India Meteorological Department

FDP STORM Bulletin No.99 (12-06-2017)

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

Southwest Monsoon has further advanced into remaining parts of central Arabian sea, Konkan, North Interior Karnataka, Rayalaseema, some parts of north Arabian sea and Gujarat region, some more parts of Madhya Maharashtra, some parts of Marathwada, entire Telangana, some more parts of Coastal Andhra Pradesh, most parts of west central & north Bay of Bengal, remaining parts of Tripura, Assam & Meghalaya, most parts of Sub Himalayan West Bengal & Sikkim and some parts of north Coastal Odisha and Gangetic West Bengal.

The Northern Limit of Monsoon (NLM) passes through Lat 20.5°N/Long 60.0°E, Lat 20.5°N/Long 70.0°E, Valsad, Nasik, Parbhani, Adilabad, Narsapur, Paradeep, Digha, Kolkata, Krishnanagar and Lat 27.4°N/Long 87.7°E.

The deep depression over south Bangladesh & neighbourhood moved north northeastwards with a speed of about 29 kmph in past six hours and lay cantered at 0830 hours IST of today, 12th June 2017 over southeast Bangladesh & neighbourhood near Latitude 23.0°N and longitude 91.0 °E about 130 km northeast of Khepupara(Bangladesh) and 100 km south southwest of Agartala. The system is very likely to continue to move north northeastwards and weaken into a depression during next 12 hours and further into a well marked low pressure area in subsequent 12 hours.

The trough at mean sea level from north Rajasthan to north Bay of Bengal now runs from Punjab to the centre of deep depression over southeast Bangladesh & neighbourhood across Uttar Pradesh and Bihar and extends upto 0.9 Km above mean sea level.

An upper air cyclonic circulation lies over south Konkan & adjoining Madhya Maharashtra 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.

The western disturbance as an upper air cyclonic circulation over Jammu & Kashmir and neighbourhood now lies over eastern parts of Jammu & Kashmir at 3.1 km above mean sea level with a trough aloft roughly along longitude 80.0°E and north of latitude 28.0°N.

The off shore trough from Maharashtra coast to Kerala coast now runs from south Maharashtra coast to Kerala coast.

The upper air cyclonic circulation over Haryana & neighbourhood at 1.5 Km above mean sea level has become less marked.

The shear zone roughly along Lat.18.0°N between 3.1 & 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):

VORTEX:

Vortex seen over NW Bay of Bengal centred within half a degree of Lat 210.6N/89.1E, intensity T1.5, associated broken low/medium clouds with embedded intense to very intense convection were seen over NW Bay adjoining NE Bay with minimum CTT minus 93 DEG C.

Cloud Description:

Broken low/medium clouds with embedded moderate to intense convection were seen over Coastal Odisha, Southeast Gangetic West Bengal,

Scattered low/medium clouds with embedded moderate to intense convection were seen over South Konkan & Goa, Marathwada, over coastal Karnataka, South Interior Karnataka, North coastal Andhra Pradesh and Lakshadweep.

Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over Sub Himalayan West Bengal, North Bihar; rest Jharkhand, Meghalaya, North Nagaland, Manipur, Mizoram, Tripura, Southeast Madhya Pradesh, Southeast Gujarat, Maharashtra,

Scattered low/medium clouds were seen over J & K, North Himachal Pradesh, exterior Southeast Uttar Pradesh, South Bihar, South Nagaland, rest Madhya Pradesh, rest Gujarat, Northwest Jharkhand, Telangana, Rayalaseema, Tamilnadu and Kerala.

Arabian Sea:

Broken low/medium clouds with embedded intense to very intense convection were seen over EC & SE Arabian Sea.

Bay of Bengal & Andaman Sea:

Scattered low/medium clouds with embedded intense to very intense convection were seen over EC Bay.

Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over rest Bay North of Lat. 10.0N and Andaman Sea.

Past Weather:

Convection:-

Intense convection was observed over coastal Odisha N coastal Andhra Pradesh Tripura & Mizoram.

Moderate to Intense convection was observed over Gujarat Madhya Pradesh Maharashtra Punjab Himachal Pradesh J&K.

Light to Moderate convection was observed over rest parts of the country

OLR:-

Upto **100** wm^{-2} was observed over coastal Odisha.

Upto **200** wm^{-2} was observed over Maharashtra Chhattisgarh Rest Odisha South West Bengal Andhra Pradesh Karnataka Kerala North East States.

Upto **230** wm^{-2} was observed over East J&K South East Madhya Pradesh South Gujarat Bihar Jharkhand Rest West Bengal Sikkim.

Westerly Trough & Jet-Stream: Westerly trough runs roughly along longitude 78.0°E and north of latitude 30°N.

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 .

Negative shear tendency is observed over Madhya Pradesh East Uttar Pradesh Kerala and Positive shear tendency is observed over rest parts of India.

A Positive Vorticity field is observed over South Andhra Pradesh West Uttar Pradesh.

