



**India Meteorological Department**  
**FDP STORM Bulletin No.63(07-05-2017)**

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

**SYNOPTIC FEATURES:**

The upper air cyclonic circulation over northwest Madhya Pradesh & neighbourhood, now lies over central Uttar Pradesh & neighbourhood and extends upto 0.9 km above mean sea level.

The trough from northwest Madhya Pradesh to North Interior Karnataka now runs from this system to North Interior Karnataka across interior Madhya Pradesh, Vidarbha & Marathwada and extends upto 0.9 km above mean sea level.

The upper air cyclonic circulation over Bihar & neighbourhood now lies over Sub Himalayan West Bengal and adjoining Bihar and extends upto 1.5 km above mean sea level.

The trough from Bihar & neighbourhood to Gangetic West Bengal now runs from this system to northeast Bay of Bengal and extends upto 0.9 km above mean sea level. An upper air cyclonic circulation lies over Assam & neighbourhood at 1.5 km above mean sea level. Another upper air cyclonic circulation lies over northwest Rajasthan & neighbourhood and extends upto 0.9 km above mean sea level. A feeble western disturbance as a trough in mid- tropospheric westerlies runs roughly along longitude 69.0°E and north of latitude 32°N.

The upper air cyclonic circulation over Comorin area & adjoining south Tamilnadu at 1.5 km above mean sea level has become less marked.

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

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

**Convective Activity and cloud description:**

Cell No	Date/Time (UTC)	Area/Location	CTBT (-°C)	Movement	Remarks If any
7	07/0000	South Chhattisgarh	54	-	Developing
	-	adjoining Odisha	-		
	0300	Exterior South Chhattisgarh	65		
		adjoining Andhra Pradesh			

Scattered low/medium clouds with embedded isolated weak to moderate convection seen over Nagaland, Manipur, Exterior east Chhattisgarh, Odisha, South Jharkhand, Kerala, North central Andhra Pradesh and Bay Islands.

Scattered low/medium clouds seen over North Himachal Pradesh, Sikkim, Sub Himalayan West Bengal, Arunachal Pradesh, Assam, North Tripura, Meghalaya, Madhya Pradesh, Telangana, North Interior Karnataka, Kerala and Tamilnadu.

**Arabian Sea:**

Scattered low/medium clouds with embedded isolated moderate to intense convection seen over Southeast Arabian Sea off Kerala coast.

**Bay of Bengal & Andaman Sea:**

Scattered low/medium clouds with embedded isolated moderate to intense convection seen over south Andaman Sea Tenasserim coast.

**Past Weather:**

**Convection:** Moderate to Intense convection was observed over Odisha, North central Andhra Pradesh, Chhattisgarh, Jharkhand, Kerala, Tamilnadu, Gangetic West Bengal, Karnataka and South Madhya Maharashtra.

**OLR: -**

Upto 230  $\text{wm}^{-2}$  was observed over J&K, NC AP ADJ ORS.

Upto 340  $\text{wm}^{-2}$  was observed over S HARY, DEL, N UP, S UTRKND, S HP, S KKN & GOA, S M MAHA, CHTGH, S ORS NE& SE JHRKND EXT S SIK.

Upto 371  $\text{wm}^{-2}$  was observed over RAJ, GUJ, MRTWD, W MP, and S UP.

**Westerly Trough & Jet-Stream:** No Westerly Trough & Jet Stream is observed.

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

Rainfall upto 10 mm was observed over J&K, N HP, N UTRKND, N ORS, SE CHTGH, NE ARUPR, NAGA.

Rainfall upto 30 mm was observed over NIK ADJ S M MAHA, NC AP ADJ ADJ ORS W MEGHA ADJ BD W ASSAM

**RADAR and RAPID observation:**

Strong echoes (dBZ > 50 and height around 12km) were seen in DWR Hyderabad, Machilipatnam at 0700UTC and also observed in Radar Composite of 1240IST. RAPID RGB Satellite imagery of 1200hrs IST indicates convective clouds over North Central Andhra Pradesh, South Kerala and adjoining Tamilnadu.

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

Higher Dust concentration was observed over northern Africa and some parts of eastern Asia. Dust concentration is expected to remain high over western and northern India for next five days. High PM10 concentration was observed over north-western and northern India.

## 2. NWP MODEL GUIDANCE:

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

**1. Weather Systems:** The model analysis in the lower tropospheric levels shows a CYCIR over north parts of UP and adjoining Uttarakhand north-south and an associated trough extending from East UP to north interior Karnataka. In the forecasts, the CYCIR remains over region with a little shift north-westward direction and the north-south trough persists for next 2 days. The east-west trough along foothills extending from Uttar Pradesh up to Assam is seen for day 1 and 2. During day 3 a CYCIR forms over Jharkhand and adjoining areas and it remains over the region till day 5. Another CYCIR forms over Tamilnadu on day 3 which persists and moves a little westward direction in next 2 days. The wind analysis at 500 hPa does not show any prominent trough in westerlies over India except over NE states on day 1 in northeast-southwest direction and during day 2-4 with north-south orientation.

**2. Location of jet and jet core at 500 hPa:-500 hPa Jet core (>60kt):** No presence of jet core over the Indian region.

**3. Low level Vorticity:-Positive Vorticity 850hPa (>12 x 10<sup>-1</sup>/s):** Mostly along the foot hill of Himalaya. Prominent vorticity zones are found in the morning hours around CYCIR and along troughs over northwest, east, central and south peninsular India during next 5 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):** Less than threshold value all over the country. The values between 3-3.5 mostly along east coast, eastern part of the country covering Bihar, SHWB, GWB, Jharkhand and reaching over east UP and adjoining areas along foothills. Also similar values are seen along west coast, over Gujarat and sometimes extending over Andhra Pradesh and Interior Karnataka during next 5 days in the morning hours.

