



India Meteorological Department
FDP STORM Bulletin No.57(01-05-2017)

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

SYNOPTIC FEATURES:

The trough at mean sea level from west Rajasthan to southern parts of Gangetic West Bengal, now runs from north Rajasthan to Gangetic West Bengal across Uttar Pradesh, Madhya Pradesh and Jharkhand.

An upper air cyclonic circulation lies over southwest Rajasthan & neighbourhood and extends upto 2.1 Km above mean sea level.

The upper air cyclonic circulation over west Uttar Pradesh & neighbourhood, now lies over northwest Uttar Pradesh & neighbourhood between 1.5 & 3.1 Km above mean sea level.

An upper air cyclonic circulation lies over East Uttar Pradesh & neighbourhood and extends upto 1.5 Km above mean sea level.

A trough runs from East Uttar Pradesh to West Vidarbha and extends upto 1.5 Km above mean sea level.

A trough in mid tropospheric westerlies runs from East Madhya Pradesh to Maldiva area across Telangana, South Interior Karnataka and Kerala.

A wind discontinuity runs from north Telangana to Maldiva area across Rayalaseema, South Interior Karnataka & Kerala and extends upto 0.9 Km above mean sea level.

The upper air cyclonic circulation over east Assam & neighbourhood extending upto 0.9 km above mean sea level persists.

A fresh feeble Western Disturbance likely to affect Western Himalayan region from tomorrow onwards.

The Western Disturbance as an upper air cyclonic circulation over northeastern parts of Jammu & Kashmir and neighbourhood extending upto 3.6 Km above mean sea level with a trough aloft at 5.8 km above mean sea level roughly along Long. 78.0°E and north of Lat. 30.0°N has moved away northeastwards.

The trough in low level easterlies from Maldiva area to coastal Karnataka at 1.5 Km above mean sea level has become less marked.

The trough from east Bihar to Telangana across Jharkhand and Chhattisgarh extending upto 1.5 km above mean sea level with two embedded upper air cyclonic circulations one over Jharkhand and another over Coastal Andhra Pradesh both extending upto 0.9 km above mean sea level has become less marked.

SATELLITE OBSERVATIONS during past 24hrs and current observation:

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

Convective Activity and cloud description:

Cell No	Date/Time (UTC)	Area/Location	CTBT (-°C)	Movement	Remarks If any
1	01/0900	NE Bihar adjoining Jharkhand	57		Developing
2	01/0900	N C Jharkhand adjoining Bihar	69		Developing
3	01/0900	South Coastal Odisha	57		Developing
4	01/0900	N Coastal Andhra Pradesh	67		Developing
5	01/0900	C Kerala ADJ adjoining Karnataka	70		Developing

Scattered low/medium clouds with embedded isolate weak to moderate convection seen over South Chhattisgarh, North Odisha, South Gangetic West Bengal, Sikkim, East Madhya Pradesh, Northwest Tamilnadu and Bay Islands.

Scattered low/medium clouds seen over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, East Uttar Pradesh, Arunachal Pradesh, North Chhattisgarh, South Rajasthan, rest Madhya Pradesh, Maharashtra, Telangana, Rayalaseema, Karnataka and South Kerala.

Scattered low/medium clouds with embedded moderate to intense convection seen over South Bihar adjoining Jharkhand, North Central Jharkhand adjoining Bihar, South coastal Odisha, Sub Himalayan West Bengal, Central North Kerala adjoining Karnataka and coastal Andhra Pradesh.

Arabian Sea:

No Significant clouds over the region.

Bay of Bengal & Andaman Sea:

Scattered low/medium clouds with embedded weak to moderate convection seen over south Andaman Sea.

Past Weather:

Convection: Moderate to Intense convection was observed over J&K Himachal Pradesh Uttar Pradesh South Haryana Delhi Madhya Pradesh Maharashtra Bihar Jharkhand West Bengal North East States Telangana Kerala Tamilnadu.

OLR: - Upto 230 w m^{-2} was observed over J&K Himachal Pradesh Uttarakhand Sikkim Arunachal Pradesh Vidarbha West Bengal Telangana.

Upto 250 w m^{-2} was observed over Delhi Uttar Pradesh Madhya Pradesh Chhattisgarh Bihar Jharkhand rest North-East States Coastal Andhra Pradesh South Kerala & West Tamilnadu.

Westerly Trough & Jet-Stream: No Trough & Jet stream observed over India.

Dynamic Features:

Positive shear tendency is observed over India.

Medium to high wind shear is observed over India.

A positive Vorticity field is observed over East Madhya Pradesh Kerala Karnataka Chhattisgarh & Odisha.

Positive Low Level Convergence is observed over Rajasthan Maharashtra East Madhya Pradesh and Negative low level convergence is observed over rest parts of India.

Precipitation:

IMR: Rainfall upto 20 mm was observed over North-East Jharkhand North Gangetic West Bengal Meghalaya.

Rainfall upto 10 mm was observed over J&K Himachal Pradesh Uttarakhand West Uttar Pradesh North-West Madhya Pradesh Bihar Sub Himalayan West Bengal Sikkim Arunachal Pradesh Assam Nagaland South Kerala West Tamilnadu.

HEM: Rainfall upto 70 mm was observed over South-West J&K, South North Uttarakhand Meghalaya.

Rainfall upto 07 mm was observed over South Haryana Delhi Himachal Pradesh Uttar Pradesh Bihar Jharkhand West Bengal Northeast States Rayalaseema North Madhya Maharashtra South Kerala & West Tamilnadu.

RADAR and RAPID observation:

Multiple significant convection was observed over Coastal Odisha, Telangana and Central Andhra Pradesh in Radar Composite of 1730UTC and South Bihar adjoining Jharkhand, North Central Jharkhand adjoining Bihar, South coastal Odisha, Sub Himalayan West Bengal, Central North Kerala adjoining Karnataka and coastal Andhra Pradesh in RAPID RGB Satellite imagery of 1630hrs IST.

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

Dust concentration was observed over northern Africa and some parts of eastern Asia. Dust concentration is expected to increase over western and northern India for next five days.

High PM10 concentration was observed over north-western and northern India. PM10 concentration is expected to decrease over northern India for next five days.

2. NWP MODEL GUIDANCE:

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

1. Weather Systems: 12UTC Charts of Day-0 to Day-3 show feeble trough in MSLP over J & K. 12UTC charts on all days from Day0-4 show two zones of wind discontinuity at 925 hPa due to persistent anticyclonic flow over Arabian Sea and Bay of Bengal :(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 GWB and SHWB in Day0-1. A CYCIR over the same region in Day-3-4. A CYCIR over Punjab and adjoining Pakistan in Day-2 at 850 hPa
At 500 hPa trough over west of J & K in Day-2-3.

Two prominent anti-cyclonic circulations at 850 hPa over Arabian Sea and Bay of Bengal from day-0 to Day-4.

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: At some isolated locations over Odisha, Jharkhand, Chhattisgarh. Additionally over Maharashtra along the western Ghats. At 12UTC Day-1: Prominent high values along the western ghats and lower values at isolated locations over central India, Assam and over Rajasthan.

At 12UTC Day-2: Prominent high values along the western ghats and lower values at isolated locations over central India and over Rajasthan. At 12UTC on Day-3&4: Over Assam, Central India over parts of Jharkhand, Chhattisgarh and MP.

