India Meteorological Department

FDP STORM Bulletin No.96 (09-06-2017)

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

Southwest Monsoon has further advanced into some more parts of Konkan, Interior Karnataka, Rayalaseema and Coastal Andhra Pradesh. The Northern Limit of Monsoon (NLM) passes through Lat. 16°N/Long. 60°E, Lat. 16°N /Long 65°E, Lat 16°N/Long 70°E, Vengurla, Gadag, Anantapur, Nellore and Lat 15°N/ Long 85°E, Lat 17°N/Long 90°E, Lat 20°N/Long 91°E, Agartala, William Nagar, Kokrajhar and Lat. 27°N/Long 90°E.

Favorable conditions are developing for further advance of southwest monsoon into some more parts of Konkan, Interior Karnataka, Rayalaseema and coastal Andhra Pradesh; some parts of Madhya Maharashtra, central & north Bay of Bengal, Tripura, Assam & Meghalaya and some parts of West Bengal & Sikkim during next 2-3 days.

The trough at mean sea level now runs from north Rajasthan to southeast Bay of Bengal across Madhya Pradesh, Chhattisgarh, Odisha and centre of the low pressure area over west central Bay.

The shear zone now runs roughly along Lat.16 .0°N between 3.1 & 5.8 Km above mean sea level.

The upper air cyclonic circulation over central Pakistan & adjoining West Rajasthan extending upto 2.1 Km above mean sea level persists.

A low pressure area has formed over west central Bay of Bengal & adjoining north Bay of Bengal off Andhra Pradesh and south Odisha coast tilting southwards with height with an associated upper air cyclonic circulation extending upto mid tropospheric levels.

The upper air cyclonic circulation over southeast Bihar & neighbourhood extending upto 1.5 Km above mean sea level persists. The trough from this system now runs upto interior Odisha and extends upto 0.9 km above mean sea level.

A fresh western disturbance as an upper air cyclonic circulation at 3.1 km above mean sea level lies over north Pakistan & neighbourhood with a trough aloft along longitude 68°E and north of latitude 30°N with its axis at 5.8 Km above mean sea level.

The upper air cyclonic circulation over north Andaman Sea & neighbourhood at 5.8 Km above mean sea level has become less marked.

SATELLITE OBSERVATIONS during past 24hrs and current observation:

Current Observation (based on 0300UTC imagery of INSAT 3D):

WESTERN DISTURBANCE (WD):

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

Cloud Description:

Scattered low /medium clouds with embedded moderate to intense convection were seen over North Bihar, East Assam adjoining Arunachal Pradesh, Nagaland, Lakshadweep and Andaman Islands.

Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over South Haryana, Delhi, Central Uttar Pradesh, Chhattisgarh, Gangetic West Bengal, rest Northeast states, Rajasthan, Karnataka, Kerala, Telangana, Rayalaseema, Andhra Pradesh and Tamilnadu.

Scattered low/medium clouds were seen over North Haryana, Uttarakhand, rest Uttar Pradesh,

Arabian Sea:

Scattered low/medium clouds with embedded moderate to intense convection were seen over EC adjoining SE Arabian Sea.

Bay of Bengal & Andaman Sea:

Broken low/medium clouds with embedded intense convection were seen over C Bay and North Andaman sea.

Past Weather:

Convection:-

Intense convection was observed over Mizoram and neighbourhood.

Moderate to Intense convection was observed over S Gujarat NW Madhya Pradesh Vidarbh Chhattisgarh Telangana Jharkhand Bihar and rest NE States.

Light convection was observed over rest parts of the country.

OLR:-

Upto **200** wm^{-2} was observed over NW Madhya Pradesh Vidarbha South Chhattisgarh South Odisha Coastal Andhra Pradesh NE Telangana S Bangladesh Mizoram Tripura .

Upto **230** wm^{-2} was observed over rest south India J & K Himachal Pradesh and rest NE States.

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

Dynamic Features:

Medium to High wind shear is observed over N & S India while low . wind shear is observed over central India .

Positive shear tendency is observed over the India.

A positive Vorticity field is observed over NE Andhra Pradesh adjoining S Chhattisgarh adjoining Odisha .

Negative low level convergence is observed over E Uttarakhand Uttar Pradesh Bihar N Jharkhand & Kerala and Positive low level convergence observed over rest parts of India

Precipitation:

IMR:

Rainfall Up to **130** mm was observed over S Mizoram and from 50mm to 110mm in rest Mizoram.

Rainfall Up to **50** mm was observed over NW Madhya Pradesh S Chhattisgarh adjoining Telangana S Gujarat NE Jharkhand E Bihar W Assam N Odisha E Assam Nagaland and Manipur.

Rainfall Up to **30** mm was observed over Rayalaseema Coastal Odisha East Meghalaya .

Rainfall Up to **20** mm was observed over extreme SW J&K.

Rainfall Up to **10** mm was observed over rest J&K extreme N Himachal Pradesh central Uttar Pradesh Rajasthan Telangana Tamil Nadu Kerala and many places in Maharashtra .

HEM:
Rainfall Up to **208** mm was observed over S Mizoram.
Rainfall Up to **70** mm was observed over extreme S Gujarat NW Madhya Pradesh S Chhattisgarh adjoining Telangana N Madhya Maharashtra S Vidarbha Jharkhand E Bihar W&E Assam extreme NW Odisha .
Rainfall Up to **14** mm was observed over W J&K Rajasthan NW Uttar Pradesh W Madhya Pradesh rest Maharashtra Coastal Odisha Telangana Andhra Pradesh Kerala Tamil Nadu and NE States .

RADAR and RAPID Observation:

DWR Composite at 1250hrs IST indicated significant isolated convection over Uttarakhand, Meghalaya, South Bihar, North Jharkhand, Odisha and Maharashtra.
RAPID RGB Satellite imagery at 1200hrs IST indicated significant convective clouds over Himachal Pradesh, Uttarakhand, Meghalaya, South Bihar, North Jharkhand, Odisha, Maharashtra and Lakshadweep.

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

Higher Dust concentration was observed over north Africa and IGP region of India. Dust concentration is expected to decrease over north India for next five days. High PM10 concentration was observed over Northern and eastern part of the country, it is expected to decrease in the next five days.

2. NWP MODEL GUIDANCE:

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

1. Weather Systems:
12UTC Charts of Day 0-4 except Day 1, show evolution of heat low over NW India and adjoining Pakistan with MSLP values lower than 992hPa on Day-2 to Day-4.
12UTC charts on days from Day 0 to Day 3: show a zone of wind discontinuity at 925 hPa; NW-SE extending from Rajasthan-MP to Jharkhand
CYCIR over: Head Bay of Bengal near 18N/92E in Day0. It is seen to persist, move northwards initially up to Day-2 and then eastwords and intensify in Day-3
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:
Day0: Vidarbha,
Day1: Punjab, West Rajasthan,
Day2: Jharkhand,
Day3: Arunachal Pradesh, Assam Meghalaya, East UP, Chhattisgarh,
Day4: Assam Meghalaya, NE NMMT, Jharkhand, East UP, Jammu Kashmir,

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

(Day/Index: Subdivisions with Lower Level Vortex > 15 x 10^-5 /s):

Day0: TN Puducherry, Kerala,
Day1: NE NMMT, Himachal Pradesh, TN Puducherry, Kerala,
Day2: Assam Meghalaya, NE NMMT, Uttarakhand, Himachal Pradesh, TN Puducherry, Kerala,
Day3: Assam Meghalaya, Sub Himalayan WB, West UP, Uttarakhand, Himachal Pradesh, TN Puducherry, Kerala,
Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Jharkhand, Uttarakhand, Himachal Pradesh, Jammu Kashmir, TN Puducherry,

