



**India Meteorological Department**  
**FDP STORM Bulletin No.85 (29-05-2017)**

**1. CURRENT SYNOPTIC SITUATION at 0300UTC of the Day:**

Southwest monsoon has further advanced into some parts of south Arabian Sea, Maldives - Comorin area and some more parts of southwest, southeast and east-central Bay of Bengal. The Northern Limit of Monsoon(NLM) passes through Lat. 7.0°N/Long. 60.0°E, Lat.7.0°N/Long.70.0°E, Lat. 7.0°N/Long.79.0°E, Lat.11.0°N/Long. 86.0°E, Lat. 15.0°N/Long. 91.0°E and Lat. 18.0°N/Long. 94.5°E. Present meteorological conditions indicate that conditions are favourable for onset of southwest monsoon over Kerala on 30th May. Simultaneously, onset is likely over most parts of northeastern states as well. Along with this, conditions are also favourable for further advance of southwest monsoon into some more parts of south Arabian Sea, Maldives Lakshadweep area, most parts of Kerala, some parts of Tamilnadu, some more parts of southwest Bay of Bengal, east-central Bay of Bengal, remaining parts of southeast Bay of Bengal and some parts of west central and north Bay of Bengal and most parts of northeast India during next 24 hours.

The cyclone storm MORA over east-central Bay of Bengal moved northward during past 06 hours with a speed of 11 kmph and lay centred at 0830 hrs IST of today, 29th May, 2017 over east-central Bay of Bengal near Lat. 17.3°N and Long. 91.3°E, about 660 Km south southeast of Kolkata and 550 Km south southwest of Chittagong.

The system is likely to intensify further into a severe cyclone storm during next 12 hours. It is very likely to move north north eastwards and cross Bangladesh coast between longitude 91.0°E and 92.0°E near Chittagong around 30th May 2017 forenoon. The trough at mean sea level runs from West Rajasthan to centre of cyclonic storm over east-central Bay of Bengal across Madhya Pradesh, Jharkhand & north Odisha and extends upto 0.9 km above mean sea level. The trough roughly along Long. 85.0°E to the north of Lat. 22.0°N, now runs roughly along Long. 87.0°E to the north of Lat. 22.0°N at 5.8 km above mean sea level.

The upper air cyclonic circulation over central Pakistan & neighbourhood persists and now extends upto 0.9 km above mean sea level. The upper air cyclonic circulation over Bihar & adjoining Sub Himalayan West Bengal between 1.5 & 3.1 Km above mean sea level has become less marked.

**SATELLITE OBSERVATIONS during past 24hrs and current observation:**

**Current Observation (based on 0900UTC imagery of INSAT 3D):**

**Convective Activity:**

Cell No	Date/time (UTC)	Location/Area	MIN CTT (- DEG C)	Movement	Remarks
1	29/0900	NIL			

**Vortex over Bay of Bengal (Bob):**

Vortex (MORA) seen over EC Bay & neighbourhood centred near **18.1N/91.5E**, intensity **T3.0**, associated Broken low/medium clouds with embedded intense to very intense convection were seen over Bay between Lat 14.5N to 22.0N o 85.0E to 97.0E with minimum CTT minus 93 DEG C.

**Cloud Description:**

Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over J & K, Himachal Pradesh, Uttarakhand, Uttar Pradesh, Odisha, South Gangetic West Bengal, Sikkim, rest NE states, Northeast Madhya Pradesh, North coastal Andhra Pradesh and Tamilnadu.

Scattered low/medium clouds were seen over Punjab, Haryana, North Rajasthan, rest Madhya Pradesh, Gujarat and Maharashtra. Scattered low/medium clouds with embedded moderate to intense convection were seen over Meghalaya, South Assam, Manipur, Mizoram, Tripura, Kerala Lakshadweep and Bay Islands.

**Arabian Sea:**

Scattered low/medium clouds with embedded moderate to intense convection were seen over South Arabian Sea.

**Bay of Bengal & Andaman Sea:**

Broken low/medium clouds with embedded intense to very intense convection were seen over North Andaman Sea. Scattered low/medium clouds with embedded moderate to intense convection were seen over rest Bay and South Andaman sea.

**Past Weather:****Convection:-**

Moderate to Intense convection was observed over J&K Himachal Pradesh Uttarakhand Punjab Haryana Delhi Uttar Pradesh Madhya Pradesh Vidarbha Chhattisgarh Bihar Jharkhand Odisha West Bengal Meghalaya North East States Karnataka Telangana Andhra Pradesh Kerala Tamilnadu .

**OLR:-**

Upto **230**  $\text{wm}^{-2}$  was observed over J&K Himachal Pradesh Uttarakhand West Uttar Pradesh Sikkim Coastal Andhra Pradesh Kerala Tamilnadu.

Upto **250**  $\text{wm}^{-2}$  was observed over Vidarbha South Chhattisgarh East Bihar East Jharkhand North East Odisha West Bengal North East States Rest Andhra Pradesh.

**Westerly Trough & Jet-Stream:** Trough in westerlies runs roughly along 82.0e north of lat 25.0n & No Jet Stream observed over India.

**Dynamic Features:**

Low to Medium wind shear is observed over India. Negative Shear tendency observed over Himachal Pradesh East Gujarat Central Madhya Pradesh Vidarbha and Positive shear tendency is observed over rest parts of India. A positive Vorticity field is observed over Saurashtra Uttar Pradesh Bihar North Coastal Andhra Pradesh. Positive low level convergence is observed over Uttar Pradesh Bihar North Odisha Kerala Tamilnadu and Negative low level convergence observed over rest parts of India.

**Precipitation:****IMR:**

Rainfall Up to **50** mm was observed over East Bihar. Rainfall Up to **10** mm was observed over South West J&K Himachal Pradesh Uttarakhand Punjab Haryana Delhi North East Rajasthan Uttar Pradesh East Madhya Pradesh Vidarbha East Assam Nagaland Manipur Mizoram Tripura East Jharkhand North East Odisha Rayalaseema Coastal Andhra Pradesh Kerala Central Tamilnadu South Interior Karnataka West Bengal Sikkim.

**HEM:**

Rainfall Up to **70** mm was observed over South Interior Karnataka South Chhattisgarh South Mizoram Telangana.  
Rainfall Up to **14** mm was observed over South West J&K South Himachal Pradesh Uttarakhand South East Bihar Kerala.

West Jharkhand, Northeast Chhattisgarh, West Arunachal Pradesh

Rainfall Up to **07** mm was observed over Rest Himachal Pradesh Haryana Delhi Uttar Pradesh North East Rajasthan East Madhya Pradesh Vidarbha Chhattisgarh North East Odisha Rest Bihar East Jharkhand West Bengal North East States Coastal Andhra Pradesh Rayalaseema South Interior Karnataka Central Tamilnadu.

### **RADAR and RAPID Observation:**

DWR Composite at 1720hrs IST indicated scattered convection over Rajasthan, Central Uttar Pradesh, Jharkhand, Gangetic west Bengal, and also in RAPID RGB Satellite imagery at 1630hrs IST including Southwest Bihar, North Chhattisgarh, Kerala, Tamilnadu, Lakshadweep, Minicoy, Andaman and Nicobar Islands.

### **Environmental condition (dust etc) and its forecast based on 00UTC of date:**

Higher Dust concentration was observed over north-west Africa and Arab countries. Dust concentration is expected to increase over north India for next five days. High PM10 concentration was observed over Rajasthan and is expected to increase over north India in next five days.

## **2.NWP MODEL GUIDANCE:**

### **NCMRWF (NCUM Forecasts based on 00 UTC of the day):-**

**1. Weather Systems: 12UTC Charts of Day 0-4** show evolution of heat low over NW India and adjoining Pakistan with MSLP values lower than 990hPa on Day-1 to Day-2.

**12UTC charts on days from Day0 to Day2:** show a zone of wind discontinuity at 925 hPa; NW-SE extending from Rajasthan to Odisha

**CS 'MORA' in Bay of Bengal** from Day-0 onwards and is seen to intensify on Day-2, tracking towards Myanmar and **is likely to cross the coast at around 18UTC on 29<sup>th</sup> May 2017 near 21N/93E**

**2. Location of jet and jet core at 500hPa:-500hPa Jet core (>60kt):** Weaker core winds at 12 UTC on all days over India.

