



India Meteorological Department
FDP STORM Bulletin No.42 (16-04-2017)

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

SYNOPTIC FEATURES:

The Cyclonic Storm (Maarutha) over eastcentral Bay of Bengal further moved northeastwards with a speed of about 32 kmph during past 06 hours and lay centered at 0830 hrs IST of today, over eastcentral Bay of Bengal near Lat. 16.7°N and Long. 92.5°E, about 420 km nearly north of Maya Bandar (Andaman & Nicobar Islands) and 280 km southwest of Sandoway (Myanmar). The system is likely to move northeastwards and cross Myanmar coast near Sandoway around midnight of today, the 16th April 2017.

- ◆ The trough from Marathwada to Lakshadweep area across coastal Karnataka now runs from north Telangana to eastcentral Arabian sea across north Interior Karnataka and extends upto 0.9 km above mean sea level.
- ◆ The upper air cyclonic circulation over northeast Rajasthan & neighbourhood extending upto 1.5 km above mean sea level and trough from this system to Marathwada across west Madhya Pradesh & west Vidarbha has become less marked.
- ◆ The upper air cyclonic circulation lies over southeast Uttar Pradesh & adjoining north Madhya Pradesh and extends upto 0.9 km above mean sea level. A trough runs from this system to Marathwada across East Madhya Pradesh & Vidarbha and extends upto 0.9 km above mean sea level.
- ◆ The upper air cyclonic circulation over east Bihar and neighbourhood now lies over southeast Bihar & neighbourhood at 1.5 km above mean sea level. A trough runs from this system to northcoastal Odisha across western parts of Gangetic West Bengal at 1.5 km above mean sea level.
- ◆ An upper air cyclonic circulation lies over southeast Bay of Bengal and adjoining Srilanka between 1.5 km and 5.8 km above mean sea level.

SATELLITE OBSERVATIONS during past 24hrs and current observation:

Current Observation (based on 0600UTC imagery of INSAT 3D):

VORTEX:

VORTEX (MAARUTHA) OVER EAST CENTRAL BAY CENTRED NEAR 17.0N/93.0E (.) INTENSITY T2.5 (.) MINIMUM CTT MINUS 77 DEG C (.) CURVE BAND PATTERN (.) ASSTD BKN LOW/MED CLOUDS WITH EMBDD INTENSE TO VERY INTENSE CONVECTION OVER EAST CENTRAL BAY BETWEEN LAT 14.0N TO 20.0N EAST OF LONG 90.0E & ARAKAN COAST GULF OF MARTABAN SOUTH MYANMAR (.)

Cloud Description:

SCATTERED MULTI LAYERED CLOUDS OVER NORTH WEST SAUDI ARABIA WEST PERSIAN GULF SOUTH IRAQ NORTH IRAN SOUTH CASPIAN SEA AND OVER AREA BET LAT 37.0N TO 48.0N LONG 54.0E TO 90.0E IN ASSOCIATION WITH WESTERN DISTURBANCE OVER THE AREA (.)

NORTH:-

SCT LOW/MED CLOUDS OVER J&K (.)

EAST:-

SCT LOW/MED CLOUDS WITH EMBDD WK TO MOD CONVTN OVER SKM SHWB NE STATES BD (.) SCT LOW/MED CLOUDS OVER COTL ORS BHR JHRKND GWB (.)

WEST:-

SCT MED/HIGH CLOUDS OVER EXT SW RAJ NW GUJ (.)

SOUTH:-

SCT LOW/MED CLOUDS WITH EMBDD MOD TO INT CONVTN OVER BAY ILS (.) SCT LOW/MED CLOUDS OVER COTL KRNTK KER N COTL AP (.)

ARABIAN SEA:-

NO SIG CLOUDS OVER THE REGION (.)

BAY OF BENGAL & ANDAMAN SEA:-

SCT LOW/MED CLOUDS WITH EMBDD MOD TO INT CONVTN OVER ANDAMAN SEA ADJ SE BAY (.)

CLOUDS DESCRIPTION OUTSIDE INDIA:-

SCT LOW/MED CLOUDS WITH EMBDD MOD TO INT CONVTN OVER CHINA MYANMAR SUMATRA BORNEO ADJ S CHINA SEA CELEBES ILS S PHILIPPINES MOZAMBIQUE CHANNEL AND OVER INDIAN OCEAN BET LAT 5.0N TO 11.0S LONG 75.0E TIO 100.0E (.)

Past Weather

Convection

Moderate convection was observed over N Bihar and NE States.

OLR:-

Up to 270 wm^{-2} was over J&K, HP , Uttarakhand N Bihar NE States and S Kerala.

Up to 310 wm^{-2} was over S Karnataka Tamil Nadu and rest parts of Kerala .

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

JetStream:

No Jet stream and trough observed over India..

DynamicFeatures:

Positive shear tendency observed over Haryana & Himachal Pradesh and negative shear tendency observed over rest parts of India

A low wind shear is observed over NW parts of India while high wind shear is observed over remaining most parts of India .

A positive Vorticity field is seen over Karnataka,Matarhwada, W Vidarbha , S Bihar and Odisha .

Positive Low Level Convergence observed over N,NE & SE parts of India.

Negative low level convergence observed over W & Central parts of India. ..

Precipitation:

IMR: Rainfall upto 30mm was observed over extream W Meghalaya .

Rainfall upto 20mm was observed over extream N Sikkim W Meghalaya W Assam N Arunachal Pradesh .

Rainfall upto 10mm was observed over rest parts of Sikkim Sub Himalayan West Bengal and rest parts of NE States .

HEM: Rainfall upto 14 mm was observed over Sub Himalayan West Bengal and NE States .

RADAR and RAPID observation:

No Strong echoes are seen in the radar mosaic at 1151 IST.

RAPID RGB Satellite imagery of 1530hrs IST indicates convective clouds over Sub-Himalayan West Bengal, Sikkim, Assam, Arunachal Pradesh, Nagaland, Manipur, Mizoram and Tripura and Nicobar Islands.