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

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

Day0: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Jharkhand, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, West Rajasthan, East Rajasthan, Odisha, West MP, East MP, Gujarat region, Saurashtra Kutch, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, NI Karnataka,
Day1: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Jharkhand, Bihar, East UP, Uttarakhand, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West Rajasthan, East Rajasthan, Odisha, West MP, East MP, Gujarat region, Saurashtra Kutch, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, NI Karnataka,
Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, West Rajasthan, East Rajasthan, Odisha, West MP, East MP, Gujarat region, Saurashtra Kutch, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana,
Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, East Rajasthan, Odisha, West MP, East MP, Gujarat region, Saurashtra Kutch, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana,
Day4: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, East Rajasthan, Odisha, West MP, East MP, Gujarat region, Saurashtra Kutch, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP,

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

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

Day0: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Jharkhand, West UP, Uttarakhand, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West Rajasthan, East Rajasthan, Odisha, West MP, East MP, Gujarat region, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, NI Karnataka,
Day1: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West Rajasthan, East Rajasthan, Odisha, West MP, East MP, Gujarat region, Saurashtra Kutch, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, NI Karnataka,
Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West Rajasthan, East Rajasthan, Odisha, West MP, East MP, Gujarat region, Saurashtra Kutch, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, NI Karnataka,
Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West Rajasthan, East Rajasthan, Odisha, West MP, East MP, Gujarat region, Saurashtra Kutch, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana,
Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West Rajasthan, East Rajasthan, Odisha, West MP, East MP, Gujarat region, Saurashtra Kutch, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Rayalaseema, TN Puducherry,

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, Uttarakhand, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West Rajasthan, East Rajasthan,

Day1: Arunachal Pradesh, Sub Himalayan WB, West UP, Uttarakhand, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West Rajasthan, East Rajasthan,

Day2: Arunachal Pradesh, Sub Himalayan WB, East UP, West UP, Uttarakhand, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West Rajasthan, East Rajasthan,

Day3: Arunachal Pradesh, Sub Himalayan WB, East UP, West UP, Uttarakhand, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West Rajasthan, East Rajasthan, West MP, East MP, Gujarat region, Vidarbha, Chhattisgarh,

Day4: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, East UP, Uttarakhand, Haryana Chandigarh Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West Rajasthan, East Rajasthan, Odisha, West MP, East MP, Gujarat region, Chhattisgarh,

8. Rainfall and thunder storm activity:

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

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Gangetic WB, Jammu Kashmir, Gujarat region, Konkan Goa, Madhya Maharashtra, Marathwada, Telangana, Rayalaseema, Coastal Karnataka, SI Karnataka, Kerala,

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Gangetic WB, Jammu Kashmir, Gujarat region, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Gangetic WB, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Marathwada, Chhattisgarh, Coastal AP, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Konkan Goa, Madhya Maharashtra, Coastal AP, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day5: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Jammu Kashmir, Konkan Goa, Madhya Maharashtra, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

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

1. Weather Systems:

The analysis based on 00 UTC show a low level CYCIR over north Bay of Bengal and a trough extends from Bihar to the CYCIR. Forecasts show that the CYCIR over north Bay of Bengal moves northward and lies over Bangladesh on day5 and the trough extends from west UP to the centre of CYCIR. Forecasts also show formation of CYCIR over the off Maharashtra coast on day4 and becomes less marked on day5.

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.

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

The high vorticity belts are mainly over the Gangetic plains, foot hills of Himalaya, south peninsula and eastern parts of the country.

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): Over Odisha and Gangetic West Bengal on day 4 and day5.

Lifted Index (< -2): Less than threshold value over most parts of the country except J&K, HP, Uttarakhand, parts of central India and south peninsula during next 5 days.

Total Total Index (> 50) : Less than threshold value all over the country.

Sweat Index (> 300): Higher than threshold value almost all over the country except Gangetic plain.

CAPE (>1000): Mostly over parts of Rajasthan and adjoining Gujarat, Sub-Himalayan West Bengal, Bihar, parts of AP and NE states.

CIN (50-150): Mostly all over the country except Gujarat and northwest India during next 48 hours.

5. Rainfall and thunderstorm activity:

10-40 mm rainfall: over Sub- Himalayan West Bengal and parts of NE states during next five days.

20-70 mm rainfall: over Telangana and coastal Andhra Pradesh during next 48 hours.

40-130 mm rainfall: over west coast, coastal Maharashtra and adjoining Gujarat and Karnataka during next 10 days.

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

1. Model Reflectivity (Max. dBz):

15-35 dBZ Model reflectivity over south peninsula during next 24 hours, over parts of central India on day2 and parts of MP, Telangana and coastal AP on day3.

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

Total Total Index (> 50) : Above threshold value over northwest and central parts of India and Gangetic plain during next 72 hours.

K-Index (> 35): Less than threshold value over the country during the next 72 hour.

CAPE (> 1000): Mostly over Rajasthan, Gujarat, Gangetic plain, parts of AP, Telangana, and central India and NE states during next 3 days.

CIN (50-150): Over north west parts of India, Gangetic plain, Parts of Telangana and AP during next three days.

Rainfall and thunderstorm activity:

20-40 mm: over parts of Gujarat, Sub-Himalayan West Bengal and NE states during next 3 days.

40-70 mm: over west coast during next 3 days.

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:
Day-1 & Day-2:

In association with the shear zone in the middle troposphere along Lat.16 .0°N, and the strong south-westerly winds incident on the west peninsular coast at the lowest levels, heavy rainfall episodes are expected along the west peninsular coast during the next two days. The maximum rainfall zone is likely to shift northward, along the west peninsular coast on day 2, but is not expected to penetrate inland.

Associated with the trough at mean sea level from north Rajasthan to southeast Bay of Bengal as well as the low pressure area off Andhra Pradesh and south Odisha coast, coastal Andhra Pradesh is likely to get some heavy showers of rainfall on day 1 and day 2. The cyclonic circulation is likely to move in a northward direction, and the associated rainfall belt is also likely to move northwards into Gangetic West Bengal and Orissa subsequently.

In association with the western disturbance as an upper air cyclonic circulation over north Pakistan & neighbourhood, and the strong southwesterly wind flow from the Arabian Sea into northwest India across Gujarat, isolated thunderstorm activity is likely over East Rajasthan on day 1. As the system moves eastwards, the rainfall over the region is likely to decrease thereafter.

