



India Meteorological Department
FDP STORM Bulletin No.74 (18-05-2017)

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

The Southwest Monsoon has further advanced into some more parts of southeast Bay of Bengal, some parts of east central Bay of Bengal and remaining parts of north Andaman sea. The Northern Limit of Monsoon (NLM) passes through Lat.5.0°/Long. 80.0°E, Lat. 8.0°N/Long. 87.0°E, Lat. 13.0°N/ Long. 92.0°E, Maya Bandar and Lat.16.0°N/ Long. 95.0°E. The NLM is likely to remain over the same region during next 4-5 days.

The Western Disturbance as a trough in mid-tropospheric westerlies roughly along longitude 72.0°E and north of latitude 25.0°N, now runs roughly along longitude 75.0°E and north of latitude 30.0°N.

The upper air cyclonic circulation over Mizoram & neighbourhood, now lies over Tripura & neighbourhood and extends upto 2.1 km above mean sea level.

The upper air cyclonic circulation over Gulf of Martaban & neighbourhood persists and now extends upto 3.1 above mean sea level.

The trough at mean sea level from south Coastal Andhra Pradesh to south Tamilnadu now runs from south coastal Andhra Pradesh to Comorin area.

An upper air cyclonic circulation lies over Punjab & neighbourhood and extends upto 0.9 Km above mean sea level.

A trough runs from west Bihar to west central Bay of Bengal and extends upto 1.5 km above mean sea level and the upper air cyclonic circulation over north Chhattisgarh & neighbourhood, now lies over north Chhattisgarh and adjoining Odisha and extends upto 0.9 km above mean sea level embedded in the above trough. The trough from this system to north Coastal Andhra Pradesh extending upto 1.5 km above mean sea level has become less marked.

The upper air cyclonic circulation over northwest Uttar Pradesh & neighbourhood between 1.5 km and 2.1 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:

Cell No	Date/Time (UTC)	Area/Location	CTT (- Deg C)	Movement	Remarks
1	18/0800 0900	EC Jharkhand adjoining S Gangetic West Bengal --	74 85	---	---
2	18/0900	S Kerala adjoining Tamilnadu	87	---	---
3	18/0900	NC Tamilnadu	82	---	---

4	18/0900	Extreme S Odisha adjoining N Coastal Andhra Pradesh	72	--	--
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Western Disturbance:

Scattered multi-layered clouds were seen over J & K in association with western disturbance over the area.

Westerly Trough:

Trough in westerlies runs roughly along long 74.0°E north of latitude 25.0°N

Cloud Description:

Broken low/medium clouds with embedded moderate to intense convection were seen over SE Jharkhand, adjoining Odisha, adjoining S Gangetic west Bengal, S Odisha, E Meghalaya. Scattered low/medium clouds with embedded moderate to intense convection were seen over Bay Islands. Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over Himachal Pradesh, Uttarakhand, Sikkim, Arunachal Pradesh, Nagaland, Manipur, and SE Assam. Scattered low/medium clouds with embedded isolated weak convection were seen over South Interior Karnataka and rest Kerala. Scattered low/medium clouds were seen over Haryana, Delhi, W & SE Uttar Pradesh, NE Rajasthan, Madhya Pradesh and rest parts of south India except N North Interior Karnataka & N Telangana.

Arabian Sea:

Scattered low/medium clouds with embedded intense to very intense convection were seen over south Arabian Sea south of latitude 10°N.

Bay of Bengal & Andaman Sea:

Scattered low/medium clouds with embedded intense convection were seen over SE & EC Bay of Bengal, Andaman Sea, Gulf of Martaban and Tenasserim coast.

Past Weather:

Convection:-

Moderate to Intense convection was observed over J & K Himachal Pradesh Punjab South West Rajasthan Uttarakhand Uttar Pradesh, Bihar Jharkhand Odisha West Bengal North-East States South Interior Karnataka Kerala and Tamilnadu.

OLR:-

Upto 200 wm^{-2} was observed over North J & K, South Mizoram.

Upto 230 wm^{-2} was observed over Rest J&K, Himachal Pradesh, North Uttarakhand East Bihar East South Interior Karnataka Kerala Tamilnadu.

Upto 250 wm^{-2} was observed over, North-East Uttar Pradesh Rest North-East States North Coastal Andhra Pradesh Telangana North Interior Karnataka Marathawada

Westerly Trough & Jet-Stream:

Trough in Westerlies runs roughly along longitude 74.0°E North of Lat. 25.0°N.

No Jet Stream is observed over India

Dynamic Features

Low to Medium wind shear is observed over India.

Negative shear tendency is observed over North India and Positive shear tendency is observed over rest India.

A positive Vorticity field is observed over West Rajasthan Uttar Pradesh Bihar East Madhya Pradesh Chhattisgarh Odisha, North Coastal Andhra Pradesh.

Positive low level convergence observed over Karnataka Andhra Pradesh and Negative low level convergence observed over rest parts of India.

Precipitation:

IMR:

Rainfall Up to 70 mm was observed over South East Bihar East Jharkhand North Gangetic West Bengal.

Rainfall Up to 50 mm was observed over East Uttar Pradesh Rest Bihar Rest West Bengal North Tamilnadu.

Rainfall Up to 10mm was observed over J&K Himachal Pradesh South West Punjab South-west Rajasthan Uttarakhand Sikkim West Assam Meghalaya Manipur Mizoram, Tripura North Coastal Andhra Pradesh South Interior Karnataka.

HEM:

Rainfall Up to 70 mm was observed over South-East Bihar, North East Jharkhand.

Rainfall Up to 14 mm was observed over J&K Himachal Pradesh East Uttar Pradesh Rest Bihar South East Rajasthan South Interior Karnataka adjoining Tamilnadu Meghalaya Nagaland Manipur Tripura East Arunachal Pradesh, East Assam.

Rainfall Up to 07 mm was observed over North West Rajasthan, Himachal Pradesh, Punjab, Haryana, Extreme North West Uttar Pradesh, West Bengal, Rest Assam Rest Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, West Central Tamilnadu.

RADAR and RAPID Observation:

Isolated strong echoes were seen in DWR Chennai (with dBZ >60 and height >15km) and DWR Kolkata (with dBZ >55 and height >15km) at 1600 hrs IST. Isolated/multiple moderate echoes were also seen in DWR Machilipatnam, Delhi, Goa, Paradeep and Mohanbari at around 1600hrs IST. Latest DWR Composite imagery was not available.

RAPID RGB Satellite imagery at 1600hrs IST indicated convective clouds over Kerala, Tamilnadu, S Karnataka, Odisha, Jharkhand, West Bengal, N Andhra Pradesh, S Assam, Nagaland, Manipur, J & K, Himachal Pradesh, Uttarakhand, Southern parts of Central Uttar Pradesh, East Rajasthan, Nicobar Islands and Lakshadweep Islands areas.