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

No significant dust concentration observed over Arabian Peninsula and west Rajasthan. Dust concentration is expected to increase over north-west India for next three days. Particulate matter concentration expected to remain in Moderate category next 2 days..

2. NWP MODEL GUIDANCE:

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

1. Weather Systems:

12UTC Charts all of the days from day-1 to Day-4 show feeble trough over J & K. Additionally on all days 12UTC charts show the development of Heat Low over Rajasthan and adjoining Pakistan and its extension over IG plains is prominent. Over Bay of Bengal CS 'Marutha' is seen close to Myanmar coast.

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

CS 'Marutha' over BoB is tracking towards Myanmar.

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

500hPa Jet core (>60kt) Weaker core winds at 12 UTC on all days over India.

3. Convergence at 850 hPa:

At 12UTC on Day-0 and Day-4: High values over parts of Odisha, Chattisgarh and adjoining Jharkhand and WB

At 12UTC on all Days: Along the west coast prominently over Maharashtra

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

At 12UTC on Day-0 and Day-1 : **High Cyclonic vorticity over BoB near Myanmar coast due to CS 'Marutha'**

At 12UTC on Day-0: Isolated locations over Odisha, Chattisgarh and Jharkhand.

At 12UTC on Day2 to Day-4: Isolated locations of Bihar and adjoining UP and Jharkhand WB and Odisha

At 00UTC on all days: Strong structure over land extending N-S from western part of India

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

At 12UTC: Day 0-2: Along west coast, some parts of Bihar, WB and large parts of NE India

Day-3 and Day-4 High magnitude over east UP, Bihar, Jharkhand, WB, Odisha, along west & east coast of India and southern parts of NE states.

At 00UTC on Day-3-5: Large belt of high magnitude extending SW to NE from NI Karnataka-Telangana region to Chattisgarh Odisha region..

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

At 12UTC: Day 0: Along west coast of Karnataka and adjoining Kerala and TN. In Eastern India over WB, and Jharkhand with adjoining Odisha and Chattisgarh.

At 12UTC: Day 1-2: Along west coast of Karnataka and adjoining Kerala and TN. In Eastern India over WB, and Jharkhand with adjoining Odisha and Chattisgarh. Expanding over Bihar and UP.

Day-3 and Day-4 High magnitude over east UP, Bihar, Jharkhand, WB, Odisha, along west & east coast of India and southern parts of NE states..

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

At 12UTC : Day0: Coastal Maharashtra, WB and coastal Odisha, and large parts of NE India.

At 12UTC : Day1 Same as in Day-0 with enhanced magnitude over eastern and NE India.

At 12UTC :Day-2: reduced coverage over NE India and confined to Odisha and Chattisgarh.

Day-3&4: Increased values over J & K widespread over eastern India covering parts of MP UP, parts of Bihar, WB.

8. Rainfall and thunder storm activity:

Day1: Light rains over SI Karnataka and adjoining TN and Kerala. Light rains over large parts of eastern India and NE.

Day2&3: reduced rainfall activity all over India.

Day 4&5: >4 cm/day enhanced rainfall over NE India.

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

1. Weather Systems:

00 UTC analysis shows a low level CYCIR along with north-south trough over south of Marathwada and adjoining north Karnataka region to Lakshadweep regions and this CYCIR will persist for the next 2 days.

Analysis also shows a north-south oriented low level trough of low starting from Jharkhand and adjoining Gangetic West Bengal (GWB) regions to central India and this trough of low will persist for the next 2 days.

MSLP analysis shows a low pressure area over east central BoB and will move towards Myanmar coast and cross after 18UTC of today 15April 2017.

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

(>60kt): No presence of jet core over the Indian region for the next 5 days..

3.Low level Vorticity:-Positive Vorticity 850hPa ($>12 \times 10^{-1}/s$):

Analysis shows low level positive vorticity ($>12 \times 10^{-5}/s$) mainly over the foothills of Himalaya, along the west coast of India, SHWB, Jharkhand, GWB and isolated pockets of NE states.

Forecast shows vorticity core zones mainly along the foothills of Himalaya, west coast of India, and isolated pockets of GWB and NE states, Marathwada, interior parts of Karnataka and few pockets along the east coast bordering Odisha and SHWB along with few regions of the north eastern states for the next 3 days..

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

T-Storm Initiation Index (> 4): Significant threshold values are noticed over Jharkhand, GWB, along the east of India and few pockets in AP and along the west coast of India. Forecast shows significantly high threshold values over west coast of India, GWB and eastern coast for the next 3 days.

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

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

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

CAPE (> 1000): Mostly along east coast of India over GWB, Odisha and adjoining AP regions along with parts in south peninsular region and coastal Kerala and Karnataka during the next 5 days

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

5. Rainfall and thunderstorm activity:

10-40 mm rainfall is forecasted tomorrow over most parts of the NE states and also some parts of GWB, Kerala regions. Isolated light to moderate rainfall activity over pockets of NE states and Kerala will continue for the next 2-3 days..

3.IOPADVISORYFOR24and48Hrs:

SummaryandConclusions:

Day 1 & Day 2:

The northeastwards movement and intensification of the Cyclonic Storm (Maarutha) over eastcentral Bay of Bengal is likely to decrease the intensity of rainfall over Andaman and Nicobar Islands and increase the rainfall over the North eastern states on day 1 and day 2..

The trough from north Telangana to eastcentral Arabian sea across north Interior Karnataka and is likely to result in thunderstorm activity over Karnataka and Telengana on day 1. This is likely to decrease but persist on day 2.

The upper air cyclonic circulation over southeast Bihar & neighbourhood with a trough from this system to northcoastal Odisha has increased the southerly wind inflow into Bengal. This will result in thunderstorm activity on day 1. The likely eastward movement of the trough is likely to decrease the thunderstorm activity over the region on day 2.