4. Low level Vorticity:-Positive Vorticity (>15 x 10⁻⁵/s): At 12UTC on Days 1-2 : over Assam-Arunachal region. At 12UTC day2 : over several isolated locations of NW India, Punjab, Haryana, Delhi NCR and parts of western UP. At 12UTC on Day-3: Over SHWB and GWB and adjoining Bihar and Jharkhand. At 12UTC on Day-3-4: Assam and adjoining Arunachal. 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, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Odisha, Konkan Goa, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Saurashtra Kutch, Coastal AP, Telangana, TN Puducherry, Coastal Karnataka, SI Karnataka, Kerala,

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Coastal AP, TN Puducherry, Coastal Karnataka, SI Karnataka, Kerala,

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Coastal AP, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

6. K-Index: Daywise Sub-divisions with K-index >40: Day0: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Odisha, Chhattisgarh, Coastal AP, Telangana, Rayalseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
Day1: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Odisha, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalseema, TN Puducherry, Coastal Karnataka, SI Karnataka, Kerala,
Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Uttarakhand, Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala

7. Spatial distribution of TTI: Daywise Sub-divisions with TTI >52: Day0: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,
Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Gangetic WB, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Saurashtra Kutch, Coastal AP, Telangana, Coastal Karnataka, SI Karnataka,
Day2: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, West MP, Konkan Goa, Madhya Maharashtra,
Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh,
Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, Coastal Karnataka, NI Karnataka,

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

Day1: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Gangetic WB, Bihar, East UP, Odisha, SI Karnataka, Kerala,
Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT,
Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Uttarakhand, Himachal Pradesh, Jammu Kashmir,
Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Bihar,
Day5: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB

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

1. Weather Systems: The CYCIR over east Uttar Pradesh and adjoining areas in the model analysis moves eastward and lies over Bihar and adjoining areas on day1 and becomes embedded in a trough orienting south-west to north-east direction from Bihar to Madhya Pradesh. The trough persists over the region till day 4. Forecasts show the north-east end of the trough moves a bit eastward over SHWB and adjoining Assam in day 4 and 5. In the forecasts, a north-south trough extending from east UP to south peninsula would persist during next 3 days. The wind at 500 hPa shows a feeble trough in westerlies over central India moves eastward during next two days to cross over NE states.

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 5 days except a zone strong wind over parts of north-eastern states.

3. Low level Vorticity:-Positive Vorticity 850hPa (>12 x 10⁻¹/s): Mostly along the foot hill of Himalaya, and along troughs over north, central and south peninsular India during next 5 days. Prominent vorticity zones are found during morning hours.

4. Spatial distribution of T-Storm Initiation Index, Lifted Index, Total Total Index, CAPE, CINE and Sweat Index (High potential for thunderstorm):

T-Storm Initiation Index (> 4): Less than threshold value all over the country during next 5 days. The values between 3-3.5 mostly along east coast, eastern part of the country, along west coast and over Gujarat during the same period.

Lifted Index (< -2): Less than threshold value mostly along east coast, south peninsula, west coast and Gujarat and also over Gangetic West Bengal, Jharkhand and parts of Bihar, east UP and north eastern states during next 5 days.

Total Total Index (> 50): Above threshold value over the most parts of central, northwest and eastern parts of India during afternoon hours for next 5 days.

Sweat Index (> 300): Mostly along east coast, along west coast, Gujarat and adjoining areas eastern part of India and north eastern states during next 5 days.

CAPE (> 1000): Has nearly similar features of sweat index.

CINE (50-150): Mostly along east coast, west coast, Gujarat and adjoining areas, parts of north eastern states, over Gangetic plains and eastern part of India during morning hours for next 5 days.

5. Rainfall and Rainfall activity:

10-70 mm rainfall over Gangetic West Bengal, SHWB, parts of Bihar and NE states during day 1.

10-40 mm rainfall over parts of costal Andhra Pradesh and adjoining areas during day 1.

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

Model Reflectivity: 15-35 dBZ over some parts Jharkhand, GWB and Bihar during next 24 hours.

15-35 dBZ over parts of over parts of NE states during next 48 hours.

15-30 dBZ over J&K, Himachal Pradesh and adjoining Uttarakhand during day 2 and 3. Over parts east UP, Delhi and Haryana on day3.

Spatial distribution of Total Total Index, K-Index, CAPE and CINE:

Total Total Index (> 50): Above threshold value over most parts of the country except extreme south peninsula, J&K and parts of NE states during next 72 hour.

CAPE (> 1000): Mostly along east coast of India, over eastern parts of India, parts of NE states, west coast and Gujarat during next 3 days.

CINE (50-150): Higher values over coastal regions of India. Some parts of eastern India, Gujarat and south peninsula at 12 UTC during next three days.

Rainfall Activity:

10-40 mm over GWB and adjoin Orissa and Jharkhand and North-eastern states during next 24 hours.

10-40 mm rainfall over Kerala and adjoining interior Karnataka, Konkan & Goa and Tamilnadu during next 3 days.

10-40 mm over J & K and Himachal Pradesh during day 3.

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:

In association with the above weather systems over North India, a region of strong wind convergence between Northwesterlies and southwesterlies persists over Northeast India. Hence rainfall will persist over the northeast Indian region on day 1. It is likely to decrease on day 2. The wind discontinuity in the lower levels from north Telangana to Maldiva area superposed by a trough in mid tropospheric westerlies from East Madhya Pradesh to Maldiva area is likely to result in thunderstorm activity all along the east coast of India and southwest peninsular India on day 1 and 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:

Sub Himalayan West Bengal and Sikkim, Arunachal Pradesh and West Assam
Rest Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura
South Interior Karnataka, Kerala, Interior Tamil Nadu
Coastal Andhra Pradesh, Telangana
Rayalaseema, South Madhya Maharashtra, Vidarbha, Chhattisgarh, East Madhya Pradesh
Orissa, Jharkhand, Bihar, Gangetic West Bengal

48 hour Advisory for IOP:

Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura
South Interior Karnataka, Kerala, Interior Tamil Nadu
Vidarbha, Chhattisgarh, East Madhya Pradesh

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

Past24hourHEMandIMRrainfall(upto03UTCoftoday)

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

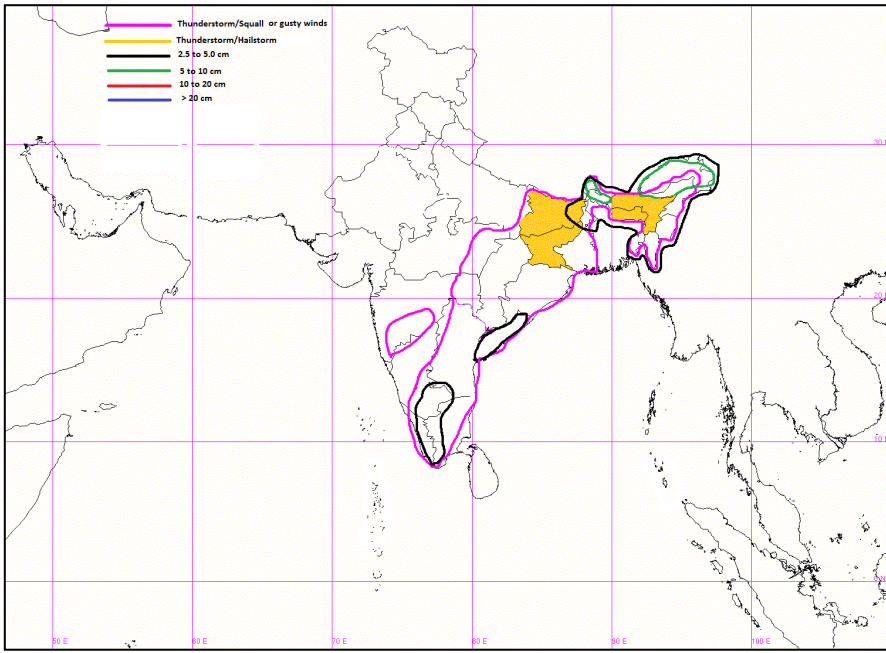
HEM: http://satellite.imd.gov.in/img/3Ddaily_he.jpg

ForRadarimagesofthepast24hoursincludingmosaicofimages:

