



India Meteorological Department
FDP STORM Bulletin No.49 (23-04-2017)

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

SYNOPTIC FEATURES:

The western disturbance as an upper air cyclonic circulation over north Pakistan & adjoining Afghanistan now lies over north Pakistan & neighbourhood and extends upto 3.1 Km above mean sea level with a trough aloft runs roughly along longitude 66.0°E and north of latitude 22.0°N.

The trough at mean sea level from northwest Rajasthan to north Coastal Odisha across north Madhya Pradesh, north Chhattisgarh and Jharkhand persists.

The upper air cyclonic circulation over northwest Uttar Pradesh & adjoining Haryana now lies over southwest Uttar Pradesh & neighbourhood and extends upto 0.9 Km above mean sea level.

The upper air cyclonic circulation over Bihar and adjoining Jharkhand & Gangetic West Bengal now lies over Jharkhand & neighbourhood and extending upto 1.5 Km above mean sea level.

The trough from Vidarbha to south Tamilnadu across Telangana and Rayalaseema now runs from the upper air cyclonic circulation over Jharkhand & neighbourhood to south Tamilnadu across interior Odisha and coastal Andhra Pradesh and extends upto 0.9 Km above mean sea level.

The upper air cyclonic circulation over Nagaland, Manipur, Mizoram & Tripura & neighbourhood extending upto 1.5 km above mean sea level persists.

The upper air cyclonic circulation over northeast Arabian Sea and adjoining Saurashtra & Kutch between 1.5 & 5.8 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:

Scattered multi-layered clouds seen over J & K, Himachal Pradesh, N Punjab in association with western disturbance over the area.

The trough in westerlies runs roughly north of latitude 17.0°N and longitude 59.0°E

Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over Assam, Arunachal Pradesh, Nagaland, Manipur and S Mizoram. Scattered low/medium clouds were seen over rest Punjab, N Uttarakhand, Odisha, Sikkim, Sub Himalayan West Bengal, north eastern states, South Interior Karnataka, Kerala, W Tamilnadu and Rayalaseema.

Arabian Sea:

No significant clouds over the region.

Bay of Bengal & Andaman Sea:

Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over extreme N Bay of Bengal and S Andaman sea.

Past Weather:

Convection:

Moderate to Intense convection was observed over J&K Himachal Pradesh Punjab Uttarakhand Jharkhand Sikkim North-East States south interior Karnataka Kerala & Tamilnadu.

OLR:-

Up to 280 w m^{-2} was over Punjab Himachal Pradesh east Uttar Pradesh Bihar Jharkhand Gangetic West Bengal Andhra Pradesh South Interior Karnataka Kerala & west Tamilnadu.

Up to 310 w m^{-2} was over north Haryana west Uttar Pradesh Chhattisgarh Bihar & Orissa.

Up to 340 w m^{-2} was over rest parts of India.

Westerly Trough & Jet Stream:

Trough in Westerlies runs roughly north of Lat 15.0N along Long 60.0E. No jet stream observed

Dynamic Features:

Negative shear tendency observed over Mizoram Tripura and Positive shear tendency observed over rest parts of India.

Medium to high wind shear is observed over India.

A positive Vorticity field is observed over coastal Andhra Pradesh east Uttar Pradesh adjoining Bihar .

Negative low level convergence observed over Uttarakhand Uttar Pradesh Vidarbha, Madhya Maharashtra Konkan & east Gujrat and

Positive Low Level Convergence observed over Bihar adjoining SHWB Sikkim NE States & coastal Odisha

Precipitation:

IMR:

Rainfall upto 50 was observed over west Gangetic West Bengal . Rainfall upto 30 was observed over extreme north-west J&K, Tripura adjoining Bangladesh, extreme north Tamil Nadu. Rainfall upto 20 mm was observed over west J&K north Himachal Pradesh .Rainfall upto 10 mm was observed over rest J&K rest Himachal Pradesh north Punjab Uttarakhand extreme north east Bihar rest North-East States north-west Tamil Nadu .

HEM: Rainfall upto 28 to 70 mm was observed over west J&K, Tripura, Mizoram extreme north-west Tamil Nadu. Rainfall upto 14 mm was observed over Punjab, north-west Uttar Pradesh, West Bengal and rest NE States.

RADAR and RAPID observation:

No Significant convection was seen in DWR composite at 1220hrs IST.

RAPID RGB imagery at 1130hrs IST indicated convective clouds over J & K, Himachal Pradesh, East Assam & adjoining Arunachal Pradesh.

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-0 to Day-1 show feeble trough over J & K.

12UTC Charts of Day-0 to Day-4 show moderate **Heat Low over Rajasthan and adjoining Pakistan** and its extension over IG plains is prominent with MSLP is at around 1000 hPa.

12UTC charts on all days from Day0-4 show two zones of wind discontinuity at 925 hPa:(i) SW-NE extending from northern Karnataka-Telangana region to Odisha region. (ii) S-N extending from southern parts of TN to northern parts of Telangana-AP region.

Trough at 850 hPa over WB and Bangladesh region from Day-0 to Day-2. CyCIR over Srilanka from Day-3-4. Strong anti-cyclone at 500 hPa from Day-0 to Day-4 over southern peninsula moving from west coast to wards coastal AP.

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-0,1&3: high values over isolated locations over Odisha, Jharkhand and parts of TN. Over Assam in day1,2&3. And in day-4 at several locations along the western ghats.

At 00UTC very high values : over Tripura, Manipur region in Day-1, several places in Assam in Day-2, and over Assam-Arunachal region in Day-3 & 4

4. Low level Vorticity:-Positive Vorticity (>15 x 10⁻⁵/s):

At 12UTC : very high values at isolated location over Jharkhand in day-0, over Assam, Bangladesh-Meghalaya border in day-1-3. Over WB and adjoining states and over Assam in Day-1. At several places over Assam in Day-2 to Day-4

At 00UTC : very high values along the line of low level confluence and strong convergence.