24 hour Advisory for IOP:

Manipur, Mizoram

Assam and Meghalaya

Nagaland and Tripura

East Bihar, Sub Himalayan West Bengal, Gangetic West Bengal, North Coastal Orissa

Karnataka and Telanagana

48 hour Advisory for IOP:

Manipur, Mizoram

Assam and Meghalaya

Nagaland, Manipur, Mizoram and Tripura

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:

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

LowLevelWinds

http://satellite.imd.gov.in/archive/INSAT-3D-IMAGER/3D-PRODUCTS/AMV/LLW/MAR_2017/?C=M;O=D

Upperlevelwinds

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

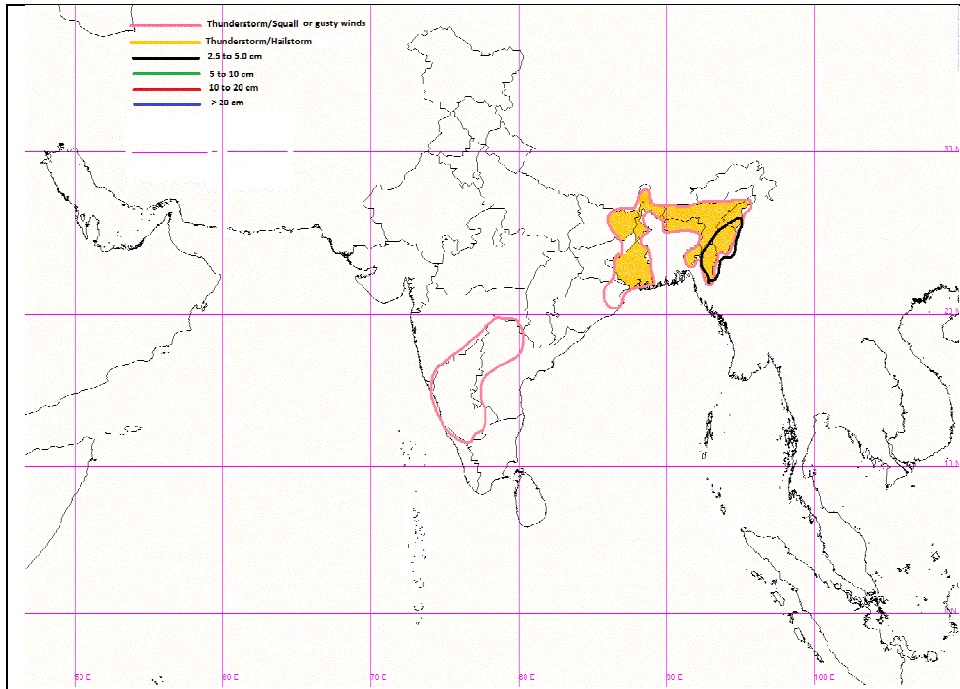
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ForRadarimagesofthepast24hoursincludingmosaicofimages:

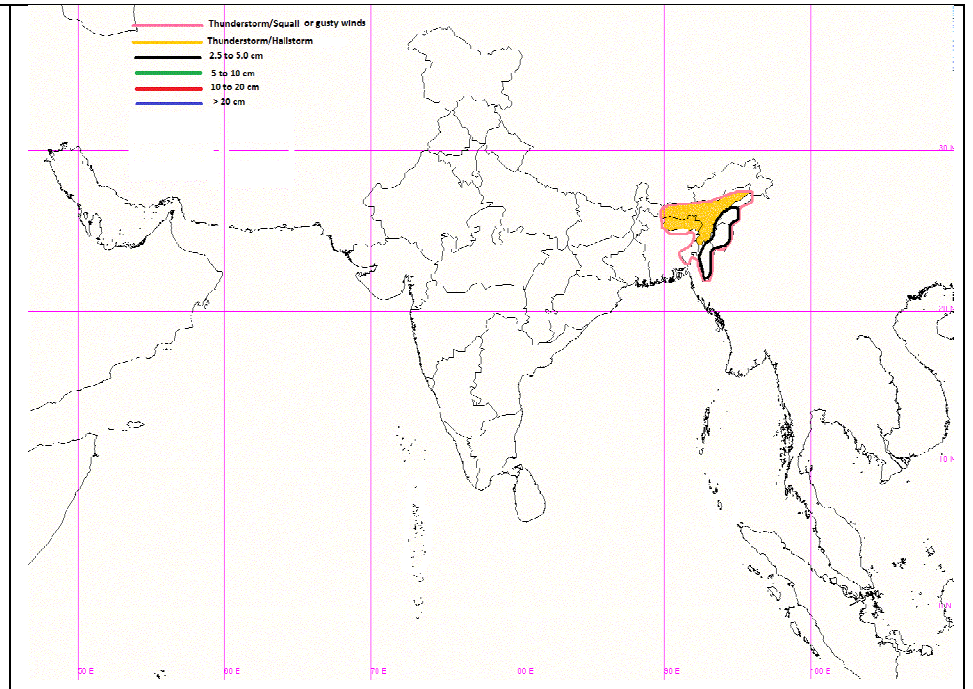
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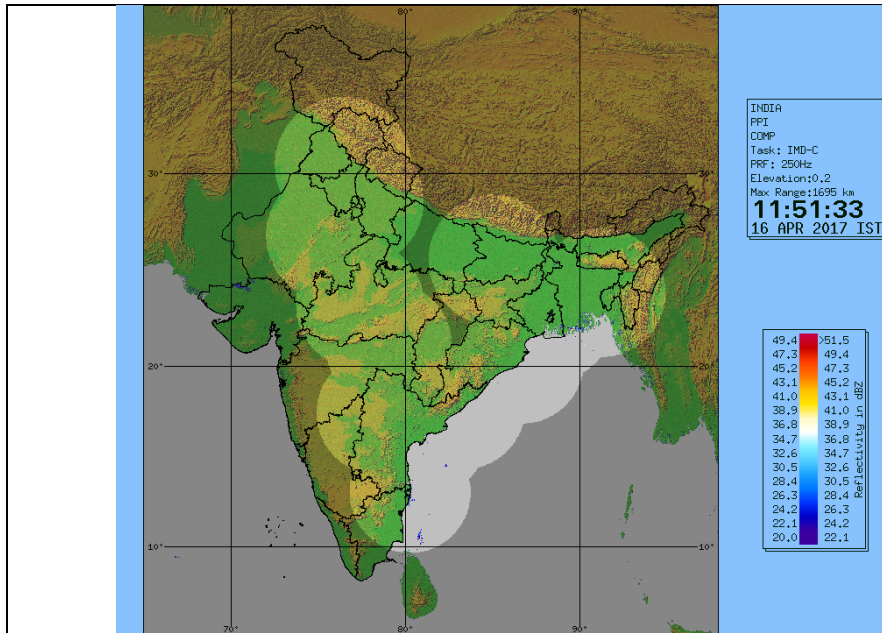
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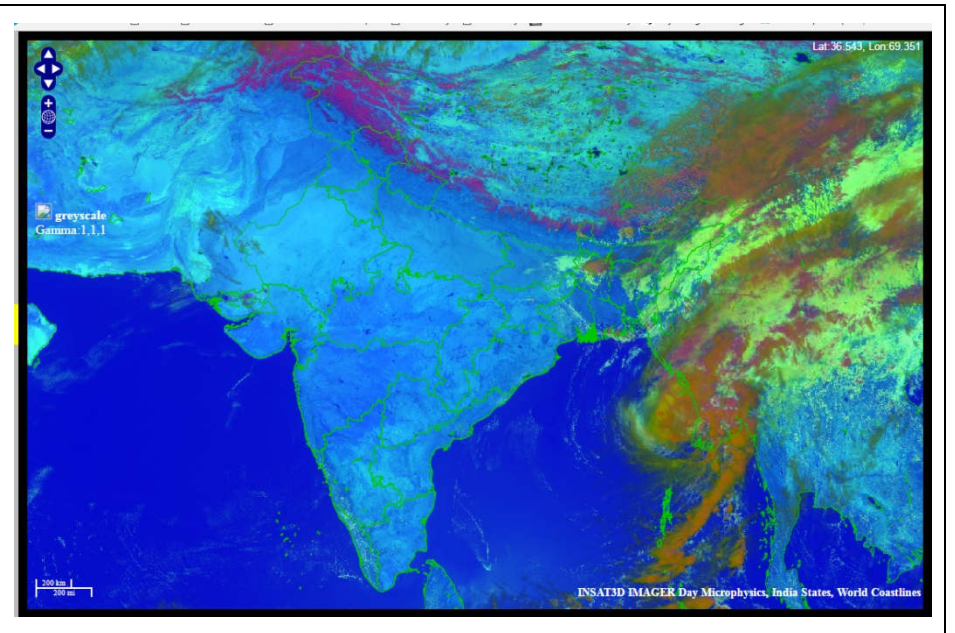
IOP Advisory for 24 hours