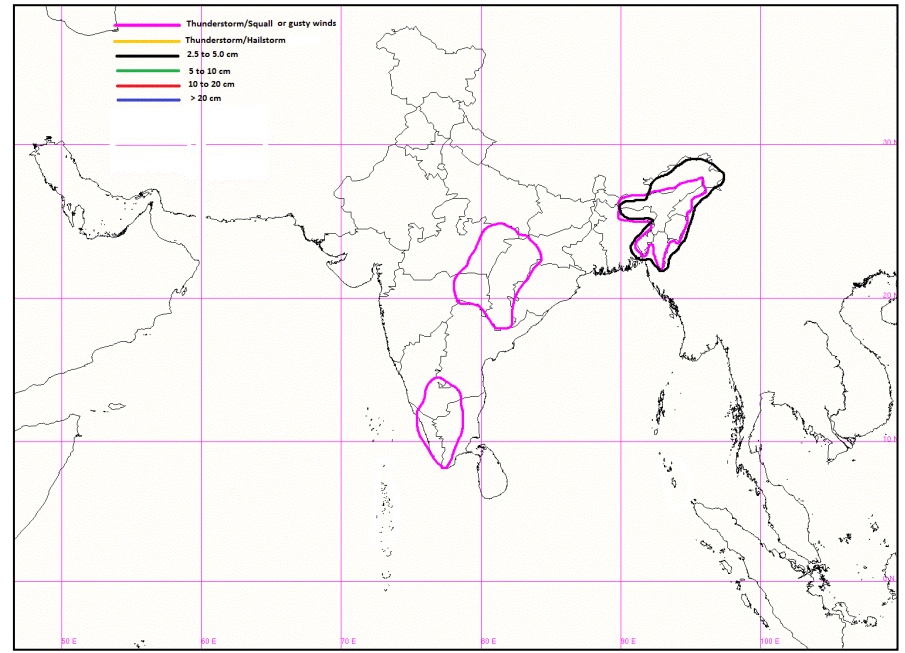
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Satellite sounder based T- Phigram

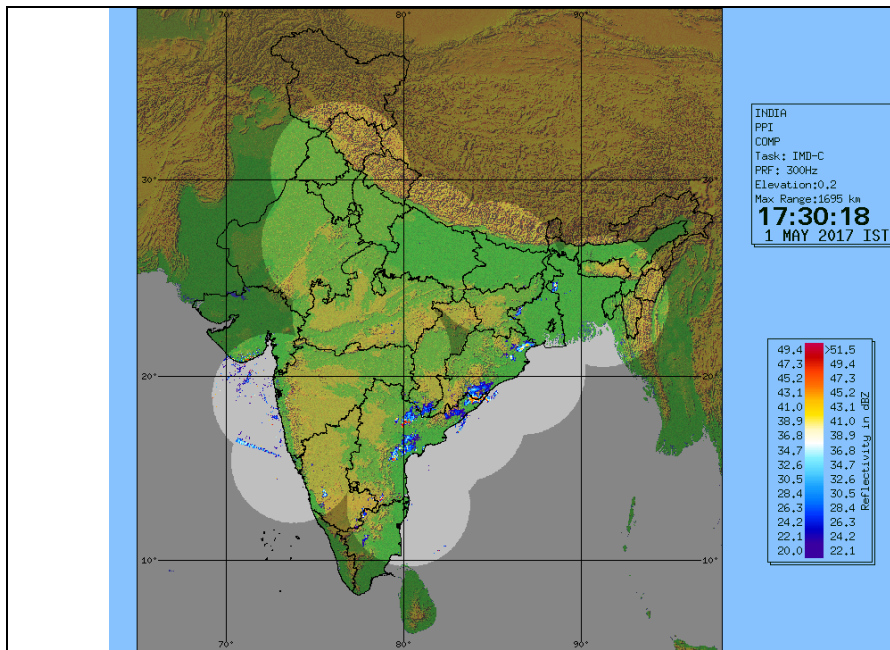
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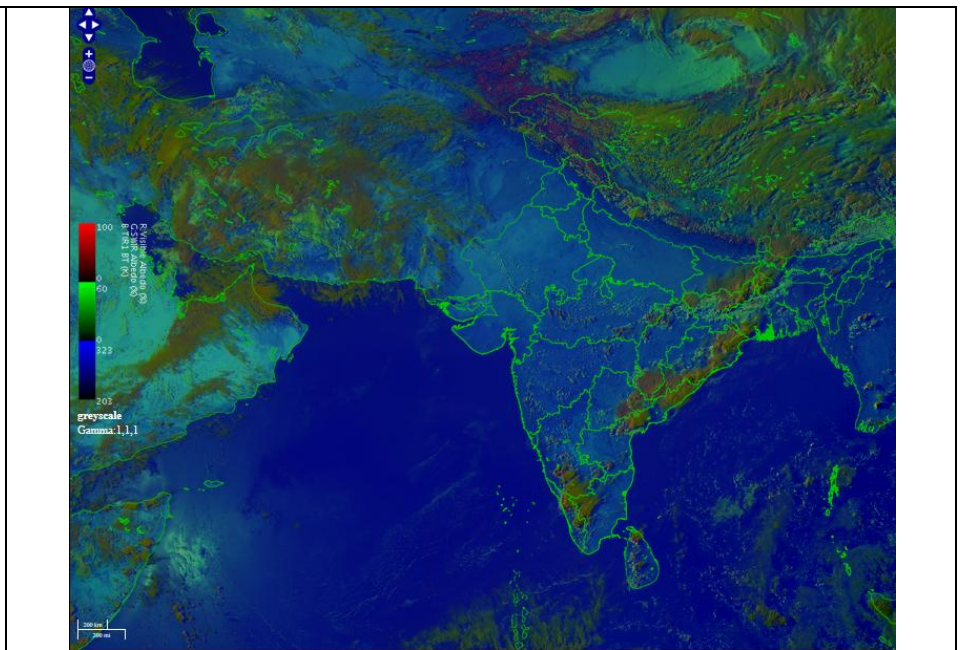
IOP Advisory for 24 hours



IOP Advisory for 48 hours

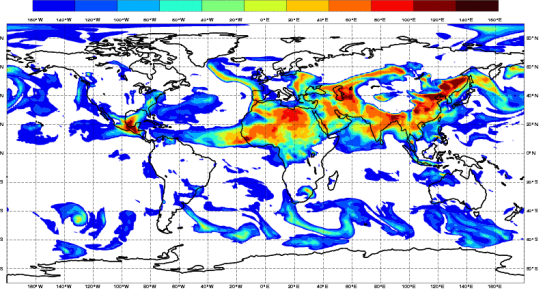


DWR Composite at 1730hrs IST of today

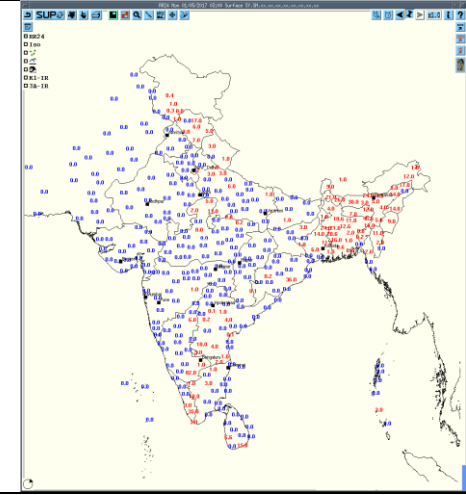
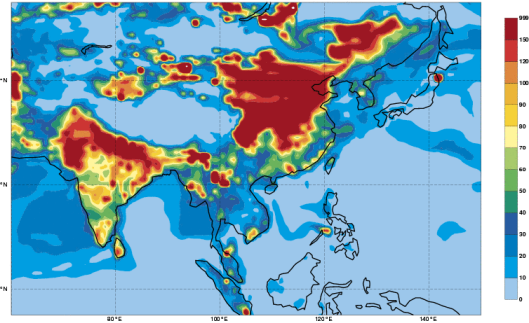


RAPID RGB Image of INSAT 3D at 1630 hrs IST of today

Sunday 30 April 2017 00UTC CAMS Forecast +120 VT: Friday 05 May 2017 00UTC
Total Aerosol Optical Depth at 550 nm