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

Higher Dust concentration was observed over north-west Africa. Dust concentration is expected to increase over north India for next five days. High PM10 concentration was observed over north India.

2. NWP MODEL GUIDANCE:

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

1. Weather Systems:

12UTC Charts of Day 2-4 show evolution of heat low extending from over NW India and adjoining Pakistan south-eastwards over the IG plains with MSLP values lower than 992hPa. Weak trough can be seen over this region on all days from Day-0-4

12UTC charts on days from Day0-4: show a zone of wind discontinuity at 925 hPa: (i) SW-NE extending from northern Telangana-Maharashtra region to Chhattisgarh-Jharkhand region.

Over Arabian Sea a CYCIR at 850 hPa is seen near to coast of Kerala on Day 0.

Over BoB a CYCIR at 850 hPa is seen north of Andaman on Day 3 & 4

At 500hPa Day-0 to Day-1 strong anticyclone over central peninsula and in Day 3-4 cyclonic circulation over BoB

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:

(Day/Index : Subdivisions with Lower Level Convergence > 15 x 10⁻⁵ /s):

Day0: Odisha, Chhattisgarh, Coastal AP, TN Puducherry,

Day1: Odisha, Chhattisgarh, Coastal AP, TN Puducherry,

Day2: Jharkhand, Hry Chd Delhi, TN Puducherry,

Day3: Jharkhand, West UP, Hry Chd Delhi, West RJ, East RJ, East MP, Chhattisgarh,

Day4: Jharkhand, Odisha, Madhya Maharashtra, Chhattisgarh, NI Karnataka

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

(Day/Index : Subdivisions with Lower Level Vortex $> 15 \times 10^{-5} /s$):

Day0: Assam Meghalaya, TN Puducherry,

Day1: Assam Meghalaya, NE NMMT, Himachal Pradesh, Saurashtra Kutch, TN Puducherry,

Day2: Arunachal Pradesh, Assam Meghalaya, TN Puducherry,

Day3: Arunachal Pradesh, Assam Meghalaya, Bihar, West UP, Uttarakhand, Andaman Nicobar, TN Puducherry,

Day4: Arunachal Pradesh, Assam Meghalaya, Punjab, TN Puducherry

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

(Day/Index : Subdivisions with Showalter Index < -4):

Day0: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Saurashtra Kutch, Konkan Goa, Coastal AP, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day1: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

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

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Jharkhand, Bihar, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Guj Reg, Saurashtra Kutch, Chhattisgarh, Coastal AP, TN Puducherry, SI Karnataka, Kerala,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Guj Reg, Konkan Goa, Coastal AP, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala

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

(Day/Index : Subdivisions with K Index > 40):

Day0: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, East MP, Madhya Maharashtra, Chhattisgarh, Coastal AP, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,

Day1: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Saurashtra Kutch, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka, Kerala,

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka, Kerala,

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka, Kerala,

Day4: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, Odisha, Coastal AP, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka

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

(Day/Index : Subdivision with Total Totals Index > 52):

Day0: Arunachal Pradesh, Sub Himalayan WB, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Saurashtra Kutch, TN Puducherry,

Day1: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Saurashtra Kutch, Chhattisgarh, Coastal AP,

Day2: Arunachal Pradesh, Sub Himalayan WB, Bihar, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Chhattisgarh, Coastal AP,

Day3: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Guj Reg, Saurashtra Kutch, Chhattisgarh, Coastal AP,

Day4: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, East MP, Guj Reg, Chhattisgarh, Coastal AP, TN Puducherry

8. Rainfall and thunder storm activity:

(Day/Index : Subdivisions with Precipitation > 2 cm):

Day1: Arunachal Pradesh, Assam Meghalaya, Andaman Nicobar, TN Puducherry, SI Karnataka, Kerala,

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Odisha, Andaman Nicobar, Kerala,

Day3: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Andaman Nicobar, Kerala,

Day4: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Hry Chd Delhi, Jammu Kashmir, Andaman Nicobar,

Day5: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Jammu Kashmir, Andaman Nicobar

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

1. Weather Systems:

00 UTC analysis shows an east west trough over UP and Bihar. The analysis also shows a trough at low level from this system passing through Odisha and North Andhra. The N-S oriented trough from west UP and Bihar along north Odisha and thereby parallel to the east coast up to AP region is seen persisting during next 4 to 5 days. Another CYCIR over north east Rajasthan and adjoining Pakistan from day 2 to day 4

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 over a small region of Bihar and UP in the analysis chart

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

Analysis shows low level positive vorticity (>12 x 10⁻⁵/s) mainly over the foothills of Himalaya, along with Interior Odisha, Chhattisgarh and adjoining east MP. The high vorticity belts are mainly confined over regions of Odisha, Coastal AP, Chhattisgarh region along with the Himalayan foothills during 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, Odisha, Chhattisgarh and coastal AP in the analysis. Forecast shows high threshold values over west coast of India mainly over the Gujarat region and regions over Chhattisgarh, Odisha, GWB and coastal AP for the next 3 days.

Lifted Index (< -2): The areas with index less than -2 lies along east UP, Bihar, Chhattisgarh, GWB and costal AP for the next 3 days.

Sweat Index (> 400): 00UTC shows significant values over major parts over east UP, Jharkhand, Chhattisgarh, GWB, coastal AP and also over the Gujarat region.

CAPE (> 1000): Mostly along east coast of India over east UP, Bihar, Jharkhand, Chhattisgarh, GWB, Odisha, coastal AP along with few pockets in the south peninsular region and Gujarat region during the next 3 days.

CIN (50-150): Maximum CIN values are found in areas over GWB, Odisha, coastal AP, TN and over few pockets in the Gujarat region for the next 2-3 days..

5. Rainfall and thunderstorm activity:

10-40 mm rainfall is forecasted tomorrow over isolated pockets in the GWB and TN region. The rainfall over GWB and TN region is expected to persist till day 2 and then decrease thereafter

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

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

15-40 dBZ over parts of North Odisha, GWB, Jharkhand, during today (11 UTC to 14 UTC)

15-40 dbz over parts of the southern peninsular region today (14UTC to 20 UTC)

2. Spatial distribution of CAPE and CIN [High potential for thunderstorm]

CAPE (> 1000): Mostly along east coast of India, over east UP, Bihar, Jharkhand, Odisha, SHWB, GWB, coastal AP, west coast with particularly over Gujarat during next 3 days.

CIN (50-150): Higher values over most regions of India except over central India, NW India, J & K region and NE states particularly during morning hours of next three days.

3. Rainfall and thunderstorm activity:

10-40 mm over few pockets in Kerala during day1 and over the North-eastern states for next 1-2 days.

