India Meteorological Department

FDP STORM Bulletin No. 31 (05-04-2017)

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

SYNOPTIC FEATURES:

The Western Disturbance as an upper air cyclonic circulation over northeast Iran & adjoining Afghanistan now lies over north Pakistan & adjoining Afghanistan and extends upto 3.1 km above mean sea level with trough aloft runs roughly along Longitude 62.0°E and north of Latitude 32.0°N.

An induced upper air cyclonic circulation lies over Punjab & adjoining north Rajasthan & Haryana and extends upto 1.5 km above mean sea level.

The east-west trough at mean sea level from southeast Uttar Pradesh to Manipur across Jharkhand and Gangetic West Bengal now runs from southeast Uttar Pradesh to Manipur across south Jharkhand and Gangetic West Bengal and extends upto 0.9 km above mean sea level.

The north-south trough from North Interior Karnataka to south Tamilnadu across South Interior Karnataka now runs from south Madhya Maharashtra to south Tamilnadu across Interior Karnataka and extends upto 0.9 km above mean sea level. The upper air cyclonic circulation over east Bihar and adjoining West Bengal now seen between 1.5 to 2.1 km above mean sea level.

A trough of low lies over Malaya Peninsula & adjoining south Andaman Sea with upper air cyclonic circulation aloft and extends upto 1.5 km above mean sea level.

SATELLITE OBSERVATIONS during past 24hrs and current observation (based on 0300UTC imagery of INSAT 3D):

Convective Activity:

Cell No.	Date/Time (UTC)	Location & Area	CTBT (- Deg. C)	Movement
6	04/2130	Tripura	62	Developing
	05/0000	Tripura, Mizoram	48	persists
	0100	do	52	do
	0200	do	55	do
	0300	do	64	do

Cloud Description:

Broken low/medium clouds were seen over J & K (minimum CTT minus 56 deg C), Himachal Pradesh (minimum CTT minus 60 deg C), Uttarakhand (minimum CTT minus 55 deg C), Punjab (minimum CTT minus 54 deg C), north Haryana (minimum CTT minus 51 deg C) and northern parts of west Uttar Pradesh (minimum CTT Minus 47 deg C) in association with western disturbance over the area.

Scattered low/medium clouds with embedded moderate to intense convection were seen over Tripura (minimum CTT minus 64 deg C), Mizoram (minimum CTT minus 65 deg C) and Meghalaya. Scattered low/medium clouds were seen over rest Uttar Pradesh, extreme north Rajasthan, rest north-eastern states, north coastal Andhra Pradesh, south Telangana, coastal Karnataka, north Kerala and Bay Islands.

Arabian Sea:

No significant clouds over the region.

Bay of Bengal & Andaman Sea:

Scattered low/medium clouds with embedded weak to moderate convection were seen over extreme south Bay of Bengal and south Andaman Sea

Convection:

Light to moderate convection was observed over North and North East parts of India and South Interior Karnataka adjoing Kerala, Telangana North East Odisha.

OLR:-

Up to 150 wm^{-2} was over North West J&K. Up to 200 wm^{-2} was over rest J&K, North East Himachal Pradesh North Uttarakhand Nagaland, Manipur, North Mizoram South Assam. Up to 230 wm^{-2} was over Punjab, rest Himachal Pradesh, rest Uttarakhand , Haryana, Extreme North Rajasthan, Sikkim, Arunachal Pradesh, rest Assam, East Meghalaya, North Tripura, extreme South Interior Karnataka and North Kerala.

Jet Stream:

No Jet stream and no trough observed over India

Dynamic Features: .

A positive Vorticity field is seen over North West Rajasthan Punjab Odisha adjoining Jharkhand South West Bengal South Interior Karnataka.

Low wind shear observed over south and moderate wind shear observed over North West India and weak to moderate wind shear observed over central India .

Positive shear tendency observed over the India except Negative shear tendency observed over Coastal Odisha and Coastal West Bengal.

Positive Low Level Convergence observed over Gujarat, Rajasthan, Coastal Andhra Pradesh, Odisha , South West Bengal

Precipitation:

IMR: Rainfall upto **50**mm was observed over J&K North Himachal Pradesh. Rainfall upto 2**0**mm was observed over rest Himachal Pradesh South Punjab, North Uttarakhand, Nagaland, Manipur, Mizoram, North Tripura, Extreme North Kerala . Rainfall upto **10**mm was observed over rest Punjab, Haryana, Delhi, Rest Uttarakhand, Arunachal Pradesh, Assam, Rest Tripura, Telangana, East Bangladesh..

HEM: Rainfall upto 70mm was observed over North West J&K, Himachal Pradesh, North Uttarakhand, Nagaland, Manipur, Mizoram, extreme South Interior Karnataka and Extreme North Kerala.. Rainfall upto 14mm was observed over Punjab, North Haryana, Extreme North West Uttar Pradesh, Central Assam North Tripura, Extreme East Arunachal Pradesh South Telangana,.

Rainfall Upto 7mm was observed over Rest Haryana, Delhi, Extreme North Rajasthan, Rest North West Uttar Pradesh, Rest Assam, West Arunachal Pradesh, rest Tripura, East Bangladesh.

RADAR and RAPID observation:

Convection was observed over Punjab, Uttarakhand, north Haryana, west Uttar Pradesh, Meghalaya, South Assam & adjoining Tripura in DWR Composite at 1150hrs IST.

RAPID RGB Imagery of 1130hrs IST also indicates convective clouds over J & K, Punjab, Himachal Pradesh, Uttarakhand, north Haryana, West UP, south Meghalaya, south Assam and adjoining areas of Tripura, Manipur & Mizoram.

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

No major dust concentration was observed over Arabian Peninsula and west Rajasthan. Dust concentration is expected to increase over northern and western India for next three days.

2. NWP MODEL GUIDANCE:

NCMRWF (NCUM Model based on 00 UTC of the day):-

1. Weather Systems:

12UTC Charts on all days from Day0-4 show trough in MSLP over J & K extending NW-SE.

00 and 12UTC show evolving heat low over NW of India and adjoining Pakistan extending over IG plains. Heat low is deepest at 12 UTC of Day-0 to 00 UTC on Day-1 with 996hPa over Pakistan.

12UTC charts on all days from Day0-4 show Wind discontinuity at 925 hPa :SW-NE extending from northern Karnataka-Telangana region to Maharashtra-Chhattisgarh region. This is also reflected at 850 hPa. 00UTC charts show feeble troughing along the line of discontinuity up to Day-2. Additionally, Weak CYCIR over Bihar-WB at 00UTC from Day-2 to Day-4. Similarly another CYCIR is seen over Punjab and adjoining Pakistan at 00UTC on Day-1 to Day-3

Weak anticyclonic circulation over Arabian Sea. WD over Pakistan region fron Day-0 to Day-2

500hPa anticyclone prominent over west coast in Day-2 moves eastwards. Another broad anticyclone over Arabian Sea is prominent in Day-3 and Day-4.