Sunday 30 April 2017 00UTC CAMS Forecast +120 VT: Friday 05 May 2017 00UTC
Surface PM10 [$\mu\text{g}/\text{m}^3$]

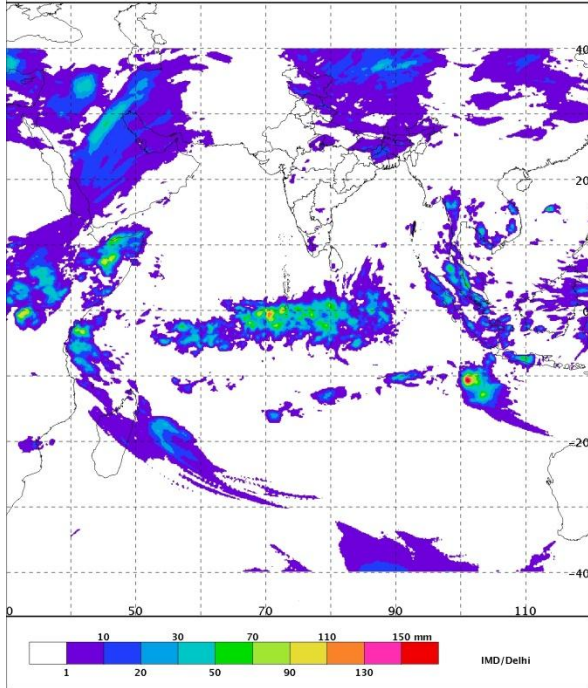


Forecast Dust Concentration for 00UTC of 5th May

PM10 Forecast for 00UTC of 5th May

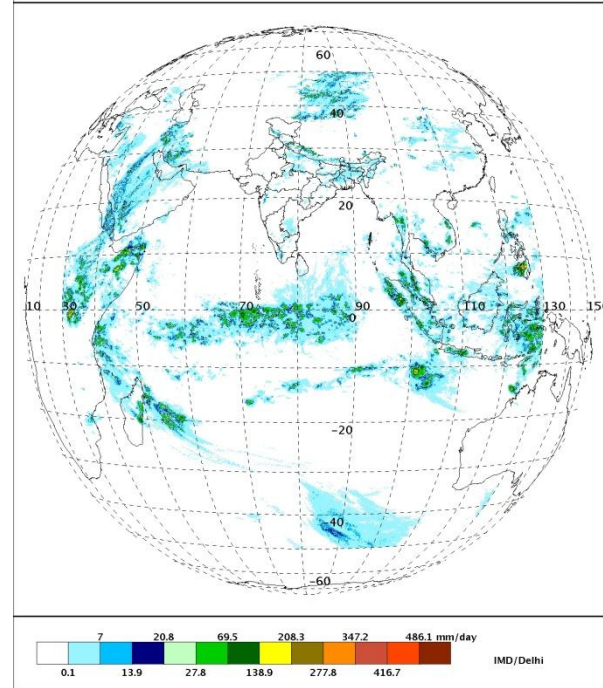
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today

SAT :INSAT-3D IMG 30-04-2017 (03:30 GMT) to 01-05-2017 (03:00 GMT)
INSAT Multispectral Rainfall(Daily)
L3B BINNED GEOPHYSICAL PARAMETER GRIDDED

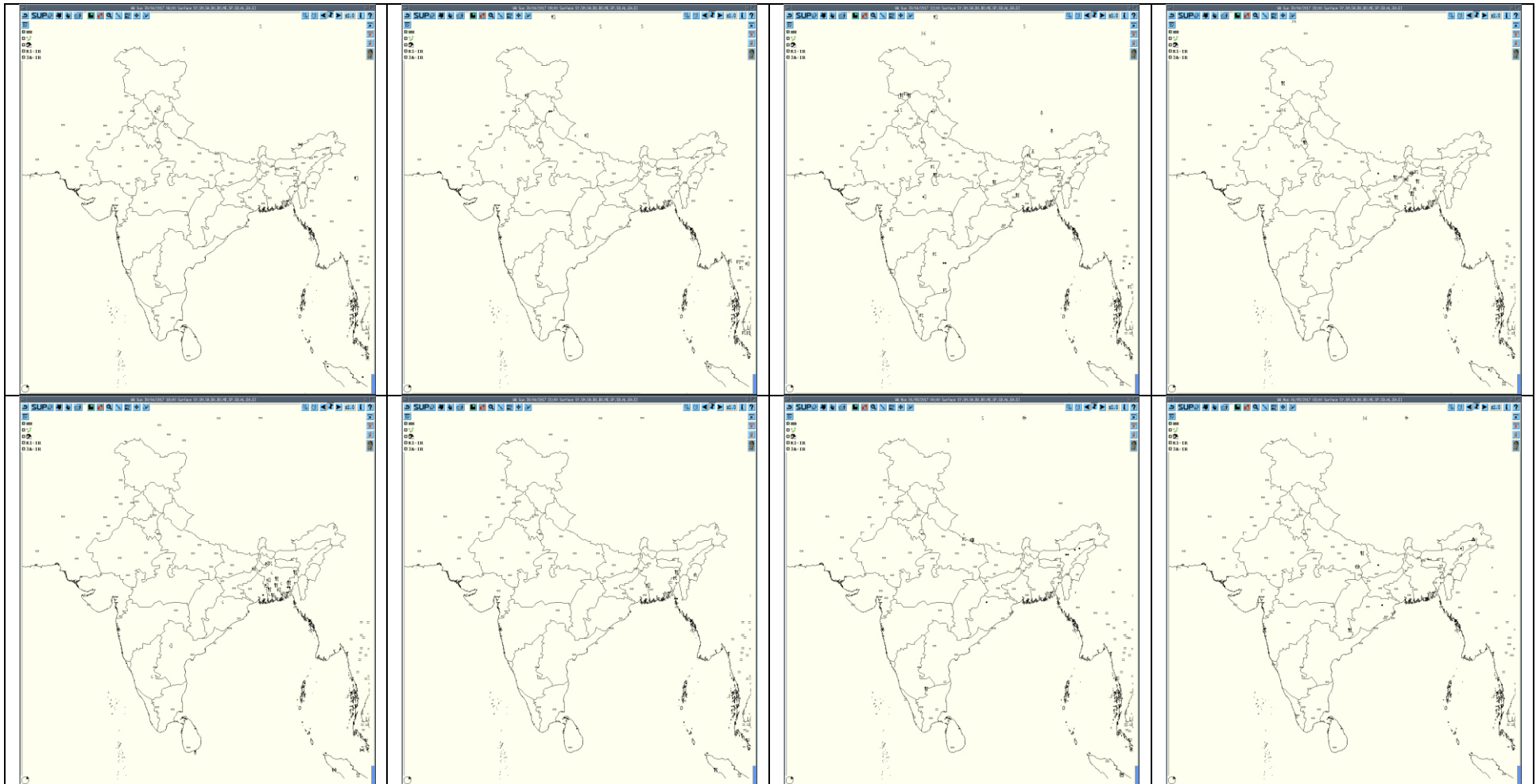


IMR Rainfall

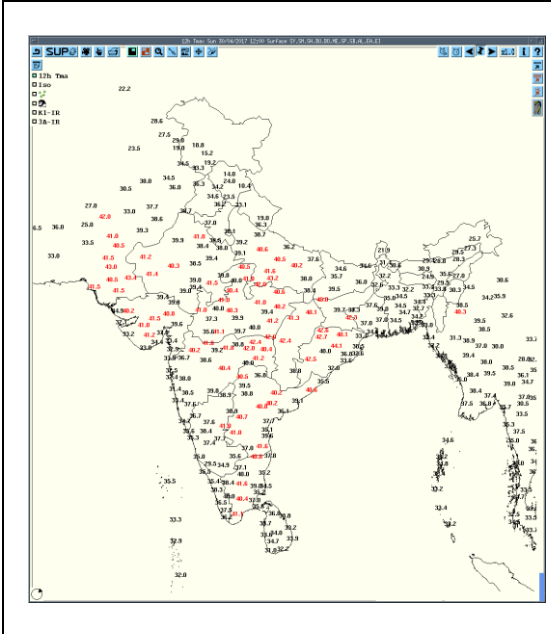
SAT :INSAT-3D IMG 30-04-2017 (03:30 GMT) to 01-05-2017 (03:00 GMT)
Precipitation(OE) Daily
L3B BINNED GEOPHYSICAL PARAMETER FULL DISK