5. Showalter Index: Day-wise Sub-divisions with Showalter index <-4:

Day0: Arunachal_Pradesh, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, East_UP, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, West_RJ, Odisha, Coastal_AP, TN_Puducherry, Coastal_Karnataka, SI_Karnataka, Kerala,

Day1: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, Saurashtra_Kutch, Coastal_AP, Telangana, TN_Puducherry, Kerala,

Day2: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, TN_Puducherry, Kerala,

Day3: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, Odisha, Coastal_AP, TN_Puducherry, Kerala,

Day4: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Bihar, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, West_RJ, Coastal_AP, Telangana, TN_Puducherry, SI_Karnataka, Kerala

6. K-Index : Daywise Sub-divisions with K-index >40:

Day0: Arunachal_Pradesh, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, East_UP, West_UP, Uttarakhand, Jammu_Kashmir, West_RJ, Odisha, Coastal_AP, Telangana, TN_Puducherry, SI_Karnataka, Kerala,

Day1: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Bihar, East_UP, Uttarakhand, Jammu_Kashmir, West_RJ, Saurashtra_Kutch, Coastal_AP, Telangana, TN_Puducherry, NI_Karnataka, SI_Karnataka, Kerala,

Day2: Arunachal_Pradesh, NE_NMMT, Sub_Himalayan_WB, Uttarakhand, TN_Puducherry, Kerala,

Day3: Arunachal_Pradesh, Assam_Meghalaya, Sub_Himalayan_WB, Uttarakhand, Himachal_Pradesh, Coastal_AP, Telangana, Rayalseema, TN_Puducherry, SI_Karnataka, Kerala,

Day4: Arunachal_Pradesh, Assam_Meghalaya, Sub_Himalayan_WB, Uttarakhand, Himachal_Pradesh, Rayalseema, TN_Puducherry, SI_Karnataka, Kerala

7. Spatial distribution of TTI: Daywise Sub-divisions with TTI >52:

Day0: Arunachal_Pradesh, Sub_Himalayan_WB, Gangetic_WB, Jharkhand, Bihar, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, Odisha, Coastal_AP,

Day1: Arunachal_Pradesh, Sub_Himalayan_WB, Bihar, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, Guj_Reg, Saurashtra_Kutch, Coastal_AP, Telangana,

Day2: Arunachal_Pradesh, Sub_Himalayan_WB, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, Guj_Reg, Saurashtra_Kutch, Coastal_AP, TN_Puducherry,

Day3: Arunachal_Pradesh, Sub_Himalayan_WB, Gangetic_WB, East_UP, West_UP, Uttarakhand, Hry_Chhd_Delhi, Punjab, Himachal_Pradesh, Jammu_Kashmir, West_RJ, East_RJ, Odisha, Coastal_AP,

Day4: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB, Gangetic_WB, Bihar, Uttarakhand, Himachal_Pradesh, Jammu_Kashmir, West_RJ, Odisha, Saurashtra_Kutch, Coastal_AP, Telangana, TN_Puducherry, NI_Karnataka, SI_Karnataka, Kerala,

8. Rainfall : Daywise Sub-divisions with Precipitation >2cm:

Day1: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Gangetic_WB, TN_Puducherry, Kerala,

Day2: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Sub_Himalayan_WB,

Day3: Arunachal_Pradesh, Assam_Meghalaya, NE_NMMT, Jammu_Kashmir,

Day4: Arunachal_Pradesh, Assam_Meghalaya, Jammu_Kashmir,

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

Not Received

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

Not Received

3. IOP ADVISORY FOR 24 and 48 Hrs:

Summary and Conclusions:

Day 1 & Day 2:

Presently, the upper air cyclonic circulation over Nagaland, Manipur, Mizoram & Tripura & neighbourhood extending upto 1.5 km above mean sea level persists which will give rise to heavy rainfall over the Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura on Day-1. However intensity of the rainfall may decrease on Day-2.

The western disturbance as an upper air cyclonic circulation over north Pakistan & neighbourhood and extends upto 3.1 Km above mean sea level with a trough aloft runs roughly along longitude 66.0°E and north of latitude 22.0°N. This will give rise to the thunderstorm with hail activities over J&K, Himachal Pradesh and Uttarakhand on Day-1.

Uttar Pradesh and Bihar, Jharkhand will experience the thunder squall with gust wind activity on Day-1 due to the upper air cyclonic circulation over southwest Uttar Pradesh & neighbourhood and extends upto 0.9 Km above mean sea level.

The trough runs from the upper air cyclonic circulation over Jharkhand & neighbourhood to south Tamilnadu across interior Odisha and coastal Andhra Pradesh and extends upto 0.9 Km above mean sea level. This will give rise to thunder squall with gust wind activity over Andhra Pradesh, Telangana, Interior Tamilnadu and Kerala on Day-1.

24 hour Advisory for IOP:

Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura, Arunachal Pradesh
Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana and West and East UP
Sub Himalayan West Bengal, Sikkim
Kerala, Telangana, Rayalaseema, Coastal Andhra Pradesh, Interior Tamilnadu
Orissa, Bihar, Jharkhand, South Chhattisgarh and GWB

48 hour Advisory for IOP:

Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura
Jammu and Kashmir, Himachal Pradesh, Uttarakhand and East UP
Sub Himalayan West Bengal, Sikkim
South Coastal Orissa, GWB

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

Past 24 hour HEM and IMR rainfall (upto 03 UT Coftoday)

IMR: http://satellite.imd.gov.in/img/3Ddaily_imr.jpg

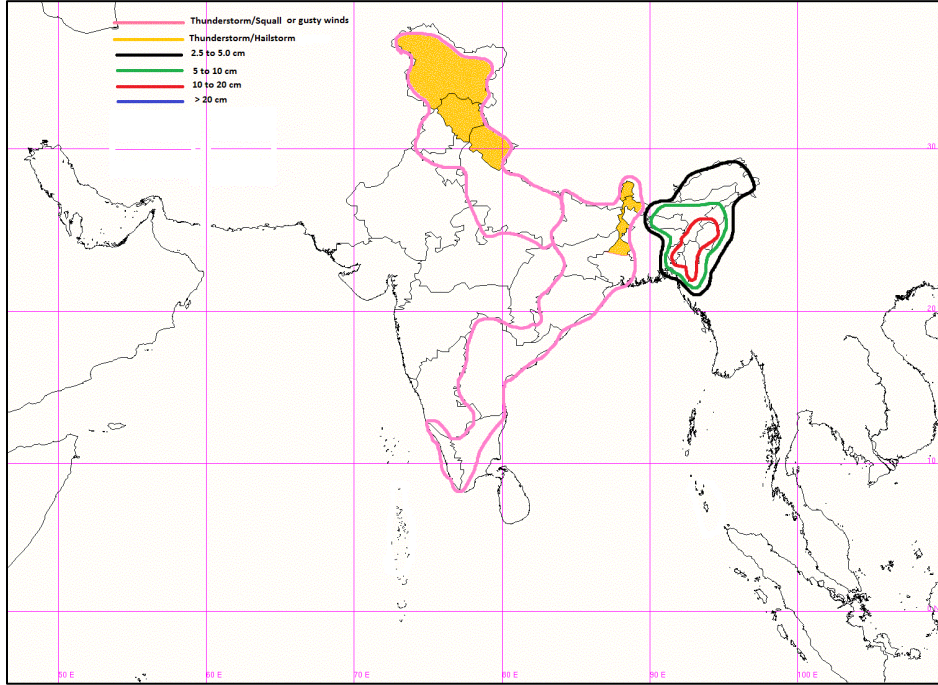
HEM: http://satellite.imd.gov.in/img/3Ddaily_he.jpg