**Total Total Index (> 50) :** Above threshold value over the most parts of NW India covering Rajasthan, Madhya Pradesh and parts of Punjab, Haryana, UP, central India covering Vidarbha, Madhya Maharashtra, parts of Telangana and north interior Karnataka and west parts of east India over Chhattisgarh and parts of Jharkhand during morning hours.

**Lifted Index (< -2):** Less than threshold value mostly reiterates the coverage like T-storm index during next 5 days.

**Sweat Index (> 300):** Similar to T-storm initiation index during morning hours.

**CAPE (> 1000):** Similar spatial coverage like T-storm initiation index for next 5 days.

**CINE (>150):** During morning hours for next 5 days, covers Indian region crossing threshold value except a few parts of coastal region of extreme south peninsula, northwest part NW India and central India over Madhya Pradesh.

**5. Rainfall and Rainfall activity:**

10-40 mm rainfall over south peninsular region including Kerala, interior Karnataka, Tamilnadu and adjoining areas during next 5 days with an increasing trend after day 2 over Kerala and over Tamilnadu over day 3.

10-40 mm along foothills and over SHWB and NE states with an increasing trend,

10-40 mm over Orissa on day 1, over adjoining coastal AP on day 2 and GWB and Orissa on day 3 to day 5.

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

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

Presently, the upper air cyclonic circulation over SubHimalayan West Bengal and adjoining Bihar and extends upto 1.5 km above mean sea level. The trough from Bihar & neighborhood to Gangetic West Bengal now runs from this system to northeast Bay of Bengal and extends upto 0.9 km above mean sea level. This system will give rise to thundersquall with hail over GWB and North Orissa on Day-1. With this system, Sub Himalayan West Bengal, Jharkhand and eastern parts of Uttar Pradesh may experience thunderstorm with gusty winds on Day-1. The activity may continue to Day-1 also.

The trough from North Interior Karnataka across interior Madhya Pradesh, Vidharbha & Marathawada and extends upto 0.9 km above mean sea level, which may result in thunderstorm with gusty winds over South Chhattisgarh and South Madhya Maharashtra Kerala, South Interior Karnataka, North Coastal Andhra Pradesh, on Day-1. Due to an upper air cyclonic circulation over Assam & neighborhood, Assam, Meghalaya, Nagaland, Meghalaya, Mizoram and Tripura may experience thunderstorm with gusty winds on Day-1.

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

Assam, Meghalaya, Nagaland, Meghalaya, Mizoram and Tripura  
Kerala, Interior Tamilnadu, South Interior Karnataka, Telangana, North Coastal Andhra Pradesh,  
Sub Himalayan West Bengal, Gangetic West Bengal, Orissa, Jharkhand, East UP.  
South Chhattisgarh and South Madhya Maharashtra

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

Kerala, Interior Tamilnadu, South Interior Karnataka and North Coastal Andhra Pradesh,  
Parts of Punjab and Haryana  
Sub Himalayan West Bengal, Gangetic West Bengal, Orissa,

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)

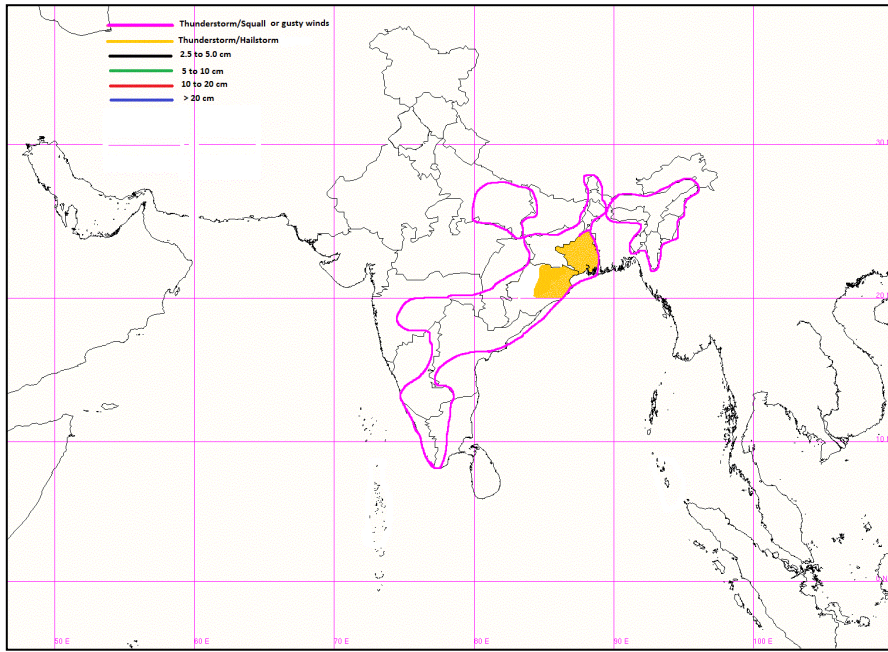
HEM: [http://satellite.imd.gov.in/img/3Ddaily\\_he.jpg](http://satellite.imd.gov.in/img/3Ddaily_he.jpg)

ForRadarimagesofthepast24hoursincludingmosaicofimages:

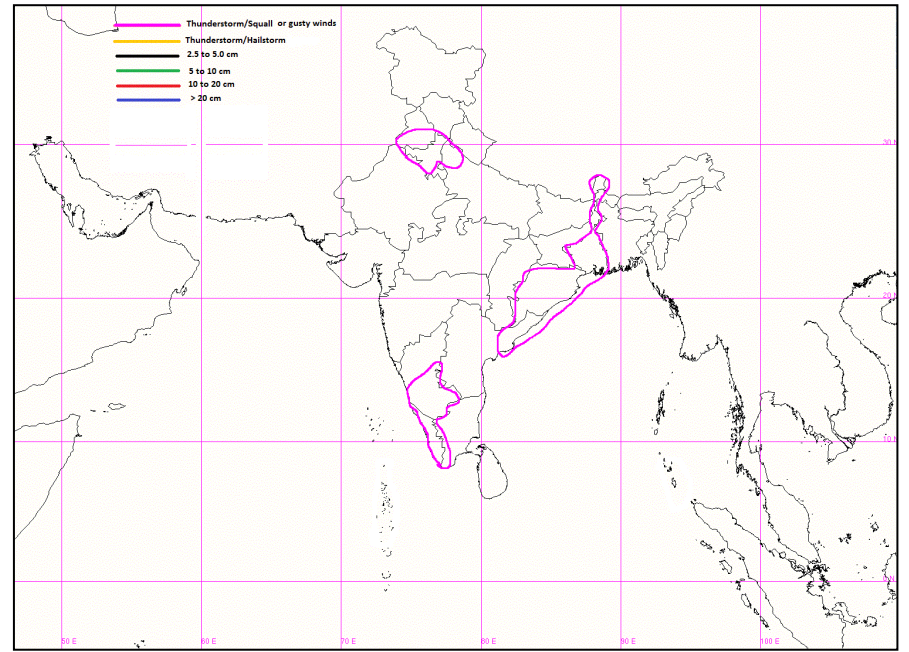
[http://ddgmui.imd.gov.in/dwr\\_img/](http://ddgmui.imd.gov.in/dwr_img/)

Satellite sounder based T- Phigram

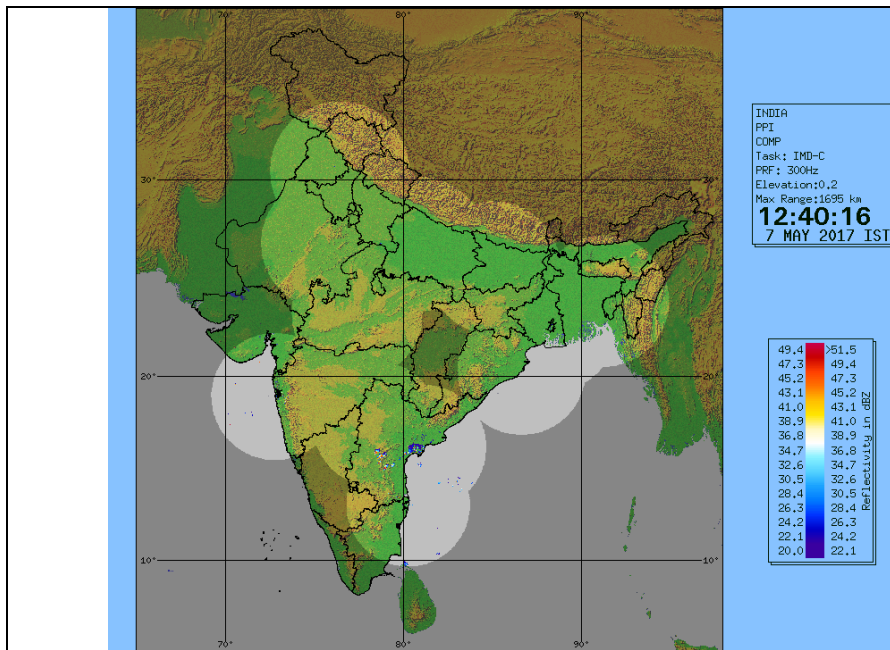
[http://satellite.imd.gov.in/map\\_skm2.html](http://satellite.imd.gov.in/map_skm2.html)