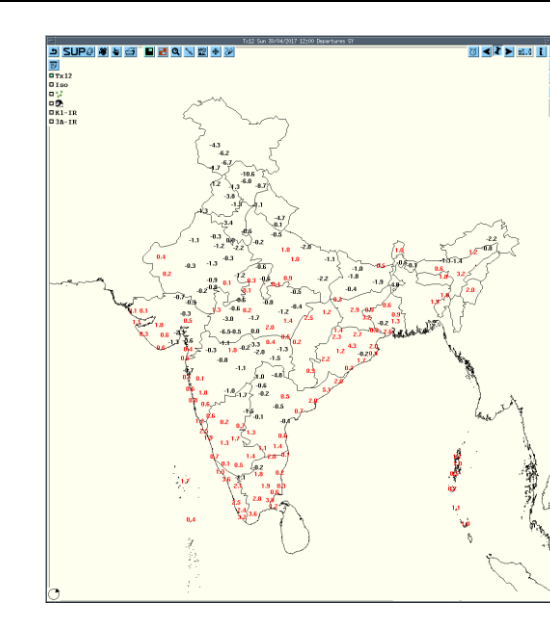
HEM Rainfall



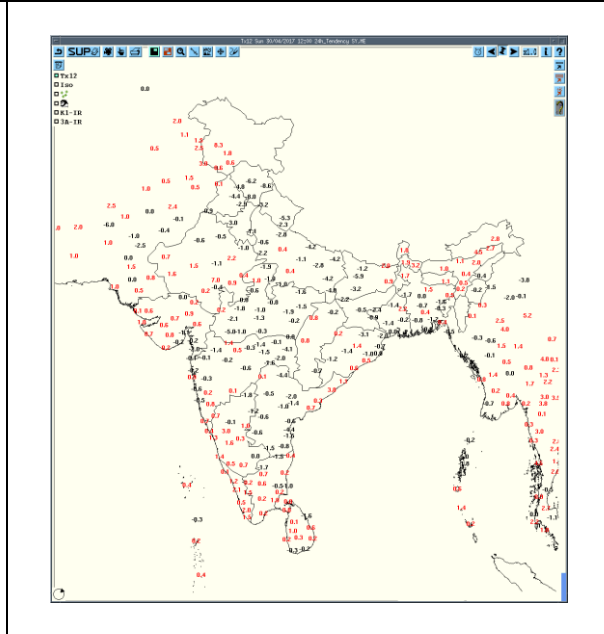
3hourly Past weather at 06, 09,12,15,18, 21UTC of yesterday and 00 & 03hrs UTC of today