For Radar images of the past 24 hours including mosaic of images:

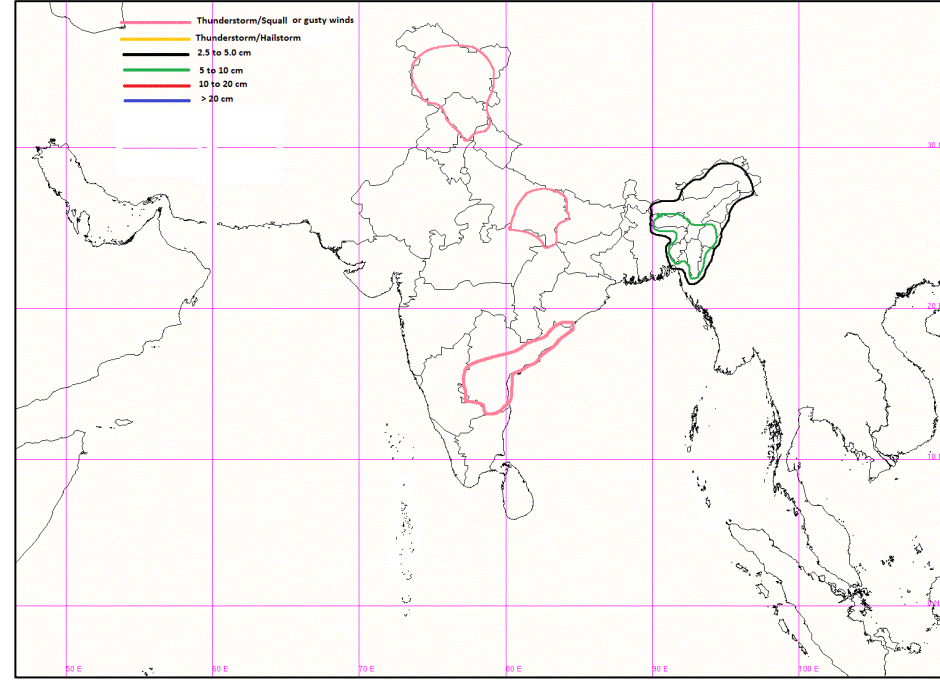
http://ddgmui.imd.gov.in/dwr_img/

Satellite sounder based T-Phigram

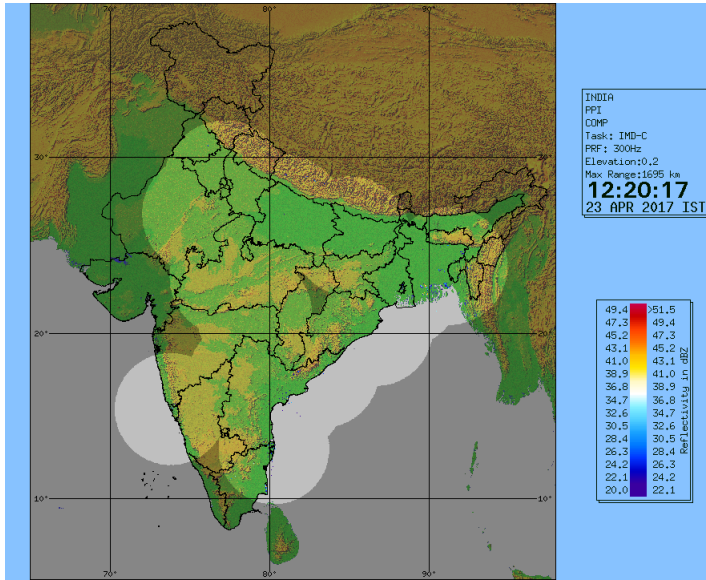
http://satellite.imd.gov.in/map_skm2.html