24 hour Advisory for IOP:
Kerala, Coastal Karnataka, Konkan and Goa
North Coastal Andhra Pradesh,
Assam, Meghalaya, Nagaland, Meghalaya, Mizoram and Tripura
Coastal Gangetic West Bengal, North Coastal Orissa
East Rajasthan

48 hour Advisory for IOP:
Kerala, Coastal Karnataka, Konkan and Goa
North Coastal Andhra Pradesh,
Assam, Meghalaya, Nagaland, Meghalaya, Mizoram and Tripura

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:
http://ddgmui.imd.gov.in/dwr img/
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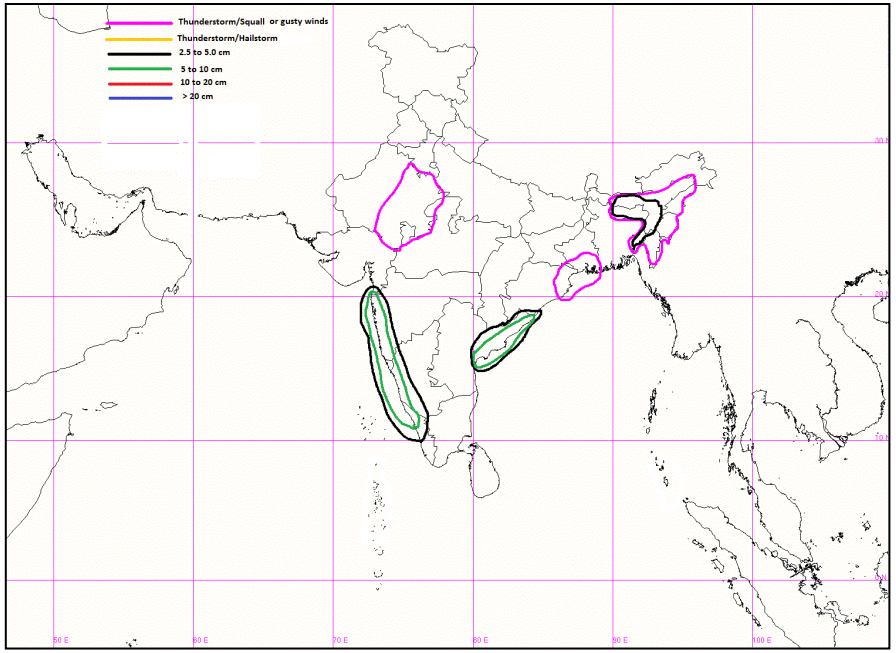
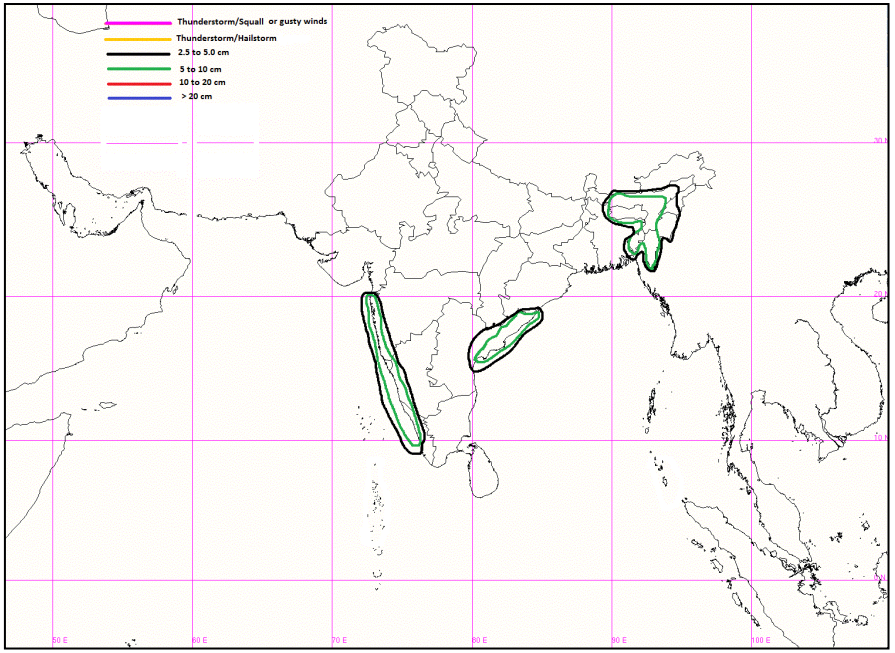
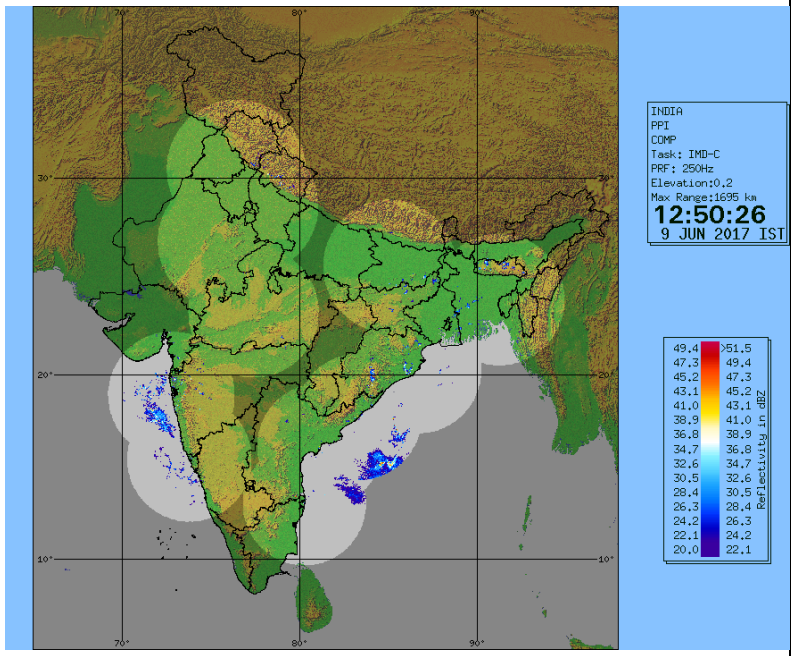
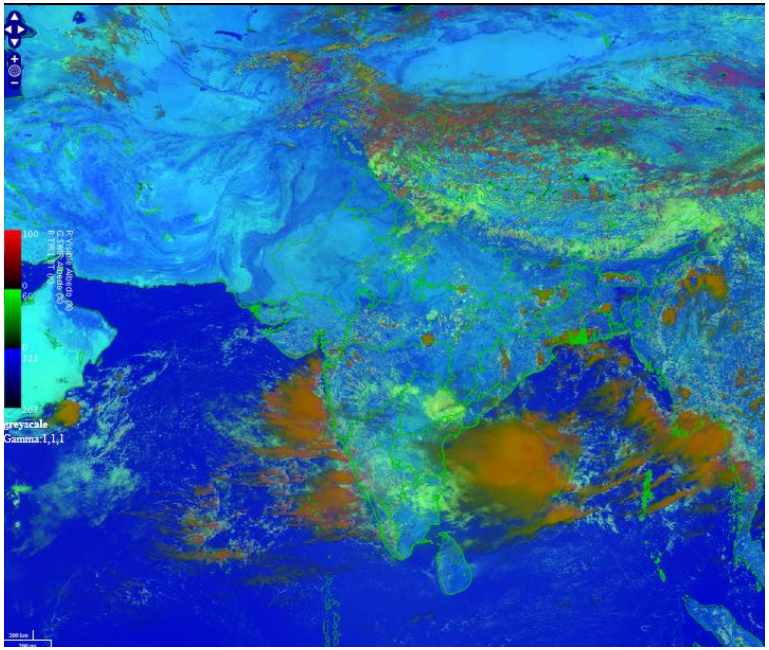
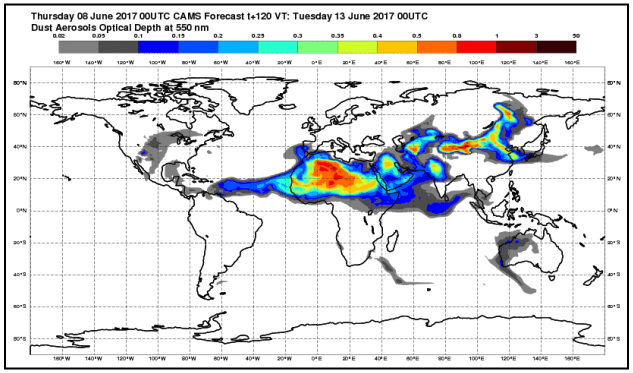