Negative low level convergence is observed over South India Coastal Odisha and Positive low level convergence observed over rest parts of India,

Precipitation:
IMR:
Rainfall Up to **150** mm was observed over Coastal Odisha. Rainfall Up to **110** mm was observed over South Assam adjoining Manipur Nagaland. Rainfall from **70** mm was observed over West Arunachal Pradesh. Rainfall Up to **50** mm was observed over North Chhattisgarh West Bengal Rest Odisha North East Andhra Pradesh Telangana.
Rainfall Up to **30** mm was observed over South Gujarat Marathwada Meghalaya Coastal Karnataka. Rainfall Up to **20** mm was observed over Rest Maharashtra.
Rainfall Up to **10** mm was observed over Vidarbha Rest Arunachal Pradesh Bihar Jharkhand Rest Chhattisgarh South East Madhya Pradesh Rest Andhra Pradesh Rest Karnataka.
HEM:.
Rainfall Up to **139** mm was observed over Coastal Karnataka Marathwada.
Rainfall Up to **70** mm was observed over Rest Maharashtra North Chhattisgarh North East Odisha Arunachal Pradesh Nagaland Manipur South Assam East Meghalaya Tripura North East Andhra Pradesh Kerala.
Rainfall Up to **14** mm was observed over South Gujarat South East Madhya Pradesh Rest Odisha North Interior Karnataka and Telangana.
Rainfall Up to **07** mm was observed over Rest Chhattisgarh Bihar Jharkhand West Bengal Rest Meghalaya Mizoram Rest Andhra Pradesh Rest Karnataka Tamilnadu

RADAR and RAPID Observation:

DWR Composite at 1300hrs IST indicated significant isolated convection Central Odisha, Rayalaseema, Andhra Pradesh and Maharashtra.
RAPID RGB Satellite imagery at 1230hrs IST indicated significant convective clouds over West & South Assam, Meghalaya, Manipur, Mizoram, Central & South Odisha, Vidarbha, Chhattisgarh, Karnataka, Konkan & Goa, North coastal Andhra Pradesh and Lakshadweep.

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

Higher Dust concentration was observed over north Africa. Dust concentration is expected to decrease over north India for next five days.
High PM10 concentration was observed over western part of the country, it is expected to increase 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 1-4 show evolution of heat low over NW India and adjoining Pakistan with MSLP values lower than 992hPa on Day-0 to Day-4.
12UTC charts on days from Day 0-3: show a zone of wind discontinuity at 925 hPa; SW-NE extending from Maharashtra across MP to Jharkhand. CYCIR over Head Bay of Bengal in Day -0 has moved over Bangladesh and is less marked.
12 UTC charts in Day 0 -2: Trough over Maharashtra. The system moves eastward towards in Day 3 and 4
00 UTC charts in Day 0-2: Feeble Western Disturbance is seen over northern parts of J&K
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: Assam Meghalaya, NE NMMT, TN Puducherry,
Day1: Assam Meghalaya, NE NMMT,
Day2: Assam Meghalaya, NE NMMT, TN Puducherry,
Day3: Nil
Day4: Nil

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

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

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

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, Gangetic 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,
Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic 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, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Rayalaseema, TN Puducherry,
Day2: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic 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, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka,

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

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

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

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

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

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

8. Rainfall and thunder storm activity: (Day/Index: Subdivisions with Precipitation > 2 cm):

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Telangana, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Jammu Kashmir, Konkan Goa, Madhya Maharashtra, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

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

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Jammu Kashmir, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day5: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Bihar, Himachal Pradesh, Jammu Kashmir, Konkan Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Telangana, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala

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

1. Weather Systems:

The analysis based on 00 UTC shows a low level CYCIR along Bangladesh Coast. Forecasts show that the CYCIR moving north east ward and becoming less marked on day 2. The trough is seen extending from west UP to Bihar from day 2 and is seen persisting for the next 5 days.

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, parts of Central India, south peninsula and parts of the north eastern states.

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 most parts of the country except J&K, Gangetic West Bengal and south peninsula during next 5 days.

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) : Greater than threshold value over northwest India and parts of Gangetic plain and central India during next 5 days.

Sweat Index (> 300): Higher than threshold value almost all over the country except parts of NW India and Gangetic plains.

CAPE (> 1000): Mostly over parts of Rajasthan, Gujarat, central parts of India, West Bengal, Bihar, isolated pockets of Odisha and regions bordering the east coast of the county.

CIN (50-150): Mostly all over the country except parts of south peninsula, J&K and western parts of Gangetic plain during next 48 hours.

5. Rainfall and thunderstorm activity:

20-70 mm: rainfall over Sub- Himalayan West Bengal and parts of NE states during next five days with very heavy rainfall (70-130 mm) over Konkan region, Sub- Himalayan West Bengal and adjoining areas on day1.

20-70 mm: rainfall over parts of Maharashtra during next 4 days and isolated pockets of coastal Andhra Pradesh during next 3 days.

40-70 mm: rainfall over west coast, coastal Maharashtra and Karnataka during next 5 days with very heavy rainfall (70-130 mm) over coastal Karnataka and adjoining Kerala during next 24 hours.

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

1. Model Reflectivity (Max. dBz):

15-35 dBZ Model reflectivity over south peninsula, AP and Odisha during next 24 hours, over NE states on day2 and 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 entire country during the next 72 hours.

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

CIN (50-150): Over north west parts of India, east UP, Bihar, Parts of central India, Telangana and AP during next three days.

Rainfall and thunderstorm activity:

40-70 mm: along west coast with very heavy rainfall (70-130) mm over Konkan and Karnataka coast during next 24 hours.

20-70 mm: over parts of SHWB, Gangetic West Bengal and NE states with very heavy rainfall (70-130) mm over NE states during day2 to day3.

3. IOP ADVISORY FOR 24 and 48Hrs:

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

The present position of the deep depression over southeast Bangladesh is likely to result in very heavy rainfall over parts of South Assam, Meghalaya and adjoining Tripura on day 1. Further de intensification and north-eastward movement of the system across north-east India, is likely to decrease the intensity of rainfall and shift the main rainfall belt to over Arunachal Pradesh and adjoining Assam and Sub Himalayan West Bengal on day 2.