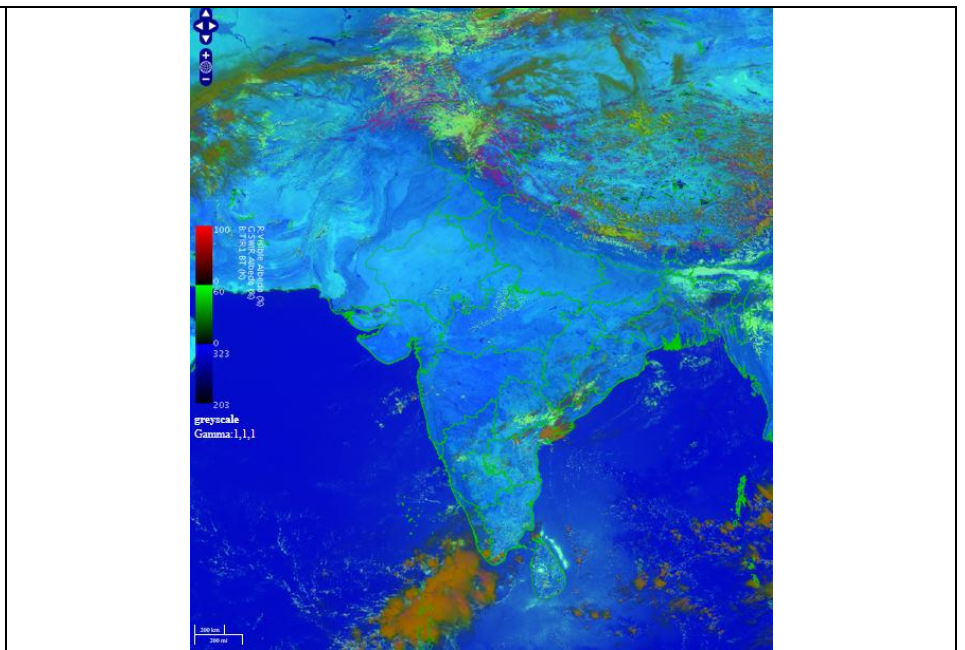
**IOP Advisory for 24 hours**



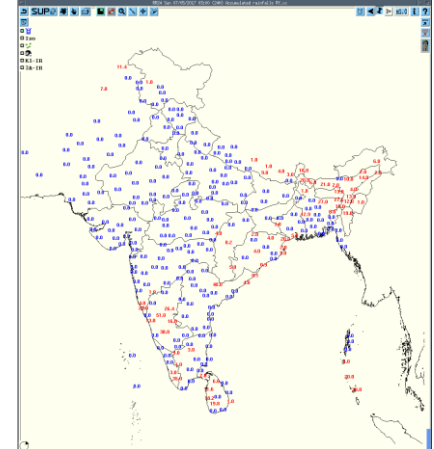
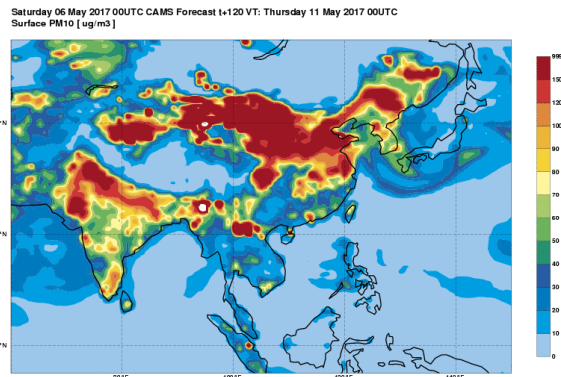
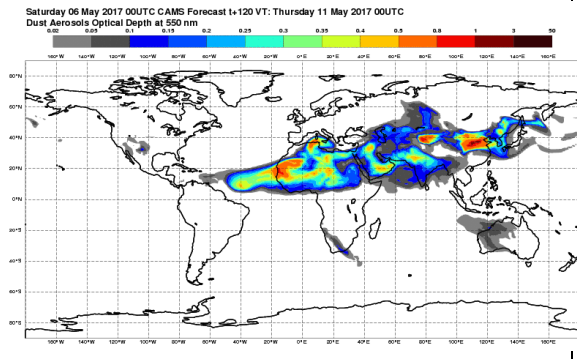
**IOP Advisory for 48 hours**



DWR Composite at 1240hrs IST of today



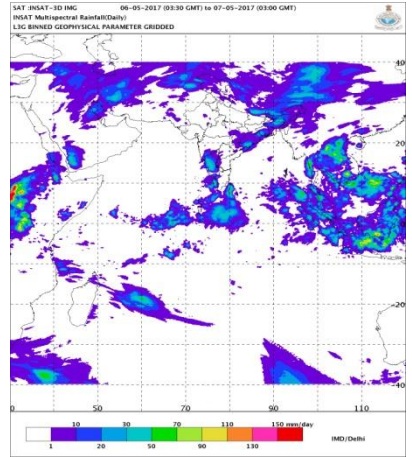
RAPID RGB Image of INSAT 3D at 1200 hrs IST of today