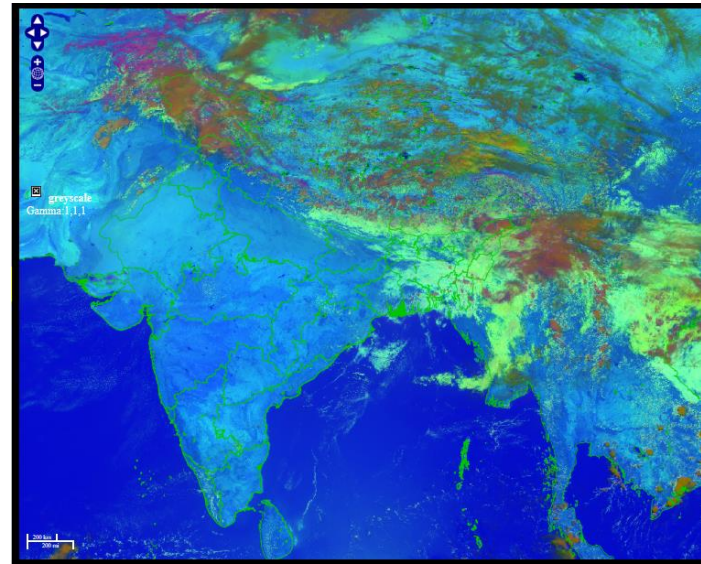
IOP Advisory for 24hours



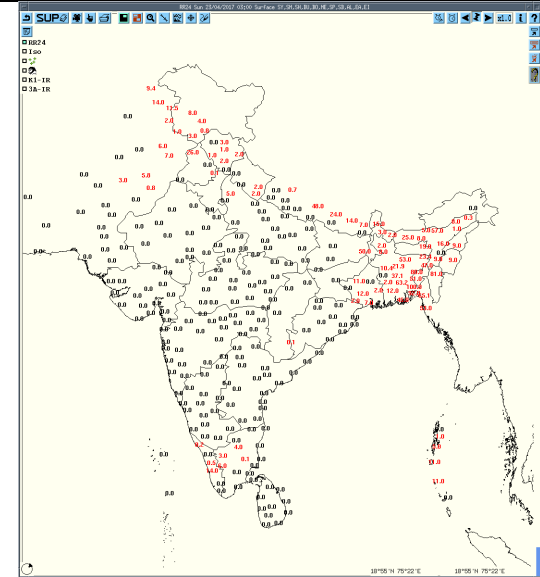
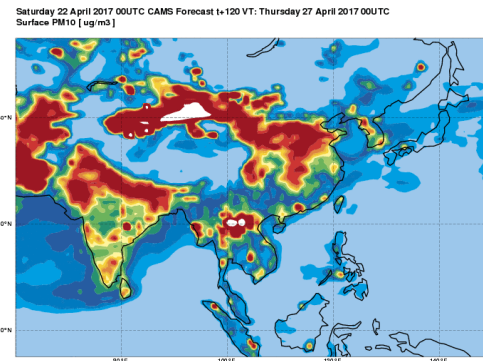
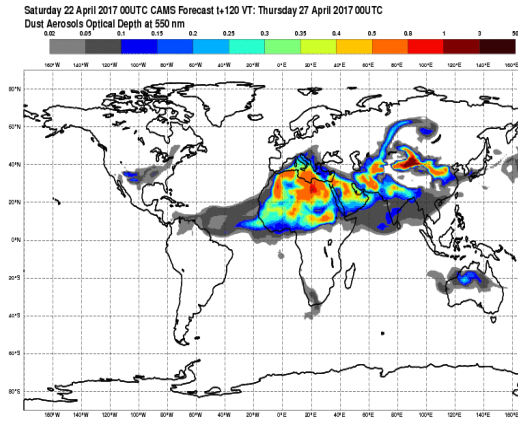
IOP Advisory for 48hours



DWR Composite at 1220hrs IST of today



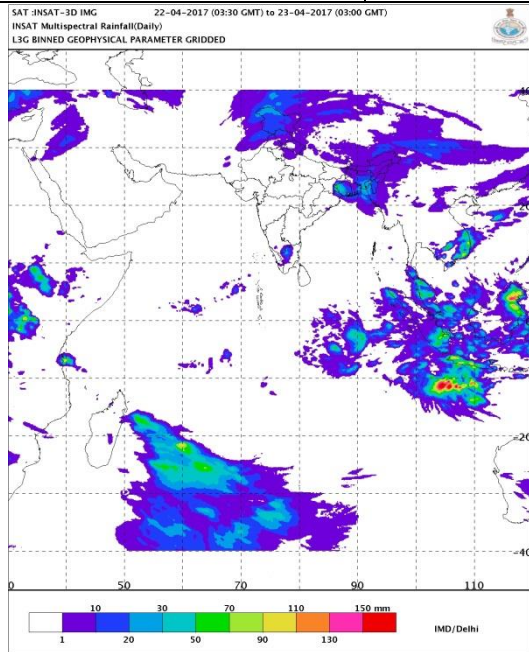
RAPID RGB Image of INSAT 3D at 1130hrs IST of today



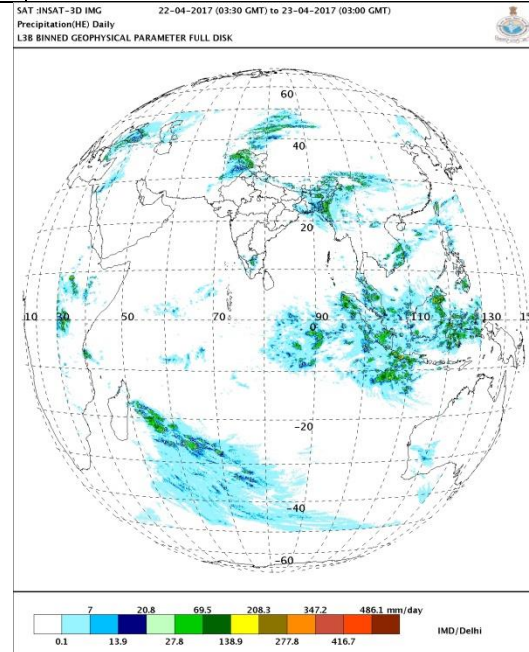
Forecast Dust Concentration for 00UTC of 27th April