The off shore trough from south Maharashtra coast to Kerala coast is likely to result in heavy rainfall all along the west coast on day 1 and 2. The upper air cyclonic circulation lies over south Konkan & adjoining Madhya Maharashtra is likely help the rainfall belt penetrate inland into west peninsular India on day 1 and 2, which is likely to concentrate over north west peninsular India in the subsequent period.

24 hour Advisory for IOP:
Assam, Meghalaya,
Nagaland, Meghalaya, Mizoram and Tripura
Arunachal Pradesh
South Gangetic West Bengal, North Coastal Orissa,
Entire Karnataka, Kerala, Lakshadweep,
Telangana, Coastal Andhra Pradesh
Konkan and Goa, Madhya Maharashtra, Marathwada

48 hour Advisory for IOP:
Assam, Meghalaya,
Arunachal Pradesh
Nagaland, Meghalaya, Mizoram and Tripura
Entire Karnataka, Kerala, Lakshadweep,
Telangana
Konkan and Goa, Madhya Maharashtra, Marathwada

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)
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HEM: http://satellite.imd.gov.in/img/3Ddaily he.jpg
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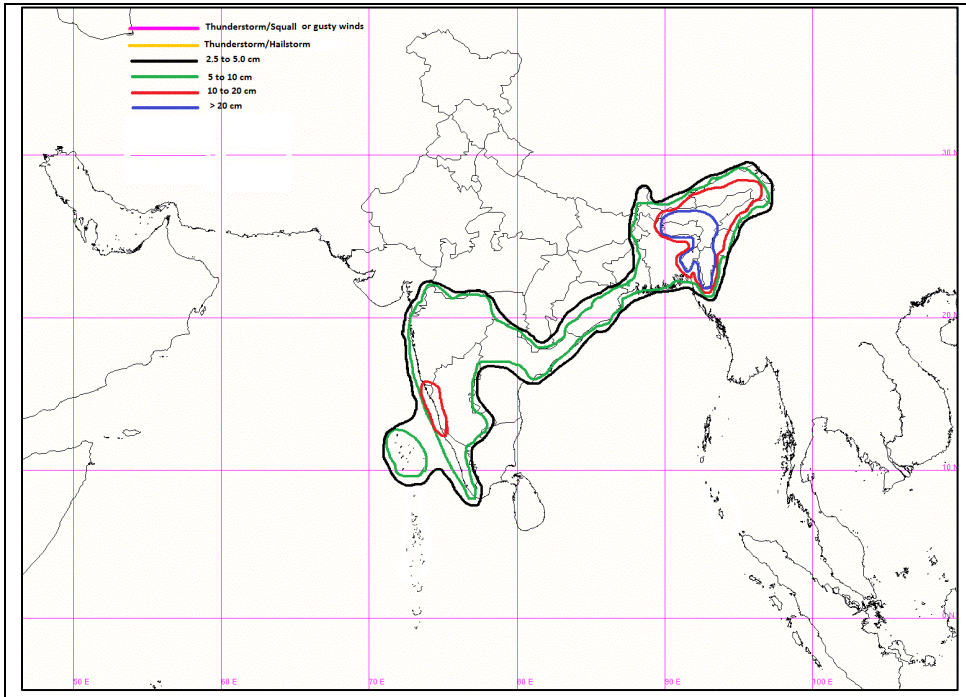
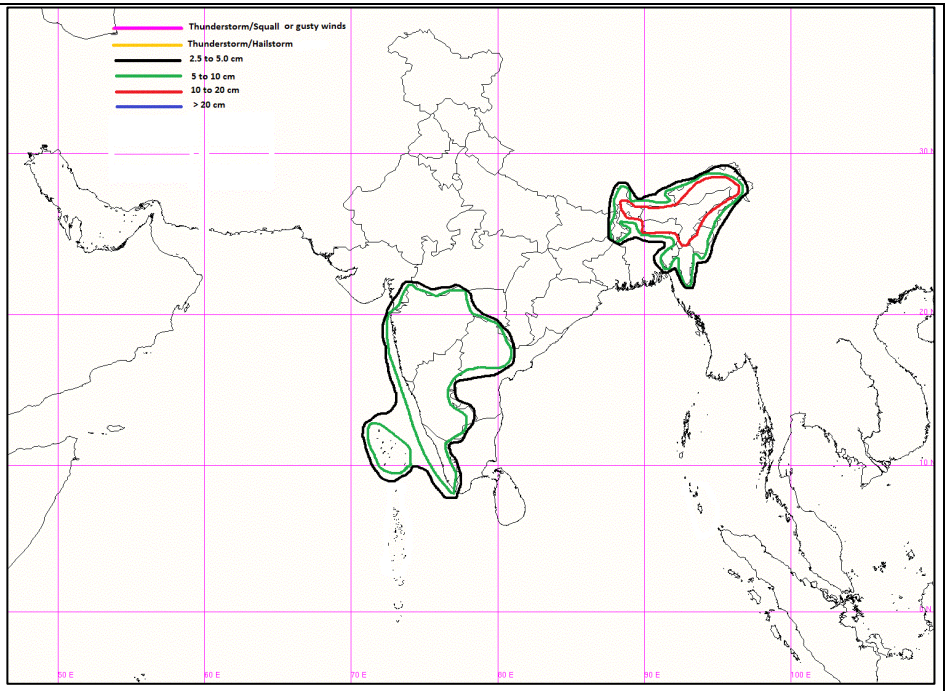
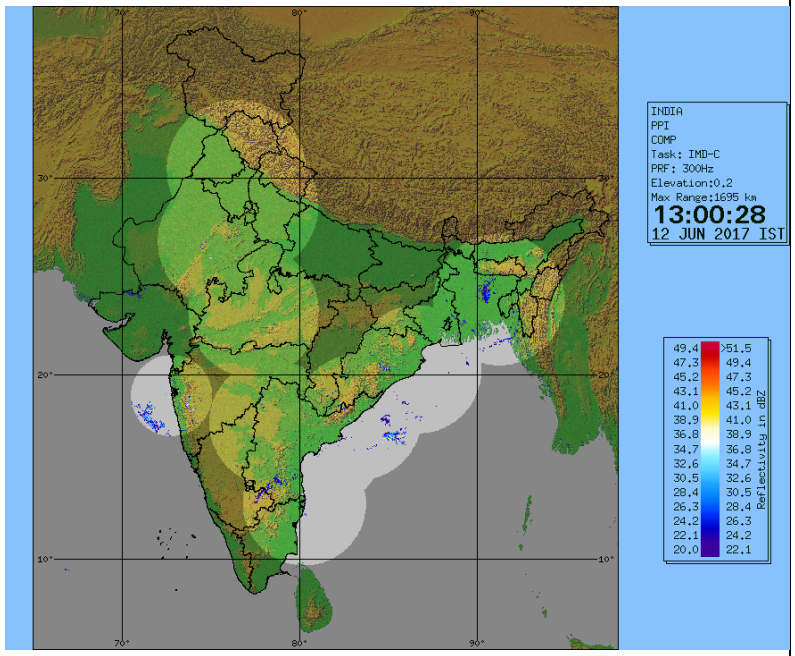
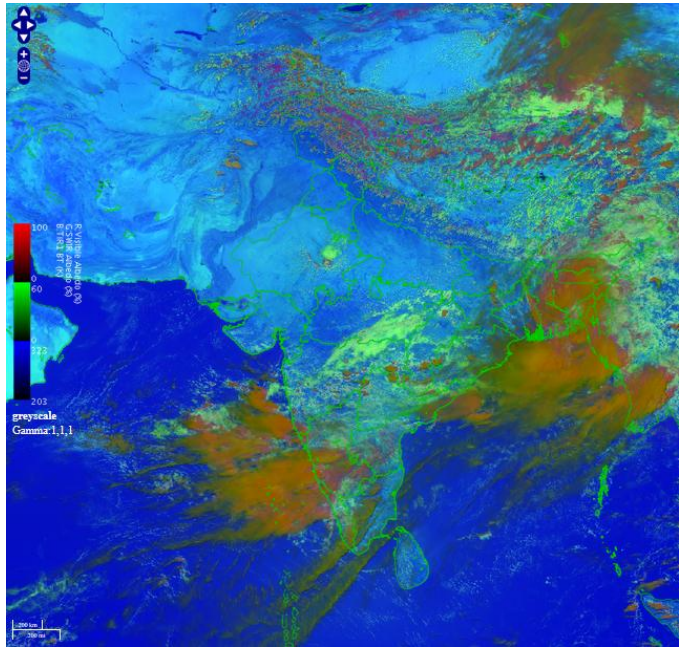