IOP Advisory for 24 hours

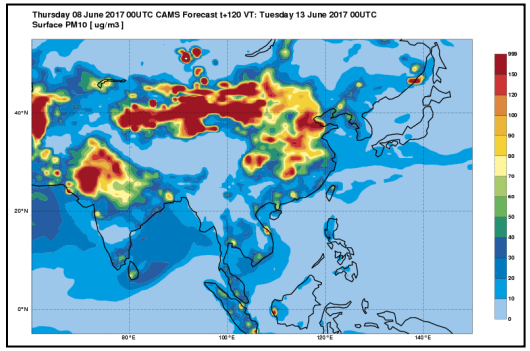


IOP Advisory for 48 hours

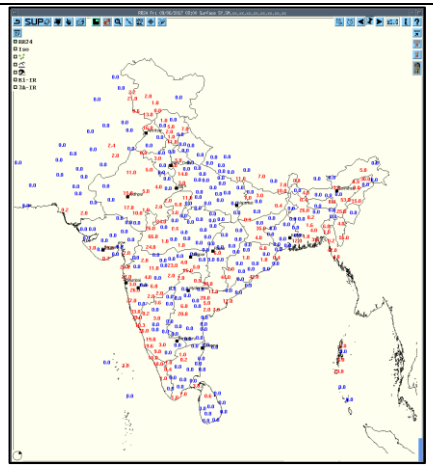
	
DWR composite at 1250 hrs IST	**RAPID RGB Satellite Imagery at 1200 hrs IST of today**



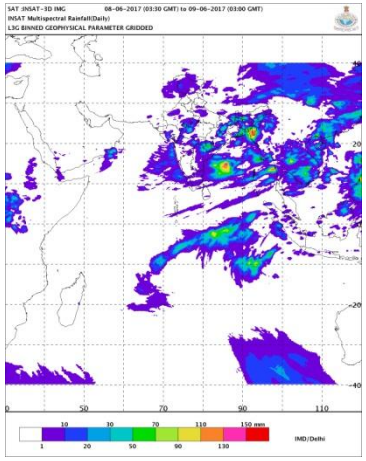
Forecast Dust Concentration for 00UTC of 13th June



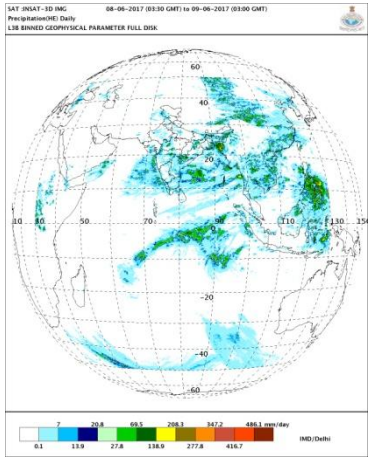
PM10 Forecast for 00UTC of 13th June



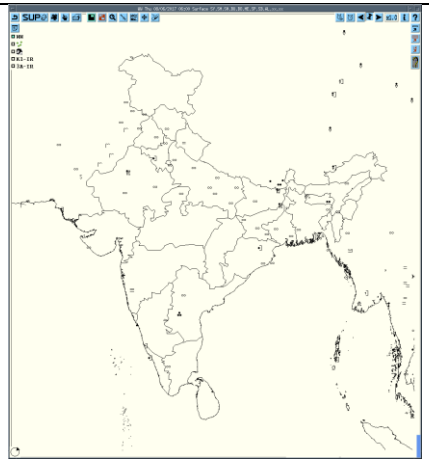
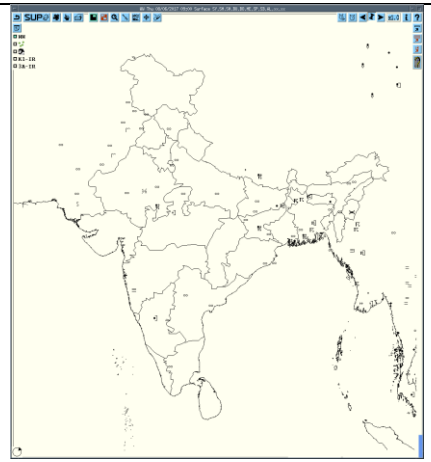
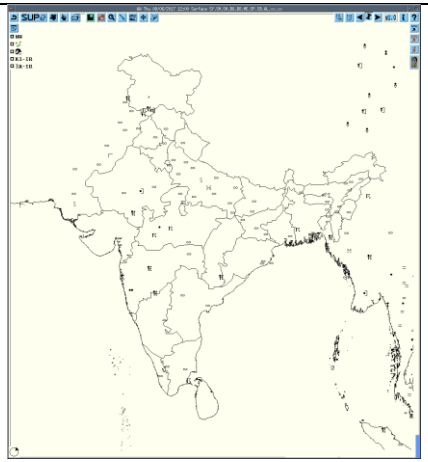
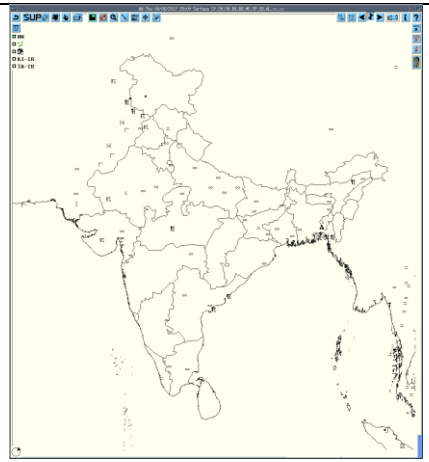
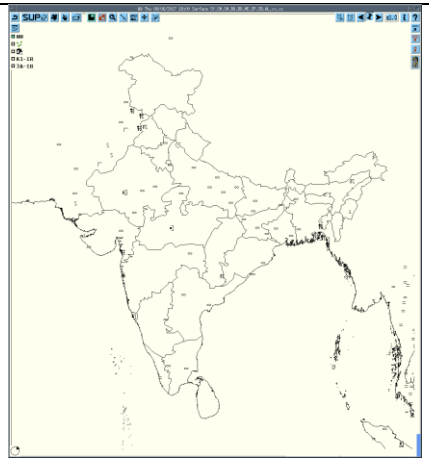
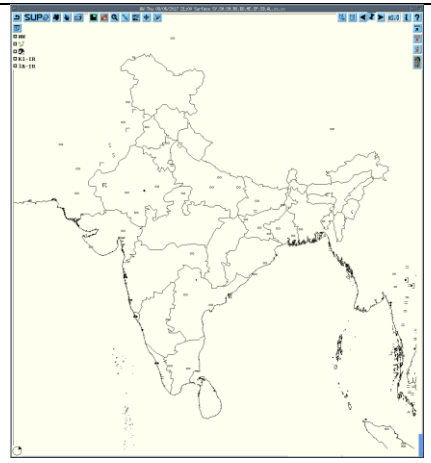
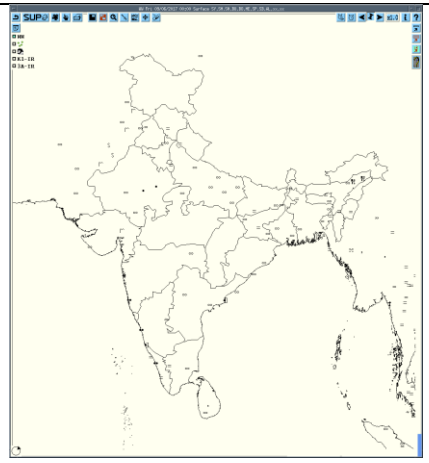
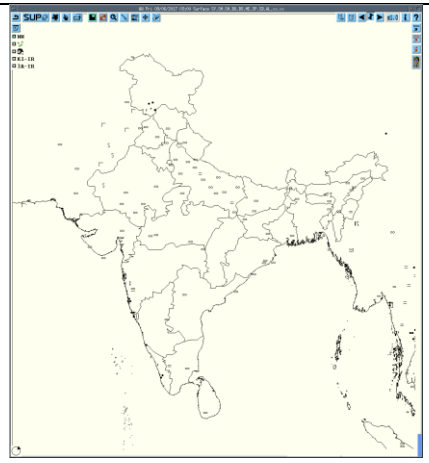
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today



