



**India Meteorological Department**  
**FDP STORM Bulletin No.46 (20-04-2017)**

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

**SYNOPTIC FEATURES:**

A trough runs from Marathawada to Lakshadweep area across North Interior Karnataka and extends upto 0.9 Km above mean sea level.

An upper air cyclonic circulation lies over West Jharkhand & neighbourhood and extends upto 0.9 km above mean sea level. A trough runs from this system to south Tamilnadu across Chhattisgarh, Telangana & coastal Andhra Pradesh and extends upto 0.9 km above mean sea level.

A trough at mean sea level runs from south Punjab to north coastal Odisha across Haryana, south Uttar Pradesh and Jharkhand. The upper air cyclonic circulation over south Pakistan & neighbourhood between 1.5 km and 3.1 km above mean sea level now seen between 1.5 and 2.1 Km above mean sea level.

The trough from West Uttar Pradesh to east Assam across East Uttar Pradesh & Bihar extending up to 0.9 km above mean sea level and upper air cyclonic circulation over Assam and neighbourhood at 0.9 above mean sea level have become less marked.

The north south trough from east Bihar to north Odisha extending upto 3.1 Km above mean sea level and now seen between 2.1 & 3.1 Km. The embedded upper air cyclonic circulation over east Bihar & neighbourhood at 1.5 above mean sea level has become less marked. The feeble western disturbance as an upper air cyclonic circulation over north Pakistan & adjoining Jammu & Kashmir at 3.1 km above mean sea level persists.

Another western disturbance as a trough in mid-tropospheric westerlies along longitude 52.0 °E and north of latitude 30.0 °N persists. The upper air cyclonic circulation over North Interior Karnataka & neighbourhood extending upto 0.9 km above mean sea level has become less marked.

The trough from Uttarakhand to Vidarbha across East Madhya Pradesh extending upto 0.9 km above mean sea level has become less marked.

The trough from north Coastal Andhra Pradesh to Coastal Karnataka across Telangana and Interior Karnataka at 1.5 km above mean sea level has become less marked.

The trough from South Interior Karnataka to Comorin area across Tamilnadu extending up to 0.9 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:**

**Convective Activity:**

Cell No.	Date/Time	Area/Location	CTBT (minus °C)	Movement	Remarks
10(old)	19/2130	NW Bihar adjoining Nepal	85	--	Developing
	2300	do	74	--	--
	20/0000	N Bihar adjoining Nepal	72	--	Expanding
	0100	Bihar adjoining Nepal	60	--	--

0200	do	68	---	---
0300	Bihar adjoining Nepal, adjoining SHWB	66	E-wards	---

Scattered multi-layered clouds were seen over north J & K and north Himachal Pradesh in association with western disturbance over the area.

Scattered low/medium clouds with embedded moderate to intense convection were seen over Bihar adjoining Nepal, adjoining Sub Himalayan West Bengal. Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over North Jharkhand, Sikkim, north-eastern states and north Bangladesh. Scattered low/medium clouds were seen over rest J & K, rest Himachal Pradesh, north Uttarakhand, extreme east Uttar Pradesh, south Chhattisgarh, coastal Odisha, Gangetic West Bengal, north coastal Andhra Pradesh, Karnataka, Kerala, northwest Tamilnadu, and Bay Islands.

**Arabian Sea:**

No significant clouds over the region.

**Bay of Bengal & Andaman Sea:**

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

**Past Weather:**

**Convection:**

Intense to Very intense convection was observed over Bihar Orissa North-East States.

Moderate to Intense convection was observed over Himachal Pradesh Uttarakhand Sikkim West Bengal south Coastal Andhra Pradesh & south interior Karnataka.

**OLR:-**

Up to 280  $wm^{-2}$  was over Uttarakhand north-east Uttar Pradesh west Bengal south Coastal Andhra Pradesh South Interior Karnataka & Kerala.

Up to 310  $wm^{-2}$  was over Chhattisgarh Orissa Jharkhand Karnataka Tamilnadu.

Up to 340  $wm^{-2}$  was over rest parts of India.

**Jet Stream:**

No Jet stream and trough observed over India

**Dynamic Features:**

Negative shear tendency observed over central & north-east India and Positive shear tendency observed over rest parts of India.

A low wind shear is observed over central & extreme south India and medium to high wind shear is observed over rest parts of India.

A positive Vorticity field is observed over extreme north-west Rajasthan north Gujarat Jharkhand Rayalseema,

Negative low level convergence observed over J&K south Madhya Pradesh Maharashtra and Positive Low Level Convergence observed over rest north & south parts of India.

**Precipitation:**

**IMR:**

Rainfall upto 90 was observed over Meghalaya. Rainfall upto 70 was observed over Assam Nagaland Manipur Tripura. Rainfall upto 50 was observed over north Bihar Coastal Orissa Arunachal Pradesh Mizoram. Rainfall upto 30 was observed over extreme north J&K, Uttarakhand West Bengal. Rainfall upto 10 mm was observed over rest J&K Himachal Pradesh south Coastal Andhra Pradesh South Interior Karnataka.

**HEM:.** Rainfall upto 70 mm was observed over north-west J&K Uttarakhand Meghalaya Nagaland Manipur Mizoram Tripura. Rainfall upto 28 mm was observed over north Himachal Pradesh Sikkim Arunachal Pradesh Assam. Rainfall upto 14 mm was observed over coastal Orissa north Bihar. Rainfall upto 7 mm was observed over South Interior Karnataka south Coastal Andhra Pradesh Gangetic West Bengal

### RADAR and RAPID observation:

Isolated moderate convection (dBZ around 50 and height 8-10km) was seen in DWR Chennai & Kolkata at 0700UTC(1230hrs IST). However, no significant echo was seen in DWR Composite at 1220 hrs IST.

RAPID RGB imagery at 1200hrs IST indicated convective clouds over north Bihar adjoining West Bengal and East Arunachal Pradesh adjoining Assam.

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

Dust concentration was observed over Arabian Peninsula. Dust concentration is expected to increase over north India for next five days.

High PM10 concentration was observed over western India. PM10 concentration is expected increase over north India for next five days

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

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

#### **1. Weather Systems:**

12UTC Charts of all the days from day-1 to Day-4 show feeble trough over J & K.

12UTC Charts of all the days show **Heat Low over Rajasthan and adjoining Pakistan** and its extension over IG plains is prominent. The **MSLP values are well below 994 hPa over NW India from Day 0 to Day-4.**

12UTC charts on all days from Day0-1 show two zones of wind discontinuity at 925 hPa:(i) SW-NE extending from northern Karnataka-Telangana region to Odisha-WB region. (ii) S-N extending from southern parts of TN to northern parts of Karnataka-Telangana region. During Day3 and Day4 confined to south peninsula, the wind discontinuity is prominent over TN and AP. 00UTC of Day1-4 show a trough over southern IG plains and a closed CYCIR over NW India.

Day-2 to Day-5 500 hPa anti cyclone over the south peninsula. At 12 UTC on Day-3 and Day-4 trough of WD can be seen over Pakistan region.