IOP Advisory for 24 hours



IOP Advisory for 48 hours

	
DWR composite at 1300 hrs IST	**RAPID RGB Satellite Imagery at 1230 hrs IST of today**

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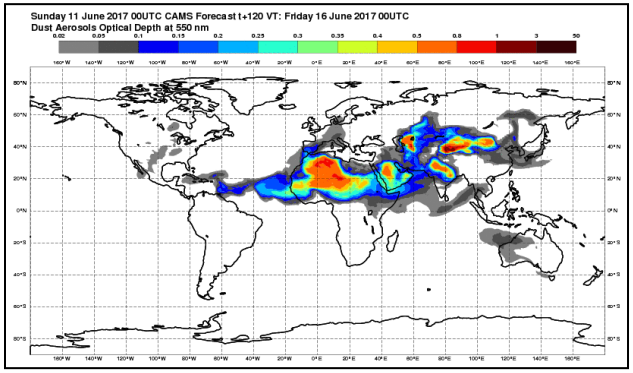
<td> 
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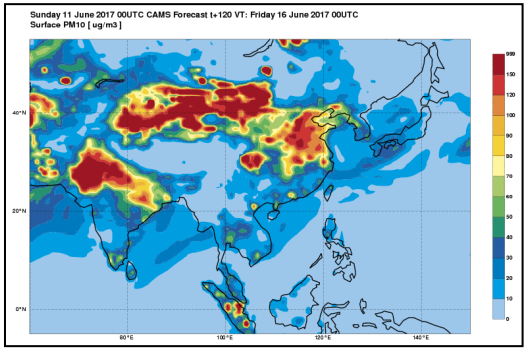
<td> 
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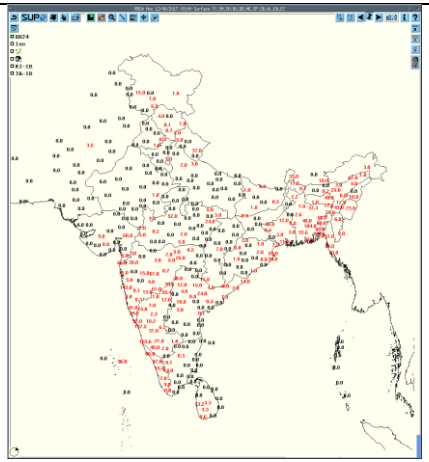