**Forecast Dust Concentration for 00UTC of 11<sup>th</sup> May**

**PM10 Forecast for 00UTC of 11<sup>th</sup> May**

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

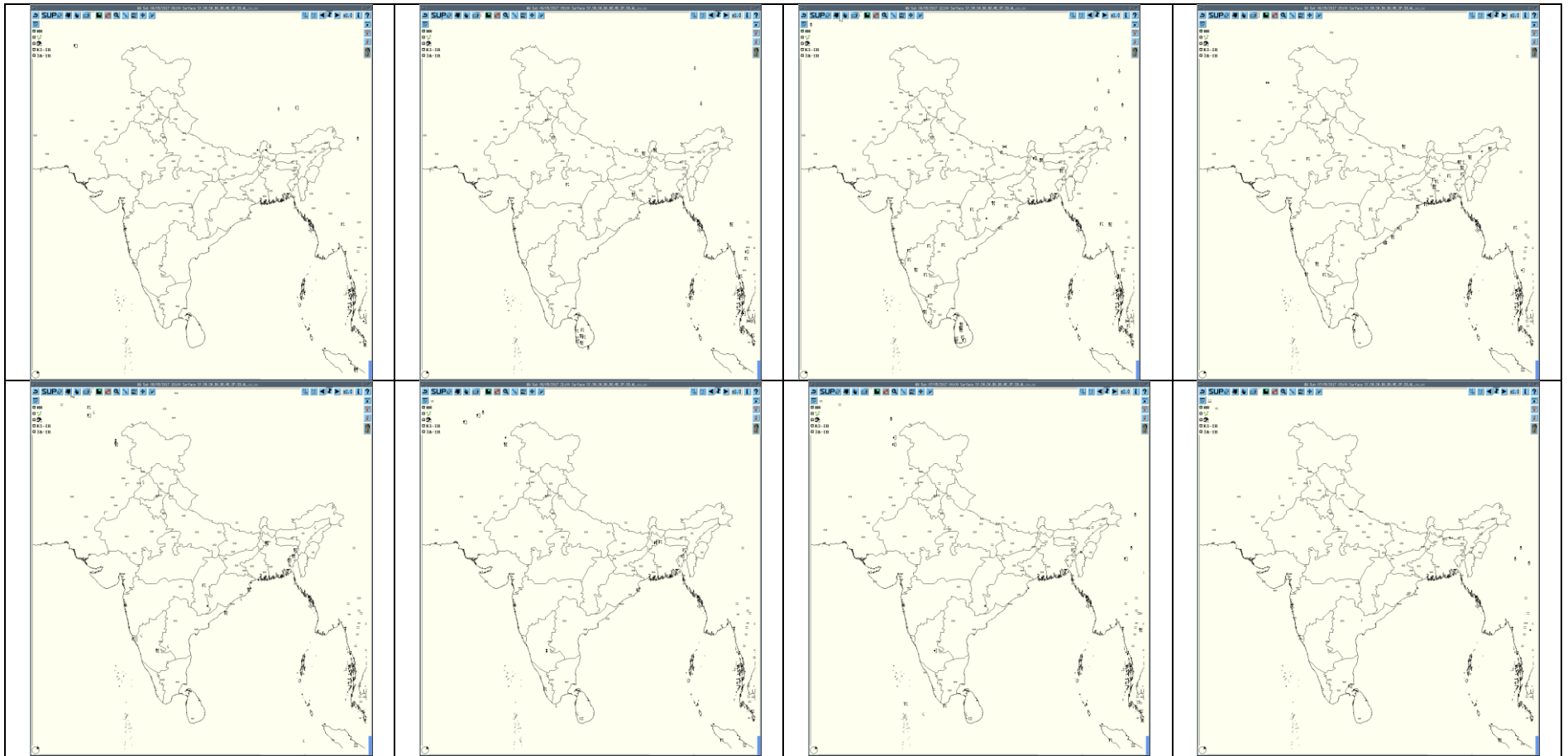


**IMR Rainfall**

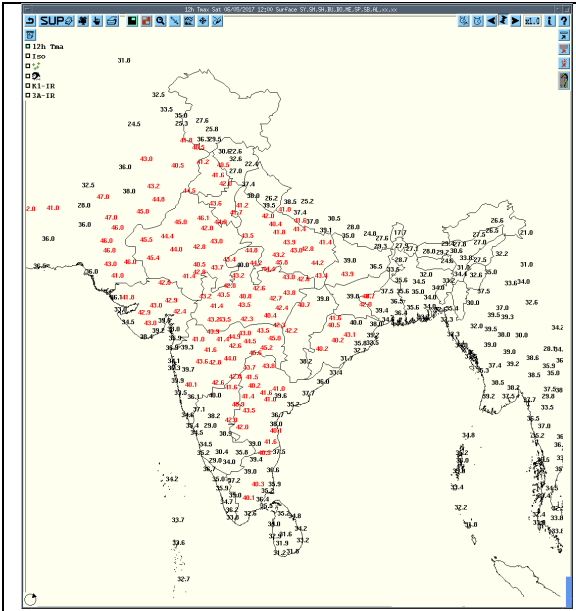
**Not Recived**

**HEM Rainfall**

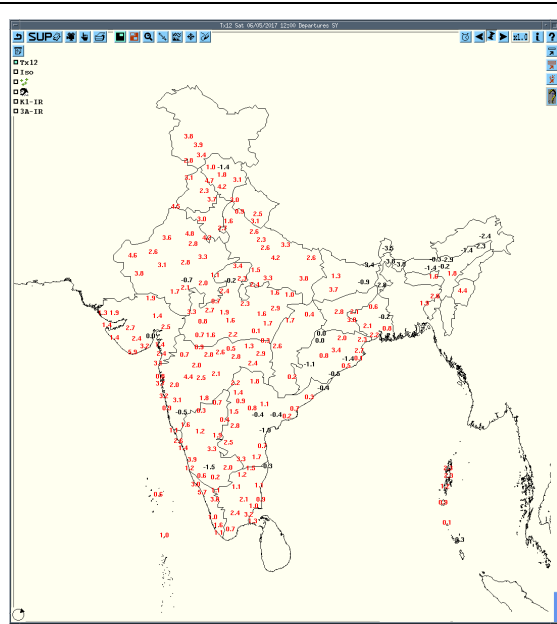




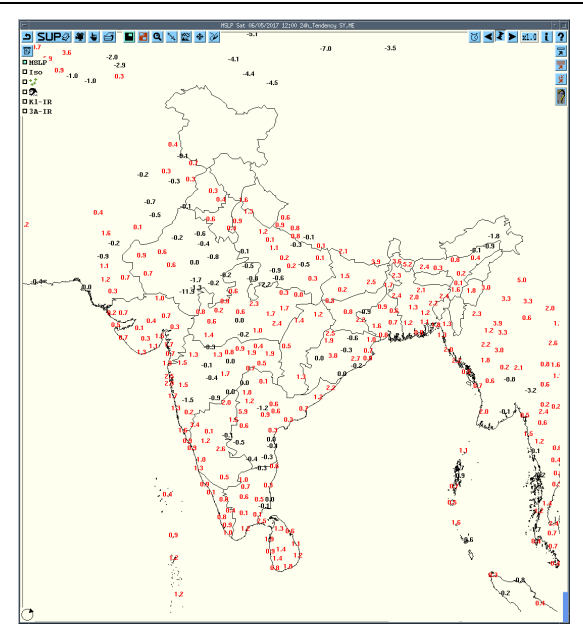
3hourly Past weather at 06, 09,12,15,18, 21UTC of yesterday and 00 & 03hrs UTC of today