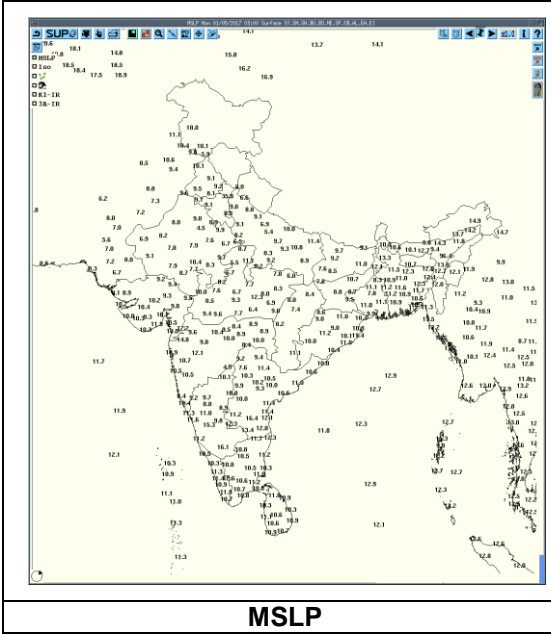
Tmax



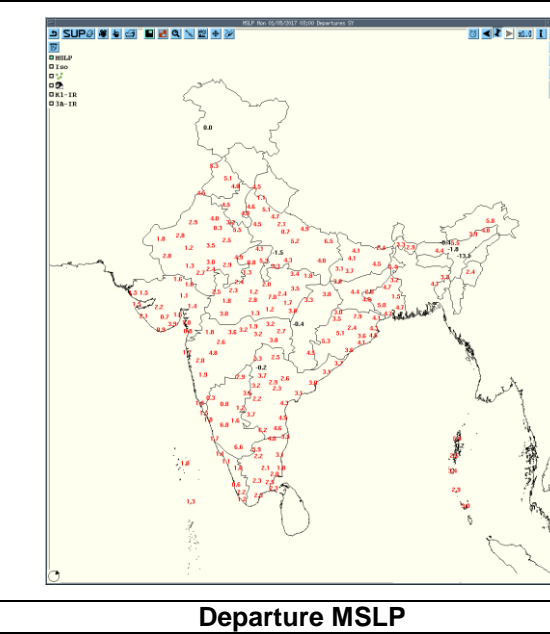
Departure Tmax



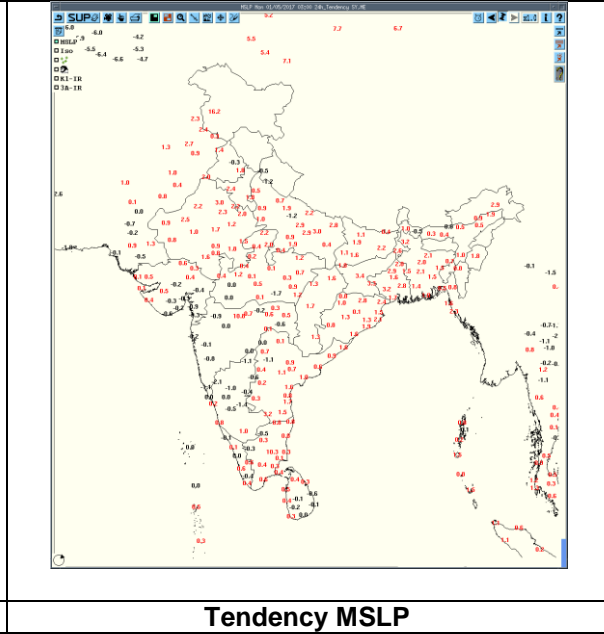
Tendency Tmax



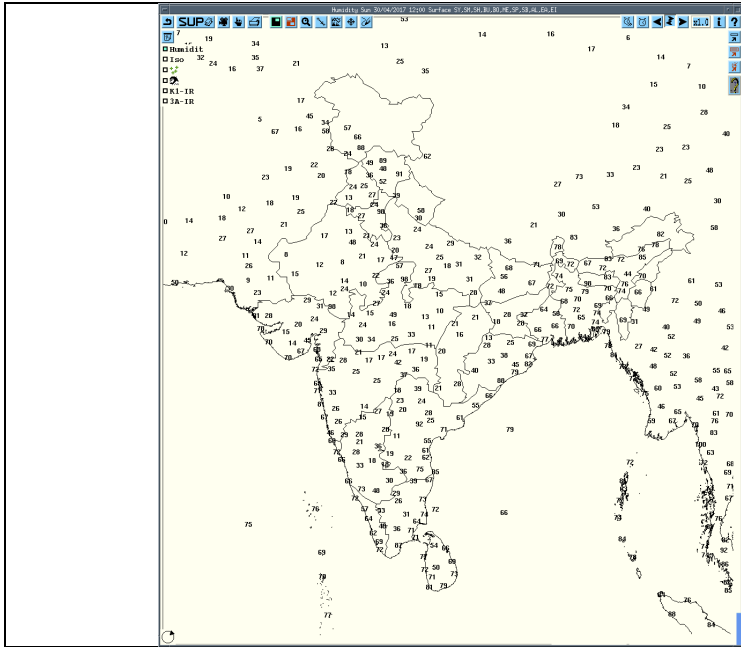
MSLP



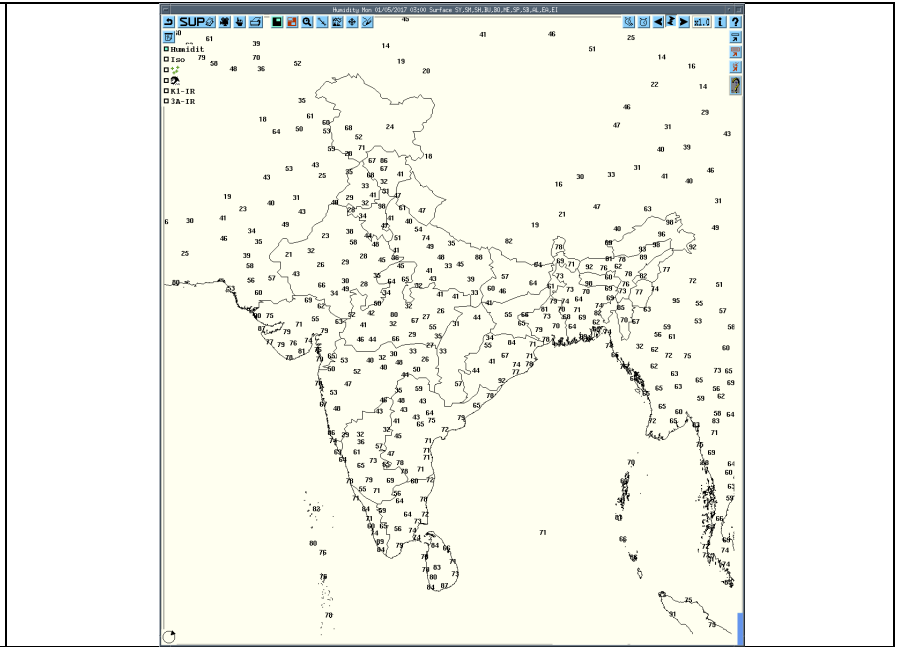
Departure MSLP



Tendency MSLP



RH at 12UTC yesterday



RH at 03UTC today

Realized weather past 24hours (Based on SYNERGIE Products)					
Date	Time of Reporting	Name of Station Reporting	Region	STATE	Weather Event
30-04-17	0600 UTC	Nil	Nil	Nil	Nil
	0900 UTC	Bhaderwah	Northwest India	Jammu & Kashmir	Thunderstorm
30-04-17	1200 UTC	Katra, Batote, Bhaderwah	Northwest India	Jammu & Kashmir	Thunderstorm
		Gangtok	East India	Sikkim	Thunderstorm
		Gaya	East India	Bihar	Thunderstorm
		Gwalior	Central India	Madhya Pradesh	Thunderstorm
		Jhansi	Northwest India	Uttar Pradesh	Thunderstorm
		Panagarh	East India	West Bengal	Thunderstorm
		Nasik city	Central India	Maharashtra	Thunderstorm
		Hyderabad	South India	Andhra Pradesh	Thunderstorm
		Coimbatore	South India	Tamilnadu	Thunderstorm
30-04-17	1500 UTC	Srinagar	Northwest India	Jammu & Kashmir	Thunderstorm
		New Delhi	Northwest India	Delhi	Thunderstorm
		Bhagalpur	East India	Bihar	Thunderstorm
		Malda, Dinapur	East India	WB(SHWB)	Thunderstorm
		Bankura	East India	West Bengal	Thunderstorm
30-04-17	1800 UTC	Purnea	East India	Bihar	Thunderstorm
30-04-17	2100 UTC	Imphal	Northeast India	Manipur	Thunderstorm
01-05-17	0000 UTC	Bangalore	South India	Andhra Pradesh	Thunderstorm
01-05-17	0300 UTC	Gorakhpur	Northwest India	Uttar Pradesh	Thunderstorm
		Jagdalpur	Central India	Chhattisgarh	

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)
Pahalgam	Northwest India	Jammu & Kashmir	Thunderstorm	30-04-17	1945	1950
Banihal	Northwest India	Jammu & Kashmir	Thunderstorm	30-04-17	2010	2130
Batote	Northwest India	Jammu & Kashmir	Thunderstorm	30-04-17	1505	1810
Katra	Northwest India	Jammu & Kashmir	Thunderstorm	30-04-17	1605	1750
Bhaderwah	Northwest India	Jammu & Kashmir	Thunderstorm	30-04-17	1240 1530	1400 1730
Safdarjung	Northwest India	Delhi	Thunderstorm	30-04-17	1921	2040
Palam	Northwest India	Delhi	Thunderstorm	30-04-17	1911	2200
Kheri	Northwest India	Uttar Pradesh	Thunderstorm	01-05-17	0430	0640
Hardoi	Northwest India	Uttar Pradesh	Thunderstorm	30-04-17	2215	2400
Churk	Northwest India	Uttar Pradesh	Thunderstorm	30-04-17	1620	1645
Shahjahanpur	Northwest India	Uttar Pradesh	Thunderstorm	01-05-17	0200	0830
Gorakhpur	Northwest India	Uttar Pradesh	Thunderstorm	01-05-17	0730	0830
Moradabad	Northwest India	Uttar Pradesh	Thunderstorm	30-04-17	2215	2240
Orai	Northwest India	Uttar Pradesh	Thunderstorm	30-04-17	2030	2130
Jhansi	Northwest India	Uttar Pradesh	Thunderstorm	30-04-17	1530	1800
Bareilly	Northwest India	Uttar Pradesh	Thunderstorm	30-04-17	2345	2400
Bareilly	Northwest India	Uttar Pradesh	Thunderstorm	01-05-17	0000	0155
Aligarh	Northwest India	Uttar Pradesh	Thunderstorm	01-05-17	0330	0400
Gwalior	Central India	Madhya Pradesh	Thunderstorm	30-04-17	1555 2240	1745 2300
Satna	Central India	Madhya Pradesh	Thunderstorm	30-04-17	2110	220
Jagdalpur	Central India	Chhattisgarh	Thunderstorm	01-05-17	0635	0830
Bilaspur	Central India	Chhattisgarh	Thunderstorm	01-05-17	0200	0400
Jorhat	Northeast India	Assam	Thunderstorm	01-05-17	0250	0500
Guwahati	Northeast India	Assam	Thunderstorm	30-04-17	2350	2400
Guwahati	Northeast India	Assam	Thunderstorm	01-05-17	0000	0232
Dibrugarh	Northeast India	Assam	Thunderstorm	01-05-17	0525	0640
N/Lakhimpur	Northeast India	Assam	Thunderstorm	01-05-17	0200	0400
Silchar	Northeast India	Assam	Thunderstorm	01-05-17	0030	0200
Cherrapunjee	Northeast India	Meghalaya	Thunderstorm	30-04-17	1940	2400
Cherrapunjee	Northeast India	Meghalaya	Thunderstorm	01-05-17	0000	0830
Imphal	Northeast India	Manipur	Thunderstorm	01-05-17	0140	0350
Agartala	Northeast India	Tripura	Thunderstorm	30-04-17	2300	2400
Agartala	Northeast India	Tripura	Squall (Direction-W, Max. speed 74kmph)	30-04-17	2250	2252
Agartala	Northeast India	Tripura	Thunderstorm	01-05-17	0000	0100

