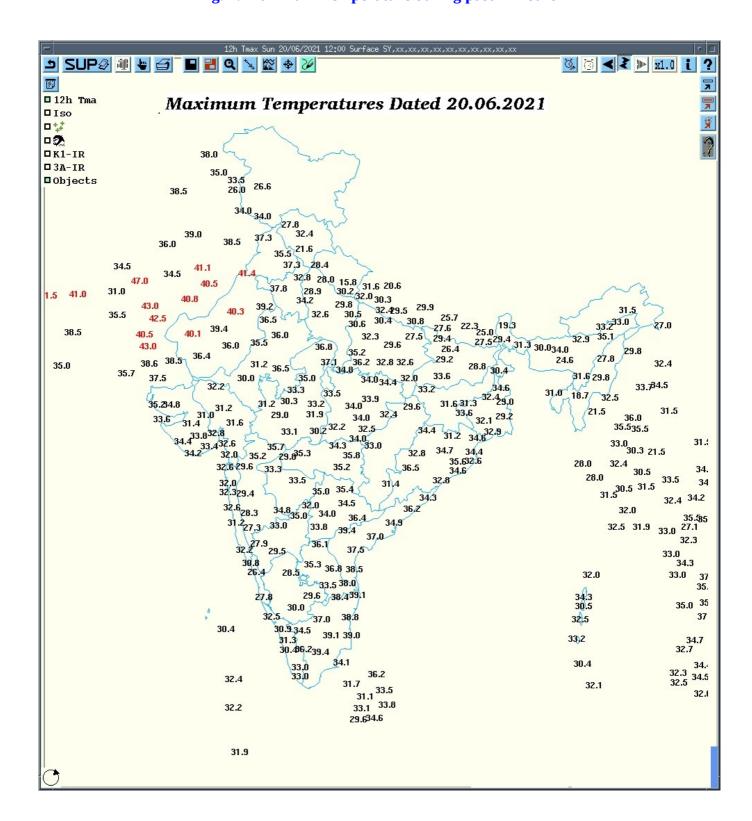




Fig. 3: Minimum Temperature during past 24 hours

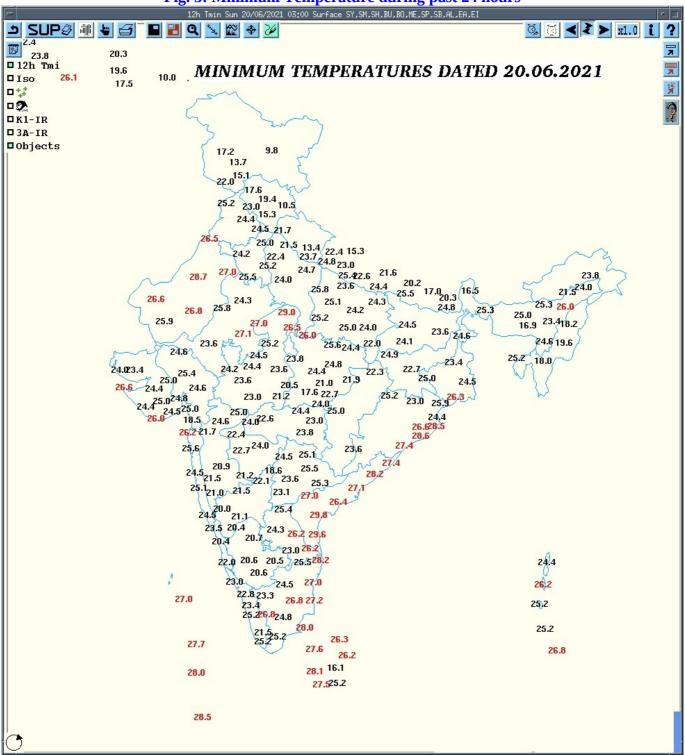




Fig. 4: Departure from Normal of Maximum Temperatures

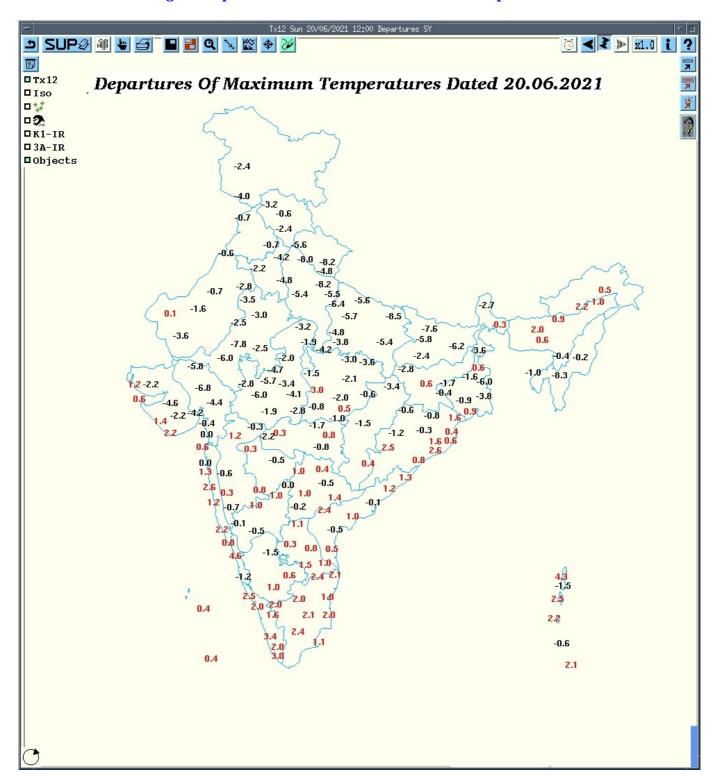
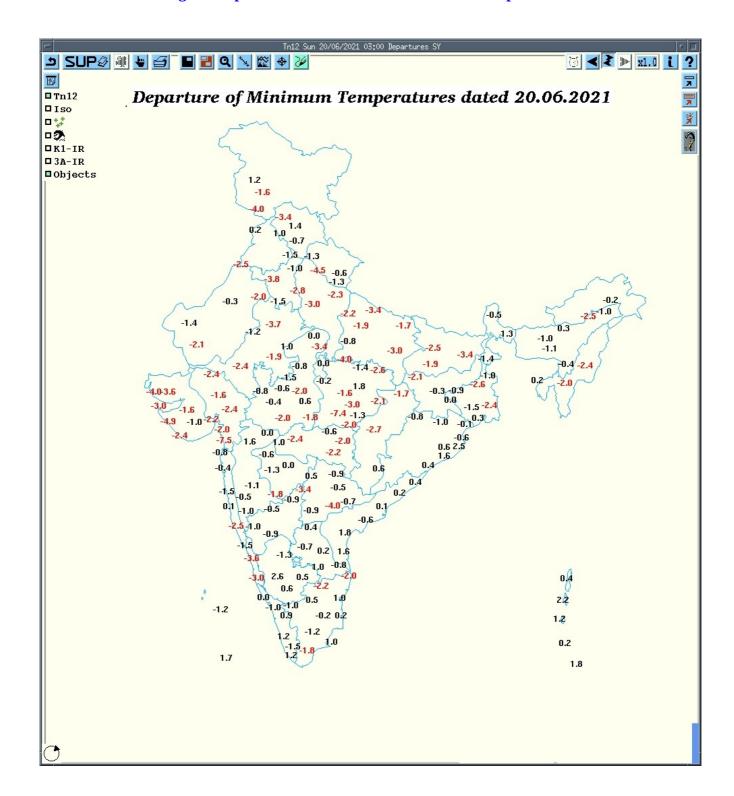


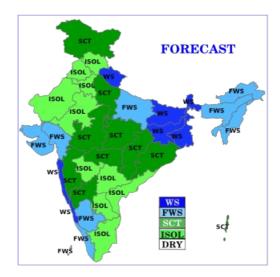


Fig. 5: Departure from Normal of Minimum Temperatures





## **Sunday 20 June 2021**



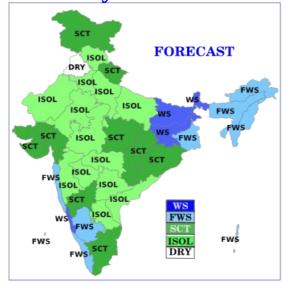


**20 June (Day 1): ♦ Heavy to Very Heavy Rainfall** very likely at isolated places over East Uttar Pradesh and Bihar and **Heavy Rainfall** at isolated places over Uttarakhand, Jharkhand, West Bengal & Sikkim, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Gujarat State, ghat areas of Madhya Maharashtra, Konkan & Goa, Coastal & South Interior Karnataka and Kerala & Mahe.