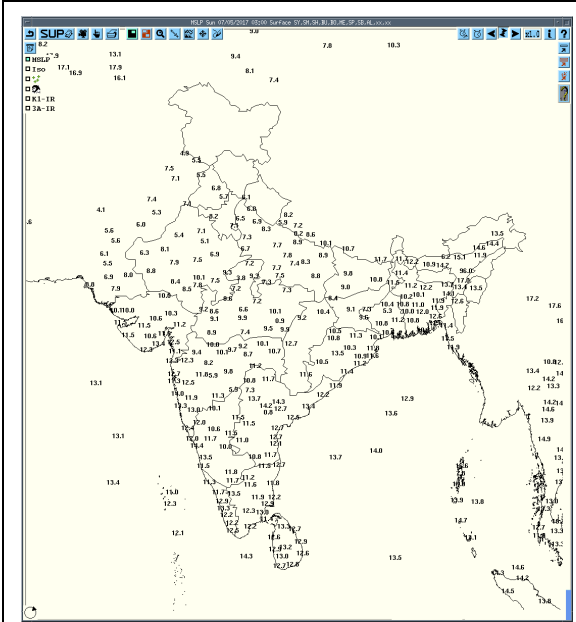
Tmax



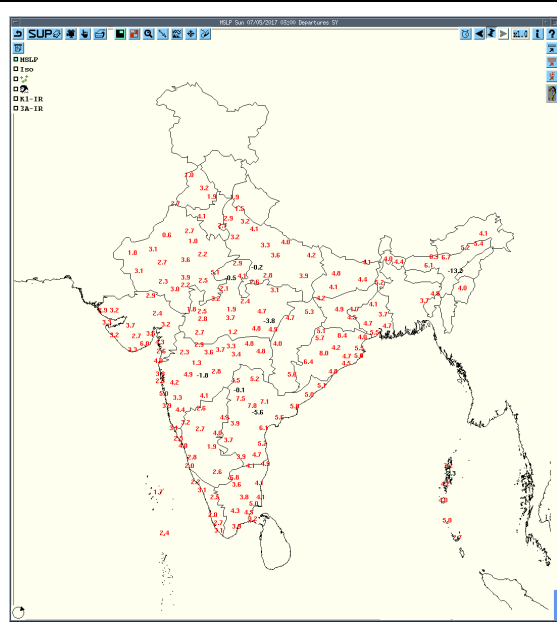
Departure Tmax



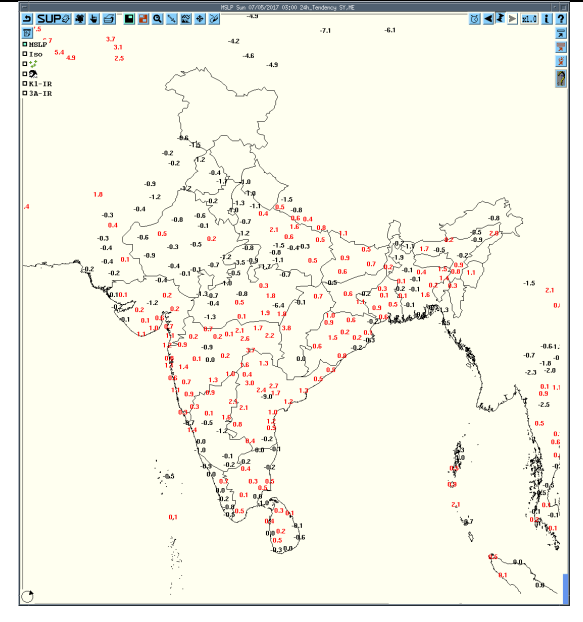
Tendency Tmax



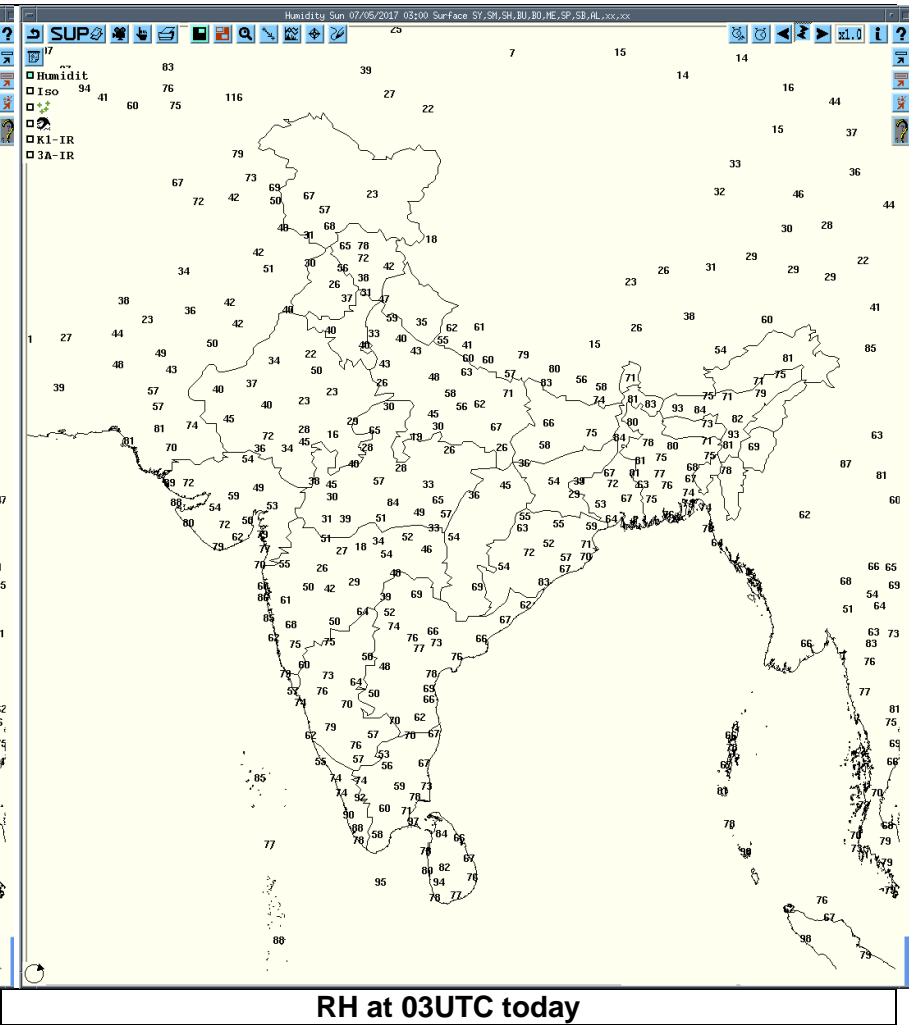
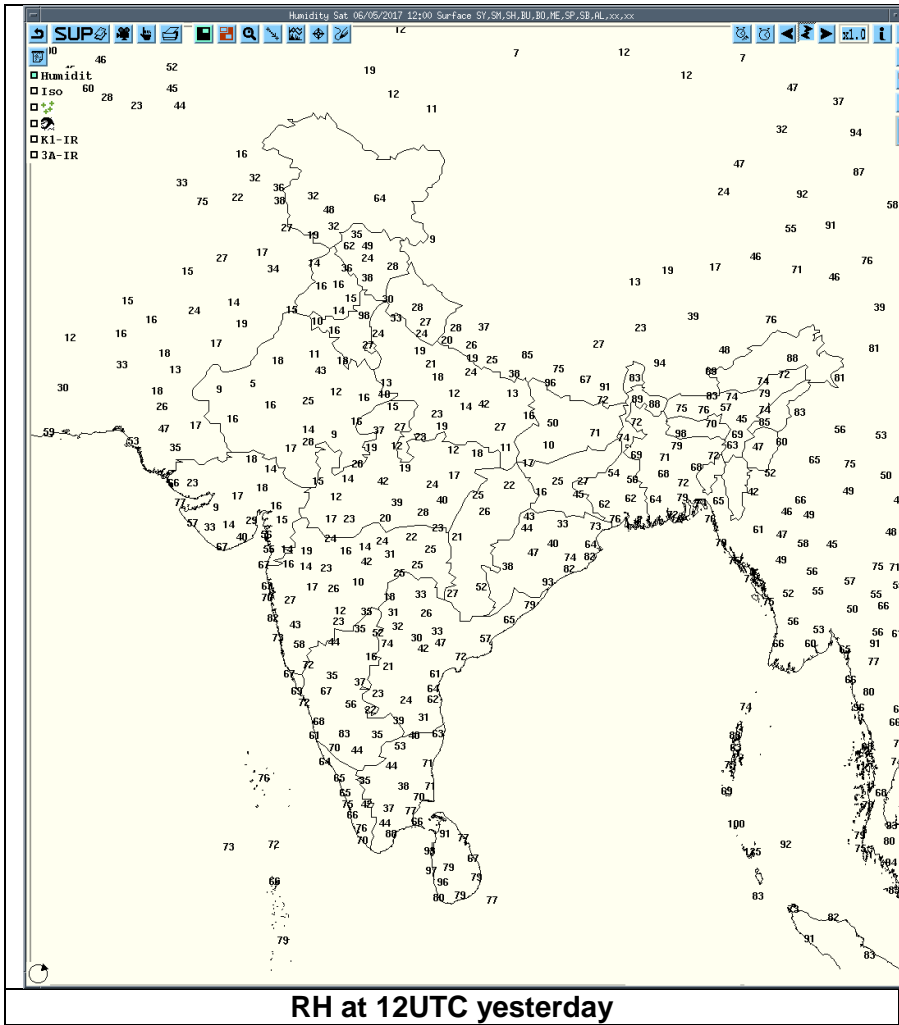
MSLP