PM10 Forecast for 00UTC of 27th April

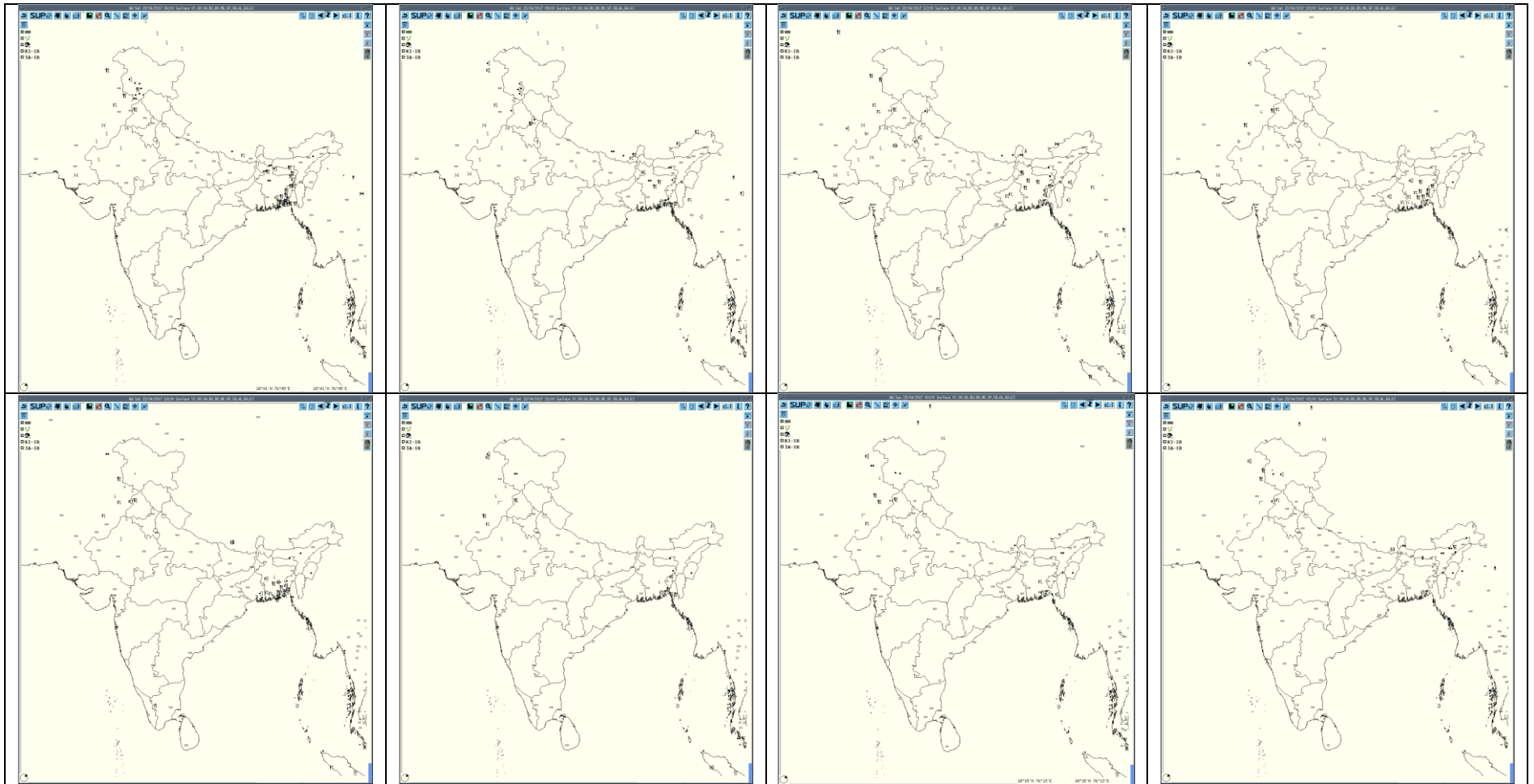
Accumulated 24 Hour rainfall (in red) recorded at 0300 UTC of today



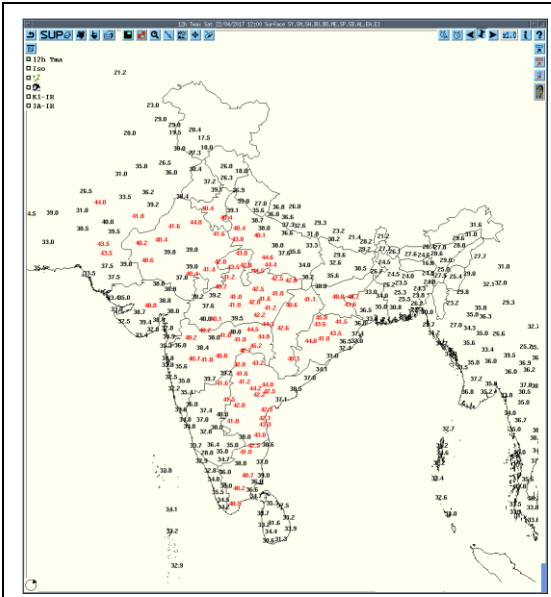
IMR Rainfall



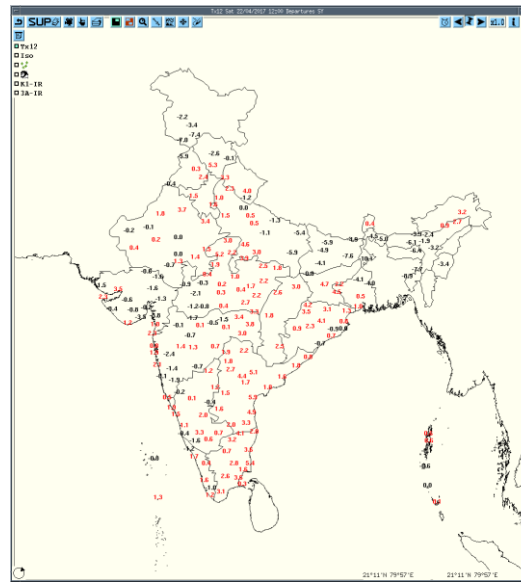
HEM Rainfall



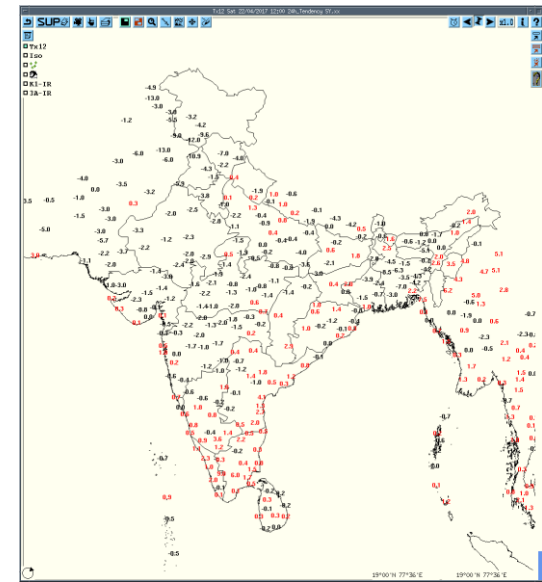
3 hourly Past weather at 06, 09, 12, 15, 18, 21 UTC of yesterday and 00 & 03 hrs UTC of today