### **3. Convergence at 850 hPa:**

**(Day/Index: Subdivisions with Lower Level Convergence > 15 x 10<sup>-5</sup> /s):** Day0: Assam Meghalaya, East RJ, West MP, East MP,

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT,

Day2: Haryana Chandigarh Delhi, Punjab, Jammu Kashmir, West RJ, Odisha,

Day3: NE NMMT, Jharkhand, Odisha, East MP, Chhattisgarh,

Day4: Assam Meghalaya, Madhya Maharashtra,

### **4. Low level Vorticity:-Positive Vorticity (>15 x 10<sup>-5</sup>/s):**

**(Day/Index: Subdivisions with Lower Level Vortex > 15 x 10<sup>-5</sup> /s):**

Day0: Arunachal Pradesh, Assam Meghalaya, East RJ, Saurashtra Kutch, TN Puducherry, Kerala,

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Saurashtra Kutch, TN Puducherry, Kerala,

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Punjab, West RJ, TN Puducherry,

Day3: Arunachal Pradesh, Assam Meghalaya, Jharkhand, Uttarakhand, Odisha, TN Puducherry,

Day4: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, West UP, Uttarakhand, Haryana Chandigarh Delhi, Himachal Pradesh, TN Puducherry,

**5. Showalter Index: -3 to -4[Very unstable]:**

**(Day/Index: Subdivisions with Showalter Index < -4):**

Day0: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, East MP, Gujarat region, Saurashtra Kutch, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, TN Puducherry,

Day1: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, East MP, Gujarat region, Saurashtra Kutch, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka,

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, Madhya Maharashtra, Coastal AP,

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, Odisha, Gujarat region, Konkan Goa, Madhya Maharashtra, Coastal AP,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Gujarat region, Konkan Goa, Madhya Maharashtra, Coastal AP,

**6. Spatial distribution of TTI (TTI >50 [Scattered Thunderstorms few severe]):**

**(Day/Index: Subdivision with Total Totals Index > 52):**

Day0: Arunachal Pradesh, Sub Himalayan WB, East UP, West UP, Uttarakhand, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, East MP, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana,

Day1: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, East MP, Saurashtra Kutch, Chhattisgarh, Telangana, Rayalaseema, NI Karnataka,

Day2: Arunachal Pradesh, Sub Himalayan WB, West UP, Uttarakhand, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, West MP,

Day3: Arunachal Pradesh, Sub Himalayan WB, East UP, West UP, Uttarakhand, Haryana Chandigarh Delhi, Himachal Pradesh, Jammu Kashmir,

Day4: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir,

**7. K-Index :> 35[Very Unstable thunderstorm likely]:**

**(Day/Index: Subdivisions with K Index > 40):**

Day0: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, East MP, Gujarat region, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka,

Day1: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, East MP, Gujarat region, Saurashtra Kutch, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka,

Day2: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, East MP, Gujarat region, Saurashtra Kutch, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka,

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, East MP, Gujarat region, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, East MP, Gujarat region, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, NI Karnataka,

#### **8. Rainfall and thunder storm activity:**

##### **(Day/Index: Subdivisions with Precipitation > 2 cm):**

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, East UP, West UP, Haryana Chandigarh Delhi, Jammu Kashmir, East RJ, West MP, Andaman Nicobar, Coastal Karnataka, Kerala,

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, East UP, Jammu Kashmir, Konkan Goa, Madhya Maharashtra, Andaman Nicobar, TN Puducherry, Coastal Karnataka, SI Karnataka, Kerala,

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West MP, Konkan Goa, Madhya Maharashtra, Andaman Nicobar, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Uttarakhand, Haryana Chandigarh Delhi, Himachal Pradesh, Konkan Goa, Andaman Nicobar, TN Puducherry, Coastal Karnataka, SI Karnataka, Kerala,

Day5: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Konkan Goa, Andaman Nicobar, TN Puducherry, Coastal Karnataka, SI Karnataka, Kerala,

#### **IMD GFS (T1534) based on 00UTC the day:-**

**1. Weather Systems:** 00 UTC analysis shows the trough from Rajasthan to centre of cyclonic storm over east-central BOB across Madhya Pradesh, Odisha and Chhattisgarh. The cyclonic storm is very likely to move north-northeast wards and reach Bangladesh coast by Day1.

**2. Location of jet and jet core at 500 hPa: 500 hPa Jet core (>60kt):** No presence of jet core over the Indian region for the next 5 days except on day 2 to day 5 over J & K region.

**3. Low level Vorticity:-Positive Vorticity 850hPa (>12 x 10<sup>-1</sup>/s):** Analysis shows low level positive vorticity (>12 x 10<sup>-5</sup>/s) mainly over isolated pockets in Punjab, Delhi, MP, AP, and over the north eastern region. The high vorticity belts are mainly confined over regions of UP, Haryana, Bihar, MP, AP and south peninsular region during next 3 to 4 days.

**4. Spatial distribution of T-Storm Initiation Index, Lifted Index, Total Total Index, CAPE, CINE and Sweat Index (High potential for thunderstorm):**

**T-Storm Initiation Index (> 4):** Significant threshold values are noticed over Gujarat and Rajasthan in the analysis. Forecast shows high threshold values over Gujarat, Rajasthan along with few pockets in Odisha and coastal AP for the next 3 days.

**Lifted Index (< -2):** The areas with index less than -2 lies along Delhi, UP, Bihar, Chhattisgarh, GWB and major regions of AP and TN along with major regions along the west coast for the next 2 to 3 days.

**Sweat Index (> 400):** 00UTC shows significant values over major parts over some pockets over Haryana, Delhi, UP, Bihar, GWB, Odisha and AP and is expected to persist for the next 3 days.

**CAPE (> 1000):** Mostly over Bihar, GWB, Odisha, and AP and other regions over the east coast, Gujarat, Rajasthan and along with major regions bordering the west coast during the next 3 days.

**CINE (50-150):** Maximum CIN values are found in areas over some packets over Punjab and Delhi UP, Bihar, GWB, Odisha, AP and TN and along with major pockets in the Maharashtra, Gujarat and Rajasthan region for the next 2-3 days.

**5. Rainfall and thunderstorm activity:**

10-40 mm rainfall is forecasted tomorrow over major pockets over Kerala, Odisha, WB, north eastern states and along with the foothills of the Himalayas, over some pocket of Haryana, Delhi and western UP and is expected to persist for the next 2-3 days.

**IMD WRF (based on 00UTC of the day):**

**1. Model Reflectivity (Max. dBz):** 15-40 dBZ over regions of the Himalayan foothills, North-East region of country and isolated pockets of the southern coast region during next 3 days on day 3 over Punjab, HP J & K and Delhi.

**2. Spatial distribution of Total Total Index, K-Index, CAPE and CIN [High potential for thunderstorm]**

**CAPE (> 1000):** Mostly along Haryana, Delhi, Bihar, Jharkhand, WB, Odisha, AP and TN and along major regions bordering the west coast during next 2 to 3 days.

**CINE (50-150):** Higher values over most regions of India except over J & K region and NE states and south peninsula of the country during next three days.

**3. Rainfall and thunderstorm activity:**

10-40 mm over isolated pockets in UP, Bihar and WB region adjoining the Himalayas, along the north east region and over few pockets in the Kerala region and it is expected to persist for the next 3 days and over Delhi and adjoining on day 1 and day 3.

### **3. IOP ADVISORY FOR 24 and 48Hrs:**

#### **Summary and Conclusions:**

In association with the northward movement and further intensification of tropical cyclone MORA which is currently over east-central Bay of Bengal, very heavy rainfall is likely over Gangetic West Bengal, Sub Himalayan West Bengal and north-eastern states on day 1. With likely landfall of the cyclone on Bangladesh coast near Chittagong on forenoon of 30th May 2017 and further northward movement inland, rainfall over these regions is likely to increase in spread as well as intensity on day 2, accompanied by strong surface winds.

The trough at mean sea level, which runs from West Rajasthan to centre of cyclonic storm over east-central Bay of Bengal is likely to result in thunderstorm activity over north India extending south upto Chhattisgarh. This region of thunderstorm activity is likely to shift eastwards on day2.

Also, with conditions becoming favorable for monsoon onset over Kerala during the next 24 hours, rainfall is likely to increase over Kerala and adjoining southwest peninsular coast of India and persist over the next two days.