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	Hailstorm (Diameter-1.0 cm)	30-04-17	1710	1850
					1910	1940
Tadong	East India	Sikkim	Thunderstorm	30-04-17	1840	2000
Malda	East India	West Bengal	Thunderstorm	30-04-17	1740	1940
Alipore	East India	West Bengal	Thunderstorm	30-04-17	2040 2345	2115 2355
Alipore	East India	West Bengal	Squall (Direction-NW, Max. speed 50kmph)	30-04-17	2050	2053
Alipore	East India	West Bengal	Thunderstorm	01-05-17	0740	0810
DumDum	East India	West Bengal	Thunderstorm	30-04-17	2115	2245
Diamond Harbour	East India	West Bengal	Thunderstorm	30-04-17	2135	2355
Asansol	East India	West Bengal	Thunderstorm	30-04-17	1725	2300
Bankura	East India	West Bengal	Thunderstorm	30-04-17	1800	2045
Bankura	East India	West Bengal	Squall (Direction-NW, Max. speed 64kmph)	30-04-17	1835	1837
Gaya	East India	Bihar	Thunderstorm	30-04-17	1605	1810
Gaya	East India	Bihar	Squall (Direction-NW, Max. speed 64kmph)		1705	1708
Bhagalpur	East India	Bihar	Thunderstorm	30-04-17	2000	2035
Purnia	East India	Bihar	Thunderstorm	30-04-17	2120	2140
Keonjhar	East India	Odisha	Thunderstorm	01-05-17	0715	0805
Port Blair	East India	Odisha	Thunderstorm	30-04-17	1240	1305
Yelahanka IAF	South India	Karnataka	Thunderstorm	30-04-17	2000	2100
Yelahanka IAF	South India	Karnataka	Thunderstorm	01-05-17	0400	0630
Bengaluru AMS HAL	South India	Karnataka	Thunderstorm	01-05-17	0510	0620
Bengaluru CITY	South India	Karnataka	Thunderstorm	01-05-17	0335	0615
Coimbatore Airport	South India	Tamilnadu	Thunderstorm	30-04-17	1720	1820
Kodaikanal	South India	Tamilnadu	Thunderstorm	30-04-17	1400	1625
Salem	South India	Tamilnadu	Thunderstorm	30-04-17	1930	1935
Hyderabad	South India	Andhra Pradesh	Thunderstorm	30-04-17	1700	1800
Anantapur	South India	Andhra Pradesh	Thunderstorm	01-05-17	0300	0400
Tirupathi AP	South India	Andhra Pradesh	Thunderstorm	30-04-17	1615	2020

Past 24 hours DWR Report:

DWR Station	Date	Time interval of observation	Organization of the cells (isolated single cell/multiple cells convective regions/ squall lines) with height of 20 dBZ echo top and maximum reflectivity	Formation w.r.t. radar station & direction of movement	Remarks	Assoc iated severe weath er, if any	Districts affected
Lucknow	30/04/2017	300752 UTC to 301322 UTC	Single cell formed at 250 Km, SW which later developed in to multiple cells over the same location. Maximum reflectivity was 46 dBZ and height of cells reached 11 Km.	System moved SE ly with avg. speed 60 Km/h followed by multiple cells moving also along SE with same velocity	Radar was not operational after 1322 UTC so further information not available.	TS	Moradabad Sonbhadra Orai Shahjahanpur Aligarh Bareilly Gorakhpur Jhansi
	01/05/2017	010225 UTC to 010300 UTC	Multiple cells formed over station and adjoining areas, also at 200 Km NE, The height of the cell in NE observed to be 12 Km. & Maximum core reflectivity reached 48 dBZ.	System moved NE ly with avg. speed 72 Km/h, Presently moved to 250 Km NE and got weakened	Radar started at 01/0220 UTC, prior information not available.	NA	NA
Nagpur	30/04/17	0002-0442 0402-2352 0812-0852 0902-1042 0932-1252 1102-1702 2132-0122(1 May 2017)	Previous clouds (multiple), dissipating, density become very less Group of clouds Single Multiple, coming from W Multiple, coming from SW Multiple Single	Moving SE'ly, spreads in form of line from E to S, Again started from S between 150 to 200 km & dissipated at 0442 Between 150to 200 km S with width 125 km in SE direction, moving NE'ly. At 1332 =150 km in width from S to E & 100 km from S to N, At 1702= 174 km from S to N & 166 km from E to radar dir 166 km in NWW Moving E'ly, ht. of cloud till 9.6 km with reflectivity 12 Moving NE'ly, 150 km from NWW, moving SE'ly 240 km SSE, moving NE'ly	< 18 dBZ < 18 dBZ < 18 dBZ < 18 dBZ < 20 dBZ < 26 dBZ, ht of cloud at maxZ=5.5 to 8.2 km		
	01/05/17	0152-0302	Single	160 km SSE	< 30 dBZ, Ht. of cloud =3 to 8 km		

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
Agartala	01-05-17	301310 - 302300	Squall line with Maximum Height 16km and maximum reflectivity 45dBZ (at 1600 UTC over Bangladesh-80 km WNW of DWR AGT)	Formation of the system unknown as the 500km Range PPI-Z is not working. System first visible in DWR AGT 250 km WNW at 1310 UTC of 30.04.17 and moved ESE-wards at around 60 kmph	The cells dissipated at 2300 UTC of 30.04.17 over Manipur and adjacent Myanmar	1. TS with rain & squall at Agartala Airport 2. TS with Light/Moderate Rain at other places	All districts of Tripura Imphal (East) district of Manipur East Khasi hills districts of Meghalaya Mamit district of Mizoram
		301330 - 302300	Multiple Cells with Maximum Height 14km and maximum reflectivity 46dBZ (at 1610 UTC over South Meghalaya)	Formed 160 km NNW of DWR AGT at 1330 UTC of 30.04.17 and initially moved Eastwards at 30kmph and later merged with the above system and moved ESE-wards at around 60 kmph	The cells merged with the above system at 1630 UTC and both dissipated at 2300 UTC of 30.04.17 over Manipur and adjacent Myanmar	TS with Light/Moderate Rain	East Khasi hills districts of Meghalaya
Jaipur	01-05-17	0632 - 1102 UTC	Single cell becomes bigger with average height of 7.5 km maximum reflectivity 52 dBZ	Forms Last day SE & moving towards EAST wards at speed direction 40 km/hr to 50 km/hr	Cells continuous forming 0632 UTC SE Jaipur and multiple cell was observed and maximum reflectivity during 0802-0842 UTC	TSRA at Isolated Places	Baran
		0742-0812	Single cell with average height 7.0 km maximum reflectivity 50 dBZ	Forms Last day SE & moving towards EAST wards at speed direction 20-25 km/hr	Cell forms at 0742 UTC and maximum reflectivity observed at 0752 UTC		Sawai madhopur
		0822-0932	Single cell with average height 7.0 km maximum reflectivity 50 dBZ	Forms Last day ESE & moving towards EAST wards at speed 40	Cell forms at 0742 UTC and maximum reflectivity observed at 0752 UTC		Karauli
		1122-1602	Multiple cell cell with average height 6.0 km maximum reflectivity 45 dBZ	Forms Last day North & moving towards EAST wards at speed 35-45 km/hr	Cell forms at 1122 UTC and maximum reflectivity observed at 1252 UTC		Jhunjhunu










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	Associate d severe weather if any	Districts affected
Visakhapatnam	01-05-17	30/0900 UTC-1200 UTC	Isolated cells Westerly 201kms and NE 243 kms with max reflectivity 57 dbz	Moving Easterly.	Well organized multiple cells are formed since last	-	-
		30/1200 UTC-1500 UTC	Isolated cells Nly 200 kms with max reflectivity 50 dbz with an height of 10kms.	Moving North Easterly.	Cells formed Northerly to the station developed moving North easterly and	-	-
		30/1500 UTC-1800 UTC	Isolated cell NNEly 240 kms with max reflectivity 44 dbz with an height of 8kms.	Moving North Easterly.	Cell formed in previous observation moving North Easterly and weakening	-	-
		30/0000 UTC-0300 UTC	A single cell at WSW 247kms with max reflectivity 45dbz and height 10kms.	Moving SW	-	-	-
Paradeep	01-05-17	30/0300-2300 UTC	Isolated Single cells with average height of 9 kms. and average reflectivity of 20 dBZ and very small areas having reflectivity values of the order of 44 dBZ.	Position: NW sector of RADAR (270-350 degrees) Range:80-250 kms from the RADAR. Movement: Westerly	Mainly concentrated in SW sector in the sea.	TS with low probability of Rain.	Mayurbhanj, Keonjhar, Balangir, Kalhandi, Kandhamal, Ganjam and Nayagarh.