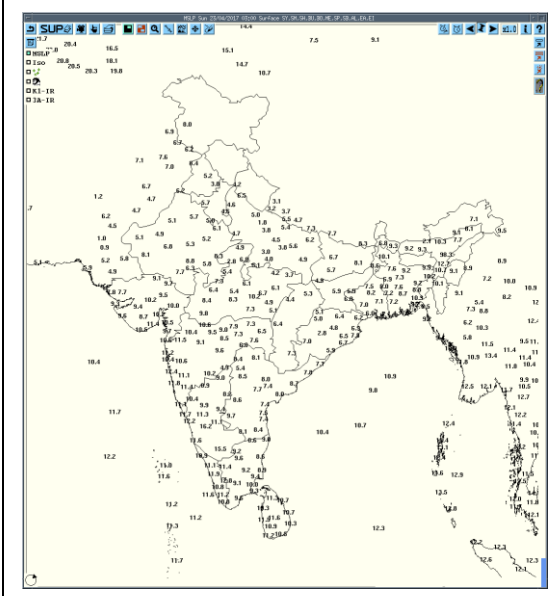
Tmax



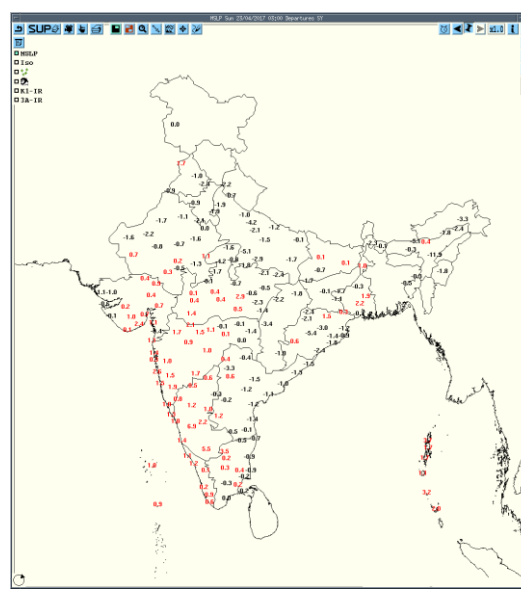
Departure Tmax



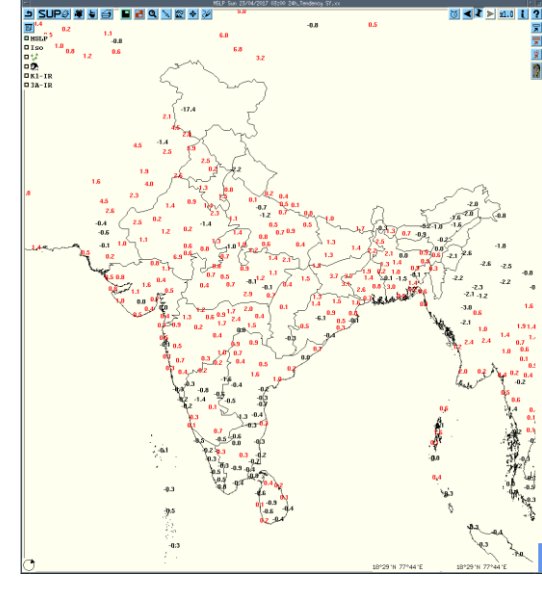
Tendency Tmax



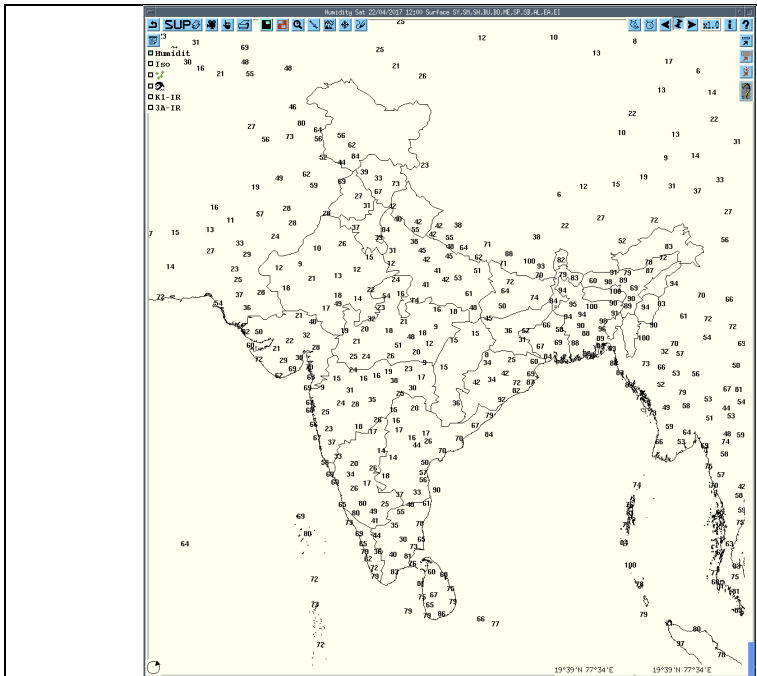
MSLP



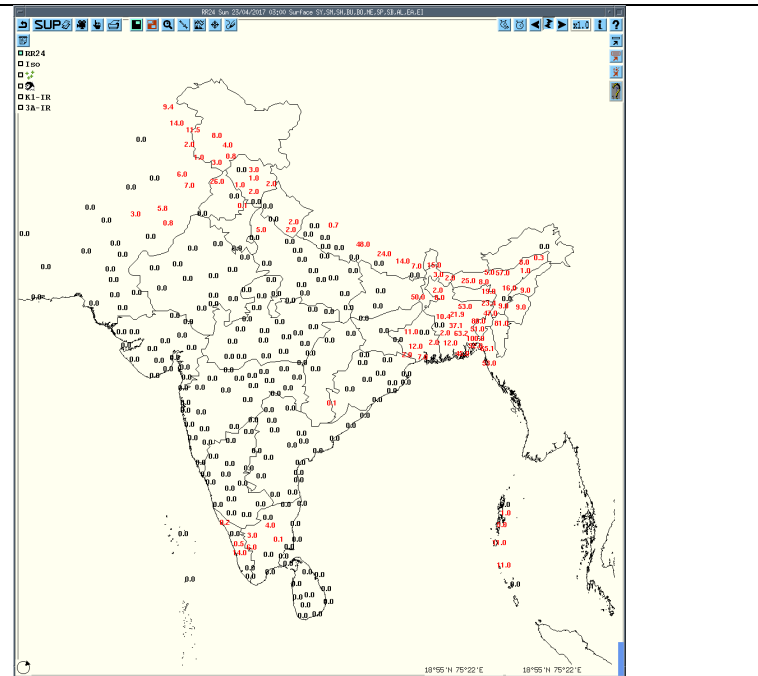
Departure MSLP



Tendency MSLP



RH at 12UTC yesterday



RH at 03UTC today

Realized weather past24 hours (Based on SYNERGIE Products)					
Date	Time of Reporting	Name of Station Reporting	Region	STATE	Weather Event
22-04-17	0600 UTC	Banihal	Northwest India	J & K	Thunderstorm
		Amritsar	Northwest India	Punjab	Thunderstorm
		Guwahati	Northeast India	Assam	thunderstorm
		Shillong, Cherrapunjee	Northeast India	Meghalaya	Thunderstorm
		Agartala, Kailasahar	Northeast India	Tripura	thunderstorm
22-04-17	0900 UTC	Patiala	Northwest India	Punjab	Thunderstorm
22-04-17	1200 UTC	Amritsar	Northwest India	Punjab	Thunderstorm
		Churu	Northwest India	Rajasthan	Duststorm
		Palam, Safdarjung	Northwest India	Delhi	Thunderstorm
		Meerut	Northwest India	Uttar Pradesh	Thunderstorm
		Tirupati	South India	Andhra Pradesh	Thunderstorm
		Bankura, Panagarh	East India	West Bengal	Thunderstorm
		Imphal	Northeast India	Manipur	Thunderstorm
		Agartala	Northeast India	Tripura	Thunderstorm
22-04-17	1500 UTC	Amritsar	Northwest India	Punjab	Thunderstorm
		Bareilly	Northwest India	Uttar Pradesh	Lightening
		Tiruchirappalli	South India	Tamilnadu	Thunderstorm
		Cochin	South India	Kerala	Thunderstorm with hail
		Bankura, Kolkata (AP & City, Digha	East India	West Bengal	Thunderstorm
		Agartala	Northeast India	Tripura	Thunderstorm
22-04-17	1800 UTC	Coimbatore	South India	Tamilnadu	Thunderstorm with hail
		Amritsar	Northwest India	Punjab	Duststorm
		Kolkata City	East India	West Bengal	Thunderstorm
22-04-17	2100 UTC	Amritsar	Northwest India	Punjab	Thunderstorm
23-04-17	0000 UTC	Amritsar	Northwest India	Punjab	Thunderstorm
23-04-17	0300 UTC	North Lakhimpur	Northeast India	Assam	Thunderstorm
		Amritsar	Northwest India	Punjab	Thunderstorm
		Aizawl	Northeast India	Mizoram	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
Nagpur	23-04-17	220252-230302	Nil				
Patiala	23-04-17	220000-220600	SUPER CELLS HT 11-12 MAX 53.0 dbz	FORMATION IN NW AND MOVEMENT SE WARDS	DWR U/S after 220600UTC for maintenance	TS/RA	BEHAT,DEOBAND,HA RDIWAR,DEHRADUN AND NEAR BY AREA
Karaikal	23-04-17	220300-230300			DWR U/S		
Hyderabad	23-04-17	220300-230300	Nil	Nil	Nil	Nil	Nil