#### **Day-1 & Day-2:**

##### **24 hour Advisory for IOP:**

Tripura, Nagaland, Manipur, Mizoram  
Assam Meghalaya, Arunachal Pradesh  
Kerala, Lakshadweep, South Interior Karnataka, Interior Tamilnadu, Coastal Karnataka  
Himachal Pradesh, Uttrakhand, Punjab, Haryana, West and East Uttar Pradesh, East Rajasthan  
Coastal Orissa, Bihar and Jharkhand, Chhattisgarh, West and East MP  
Sub Himalayan West Bengal, Gangetic West Bengal  
South Tamilnadu

##### **48 hour Advisory for IOP:**

Kerala, Lakshadweep, South Interior Karnataka, Interior Tamilnadu, Coastal Karnataka  
Sub Himalayan West Bengal, Gangetic West Bengal  
Tripura, Nagaland, Manipur, Mizoram  
Assam Meghalaya, Arunachal Pradesh  
Himachal Pradesh, Uttrakhand, East Uttar Pradesh  
Chhattisgarh, West and East MP, Vidarbha

For NCMRWF NWP products:(<http://www.ncmrwf.gov.in/HomePage/NEPS-prod-1.php>)

For IMD NWP products:([http://nwp.imd.gov.in/diagpro\\_new.php](http://nwp.imd.gov.in/diagpro_new.php))

For Synoptic plotted data and charts

<http://amssdelhi.gov.in/>

<http://www.amsskolkata.gov.in/>

For RAPID tool:

<http://rapid.imd.gov.in/>

Low Level Winds

[http://satellite.imd.gov.in/archive/INSAT-3D-IMAGER/3D-PRODUCTS/AMV/LLW/MAR\\_2017/?C=M;O=D](http://satellite.imd.gov.in/archive/INSAT-3D-IMAGER/3D-PRODUCTS/AMV/LLW/MAR_2017/?C=M;O=D)

Upper level winds

[http://satellite.imd.gov.in/archive/INSAT-3D-IMAGER/3D-PRODUCTS/AMV/HLW/MAR\\_2017/?C=M;O=D](http://satellite.imd.gov.in/archive/INSAT-3D-IMAGER/3D-PRODUCTS/AMV/HLW/MAR_2017/?C=M;O=D)

Past24hourHEMandIMRrainfall(upto03UTCoftoday)

IMR: [http://satellite.imd.gov.in/img/3Ddaily\\_imr.jpg](http://satellite.imd.gov.in/img/3Ddaily_imr.jpg)

HEM: [http://satellite.imd.gov.in/img/3Ddaily\\_he.jpg](http://satellite.imd.gov.in/img/3Ddaily_he.jpg)

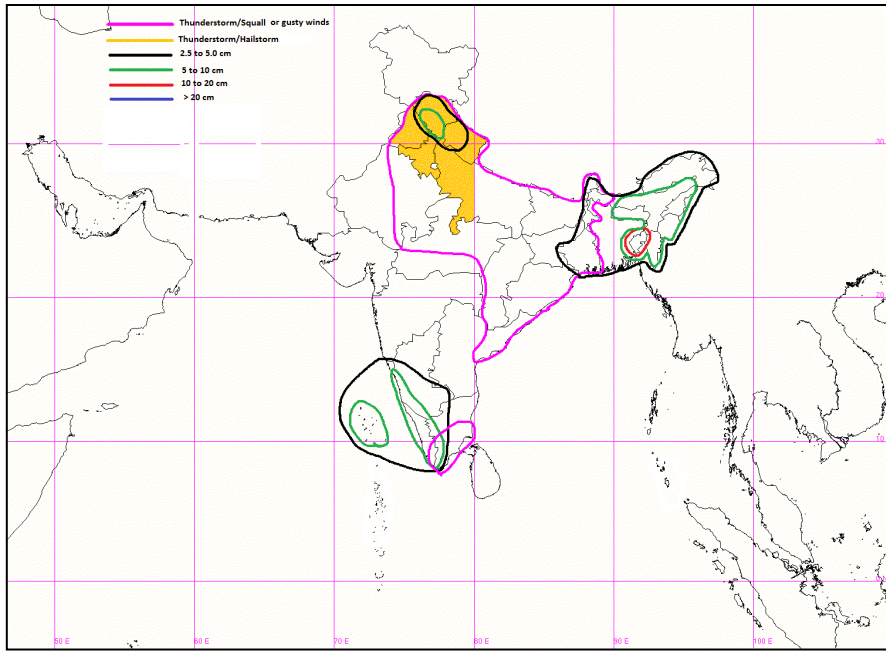
ForRadarimagesofthepast24hoursincludingmosaicofimages:

[http://ddgmui.imd.gov.in/dwr\\_img/](http://ddgmui.imd.gov.in/dwr_img/)

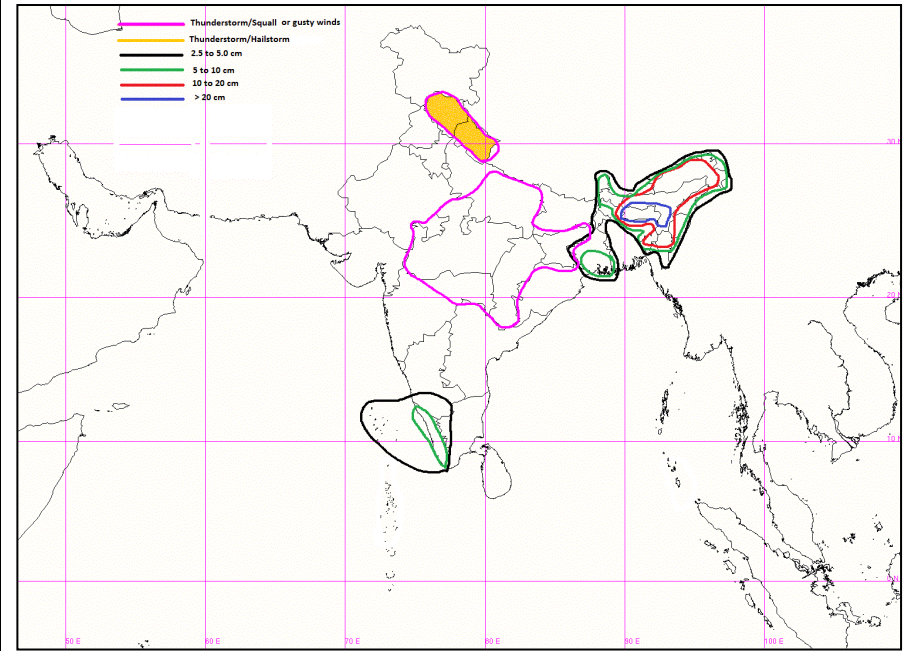
Satellite sounder based T- Phigram

[http://satellite.imd.gov.in/map\\_skm2.html](http://satellite.imd.gov.in/map_skm2.html)