2. Location of jet and jet core at 500hPa:-**500hPa Jet core (>60kt)**:

Weak in magnitude over India upto Day-0. Strong over Iran Pakistan in Day-0. In Day-1 at all times over Rajasthan and adjoining Pakistan region due to WD. At 12UTC on Day-3 strong over parts of western Pakistan and Afghanistan.

From 12UTC on Day-3 to 00UTC on Day-5 strong over Sikkim, Assam, Meghalaya and Nagaland.

3. Convergence at 850 hPa:

At 12UTC on Day-0 and Day-2: High values along the Western Ghats in Karnataka and Maharashtra, parts of Odisha and WB along with adjoining Jharkhand and Chhattisgarh. Over NW India due to WD mainly over Rajasthan and Haryana. On Day-3 and Day-4 same as above except in NW India.

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

At 12UTC on Day-0 to Day-2 high values mainly over NW India due to WD and along the IG plains extending NW to SE-wards. Similarly in Day-3 and Day-4 over Assam and Meghalaya region

At 00UTC on Day-1**:** high values along the NW India and IG plains. Over the peninsula all along the line of low level confluence on all days.

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

Day-0 at 12UTC: Strong along coast of Karnataka and Kerala, all along the east coast from Chennai to WB. Over NE mainly over Bangladesh and adjoining Tripura and Mizoram.in Day-1 Prominent over NW India due to WD. In the west only along the coastal Kerala and Karnataka and in east mainly over Odisha to WB coast. Over Bangladesh and adjoining states in the east. Day-1 to Day-4 reduced values over NW India and reduced spatial coverage over NE India

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

Day-0 at 12UTC: Strong along coast of Karnataka and Kerala, all along the east coast from Chennai to WB. Over NE mainly over Bangladesh and adjoining Tripura and Mizoram.in Day-1 Prominent over NW India due to WD. In the west only along the coastal Kerala and Karnataka and in east mainly over Odisha to WB coast. Over Bangladesh and adjoining states in the east.Day-1 to Day-4 reduced values over NW India and reduced spatial coverage over NE India.

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

Over peninsula along the east and west coasts , relatively lower values and seen only in Day0 to Day-1. Prominent over NW India and Pakistan region in Day-0 and Day-1. Extending to foothills over Himachal and Uttarakhand in Day-1-Day-3. In Day-4 prominent over WB and Bangladesh.

8. Rainfall and thunder storm activity:
Day-0-2: (>4cm/day) Over Most part of NE India and J&K region extending along the foothills in Himachal and Uttarakhand. Over peninsula and coast the rainfall amounts are low.
Day-4-5☹>4cm/day) over Arunachal and Assam region.

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

1. Weather Systems:.
00 UTC analysis shows CYCIR over Punjab, UP, Bihar, and adjoining areas. The forecast shows the persistence of east west trough along the major parts of UP, Bihar, GWB for all the five days and the extension of the east west trough towards coastal Odisha on the 5th day
2. Location of jet and jet core at 500 hPa:**-500 hPa Jet core (>60kt):**
The Jet at 500 hPa does not exist over India during next 5 days except during day 1 over western Rajasthan.
3. Low level Vorticity:-Positive Vorticity 850hPa (>12 x 10^{-1}/s):.
Analysis shows the low level positive vorticity mainly over some parts of Punjab, UP, Karnataka along with few pockets in the NE states. Forecast shows vorticity core zones mainly along UP, Bihar and interior parts of Karnataka along with few regions of the north eastern states for the 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): Forecast at 00hr shows significant values over GWB, Odisha, Jharkhand, western Gujarat and few pockets in AP. Threshold values are noticed over GWB, Odisha, Jharkhand, Bihar, and eastern coast adjoining Bangladesh during next 4/5 days.
Lifted Index (< -2): The areas with index less than -2 lies along east coast regions, GWB, Odisha, coastal AP, Bihar and adjoining areas with gradually the LI areas with less than -2 mainly extended towards south-eastern coastal regions and west costal region of India.
Sweat Index (> 400): The significant zones are confined along east coast of India over GWB, Odisha, western Gujarat, few pockets in J&K, Bangladesh and adjoining regions and high value of SI observed over WB, Bihar, and east UP, Bangladesh and NE region for day 1 to day 5. Some parts of western Gujarat states and Karnataka coast along with few pockets in J & K also indicated the value > 400 K for next 2 days.
Total Total Index (> 50): Above threshold value in most parts of central India and adjoining northern parts of India along with areas bordering north west India from day 1 to day 4 particularly at 12 UTC of each day.
CAPE (> 1000): Mostly along east coast of India over Gangetic West Bengal, Odisha, Bihar, Jharkhand and adjoining regions and Kerala and parts of coastal Karnataka during next 5 days. The CAPE values above threshold values are also observed over Coastal Gujarat region for day 1.
CINE (50-150): Maximum CINE values are found in some areas along east coast over GWB, Odisha, coastal AP and Tamil Nadu and also over Bihar, Jharkhand and Goa & Konkan from Day-1 to Day-5 and Maximum CINE value over Gujarat region during next 24 hours.
5. Rainfall and thunderstorm activity:.
10-40 mm rainfall is forecasted tomorrow over major regions of J&K, H.P and areas adjoining the foothills of the Himalayas till the next 48 hrs. Rainfall activity is also forecasted over parts of NE states for all the five days.

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

1. Model reflectivity (Max. dBz): (>25 dBZ)

Model reflectivity exceeding the threshold value, is seen over major regions of J&K, HP and regions along the foothills of Himalayas along with the north eastern states and is seen very prominent till day 1 and day 2. Higher threshold values are seen over J & K region in evening hours at day1 to day3.

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

Total Total Index (> 50): Above threshold values is observed over most parts of India during next 3 days except parts of extreme south peninsular region, north-eastern states and J & K.

K-Index (> 35): Less than threshold value over most parts of India during next 3 days.

CAPE (> 1000): Mostly along east coast of India over Andhra Pradesh, Odisha, and GWB, Bihar and eastern UP during next 3 days. Another zone along west coast over Kerala, coastal Karnataka and Konkan & Goa during next 3 days.

CINE (50-150): CINE values are mostly small all over India during all three days of forecasts except some areas along coastal areas of India over Odisha, GWB, Eastern UP, Bihar, Jharkhand, coastal AP, coastal Karnataka and Konkan-Goa during next 3 days.

3. Rainfall activity:

Rainfall activity (~ 10-40 mm) is expected to persist till next 2 days over J & K, H. P and along the foothills of Himalayas.

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:

Day 1 & Day 2:

Presently, the Western Disturbance as an upper air cyclonic circulation over northeast Iran & adjoining Afghanistan now lies over north Pakistan & adjoining Afghanistan and extends upto 3.1 km above mean sea level with trough aloft runs roughly along Longitude 62.0°E and north of Latitude 32.0°N, which will give very to very heavy rainfall over Jammu and Kashmir, Himachal Pradesh, Uttarakhand on Day-1. An induced upper air cyclonic circulation lies over Punjab & adjoining north Rajasthan & Haryana and extends upto 1.5 km above mean sea level. Due to this system, Thunder squall with hail possibilities over Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana on Day-1 and Day-2.