#### **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:**

At 12UTC Day-0 Moderate values over isolated locations of Maharashtra, Telangana, AP and Odisha, on Day-1 prominent over Karnataka, on Day-2 over Punjab and adjoining J & K and HP and isolated locations over Manipur and Mizoram. On Day3 over Punjab-Haryana, parts of WB. In Day-4 over Assam.

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

At 12UTC on Day-0-1 isolated locations of TN, parts of WB, Bihar and Assam with enhanced activity in Day-1.

At 12UTC on Day-2-3 continued activity over Assam and IG plains.

At 00UTC on all days: Strong structure over land extending N-S over peninsula and along IG plains and over Assam.

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

Day-0-1: Coastal Karnataka and interior parts of Karnataka and adjoining TN and Kerala, coastal AP, Odisha, WB and adjoining Bihar. Parts of J & K parts of north UP. Over NE mainly over Tripura, Mizoram and Manipur and Arunachal

Day-2: Parts of TN and Kerala, coastal AP, Odisha, WB and adjoining Bihar and. Parts of J & K parts of north UP. Over NE mainly over Tripura, Mizoram and Manipur and Arunachal

Day-3: Parts of TN and Kerala, WB and adjoining Bihar and. Enhanced activity over NW India over Rajasthan and Gujarat. Parts of J & K parts of north UP. Over NE mainly over Tripura, Mizoram and Manipur and Arunachal

Day-4: Parts of TN and Kerala, Parts of J & K parts of north UP. Over most parts of NE

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

At 12UTC: Day 0: South Karnataka, Kerala and TN along with interior parts, parts of J & K, parts of WB, Odisha and adjoining AP, over most parts of NE.

At 12UTC: Day 1: South Karnataka, Kerala and TN along with interior parts, northern parts of UP, parts of J & K, Odisha and adjoining AP, over most parts of NE.

At 12 UTC : Day2 same as in Day 1 with WB and Bihar included. In Day-3 reduced activity over Odisha.

**7. Spatial distribution of TTI: TTI >50 [Scattered Thunderstorms few severe]:**

At 12UTC: Day0: Coastal AP, Odisha, WB, Bihar and adjoining UP, Jharkhand J & K, HP

At 12UTC: Day1: Coastal AP, Odisha, WB, Bihar and adjoining UP, Jharkhand J & K, HP, Uttarakhand.

At 12UTC: Day2: Coastal AP, Odisha, WB, Bihar and adjoining UP, Jharkhand J & K, HP, Uttarakhand, Chhattisgarh.

At 12UTC: Day3: WB, Bihar and adjoining UP, J & K, HP, Uttarakhand, Over NW India mainly Rajasthan and Gujarat

At 12UTC: Day4: J & K, HP, Uttarakhand, North UP and parts of NE

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

**>4 cm/day in Day-1 over Assam, Meghalaya and adjoining Bangladesh, Day-4 & 5 over Assam, Meghalaya and Arunachal**

**>16cm/day in Day 2-4 over Meghalaya and adjoining Bangladesh**

**>2cm in Day 3 & 4 over J&K**

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

**1. Weather Systems:**

00 UTC analyses shows a low level trough starting from west UP and adjoining regions to Gangetic West Bengal (GWB) regions and this trough will persist for the next 2 -3 days.

Another north-south oriented low level trough starting from Jharkhand and adjoining GWB regions to Marathawada region and this trough will persist for the next days.

Analyses also shows a low level CYCIR over NE India and another over J&K regions, both of this CYCIR will persist for the next 2 days.

**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 3 days.

**3. Low level Vorticity:-Positive Vorticity 850hPa (>12 x 10<sup>-1</sup>/s):**

Analysis shows low level positive vorticity mainly over the foothills of Himalaya, along the west coast of India, east UP, Bihar, SHWB, Jharkhand, GWB and isolated pockets of NE states.

Forecast shows vorticity core zones mainly along the foothills of Himalaya, west coast of India, and isolated pockets of SHWB, GWB and NE states, Marathawada, north interior parts of Karnataka and few pockets along the east coast bordering Odisha and AP along with few regions of the north eastern states for the next 3 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 Jharkhand, GWB, along the east of India and few pockets in NE India and along the west coast of India. Forecast shows significantly high threshold values over west coast of India, GWB and eastern coast for the next 3 days.

**Lifted Index (< -2):** The areas with index less than -2 lies along east coast regions, GWB, Odisha, coastal AP, and along the west coast of India and Kerala coast with gradually the above threshold value mainly extended towards southern coastal regions.

**Sweat Index (> 400):** 00UTC shows significant values over major parts along with the east coast extending up to coastal TN and also over west coast of India and few isolated pockets in the NE states. The significant zones are confined along east coast of India over GWB, Odisha, Bangladesh and adjoining regions and high value of SI observed over GWB and south AP coastal regions and NE region for next 5 days and also over few pockets in the south west region.

**Total Total Index (> 50):** Analysis shows significant values over few pockets in Gujarat, MP and adjoining areas. Above threshold value in most regions of central and western India and adjoining northern parts of India along with areas bordering north west India for the next 2-3 days.

**CAPE (> 1000):** Mostly along east coast of India over GWB, Odisha and adjoining AP regions along with parts in south peninsular region and coastal Kerala and Karnataka during the next 3 days.

**CINE (50-150):** Maximum CINE values are found in some areas of GWB and along east coast over Odisha, coastal AP and Tamil Nadu and also along the west coast of India for the next 2-3 days.

#### **5. Rainfall and thunderstorm activity:**

10-40 mm rainfall is forecasted tomorrow over most parts of the NE states, some parts of J&K, SHWB and also some parts of HP, Uttarakhand, Orissa and adjoining north AP, Karnataka, north Tamilnadu and Kerala regions. Rainfall activity over NE states will increase from day-1 onwards and light to moderate rainfall activity will continue over J&K, Kerala for the next 3 days

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

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

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

Presently, an upper air cyclonic circulation lies over West Jharkhand & neighbourhood and extends upto 0.9 km above mean sea level. This will give rise to Thunder squall with hail possibilities over Bihar, Sub Himalayan west Bengal, Sikkim on Day-1. The north south trough from east Bihar to north Odisha now seen between 2.1 & 3.1 Km. Due to this system, Orissa, North coastal Andhra Pradesh will experience Thunder storm with gusty wind on Day-1.

Upper air cyclonic circulation may give rise to the possibility of heavy rainfall over Assam and Meghalaya and NMMT on Day-1 and may continue to Day-2.