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:

Day-1 & Day-2:

Under the influence of the monsoon current Nicobar Islands will experience heavy rain during the next 24 hours.

The upper air cyclonic circulation over Tripura & neighbourhood will cause thunderstorm with gusty winds which will also produce heavy rainfall at isolated places over Assam& Meghalaya and NMMT on day 1. Thunderstorm with gusty winds will continue over Assam& Meghalaya on day 2 also.

The trough which runs from west Bihar to west central Bay of Bengal upto 1.5 km above mean sea level will cause incursion of moisture laden southerlies over Bihar and neighbouring states resulting in thunderstorm with squally winds on day1 and thunderstorm with gusty winds on day2. This will aid in isolated heavy rainfall over Gangetic and Sub-Himalayan West Bengal on day 1. The upper air cyclonic circulation over north Chhattisgarh and adjoining Odisha will cause thunderstorm with squall to form over Orissa.

Thunderstorm with gusty winds are expected on day1 and day2 over Kerala, Interior Tamilnadu, South Interior Karnataka mainly attributable to the trough at mean sea level from south coastal Andhra Pradesh to Comorin area.

The Western Disturbance present will cause thunderstorm accompanied by squall and hail to occur over Himachal Pradesh and Uttarakhand on day1. Thunderstorm with squall will continue on day2 also, however no hail is expected on day2. Similarly, the upper air cyclonic circulation lies over Punjab & neighbourhood is expected to cause thunderstorm with squall over Punjab on day1.

24 hour Advisory for IOP:

Kerala, Interior Tamilnadu, South Interior Karnataka,
Gangetic west Bengal, Sub Himalayan West Bengal, Orissa, Bihar, Jharkhand
Nicobar Islands
Assam & Meghalaya, NMMT
Himachal Pradesh, Punjab, Uttarakhand
West and East Rajasthan

48 hour Advisory for IOP:

Kerala, Interior Tamilnadu, South Interior Karnataka
Gangetic west Bengal, Orissa, Jharkhand
Assam & Meghalaya,
Himachal Pradesh East UP, Uttarakhand
West and East Rajasthan

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

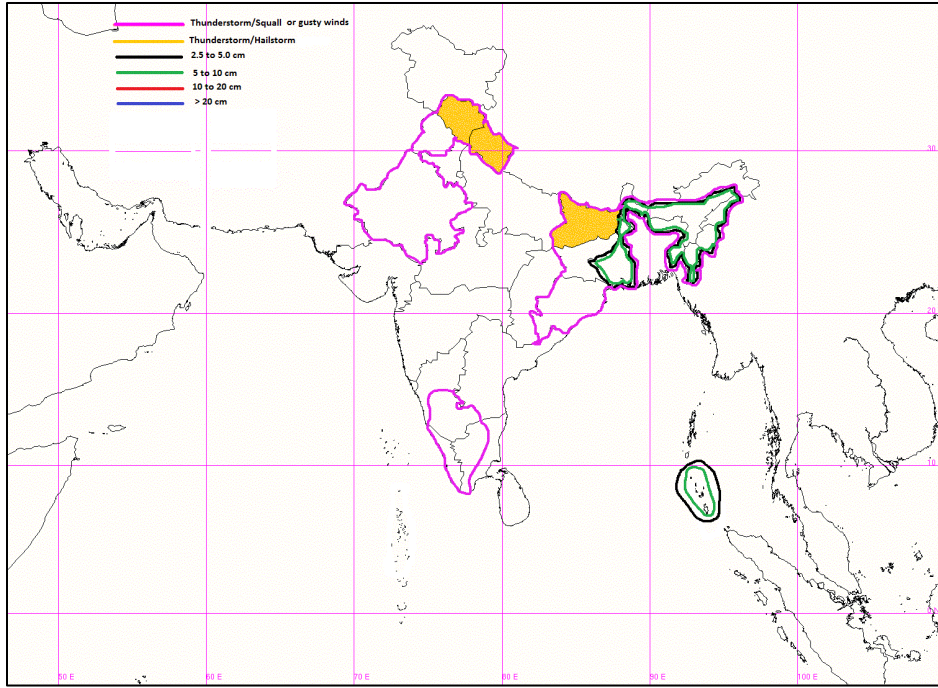
HEM: http://satellite.imd.gov.in/img/3Ddaily_he.jpg

ForRadarimagesofthepast24hoursincludingmosaicofimages:

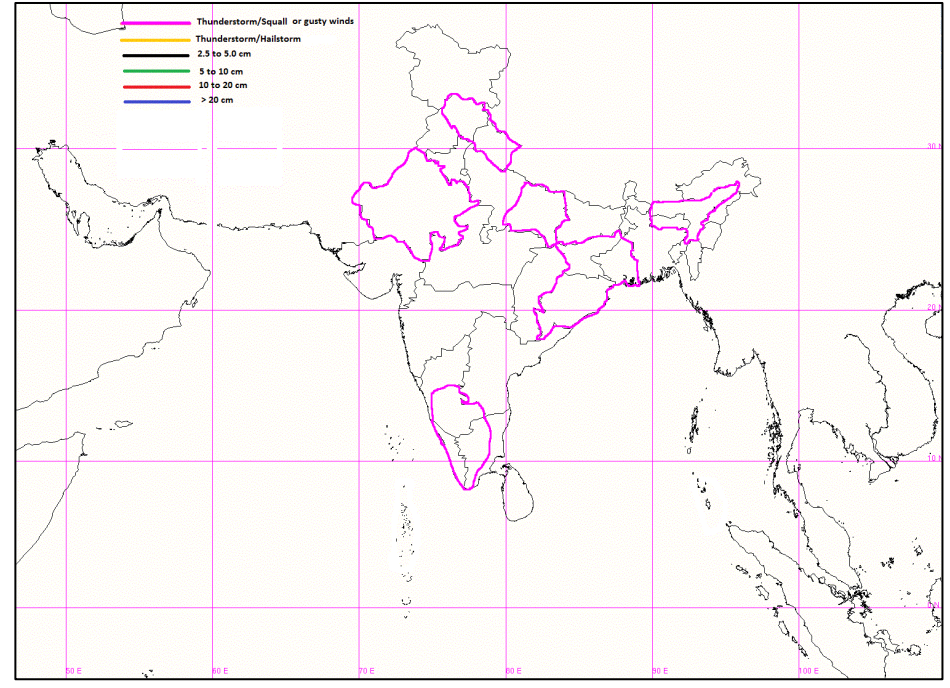
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Satellite sounder based T- Phigram