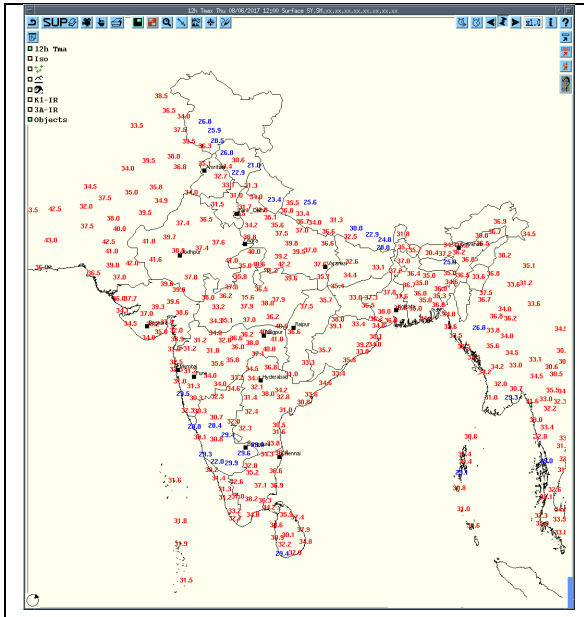
IMR Rainfall



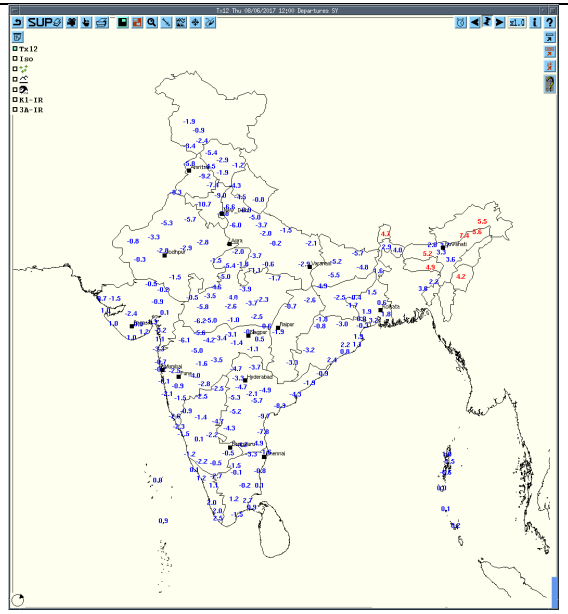
HEM Rainfall

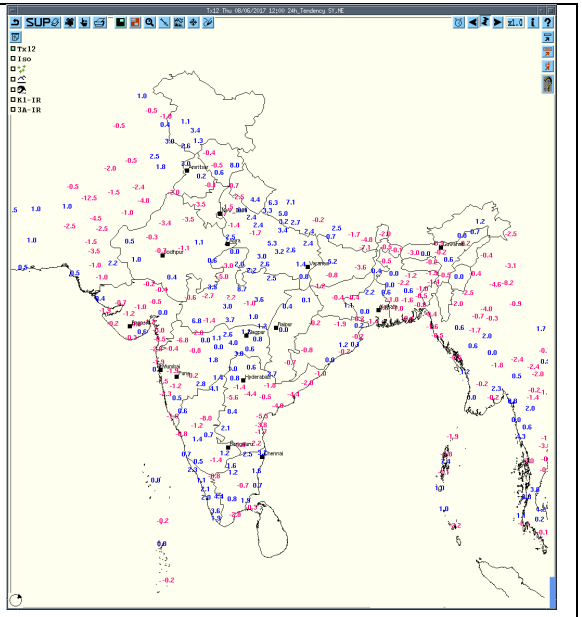
3hourly Past weather at 06, 09, 12, 15, 18, 21UTC of yesterday and 00 & 03 hrs UTC of today