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

Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura  
Kerala, South Coastal and South Interior Karnataka, Coastal Andhra Pradesh  
Orissa, Bihar, GWB  
Sub Himalayan West Bengal, Sikkim  
Arunachal Pradesh

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

Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura  
Orissa and GWB

ForNCMRWFNWPproducts:(<http://www.ncmrwf.gov.in/HomePage/NEPS-prod-1.php>)

ForIMDNWPproducts:([http://nwp.imd.gov.in/diagpro\\_new.php](http://nwp.imd.gov.in/diagpro_new.php))

ForSynopticplotteddataandcharts

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

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

ForRAPIDtool:

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

LowLevelWinds

[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)

Upperlevelwinds

[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)

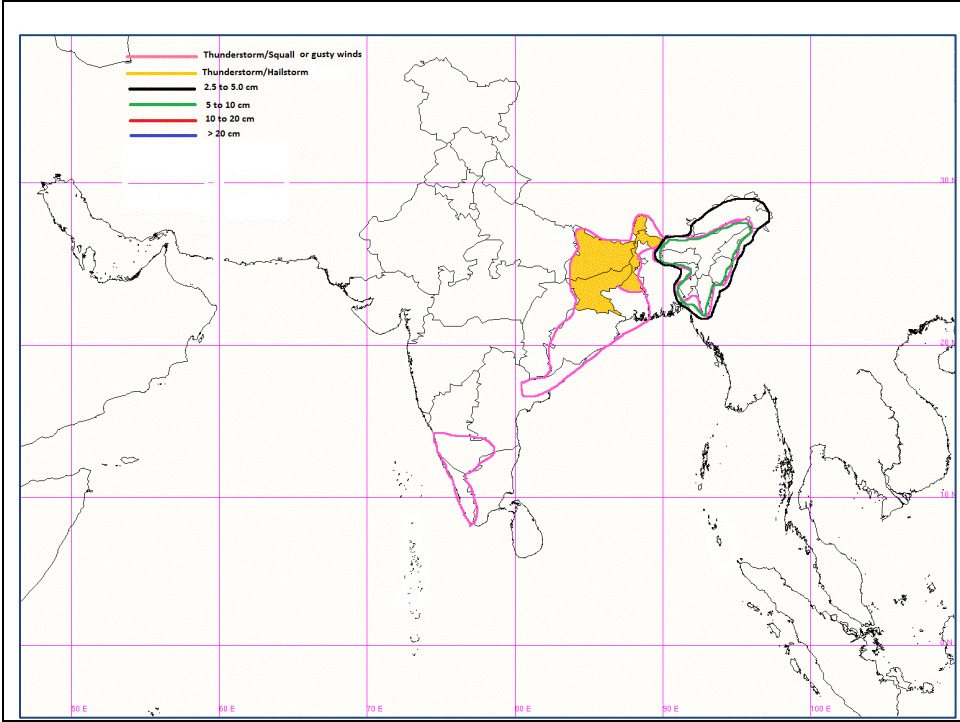
ForRadarimagesofthepast24hoursincludingmosaicofimages:

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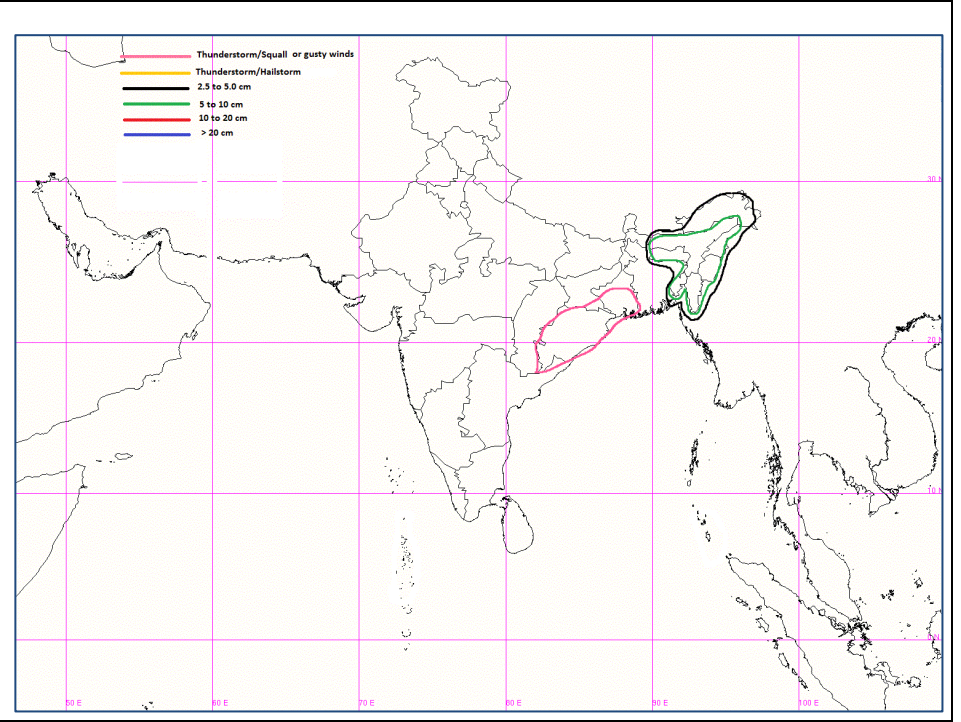
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[http://satellite.imd.gov.in/map\\_skm2.html](http://satellite.imd.gov.in/map_skm2.html)