Machilipatnam	23-04-17	220941-221111	Isolated single cell with average height of 8.5 km with maximum reflectivity of 54 dBZ	N (234KM) moving SE ly direction average speed of 3.6 kmph	Cells started forming at 0941UTC at N (234km) from radar. Maximum reflectivity during 1001 to 1041 and died down at 1111UTC	Possibility of Thunder storm with Rain and moderate winds.	Dantewara District
		221031-22 1201	Isolated single cell average height of 8 km with maximum reflectivity of 55.5dBZ	NE(212KM) moving SW ly direction average speed of 13.3kmph	Cells started forming at 1031UTC at NE (212km) from radar. Maximum reflectivity during 1051 to 1121 and died down at 1201 UTC	Possibility of Thunder storm and Rain with moderate winds.	Visakhapatnam District
Lucknow	23-04-17	220352-220442	Single isolated cell with average height of 14km and maximum	NNW(250KM) moving in ESE'ly Direction at speed of 65km/hr	Single cell came under LKN Radar at 0352 UTC at NNW(250KM) did not	NIL	Pilibhit

			reflectivity of 46 dBZ		intensified and dissipated at 0452 UTC at NNW(200KM) from RADAR		
		221402-221442	Single cell with average height of 14 km and Maximum reflectivity of 46 dBZ	NW(250KM) moving in SE'y direction at speed of 65km/hr	Single cell came under LKN Radar at 1402 UTC at NW(250KM) moved inSE'y direction did not intensified and dissipated at 1432 UTC at NW(225KM) from RADAR	NIL	Badaun,Bareilly
		221502-221602	Single cell with average height of 14 Km and maximum reflectivity 46 dBZ	WNW(250KM) moving in SE'y direction at speed of 43 km/hr	Single cell came under LKN Radar at 1502 UTC at about WNW(250KM) did not intensified and dissipated at 1552 UTC at WNW(200KM) from RADAR	NIL	Badaun
		221632-221652	Single Isolated cell with average height of 12 km and maximum reflectivity of 34 dBZ	NW (200KM) moving in E'y direction at speed of 22km/hr	Single isolated cell started forming at 1622 UTC at NW(200KM) did not intensified and dissipated at 1652 UTC at NW(195KM) from radar	NIL	NIL
		221732-221822	Single Isolated cell with average height of 13km and Maximum reflectivity of 46 dBZ	NNW(175KM) moving in ESE'y direction at speed of 86km/hr	Single cell started forming at 1732 UTC at NNW (180KM) intensified at 1752 UTC at NNW(170KM) and dissipated at 1822 UTC at N(160KM) from radar	NIL	Lakhimpur Kheri
Agartala	23-04-17	220300-221000	A line Structure of cells with Maximum Height 14km and maximum reflectivity 42 dBZ (at 0450	Formed 300 km NW of DWR AGT at 1700 UTC of 21.04.17 and moved ESE-wards at around 70kmph	Cells Dissipated at 1000 UTC of 22.04.17 over Mizoram	TS with rain	All Districts of Tripura, East Khasi District of Meghalaya, Mamit District of Mizoram