<td>  </td>
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<td>Forecast Dust Concentration for 00UTC of 15th June</td>
<td>PM10 Forecast for 00UTC of 15th June</td>
<td>Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today</td>
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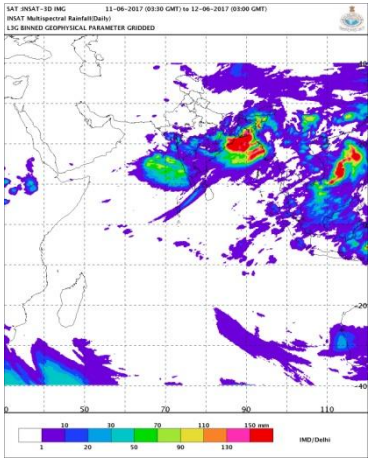
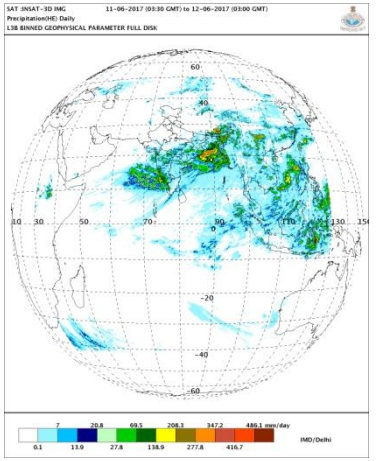
<td colspan="2">  </td>
