



India Meteorological Department
FDP STORM Bulletin No. 29 (03-04-2017)

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

SYNOPTIC FEATURES:

The Western Disturbance as an upper air cyclonic circulation with a trough aloft in mid & upper tropospheric westerlies roughly along Longitude 80.0°E and north of Latitude 32.0°N, now seen with its axis at 3.1 Km above mean sea level roughly along Longitude 85.0°E and north of Latitude 32.0°N.

Another fresh Western Disturbance as a trough in mid tropospheric westerlies with its axis at 3.1 Km above mean sea level runs roughly along Longitude 65.0°E and north of Latitude 32.0°N.

The trough from west Vidarbha to Coastal Karnataka across Telangana & North Interior Karnataka, now runs from south Chhattisgarh to south Madhya Maharashtra across Vidarbha and extends upto 0.9 km above mean sea level.

An upper air cyclonic circulation lies over south Tamilnadu and adjoining Comorin area between 1.5 Km & 2.1 Km above mean sea level.

A trough runs from east Bihar to north coastal Odisha across Jharkhand between 1.5 Km & 3.6 Km above mean sea level.

An east-west trough at mean sea level runs from East Uttar Pradesh to Manipur across Bihar, northern parts of West Bengal and Bangladesh.

The upper air cyclonic circulation over southwest Rajasthan & neighbourhood between 1.5 km & 2.1 km above mean sea level has become less marked.

The upper air cyclonic circulation over north Bangladesh & neighbourhood extending upto 0.9 km above mean sea level has become less marked.

SATELLITE OBSERVATIONS during past 24hrs and current observation:

Clouds (based on 0900UTC imagery of INSAT 3D):

Convective Activity:

Cell No.	Date/Time (UTC)	Location & Area	CTBT (minus Deg. C)	Movement
1	03/0800 0900	west Assam, Meghalaya, north Tripura, north Mizoram and Manipur do	60 55	Developing

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

Scattered low/medium clouds with embedded moderate to intense convection were seen over Sikkim and north eastern states.

Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over northeast north Uttarakhand, north Gangetic West Bengal, Jharkhand, South Interior Karnataka, Rayalaseema, Kerala and Nicobar Islands. Scattered low/medium clouds were seen over rest Uttarakhand, Uttar Pradesh, east Rajasthan, east Madhya Pradesh, Vidarbha, rest parts of east India, Telangana, and Tamilnadu.

Arabian Sea:

Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over Comorin Area.

Bay of Bengal & Andaman Sea:

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

Convection:

Light to moderate convection was observed over J&K and North East parts of India.

OLR:- Up to 200 wm^{-2} was over North West J&K North East states except Mizoram. Up to 230 wm^{-2} was over Rest J&K North Himachal Pradesh, North Uttarakhand, Coastal Odisha South Kerala.

Jet Stream:

No Jet stream and no trough observed over India.

Dynamic Features:

A positive Vorticity field is seen over Uttarakhand, Uttar Pradesh, Bihar, West Bengal, Vidarbha and South India.

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 Andhra Pradesh and Negative shear tendency observed over rest India.

Positive Low Level Convergence observed over Central India Coastal Andhra Pradesh and Odisha.

Precipitation:

IMR: Rainfall upto 50mm was observed over North-East states and South Kerala. Rainfall upto 20mm was observed over extreme North J&K.

Rainfall upto 10mm was observed over rest J&K, North Himachal Pradesh, South Punjab, North Haryana, North Uttarakhand, Odisha.

HEM: Rainfall upto 70mm was observed over North-East states and South Kerala.

Rainfall upto 14mm was observed over West J&K and Sikkim.

Rainfall upto 7mm was observed over South Punjab, Odisha and South West Bengal.

RADAR and RAPID observation:

Strong multiple echoes (dbZ >50, height >10km) were seen in DWR Kolkata at 1651hrs IST. Isolated convective cells were also observed in DWR Hyderabad, Agartala, Patna, at Significant convection was Paradeep and Patiala at around 1700hrs IST.

RAPID RGB Imagery of 1600hrs IST also indicates convective clouds over northeastern states, north Kerala adjoining Karnataka, Telangana, Andhra Pradesh and West Bengal.

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 India for next three days.

2. NWP MODEL GUIDANCE:

NCMRWF (NCUM Forecasts 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.

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.

Weak anticyclonic circulation over Arabian Sea. WD over Pakistan region from Day-2 to Day-4

500hPa anticyclone prominent over west coast in Day-2 moves eastwards 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-2. Over Iran and Afghanistan in Day-1 and over Iran and Pakistan in Day-2. In Day-2 at all times over Rajasthan and adjoining Pakistan region due to WD

3. Convergence at 850 hPa:

At 12UTC on all: Strong low level convergence in land all along the west coast and isolated regions over Odisha-Jharkhand. Day-3 and Day4: over parts west UP and Uttarakhand.

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

12UTC: over isolated locations mainly NE India and parts of northern UP in Day-0 to 1. Over NW India and adjoining Pakistan in Day-2-4 due to WD.

00UTC: Over NW India and adjoining Pakistan in Day-2-4 due to WD. over peninsula SW to NE along the region of low level confluence on all days.

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

Day-0-2at 12UTC: Isolated location over coastal Maharashtra, Goa, Kerala over Odisha, northern WB and Bihar, and parts of NE over Meghalaya, Tripura and Arunachal. Over J&K from Day2 onwards. Over Kerala, coast on all days upto day-3.

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

Day-0 at 12UTC: Isolated location over coastal Maharashtra, Goa, Kerala over Odisha, Bihar and adjoining WB; over parts of NE over Meghalaya, Tripura and Arunachal.

Day-1-3: Over J&K ; Over Kerala on all days

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

Day 0-1 mainly over Telangana, AP Odisha and WB. In Day1-2 over parts of NW India. Also over west coast over Karnataka and Kerala. In Day-2 mainly over Odisha and WB and Bangladesh. In N India mainly over J&K parts of west UP, Himachal Punjab and Haryana. In Day-3 and Day-4 along the foot hills of Himachal and Uttarakhand.