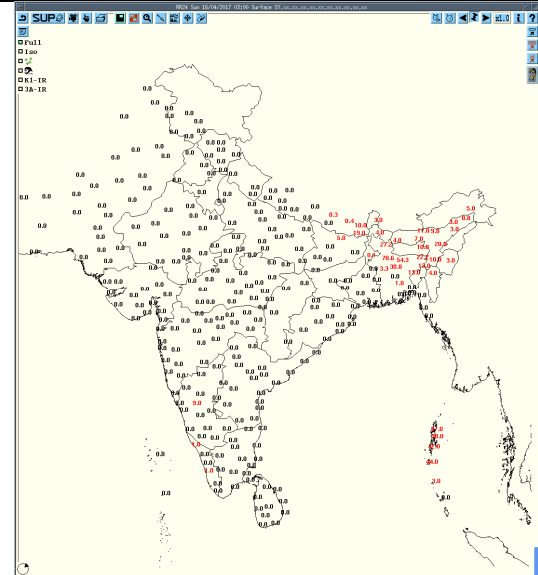
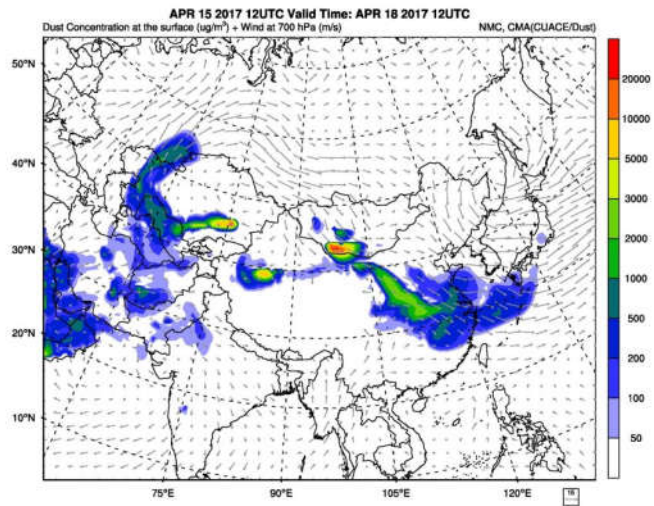
IOP Advisory for 48 hours