The east-west trough at mean sea level from southeast Uttar Pradesh to Manipur across Jharkhand and Gangetic West Bengal now runs from southeast Uttar Pradesh to Manipur across south Jharkhand and Gangetic West Bengal and extends upto 0.9 km above mean sea level, which may result rainfall activities including thundersquall with hail over South Assam, NMMT and GWB, Jharkhand on Day-1.

The guidance from the NWP model output from ECMWF, IMD1534 and NCEP, IITM GFS, NCUM, NEPS and Satellite imageries are also suggesting the similar area of rainfall activities on Day1 and Day2.

24 hour Advisory for IOP:

Jammu and Kashmir, Himachal Pradesh, Uttarakhand,
South Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura
Punjab and Haryana
South Gangetic West Bengal
Orissa, Bihar, Jharkhand
South Interior Karnataka

48 hour Advisory for IOP:

Jammu and Kashmir, Himachal Pradesh
Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura,
West and East Uttar Pradesh, Bihar, Jharkhand

ForNCMRWFNWPproducts:(http://www.ncmrwf.gov.in/HomePage/NEPS-prod-1.php)
ForIMDNWPproducts:(http://nwp.imd.gov.in/diagpro_new.php)
ForSynopticplotteddataandcharts
http://amssdelhi.gov.in/
http://www.amsskolkata.gov.in/
ForRAPIDtool:
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Upperlevelwinds
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Past24hourHEMandIMRrainfall(upto03UTCoftoday)
IMR:http://satellite.imd.gov.in/img/3Ddaily_imr.jpg
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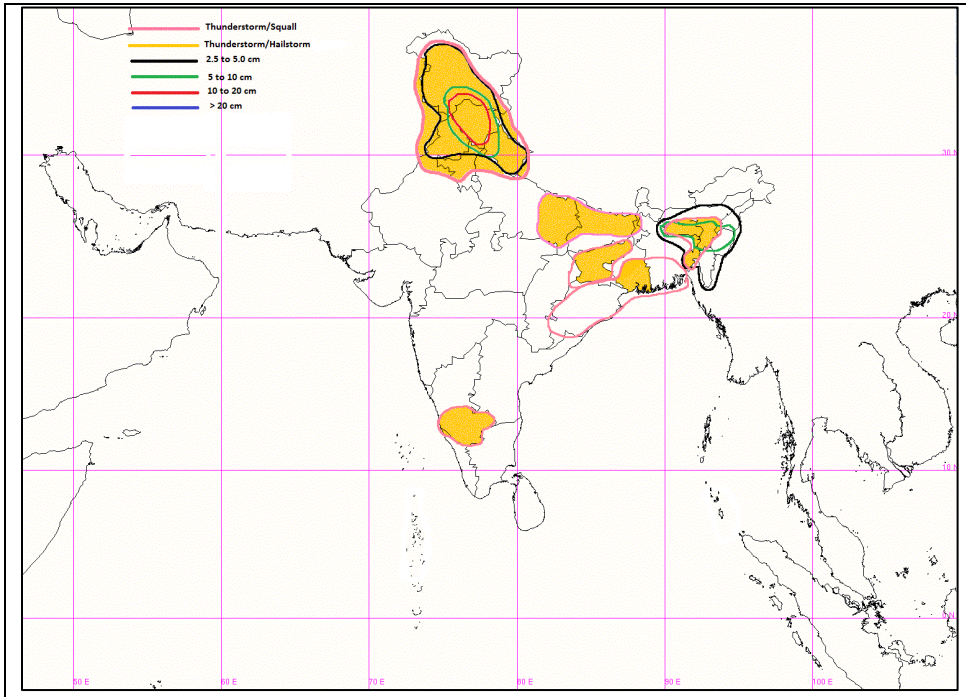
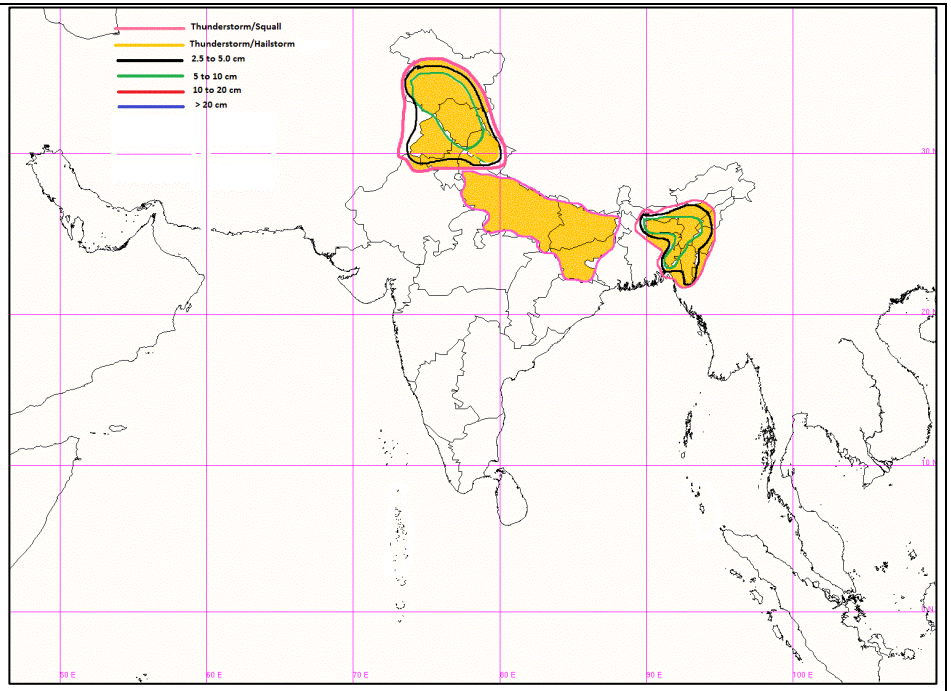
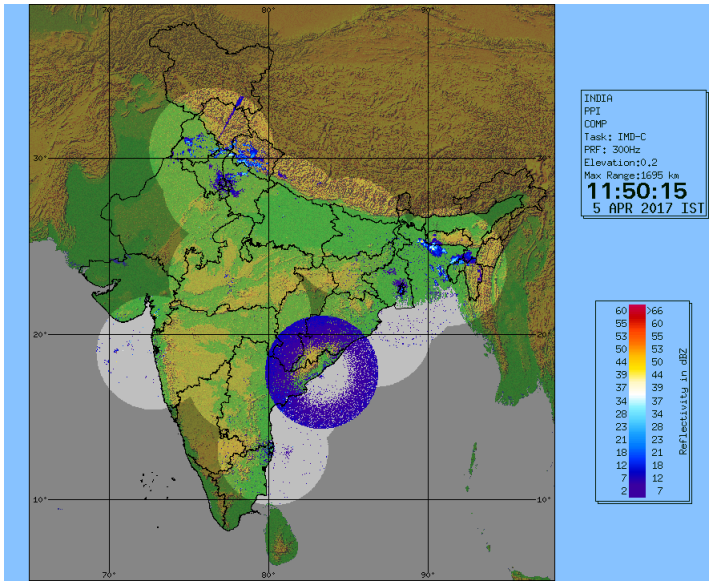
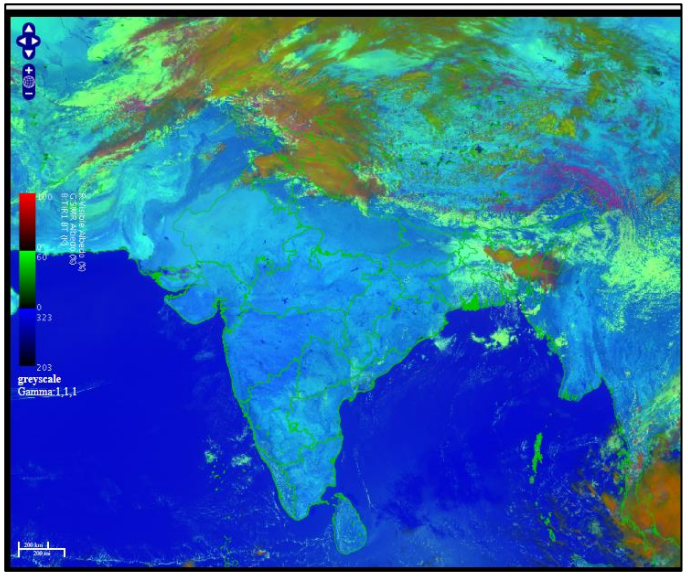
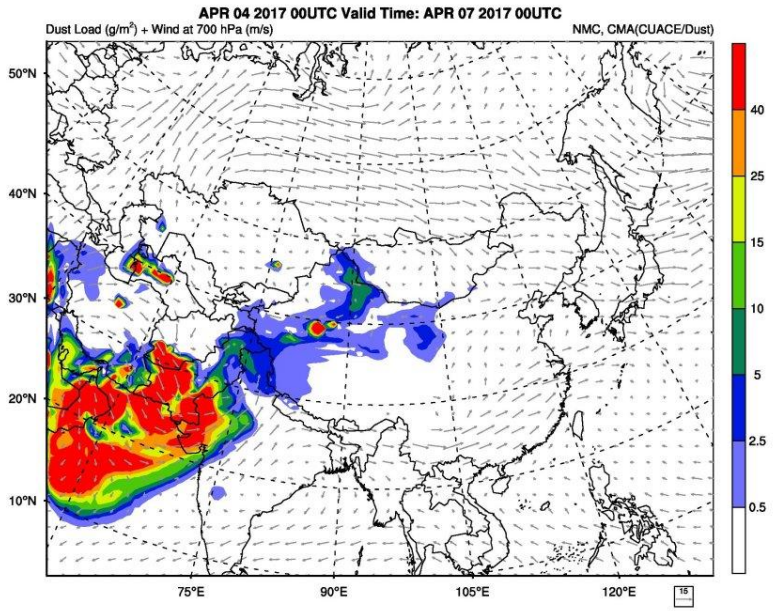