Day 3-4: Parts of J & K, Punjab region along with parts of Kerala.

8. Rainfall and thunder storm activity:

Day-0-3: (>4cm/day) Over Most part of NE India

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

1. Weather Systems:

00 UTC analysis shows CYCIR over UP, Bihar, GWB and adjoining areas. It also shows a trough along Maharashtra extending up to interior parts of Karnataka. The forecast shows extension of east west trough up to Odisha and is persistent till the 3rd day. Incursion of WD into the country is observed from 48 hours.

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.

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

Analysis shows the low level positive vorticity mainly along foothill of Himalayas, over east UP, GWB along with few pockets in Maharashtra, Karnataka and NE states. Forecast shows vorticity zones mainly along UP, Bihar and adjoining areas along with few pockets in Karnataka 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): Significant zones are noticed over GWB, Odisha, Jharkhand, Bihar, and eastern coast adjoining Bangladesh during next 4/5 days and coastal region of Gujarat and adjoining areas also shows significant value during day 3.

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 Andhra coast, GWB, Odisha, Bangladesh and adjoining regions and very high value of SI observed over WB, Bihar, and east UP, Bangladesh and NE region for day 1 to day 4. Some parts of western Gujarat states and Karnataka coast along with few pockets in J & K also indicated the value > 400 K for next 4 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 from day 2 to day 3.

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 day 1 to day 3.

5. Rainfall and thunderstorm activity:

10-40 mm rainfall shows over isolated place of NE States, the rainfall over NE states likely to continue for the next 2 days and rainfall shows over J & K, Punjab and H.P from day 3 to day 4.

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 in the north eastern states and is seen persisting over few pockets till day 2. Higher threshold values are seen over J&K region in evening hours at day1 and day2.

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) over NE states is expected to persist till next 3 days and rainfall is predicted over J & K from day 2.

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:

Day 1 & Day 2:

Presently, an east-west trough at mean sea level runs from East Uttar Pradesh to Manipur across Bihar, northern parts of West Bengal and Bangladesh which may result heavy to very heavy rainfall over Assam, Meghalaya, Arunachal Pradesh, Nagaland, Manipur, Mizoram and Tripura on Day-1. The rainfall activity will continue to Day-2 also over same areas. Another trough runs from east Bihar to north coastal Odisha across Jharkhand between 1.5 Km & 3.6 Km above mean sea level due to that thundersquall with hail may occur over Coastal Gangetic West Bengal, Coastal Orissa and North Coastal Andhra Pradesh on Day-1.

Another fresh Western Disturbance as a trough in mid tropospheric westerlies with its axis at 3.1 Km above mean sea level runs roughly along Longitude 65.0°E and north of Latitude 32.0°N. Due to this system, Jammu and Kashmir, Himachal Pradesh, Punjab, Haryana and Uttarakhand will experience thundersquall with hail on Day-2. North Rajasthan may also experience Dust storm probability on Day-2.

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:

Assam, Meghalaya,
Arunachal Pradesh, Nagaland, Manipur, Mizoram and Tripura
Sub Himalayan west Bengal and Sikkim, Coastal Gangetic West Bengal, Coastal Orissa and North Coastal Andhra Pradesh

48 hour Advisory for IOP:

Assam, Meghalaya,
Nagaland, Manipur, Mizoram and Tripura,
Jammu and Kashmir, Himachal Pradesh, Punjab, Haryana and Uttarakhand

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 UTC of today)

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

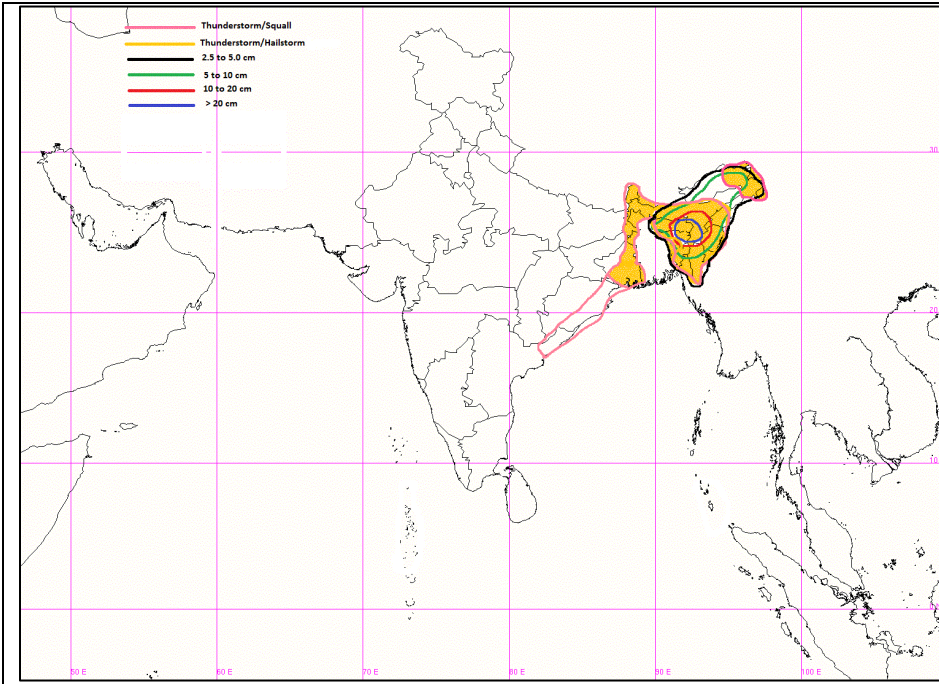
HEM: http://satellite.imd.gov.in/img/3Ddaily_he.jpg