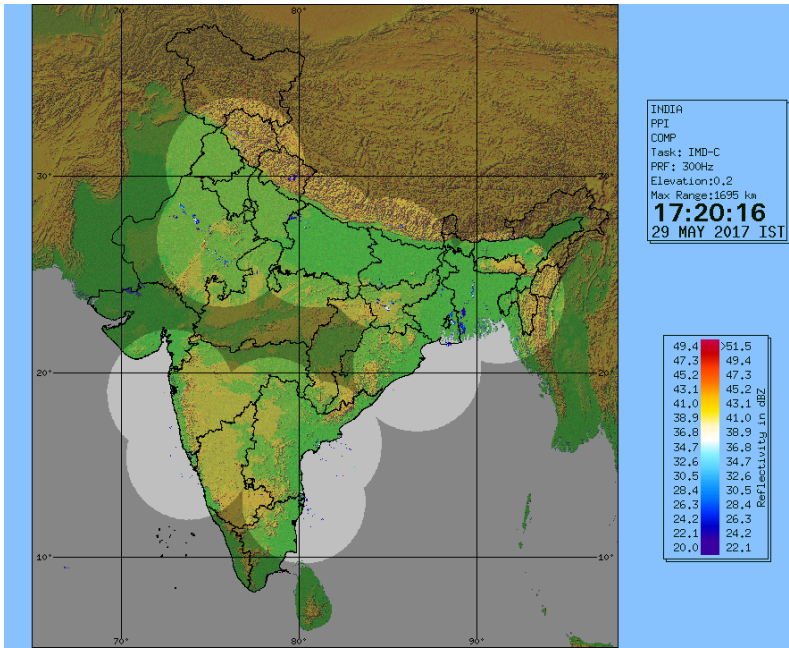




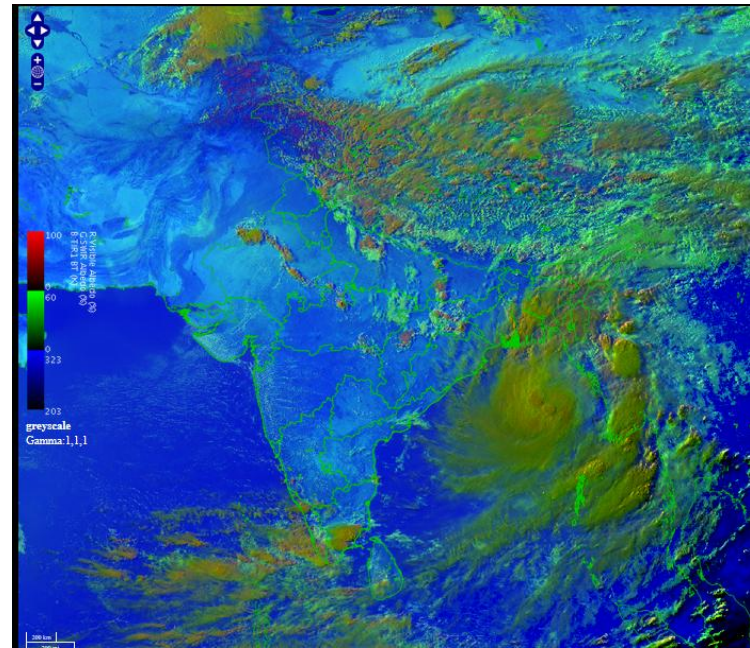
**IOP Advisory for 24 hours**



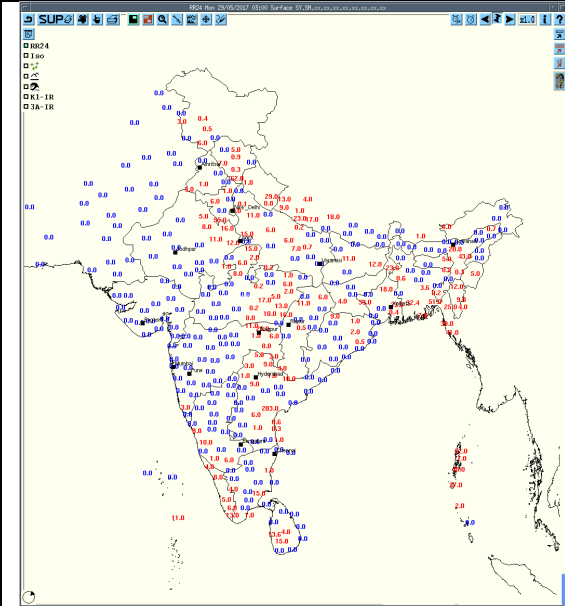
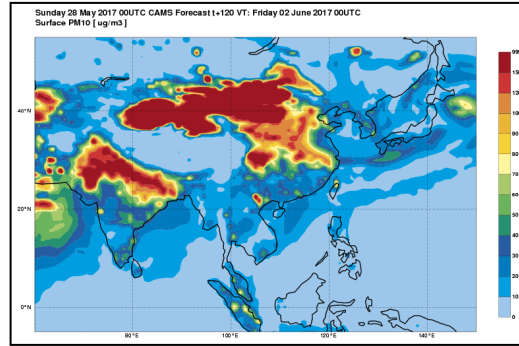
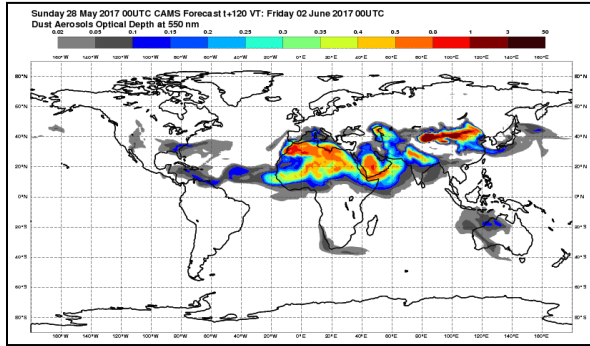
**IOP Advisory for 48 hours**



**DWR Composite at 1720 hrs IST of today**



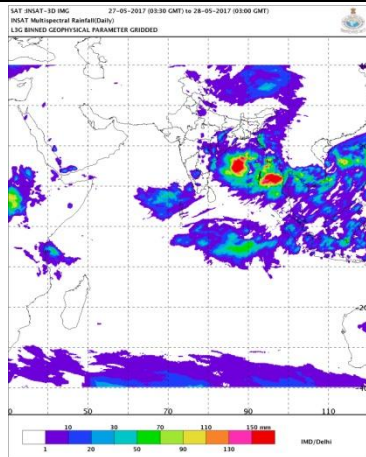
**RAPID RGB Satellite Imagery at 1630 hrs IST of today**



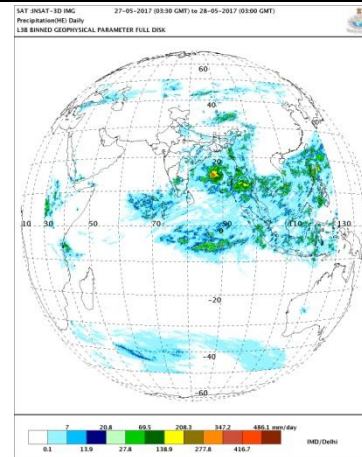
**Forecast Dust Concentration for 00UTC of 2<sup>nd</sup> June**

**PM10 Forecast for 00UTC of 2<sup>nd</sup> June**

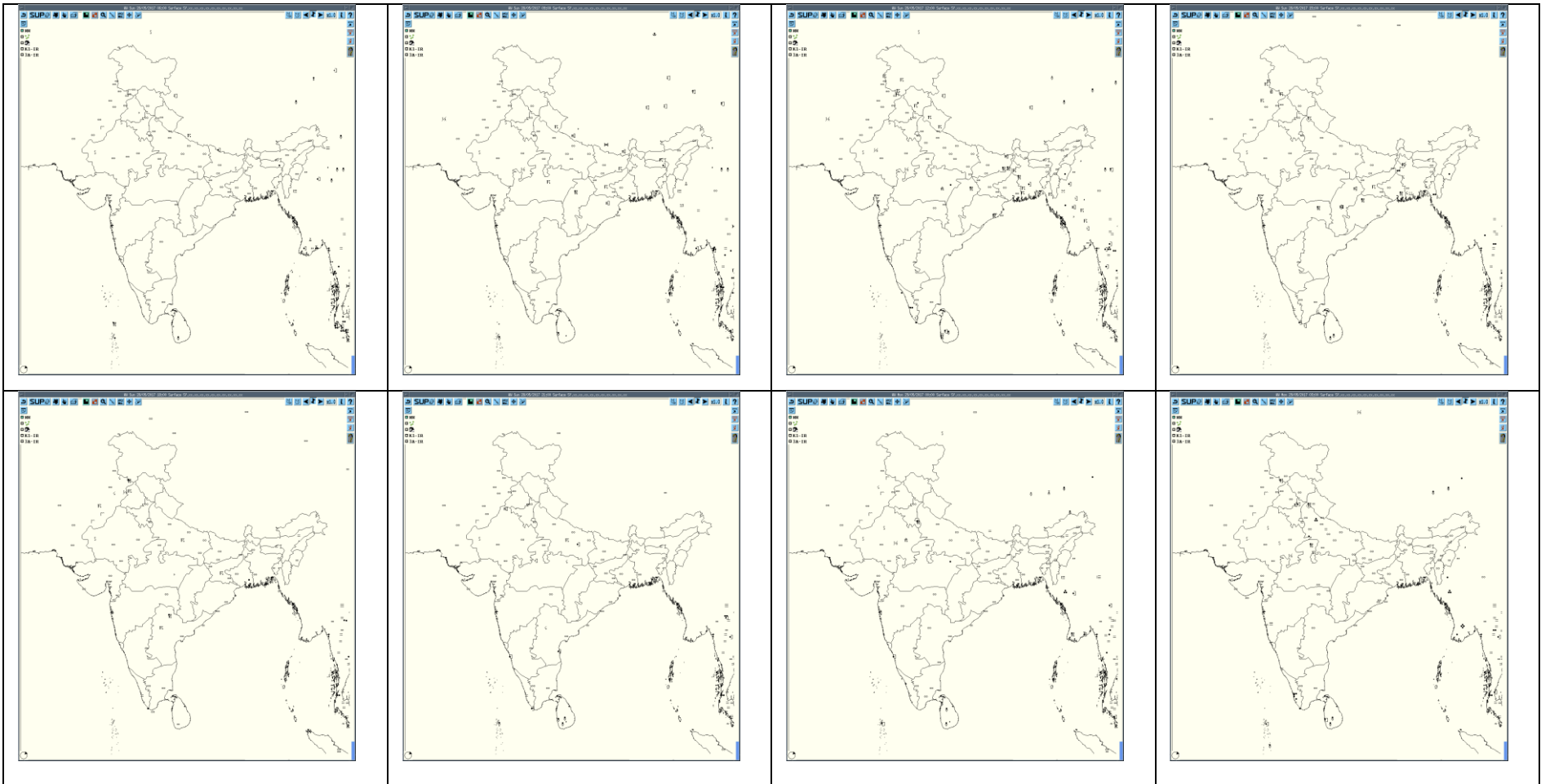
**Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today**



