



India Meteorological Department
FDP STORM Bulletin No.91 (04-06-2017)

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

The Northern Limit of Monsoon continues to pass through Lat.10.0°N/Long.60.0°E, Lat.10.0°N/Long.70.0°E, Kochi, Tondi, Lat. 14.0° N / Long.87.0°E, Lat.17°N/ Long.90.0°E, Lat.20.0°N/Long. 91.0°E, Agartala, William Nagar, Kokrajhar and Lat. 27.0°N/Long. 90.0°E.

The upper air cyclonic circulation over eastcentral Arabian sea off Maharashtra coast now lies over westcentral Arabian sea & neighbourhood between 1.5 km & 4.5 km above mean sea level.

The upper air cyclonic circulation over southeast Bay of Bengal & adjoining eastcentral Bay of Bengal now lies over westcentral Bay of Bengal & neighbourhood between 3.1 & 4.5 Km above mean sea level.

The trough at mean sea level from northwest Uttar Pradesh to Assam across north Uttar Pradesh & north Bihar now runs from northwest Uttar Pradesh to south Bangladesh across East Uttar Pradesh, northern parts of Jharkhand & Gangetic West Bengal and extends upto 0.9 km above mean sea level.

The western disturbance as a trough in mid-tropospheric westerlies with its axis at 3.1 km above mean sea level roughly along Longitude 57.0°E and north of latitude 32.0°N, now runs roughly along Longitude 58.0°E and north of latitude 32.0°N.

SATELLITE OBSERVATIONS during past 24hrs and current observation:

Current Observation (based on 0300UTC imagery of INSAT 3D):

CONVECTIVE ACTIVITY: -

Cell No	Date/time (UTC)	Location/Area	MIN CTT (-DEG C)	Movement	Remarks
5	04/0000	North Bangladesh adjoining West Meghalaya	67	--	--
	0100	Meghalaya Northeast Bangladesh Tripura North Mizoram	67		
	0200	do	81		
	0300	do	72		
6	04/0000	Telangana	87	--	--
	0100	Telangana adjoining North Coastal Andhra Pradesh	86		
	0200	DO	75		
	0300	DO	75		

Clouds Description:-

Isolated low/medium clouds were seen over J & K, North Himachal Pradesh and North Uttarakhand. Scattered low /medium clouds with embedded moderate to intense convection were seen over South Chhattisgarh, North Bangladesh adjoining Meghalaya, South Mizoram, Tripura and Southeast Assam. Scattered low /medium clouds with embedded isolated moderate to intense convection were seen over Telangana, North Coastal Andhra Pradesh, North Interior Karnataka and Bay islands. Scattered low/medium clouds with embedded weak to moderate convection were seen over Manipur; rest Mizoram, Marathwada, Madhya Maharashtra and rest parts of India.

Arabian Sea:

Scattered low/medium clouds with embedded intense to very intense convection were seen over WC Arabian Sea. Scattered low /medium clouds with embedded moderate to intense convection were seen over Southeast adjoining EC Arabian Sea.

Bay of Bengal & Andaman Sea:

Scattered low/medium clouds with embedded moderate to intense convection were seen over SE Bay Andaman Sea.

RADAR and RAPID Observation:

DWR Composite at 1300hrs IST indicated significant convection over South Tripura and in RAPID RGB Satellite imagery of 1200hrs IST indicated significant convective clouds over Tripura, Mizoram, Tripura, Coastal Karnataka, Lakshadweep, Andaman & Nicobar Islands.

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

Not available.

2. NWP MODEL GUIDANCE:

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

1. Weather Systems: 00 UTC analysis shows the trough along Haryana region extending across Madhya Pradesh, Chhattisgarh and WB. The off-shore trough from south Maharashtra coast to Kerala coast is also seen in the analysis and is seen persisting till day 5.

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.

3. Low level Vorticity:-Positive Vorticity 850hPa (>12 x 10⁻¹/s): Analysis shows low level positive vorticity (>-12 x 10⁻⁵/s) mainly over isolated pockets in UP, SHWB, Chhattisgarh and along the north eastern states. The high vorticity belts are mainly confined over regions of Punjab, UP, WB and Chhattisgarh region.

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): Forecast shows high threshold values over Bihar, along coastal region of Odisha, WB and AP for the next 2 to 5 days.

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

Sweat Index (> 400): 00UTC shows significant values over major parts over Bihar, GWB, Odisha and AP and is expected to persist for the next 4 to 5 days.

CAPE (> 1000): Mostly over Bihar, GWB, Odisha, and AP and other regions over the east coast, and over few pocket in Gujarat during the next 3 to 4 days.

CINE (50-150): based on 00 analysis maximum CIN values are found in areas over east 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 few pockets in the Kerala region and AP region. Day 2 to day 5 shows rainfall over isolated pockets in the south peninsular region, Central India and along the foothills of the Himalayas.

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

1. Model Reflectivity (Max. dBz):

15-40 dBZ: over isolated pockets in the Kerala Coast, AP and the North-East region till today.

15-40 dBZ: over isolated pockets in the North West J&K region tomorrow.