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

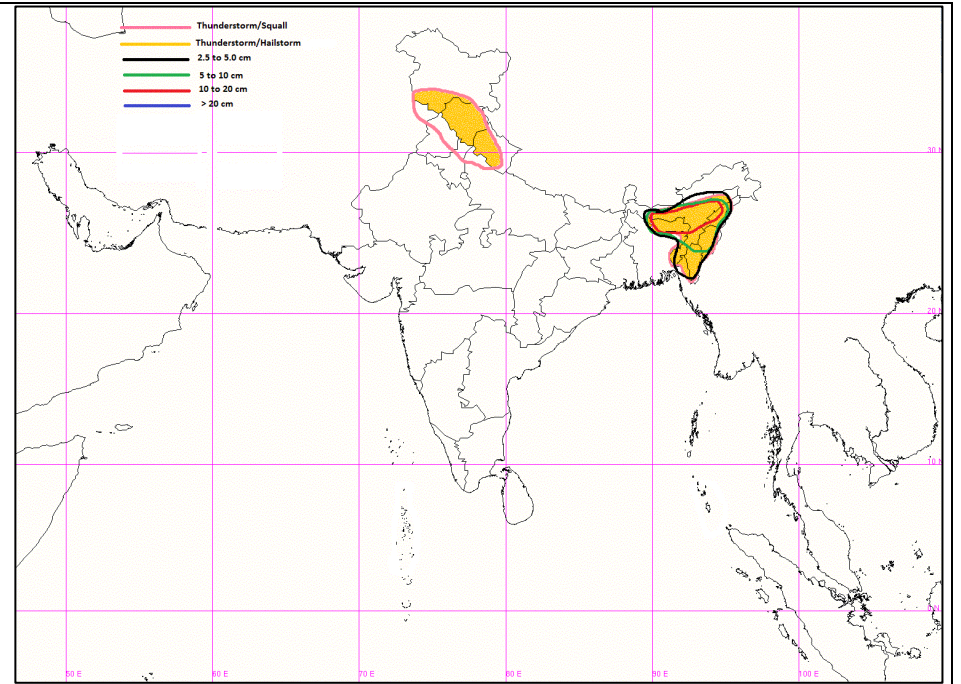
http://ddgmui.imd.gov.in/dwr_img/

Satellite sounder based T-Phi gram

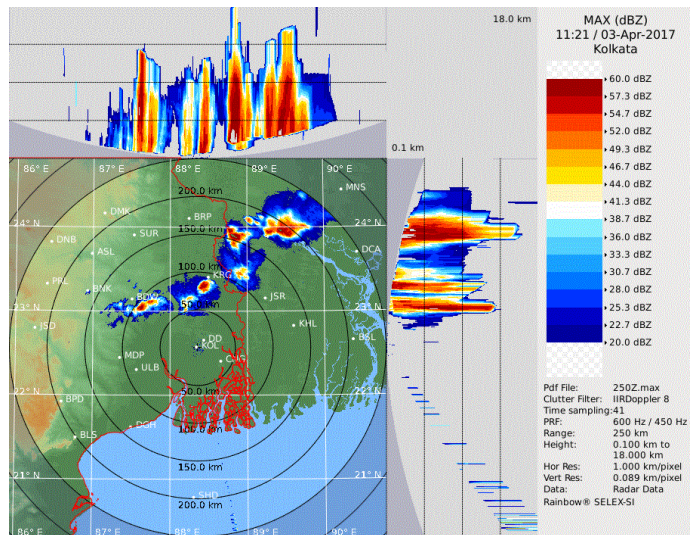
http://satellite.imd.gov.in/map_skm2.html



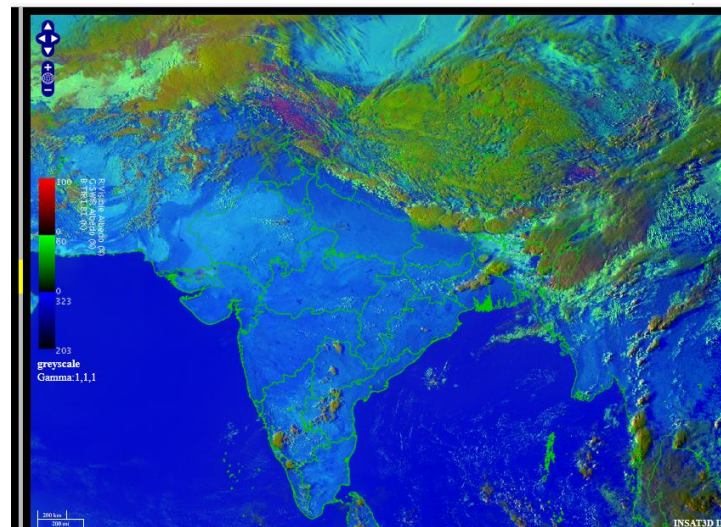
IOP Advisory for 24 hours



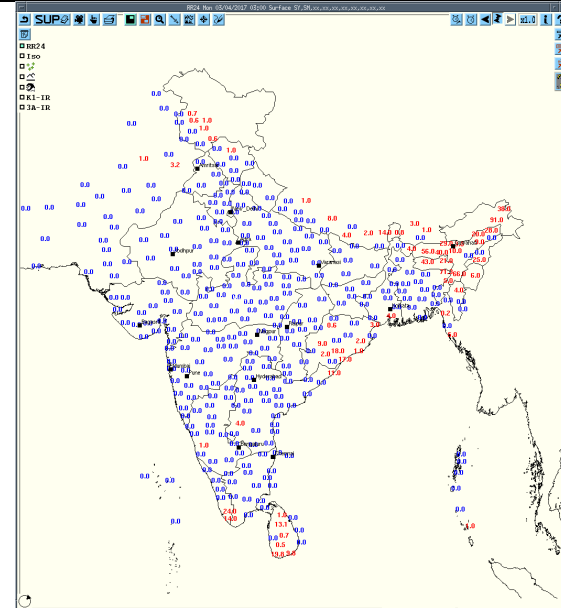
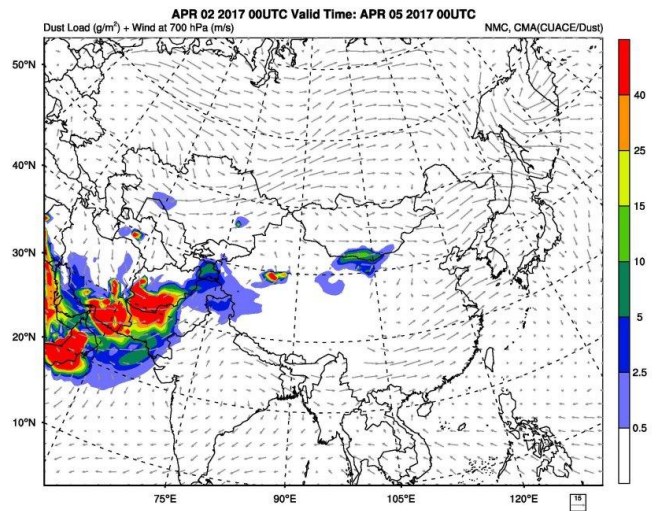
IOP Advisory for 48 hours