DWR Composite at 1151 hrs IST of today

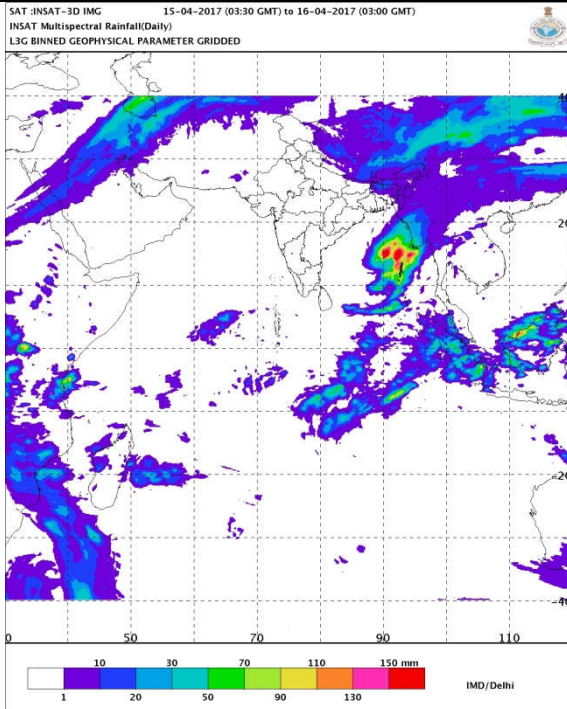


RAPID RGB Image of INSAT 3D at 1130 hrs IST of today

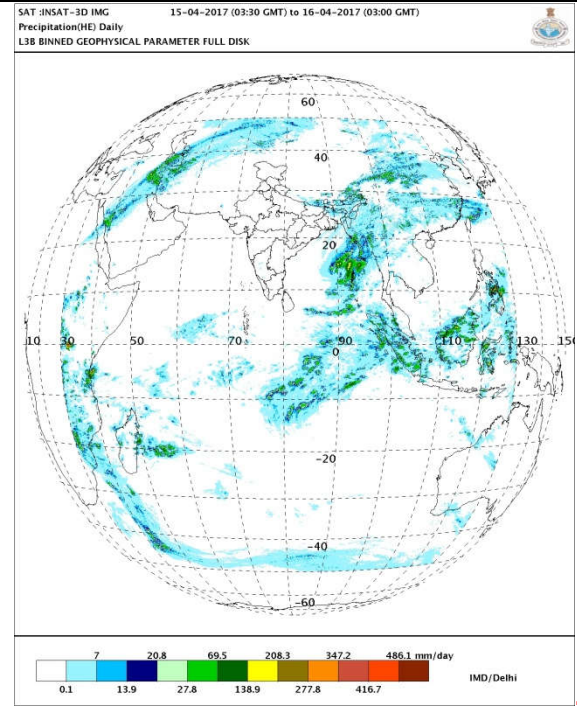


Forecast Dust Concentration for 12UTC of 18th April

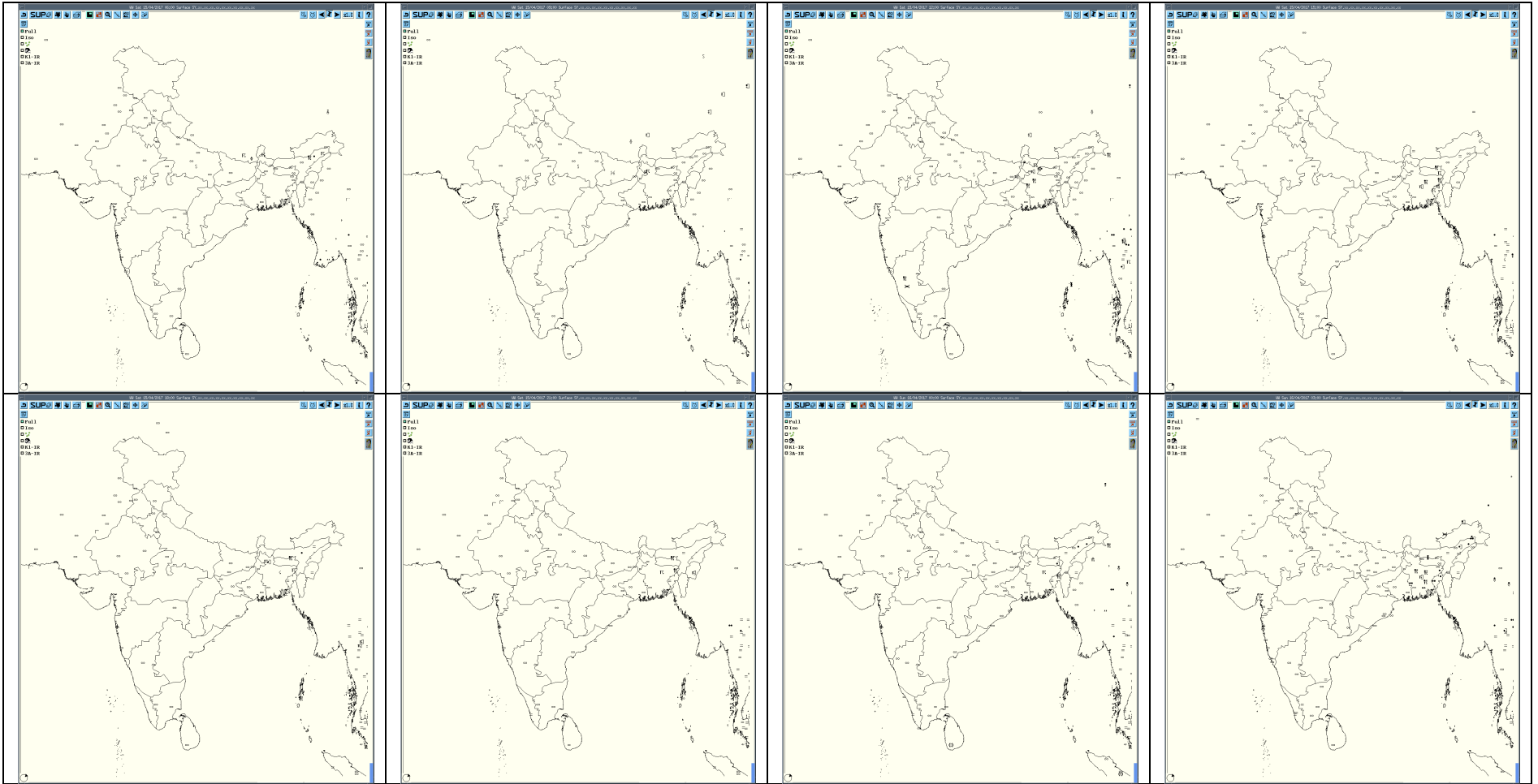
Accumulated 24 Hour rainfall (in red) recorded at 0300 UTC of today