IOP Advisory for 24 hours

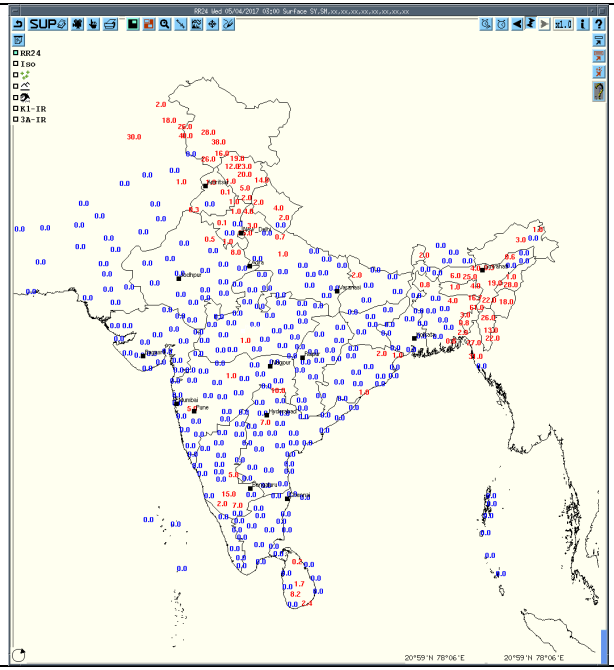


IOP Advisory for 48 hours

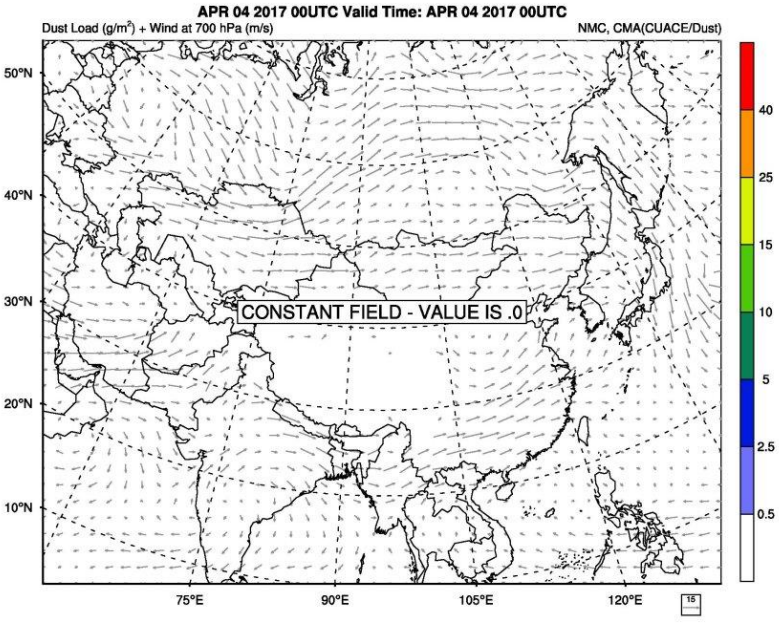
	
DWR Composite at 1150 hrs IST	**RAPID RGB Image of INSAT 3D at 1130 hrs IST**



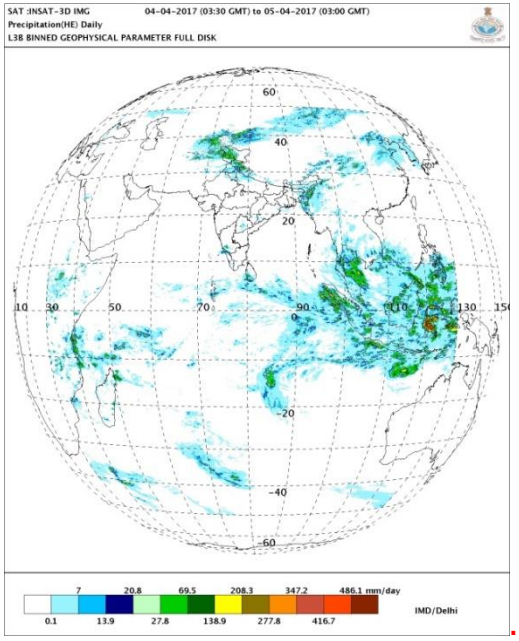
Forecast Dust Concentration for 00 UTC of 07 April