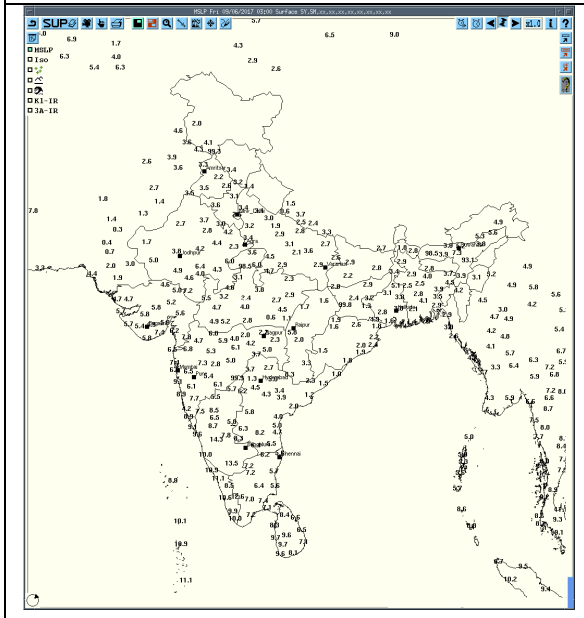
Tmax



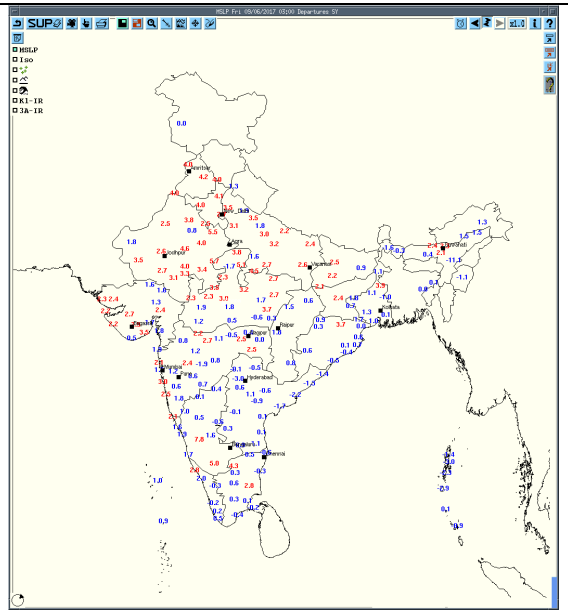
Departure Tmax



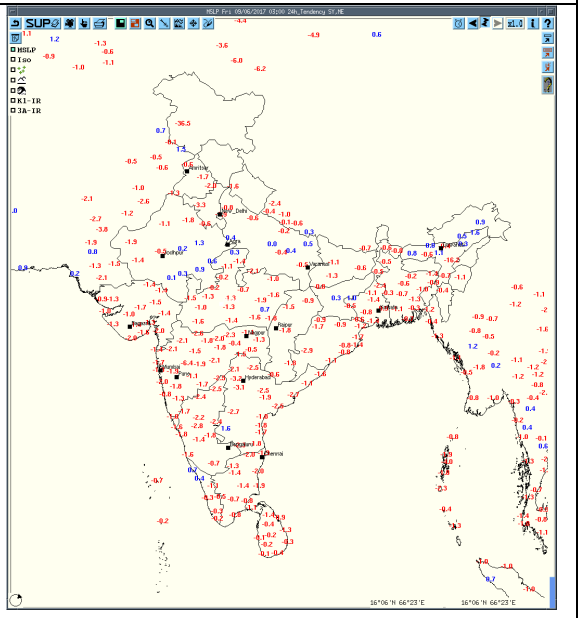
Tendency Tmax



MSLP



Departure MSLP



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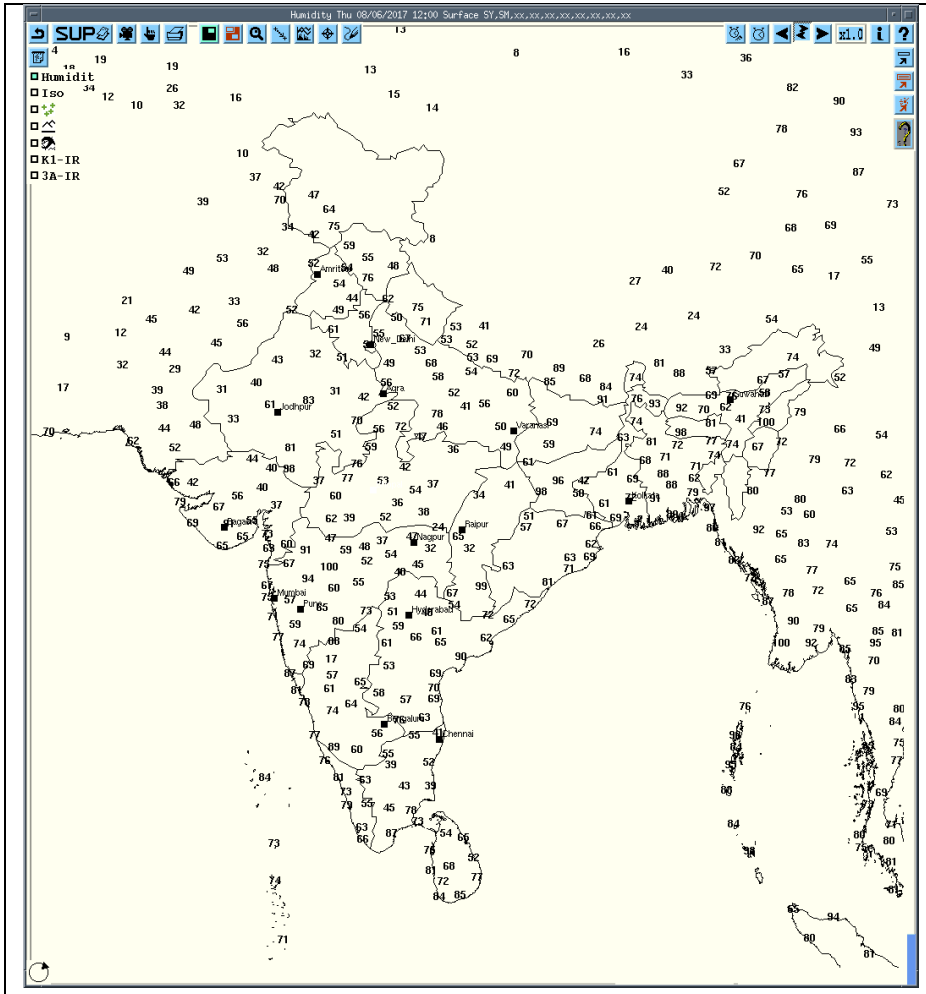
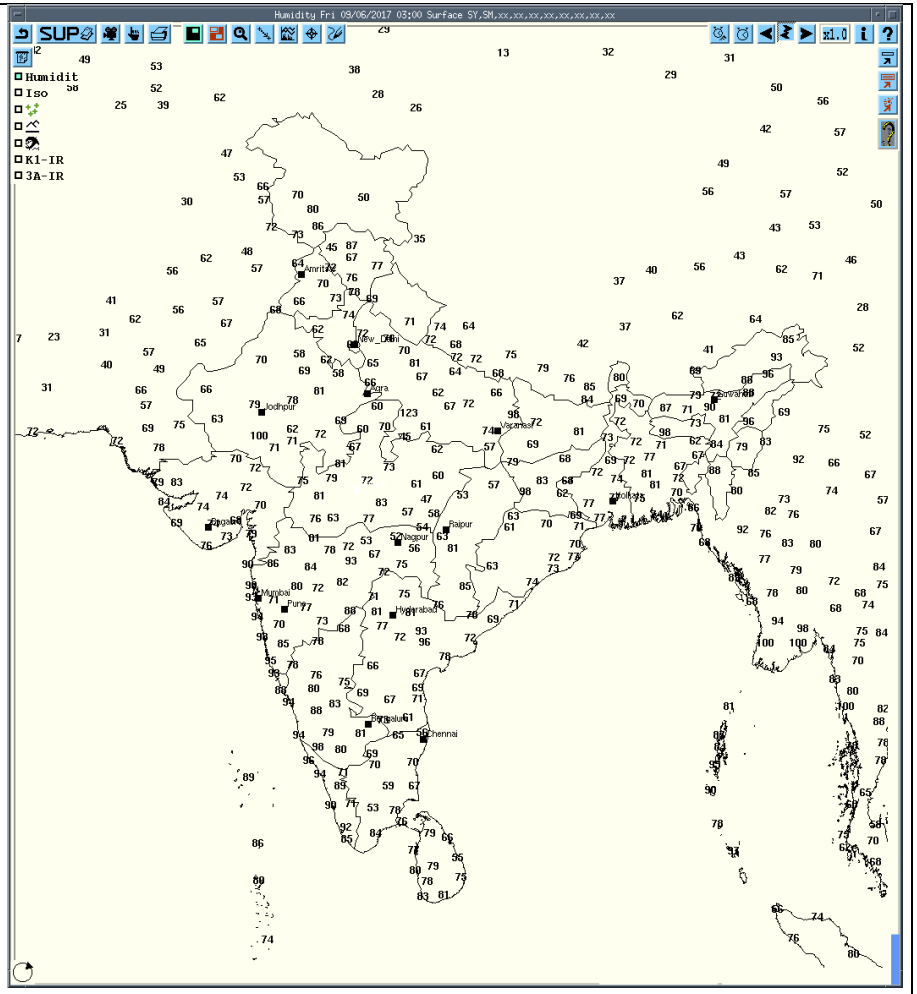


RH at 12UTC yesterday



RH at 03UTC today

Realised past 24hrs TS/SQ/HS Data (reported at 0300UTC of the day):