Departure MSLP



Tendency MSLP



<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>
06-05-17	0600 UTC	Nil	Nil	Nil	Nil
06-05-17	0900 UTC	Sagar	Central India	Madhya Pradesh	Thunderstorm
		Jamshedpur	East India	Jharkhand	Thunderstorm
		Gangtok	East India	Sikkim	Thunderstorm
06-05-17	1200 UTC	Raipur	Central India	Chhattisgarh	Thunderstorm
		Keonjhar, Jharsuguda	East India	Odisha	Thunderstorm
		Cherrapunjee	Northeast India	Meghalaya	Thunderstorm
		Sangali	Central India	Maharashtra	Thunderstorm
		Belgaum, Gulbarga, Haveri	South India	Karnataka	Thunderstorm
		Jagdalpur	Central India	Chhattisgarh	Thunderstorm
		Mahabaleshwar, Satara, Belgaum, Gadag, Chamarajanagar	Central India	Maharashtra	Thunderstorm
		Belgaum, Gadag, Chamarajanagar	South India	Karnataka	Thunderstorm
		Cochin	South India	Kerala	Thunderstorm
		Ajmer	Northwest India	Rajasthan	Thunderstorm
06-05-17	1500 UTC	Dibrugarh, Tezpur, Guwahati	Northeast India	Assam	Thunderstorm
		Shillong	Northeast India	Meghalaya	Thunderstorm
		Raipur	Central India	Chhattisgarh	Thunderstorm
		Gadag, Honavar, Chitradurga	South India	Karnataka	Thunderstorm
		Gopalpur	East India	Odisha	Thunderstorm
		Calingapatnam, Vishakhapatnam	South India	Andhra Pradesh	Thunderstorm
		Agartala	Northeast India	Tripura	Thunderstorm
06-05-17	1800 UTC	Raipur	Central India	Chhattisgarh	Thunderstorm
		Chandbali	East India	Odisha	Thunderstorm
		Calingapatnam	South India	Andhra Pradesh	Thunderstorm
		Chitradurga	South India	Karnataka	Thunderstorm
		Cochin	South India	Kerala	Thunderstorm
06-05-17	2100 UTC	Cochin	South India	Kerala	Thunderstorm
07-05-17	0000 UTC	Kanyakumari	South India	Tamilnadu	Thunderstorm
07-05-17	0300 UTC	Adiramapatnam	South India	Tamilnadu	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
Agartala	07.05.17	060300 - 060530	Multi cell with Maximum Height <b>13km</b> and maximum reflectivity <b>43.5 dBZ</b> (at 0310 UTC)	Formed 410 km NW of DWR AGT at 1620 UTC dt.05.05.17 and moved SE-wards at around 66kmph	Cell dissipate at 0530UTC,over Meghalaya	N/A	N/A
		060840 - 061900	Multi Cell developed into squall line with Maximum Height <b>14 km</b> and maximum reflectivity <b>44 dBZ</b> (at 1450 UTC)	Formed 170 km NW of DWR AGT at 0840 UTC and moved SE-wards at around 65 kmph	Cells Dissipated at 1900 UTC ,over Mizoram	TS with light to moderate rain	West khowai, Gomati. North Unakoti, Dhalai district of Tripura, East Khasi Hills dist of Meghalaya, Mamit dist. Of Mizoram
		061640 - 062350	Multi cell with Maximum Height <b>12km</b> and maximum reflectivity <b>46 dBZ</b> (at 2040 UTC)	Formed 280 km NW of DWR AGT at 1640 UTC and moved ESE-wards at around 40kmph	Cell dissipate at 0530UTC,over Meghalaya	N/A	N/A
Patiala	07.05.17	060300 - 070300	Nil	Nil	Nil	Nil	Nil
MC JAIPUR	07/05/17	0650 - 1720 UTC	Multiple cell with average height of 6.5 km maximum reflectivity 49 dBZ	W moving towards SW wards at speed direction 12 km/hr to 16 km/hr	Cells continuous forming from 0650 UTC SW & W of Jaipur and multiple cell was observed and maximum relectivity during 1110-1610 UTC and died down at 1720 UTC.		Ajmer, Bhilwara, Tonk, Nagaur, Chittorgarh, Bundi