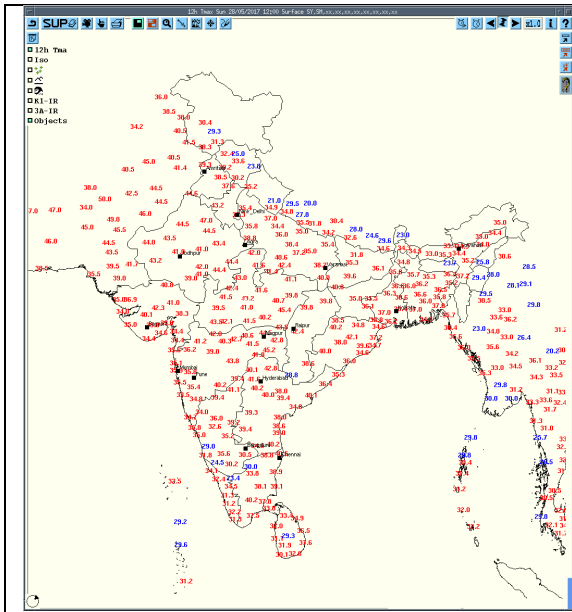
**IMR Rainfall**



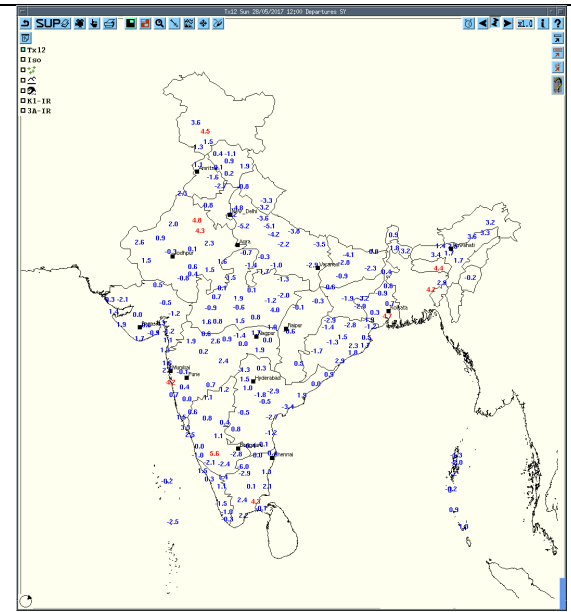
**HEM Rainfall**



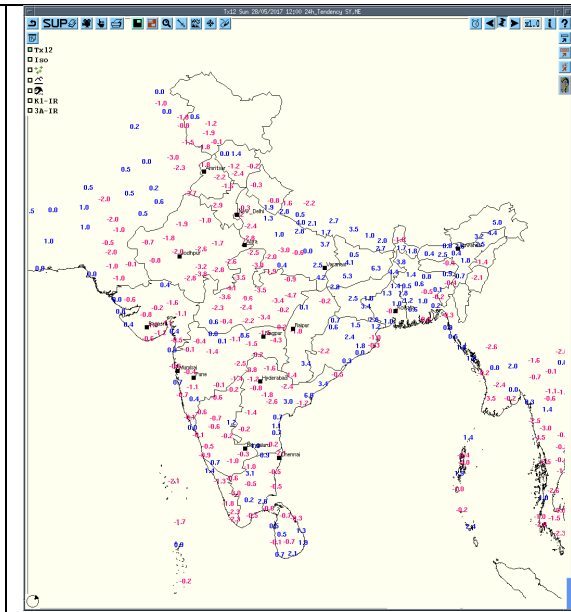
**3hourly Past weather at 06,09,12,15,18,21UTC of yesterday and 00 & 03 hrs UTC of today**