DWR Kolkata Max (dBZ) Image at 1651 hrs IST

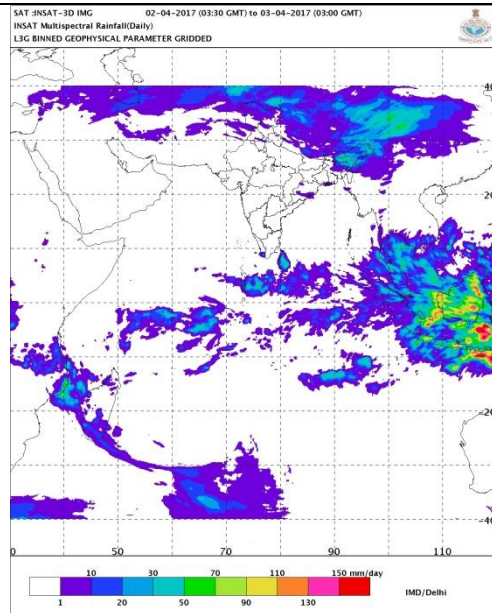


RAPID RGB Image of INSAT 3D at 1600 hrs IST

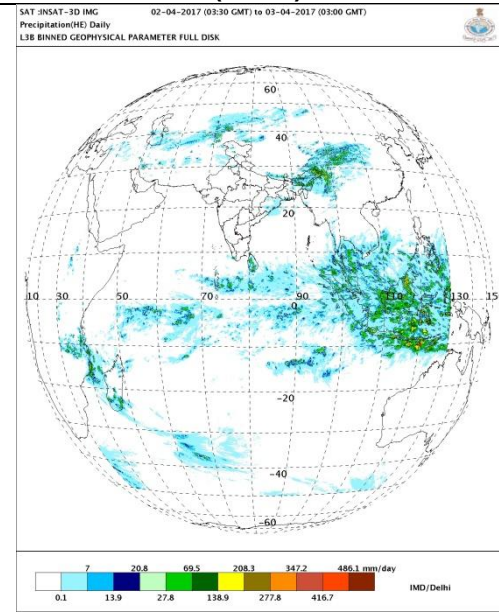


Forecast Dust Concentration for 00 UTC of 05 April

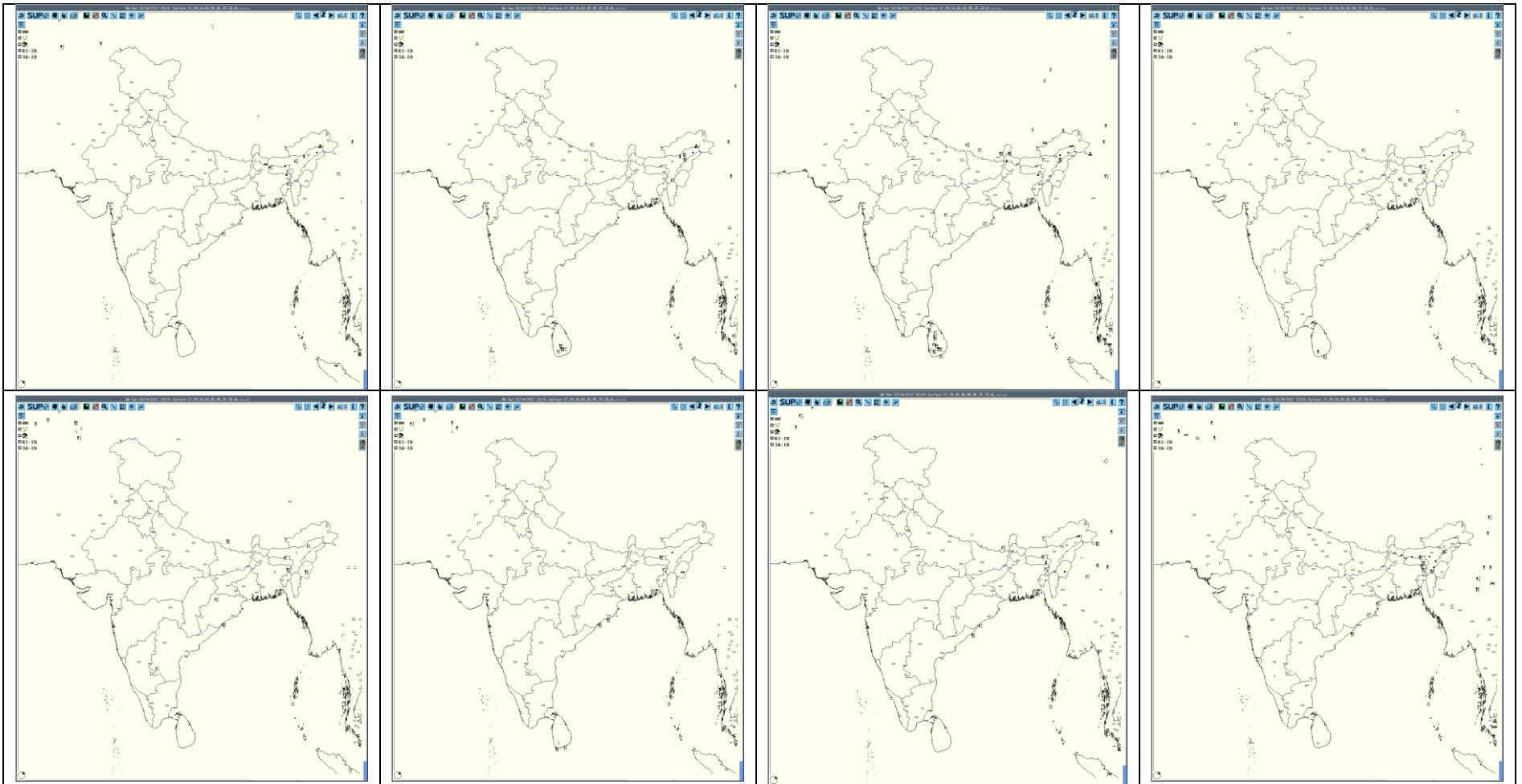
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today