<td colspan="2">  </td>
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<td colspan="2">IMR Rainfall</td>
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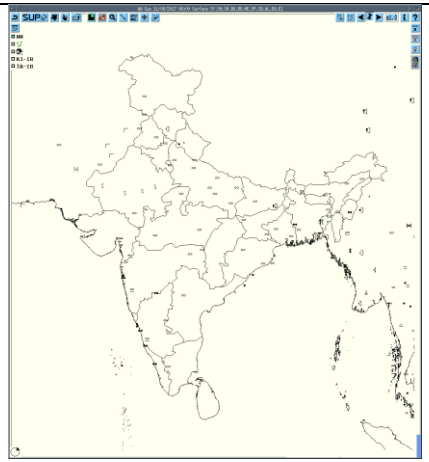
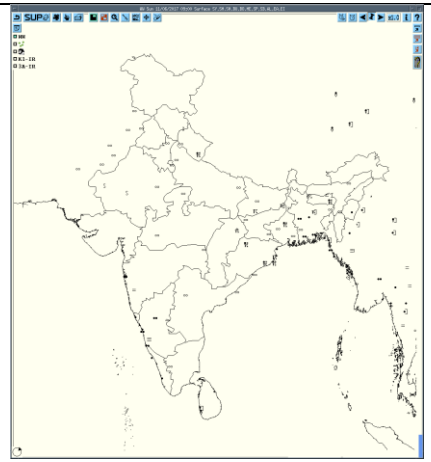
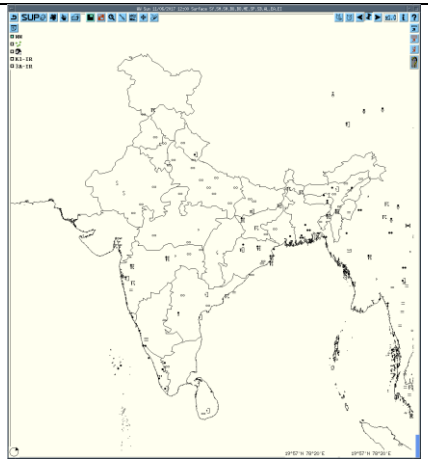
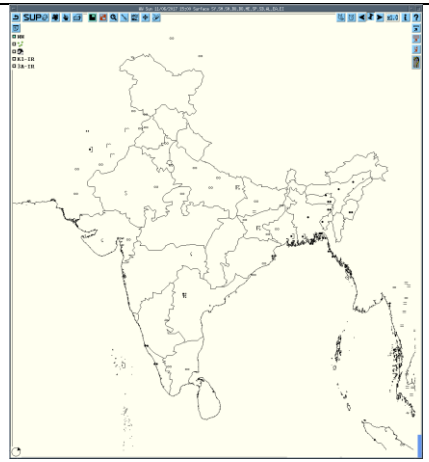
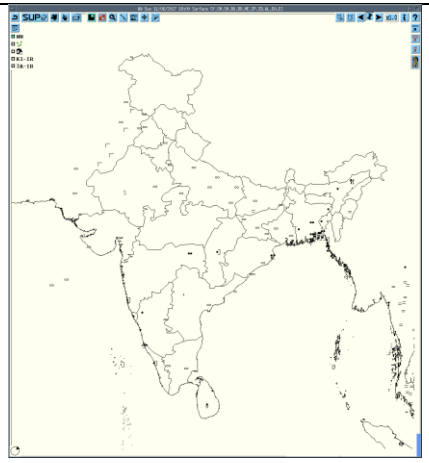
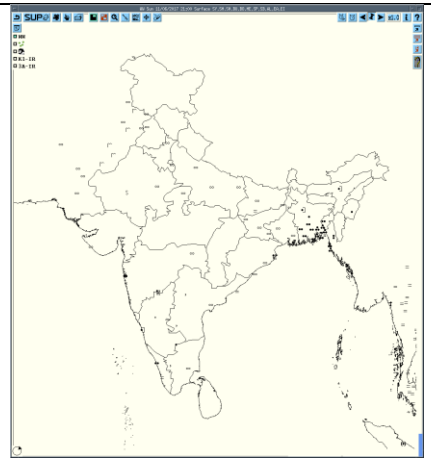