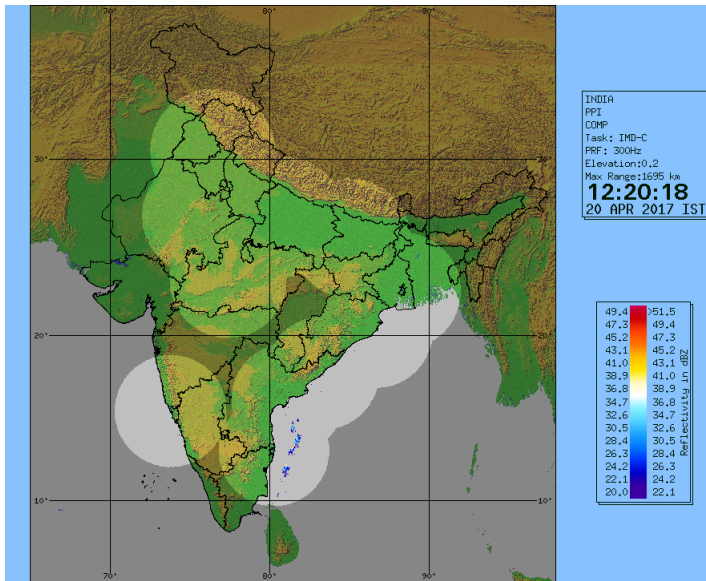


**IOP Advisory for 24hours**

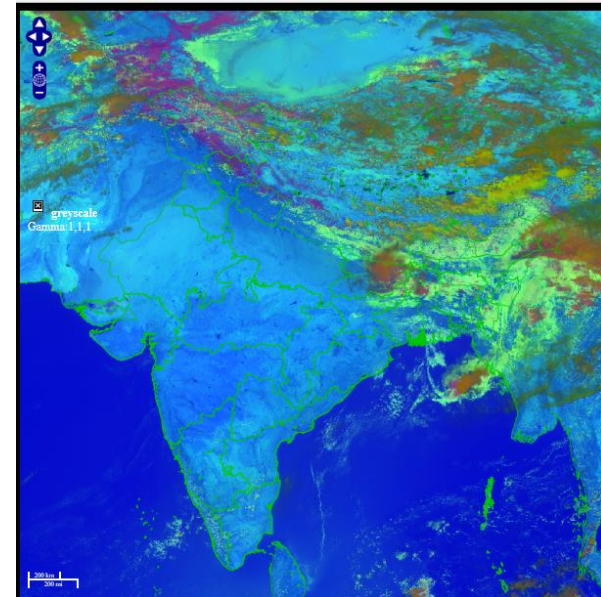


**IOP Advisory for 48hours**

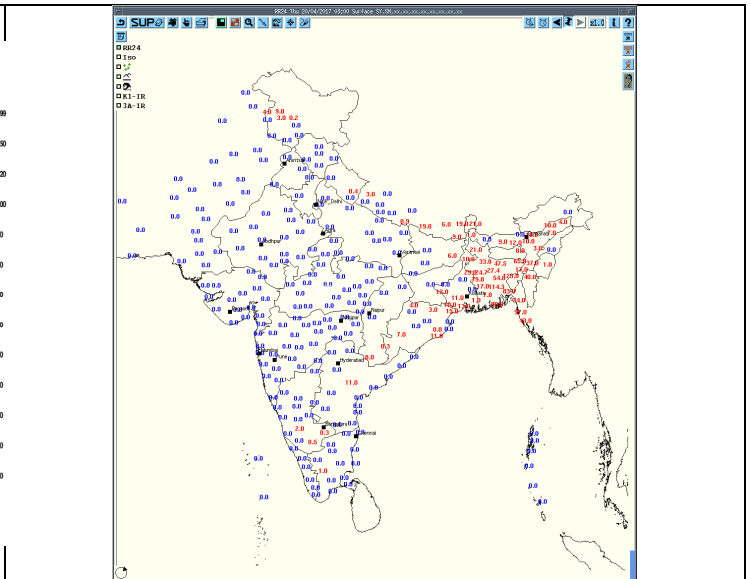
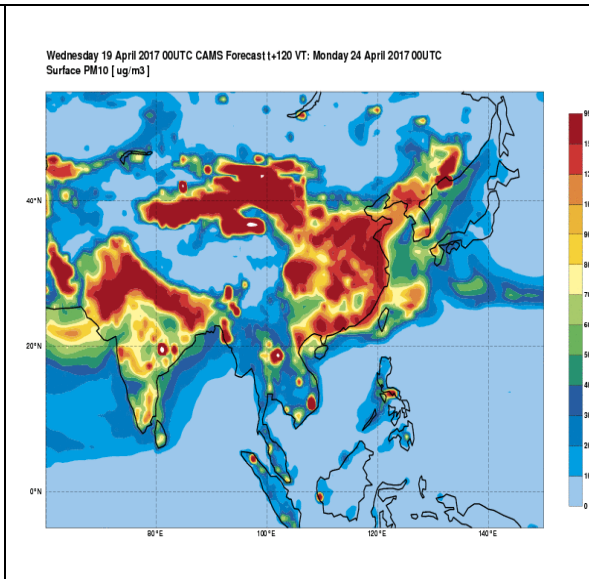
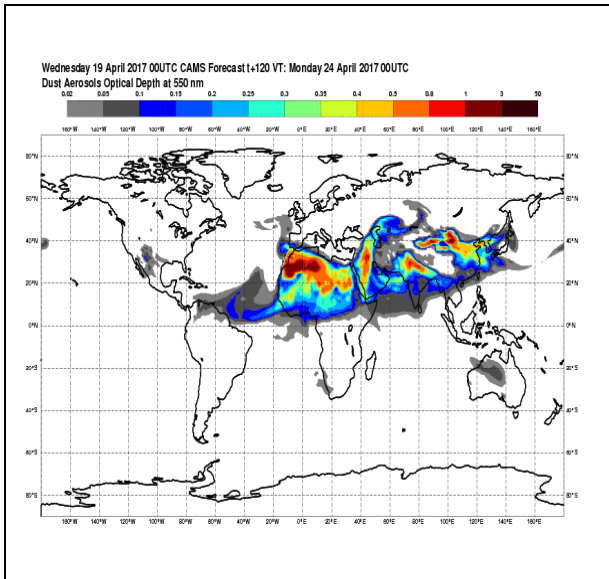




**DWR Composite at 1220 hrs IST of today**



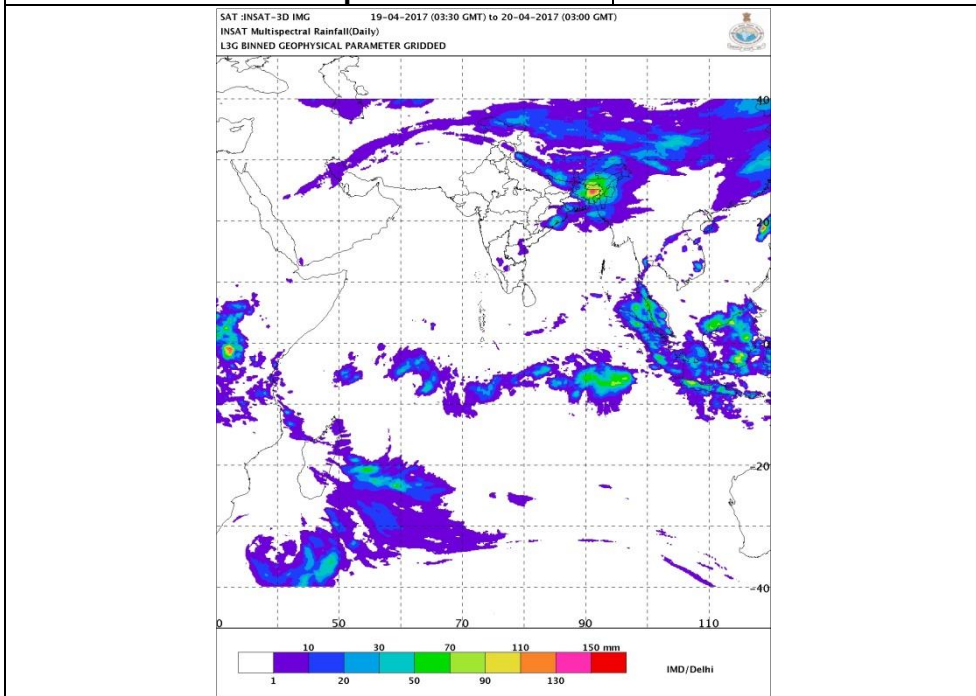
**RAPID RGB Image of INSAT 3D at 1200 hrs IST of today**