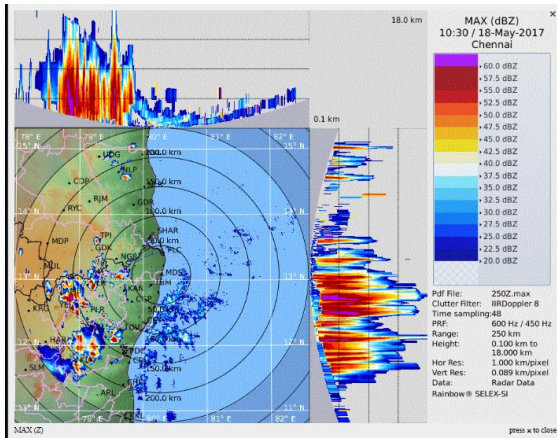
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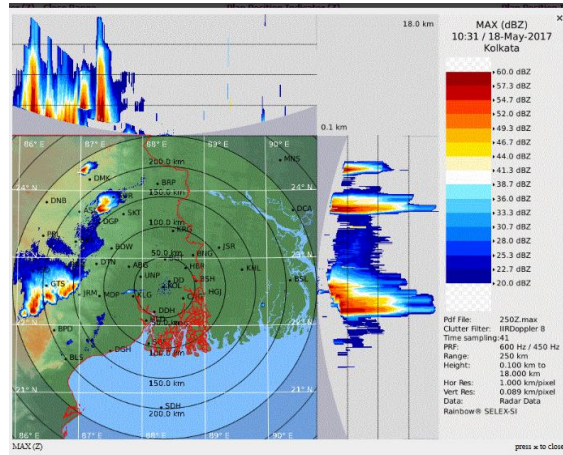
IOP Advisory for 24 hours



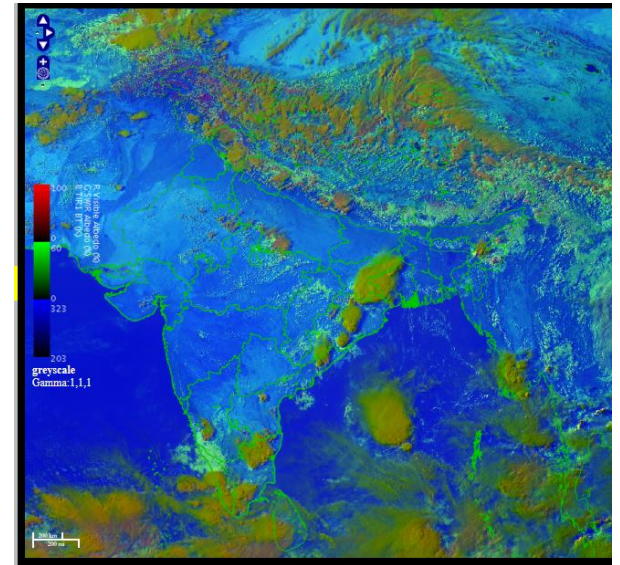
IOP Advisory for 48 hours



DWR Chennai at 1030UTC (1600hrs IST)

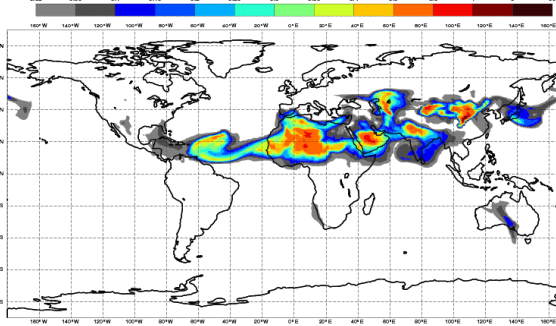


DWR Kolkata at 1031UTC (1601hrs IST)

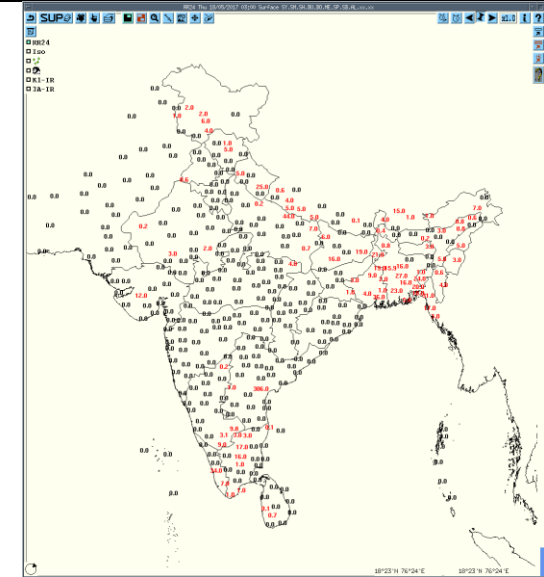
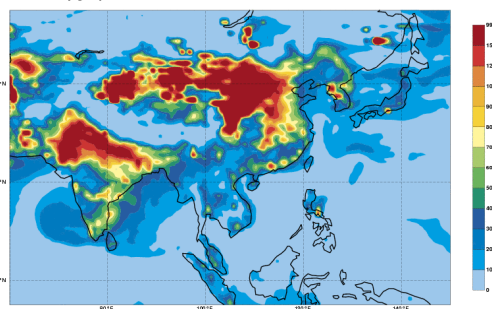


RAPID RGB Satellite Imagery at 1600 hrs IST of today

Wednesday 17 May 2017 00UTC CAMS Forecast t+120 VT: Monday 22 May 2017 00UTC



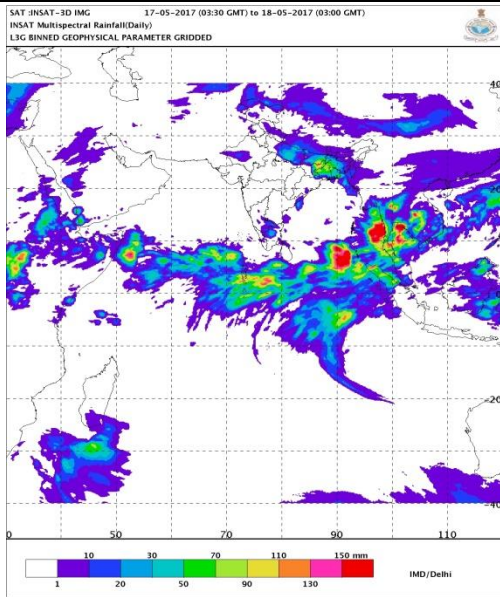
Wednesday 17 May 2017 00UTC CAMS Forecast t+120 VT: Monday 22 May 2017 00UTC