Realized weather past 24hours (Based on SYNERGIE Products)					
Date	**Time of Reporting**	**Name of Station Reporting**	**Region**	**STATE**	**Weather Event**
08-06-17	0600UTC	Bikaner	Northwest India	Rajasthan	Thunderstorm
		Dhubri	Northeast India	Assam	Thunderstorm
		Purnea	East India	Bihar	Thunderstorm
08-06-17	0900UTC	Kota	Northwest India	Rajasthan	Thunderstorm
		Dhubri	Northeast India	Assam	Thunderstorm
		Purnea	East India	Bihar	Thunderstorm
		Ranchi	East India	Jharkhand	Thunderstorm
		Diamond Harbour, Haldia, Canning	East India	West Bengal	Thunderstorm
08-06-17	1200UTC	Katra, Batote, Bhaderwah, Jammu	Northwest India	J & K	Thunderstorm
		Udaipur	Northwest India	Rajasthan	Thunderstorm
		Bhopal, Indore	Central India	Madhya Pradesh	Thunderstorm
		Jagdalpur	Central India	Chhattisgarh	Thunderstorm
		Aurangabad, Sholapur	West India	Maharashtra	Thunderstorm
		Tondi	South India	Tamilnadu	Thunderstorm
08-06-17	1500UTC	Amritsar	Northwest India	Punjab	Thunderstorm
		Barmer	Northwest India	Rajasthan	Thunderstorm
		North Lakhimpur,	Northeast India	Assam	Thunderstorm
		Bhopal	Central India	Madhya Pradesh/Vidarbha	Thunderstorm
		Rajkot	West India	Gujarat	Thunderstorm
		Tuni, Machilipatnam	South India	Andhra Pradesh	Thunderstorm
08-06-17	1800UTC	Amritsar	Northwest India	Punjab	Thunderstorm
		Jodhpur	Northwest India	Rajasthan	Thunderstorm
		North Lakhimpur,	Northeast India	Assam	Thunderstorm
		Jagdalpur	Central India	Chhattisgarh	Thunderstorm
08-06-17	2100UTC	Jaisalmer	Northwest India	Rajasthan	Thunderstorm
		Tuni	South India	Andhra Pradesh	Thunderstorm
09-06-17	0000UTC	North Lakhimpur, Dibrugarh	Northeast India	Assam	Thunderstorm
09-06-17	0300UTC	Nil	Nil	Nil	Nil

Past 24 hours DWR Report:

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
Jaipur	09/06/17	0302-1312 UTC	Multiple cells with average height of 4.5 km & maximum reflectivity 57.5 dBZ	Multiple cells develop 0312 to 1312 UTC of 08/06/2017 towards NW,N & SW of Jaipur and moved to E Wards at speed 15 - 20 km/hr	Cell starts forming from 0302 UTC of 08/06/2017 at NW,N & SW of Jaipur and reaches maximum reflectivity during 0302-1312 UTC and died down 1322 UTC.	Thunderstorm /rain at isolate places	Churu, Nagaur, Sikar, Ajmer, Kota, Sawai Madhopur, Bhilwara, Jhalawar, Jhunjhunu.
	09/06/17	1702-0122 UTC	Multiple cells with average height of 5.5 km & maximum reflectivity 54.5 dBZ	Multiple Cells develop 1702 to 0122 UTC of 08/06/2017 towards W , SW of Jaipur and moved to ESE Wards at speed 20 -25 km/hr	Cells starts forming from 1702 UTC of 08/06/2017 AT W,SW of Jaipur and reaches maximum reflectivity during 1702-0122 UTC and died down 0122 UTC.	Thunderstorm /rain at isolate places	Jaipur, Dausa, Jhunjhunu, Alwar, Pilani, Bhilwara, Sawai Madhopur, Kota, Ajmer, Nagaur, Churu
Bhuj	08/06/2017	0430 - 1200	Multiple cell at height from 03 to 12 Kms. with maximum 53 dBZ.	150 to 200 Kms. In NW, 50 to 150 Kms. In NE and 100 to 200 Kms. in SE move towards SE.	Observed during 0600 to 1200 UTC.	TS or TSRA.	(1) Kutch (2) Rajkot (3) Jamnagar (4) Amreli.

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
Patiala	09-06-2017	08/ 0300 - 0600	Multiple cells Max dBZ=45.0 Ht.=8-9KM	ECHOS FORMED IN S, SE SCETORS. THEIR MOVEMENT SE WARDS	-------	-	Kaithal, Panipat, Sonipat,
		08/0600 - 0900 -	Multiple cells Max dBZ=52 Ht.=10-12KM	ECHOS FORMED IN NW SCETOR . THEIR MOVEMENT SE WARDS	--------	----------	Near Chamba, Kalanaur
		08/ 0900 - 1200 -	Multiple cells Max dBZ=52 Ht.=12-14KM	ECHOS FORMED IN NW SCETOR. THEIR MOVEMENT SE WARDS		-----	Near Hoshiarpr, Kalanaur
		08/1200 - 1500 -	Isolated cells Max dBZ=36.5 Ht.=6-7 KM	ECHOS FORMED IN NW SCETOR. THEIR MOVEMENT SE WARDS --	----------		Near Amritsar
		08/ 1500 - 1800	Isolated cells Max dBZ=53.5 Ht.=9-10 KM	ECHOS FORMED IN NW SCETOR. THEIR MOVEMENT NE WARDS	----------	----------	Amritsar, Tarantaran and Adjoining Area
		08/ 1800 - 2100	Isolated cells Max dBZ=54.5 Ht.=10 KM	ECHOS FORMED IN NW SCETOR. THEIR MOVEMENT NE WARDS	----------	----------	Moga, Zira, Jalandhar, Nakodar and Adjoining Area
		08/ 2100 – 09/ 0000	Multiple cells Max dBZ =49.5 Ht.=9-10km	ECHOS FORMED IN NE SCETOR. THEIR MOVEMENT NE WARDS	----------	TS/RA-	Mandi
		09/ 0000 - 0252	NO ECHOS	----------	----------	----------	,----------

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
DWRVSK	08/06/17	0300 UTC 0600 UTC	Single isolated cells in NEly and Convictive region with CB cells in SEly with max reflectivity 58dbz and max. height of 12 kms	NE around 150 KM & SE 240 KM.	CB cells in forming stage.		-
DWRVSK	08/06/17	0600 UTC 0900 UTC	Single isolated cells in NEly and Convictive region with CB cells in with max reflectivity 56dbz and max. height of 15.5 kms	NE around 75KM to 220Kms.	Cb cells moving in Swly direction and dissipating.	-	-
DWRVSK	08/06/17	0900 UTC 1200 UTC	Isolated Single cells in NWly and SE ly directions with max reflectivity of 54 and 52 and Max hr of 15.5 and 15 kms respectively	SE at around 180 kms and Nw at 50 to 210 kms	Cb cells moving in S direction and dissipating.	-	-
DWRVSK	08/06/17	1200 UTC 1500 UTC	Multiple cells in NWly and Isolated Single cells in Nly with max reflectivity of 52 and 50 and Max ht of 14 15 km respectively	Nw at 50 to 210 kms and N(150 KM) moving SEly	Cb cells are forming and after well developing start dissipating.	-	-
DWRVSK	08/06/17	1500 UTC 1800 UTC	Isolated Single cells in NWly and SW ly directions with max reflectivity of 55 and Max hr of 14 km respectively	SW at around 100 kms and Nw at 100 to 210 km moving SEly.	Cb cells are forming, matured well and dissipating.	-	-
DWRVSK	09/06/17	1800 UTC 0000 UTC	Isolated Single cells in WSW ly directions with max reflectivity of 50 and Max hr of 10 km respectively	WSE at around 100 kms moving SEly.	Cb cells are moving SEly , matured well and dissipating.	-	-