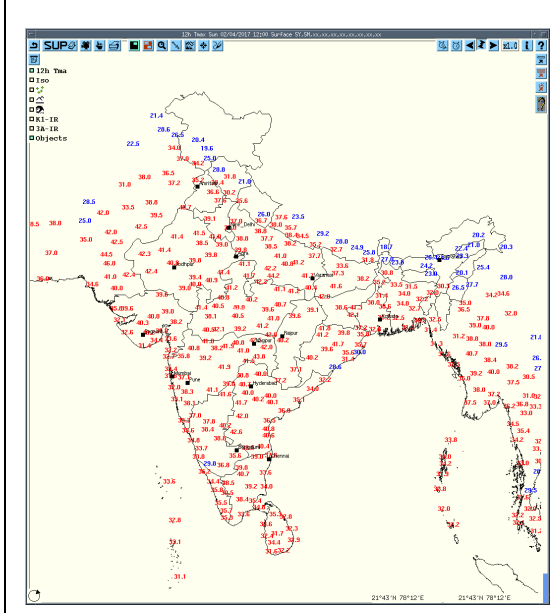
IMR Rainfall



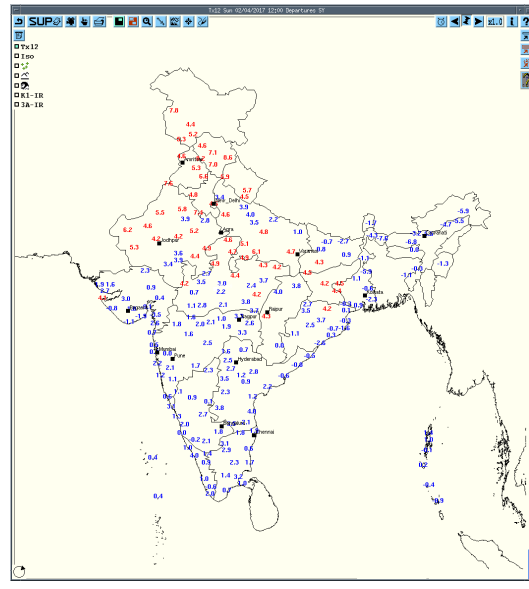
HEM Rainfall



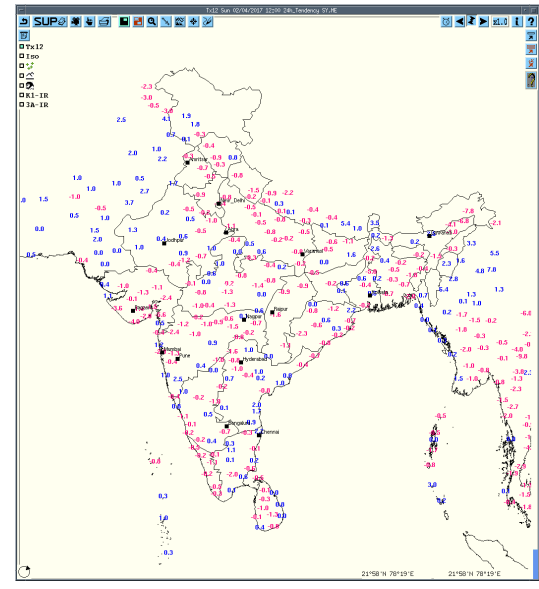
3hourly Past weather at 06, 09, 12, 15, 18, 21UTC of yesterday and 00 & 03 hrs UTC of today