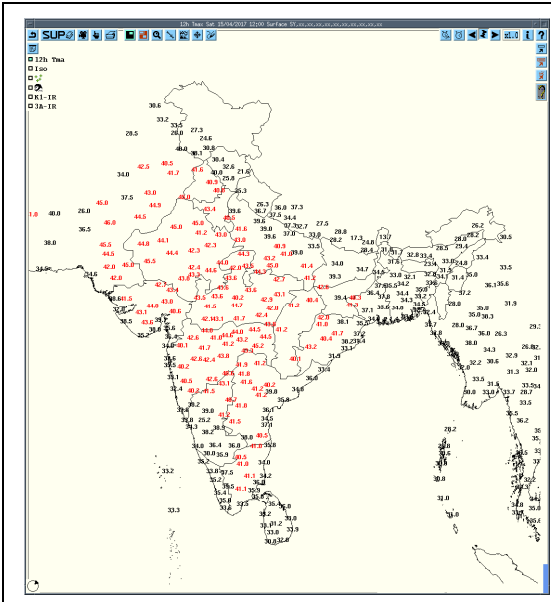
IMR Rainfall



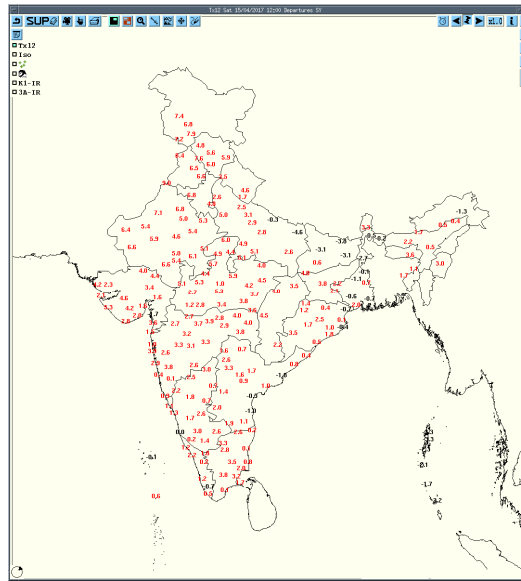
HEM Rainfall



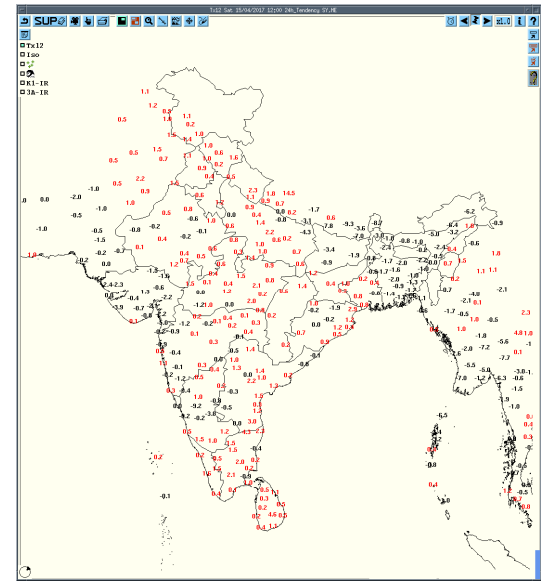
3 hourly Past weather at 06, 09, 12, 15, 18, 21 UTC of yesterday and 00 & 03 hrs UTC of today