15-40 dBZ: over major regions of North West J&K and Bihar during day2.

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

CAPE (> 1000): Mostly along Bihar, GWB, Odisha, AP and along major regions bordering the west coast, along with few pockets in Gujarat, MP and adjoining regions of Central India during next 2 to 3 days.

CINE (50-150): Higher values over Rajasthan, WB, east coast and Odisha during next three days.

3. Rainfall and thunderstorm activity:

40-70 mm over North-east region, some pockets of Kerala and adjoining west coast of country based on 00 analysis it seen persisting for the next 3 days along with few pockets over the Himalayan foothills from day 2 to day3.

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:

Day-1 & Day-2:

Presently, the trough at mean sea level from northwest Uttar Pradesh to south Bangladesh across East Uttar Pradesh, northern parts of Jharkhand & Gangetic West Bengal and extends upto 0.9 km above mean sea level. The upper air cyclonic circulation over southeast Bay of Bengal & adjoining east central Bay of Bengal now lies over west central Bay of Bengal & neighbourhood between 3.1 & 4.5 Km above mean sea level. This system will give rise to very heavy rainfall over Arunachal Pradesh, Assam and Meghalaya on Day-1. The thunderstorm with gusty wind possibility is very likely to Tripura, Nagaland, Manipur and Mizoram on Day-1.

The upper air cyclonic circulation over west central Arabian sea & neighbourhood between 1.5 km & 4.5 km above mean sea level. Based on Satellite RGB imageries and NWP model guidance, Kerala, Lakshadweep, Rayalaseema may experience some rainfall on Day-1

24 hour Advisory for IOP:

Arunachal Pradesh Assam Meghalaya Tripura, Nagaland, Manipur, Mizoram
Kerala, Lakshadweep, Rayalaseema, South Coastal Karnataka
Telangana, North Coastal Andhra Pradesh
South Chhattisgarh, Bihar
South Madhya Maharashtra

48 hour Advisory for IOP:

East UP, Bihar, Jharkhand, GWB
South Madhya Maharashtra

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)

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

Upper level winds

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

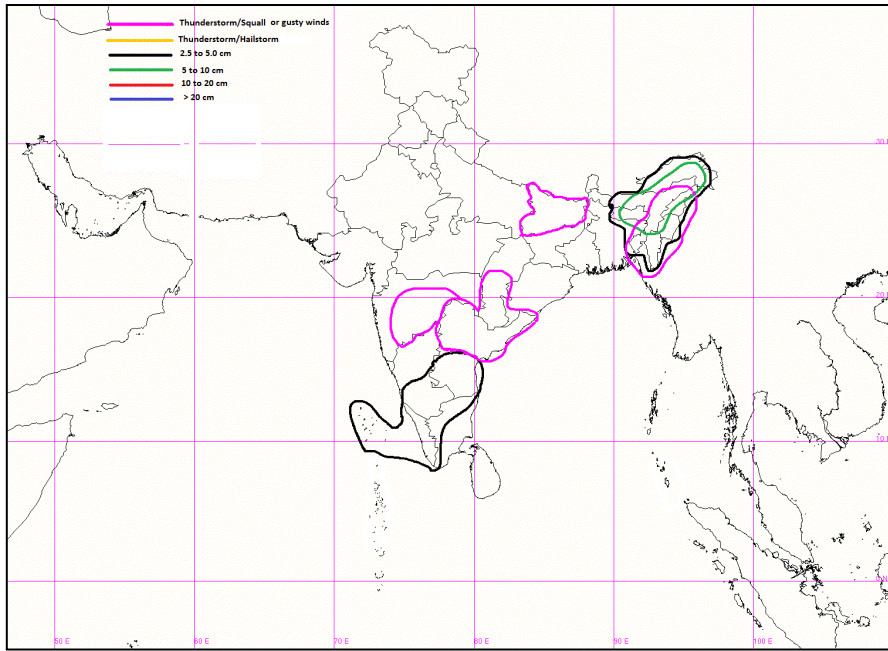
HEM: http://satellite.imd.gov.in/img/3Ddaily_he.jpg

ForRadarimagesofthepast24hoursincludingmosaicofimages:

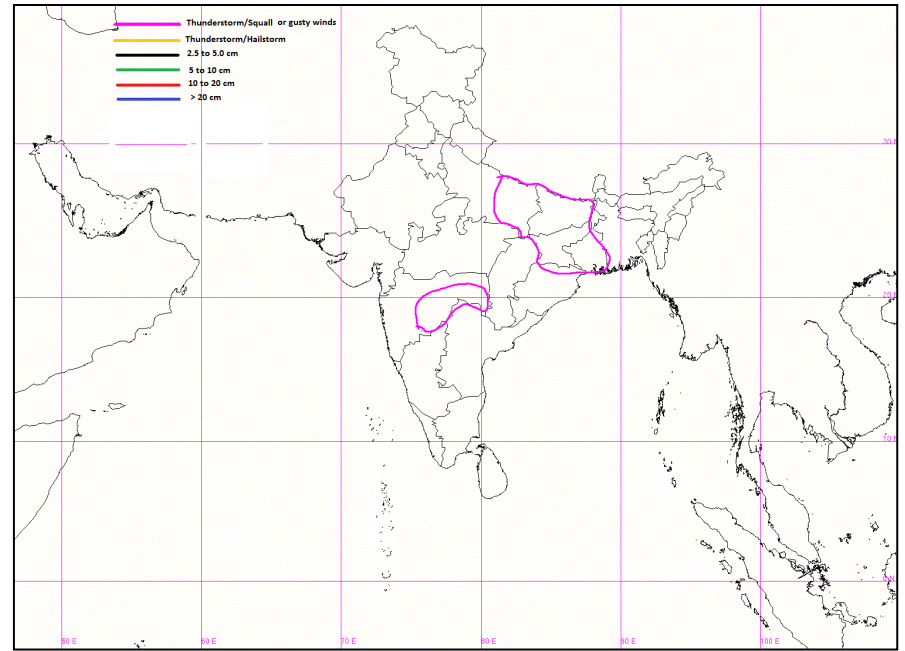
http://ddgmui.imd.gov.in/dwr_img/

Satellite sounder based T- Phigram

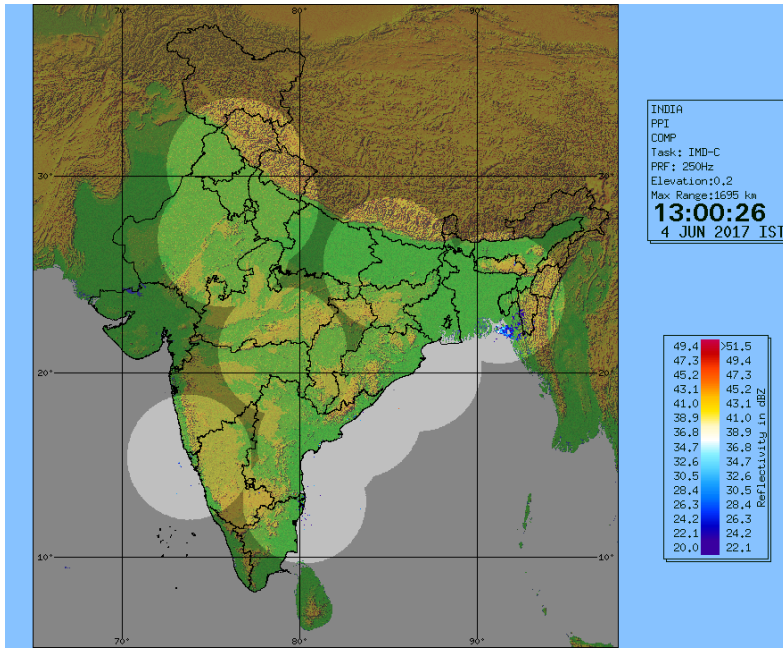
http://satellite.imd.gov.in/map_skm2.html