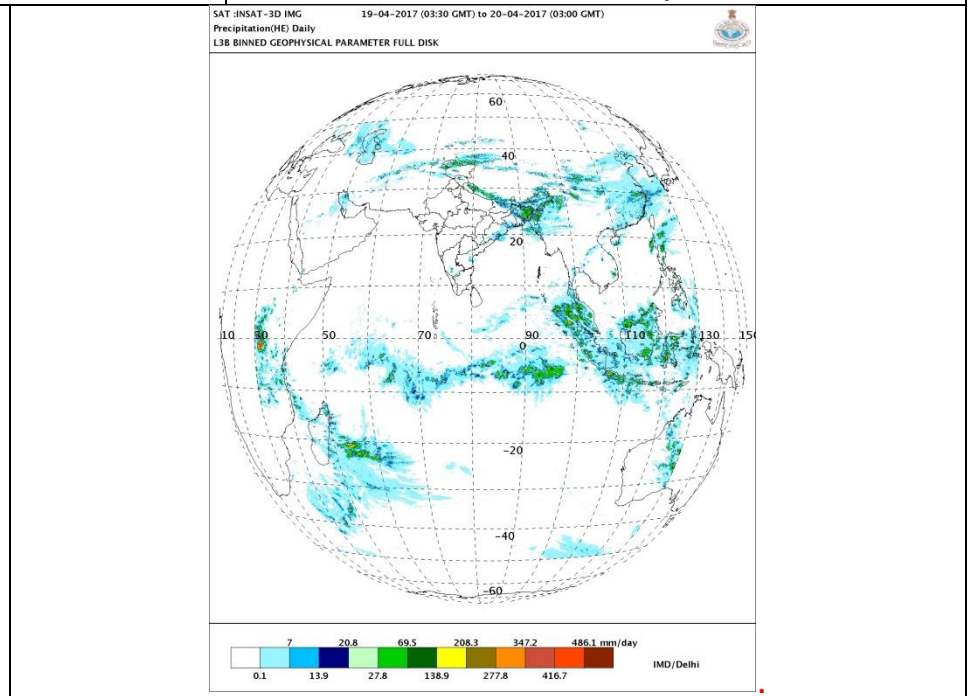
**Forecast Dust Concentration for 00UTC of 24<sup>th</sup> April**

**PM10 Forecast for 00UTC of 24<sup>th</sup> April**

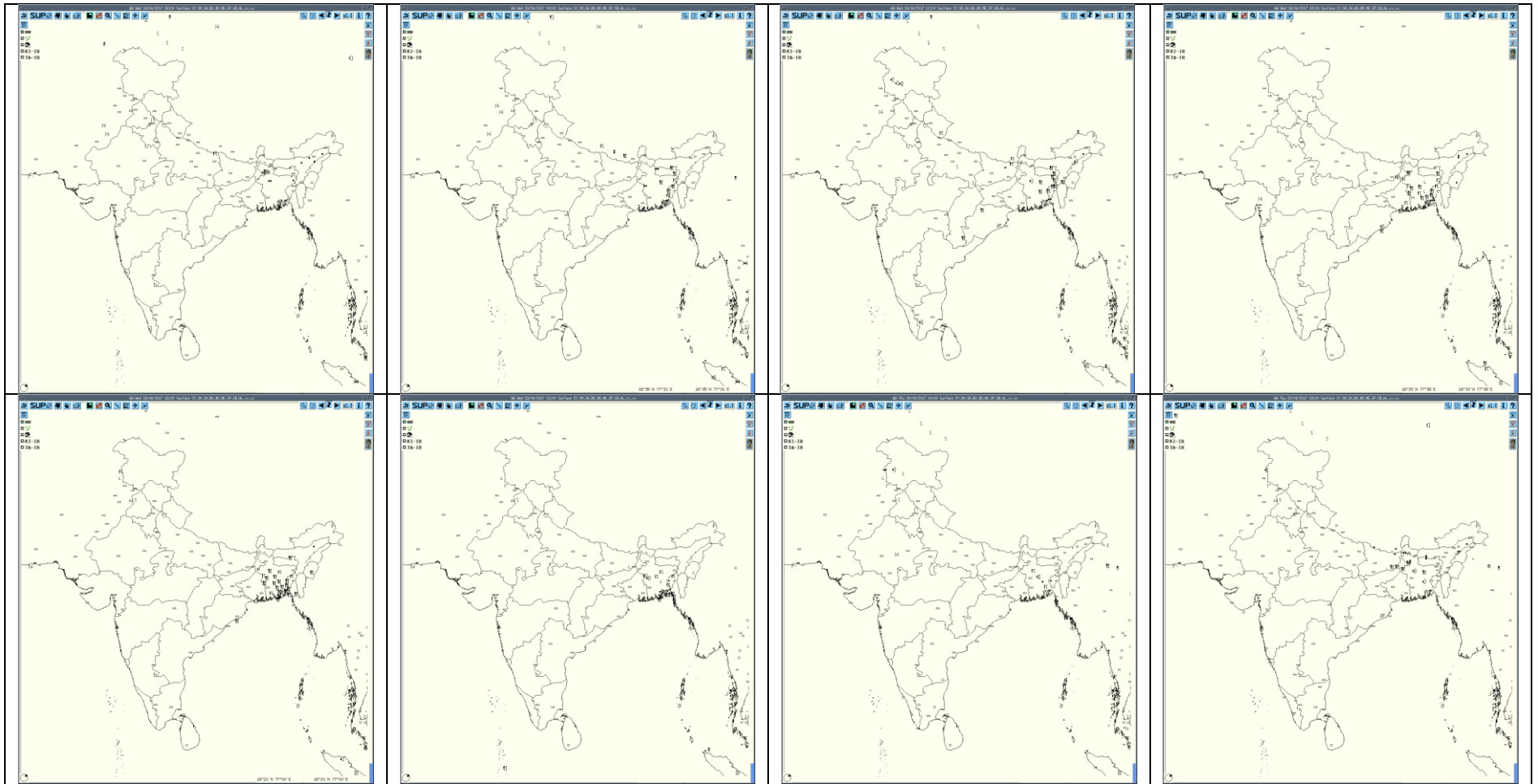
**Accumulated 24 Hour rainfall (in red) recorded at 0300 UTC of today**