- ♦ Thunderstorm with lightning & gusty winds (speed reaching 30-40 kmph) very likely at isolated places over Uttarakhand, Punjab, Haryana, Chandigarh & Delhi; with lightning at isolated places over Jammu Division, Himachal Pradesh, Uttar Pradesh, Bihar, Jharkhand, Gangetic West Bengal, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Odisha, Madhya Pradesh, Vidarbha, Chhattisgarh, Coastal & North Interior Karnataka and Tamilnadu, Puducherry & Karaikal.
- ◆Duststorm/Thunderstorm with lightning & gusty winds (speed reaching 30-40 kmph) very likely at isolated places over Rajasthan.
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# Monday 21 June 2021





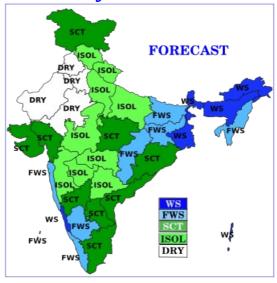
- **21 June (Day 2): ♦ Heavy Rainfall** very likely at isolated places over Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Konkan & Goa Coastal Karnataka Tamilnadu, Puducherry & Karaikal and Kerala & Mahe.
- ♦ Thunderstorm with lightning & gusty winds (speed reaching 30-40 kmph) very likely at isolated places over Uttarakhand and Andaman & Nicobar Islands and

with lightning at isolated places over Himachal Pradesh, Uttar Pradesh, East Madhya Pradesh, Haryana, Chandigarh & Delhi, Chhattisgarh, Bihar, Jharkhand, Odisha, Assam & Meghalaya, Coastal Karnataka and Tamilnadu, Puducherry & Karaikal.

- ◆Duststorm/Thunderstorm with lightning & gusty winds (speed reaching 30-40 kmph) very likely at isolated places over Rajasthan.
- ♦ Strong Winds (speed 40-50 kmph gusting to 60 kmph) very likely over Southwest, Westcentral & adjoining Eastcentral Arabian Sea. Fishermen are advised not to venture into these areas.



# **Tuesday 22 June 2021**



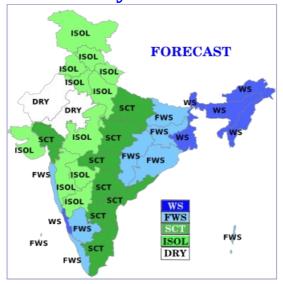


**22 June (Day 3): ♦ Heavy Rainfall** very likely at isolated places over Chhattisgarh, Bihar, Odisha, Andaman & Nicobar Islands, Assam & Meghalaya and Tamilnadu, Puducherry & Karaikal.

- ♦ Thunderstorm with lightning & gusty winds (speed reaching 40-50 kmph) very likely at isolated places over Andaman & Nicobar Islands and with lightning at isolated places over East Madhya Pradesh, Chhattisgarh, Bihar, Gangetic West Bengal, Odisha, Coastal Andhra Pradesh & Yanam, Rayalaseema and Tamilnadu, Puducherry & Karaikal.
- ◆ Strong Winds (speed 40-50 kmph gusting to 60 kmph) likely over Southwest, Westcentral & adjoining Eastcentral Arabian Sea. Fishermen are advised not to venture into these areas.



# Wednesday 23 June 2021

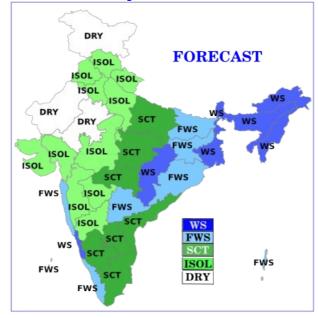




- 23 June (Day 4): Heavy to very Heavy Rainfall likely at isolated places over Assam & Meghalaya and Heavy Rainfall at isolated places over Chhattisgarh, Gangetic West Bengal, Odisha, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Coastal Andhra Pradesh & Yanam and Tamilnadu, Puducherry & Karaikal
- ♦ Thunderstorm with lightning & gusty winds (speed reaching 40-50 kmph) likely at isolated places over Andaman & Nicobar Islands and with lightning at isolated places over East Madhya Pradesh, Vidarbha, Chhattisgarh, Gangetic West Bengal, Odisha, Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema and Tamilnadu, Puducherry & Karaikal.
- ◆ Strong Winds (speed 40-50 kmph gusting to 60 kmph) likely over Southwest, Westcentral & adjoining Eastcentral Arabian Sea. Fishermen are advised not to venture into these areas.