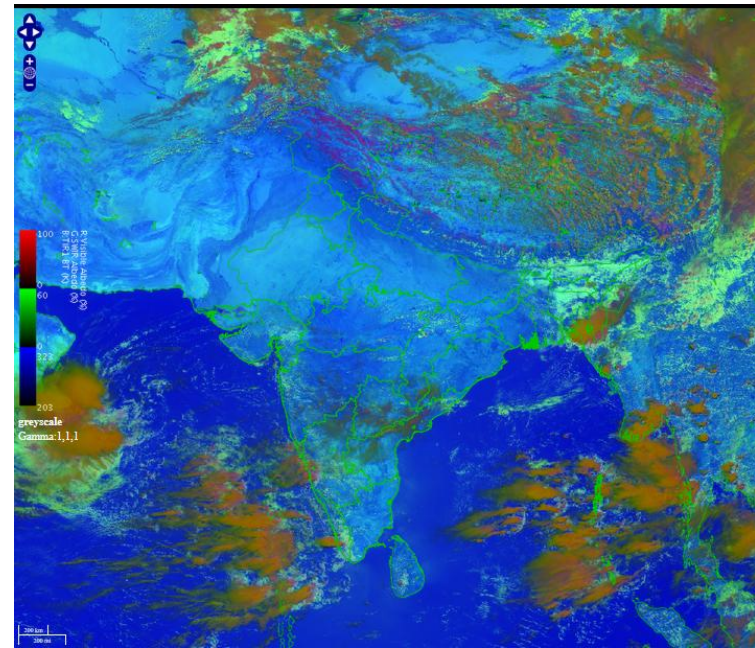
IOP Advisory for 24 hours



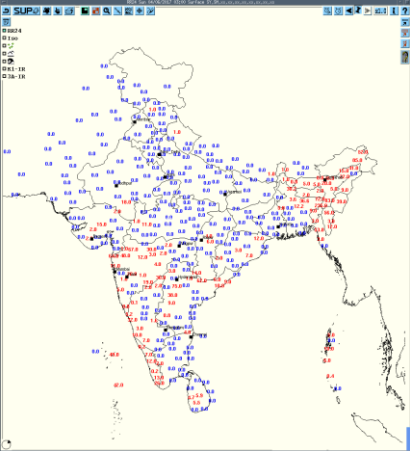
IOP Advisory for 48 hours

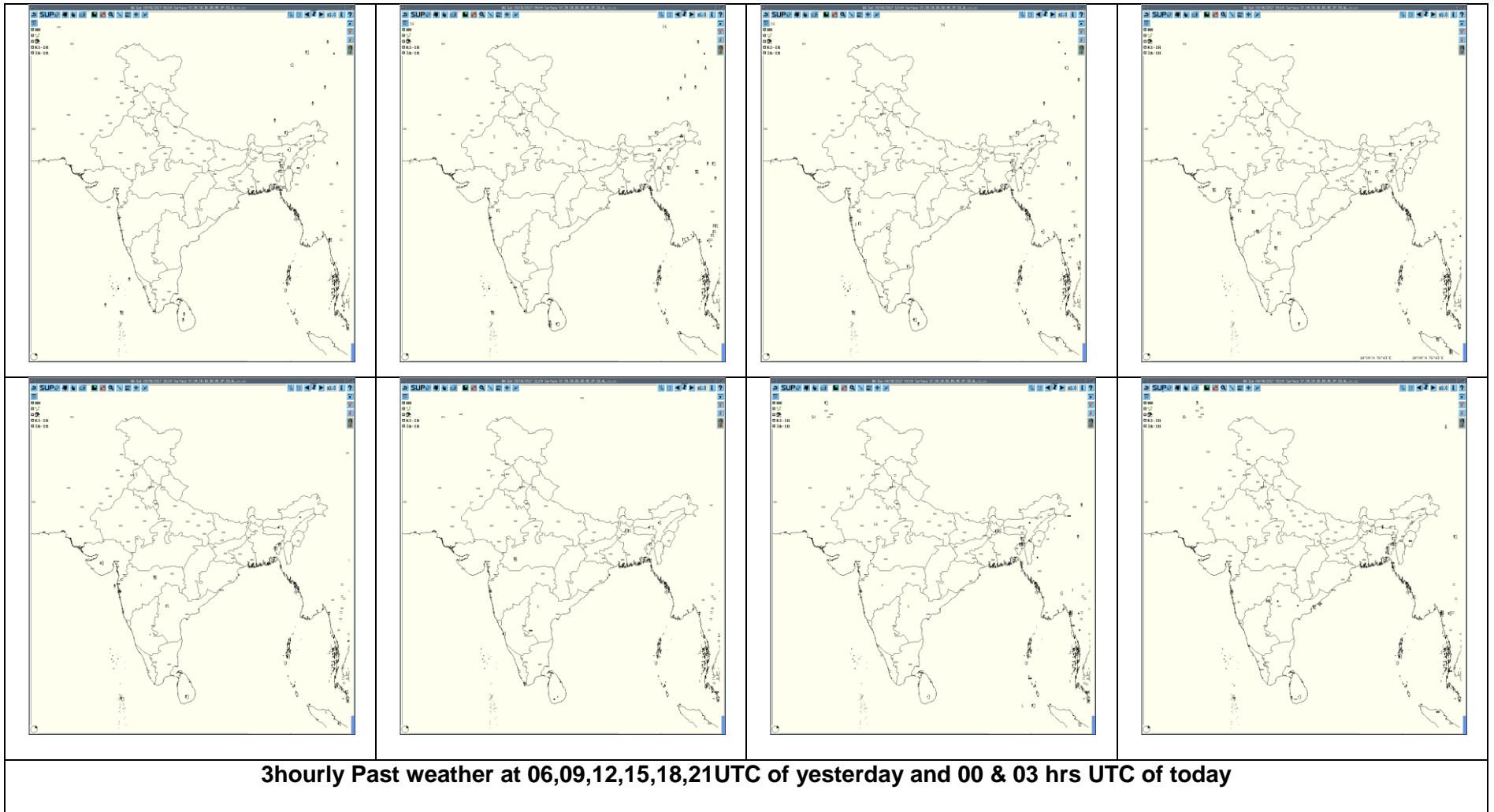


DWR Patna at 1300hrs IST of today

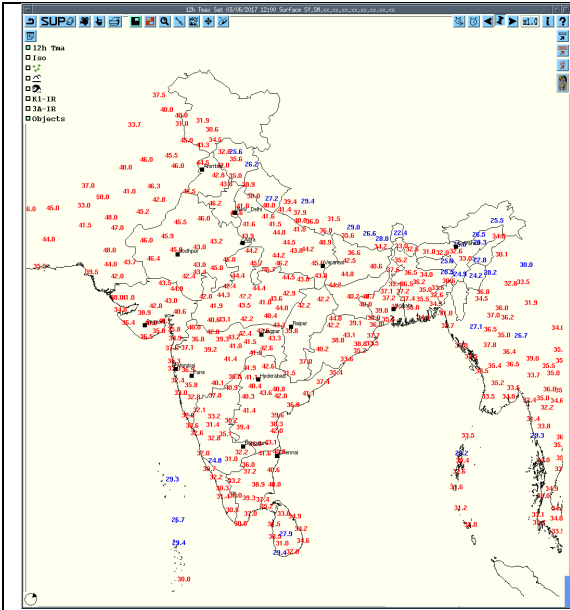


RAPID RGB Satellite Imagery at 1230 hrs IST of today

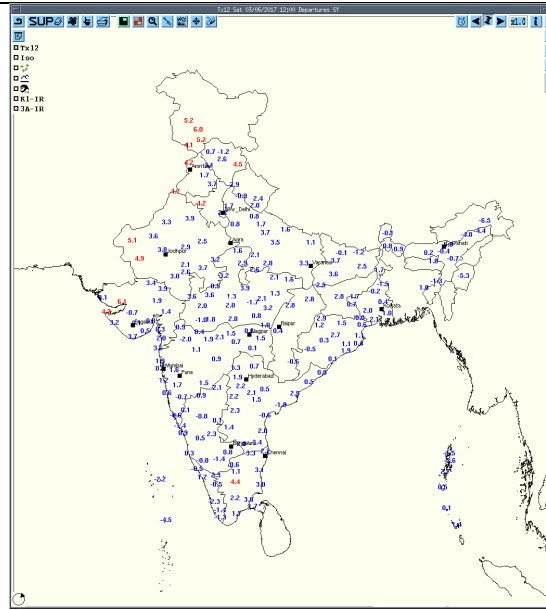
<p style="text-align: center;">Not available</p>	<p style="text-align: center;">Not available</p>	