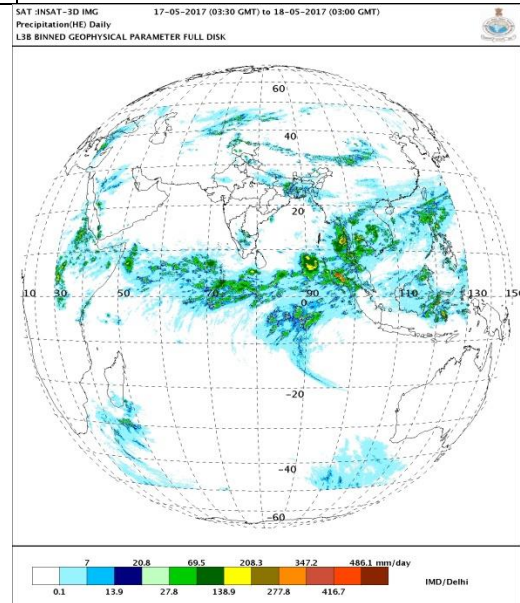
Forecast Dust Concentration for 00UTC of 22th May

PM10 Forecast for 00UTC of 22th May

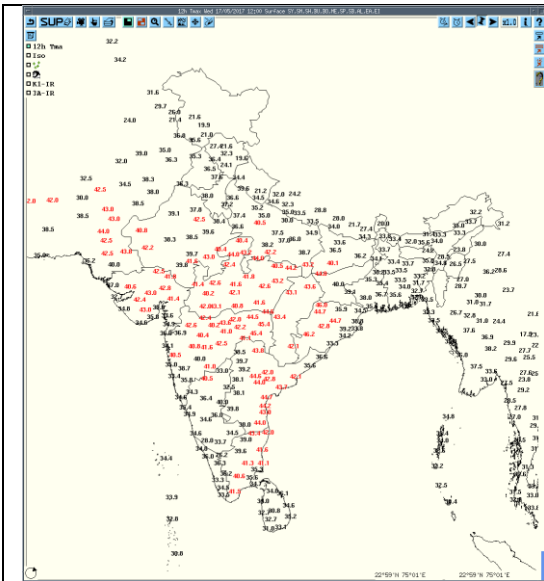
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today