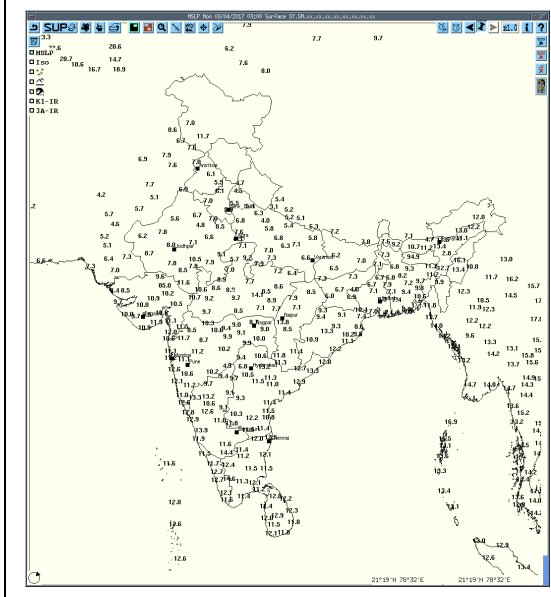
Tmax



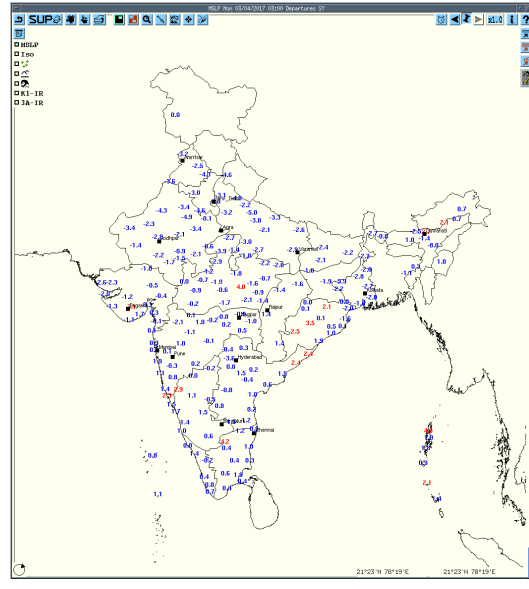
Departure Tmax



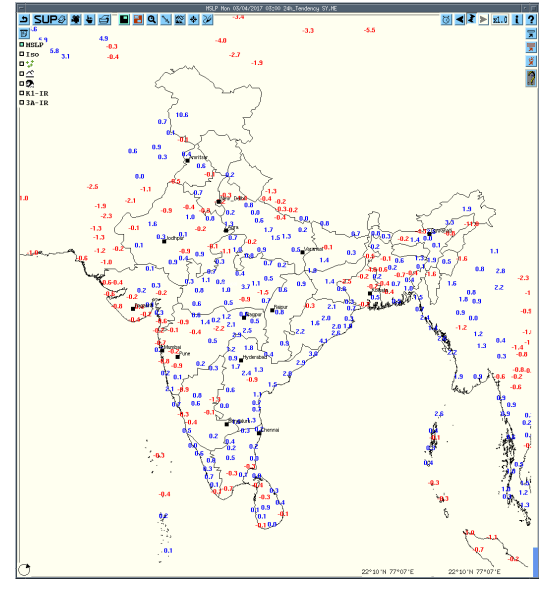
Tendency Tmax



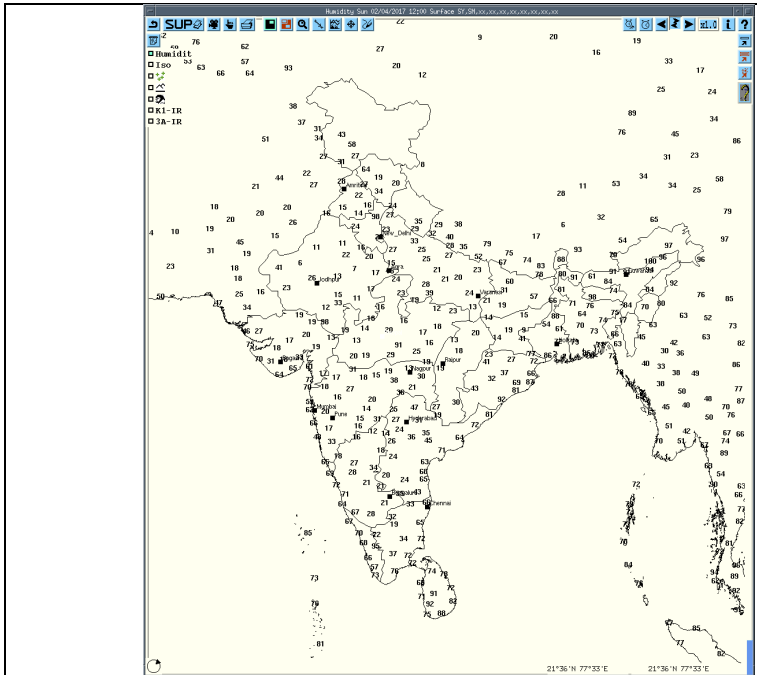
MSLP



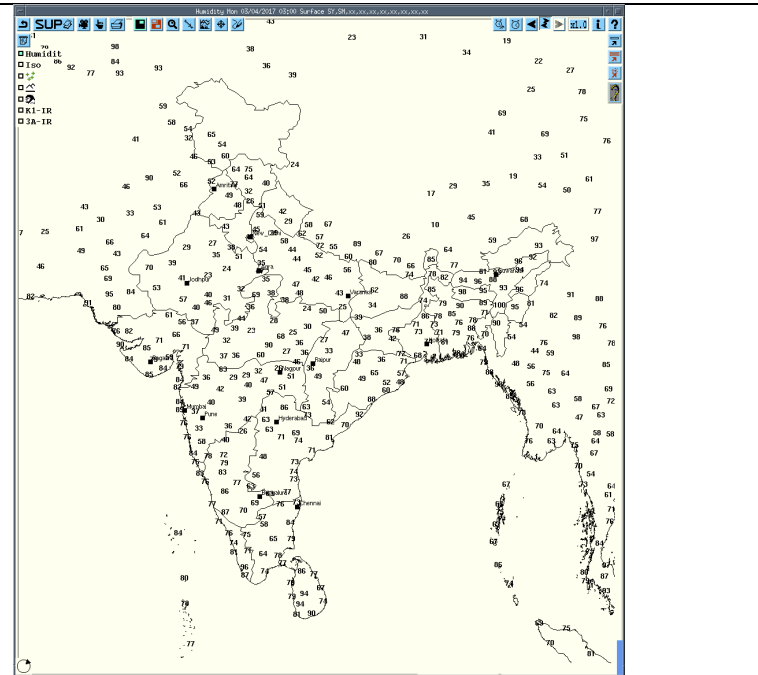
Departure MSLP



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
02-04-2017	0600UTC	Tezpur	Northeast India	Assam	Thunderstorm
		Shillong	Northeast India	Meghalaya	Thunderstorm
		Gopalpur	East India	Odisha	Thunderstorm
02-04-2017	0900UTC	North Lakhimpur	Northeast India	Assam	Thunderstorm
		Jorhat	Northeast India	Assam	Thunderstorm
02-04-2017	1200UTC	Gangtok	East India	Sikkim	Thunderstorm
		Majbat	Northeast India	Assam	Thunderstorm
		Golaghat	Northeast India	Assam	Thunderstorm
		Raipur	Central India	Chhattisgarh	Thunderstorm
		Thiruvananthapuram	South India	Kerala	Thunderstorm
02-04-2017	1500UTC	Guwahati	Northeast India	Assam	Thunderstorm
		Shillong	East India	Meghalaya	Thunderstorm
		Thiruvananthapuram	South India	Kerala	Thunderstorm
02-04-2017	1800UTC	North Lakhimpur	Northeast India	Assam	Thunderstorm
		Guwahati	Northeast India	Assam	Thunderstorm
		Imphal	Northeast India	Manipur	Thunderstorm
		Jharsuguda	East India	Odisha	Thunderstorm
		Gopalpur	East India	Odisha	Thunderstorm
02-04-2017	2100UTC	Guwahati	Northeast India	Assam	Thunderstorm
		Puri	East India	Odisha	Thunderstorm
		Gopalpur	East India	Odisha	Thunderstorm
03-04-2017	0000UTC	Guwahati	Northeast India	Assam	Thunderstorm
		Gopalpur	East India	Odisha	Thunderstorm
		Kalingapatnam	South India	Andhra Pradesh	Thunderstorm
03-04-2017	0300UTC	Guwahati	Northeast India	Assam	Thunderstorm
		Golaghat	Northeast India	Assam	Thunderstorm
		Silchar	Northeast India	Assam	Thunderstorm
		Cherrapunjee	Northeast India	Meghalaya	Thunderstorm
		Kalingapatnam	South India	Andhra Pradesh	Thunderstorm

Realised TS/HS/SQ during past 24 hours ending at 0300UTC of today(received from RMCs/MCs)

Name of Station Reporting	Region	STATE	Weather Event (TS/Hail/Squall)	Date	Time of Commencement (IST)	Time of end (IST)
Gangtok	East India	Sikkim	Thunderstorm	02-04-17	1650	1910
Tadong	East India	Sikkim	Thunderstorm	02-04-17	1640	1735
Coochbehar	East India	West Bengal (SHWB)	Thunderstorm	02-04-17	0850	0930
Haldia	East India	West Bengal(GWB)	Thunderstorm	03-04-17	0809	0829
Bhubaneswar	East India	Odisha	Thunderstorm	03-04-17	0235	0250
Balasore	East India	Odisha	Thunderstorm	03-04-17	0540	0655
Jharsuguda	East India	Odisha	Thunderstorm	02-04-17	2100	2235