<p style="text-align: center;">Forecast Dust Concentration</p>	<p style="text-align: center;">PM10 Forecast</p>	<p style="text-align: center;">Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today</p>
<p style="text-align: center;">Not available</p>		<p style="text-align: center;">Not available</p>
<p style="text-align: center;">IMR Rainfall</p>		<p style="text-align: center;">HEM Rainfall</p>



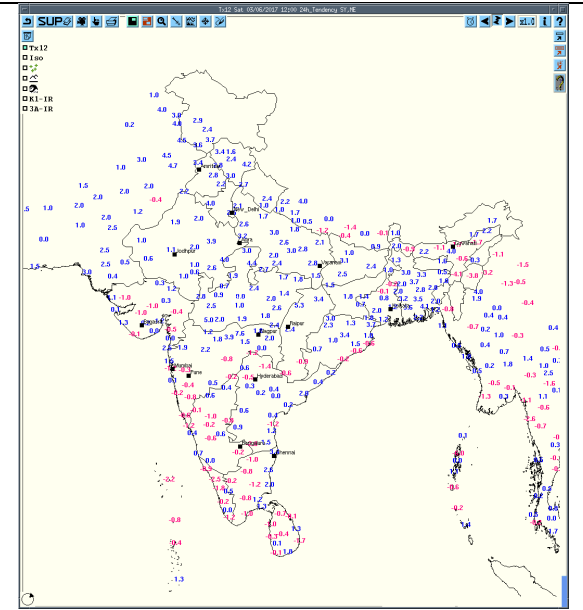
3hourly Past weather at 06,09,12,15,18,21UTC of yesterday and 00 & 03 hrs UTC of today