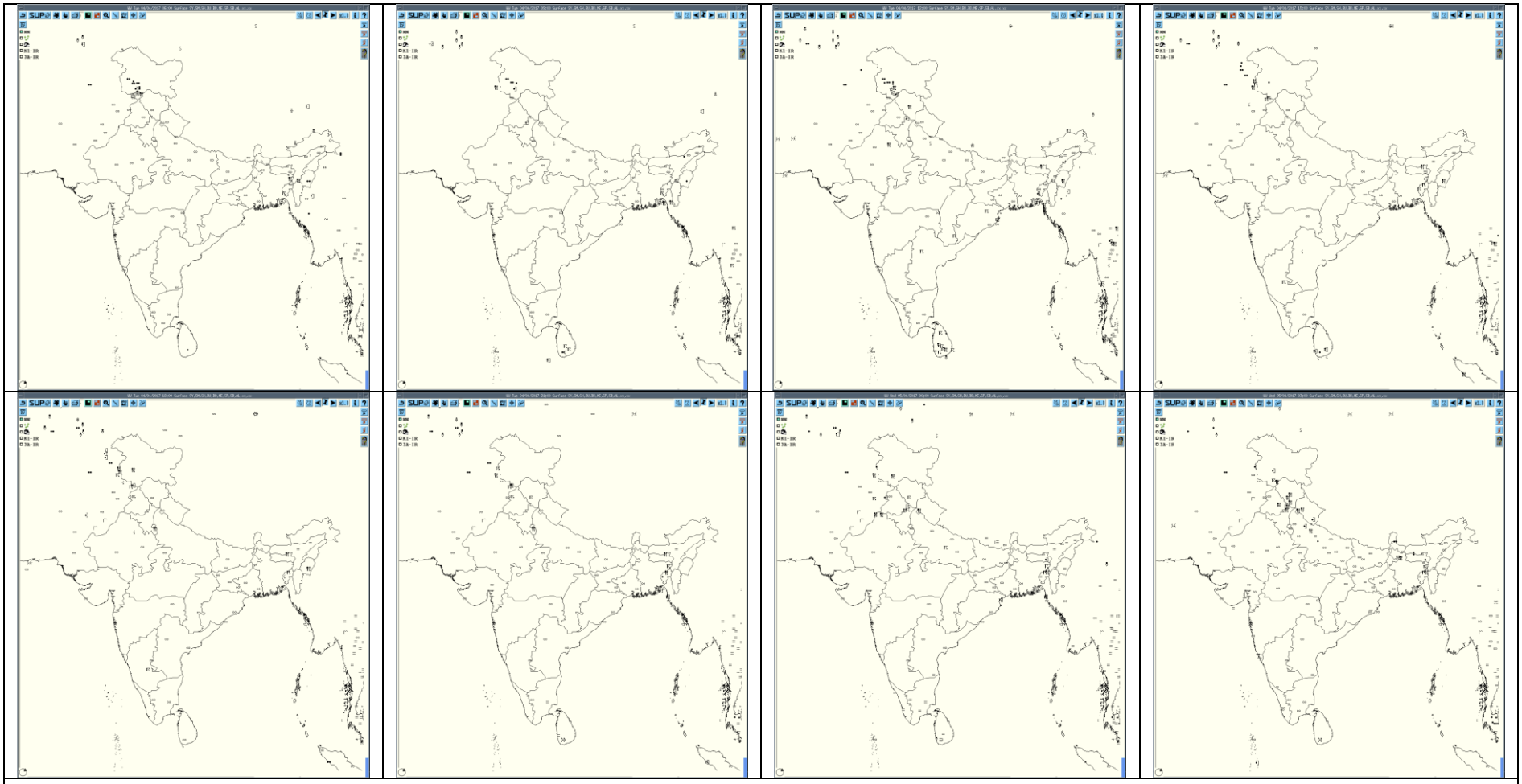
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today