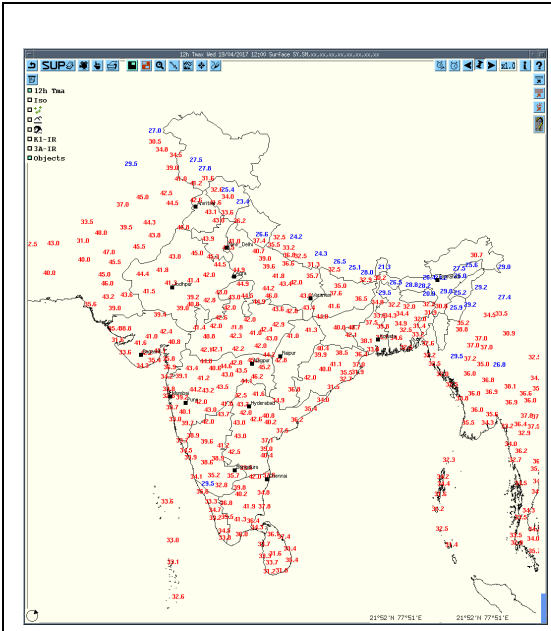
**IMR Rainfall**



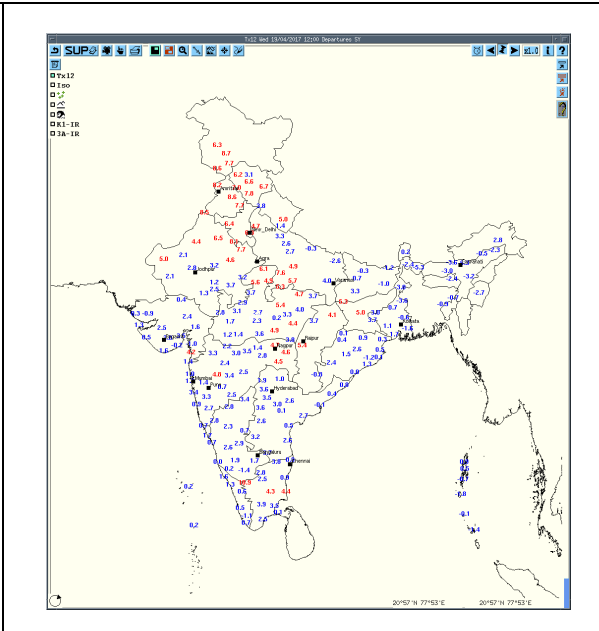
**HEM Rainfall**



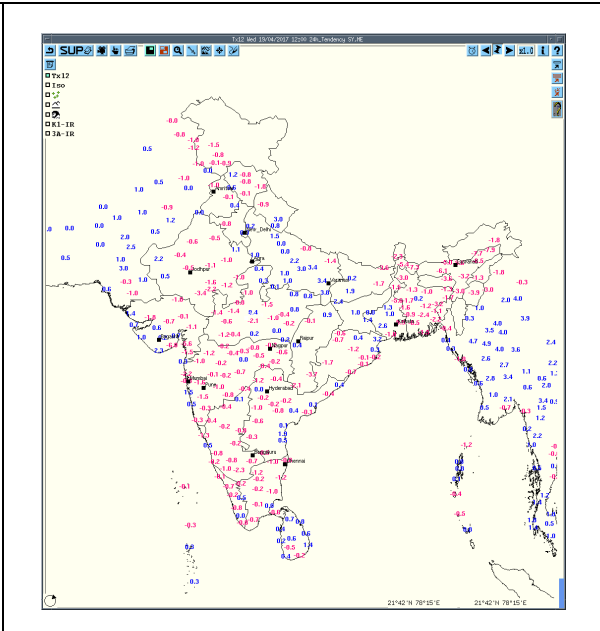
3 hourly Past weather at 06, 09, 12, 15, 18, 21 UTC of yesterday and 00 & 03 hrs UTC of today



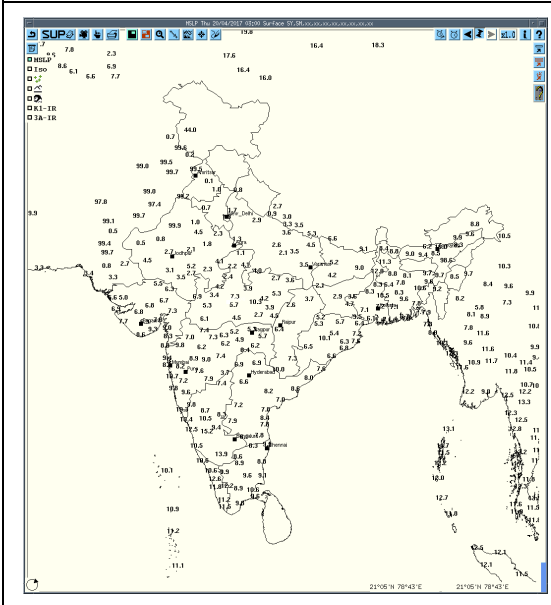
**Tmax**



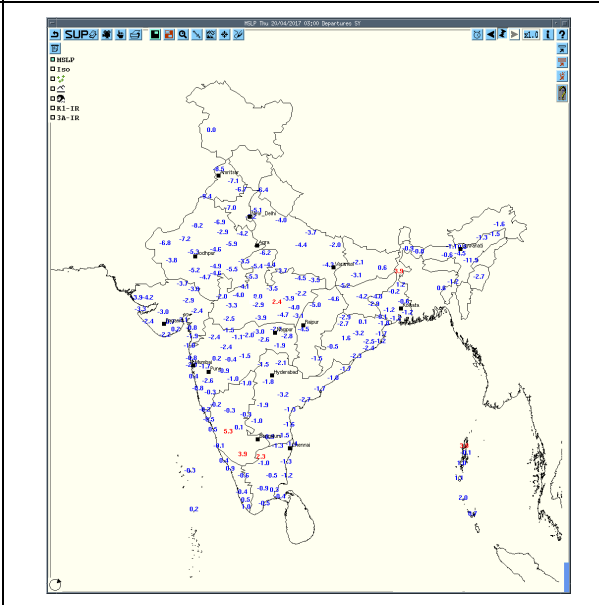
**Departure Tmax**



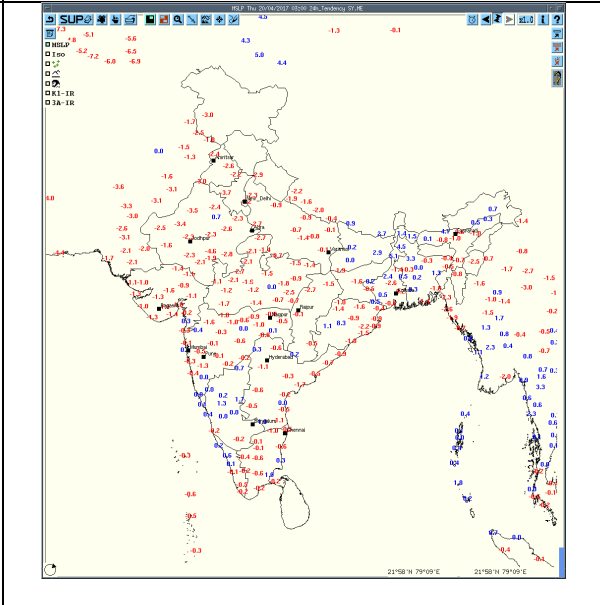
**Tendency Tmax**



**MSLP**



**Departure MSLP**



**Tendency MSLP**



Realized weather past 24 hours (Based on SYNERGIE Products)					
Date	Time of Reporting	Name of Station Reporting	Region	STATE	Weather Event
19-04-17	0600 UTC	Cooch Behar	East India	West Bengal(SHWB)	Thunderstorm
19-04-17	0900 UTC	Guwahati	Northeast India	Assam	Thunderstorm
		Shillong	Northeast India	Meghalaya	Thunderstorm
		Agartala	Northeast India	Tripura	Thunderstorm
19-04-17	1200 UTC	Kodaikanal	South India	Tamilnadu	Thunderstorm
		Jagdapur, Jharsuguda	Central India	Chhattisgarh	Thunderstorm
		Forbesganj	East India	Bihar	Thunderstorm
		Kukernag	Northwest India	J & K	Thunderstorm
		Mukteshwar	Northwest India	Uttarakhand	Thunderstorm
		Guwahati, Silchar	Northeast India	Assam	Thunderstorm
		Shillong, Cherrapunjee	Northeast India	Meghalaya	Thunderstorm
		Agartala, Kailasahar	Northeast India	Tripura	Thunderstorm
19-04-17	1500 UTC	Bhubaneshwar, Puri	East India	Odisha	Thunderstorm
		Purnea	East India	Bihar	Thunderstorm
		Digha, Kolkata (AP & City), Malda	East India	West Bengal	Thunderstorm
		Shillong	Northeast India	Meghalaya	Thunderstorm
		Agartala	Northeast India	Tripura	Thunderstorm
19-04-17	1800 UTC	Puri	East India	Odisha	
		Malda	East India	West Bengal (SHWB)	Lightening
		Guwahati	Northeast India	Assam	Thunderstorm
		Imphal	Northeast India	Manipur	Thunderstorm
		Agartala	Northeast India	Tripura	Thunderstorm
19-04-17	2100 UTC	Bhagalpur	East India	Bihar	Lightening
		Imphal	Northeast India	Manipur	Lightening
20-04-17	0000 UTC	Nil	Nil	Nil	Nil
20-04-17	0300 UTC	Bhagalpur, Purnea	East India	Bihar	Thunderstorm
		Malda	East India	West Bengal (SHWB)	Thunderstorm