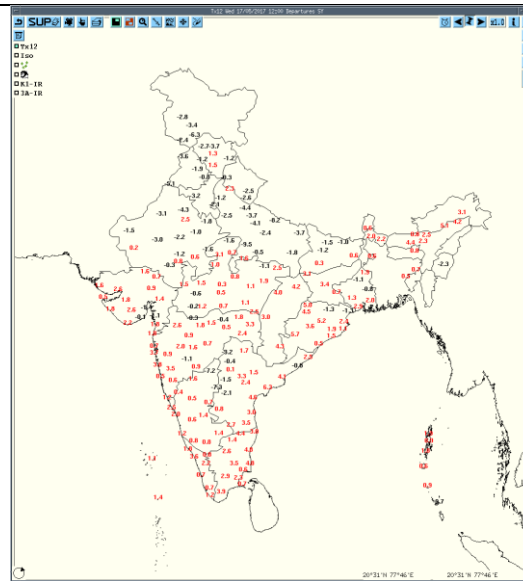
IMR Rainfall



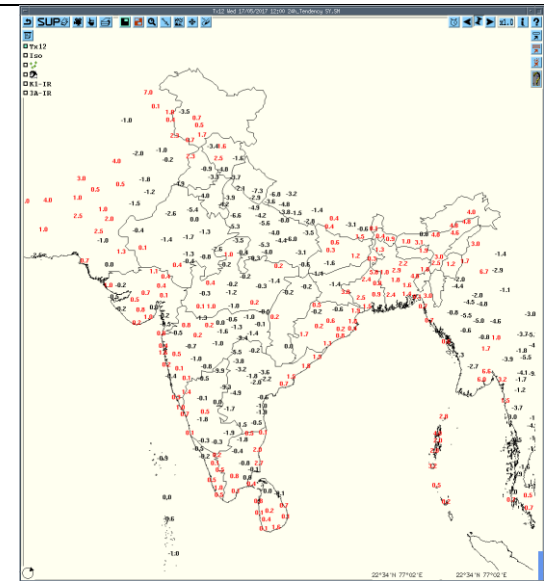
HEM Rainfall



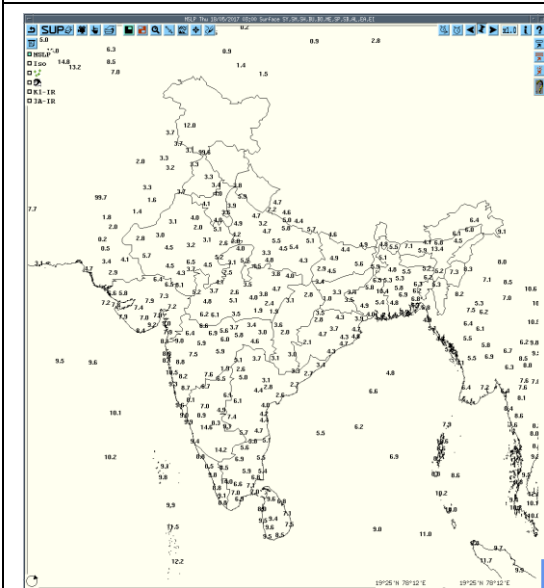
max



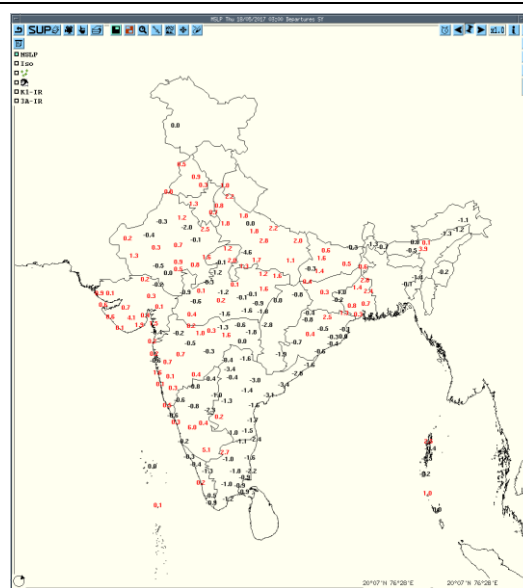
Departure Tmax



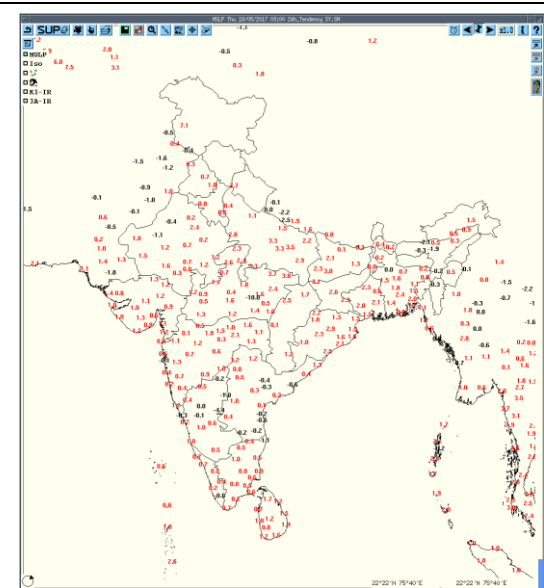
Tendency Tmax



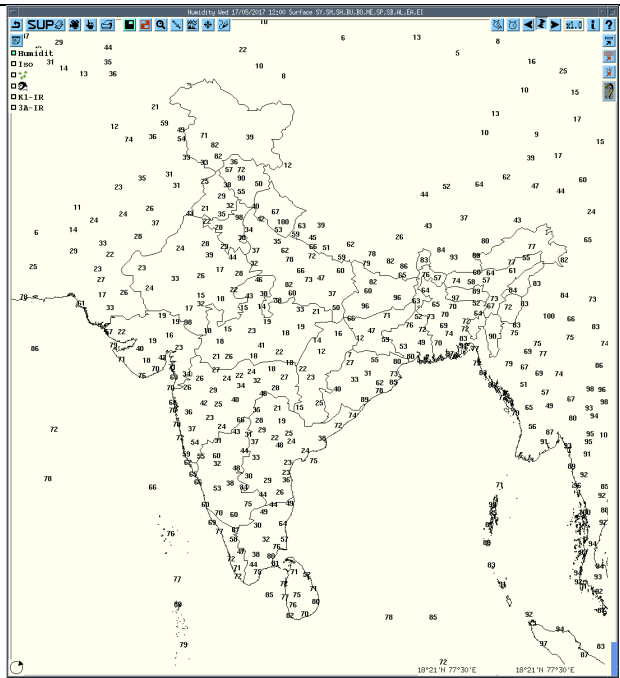
MSLP



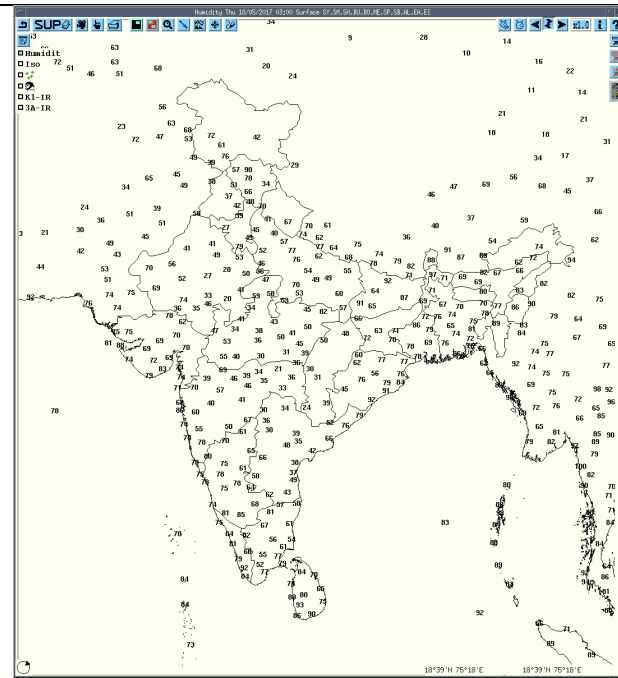
Departure MSLP



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
17-05-17	0600UTC	Gorakhpur	NW India	Uttar Pradesh	Thunderstorm
17-05-17	0900UTC	Bhunter, Sundernagar, Shimla	NW India	Himachal Pradesh	Thunderstorm
		Mukteshwar	NW India	Uttarakhand	Thunderstorm
17-05-17	1200UTC	Banihal, Batote	NW India	J & K	Thunderstorm
		Sundernagar	NW India	Himachal Pradesh	Thunderstorm
		Tehri	NW India	Uttarakhand	Thunderstorm
		Fursatganj	NW India	Uttar Pradesh	Thunderstorm
		Rajkot	W India	Gujarat	Thunderstorm
		Bhagalpur, Purnea	E India	Bihar	Thunderstorm
		Kolkata (City & Dumdum AP)	E India	West Bengal	Thunderstorm
		Bengaluru	NW India	Karnataka	Thunderstorm
17-05-17	1500UTC	Jodhpur	NW India	Rajasthan	Thunderstorm
		Barmer	NW India	Rajasthan	Lightening
		Dehradun	NW India	Uttarakhand	Thunderstorm
		Bankura	E India	West Bengal	Thunderstorm
		Kolkata (Dumdum AP)	E India	West Bengal	Thunderstorm
		Kolkata (City)	E India	West Bengal	Lightening
		Bengaluru	S India	Karnataka	Lightening
Tiruchirappalli	S India	Tamilnadu	Lightening		
17-05-17	1800UTC	Cochin	S India	Kerala	Thunderstorm with Hail
		Coimbatore	S India	Tamilnadu	Duststorm
		Bengaluru	S India	Karnataka	Lightening
		Jodhpur	NW India	Rajasthan	Thunderstorm
		Udaipur	NW India	Rajasthan	Lightening
		Kolkata (Dumdum AP & City)	E India	West Bengal	Thunderstorm
		Agartala	NE India	Tripura	Thunderstorm with Hail
17-05-17	2100UTC	Coimbatore	S India	Tamilnadu	Thunderstorm
18-05-17	0000UTC	Nil	--	--	--
18-05-17	0300 UTC	Nil	--	--	--

Realized 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 Comment (IST)	Time of end (IST)
Agartala	NE India	Tripura	Thunderstorm	17/18-05-17	172115	180050
Sundernagar	NW India	Himachal Pradesh	Thunderstorm	17-05-17	1423 1554	1515 1733
Dehradun	NW India	Uttarakhand	Thunderstorm	17-05-17	1740	1945
Mukteshwar	NW India	Uttarakhand	Thunderstorm	17-05-17	1245 1430	1430 1645
Tehri	NW India	Uttarakhand	Thunderstorm	17-05-17	1205 1730	1730 1900
Shimla	NW India	Himachal Pradesh	Thunderstorm	17-05-17	1400	1650
Jorhat	NE India	Assam	Thunderstorm	18-05-17	0215	0400
Barapani	NE India	Meghalaya	Thunderstorm	17-05-17	1630	1750
Gorakhpur	NW India	Uttar Pradesh (East)	Thunderstorm	17-05-17	0900	0930
Churk	NW India	Uttar Pradesh (East)	Thunderstorm	17-05-17	2010	2105
Bahraich	NW India	Uttar Pradesh (East)	Thunderstorm	17-05-17	0820	0920
Allahabad	NW India	Uttar Pradesh (East)	Thunderstorm	17-05-17	1710	1800
Lucknow	NW India	Uttar Pradesh (East)	Thunderstorm	17-05-17	1525	1630
Kheri	NW India	Uttar Pradesh (East)	Thunderstorm	17-05-17	1430	1630
Etawah	NW India	Uttar Pradesh (West)	Thunderstorm	17-05-17	1800	1815
Bareilly	NW India	Uttar Pradesh (West)	Thunderstorm	17-05-17	1315	1415
Sahjahanpur	NW India	Uttar Pradesh (West)	Thunderstorm	17-05-17	1430	1600
Alwar	NW India	Rajasthan	Thunderstorm	17-05-17	1935	2000
Jodhpur	NW India	Rajasthan	Thunderstorm	17-05-17	1930	2145
Qazigund	NW India	J & K	Thunderstorm	17-05-17	1710	1855
Pahalgam	NW India	J & K	Thunderstorm	17-05-17	1900	1910
Kukernag	NW India	J & K	Thunderstorm	17-05-17	1745	1830