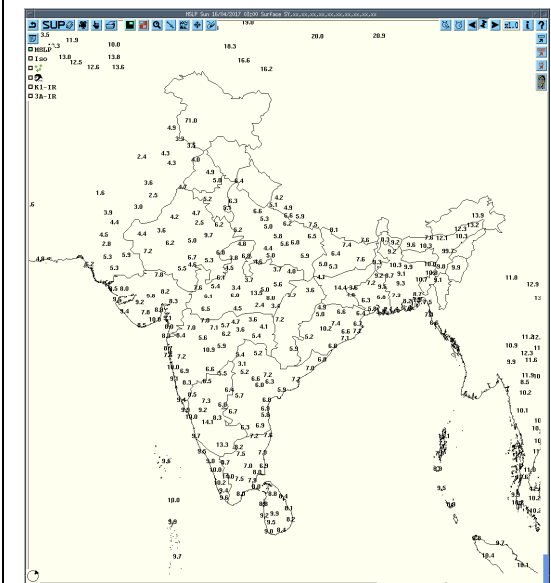
T_{max}



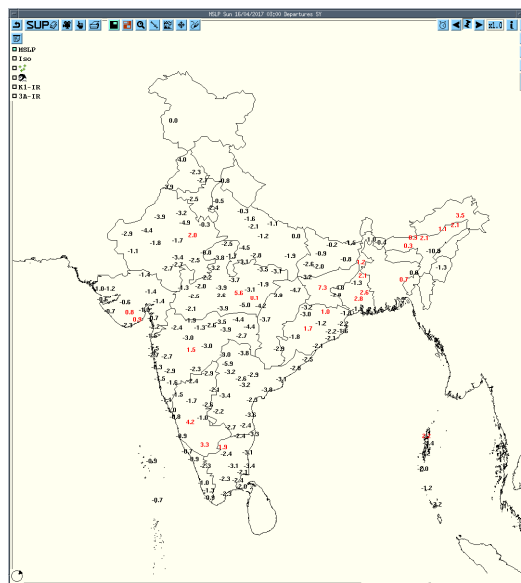
DepartureT_{max}



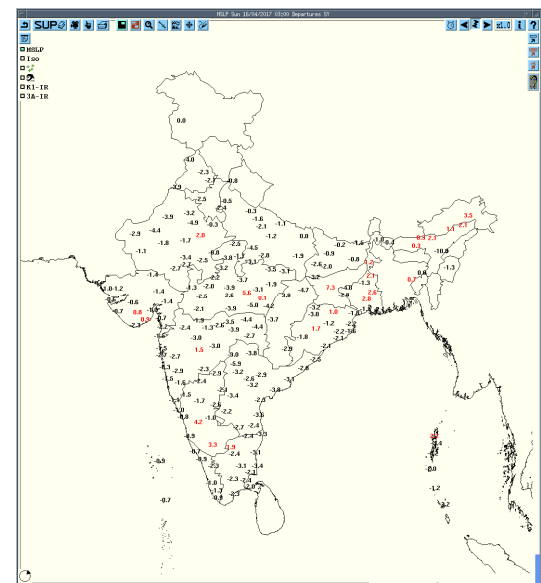
TendencyT_{max}



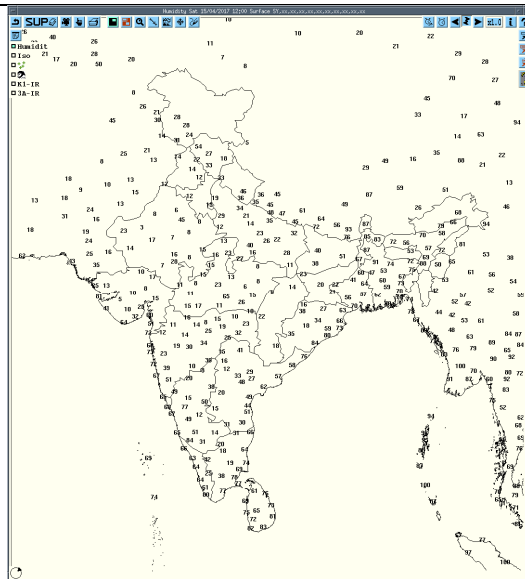
MSLP



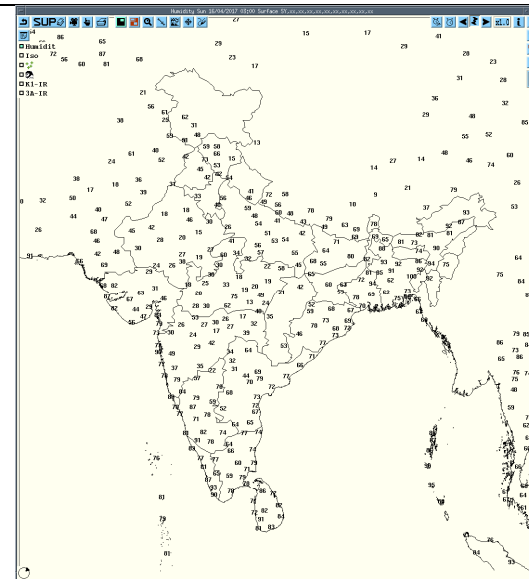
DepartureMSLP



TendencyMSLP



RH at 12UTCyesterday



RH at 03UTCtoday

Realized weather past 24 hours(Based on SYNERGIE Products)

| Date | Time of Reporting | Name of Station Reporting | Region | STATE | Weather Event |
|-------------|--------------------------|----------------------------------|-----------------|-------------------|----------------------|
| 14-04-17 | 0600 UTC | Gangtok | East India | West Bengal | Thunderstorm |
| | | Itanagar | Northeast India | Arunachal Pradesh | Thunderstorm |
| | | Dibrugarh | Northeast India | Assam | Thunderstorm |
| 14-04-17 | 0900 UTC | Dinajpur | East India | West Bengal | Thunderstorm |
| 14-04-17 | 1200 UTC | Coochbehar | East India | West Bengal | Thunderstorm |
| | | Dhubri | Northeast India | Assam | Thunderstorm |
| | | Purnea | East India | Bihar | Thunderstorm |
| | | Haveri | South India | Karnataka | Thunderstorm |
| 14-04-17 | 1500 UTC | Guwahati | Northeast India | Assam | Thunderstorm |
| | | Shillong | Northeast India | Meghalaya | Thunderstorm |
| 14-04-17 | 1800 UTC | Guwahati | Northeast India | Assam | Thunderstorm |
| 14-04-17 | 2100 UTC | Guwahati | Northeast India | Assam | Thunderstorm |
| | | Imphal | Northeast India | Manipur | Thunderstorm |
| 15-04-17 | 0000 UTC | Kailashahar | Northeast India | Assam | Thunderstorm |
| 15-04-17 | 0300 UTC | Nil | Nil | Nil | Nil |

Past24hoursDWRReport:










| 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 |
|---------------------------|------------------------------------|---|---|---|---|---|---|
| Machilipatnam | 03Z of 15/04/17 to 03Z of 16/04/17 | 1151 to 1301 UTC | Isolated cell with average height of 6.4 km with maximum reflectivity of 50.5 dBZ | W(249KM) Stationary | Cells started forming at 1151UTC at W(249km) from radar. Maximum reflectivity during 1221 to 1241 and died down at 1301 UTC | Possibility of rain with light winds. | Prakasam district North of Giddalur (78.872Lon/15.723Lat) |
| Paradip | 15/04/17 | 1030-1130 | Convective Isolated very little cell with maximum reflectivity 40 Dbz and maximum height reached up to 07.0km at 1630Hrs IST. Thereafter cell is shown quickly transformed into weak cell in dissipation. | Position: Lat.: -19.1 deg.N Long: -84.7deg.E Range: -Around 240km. AZ: - Around 240deg. Movement- Sly. | NIL . | NIL | NIL |
| | | 150300 - 151127 | -- | -- | Radar on Standby Mode due to AC Failure | -- | -- |