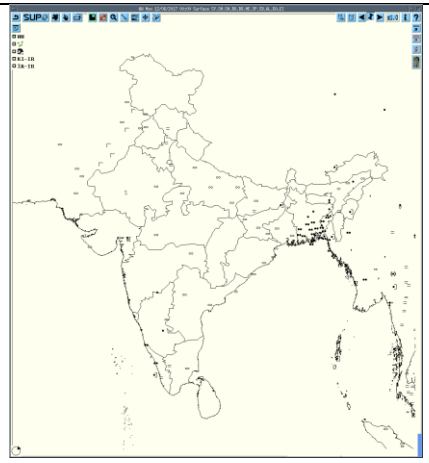
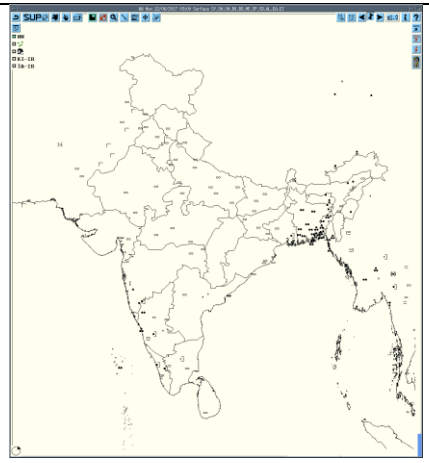
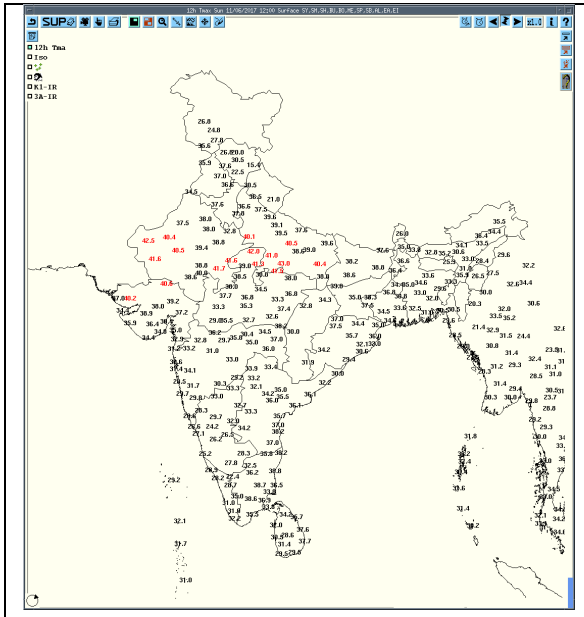
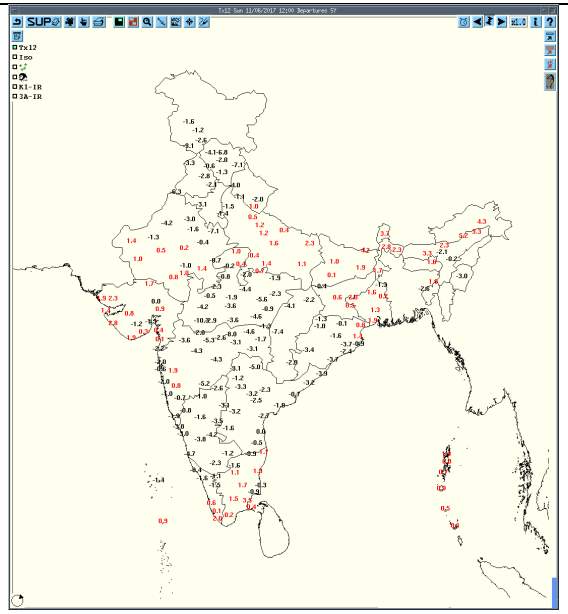
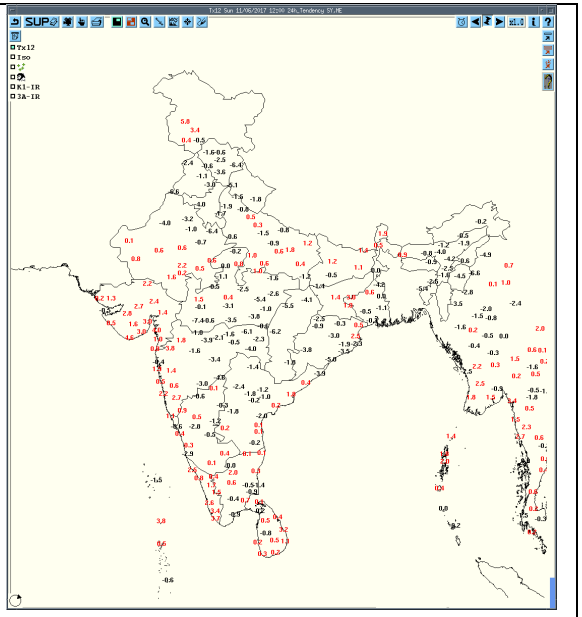
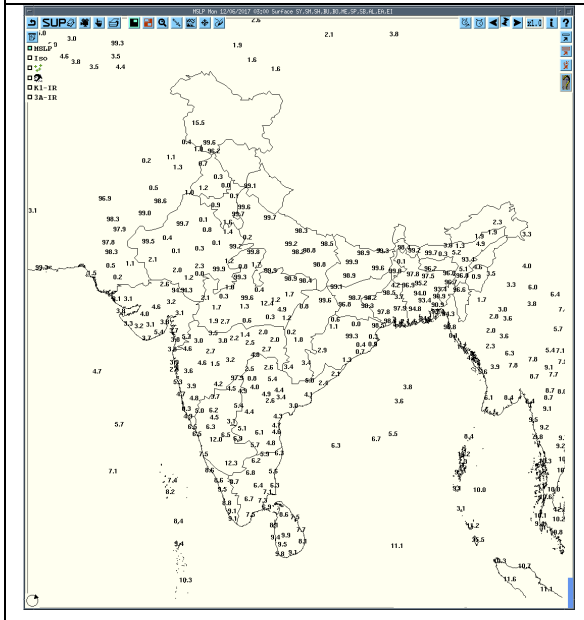
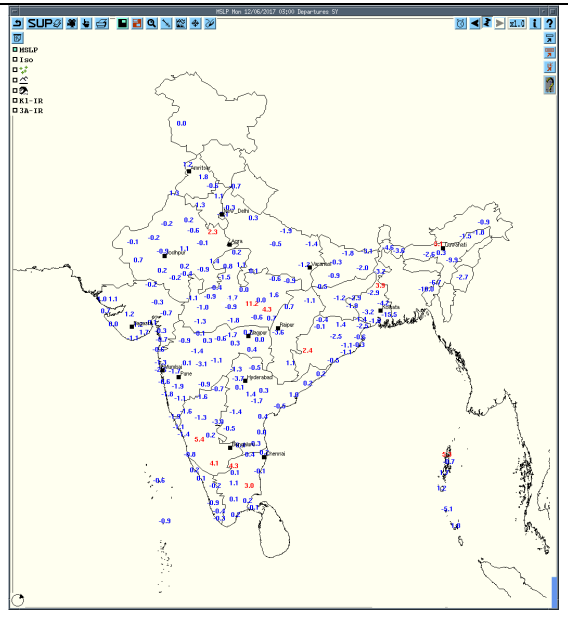
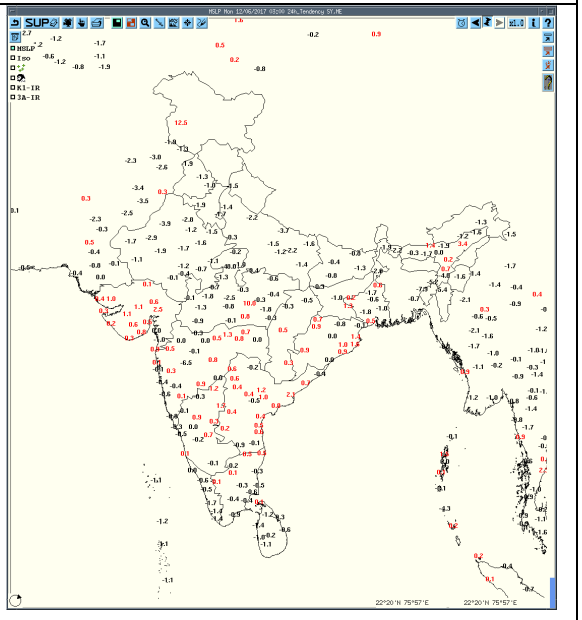
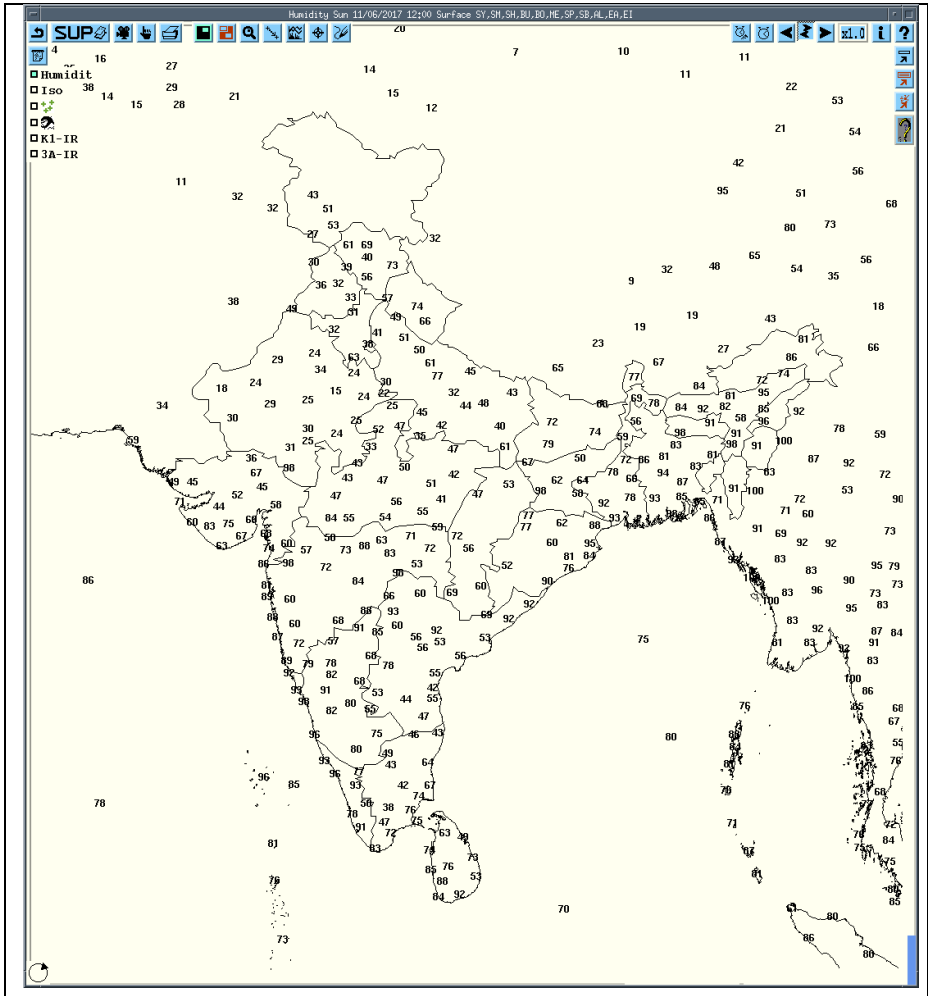
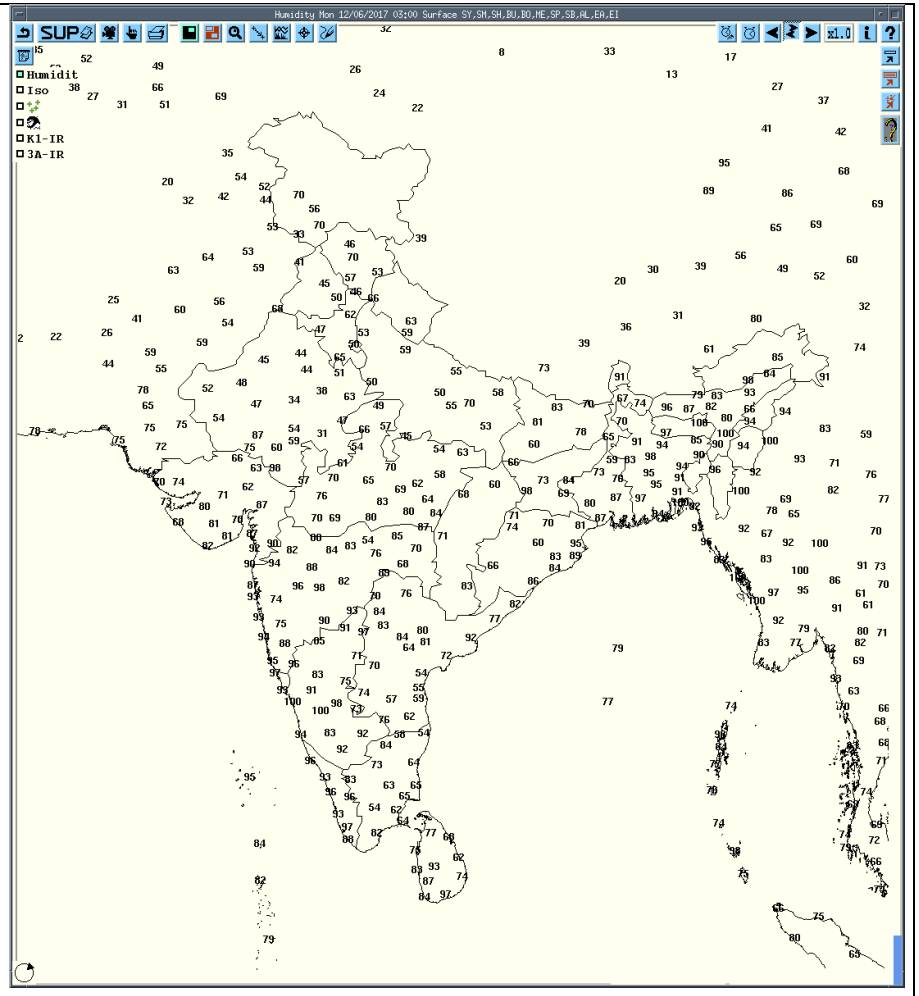