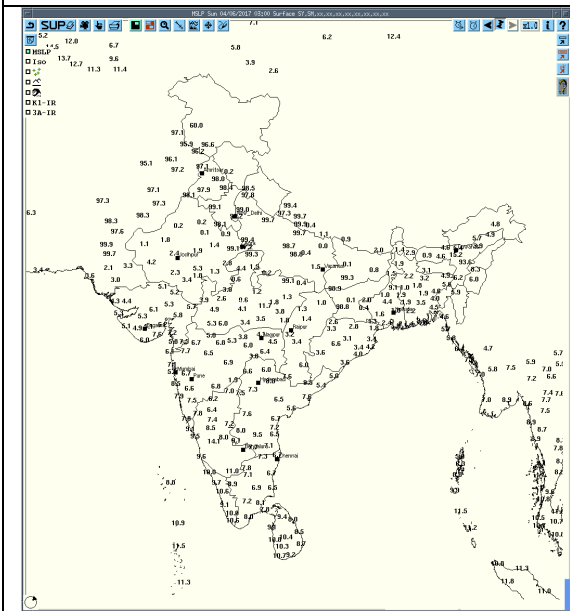
Tmax



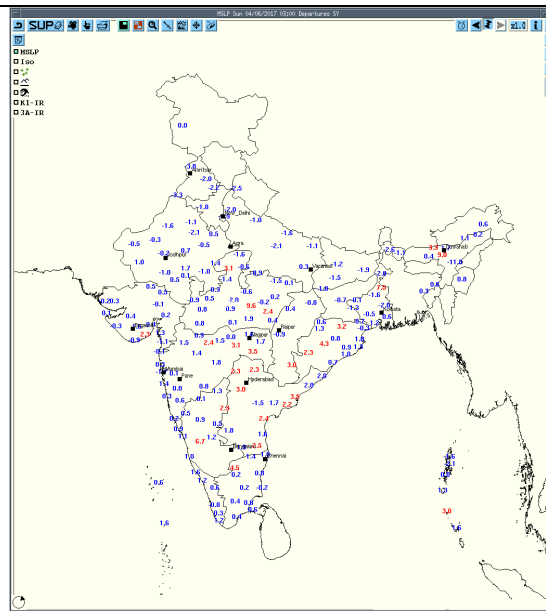
Departure Tmax



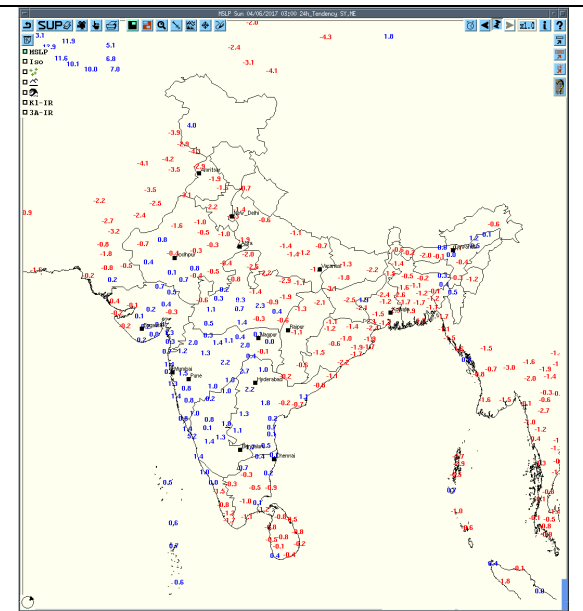
Tendency Tmax



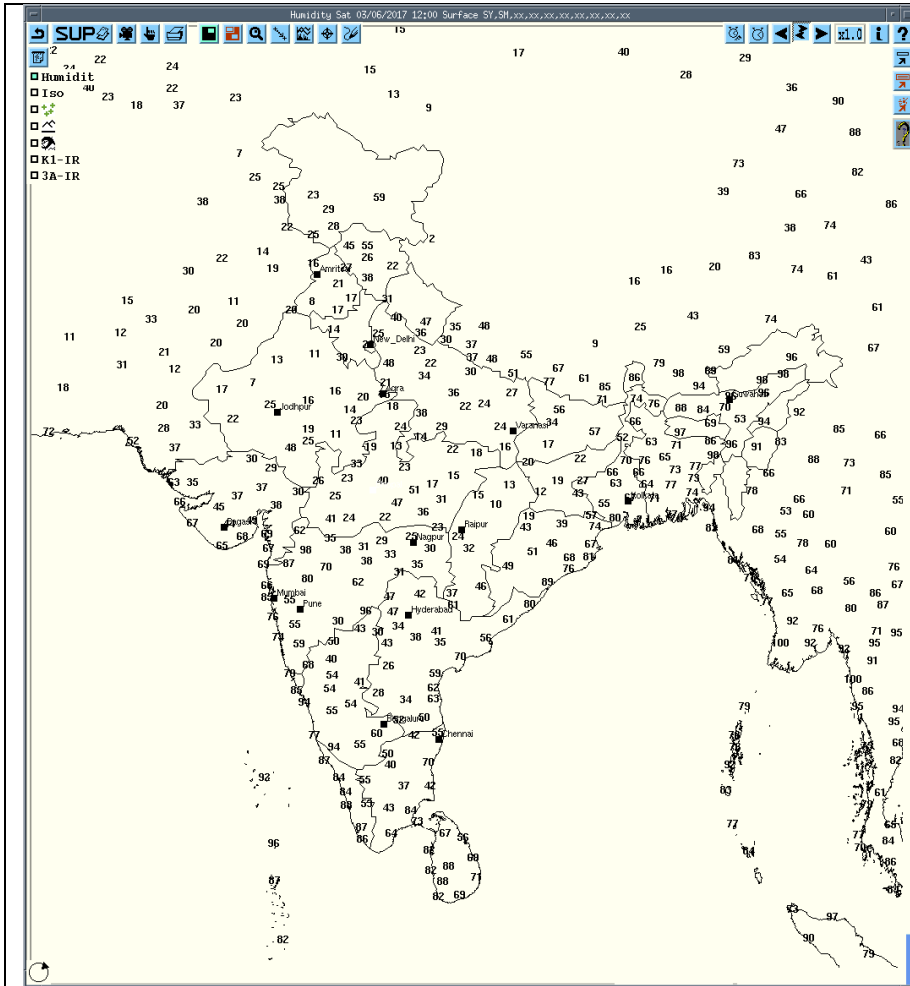
MSLP



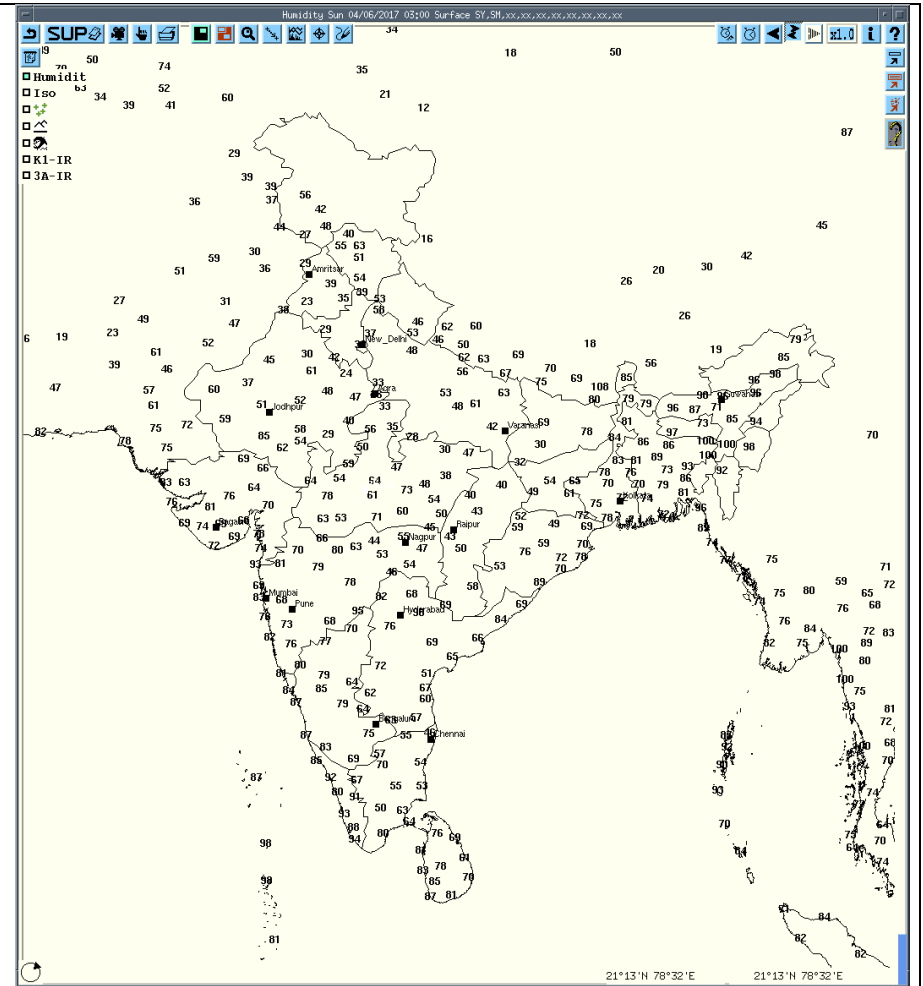
Departure MSLP



Tendency MSLP



RH at 12UTC yesterday



RH at 03UTC today

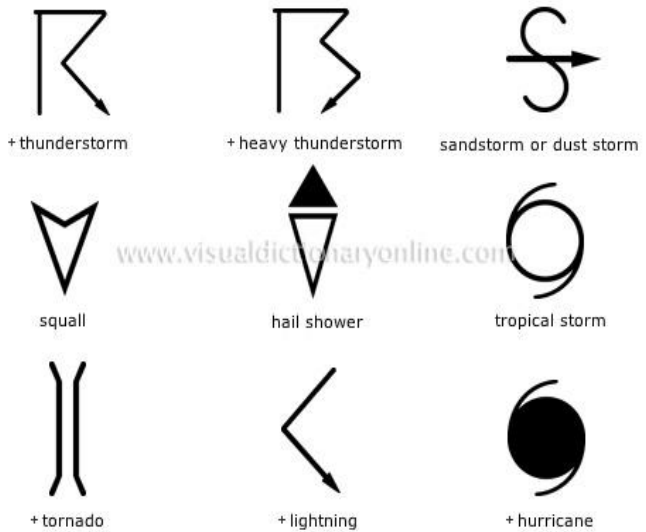
Realised past 24hrs TS/SQ/HS Data (reported at 0300UTC of the day):

Realized weather past 24hours (Based on SYNERGIE Products)					
Date	Time of Reporting	Name of Station Reporting	Region	STATE	Weather Event
03-06-17	0600UTC	Silchar	NE India	Assam	Thunderstorm
03-06-17	0900UTC	Imphal	NE India	Manipur	Thunderstorm
		Nasik	West India	Maharashtra	Thunderstorm
03-06-17	1200UTC	Kailasahar	NE India	Tripura	Thunderstorm
		Nasik, Pune	West India	Maharashtra	Thunderstorm
		Tirupathi	South India	Andhra Pradesh	Thunderstorm
03-06-17	1500UTC	Guwahati, North Lakhimpur	NE India	Assam	Thunderstorm
		Rajkot	West India	Gujarat	Thunderstorm
		Nasik, Aurangabad AP, Sholapur	West India	Maharashtra	Thunderstorm
		Hyderabad, Kurnool	South India	Andhra Pradesh	Thunderstorm
03-06-17	1800UTC	Rajkot	West India	Gujarat	Thunderstorm
		Akola	Central India	Vidarbha	Thunderstorm
		Agartala	NE India	Tripura	Thunderstorm
		Hyderabad	South India	Andhra Pradesh	Thunderstorm
03-06-17	2100UTC	Indore	Central India	Madhya Pradesh	Thunderstorm
		Kailasahar	NE India	Tripura	Thunderstorm
		Thiruvanthapuram	South India	Kerala	Thunderstorm
04-06-17	0000UTC	Kailasahar	NE India	Tripura	Thunderstorm
04-06-17	0300UTC	Tuni, Vishakhapatnam	South India	Andhra Pradesh	Thunderstorm