**Past 24 hours DWR Report:**

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 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
Jaipur	20-04-17	190300-200300	Nil				
Lucknow	20-04-17	190300-190412	Isolated cell with average average height of 13 km with maximum reflectivity of 44dbZ	NE(210km) moving in SE'ly direction at speed of 43kmph	Cell started forming at 0300UTC in NE(210km) direction from Radar. Max reflectivity during 0300UTC to 0312UTC and died down at 0412UTC	NIL	Balrampur
Karaikal	20-04-17	190300-200300	--	--	--	DWR U/S	
Patiala	20-04-17	190302-190900	NO ECHO	NIL	NIL	NIL	NIL
		190900-191200	Patch of Cloud 50.5 MAX DBZ				UTTARKASI
		191200-200252	NO SIGNIFICANT ECHO	NIL	NIL	NIL	NIL
Nagpur	20-04-17	190922-191042	Single	220 km E	< 10 dBZ, Disappear at 0932 & again appear at 0952		
		190922-191012	Single	210 km S	< 20 dBZ		
		1961012-191042	Single	170 km SSE	< 10 dBZ		
		191012-191242	Group	230 to 250 km ESE, moving ESE'ly	< 30 dBZ, ht. of cloud = 5.5 to 9.6 km		

		200002-200302	Nil				
Vishakhapatnam	20-04-17	190600-190900	Isolated single cell developing in NW direction with average ht of 6 kms and max reflectivity of 42 dBz.	NW(92 KMS) moving Ely	Cell start forming at 0831 UTC and not matured well and start dissipating from 0851UTC.	-	--
		190900-191200	Multiple well organized cells with max reflectivity 57 DBZ with Max height of 14kms.	W(115 km) WNW(75 km) NNW(200 km) and moving SE ly.	Cells are continues forming , developing to well matured stage and afterwards start dissipating.	-	--
		191200-191500	Multiple well organized cells with max reflectivity 63 DBZ with Max height of 16kms.	NNW(205 km) and N(200 km) moving SE ly.	Cells are continuesly forming , developing to well matured stage as they move in SEly direction .	-	--
		191500-191800	Multiple well organized cells formed during past three hours move further SEly with max reflectivity of 56 dBz and max ht of 14km.	NW and NNW from 100km to 205 kms continue to move SEly	Cells continue to move SEly mature completely and dissipating.	--	--
		200000-200300	convective region of Max reflectivity of 34dBZ with max height of 6 kms.	SE(240 km) S(210 km) moving Wly	convective regions formed in BOB and not matured well and dissipated.	--	--
Paradeep	20-04-17	190300-191130	Isolated cells observed forming after 1400 IST with average height of 10 kms and mximum height of 14 kms reflectivity 48	Position: Lat.: -20 deg.N Long: -84deg.E Range: -Around 150 km to 200km. Movement-NWly.	NIL .	TS with Lightning and rain	Sambalpur, Keonjhar, Angul, Kandhamal, Nayagarh, Ganjam, Khurda, Rayagada, Dhenkanal, Cuttack, Kendrapada, Jagatsinghpur

			dBZ having Lat. 20deg. N and Long. 84 Deg.E					
		191130 and beyond	Multiple cells observed forming after 1700 IST with average height of 14 kms reflectivity 53 dBZ having Lat. 20deg. N and Long. 84 Deg.E	Position: NW sector of RADAR in the range of 270 to 350 degrees. Range:-Around 150 km to 200km. Movement-NWly.	NIL	TS with Lightning and rain	Sambalpur,Keonjhar, Angul,Kandhamal, Nayagarh,Ganjam, Khurda, Rayagada, Dhenkanal, Cuttack, Kendrapada,Jagatsingh pur	
Agartala	20-04-17	190310-190632	Multiple Cells with Maximum Height <b>15 km</b> and maximum reflectivity <b>43 dBZ</b> (at 0520 UTC over Bangladesh-120KM North of DWR AGT)	Some cells formed 120km North of DWR AGT at 0310 UTC and some cells formed 80km NW of DWR AGT at 0400 UTC, merged at 0500 UTC and moved NE-wards at around 20 kmph	Dissipation of the system unknown due to AC Failure at DWR	N/A	N/A	
		190632-190822	--	--	Radar on standby due to AC Failure & Maintenance	--	--	
		190822-192030	Multiple Cells with Maximum Height <b>16 km</b> and maximum reflectivity <b>53 dBZ</b> (at 0950 UTC over West Tripura District)	After Radar turned on, cells with maximum height 14km and reflectivity <35dBZ were covering almost whole NE to NW sector upto 250km and some isolated cells to 50km south of DWR AGT moving NE-wards at around 45kmph	The two systems <b>merged</b> at 1100 UTC forming a line structure and the whole system started moving SE-wards at around 50kmph. Cells dissipated at 2030 UTC of 19.04.17 over South Bangladesh and adjoining BoB	--	<ol style="list-style-type: none"> <li>1. TS with heavy rain at West, Khowai, Sipahijala, Gomati districts of Tripura.</li> <li>2.TS with moderate rain at remaining dists of Tripura, Silchar, Cherrapunjee, Lengpui</li> <li>3.Squall reported at Agartala Airport</li> </ol>	<p>All districts of Tripura,</p> <p>Cachar district of Assam,</p> <p>East Khasi district of Meghalaya</p> <p>Mamit district of Mizoram</p>
		190822-192030	Multiple Cells with Maximum Height <b>16 km</b>	After Radar turned on, cells were visible on DWR at				

			and maximum reflectivity <b>52 dBZ</b> (at 1340 UTC over Gomati District of Tripura)	0822 UTC 250km WNW of DWR Agartala moved SE-wards at around 50 kmph			
Hyderabad	20-04-17	190732 – 190942	Isolated cells with an average height of 10 Km with a max reflectivity of 50 dBZ At 0822 UTC	SSE (175 Kms) moving in SE ly Direction at a speed of 15 Kmph.	Cells started forming at 0732 UTC at SSE (170 Kms) from radar, Matured a bit in size. Max reflectivity was between 0822 and 0842 UTC and dissipated at 0942 UTC.	Moderate Thunderstorm with or without rain	Not known.
		19 0832 –191022	Isolated cells with an average height of 10 Km with a max reflectivity of 44 dBZ At 1002 UTC	S (90 Kms) moving in S ly Direction at a speed of 20 Kmph.	Cells started forming at 0822 UTC at SSE (170 Kms) from radar, Matured by 0942. Max reflectivity was between 0942 and 1002 UTC and dissipated at 0942 UTC.	weak Thunderstorm with or without rain	Not known.
		191002- 191142	Isolated cells with an average height of 12 Km with a max reflectivity of 55 dBZ at 1102	SE (80 Kms) moving in SE ly Direction @ 15 Kmph.	Cells started forming at 0952 UTC at SE (70 Kms) from radar, Matured a bit in size. Max reflectivity was between 1102 and 1122 UTC and dissipated at 1142 UTC.	Moderate Thunderstorm with or without rain	Not known.
Machilipatnam	20-04-17	190721-19 1331	Isolated cell with average height of 10.5 km with maximum reflectivity of 61 dBZ	W (240KM) , moving SE ly direction average speed of 10kmph	Cells started forming at 0721UTC at W (240km) from radar. Maximum reflectivity during 0721 to 1241 and died down at	Possibility of Thunder storm with hail with moderate winds.	Nellore District