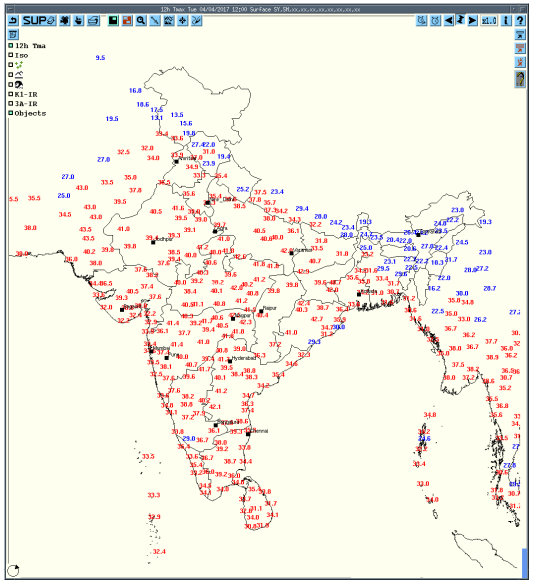
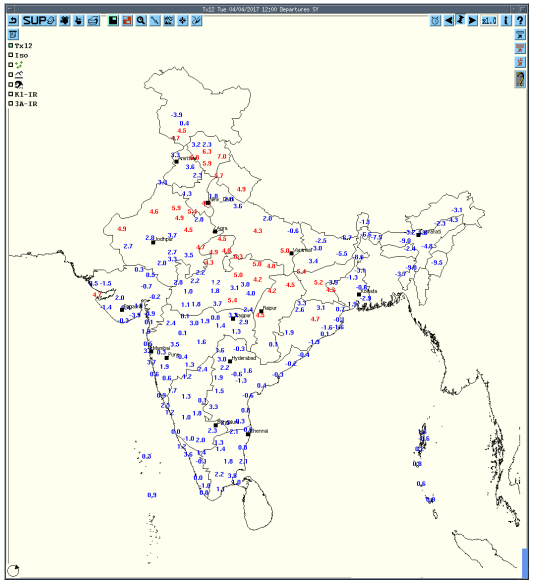
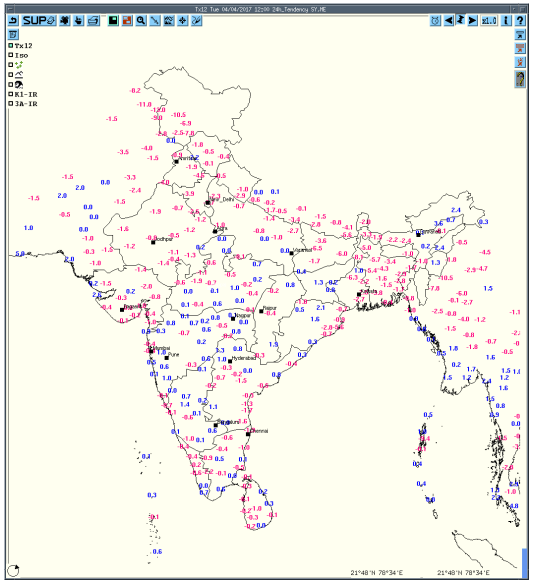
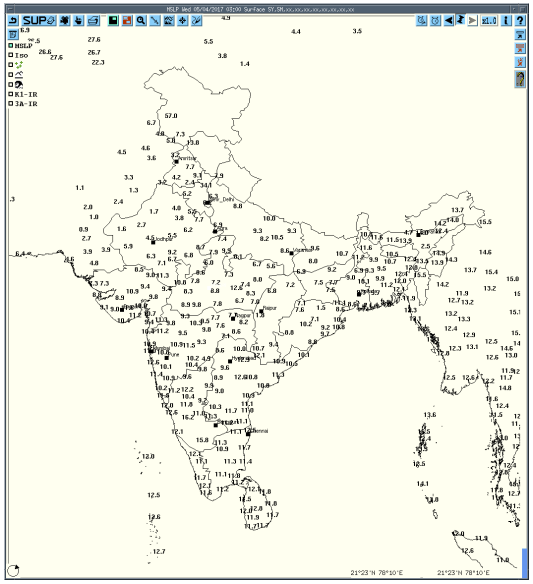
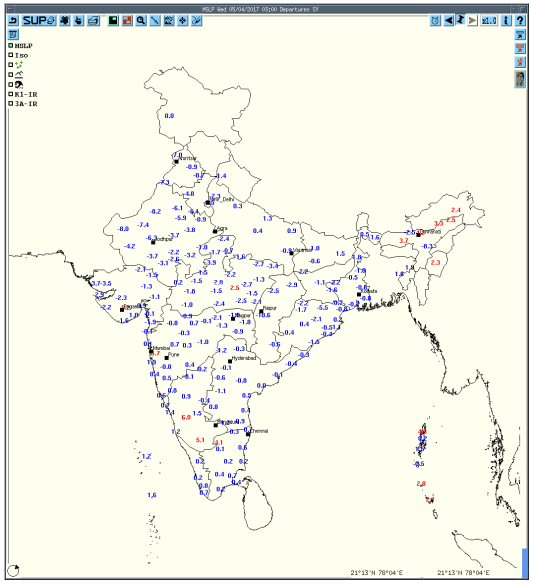
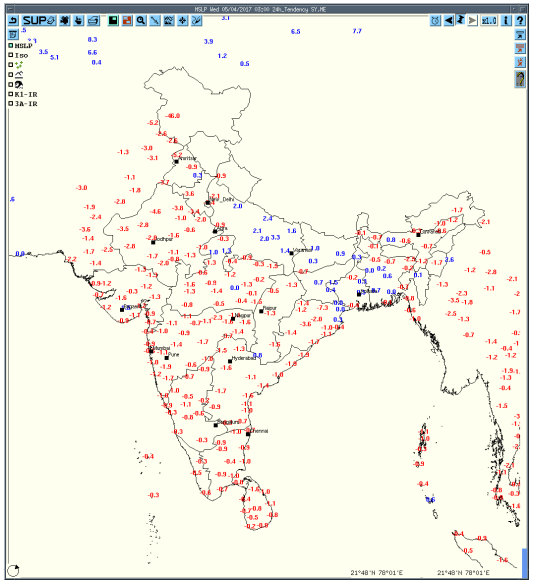
IMR Rainfall

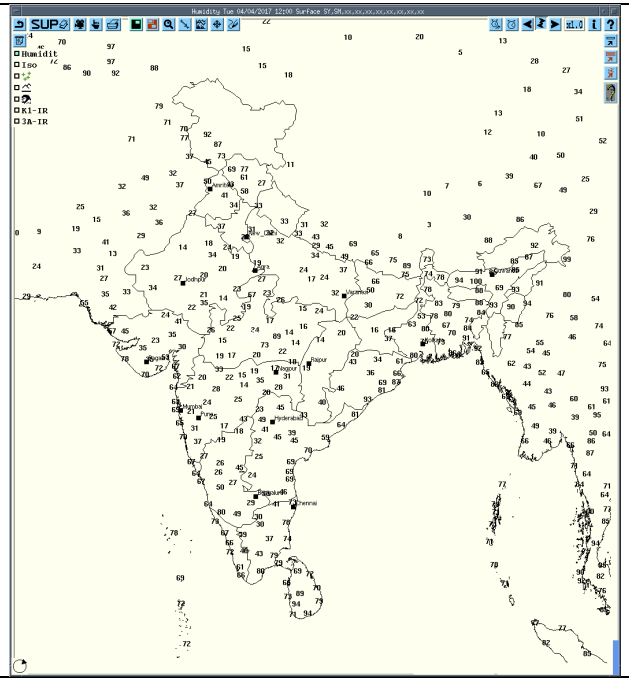
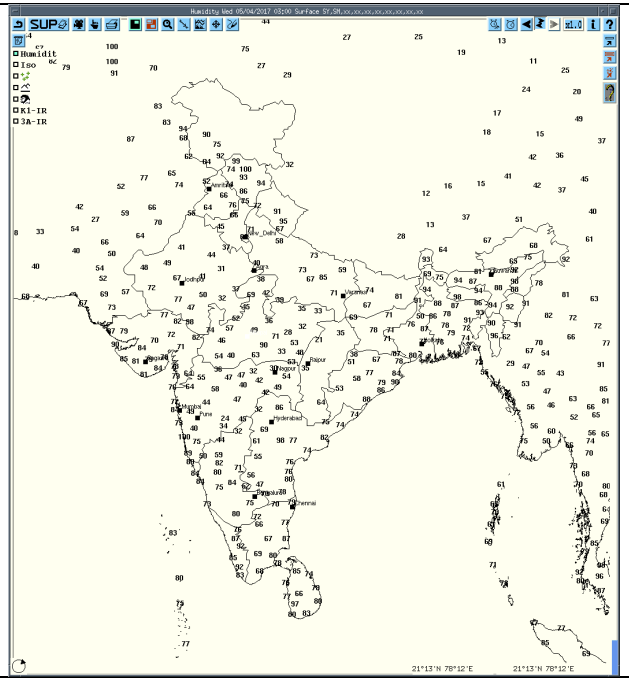