	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
Radar Station name DWR Machilipatnam	03Z of 06/05/17 to 03Z of 07/05/17	0811 to 1141 UTC	Isolated Multiple cells with average height of 13 km with maximum reflectivity of 62 dBZ	NE(234KM) stationary	Cells started forming at 0811 UTC, maximum reflectivity during 0911 to 1131 and died down at 1141UTC	Possibility of Thunder storm with hail, rain and moderate winds.	Visakhapatnam District
	03Z of 06/05/17 to 03Z of 07/05/17	2321 to 0251 UTC	Isolated Multiple cells average height of 8.5 km with maximum reflectivity of 62.5 dBZ	N(230KM) and moving SE ly direction with average speed of 22.3 kmph	Cell started forming at 2321UTC, at SE (148km) from radar the maximum reflectivity period is 0001 to 0251 UTC	Possibility of Thunder storm with Hail, rain and moderate winds.	Dantewara, Badradri kothagudem and khammam Districts
	03Z of 06/05/17 to 03Z of 07/05/17	0021 to 0251UTC	Isolated Multiple cells average height of 8.5 km with maximum reflectivity of 55.5 dBZ	NW(248KM) and moving SE ly direction with average speed of 10 kmph	Cells started forming at 0021UTC at NW(222km) from radar with maximum reflectivity during 0031 to 0251	Possibility of Thunder storm with Rain and moderate winds.	Nalgonda and Suryapet Districts
	06/0300 to 07/0300	06/0722-1102	scattered cells with an average height of 10.6 Km with a max reflectivity of 60.0 dBZ	W(73 Kms) moving in S- ly Direction at a speed of 6 Kmph.	Cells started forming at 0722 UTC at W direction from radar, , matured bet. 0912-0952UTC and dissipated by 1042	Severe Thunderstorm with or without rain	Not Known
Hyderabad		06/ 1042-1302	scattered cells with an average height of 10.6 Km with a max reflectivity of 55.5 dBZ	SW (101 Kms) moving in SW- ly Direction at a speed of 12 Kmph.	Cells started forming at 1042 utc matured a bit and dissipated by 1302 UTC	Severe Thunderstorm with or without rain	Areas near Mahabubnagar district.
		06/1102-1242	Isolated cells with an average height of 10.6 Km with a max reflectivity of 53 dBZ	NE (90 Kms) moving in S- ly Direction at a speed of 12 Kmph.	Cells started forming at 1102 utc matured a bit and dissipated	Mod Thunderstorm with or without rain	Not Known
		07/ 0002-0132	Isolated cells with an average height of 10.6 Km with a max reflectivity of 54.5 dBZ	NE (152 Kms) moving in ESE- ly Direction	Cells started forming at 0802 utc matured a bit with max ref of 54.5 dBz and dissipated by 0132 UTC	Mod Thunderstorm with or without rain	Areas near Warangal District.

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	07/05/17	0312- 0841 UTC	NIL	NIL	NO ECHO	NIL	NIL
		0841- 1601 UTC	1. Isolated Single cells with maximum reflectivity of 73.0 dBz at 1101 UTC and maximum height of 17.6 Km at 1051 UTC	W (238.2 km) Moving in ESE-ly then SE-ly direction with speed of 48.3 kmph.	Isolated single cell coming from 0841 UTC from W at a distance of 238.2 km from radar. Matured and merged with 3 at 1211 UTC in WSW at a distance of 117.7 km from Radar.	Thunderstorm /Squall/ Hail/ Rain	N/A
			2. Isolated Single cell with maximum reflectivity of 51.0 dBz at 0941 UTC and maximum height of 10.2 Km at 0931 UTC	NNW (248.4 km) Moving in ESE-ly direction with speed of 32 kmph.	Isolated single cell coming from 0921 UTC from NNW at a distance of 248.4 km from radar. Matured and dissipated at 1011 UTC in NNW at a distance of 234.1 km from Radar.	Thunderstorm /Rain	N/A
			3. Multi celled system with maximum reflectivity of 68.5 dBz at 1201 UTC and maximum height of 16.7 Km at 1201 UTC	W (228.5 km) Moving in ESE-ly direction with speed of 38.7 kmph.	Multicelled system coming from 1041 UTC from W at a distance of 228.5 km from radar. Matured and merged with 1 at 1211 UTC in WSW at a distance of 117.7 km from Radar.	Thunderstorm /Squall/ Hail/ Rain	N/A
			4. Isolated Single cell with maximum reflectivity of 69.0 dBz at 1241 UTC and maximum height more than 18 km between 1231 and 1301 UTC	NNW (248.4 km) Moving in SE-ly direction with speed of 49.3 kmph.	Isolated single cell coming at 1041 UTC from NNW at a distance of 248.4 km from radar. Matured . Dissipated around 1601 UTC in NE at a distance of 152.6 km from Radar.	Thunderstorm /Squall/ Hail/ Rain	N/A
Lucknow	07/05/17	06/0300-07/0300	Nil	Nil	Nil	Nil	Nil

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

		
+ thunderstorm	+ heavy thunderstorm	sandstorm or dust storm
		
squall	hail shower	tropical storm
		
+ tornado	+ lightning	+ hurricane

www.visualdictionaryonline.com