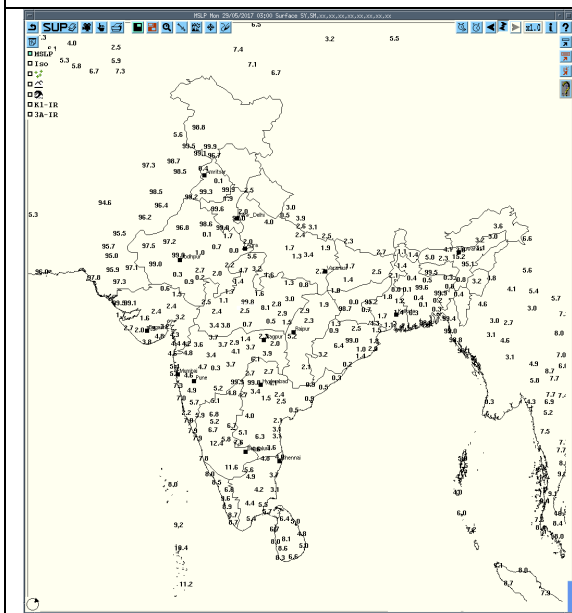
**Tmax**



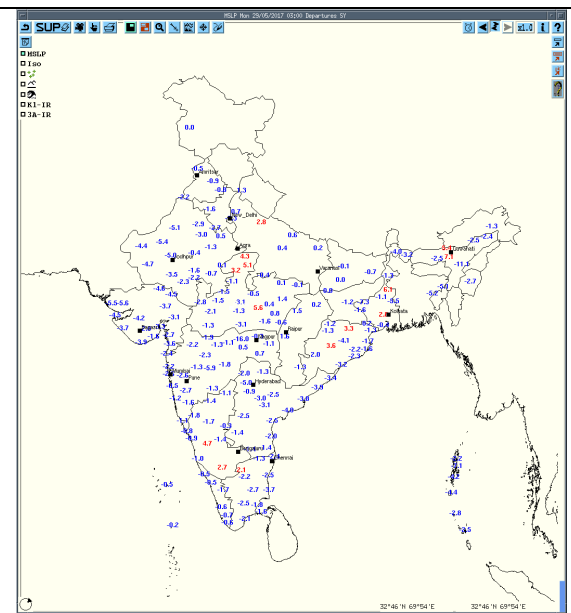
**Departure Tmax**



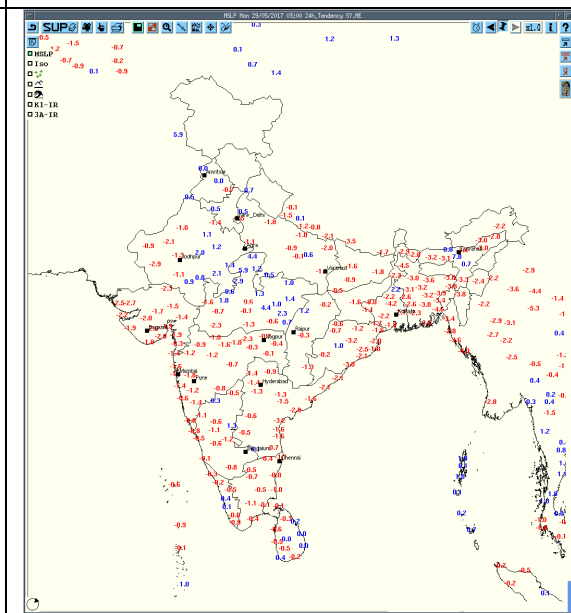
**Tendency Tmax**



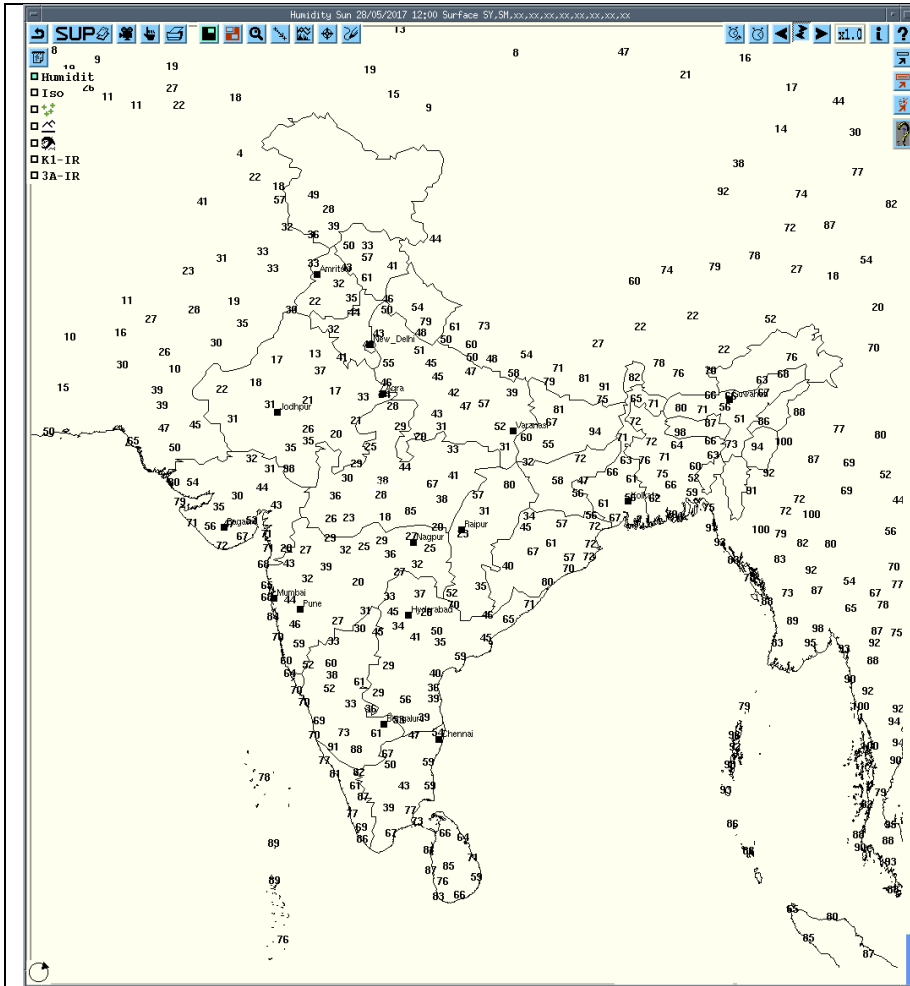
**MSLP**



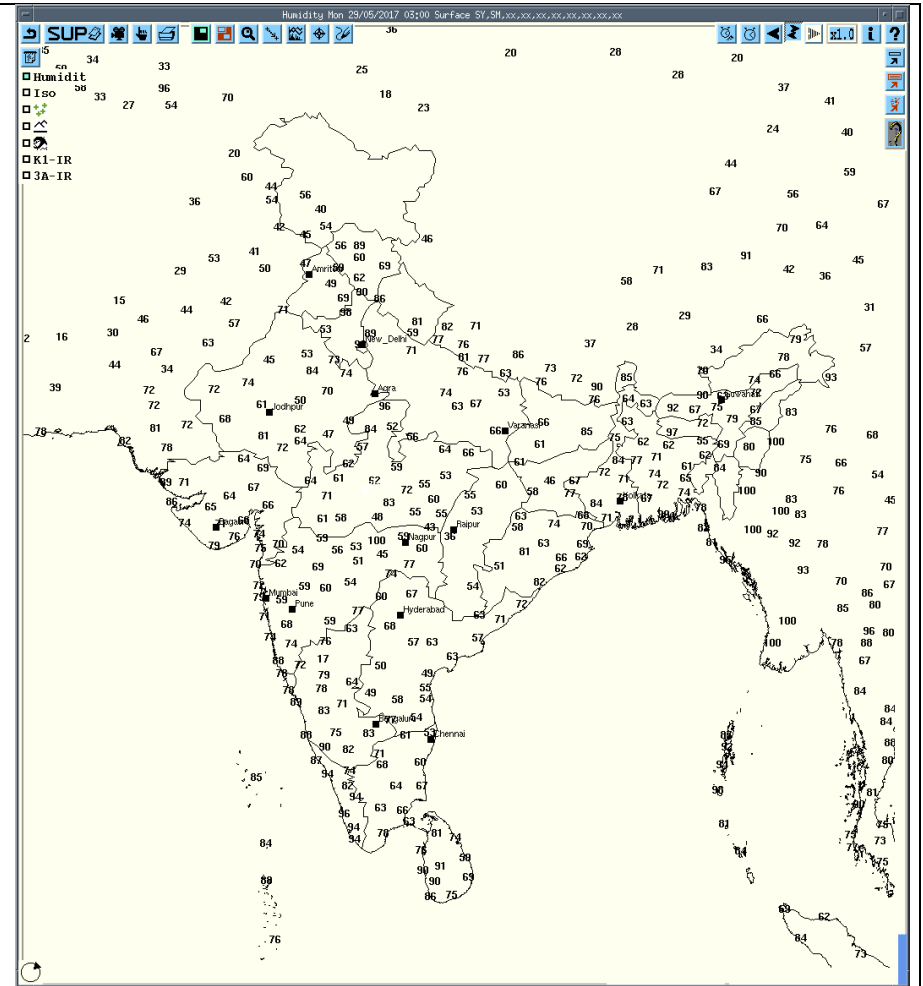
**Departure MSLP**



**Tendency MSLP**



RH at 12UTC yesterday



RH at 03UTC today

**Realised past 24hrs TS/SQ/HS Data (reported at 0300UTC of the day):**

<b>Realized weather past 24hours (Based on SYNERGIE Products)</b>					
<b>Date</b>	<b>Time of Reporting</b>	<b>Name of Station Reporting</b>	<b>Region</b>	<b>STATE</b>	<b>Weather Event</b>
28-05-17	0600UTC	Nil	Nil	Nil	Nil
28-05-17	0900UTC	Mukteswar	NW India	Uttarakhand	Thunderstorm
		Bhagalpur	East India	Bihar	Thunderstorm
		Guwahati	NE India	Assam	Thunderstorm
		Sagar	Central India	Madhya Pradesh	Thunderstorm
		Pendra Road	Central India	Chhattisgarh	Thunderstorm
		Ranchi	East India	Jharkhand	Thunderstorm
		Keonjhar	East India	Odisha	Thunderstorm
28-05-17	1200UTC	Pahalgam, Jammu, Katra	NW India	J & K	Thunderstorm
		Sundernagar	NW India	Himachal Pradesh	Thunderstorm
		Tehri, Mukteswar	NW India	Uttarakhand	Thunderstorm
		Bhagalpur, Purnia	East India	Bihar	Thunderstorm
		Malda	East India	West Bengal	Thunderstorm
		Ambikapur	Central India	Chhattisgarh	Thunderstorm
		Jabalpur	Central India	Madhya Pradesh	Thunderstorm
		Bhubaneswar	East India	Odisha	Thunderstorm
28-05-17	1500UTC	Jammu	NW India	J & K	Thunderstorm
		Dehradun	NW India	Uttarakhand	Thunderstorm
		Ambikapur, Raipur	Central India	Chhattisgarh	Thunderstorm
		Ranchi	East India	Jharkhand	Thunderstorm
		Kolkata	East India	West Bengal	Thunderstorm
		Nagpur	Central India	Vidarbha	Thunderstorm
28-05-17	1800UTC	Jammu	NW India	J & K	Thunderstorm
		Amritsar	NW India	Punjab	Thunderstorm
		Lucknow	NW India	Uttar Pradesh	Thunderstorm
		Ranchi	East India	Jharkhand	Thunderstorm
		Ramagundam, Hyderabad	South India	Andhra Pradesh	Thunderstorm
28-05-17	2100UTC	Lucknow	NW India	Uttar Pradesh	Thunderstorm
		Churu	NW India	Rajasthan	Thunderstorm
29-05-17	0000UTC	New Delhi	NW India	Delhi	Thunderstorm
		Jaipur	NW India	Rajasthan	Thunderstorm
29-05-17	0300 UTC	Gwalior	Central India	Madhya Pradesh	Thunderstorm