| | | | | | | | |
|----------|------------|-----------------------|--|--|--|-----------------------------|--|
| AGARTALA | 16/04/17 | 151127 – 151900 | Cells organized in a line with Maximum Height 15km and maximum reflectivity 48 dBZ (at 1250 UTC over Bangladesh-160 KM WNW of DWR Agartala) | System was first visible as a line structure with max height 10KM and reflectivity<40dBZ at 1127 UTC, 200 KM NW from DWR Agartala moving ESE-wards at around 45 kmph | Cells dissipated at 1900 UTC of 15.04.17 over Manipur and adjoining Assam | TS with rain | 1. West, North, Unakoti Districts of Tripura, 2.East Khasi Hills District of Meghalaya, 3.Cachar District of Assam |
| | | 151430 – 160120 | Multiple cells with Maximum Height 15km and maximum reflectivity 50 dBZ (at 1740 UTC over Bangladesh-220 KM NW of DWR Agartala) | Formed 300 KM NW of DWR Agartala at 1430 UTC of 15.04.17 moving SE-wards at around 40 kmph | Cells dissipated at 0120 UTC of 16.04.17 over Mizoram | TS with rain | 1. West, North, Unakoti Districts of Tripura, 2.East Khasi Hills District of Meghalaya, 3.Cachar District of Assam |
| | | 151750 – 160300 | Multiple cells with Maximum Height 14km and maximum reflectivity 46 dBZ (at 1940 UTC over Bangladesh-260 KM NW of DWR Agartala) | Cells continuously formed one after another 300 KM NW of DWR Agartala since 1750 UTC of 15.04.17 moving SE-wards at around 40 kmph | At 0300 UTC of 16.04.17, cells persists over Western parts of Tripura with reflectivity <35 dBZ and height <9KM | Light Rain | West district of Tripura |
| KOLKATA | 15-04-2017 | 0301-0901 UTC | NIL | NIL | NO SIGNIFICANT ECHO | NIL | NIL |
| | | 0901-1401 UTC | Isolated two cells with position 24.237 N/ 86.876 E / 321.2 Degree/ 239.5 Km with reflectivity of 48 dBz and maximum height of 9.59 Km at 0902 UTC and position 24.499 N/ 87.146 E / 330.3 Degree/ | Moving in ESE-ly direction | Cell started forming at 0901 UTC at NNE (294.3 Km) from radar, Matured. Moved towards Bangladesh, dissipated at 1401 UTC in NE direction at a distance of 181.8 km from Radar. | Thunderstorm/Hailstorm/Rain | N/A |

| | | | | | | | |
|------------|--|----------------------------------|---|--|---|------------------|--|
| | | | 247.2 Km with reflectivity of 39.5 dBz and maximum height of 9.77 Km merged into a single cell with max. height of 12.72 km and max. reflectivity of 65.0 dBz at 1201 UTC | | | | |
| KOLKATA | | 1411-2351 UTC | NIL | NIL | NO SIGNIFICANT ECHO | NIL | NIL |
| | 16-04-2017 | 0001-0301 UTC | Small scattered cells with maximum reflectivity of 54 dBz and maximum height of 7.62 km at 0101 UTC | Moving in SSW-ly direction with a speed of 30 kmph | Cell started forming at 0051 UTC in NE (230.8 km) from Radar, moving SSW-ly and died out at 0301 UTC in NE at 139 km from Radar | Rain | N/A |
| MC Lucknow | 16/04/2017 | 150342 UTC TO 150512UTC | Multiple cells started forming in 230 Km ENE at 0342 UTC. The height of the system reached 14 Km. with maximum reflectivity 50 dBZ. | 230 Km ENE w.r.t. the station and the system moved in ESE direction with average speed 54 Km/h.Cells became weaker at position 250 Km. east around 0512 UTC and dissipated completely around 0532 UTC. | Radar was not operational from 1115 UTC to 1600 UTC due to continuing maintenance. Records/data of this period not available. | NIL | NIL |
| SRINAGAR | 16/04/2017 | 15April 03Z to 16April 3Z(24hrs) | NIL | NIL | NIL | NIL | NIL |
| PATNA | 15/04/2017 0300 UTC TO 16/04/2017 0300 UTC | 150410 | Multiple cell having Maximum reflectivity 55dBZ with height of 14 km at 09:40 hrs IST on15-04-2017 | Formed at NE Direction from DWR Patna at the distance of 151 KM. Movement-SEly | NIL | Tunderstorm/Hail | Madhubani, Darbhanga, Madhepura, Supaul, Betia, Motihari Sheohar & Purnea. |

| | | | | | | | |
|--------------------|---|-----------------------|---|---|---|-----|-----|
| VISA KHAPATNA M | 15/04/17 | 0300 UTC- 0600 UTC | A CELL OF max reflectivity 42 DBZ NE ly 120 kms from RADAR with height 6kms. | Moving towards NW ly | Dissipated as its reflectivity dies during the period of 04.01 UTC – 04.11 UTC. | - | ■ |
| | 15/04/17 | 0600 UTC- 0900 UTC | Isolated single cells of max reflectivity 50 DBZ with average height of 5km. | NEly(130km) Moving towards SW ly | Cells start forming at 08.31UTC and not matured well and dissipated. | - | ■ |
| | 15/04/17 | 0900 UTC- 1200 UTC | Isolated single cells of max reflectivity 45 DBZ with average height of 6km. | NE(200km) & SW(150) Moving towards SW ly | Cells start forming and not matured well and dissipated. | - | ■ |
| | 15/04/17 | 1500 UTC- 1800 UTC | Isolated single cells of max reflectivity 52 DBZ with average height of 8km. | SW (180 km) & SW(2400) | Cells start forming and not matured well and dissipated. | - | ■ |
| DWR HYDERABAD | 15/16.04. 2017. (0300 utc to 0300utc) | NIL | NIL | NIL | NIL | NIL | NIL |

| | |
|------------------------|--------------------|
| ∞ | haze |
| ☁ | smoke |
| ☁ | dust or sand storm |
| ☁ | fog |
| ☁ | drizzle |
| • | rain |
| * | snow |
| ▽ | showers |
| △ | hail |
| ⚡ | thunderstorm |
| Weather Symbols | |

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

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