HEM Rainfall



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

		
Tmax	**Departure Tmax**	**Tendency Tmax**
		
MSLP	**Departure MSLP**	**Tendency MSLP**

	
RH at 12UTC yesterday	**RH at 03UTC today**

Realized weather past 24 hours (based on SYNERGIE data)					
Date	**Time of Reporting**	**Name of Station Reporting**	**Region**	**STATE**	**Weather Event**
04-04-2017	0600UTC	Katra, Bhaderwah & Batote	Northwest India	J & K	Thunderstorm
		Silchar	Northeast India	Assam	Thunderstorm
04-04-2017	0900UTC	Silchar	Northeast India	Assam	Thunderstorm
04-04-2017	1200UTC	Kukernag, Batote, & Bhaderwah	Northwest India	J & K	Thunderstorm
		Bhunter	Northwest India	Himachal Pradesh	Thunderstorm
		Churu	Northwest India	Rajasthan	Thunderstorm
		Silchar & Guwahati	Northeast India	Assam	Thunderstorm
		Imphal	Northeast India	Manipur	Thunderstorm
		Keonjhargarh	East India	Odisha	Thunderstorm
		Jagdalpur	Central India	Chhattisgarh	Thunderstorm
		Hyderabad	South India	Andhra Pradesh	Thunderstorm
04-04-2017	1500UTC	Jammu	Northwest India	J & K	Thunderstorm
		Guwahati	Northeast India	Assam	Thunderstorm
		Imphal	Northeast India	Manipur	Thunderstorm
		Chitradurga	South India	Karnataka	Thunderstorm
04-04-2017	1800UTC	Srinagar, Jammu	Northwest India	J & K	Thunderstorm
		New Delhi	Northwest India	Delhi	Thunderstorm
		Guwahati	Northeast India	Assam	Thunderstorm
		Imphal	Northeast India	Manipur	Thunderstorm
		Chitradurga	South India	Karnataka	Thunderstorm
04-04-17	2100 UTC	Jammu	Northwest India	J & K	Thunderstorm
		Sundernagar	Northwest India	Himachal Pradesh	Thunderstorm
		Amritsar	Northwest India	Punjab	Thunderstorm
		New Delhi	Northwest India	Delhi	Thunderstorm
		Guwahati	Northeast India	Assam	Thunderstorm
05-04-17	0000 UTC	Banihal	Northwest India	J & K	Thunderstorm
		Patiala	Northwest India	Punjab	Thunderstorm
		Ambala	Northwest India	Haryana	Thunderstorm
		Sundernagar	Northwest India	Himachal Pradesh	Thunderstorm

		Ganganagar	Northwest India	Rajasthan	Thunderstorm
		Dehradun	Northwest India	Uttarakhand	Thunderstorm
		Lucknow	Northwest India	Uttar Pradesh	Thunderstorm
05-04-17	0300 UTC	Batote, Bhaderwah	Northwest India	J & K	Thunderstorm
		Bhunter & Shimla, Silon	Northwest India	Himachal Pradesh	Thunderstorm
		Ludhiana & Ambala	Northwest India	Punjab	Thunderstorm
		Dehradun &Tehri	Northwest India	Uttarakhand	Thunderstorm
		Bareilly	Northwest India	Uttar Pradesh	Thunderstorm
		Kailasahar	Northeast India	Tripura	Thunderstorm

Past 24 hours DWR Report:

Radar Station Name	Date of Report	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
Nagpur	**05-04-17**	040302-040822	Nil	Nil	No Echoes	Nil	Nil
		040832-041322	Single	Approx 160 km south.. moving south	Approx 31 dBZ at 0932 UTC and 45 dBZ at 1322 and ht of max Z more than 10km	-----	--------
		041332-041602	Nil	Nil	--------	--------	---------
		041612-041952	Group of clouds(small patches)	25 km SE	Less than 5dBZ and moving towards Nagpur radar and last upto approx 1952UTC after that few small patches	-------	----------
		042032-042202	Group of clouds	70km NE and extending upto 100 km from radar towards E and S	Less than 10 dBz	-------	
		042212-042352	nil	nil	nil	------	-----
		050002-050302	nil	nil	nil	----	----

Mohanbari	05-04-17	040312-040452	Cell type- Isolated Avg. ht.- 6.0 Km MAX_Z:- 29.5 dbZ	Distance- 190 Km Direction- SW Movement- ENEly	Weak cells and moved slowly towards ENEly and dissipated.	N/A	N/A
Lucknow	05-04-17	042012-042042	Single cell with average height of 8.5 km with maximum reflectivity of 38 dBZ	SE(30KM) moving in E'ly direction at speed of 43 km/hr	Multiple cell started forming at 2052 UTC,one NE(10km)with average height 7km and second SE(20km) with average height 8km and remained stable upto 2122 UTC.	NIL	NIL
		042152-042302	Multiple cells with average height of 8km with maximum reflectivity 38dBZ	W(50KM)moving towards the station at speed of 22 km/hr	Multiple cell started forming at 2142 UTC at W(50km) and weakend at 2302 UTC at W(20KM) from radar	NIL	NIL
		042320-04 0110	Multiple cell with Maximum height of 10km with maximum reflectivity of 40dBZ	NW(100-250KM) moving in NNE'ly towards the station at speed of 22km/hr	Multiple Cell started forming at 2222 UTC in NW(250KM) from radar and became stronger at 2332 UTC in the NW(150km) and at 2342 UTC in NW(230km) with maximum height of 10.3km with maximum reflectivity of 40dBZ. The cell died out at 0110 UTC at NW(100KM) from Radar.	Thunderstorm reported by Bareily station from 0400-0500hrs,Moradabad station from 0530-0615 hrs,Kheri station from 0630-0640hrs,lucknow station from 0520-0540 hrs.	NIL
Paradeep	05-04-17	0300-1900 UTC	Convective regions with average height of 6 km having maximum reflectivity of 25 dBZ with small areas showing reflectivity values in the range of 30- 40 dBZ .	Convective regions mainly concentrated in the sea areas to the south of the RADAR(150-240 degrees) at a distance of 125- 250kms from the RADAR. No appreciable movement noticed.	NIL	NIL	NIL

		1900- 0300 UTC	Isolated cells with average height of 7 km having reflectivity values in the range of 30-40 dBZ observed. Another single cell development seen after the dissipation of the above cell in the sea region.	Position: Lat:21.59E Long:87.40E Range:167 km from RADAR Movement: NWly	NIL	TS	Mayurbhanj and Baleshwar
Patna	05-04-17	040300-050300	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**
Patiala	05-04-17	041200-041500 041500-041800 041800-042100 042100-040000 050000-050300	MUTIPLE 43.5 DBZ, 9 KM. MULTIPLE 48.0 DBZ, HT. 11- 15 KMS MULTIPLE 49.0 DBZ 9-14 KM MULTIPLE 49.5 DBZ 9-13 KM MULTIPLE 5DBZ 9-13 KM	NW SECTOR. Direction of movement :ESE SW SECTOR Direction of movement :E NE SECTOR Direction of movement :E SW&NE SECTORS Direction of movement :E SW&NE SECTORS Direction of movement :E	-------	RAIN RA/TS RA/TS RA/TS RA/TS	MOGA, PATIALA. FATEHABAD, JHAJAR, GURDASPUR. PALAMPUR,GURDASPUR,HOSHIRPUR. PALAMPUR,SHIMLA, BHUNTAR, NAHAN,PATIALA,AMBALA.