			Lightening	02-04-17	2045	2310
Paradeep	East India	Odisha	Thunderstorm	03-04-17	0135	0210
			Squall from SW direction with max speed 60kmph	03-04-17	0205	0210
			Lightening	03-04-17	0210	0225
Puri	East India	Odisha	Thunderstorm	03-04-17	0220	0300
			Thunderstorm	03-04-17	0615	0705
Gopalpur	East India	Odisha	Thunderstorm	02/03-04-17	022305	030135
	East India	Odisha	Thunderstorm	03-04-17	0340	0455
Sambalpur	East India	Odisha	Thunderstorm	02-04-17	2215	2345
			Lightening	02-03-17	2200	2400
Hirakud	East India	Odisha	Thunderstorm	02-04-17	2200	2300
Keonjhar	East India	Odisha	Thunderstorm	03-04-17	0420	0550
Thiruvananthapuram Airport	South India	Kerala	Thunderstorm	02-04-17	1850	2115

Thiruvananthapuram City	South India	Kerala	Thunderstorm	02-04-17	1710	1740
			Thunderstorm	02-04-17	1845	1905
			Thunderstorm	02-04-17	1945	2035
Vishakhapatnam	South India	Andhra Pradesh	Thunderstorm	03-04-17	0500	0600
Shimla	Northwest India	Himachal Pradesh	TS	02-03-17	1551 1700	1605 1720
Raipur	Central India	Chhattisgarh	Thunderstorm	02-04-17	1625	1900
Mana	Central India	Chhattisgarh	Thunderstorm	02-04-17	1645	1815
Barapani	Northeast India	Meghalaya	Thunderstorm	02-04-17	1050	1110
Cherrapunjee	Northeast India	Meghalaya	Thunderstorm	02-04-17	1500	1600
			Thunderstorm	02/03-04-17	021845	030100
			Thunderstorm	03-04-17	0530	0830
Dhubri	Northeast India	Assam	Thunderstorm	02/03-04-17	02/2150	03/0330
Kailashahar	Northeast India	Tripura	TSRA	02-03-17	1100	1215
Dibrugarh	Northeast India	Assam	Thunderstorm	02-04-17	0830	0840
Guwahati	Northeast India	Assam	Thunderstorm	02-04-17	1625	1705
			Thunderstorm	02-03-04-17	1751	03/0830
			Hailstorm with diameter0.5cm	02-04-17	2010	2015
Imphal	Northeast India	Manipur	Thunderstorm	02-04-17	1555	1620
			Thunderstorm	02-04-17	1850	1910
Jorhat	Northeast India	Assam	Thunderstorm	02-04-17	1200	1800
			Thunderstorm	02-03-04-17	022015	030015

			Thunderstorm	03-04-17	0730	0815
N/Lakhimpur	Northeast India	Assam	Thunderstorm	02-04-17	1310	1435
			Thunderstorm	03-04-17	2040	2400
Shillong	Northeast India	Meghalaya	Thunderstorm	02-04-17	1744	1815
			Thunderstorm	03-04-17	0500	0830
Silchar	Northeast India	Assam	Thunderstorm	02-04-17	1340	1520
			Thunderstorm	02-04-17	1800	1940
			Thunderstorm	02/03-04-17	022050	030410
			Thunderstorm	03-04-17	0740	0830
Tezpur	Northeast India	Assam	Thunderstorm	02-04-17	02/1040,02/2040	02/1055,02/2130
			Thunderstorm	02-04-17	2040	2130

Past 24 hours DWR Report:










Radar Station Name	Date	Time Interval of Observation (UTC)	Organisation of cells (Isolated single cells /multiple cells/ convective regions /squall lines) with height of 20 dBZ echo top and maximum reflectivity	Formation w.r.t. radar station and Direction of movement	Remarks	Associated Severe Weather if any	Districts affected
Kolkata	03/04/17	020301-021211	NIL	NIL	NO ECHO	NIL	NIL
		021211-021511	Isolated single cell with maximum height of 15.6 Km at 1241 UTC and maximum reflectivity of 61.0 dBz at 1241 UTC	NNE (230km) moving in ENE-ly direction at a speed of 37.0 kmph	Cell started forming at 1211 UTC at NNE (230 Km) from radar. Matured. Moved out of RADAR range at 1511 UTC	Thunderstorm/ Squall	
		021511 - 021941	NIL	NIL	NO ECHO	NIL	NIL
		021952 - 022211	Isolated cells with maximum height of 08.9 Km at 2102 UTC and maximum	W (210.7km) moving in E-ly at a speed of 46.8 kmph	Cell started forming at 1952 UTC at W (210.7 Km) from radar. Not Matured or organised.	Thunderstorm	N/A

			reflectivity of 50.5 dBz at 2032 UTC		Dissipated at 2211 UTC.		
		022122 - 030301	Initially a single cell but gradually developed in multi cell system with maximum height of 11.4 Km at 2331 UTC and maximum reflectivity of 65.0 dBz at 2331 UTC	WSW (139 km) moving in E-ly direction at a speed of 37.0 kmph	Cell started forming at 2122 UTC at WSW (139 Km) from radar. Matured. Multi cell system. Active till 0301 UTC at SSE (108 km) from Radar.	Thunderstorm/ Hailstorm /Squall	N/A
		022331- 030211	Isolated single cell but gradually developed in multi cell system with maximum height of 8.9 Km at 2351 UTC and maximum reflectivity of 56.0 dBz at 2351 UTC	SW (184 km) moving initially in E-ly then ESE-ly direction at a speed of 57.0 kmph	Cell started forming at 2331 UTC at SW (184 Km) from radar. Matured. Dissipated at 0211 UTC at SSW (139 km) from Radar.	Thunderstorm	N/A
		030151-030301	Isolated single cell with maximum height of 9.1 Km at 0201 UTC and maximum reflectivity of 51.5 dBz at 0222 UTC	E (63 km) moving in E-ly direction at a speed of 37.0 kmph	Cell started forming at 0151 UTC at E (63 Km) from radar. Matured. Active till 0301 UTC at E (112 km) from Radar	NIL	N/A
Patna	03/04/17	020300-030300	Nil	Nil	02/620-02/1725-DWR U/S	Nil	Nil
Nagpur	03/04/17	020302-030302* *021102-021112	Nil single	Nil Approx 250 km east	No Echoes 36 dBZ	Nil	Nil
Srinagar	03/04/17	021050-021200	Isolated cells with average height of 9 km with maximum reflectivity of 50 DBZ	Developed at SW direction of Srinagar around 1030Z and moved towards SE of Srinagar and cloud dissipated at 1200Z	Thunderstorm observed/reported at Phalgam and Srinagar	Nil	Very light to light rain in, Srinagar , Budgam and Anantnag districts
Agartala	03/04/17	020310-030300	Multiple Cells with Maximum Height 15 km and maximum reflectivity 54 dBZ (at 1450 UTC over Meghalaya and adjoining Assam)	NW (300 KM) from DWR Agartala moving ESE-wards at around 40 kmph	Cells continuously developed one after another over North Bangladesh and moves ESE wards through Meghalaya and South Assam, average height of 14 km and average intensity >45dBZ (and it still persists at 0300 UTC of 03.04.17)	TS with heavy Rain at Cherrapunjee & Silchar observatory, TS with light rain at Kailashahar observatory	East Khasi Hills of Meghalaya, Cachar District of Assam, Unokoti District of Tripura

		020500 UTC – 021300 UTC	Multiple Cells with Maximum Height of 15 km and maximum reflectivity 51 dBZ (at 1030 UTC over Mizoram)	NW (70 KM) from DWR Agartala moving ENE-wards at around 30 kmph	Cell dissipated at 1300 UTC of 02.04.17 over Myanmar	N/A	N/A
		021210 UTC – 021510 UTC	Multiple Cells with Maximum Height 14 Km and maximum reflectivity 45 dBZ (at 1250 UTC over Bangladesh)	WNW (230 KM) from DWR Agartala initially moving ESE-wards and later ENE-wards at around 30 kmph	Some parts of the cells dissipated over Bangladesh by 1510 UTC of 02.04.17 and some other parts merged with the first system	N/A	N/A
Paradeep	3/04/17	020300-020500	Convective regions with average height of 5 km having maximum reflectivity of 25 dBZ with small areas showing reflectivity values in the range of 30- 40 dBZ . Isolated cells with dBZ values between 25- 50 and cloud heights reaching 12 km.	Convective regions mainly concentrated in the sea areas to the south of the RADAR(150-240 degrees) at a distance of 80-200kms from the RADAR.. Increase Isolated cells located WSW from RADAR at 120 kms approx. Movement is NWly.	NIL	TS	Ganjam and Puri
		020500- 020900	Isolated cells with average height of 4 km having maximum reflectivity of 20 dBZ with very small areas showing reflectivity values in the range of 30- 40 dBZ and average heights of 7 km observed	Mainly concentrated in the sea areas to the south of the RADAR(150-240 degrees) at a distance of 80-200kms from the RADAR. Position is almost stationary.	NIL	NIL	NIL
		02900-02 1400	Single isolated cell developing in Ganjam district approx. 90km from the coastline . Maximum dBZ associated is >60 with cloud height crossing 14kms. Multi cell development in later	Position: Lat. -19.56 Long.- 84.62 Range: 225 km Movement: NWly	NIL	TS	Ganjam

			stages with av. cloud heights 7-10 kms and associated dBZ 20-40.				
		021600-030300	Multi cell development with associated dBZ values 20-45 and cloud heights reaching upto 14 km. Convective regions observed in later images.	Movement from the WSW direction . Movement is Wly.	NIL	Squall having windspeed 60kmph from SWly direction.	Ganjam, Puri and Khorda

∞	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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