**Realised TS/HS/SQ during past 24 hours ending at 0300UTC of today(received from RMCs/MCs)**

<b>Name of Station Reporting</b>	<b>Region</b>	<b>STATE</b>	<b>Weather Event (TS/Hail/Squall)</b>	<b>Date</b>	<b>Time of Commencement (IST)</b>	<b>Time of end (IST)</b>
Srinagar	Northwest India	J & K	Thunderstorm	28-05-17	1814	1820
Qazigund	Northwest India	J & K	Thunderstorm	28-05-17	1910	1945
Pahalgam	Northwest India	J & K	Thunderstorm	28-05-17	1545	1830
Jammu	Northwest India	J & K	Thunderstorm	28-05-17	1650	2340
Banihal	Northwest India	J & K	Thunderstorm	28-05-17	1930	2020
Shimla	Northwest India	Himachal Pradesh	Thunderstorm	28-05-17	1930	2000
Sunder Nagar	Northwest India	Himachal Pradesh	Thunderstorm	28-05-17	1620 1700	1635 1750
Sunder Nagar	Northwest India	Himachal Pradesh	Thunderstorm	29-05-17	0038	0150
Allahabad	Northwest India	Uttar Pradesh	Thunderstorm	28-05-17	2200	2240
Allahabad	Northwest India	Uttar Pradesh	Thunderstorm	29-05-17	0145 0415	0235 0600
Barabanki	Northwest India	Uttar Pradesh	Thunderstorm	28-05-17	2130	2130
Kanpur IAF	Northwest India	Uttar Pradesh	Thunderstorm	29-05-17	0400	0700
Kanpur City	Northwest India	Uttar Pradesh	Thunderstorm	29-05-17	0100	0215
Lucknow AP	Northwest India	Uttar Pradesh	Thunderstorm	28-05-17	1700 1950	1820 2245
Kheri	Northwest India	Uttar Pradesh	Thunderstorm	28-05-17	1250	2230
Muzaffarnagar	Northwest India	Uttar Pradesh	Thunderstorm	29-05-17	0600	0700
Aligarh	Northwest India	Uttar Pradesh	Thunderstorm	28-05-17	2300	2400
Aligarh	Northwest India	Uttar Pradesh	Thunderstorm	29-05-17	0000	0100
Agra	Northwest India	Uttar Pradesh	Thunderstorm	28-05-17	2230	2400
Agra	Northwest India	Uttar Pradesh	Thunderstorm	29-05-17	0600	0800
Etawah	Northwest India	Uttar Pradesh	Thunderstorm	29-05-17	0300	0310
Bareilly	Northwest India	Uttar Pradesh	Thunderstorm	29-05-17	0650	0700
Shahjahanpur	Northwest India	Uttar Pradesh	Thunderstorm	28-05-17	1800	1900
Shahjahanpur	Northwest India	Uttar Pradesh	Thunderstorm	29-05-17	0500	0530
Moradabad	Northwest India	Uttar Pradesh	Thunderstorm	29-05-17	0730	0830
Orai	Northwest India	Uttar Pradesh	Thunderstorm	29-05-17	2230	2300
Hamirpur	Northwest India	Uttar Pradesh	Thunderstorm	29-05-17	0100	0200
Alwar	Northwest India	Rajasthan	Thunderstorm	29-05-17	0200	0400
Jaipur	Northwest India	Rajasthan	Thunderstorm	29-05-17	0440	0630
Pilani	Northwest India	Rajasthan	Thunderstorm	28-05-17	1900	0400
Sikar	Northwest India	Rajasthan	Thunderstorm	28-05-17	2300	0100
Sawai Madhopur	Northwest India	Rajasthan	Thunderstorm	29-05-17	0530	0615
Vanasthali(Tonk)	Northwest India	Rajasthan	Thunderstorm	29-05-17	0530	0545
Churu	Northwest India	Rajasthan	Thunderstorm	29-05-17	0240	0330
Ganganagar	Northwest India	Rajasthan	Thunderstorm	28-05-17	1220	0140



**Realised TS/HS/SQ during past 24 hours ending at 0300UTC of today(received from RMCs/MCs)**

<b>Name of Station Reporting</b>	<b>Region</b>	<b>STATE</b>	<b>Weather Event (TS/Hail/Squall)</b>	<b>Date</b>	<b>Time of Commencement (IST)</b>	<b>Time of end (IST)</b>
Nagpur	Central India	Vidarbha	Thunderstorm	28-05-17	1825	2140
Nagpur	Central India	Vidarbha	Squall( Dir.-NW, Max. speed-70 Kmph)	28-05-17	1824	1828
Gondia	Central India	Vidarbha	Thunderstorm	28-05-17	1920	2330
Sagar	Central India	Madhya Pradesh	Thunderstorm	28-05-17	1340	1530
Sagar	Central India	Madhya Pradesh	Thunderstorm	28-05-17	0030	0100
Ambikapur	Central India	Chhattisgarh	Thunderstorm	28-05-17	1350	1935
Pendra Road	Central India	Chhattisgarh	Thunderstorm	28-05-17	1320	1520
Malda	East India	West Bengal	Thunderstorm	28-05-17	1445 1700	1600 1945
Malda	East India	West Bengal	Lightning	28-05-17	1800	2100
Alipore	East India	West Bengal	Thunderstorm	28-05-17	1720 1940	1745 2210
DumDum	East India	West Bengal	Thunderstorm	28-05-17	1915	2345
DumDum	East India	West Bengal	Lightning	28-05-17	1850	2310
Patna	East India	Bihar	Thunderstorm	28-05-17	1235	1310
Bhagalpur	East India	Bihar	Thunderstorm	28-05-17	1340	1730
Purnia	East India	Bihar	Thunderstorm	28-05-17	1530	1730
Jamshedpur	East India	Jharkhand	Thunderstorm	28-05-17	2040	2400
Ranchi	East India	Jharkhand	Thunderstorm	28-05-17	1310 1910	1450 2340
Bhubaneswar	East India	Odisha	Thunderstorm	28-05-17	1150	1250
Jharsuguda	East India	Odisha	Thunderstorm	28-05-17	1940	2100
Port Blair	East India	Odisha	Thunderstorm	28-05-17	1415	1840
Port Blair	East India	Odisha	Thunderstorm	29-05-17	0215	0640
Silchar	Northeast India	Assam	Thunderstorm	28-05-17	0800	0830
Guwahati	Northeast India	Assam	Thunderstorm	28-05-17	1325	1520
Barapani	Northeast India	Meghalaya	Thunderstorm	28-05-17	1300	1350
Shillong	Northeast India	Meghalaya	Thunderstorm	28-05-17	1300	1315
Toni	South India	Tamilnadu	Thunderstorm	28-05-17	1855	1900
CIAL Kochi	South India	Kerala	Thunderstorm	28-05-17	1130	1240
Karipur AP	South India	Kerala	Thunderstorm	29-05-17	0200	0310
Minicoy	South India	Minicoy	Thunderstorm	28-05-17	0830	1300
AMS Bajpe	South India	Karnataka	Thunderstorm	28-05-17	1155	1545

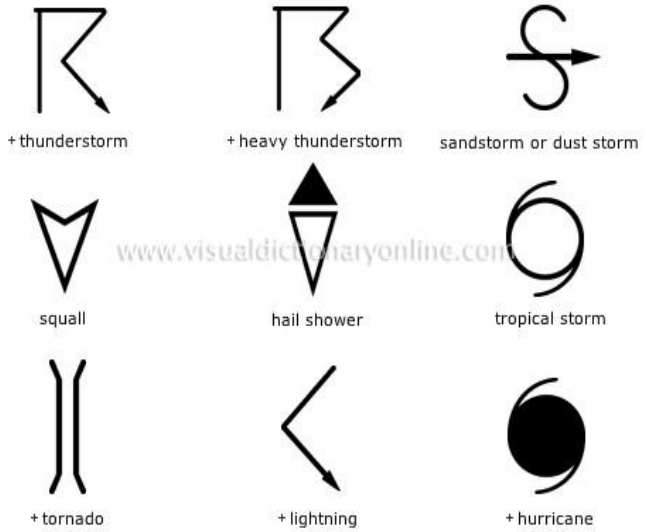
**Past 24 hours DWR Report:**

Radar Station name	Date	Time interval of observation (UTC)	Organization of the cells (Isolated single cells/multiple cells/ convective regions/ squall lines) with height of 20 dBZ echo top and maximum reflectivity	Formation w.r.t radar station and Direction of movement	Remarks	Associated severe weather if any	Districts affected
Lucknow	29-05-17	281252UTC to 281432UTC	Single cell with height of 8Kms echo top and maximum reflectivity was 36dBz	40 Kms N from radar and moving NWly direction	Cells started forming at 1252UTC	TS/Squall/ Rain	Sitapur, Barabanki
		281452UTC to 282042UTC	Single cell with height of 10Kms echo top and maximum reflectivity was 44dBz	150 Kms WNW from radar and moving WNWly direction	Cells started forming at 2342 UTC and formed a large Cell	TS/Squall/ Rain	Kannauj, KNP, UNO, LKN, BBK, RBL, STP and FZB
		281632UTC To 290012UTC	Single cell with height of 11Kms echo top and maximum reflectivity was 38dBz	200 Kms WNW from radar and moving WNWly direction	Cells started forming at 1632 UTC and formed a large Cell	TS/Squall/ Rain	MNP, KNP FZB, UNO, Firozabad
Paradeep	28/05/17	0300-2330 UTC	Isolated single cells seen in the NW sector of the RADAR with av. Reflectivity value of 38 dBZ and heights of 12 km.	Position: Lat:21.79 N Lon:85.25 E Movement: NNW LY	NIL	TS	Keonjhargarh, Debagarh, Bhadrak, Jajpur, Dhenkanal, Angul And Nayagarh.
Srinagar	29/05/2017	28MAY 03Z to 29May 03Z(24hrs)	1. Isolated cells developed at 0940utc in SE direction with max. reflectivity 50-55 dBZ and average height 8Km	Moves further SE and dissipated at 2110 UTC	Thunder observed at Pahalgam Srinagar Qazigund Banihal Jammu	Light rain at Banihal Jammu Srinagar Katra and Gulmarg	Anantnag Srinagar Jammu