							YAMUNANAGAR,NAHAN,AMBALA,HOSHIARPUR,CHANDIGARH, PATIALA.
Kolkata	05-04-17	040312-040832	NIL	NIL	NO ECHO	NIL	NIL
		040842-041221	Isolated single cell with maximum height of 15.1 Km at 1011 UTC and maximum reflectivity of 67.0 dBz at 1001 UTC Isolated single cell with maximum height of 12.0 Km at 1041 UTC and maximum reflectivity of 48.5 dBz at 1041 UTC Isolated cells with maximum height of 8.1 Km at 1011 UTC and maximum reflectivity of 47.5 dBz at 1021 UTC	WSW (209 km) moving in E-ly direction at a speed of 37.0 kmph WSW(247.5Km) moving in SE-ly direction at a speed of 50.0 kmph WNW(166.7Km) moving in ESE-ly direction at a speed of 43.0 kmph	Cell started forming at 0842 UTC at WSW (209 Km) from radar. Matured. Converted to Multi cell system at 1031 Dissipated at 1221 UTC . Cell started forming at 0912 UTC at WSW (247.5 Km) from radar. Matured. Dissipated at 1111 UTC. Cell started forming at 0941 UTC at WNW(166.7Km) from radar. Not matured. Dissipated at 1121 UTC.	Thunderstorm Thunderstorm Thunderstorm	N/A N/A N/A
		041231-041930	NIL	NIL	NO ECHO	NIL	NIL
		041931 - 050021	Isolated single cell with maximum height of 11.4 Km at 2042 UTC and maximum reflectivity of 61.5 dBz at 2001 UTC Isolated single cell with maximum height of 11.4 Km at	WSW(101Km) moving in SE-ly direction at a speed of 65.0 kmph SW(132Km) moving in SE-ly	Mature single cell Mature single cell	Thunderstorm Thunderstorm	N/A N/A

			2042 UTC and maximum reflectivity of 53.5 dBz at 2042 UTC	direction at a speed of 68.0 kmph	Merged to form a weak cell at 2241 UTC and dissipated at 0021 UTC.		
		050021-050101	NIL	NIL	NO ECHO	NIL	NIL
		050101 –050221	Isolated single cell with maximum height of 12.2 Km and maximum reflectivity of 50.5 dBz at 0121 UTC	SSW(201Km) moving in SE-ly direction at a speed of 58.0 kmph	Mature single cell. Dissipated at 0221 UTC.	Thunderstorm	N/A
		050221 –050300	NIL	NIL	NO ECHO	NIL	NIL
Srinagar	05-04-17	040300-050300	Multiple cells developed at scattered places from different direction of DWR at different time interval. 1. Single cell formed at SW of DWR site at 950 UTC with average cloud height of 9km and maximum reflectivity of 50 DBZ and moved towards south of DWR site. 2. Single cell formed at NW of DWR site at 950 UTC with average cloud height of 9km and maximum reflectivity of 50 DBZ and moved towards SE of DWR site. 3. Single cell formed at S of DWR site at 1110 UTC with average cloud height of 9km and maximum reflectivity of 50 DBZ and moved towards SE of DWR site. 4. Single cell formed at SW of DWR site at 1210 UTC with average cloud height of 9km and maximum reflectivity of 50 DBZ and moved towards NE of DWR site. 5. Single cell formed at	Developed at different directions of DWR site Srinagar and each of these cells dissipiated with in 20-25 minutes.	Thunderstorm observed/reported at Srinagar, Kupwara, Gulmarg, Kupwara, Phalgam , Qazigund and Kokernag dist.	Thunderstorm accompained with rain and hail is reported from Gulmarg.	light to moderate rain in Srinagar, Anantnag, Kupwara, Baramulla ,, Kulgam, Pahalagm, Gulmarg and Qazigund dist.

			W of DWR site at 1740 UTC with average cloud height of 9km and maximum reflectivity of 50 DBZ and moved towards East of DWR site. 6. Single cell formed at W of DWR site at 02 UTC of 5th April with average cloud height of 9km and maximum reflectivity of 45 DBZ and moved towards east of DWR site.				
Agartala	05-04-17	040300-041100	Multiple Cells with Maximum Height **13 km** and maximum reflectivity **43 dBZ** (at 0330 UTC over Northern parts of Tripura)	ENE (100 KM) from DWR Agartala at 0150 UTC of 04.04.17 moving ESE-wards at around 35 kmph	Cell dissipated at 1100 UTC of 04.04.17 over Southern parts of Bangladesh	TS with rain	Unakoti District of Tripura
		040420-041100	Multiple Cells with Maximum Height of **15km** and maximum reflectivity **46 dBZ** (at 0710 UTC over Bangladesh)	SSW (70 KM) from DWR Agartala moving SE-wards at around 45 kmph	It merged with the above system at 0730 UTC and later dissipated at 1100 UTC of 04.04.17 over Southern parts of Bangladesh	TS with rain	South Tripura Distrct
		040930 UTC – 041210 UTC	Single Cell with Maximum Height **14 Km** and maximum reflectivity **45 dBZ** (at 1050 UTC over Bangladesh)	W (70 KM) from DWR Agartala moving SE-wards at around 25 kmph	Cell dissipated at 1210 UTC of 04.04.17 over Gomati and Sipahijala Districts of Tripura	N/A	N/A
		041230-041830	Multiple Cells arranged into a line structure at 1330 UTC with Maximum Height of **15 km** and maximum reflectivity **349 dBZ** (at 1500 UTC over Khowai district of Tripura)	NW (130 KM) from DWR Agartala moving SE-wards at5 55 kmph	Cell dissipated at 1830 UTC of 04.04.17 over Mizoram	TS with rain	West, Khowai Districts of Tripura
		041530-042350	Multiple Cells with Maximum Height of **15km** and maximum reflectivity **54 dBZ** (at 1920 UTC 30 KM North of DWR Agartala over Bangladesh)	NNW (120 KM) from DWR Agartala moving SE-wards at 35 kmph	Cell dissipated at 2350 UTC of 04.04.17 over Mizoram	TS with rain	Khowai District of Tripura
		042010-050140	Multiple Cells with Maximum Height of **14km** and	N (100 KM) from DWR Agartala moving SE-	Cell dissipated at 0140 UTC of	N/A	N/A

			maximum reflectivity **50 dBZ** (at 2350 UTC over Northern parts of Tripura)	wards at 45 kmph	05.04.17 over Mizoram		
		042220-050300	Multiple Cells with Maximum Height of **15km** and maximum reflectivity **50 dBZ** (at 0220 UTC over Northern parts of Tripura)	NNW (150 KM) from DWR Agartala moving SE-wards at 40 kmph	At 0300 UTC of 05.04.17 cells still persist over North, Unakoti and Dhalai districts of Tripura withy reflectivity >40dBZ	TS with rain	North and Unakoti Districts of Tripura