Malda	E India	West Bengal (SHWB)	Thunderstorm	17-05-17	1730	1930
			Squall from W direction with max speed 48kmph	17-05-17	1750	1751
			Lightening	17-05-17	1800	1900
Alipore	E India	West Bengal (GWB)	Thunderstorm	17/18-05-17	172150	180010
Dum Dum	E India	West Bengal (GWB)	Thunderstorm	17-05-17	1625	1800
			Lightening	17-05-17	1940	2355
Canning	E India	West Bengal (GWB)	Thunderstorm	17-05-17	1600	1620
Haldia	E India	West Bengal (GWB)	Thunderstorm	17-05-17	2217	2255
			Squall from NW direction with max speed 80kmph	17-05-17	2237	2239
			Lightening	17-05-17	2150	2217
Gaya	E India	Bihar	Thunderstorm	17-05-17	1615	1640
			Squall from NW direction with max speed 76kmph	17-05-17	1538	1540
Bhagalpur	E India	Bihar	Thunderstorm	17-05-17	1625	1720
Purnia	E India	Bihar	Thunderstorm	17-05-17	1645	1730
Jamshedpur	E India	Jharkhand	Thunderstorm	17-05-17	1530	1545
Salem North Tamil Nadu	S India	Tamilnadu(North)	Thunderstorm	17-05-07	1940	1950
Dharmapuri	S India	Tamilnadu(North)	Thunderstorm	17-05-17	2200	2300
Coimbatore	S India	Tamilnadu(North)	Thunderstorm	18-05-17	0105	0250
Bengaluru City	S India	Karnataka(SIK)	Thunderstorm	17-05-17	1625	1735
					1750	1900
					2100	2350
Bengaluru (HAL)	S India	Karnataka(SIK)	Thunderstorm	17-05-17	1530	1745
					2100	2400
Yelahanka IAF	S India	Karnataka(SIK)	Thunderstorm	17-05-17	1615	1730
					2100	2230
Bengaluru (KIAL)	S India	Karnataka(SIK)	Thunderstorm	17-05-17	2050	2315

Past 24 hours DWR Report:

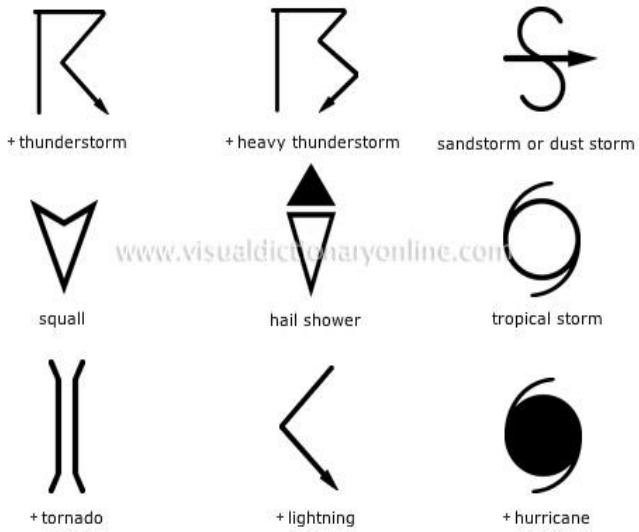
Radars Station name	Date of Reporting	Time interval of observation (UTC)	Organization of the cells (Isolated single cells/multiple cells/ convective regions/ squall lines) with height of 20 dBZ echo top and maximum reflectivity	Formation w.r.t radar station and Direction of movement	Remarks	Associated severe weather if any	Districts affected	
Patiala	18-05-17	170302-170602	Multiple cells Max= 44.0 dBz Ht.=5-6 km	Formation in SW sector. MOVEMENT NNE-WARDS.	-----		Bhatinda, Mansa, Barnala, Tohana And Its Adj. Areas..	
		170602-170902	Multiple cells Max= 53.0 dBz Ht.=9-10 km	Formation in NE sector. MOVEMENT NE-WARDS.	-----	-----	Shimla, Solan, Sundernagar, Mussorie, Uttarakhand And Its Adj. Areas..	
		170902-171202	Multiple cells Max= 61.0 dBz Ht.=10-14 km	Formation in NE sector. MOVEMENT NE-WARDS.			Shimla, Mussorie, Kalsi, Bhakra	
		171202-171502	Multiple cells Max= 54.0 dBz Ht.=11-13 km	Formation in NE sector. MOVEMENT E-WARDS.		-	Dehradun, Haridwar, Mussorie	
		171502-171802	No significant Echo	-----	-----	-----	-----	
		171802-172102	No significant Echo	-----	-----	-----	-----	
		172102-180002	Isolated cell Max=49.5 Ht.= 8-9km					Rohtak And Its Adj. Areas..
		180002-180252	No significant Echo	-----	-----	-----	-----	

Patna	18-05-17	170300 - 170600	Multi cell Maximum Reflectivity:-45 dBZ Echo Top-14.9 KM	Range:240 km NW from DWR Patna Movement SEly	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	Thunderstorm with Squall & Rain	West Champaran, East Champaran, Gopalganj, Siwan, S aran	
		170600 - 170900	Multi cell. Maximum Reflectivity : 44.5 dBZ Echo Top : 14 KM	Range: 80 km North west from DWR Patna Movement-South- Easterly	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	Thunderstorm with Squall & Rain	Chapra, Muzaffarpur, Darbh anga, Patna, Samas tipur	
		170900 - 171200	Single Cells. Maximum Reflectivity : 50 dBZ Echo Top : 14 KM, Multiple Cells. Maximum Reflectivity : 42dBZ Echo Top : 14 KM	Range: 94.3 km South west from DWR Patna Movement-South- Easterly Range: 80 km South East from DWR Patna Movement-South- Easterly	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	Thunderstorm with Squall & Rain	Gaya Sitamarhi, Madhepura, Purnia, Saharsa, Begusarai, Madhubani, Dharbhanga, Muzaffarpur, Sama stipur, Supaul, Khagaria, Lakhisarai, Munger, Bhgalpur	
		171200 - 172400	NIL	NIL	NIL	NIL	NIL	NIL
		180000 - 180300	NIL	NIL	NIL	NIL	NIL	NIL
		Paradeep	18-05-17	170900- 171700	Isolated cells formed with reflectivity values ranging between 38- 55 dBZ and eights exceeding 14kms..	Position: Lat:22.25 degree N Lon:86.18 degree E Movement: NWly	NIL	TS with rain
Nagpur	18-05-17	170322- 180252	Multiple cell coming from SW	227 km SW direction, moving in NE direction.	At 0322- Maxz =27.50 distance-186km Cloud height 4.0- 6 km At 1602-Maxz-31.00 distance 156 km Cloud height 5.5- 7 km.	NIL	Isolated places of District Gadchiroli, Chandrapur, and Adilabad.	