			UTC of 22.04.17 over South Bangladesh-160km SSW of DWR AGT)				
	220620-221520	Multiple Cells with Maximum Height 10 km and maximum reflectivity 35 dBZ (at 0820 UTC over Bangladesh-130km NW of DWR AGT)	Formed 290 km NW of DWR AGT at 0620 UTC of 22.04.17 and moved SE-wards at around 55 kmph	Cells Dissipated at 1520 UTC of 22.04.17 over Manipur	TS with rain	West, Sipahijala, Gomati, Khowai, North, Dhalai, Unakoti districts of Tripura	
	220820-222300	A squall line with Maximum Height 14 km and maximum reflectivity 42dBZ (at 1430 UTC over Sipahijala District of Tripura)	Formed 430 km NW of DWR AGT at 0820 UTC of 22.04.17 and moved SE-wards at around 60kmph	Cells Dissipated at 2300 UTC of 22.04.17 over Manipur	TS with rain	All Districts of Tripura, Imphal East and West district of Manipur, Mamit District of Mizoram	
	221520-221940	Multiple Cells with Maximum Height 14 km and maximum reflectivity 40 dBZ (at 1700 UTC over Bangladesh-180km West of DWR AGT)	Formed 250 km WNW of DWR AGT at 1520 UTC of 22.04.17 and moved ESE-wards at around 50 kmph	Cells merged with the above system at 1940 UTC of 22.04.17	TS with rain	All Districts of Tripura	
	222200-230230	Multiple Cells with Maximum Height 10 km and maximum reflectivity 42 dBZ (at 0020 UTC over Bangladesh-100km SW of DWR AGT)	Formed 170 km West of DWR AGT at 2200 UTC of 22.04.17 and moved SE-wards at around 55kmph	Cells Dissipated at 0230 UTC of 22.04.17 over South Bangladesh	N/A	N/A	

Vishakhapatnam	23-04-17	220300-220600	NIL	NIL	NIL	-	!
		220600-220900	A single cell in the NE at 173kms with max reflectivity 45dbz with height 4kms.	-	-	-	!
		220900-221200	Well organized cell in the NE at 209kms with max reflectivity 64dbz and height 14kms. Another convective region in WEST with reflectivity 40dbz and at 119kms.other convective region in SE 114kms with max reflectivity 40 dbz and height 5kms.	Moving SE ly and dissipated at 12.01 UTC. - -	-	-	!
		221200-221500	Convective region of max reflectivity 50dbz at 118kms in SE with height 4kms.	Moving SE ly	Convective region to form as a cell and dissipates .	-	!
		221500-221800	Convective region at 188kms from radar with Max reflectivity44dbz in the SE and height 5kms.	SE ly	-	-	!
		221800-230000	Convective region at 180kms from radar with Max reflectivity 40dbz in the SW and height 4kms.	SW ly	-	-	!

		230000-230300	NIL	NIL	-	-	!
Kolkata	23-04-17	220632 -2220652	NIL	NIL	NO SIGNIFICANT ECHO	NIL	NIL
		220701 - 221851	Cluster of isolated single cells merged to form extended multi celled system with maximum reflectivity of 63.0	ENE (147 km) To ESE (169 km). Moving in SE-ly direction with a speed of 34.9 kmph.	Formation started at 0701 UTC in between ENE (147 km) and ESE (169 km) from Radar. Matured and moved out of Radar range at 1051 UTC.	Hailstorm /Thunderstorm /Squall / Rain	N/A
			1.Isolated single cells with maximum reflectivity of 66.5dBz at 1241 UTC and maximum height of 15.7 Km at 1231 UTC.	1.W (234 km) moving in SE-ly direction with a speed of 36 kmph.	1.Formation started at 0912 UTC of in W at a distance of 234 km from Radar. Merged to a single cell Matured and merged with 2.at 1351 UTC	Hailstorm /Thunderstorm /Squall / Rain	N/A
2.Initially single cell which developed in line squall with maximum reflectivity of 69.0 dBz at 1031 UTC and height more than 18 Km between 1112 and 1351UTC.	2.NW (248 km) moving in SE-ly direction with a speed of 61 kmph.	2.First observed at 0951 UTC in NW at a distance of 248 km from Radar. Matured single cell and developed in extended multi celled system at 1221 UTC. Formation of line squall at 1422. Dissipated at 1851 in SE at a distance 131.5 km from radar	Hailstorm /Thunderstorm /Squall / Rain	N/A			

			3. Single cell with maximum reflectivity of 67.0 dBz at 1011 UTC and maximum height 14.6 km at 1011 UTC.	3. NW (247 km) moving in SE-ly direction with a speed of 52.2 kmph.	3. First observed at 1011 UTC in NW at a distance of 247 km from Radar. Matured single cell. Dissipated at 1131 UTC in NW at a distance of 197 km from Radar.	Hailstorm /Thunderstorm /Squall / Rain	N/A
			4. Extended multi celled system with maximum reflectivity of 60.5 dBz at 1241 UTC and maximum height of 16.6 Km at	4. N (241 km) moving in ESE-ly direction with a speed of 43.6 kmph.	4. First observed at 1031 UTC in N at a distance of 241 km from Radar. Matured. Merged with 2. at 1652 UTC.	Hailstorm /Thunderstorm /Squall / Rain	N/A
			5. Extended multi celled system with maximum reflectivity of 63.0 dBz at 1731 UTC and maximum height of 15.1 Km at	5. NNE (205 km) moving in ESE-ly direction with a speed of 71.6 kmph.	5. Multicelled system developed at 1521 UTC in NNE at a distance of 241 km from Radar. Matured. Moved out of radar range at 1851 UTC in ENE-ly direction	Hailstorm /Thunderstorm /Squall / Rain	N/A
		221901 - 222211	NIL	NIL	NO SIGNIFICANT ECHO	NIL	NIL
		222221 - 230041	Single cells with maximum reflectivity of 59.0 dBz at 0021 UTC and maximum height 09.59 km at 0002 UTC.	NE (192.8 km) moving in ESE-ly direction	Isolated single cells developed at 2221 UTC in NE(192.8 km)Not matured.Dissipated at 0041 UTC in ENE at a distance 223.2 km from radar.	Thunderstorm /Squall / Rain	N/A
		230052 - 230301	NIL	NIL	NO SIGNIFICANT ECHO	NIL	NIL

∞	haze
☁	smoke
☼	dust or sand storm
☁	fog
☂	drizzle
•	rain
✱	snow
▽	showers
△	hail
⚡	thunderstorm
Weather Symbols	

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

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