# Thursday 24 June 2021

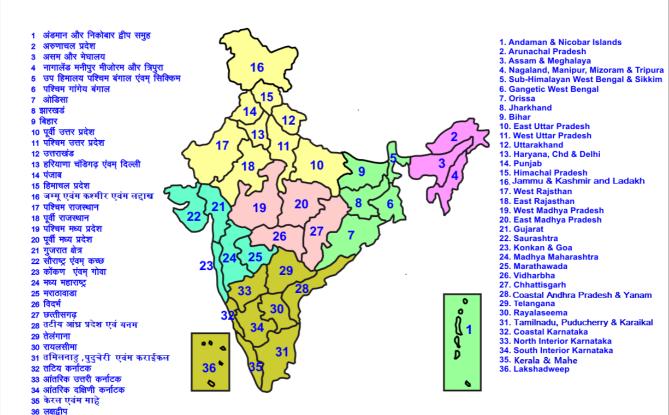




- **24 June (Day 5): ♦ Heavy Rainfall** likely at isolated places over Chhattisgarh, Bihar, West Bengal & Sikkim, Odisha, Arunachal Pradesh, Assam & Meghalaya, Coastal Andhra Pradesh & Yanam, Telangana and Tamilnadu, Puducherry & Karaikal.
- ♦ Thunderstorm with lightning & gusty winds (speed reaching 30-40 kmph) likely at isolated places over Andaman & Nicobar Islands and with lightning at isolated places over East Uttar Pradesh, East Madhya Pradesh, Vidarbha, Chhattisgarh, Sub-Himalayan West Bengal & Sikkim, Coastal Andhra Pradesh & Yanam, Telangana and Rayalaseema.
- ♦ Strong Winds (speed 40-50 kmph gusting to 60 kmph) likely over Southwest, Westcentral & adjoining Eastcentral Arabian Sea. Fishermen are advised not to venture into these areas.



# **LEGENDS**



## 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 Widespred (FWS/ Many Places)	1-25	Isolated (ISOL)

## **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



**Heavy Rain** 



**Heavy Snow** 



**77** Thunderstorm



**Dust Storm** 



**Strong Winds** 



Visibility



Cyclone





Squall/ Hail



**Sea State** 





#### **LEGENDS Probabilistic Forecast** WARNING **WARNING (TAKE ACTION)** Probability of Occurrence (%) ALERT ( BE PREPARED) WATCH (BE UPDATED) Very Likely Most Likely NO WARNING ( NO ACTION > 75 Heavy: 64.5 to 115.5 mm/cm \* Very Heavy: 115.6 to 204.4 mm/cm\* Rain/ Snow \* Extremely Heavy: > 204.4 mm/cm When maximum temperature of a station reaches ≥40° C for plains and ≥30° C for hilly regions (a) Based on Departure from normal Heat Wave: Maximum Temperature Departure from normal 4.5° C to 6.4° C. Severe Heat Wave: Maximum Temperature Departure from normal ≥6.5° C (b). Based on Actual maximum temperature **Heat Wave** Heat Wave: When actual maximum temperature ≥45°C. Severe Heat Wave: When actual maximum temperature ≥47°C (c). Criteria for heat wave for coastal stations When maximum temperature departure is >4.5°C from normal. Heat Wave may be described provided maximum temperature ≥37°C When maximum temperature remains 40°C J+ Warm Night Warm Night: When minimum temperature departure 4.5 °C to 6.4 °C. Severe Warm Night: When minimum temperature departure >6.4 °C. When minimum temperature of a station ≤10°C for plains and ≤0°C for hilly regions. (a). Based on departure Cold Wave: Minimum Temperature Departure from normal -4.5 °C to -6.4 °C. Severe Cold Wave: Minimum Temperature Departure from normal ≥ -6.5 °C (b) Based on actual Minimum Temperature (for Plains only) **Cold Wave** Cold Wave: When Minimum Temperature is ≤ 4.0 °C Severe Cold Wave: When Minimum Temperature is $\leq 2.0$ °C (c) For Coastal Stations When Minimum Temperature departure is ≤-4.5 °C or actual Minimum Temperature is ≤ 15 °C When minimum temperature of a station ≤10°C for plains and ≤0°C for hilly regions Based on departure Cold Day: Maximum Temperature Departure from normal -4.5 °C to -6.4 °C. **Cold Day** Severe Cold Day: Maximum Temperature Departure from normal ≤ -6.5 °C Phenomenon of small droplets suspended in air and the horizontal visibility < 1km Moderate Fog: When the visibility between 500-200 metres 0 Dense Fog: when the visibility between 50- 200 metres Fog Very Dense Fog: when the visibility < 50 metres 44 Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder) Thunderstorm An ensemble of particles of dust or sand energetically lifted to great heights by a strong and Dust/Sand Storm turbulent wind. Ice deposits on ground 55 Air temperature ≤4°C ( over Plains) **Frost** A strong wind that rises suddenly, lasts for atleast 1 minute. Moderate: Wind speed 52-61 kmph 4 Severe: Wind speed 62-87 kmph Squall Very Severe: Wind speed >87 kmph 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 **Sea State** Phenomenal: Wind speed >117 kmph (>63 knots) & Wave height >14 metre Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots) Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots) 9 Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots) Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots) Cyclone Super Cyclone Strom: Wind speed >220 kmph (>119 knots)