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
Hyderabad	30/04 to 01/05-17. (0300 UTC to 0300 UTC)	30/0902-1042 UTC	Isolated cells with an average height of 12 Km with a max reflectivity of 60.5 dBZ	SSE (122 Kms) moving in ESE- ly Direction at a speed of 6 Kmph.	Cells started forming at 0902 UTC at SSE direction from radar, Matured a bit in size. Max reflectivity was between 1042 UTC and dissipated at 1002 UTC	Moderate Thunderstorm with or without rain	Areas near Mahabubnagar district
		30/ 0952-1152 UTC	Isolated cells with an average height of 9 Km with a max reflectivity of 58 dBZ	SW (72 Kms) Not moving much	Cells started forming at 0952 UTC at SW from radar, matured bet.. 1102 and 1132 UTC and dissipated at 1152 UTC	Moderate Thunderstorm with or without rain	Not Known.
		30/1102 -1232 UTC	Isolated cells with an average height of 12 Km with a max reflectivity of 58 dBZ	S (22 Kms) moving in E- ly Direction at a speed of 4 Kmph, very slow	Cells started forming 1102 UTC S from radar, Matured a bit in size. Max reflectivity was between 1122 and 1152 UTC .	Moderate Thunderstorm with or without rain	RR, Shamshabad Airport
		30/ 1132-1302 UTC	Isolated cells with an average height of 9 Km with a max reflectivity of 51.5 dBZ	WNW (120Kms) moving in SW- ly Direction at a speed of 12 Kmph.	Cells started forming at 1132 UTC at SW from radar, Matured a bit in size. Max reflectivity was between 1202 and 1242 UTC .	Moderate Thunderstorm with or without rain	Not known.
		30/ 1202-1402 UTC	Isolated cells with an average height of 11 Km with a max reflectivity of 56.5 dBZ	SE (74 Kms) moving in NE- ly Direction at a speed of 12 Kmph.	Cells started forming at 1202 UTC at SE from radar, Matured a bit in size. Max reflectivity was between 1302 and 1332 UTC.	Moderate Thunderstorm with or without rain	Nalgonda Dist
		30/1622-1752 UTC	Isolated cells with an average height of 9 Km with a max reflectivity of 48.5 dBZ	S (87Kms) moving in E- ly Direction at a speed of 8 Kmph.	Cells started forming at 1622 UTC at S from radar, Matured a bit in size. Max reflectivity was between 1652 and 1722 UTC.	Light Thunderstorm with or without rain	Mahaboobnagar Dist

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	01-05-17	30/0301 – 0822 UTC	NIL	NIL	NO SIGNIFICANT ECHO	NIL	NIL
		30/0822 – 2142 UTC	1. Single cell with maximum reflectivity of 62.5 dBz at 1041 UTC and maximum height of 13.79 Km at 1041 UTC .	1. W (233 km) Moving in E-ly direction with a speed of 30 kmph	1. Formation started at 0832 UTC in W at a distance of 233 km from Radar. Matured and dissipated at 1241UTC in W at a distance of 118 km from Radar.	Hailstorm /Thunderstorm /Squall / Rain	N/A
			2. Extended multi cell converted to squall line with maximum reflectivity of 68.5dBz at 1111 UTC and maximum height of 17.9 Km at 1121 UTC	2. NW (247 km) Moving in ESE-ly direction with a speed of 50 kmph	2. First observed at 0951 UTC in NW at a distance of 247 km from Radar. Matured. Squall line formed at 1231 UTC. Merged with 3 at 1251 UTC	Hailstorm /Thunderstorm /Squall / Rain	N/A
			3. Initially single cell but developed in Extended multi cell with maximum reflectivity of 67.5 dBz at 1202 UTC and maximum height of 17.37 Km at 1151 UTC	3. WNW (248 km) Moving in E-ly direction with a speed of 38 kmph	3. First observed at 0951 UTC in WNW at a distance of 248 km from Radar. Matured. Merged with 2 at 1251 UTC	Hailstorm /Thunderstorm /Squall / Rain	N/A
		30/0822 – 2142 UTC	4. Multicelled system with squall line with maximum reflectivity of 69.5 dBz at 1312 UTC and maximum height more than 18 km at 1312 UTC .	4. WNW to N (123 km) Moving in ESE-ly direction with a speed of 65 kmph	4. Formed merging 2 and 3 at 1251 UTC from WNW to N at a distance of 123 km from Radar. Matured and dissipated at 1751 UTC in ENE at a distance of 184 km from Radar.	Hailstorm /Thunderstorm /Squall / Rain	N/A
			5. Isolated cells with maximum reflectivity of 63.5dBz at 1801 UTC and maximum height of 12.0 Km at 1611 UTC	5. W (82 km) Moving in E-ly then NE-ly direction with a speed of 47 kmph	5. Isolated cells started developing in W at a distance of 82 km from radar from 1451 UTC Merged to a multicelled system at 1851 UTC . Matured and dissipated at 2142 UTC in NE at a distance of 118 km from Radar.	Hailstorm /Thunderstorm /Squall / Rain	N/A
		30/2151 – 2352 UTC	NIL	NIL	NO SIGNIFICANT ECHO	NIL	NIL
		01/0001 – 0351 UTC	NIL	NIL	NO SIGNIFICANT ECHO	NIL	NIL

Radar Station Name	Date	Time Interval Of Observation (UTC)	Organisation 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
PATNA	01/05 /2017	300300 - 300910	NIL	NIL	N/A	N/A	N/A
		300920 - 301020	Single Cell. Maximum Reflectivity : 50 dBZ Echo Top : 14 KM	Range : 160 KM from DWR Patna in South- West. Movement-North- Easterly	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	N/A	Bhabua, Sasaram, Rohtas
		301020 - 301220	Multiple Cell. Maximum Reflectivity : 50 dBZ Echo Top : 14 KM	Range : 120 KM from DWR Patna in South- South- West. Movement- North-Easterly	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	THUNDER- STORM, SQUALL(At Gaya) WITH RAIN	Gaya, Nawada, Jamui, Banka
		301220 - 301420	Single Cell. Maximum Reflectivity : 50 dBZ Echo Top : 14 KM	Range : 110 KM from DWR Patna in West- South- West. Movement- Easterly	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	N/A	Buxar, Bhojpur, Jehanabad, Patna
		301240 - 301430	Single Cell. Maximum Reflectivity : 45 dBZ Echo Top : 9.3 KM	Range : 090 KM from DWR Patna in South- South-East. Movement- North-Easterly	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	N/A	Nalanda, Nawada, Lakhisarai, Munger
		301500 - 301600	Multiple Cell. Maximum Reflectivity : 45 dBZ Echo Top : 10.5 KM	Range : 170 KM from DWR Patna in East. Movement-Easterly	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	THUNDER- STORM WITH RAIN	Khagaria, Saharsa, Madhepura, Purnia
		010020 - 010120	Single Cell. Maximum Reflectivity : 45 dBZ Echo Top : 14 KM	Range : 200 KM from DWR Patna in North- North-West Movement- Easterly	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	N/A	West Champaran
		010200 - 010300	Multiple Cell. Maximum Reflectivity : 50 dBZ Echo Top : 9.3 KM	Range : 175 KM from DWR Patna in North- West Movement-Easterly	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	N/A	West Champaran, East Champaran, Gopalganj

∞	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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