Radar Station name	Date	Time interval of observation (UTC)	Organization of the cells (Isolated single cells/multiple cells/convective regions/ squall lines) with height of 20 dBZ echo top and maximum reflectivity	Formation w.r.t radar station and Direction of movement	Remarks	Associated severe weather if any	Districts affected
Patiala	29-05-2017	28/ 0300 - 1200	NO ECHO	-----.	-----	-----	-----
		28 /1200 - 1500	Multiple cells max. 58.5 dbz Ht. 13-15 km	NE, E & Se Sector. Movement SE Wards	-----	HAIL/RA/TS	Sundernagar, Manali, Kulu, Bilaspur, Dehradoun, Mussoorie, And Its Adjoining Areas.
		28 /1500 - 1800	Multiple cells max. 59.5 dbz Ht. 13-15 km	SE Sector. Movement SE Wards	Hailstorm Likely Over Kapurthla, Dasua.	TS/RA/HAIL	Amritsar, Gurdaspur, Batala, Taran-Taran, Dasua, Jalandhar, Kapurthla, Bhiwani And Its Adjoining Areas.
		28 / 1800 - 2100 UTC	Multiple cells max. 57.5 dbz Ht. 12-14 km	NE Sector. Movement SE Wards	-----	TS/RA	Uttarkasi,Gangotri, Bhunther,Amritsar
		28/ 1500 - 1800 UTC	Multiple cells max. 45.5 dbz Ht. 8-10 km	NE Sector. Movement SE Wards			Ambala,Saharnpur
		28/ 1800 - 2100 UTC	Multiple cells max. 57.5 dbz Ht. 12-14 km	NNW, West & South Sector. Movement Se Wards	-----	TS/RA	Chandigarh, Nabha, Roopnagar, Bathinda, Fazilka, Sangrur, Fatehbad, Ludhiana, Ferozpur, Sirsa And Its Adjoining Areas.
		28 / 2100-0000 UTC	Multiple cells max. 60.0 dbz Ht. 10-12 km	S & SW Sector. Movement Se Wards	-----	TS/RA	Kaithal, Pehowa, Panpat, Karnal, Jind And Its Adjoining Areas.
		29 / 0000 - 0300	Multiple cells max. 56.5 dbz Ht. 10-12 km	SE Sector. Movement Se Wards	-----	-----	SOLAN, NAHAN, KALSI, BEHAT, ROORKIE, MUZARABAD AND ADJOING AREAS.

Radar Station Name	Date	Time Interval of Observation (UTC)	Organisation of cells(Isolated single cells/multiple cells/ convective regions /squall lines) with height of 20 dBZ echo top and maximum reflectivity	Formation w.r.t. radar station and Direction of movement	Remarks	Associate d Severe Weather if any	Districts affected
Kolkata	29-05-2017	28/0301-0553	NIL	NIL	NO SIGNIFICANT ECHO	NIL	NIL
		28/0553 - 1751	1. Isolated single cells with maximum reflectivity of 59.0 dBz at 0841 UTC and maximum height 14.4 km at 0802 UTC	1.N to NE (185 km) almost no movement	1. Isolated single cells started forming between N to NE since 0553 UTC at a distance of 185 km from Radar at 0631 UTC. Not matured some merged with cell no. 2 rest dissipated at 1032 UTC in NE	Thunderst orm / Rain	N/A
			2. Single cell converted to multi celled system with maximum reflectivity of dBz at UTC and maximum height km at UTC	2.NNW( 205 km)	2. Single cell formed at NNW at 0601 UTC at a distance of 205 km from Radar. Not matured dissipated at UTC in	Thunderst orm / Rain	N/A
			3. Single cell with maximum reflectivity of 60.0 dBz at 0751 UTC and maximum height 11.02km at 0751 UTC	3.NW (102 km) almost no movement	3. Single cell formed at NW at 0712 UTC at a distance of 102 km from Radar . Matured dissipated at 0841 UTC in NW	Thunderst orm / Rain	N/A
			4. Single cell with maximum reflectivity of 57.0 dBz at 0751 UTC and maximum height 07.98km at 0751 UTC	4.NW (108 km) almost no movement	4. Single cell formed in NW at 0751 UTC at a distance of 108 km from Radar. Not matured dissipated at 0841 UTC in NW	Thunderst orm / Rain	N/A
			5. Extended multi celled system with maximum reflectivity of 65.0 dBz at 1241 UTC and maximum height 14.6 km at 1101 UTC	5. NNW (248 km) moving in E-ly/ ESE-ly direction with a speed of 36.7 kmph.	Extended multi celled system first observed in NNW at a distance of 248 km from Radar. Matured and dissipated at 1521 UTC in N at a distance 207 km from Radar.	Hailstorm/ Squall/ Thunderst orm / Rain	N/A
			6. A large number of small single cells were formed in between1051 and 1152 UTC to merge a and formed an extended multi celled system with maximum reflectivity of 64.0 dBz and maximum height 17.3 km at 1202 UTC.	6. N/145 km to N/91 km moving in ES E-ly/ SE-ly direction with a speed of 34.9 kmph.	6. A large number of small single cells were formed in between1051 and 1152 UTC to merge a and formed an extended multi celled system at 1202 UTC which again split up in two parts at 1421 UTC and again merged at 1441 UTC. Matured and dissipated at 1731 UTC in NE at a distance 19 km from Radar.	Hailstorm/ Squall/ Thunderst orm / Rain	N/A
		28/1801-29/0300	NIL	NIL	NIL	NIL	NIL

Radars Station name	Date	Time interval of observation (UTC)	Organization of the cells (Isolated single cells/multiple cells/ convective regions/ squall lines) with height of 20dBZ echo top and maximum reflectivity	Formation w.r.t radar station and Direction of movement	Remarks	Associated severe weather if any	Districts affected
DWR Machilipatnam	03Z of 28/05/17 to 03Z of 29/05/17	1731 to 1751 UTC	Multiple cells average height of 6.0Km with maximum reflectivity of 55.0 dBZ	NW (235km) and moving SE ly direction with average speed of 30 kmph	Cell started forming at 1701 UTC, at NW (181km) from Radar the maximum reflectivity during 1731 to 1751 UTC and died down at 1811 UTC	Possibility of Thunder storm with rain and winds	Prakasam and Nellore Districts
	03Z of 28/05/17 to 03Z of 29/05/17	2111 to 2201 UTC	Multiple cells average height of 3.6 km with maximum reflectivity of 54.5 dBZ	NW (101km) and moving SE ly direction with average speed of 14 kmph	Cell started forming at 2111UTC, at NW (111km) from Radar the maximum reflectivity during 2131 to 2201 UTC and died down at 2221UTC	Possibility of Thunder storm with and winds	Khammam and Krishna Districts
Patna	29/05/2017	280300 - 280600	Single Cell. Maximum Reflectivity : 45 dBZ Echo Top : 10.5 KM	Range : 145 KM from DWR Patna in North-North-West direction. Movement-South-Easterly	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	THUNDER-STORM WITH RAIN	West Champaran, East Champaran, Gopalganj, Siwan, Saran, Sheohar, Sitamarhi, Muzaffarpur, Dharbhanga
		280600 - 281300	Single Cell. Maximum Reflectivity : 52 dBZ Echo Top : 14.0 KM Note: This cell merged with upper described cell at 0630 UTC.	Range : 45 KM from DWR Patna in North-North-West. Movement-South-Easterly	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	THUNDER-STORM WITH RAIN	Vaishali, Patna, Nalanda, Samastipur, Begusarai, Sheikhpura, Nawada, Supaul, Madhepura, Saharsa, Khagaria, Munger, Lakhisarai, Jamui, Banka, Bhagalpur, Katihar & Purnia
		281300 - 290300	NIL	NIL	N/A	N/A	N/A



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∞	haze
rw	smoke
⊘	dust or sand storm
≡	fog
☉	drizzle
•	rain
*	snow
▽	showers
△	hail
⊘	thunderstorm
<b>Weather Symbols</b>	