		180002-180302	nil				
Machilipatnam	18-05-17	170301-170341	Isolated Multiple cells average height of 2.5 km with maximum reflectivity of 51.5dBZ	NE(88.6KM) , moving SWly direction average speed of10.0kmph	Cell started forming at 0301UTC, at NE (88.6km) from Radar the maximum reflectivity during 0301 to 0341 UTC and died down at 0351UTC	Possibility of Thunder storm with rain and light winds.	West Godavari District
Jaipur	18-05-17	170302-170512	Single cell with average height of 5.5 km maximum reflectivity 45 dBZ	Cell develop 0302 to 0502 UTC towards north east of Jaipur and moves towards NE at speed 40-45 km/hr	Cells continuous forming from 0302 UTC NE of Jaipur and maximum relectivity during 0422-0432 UTC and outfrom the state at t 0512 UTC.	---	Alwar, Bharatpur
		170622-172042	Multiple cells with average height of 5.0 km maximum reflectivity 57 dBZ	Multiple Cells develop 0622 to 2002 UTC towards south west and moves towards east at speed 45 km/hr.	Cells continuous forming from 1632 UTC SW of Jaipur and maximum relectivity during 0712-0722 UTC and died down at 2042 UTC	Moderate Thunderstorm	Nagaur, Ajmer, Rajsamand, Bhilwara, Tonk, Pali, Bundi
		171112-171522	Multiple cells with average height of 4.5 km maximum reflectivity 54 dBZ	Multiple Cells develop 1112 to 1502 UTC towards north east and moves towards east at speed 35 km/hr.	Cells continuous forming from 1112 UTC NE of Jaipur and maximum relectivity during 1312-1322 UTC and 1432-1442 UTC and died down at 1522 UTC	Moderate Thunderstorm	Sikar, Alwar, Dausa, Jaipur
		171632-171712	single cell with average height of 4.0 km maximum reflectivity 32 dBZ	Cell develop 1632 to 1702 UTC towards north south east of Jaipur and No large movement.	Cells continuous forming from 1632 UTC SE of Jaipur and maximum relectivity during 1642-1652 UTC and died down at 1712 UTC	---	Baran
Agartala	18-05-17	171100 - 172220	Squall line with Maximum Height 15 km and maximum reflectivity 45 dBZ (at 1700 UTC of over Sipahijala District of	Formed 500 km west of DWR AGT at 1100 UTC and moved ESE-wards at around 80 kmph	Cells Dissipated at 2220 UTC over Myanmar	TS with light rain	West, Sipahijala, Dhalai, South, Gomati districts of Tripura

			Tripura)				
Kolkata	18-05-17	170301-170811	NIL	NIL	NO SIG ECHO	NIL	N/A
		170811-171041	Isolated cell at a position 22.413 N/ 88.563 E/ 129.0 Degree/ 27.8 km away from radar transformed into big cells with maximum reflectivity of 57.0 dBz at 1001 UTC and maximum height of 11.29 Km at 1001 UTC	SE (27.8 km) Moving in SE-ly direction.	A cell formed at 0811 UTC in SE at a distance of 27.8 km from radar. Matured and dissipated at 1041UTC in SE	Thunderstorm Hail/ Rain	N/A
		170941-171301	i) Isolated cell at a position 22.819 N/ 85.963 E/ 277.0 Degree/ 246.8 km away from radar transformed into big cells with maximum reflectivity of 63.50 dBz at 1212 UTC and maximum height of 18.69 Km at 1212 UTC	WNW (246.8km) Moving in SE-ly direction.	A cell formed at 0941 UTC in WNW at a distance of 246.8 km from radar. Matured and dissipated at 1301UTC in SW	Thunderstorm Hail/ Rain	N/A
		170941-171212	ii) Isolated cell at a position 23.529 N/ 86.176 E/ 295.9 Degree/ 246.7 km away from radar transformed into big cells with maximum reflectivity of 59.0 dBz at 1021 UTC and maximum height of 11.65 Km at 1021 UTC	NW (240.2km) Moving in SE-ly direction.	A cell formed at 0941 UTC in WNW at a distance of 240.2 km from radar. Matured and dissipated at 1212 UTC in SW direction.	Thunderstorm Hail/ Rain	N/A

		171142 - 171830	Multiple cells from a position 24.416 N/ 86.973 E/ 325.8 Degree/ 248.9 km to 24.654 N/ 87.505 E/ 339.7 Degree/ 247.3 km away from radar transformed into big cells with maximum reflectivity of 65.5 dBz at 1221 & 1421 UTC and maximum height of 21.48 Km at 1331 UTC	NNW (248km) Moving in SE-ly direction.	A cell formed at 1142 UTC in NNW at a distance of 248 km from radar. Matured and dissipated at 1830 UTC in SE	Thunderstorm Hail/ Rain	N/A
		171301 - 172031	Isolated cell at a position 23.806 N/ 86.378E/ 304.7 Degree/ 244.2 km away from radar transformed into big cells with maximum reflectivity of 64.50 dBz at 1542 UTC and maximum height of 20.89 Km at 1351 UTC	NW (244.2km) Moving in SSE-ly direction.	A cell formed at 1301 UTC in NW at a distance of 244.2 km from radar. Matured and dissipated at 2031 UTC in SSE .	Thunderstorm Hail/ Rain	N/A
		172041-180301	NIL	NIL	NO SIG ECHO	NIL	NIL
Karaikal	18-05-17	170300-180300	---	----	DWR U/S	---	---
Bhuj	18-05-17	170430-171200	Nil	--	--	--	--



∞	haze
☁	smoke
☄	dust or sand storm
☁	fog
☂	drizzle
•	rain
❄	snow
☂	showers
⚡	hail
☄	thunderstorm
Weather Symbols	