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	08-06-2017	0301-0521	NIL	NIL	NO ECHO	NIL	NIL
		0541-0831 UTC	1. Isolated single cells developed with maximum reflectivity of 57.5 dBz at 0651 UTC and maximum height 10.57 km at 0641 UTC.	SE (97 km) moving towards WNW-ly	1. Isolated single cells started forming in SE from 0541 UTC at a distance of 97 km from Radar, transformed into multi cells. Merged with cell no. 2 & 3 Dissipated at 0821 UTC in in SW at a distance of 16.3 km from radar.	Thunderstorm / Squall /Hail / Rain	N/A
		0611-0831 UTC	2. Isolated single cells developed with maximum reflectivity of 57.5 dBz at 0651 UTC and maximum height 14.33 km at 0641 UTC.	ESE (111.7 km) moving towards WNW-ly	2. Isolated single cells started forming in ESE from 0611 UTC at a distance of 111.7 km from Radar, transformed into multi cells. Merged with cell no. 1 & 3. Dissipated at 0821 UTC in in SW at a distance of 16.3 km from radar.	Thunderstorm / Squall /Hail / Rain	N/A
		0701-0831 UTC	3. Isolated single cells developed with maximum reflectivity of 55.0 dBz at 0711 UTC and maximum height 9.14 km at 0751 UTC.	SE (19.1 km) moving towards WNW-ly	3. Isolated single cells started forming in SE from 0701 UTC at a distance of 19.1 km from Radar, transformed into multi cells, merged with cell no. 1 & 2. Dissipated at 0821 UTC in SW at a distance of 16.3 km from radar.	Thunderstorm / Squall /Hail / Rain	N/A
		0801-0911 UTC	4. Isolated single cells developed with maximum reflectivity of 57.0 dBz at 0831 UTC and maximum height 13.70 km at 0831 UTC.	NNE (107 km) moving towards WNW-ly	4. Isolated single cells started forming in NNE from 0801 UTC at a distance of 107 km from Radar, matured. Dissipated at 0911 UTC in at a distance of 107.8 km from radar.	Thunderstorm / Squall /Hail / Rain	N/A
		1041-1202 UTC	5. Isolated single cells developed with maximum reflectivity of 56.5 dBz at 1102 UTC and maximum height 7.71 km at 1051 UTC.	NW (89.1 km) moving towards WNW-ly	5. Isolated single cell started forming in NW from 1041 UTC at a distance of 89.1 km from Radar, matured. Dissipated at 1202 UTC in at a distance of 91.2 km from radar.	Thunderstorm / Squall /Hail / Rain	N/A
		1142-1301 UTC	6. Isolated single cells developed with maximum reflectivity of 60.0 dBz at 1202 UTC and maximum height 16.84 km at 1212 UTC.	NNE (165.4 km) moving towards WNW-ly	6. Isolated single cell started forming in NNE from 1142 UTC at a distance of 165.4 km from Radar, matured. Dissipated at 1301 UTC in NNE at a distance of 164.7 km from radar.	Thunderstorm / Squall /Hail / Rain	N/A
	09-06-2017	0000-0300 UTC	NIL	NIL	NO 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	09/06/ 2017	080400 - 080700	Multi Cell. Maximum Reflectivity : 41 dBZ Echo Top : 11.6 KM	Range: 252 KM from DWR Patna in ENE direction. Movement-ENE	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	THUNDER, LIGHTINING, GUSTY WIND	Supaul, Madhepura, Saharsa, Khagaria, Purnia, Araria
		080730 - 081030	Multi Cell. Maximum Reflectivity : 41.5 dBZ Echo Top : 11.6 KM	Range: 148 KM from DWR Patna in ESE direction. Movement-N	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	THUNDER, LIGHTINING, GUSTY WIND	Khagaria, Munger, Khagaria, Banka, Jamui, Lakhisarai Begusarai, Bhagalpur
		080950 - 081250	Multi Cell. Maximum Reflectivity : 44 dBZ Echo Top : 10.5 KM	Range: 100KM from DWR Patna in SES direction. Movement-NWN	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	THUNDER, LIGHTINING, GUSTY WIND	Nalanda, East Champaran, West Champaran, Gopalganj, Gaya,Nalnda,Seikhpura, Begusarai,Lakhisarai,Nawada,Bhagalpur,Banka, Jamui,Munger
		081200 - 081500	Multi Cell. Maximum Reflectivity : 41 dBZ Echo Top : 8.4 KM	Range: 28 KM from DWR Patna in SES direction. Movement-NWN	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	THUNDER, LIGHTINING, GUSTY WIND	Patna, Jehanabad, Aurangabad, Rohtas.
		090220 - 090520	Multi Cell. Maximum Reflectivity : 39.5 dBZ Echo Top : 11.6 KM	Range: 80 KM from DWR Patna in ENE direction. Movement-ENE	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	THUNDER, LIGHTINING, GUSTY WIND	Samastipur, Dharbhanga, Muzaffarpur, Madhubani, Madhepura, Supul
Paradeep	08/06/ 17	0300-2200 UTC	Isolated single cells seen in the western sector of the RADAR between 270-180 degrees(clockwise) and with av. Reflectivity value of 30 dBZ and heights of 11 km.	Position: Western and Eastern sector of radar at a distance of 0-250 km approx. scattered in the zone. Movement: SEly to Ely.	NIL	TS	Dhenkanal, Bhadrak, Jajpur, Angul, Puri Keonjhargarh, Mayurbhanj, Khorda, Cuttack, Deogarh, Baleshwar and Ganjam.

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
Agartala	09/06/17	080402 - 081142	Multiple cells formed NNW OF DWR Agartala at a distance of 230km with Maximum cell Height 14 km at 0812 UTC and maximum reflectivity 52.50 dBZ at 0812 UTC	Formed NNW at 230 km respectively of DWR and moves West wards with around 15 kmph.	Cells dissipated at 1142 UTC over 160km in NNE Direction.	N/A	N/A
		080622 - 081302	Multiple cells formed W of DWR Agartala at a distance of 110 km with Maximum cell Height 14 km at 0822 UTC and maximum reflectivity 50.50 dBZ at 0822 UTC	Formed 110 km W of DWR and moved west wards at around 20kmph	Cells dissipated at 1302 UTC over 220 km west Direction.	N/A	N/A
		080842 - 080252	Multiple cells formed SE of DWR Agartala at a distance of 250 km with Maximum cell Height 14 km at 1522 UTC and maximum reflectivity 50 dBZ at 1522 UTC	Formed 250 km SE of DWR and moved W wards at around 20kmph	Cells dissipated at 1802 UTC over 60km south Direction	N/A	N/A
		081522 - 082152	Multiple cells formed NE of DWR Agartala at a distance of 180 km with Maximum cell Height 12 km at 1742 UTC and maximum reflectivity 47.50 dBZ at 1742 UTC	Formed 180 km NE of DWR and moved W wards at around 20kmph	Cells dissipated at 2152 UTC over 200km NE Direction	N/A	N/A
Machilipatnam	08/0300 -09/0300	0511 to 1201 UTC	Isolated Multiple cells average height of3.7 km with maximum reflectivity of 54.5dBZ.	N (30.9KM) and moving Sly direction with average speed of 14.0kmph	Cell started forming at0511UTC, at N(77km) from Radar the maximum reflectivity during0841UTCto 0921 UTC and died down at 1201UTC	Possibility of Thunder storm with rain and winds.	Krishna, East and west Godavariri Districts.
		0911to 1611 UTC	Isolated Multiple cells average height of8.5 km with maximum reflectivity of58.5dBZ.	NW (118.5KM) and moving Sly direction with average speed of 30.0kmph	Cell started forming at0911UTC, at NW(199km) from Radar the maximum reflectivity during1351UTCto1511 UTC and died down at 1611UTC	Possibility of Thunder storm with rain and winds.	Khammam, Mahabubabad, Bhadradri- Kotha gudem and Krishna Districts.
		1741to 0201 UTC	Isolated Multiple cells average height of5.3 km with maximum reflectivity of59.0dBZ.	NW (243KM) and moving Sly direction with average speed of 35.0kmph	Cell started forming at1741UTC, at NE(250km) from Radar the maximum reflectivity during1941UTCto2011 UTC and died down at 0201UTC	Possibility of Thunder storm with rain and winds.	Visakhapatnam, East,west,Kerishna, Guntur,Khammam,Mahabubabad,Bhadradri-Kotha gudem and Warangal Districts.