					1331UTC		
		190941-191341	Isolated cell with average height of 9.2km with maximum reflectivity of 54.5 dBZ	W (247KM) moving E ly direction average speed of 31.5kmph	Cells started forming at1001UTC at W (247km) from radar. Maximum reflectivity during 1001 to 1311 and died down at 1341 UTC	Possibility of Thunder storm and rain with moderate winds.	Guntur District
		190851-191041	Isolated cell with average height of 10km with maximum reflectivity of 60.5 dBZ	NE (235.6KM) Stationary	Cells started forming at0851UTC at NE (235.6km) from radar. Maximum reflectivity during 0931 to 1031 and died down at 1041 UTC	Possibility of Thunder storm and rain with moderate winds.	East Godavari District
Kolkata	20-04-17	190311-190631	NIL	NIL	NO ECHO	NIL	NIL
		190632	Single cell developed at 24.422 N/ 88.665 E 08.6 degree / 208.3 km from radar at 0632 UTC with maximum height of 11.82 Km and maximum reflectivity of 62.5 dBz at 0732 UTC	ESE-ly movement	Moves Over Bangladesh	Thunderstorm /Rain	N/A
		190911 -191121	Single cell developed at 24.483 N/ 87.507 E 338.0 degree / 229.5 km from	ESE-ly movement	Isolated cells started forming at 0911 UTC from NNW to N (231.4 km) from radar dissipated at 1121 UTC in N at a	Thunderstorm /Rain	N/A










		191011 -19 1602	<p>radar at 0911 UTC with maximum height of 16.66 Km and maximum reflectivity of 61.5 dBz at 0941 UTC</p> <p>Single cell developed at 23.044 N/ 85.988 E 282.8 degree / 248.1 km from radar at 1011 UTC with maximum height of 14.69 Km at 1131 UTC and maximum reflectivity of 64.5 dBz at 1201 UTC</p>	SSE-ly movement	<p>distance of 174.3 km from radar</p> <p>Isolated cells started forming at 1011 UTC from WNW (250.0 km) from radar and transformed into a multi cell system at 1121 UTC and moved into Bay of Bengal at 1602 UTC in SE-ly direction from radar at a distance of 165 km.</p>	Thunderstorm Hail/Rain	N/A
		191151 –191512	<p>Single cell developed at 24.755 deg N/87.912 deg E at 350.9 deg at a distance of 234.8 km from Radar with maximum reflectivity of 62.5 dBz at 1331 UTC and maximum height of 17.02 km at 1241 UTC</p>	Formed in N and moving towards SE-ly	<p>Formed before 1151 UTC in N at a distance more than 234.8 km from radar and transformed into multi cell system in 1321 UTC moving towards SE-ly into Bangladesh</p>	Thunderstorm/ Hail/Rain	N/A
		191331-191651	<p>Small scattered cell at 23.542 deg N/86.992 deg E at 308 deg at a distance of 176.3 km from Radar with maximum reflectivity of 60.5 dBz at 1551 UTC</p>	Formed in NW and moving towards SE-ly	<p>Formation started at 1331 UTC in NW at a distance of 176.3 km from radar merged into a multi cell system at 1512 UTC dissipated at 1651 UTC at a distance</p>	Thunderstorm/ Rain	N/A



			and maximum height of 7.47 km at 1531 UTC		of 31.2 km in NW from Radar		
		191441 –192101	Isolated single cell developed at 24.319 deg N/87.260 deg E at 330.0 deg with maximum reflectivity of 66.0 dBz at 1621 UTC and maximum height of 17.28 km at 1621 UTC	Formed in NNW and moving towards ESE-ly	Formation started at 1441 UTC in NNW at a distance 229.1 km from radar and transformed into multi cell system at 1531 UTC and dissipation started at 1811 UTC in NNE at a distance of 167.1 km from radar	Thunderstorm/ Hail/Rain	N/A
		191721 –192101	Scattered multi cells developed in N with maximum reflectivity 62.5 dBz at 1821 UTC and maximum height of 12.54 km at 1811 UTC	Formed in N and moving towards ESE-ly	Formation started at 1721 UTC in N at a distance 242.7 km from radar, merged, matured and dissipated at 2001 UTC in NE at a distance 304.9 km from radar	Thunderstorm/ Rain	N/A
		192111-192351	NIL	NIL	NO ECHO	NIL	NIL
		200001-200301	NIL	NIL	NO ECHO	NIL	NIL
Patna	20-04-17	190830-191220	NIL	NIL	N/A	N/A	N/A
		191220-181520	Multiple Cell. Maximum Reflectivity : 47.0 dBZ Echo Top : 13.0 KM	Range : 151 KM from DWR Patna in North. Movement-South East	NIL	THUNDER-STORM WITH RAIN	EAST AND WESTCHAMPARAN, SITAMARHI, SHEOHAR, DARBHANGA AND MADHUBANI.

		191510-191810	Multiple Cell. Maximum Reflectivity : 48.0 dBZ Echo Top : 14.5 KM	Range : 104.6 KM from DWR Patna in North East. Movement-South East	NIL	THUNDER-STORM WITH RAIN	SITAMARHI, SHEOHAR, DARBHANGA , MUZAFFARPUR, SHARSHA, SUPAUL, ARARIA, PURNEA AND MADHUBANI.
		191810-200230	NIL	NIL	N/A	N/A	N/A
		200230-200530	Multiple Cell. Maximum Reflectivity : 50 dBZ Echo Top : 13.0 KM	Range : 109 KM from DWR Patna in NORTH EAST. Movement-South East	NIL	THUNDER-STORM WITH RAIN	EAST AND WESTCHAMPARAN, SITAMARHI, SHEOHAR, DARBHANGA , MUZAFFARPUR, SHARSHA, SUPAUL, ARARIA, PURNEA , KHAGARIA AND MADHUBANI.
		200530-200600	NIL	NIL	N/A	N/A	N/A
		200600-200830	Multiple Cell. Maximum Reflectivity : 51 dBZ Echo Top : 13.0 KM	Range : 126 KM from DWR Patna in NORTH. Movement-South East.	NIL	THUNDER-STORM WITH RAIN	SITAMARHI, SHEOHAR, DARBHANGA , MUZAFFARPUR, SHARSHA, SUPAUL, ARARIA, PURNEA , KHAGARIA AND MADHUBANI.

∞	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