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
Visakhapatnam	03/06/17	0600 UTC-0900 UTC	CB cell towards N direction with Max ht reaching 16 km with Max reflectivity of 52dBz.	CB cell is 190 Km from the Radar and moving SEly	Existing CB cell is maturing stage.	-	-
		0900 UTC-1200 UTC	Multiple CB cells towards N and NE direction with Max ht reaching 18 km with Max reflectivity of 57dBz.	CB cells are 147 Km from the Radar and moving SEly	Existing CB cells are maturing stage.	-	-
		1200 UTC-1500 UTC	Multiple CB cells towards NW and NE direction with Max ht reaching 14 km with Max reflectivity of 53dBz.	CB cells are 63 Km from the Radar and moving SEly	-.	-	-
		1500 UTC-1800 UTC	An organized cell at SW with reflectivity 53 dBZ and height 10kms .	Matured stage and moving EASTERLY.	-.-	-	-
	04/06/17	1800 UTC-0000 UTC	Multiple cells of organized and convective cells at NW sector with max reflectivity 56dbz with average height 17kms.	Matured stage and it movement is SOUTHERLY.	-.-likely to be intensified	-	-
		0000 UTC-0300 UTC	Multiple cells of organized and convective cells at NW sector with max reflectivity 56dbz with average height 18kms.	Matured stage and movement is SOUTHERLY.	likely to dissipate	-	-
Jaipur	04/06/17	03/0300 - 04/0300	Nil	Nil	Nil	Nil	Nil
Patna	04/06/17	03/0300 - 04/0300	Nil	Nil	Nil	Nil	Nil
Patiala	04/06/17	03/0300 - 04/0300	Nil	Nil	Nil	Nil	Nil
Srinagar	04/06/17	03/0300 - 04/0300	Nil	Nil	Nil	Nil	Nil
Lucknow	04/06/17	03/0300 - 04/0300	Nil	Nil	Nil	Nil	Nil

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	Associated Severe Weather if any	Districts affected
Kolkata	03-06-17	03/0311-0902	NIL	NIL	NO ECHO	NIL	NIL
		03/0911-1711	1. Single cells converted to multi celled system and later merged to a single cell with maximum reflectivity of 65.0 dBz at 1041 UTC and maximum height 16.9 km at 1011 UTC.	1. NNW/217 km moving towards ESE-ly/ at a speed of 43 kmph	1. Single cell developed at 0911 UTC in NNW/217 km from Radar Converted to multi celled system and later merged to a single cell. Matured. Dissipated at 1711 UTC in NE at a distance of 231 km from radar.	Thunderstorm / Squall / Hail / Rain	N/A
			2. Single cells converted to multi celled system and later merged to a single cell with maximum reflectivity of 62.5 dBz at 1111 UTC and maximum height more than 18 km at 1041 UTC.	2. N/249 km moving towards ESE-ly/ at a speed of 49 kmph	2. Single cell developed at 0951 UTC in N/249 km from Radar Converted to multi celled system and later merged to a single cell. Matured. Moved out of Radar range at 1501 UTC in NE.	Thunderstorm / Squall / Hail / Rain	N/A
			3. Multi celled system with maximum reflectivity of 55.5 dBz at 1331 UTC and maximum height more than 114.1 km at 1201 UTC.	3.W/206 km moving towards SE-ly/ at a speed of 41 kmph	3. Multi celled system developed at 1121 UTC in W/206 km from Radar. Not matured. Dissipated at 1501 UTC in WSW/119 km from Radar.	Thunderstorm / Squall / Hail / Rain	N/A
	04-06-17	03/1721 - 04/0300	NIL	NIL	NO ECHO	NIL	NIL
Karaikal	03.06.17	1) 1222-1632 IST 2) 1512-2142IST	1)Cluster of individual cells at NW direction at 182 km range with max reflectivity of 67dBz and average height of 10 kms 2)Cluster of cells in NNW direction at 200 km range with max reflectivity of 67dBz and Average height of 11KM	1)In NW direction moving in E ly direction with speed of 20 kmph 2)In NNW direction almost stationary	1)Cells started forming at 1222 and dissipated at 1632 IST 2)Cells started forming at 1332 and dissipated at 2022 IST	N/A	N/A
	03.06.17	1) 1222-1632 IST 2) 1512-2142IST	1)Cluster of individual cells at NW direction at 182 km range with max reflectivity of 67dBz and average height of 10 kms 2)Cluster of cells in NNW direction at 200 km range with max reflectivity of 67dBz and Average height of 11KM	1)In NW direction moving in E ly direction with speed of 20 kmph 2)In NNW direction almost stationary	1)Cells started forming at 1222 and dissipated at 1632 IST 2)Cells started forming at 1332 and dissipated at 2022 IST	N/A	N/A



∞	haze
☁	smoke
☁	dust or sand storm
☁	fog
☂	drizzle
•	rain
❄	snow
☔	showers
⚡	hail
☁	thunderstorm
Weather Symbols	