3hourly Past weather at 06, 09, 12, 15, 18, 21UTC of yesterday and 00 & 03 hrs UTC of today

		
Tmax	**Departure Tmax**	**Tendency Tmax**
		
MSLP	**Departure MSLP**	**Tendency MSLP**



RH at 12UTC yesterday



RH at 03UTC today

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**
11-06-17	0600UTC	Purnea	E India	Bihar	Thunderstorm
		Agartala	NE India	Tripura	Thunderstorm
		Cooch Behar	E India	West Bengal	Thunderstorm
11-06-17	0900UTC	Mukteshwar	NW India	Uttarakhand	Thunderstorm
		Ambikapur	**C India**	**Chhattisgarh**	**Thunderstorm with Hail**
		Gaya, Purnea	E India	Bihar	Thunderstorm
		Jharsuguda, Chandbali, Paradeep, Bhubaneswar	E India	Odisha	Thunderstorm
		Shanti Niketan,	E India	West Bengal	Thunderstorm
		Dhubri	NE India	Assam	Thunderstorm
		Shillong	NE India	Meghalaya	Thunderstorm
11-06-17	1200UTC	Bhaderwah	NW India	J & K	Thunderstorm
		Gaya, Purnea	E India	Bihar	Thunderstorm
		Daltonganj, Ranchi	E India	Jharkhand	Thunderstorm
		Sambalpur, Keonjhargarh, Chandbali, Paradeep	E India	Odisha	Thunderstorm
		Bagdogra, Cooch Behar	E India	West Bengal	Thunderstorm
		Silchar	NE India	Assam	Thunderstorm
		Kailasahar	NE India	Tripura	Thunderstorm
		Raipur	**C India**	**Chhattisgarh**	**Thunderstorm with Hail**
		Akola	C India	Maharashtra(Vidarbha)	Thunderstorm
		Nasik, Pune	W India	Maharashtra	Thunderstorm
		Tuni	S India	Andhra Pradesh	Thunderstorm
		Bhavnagar	W India	Gujarat	Thunderstorm
11-06-17	1500UTC	Gorakhpur	NW India	Uttar Pradesh	Thunderstorm
		Ranchi	E India	Jharkhand	Thunderstorm
		Chandbali	E India	Odisha	Thunderstorm
		Rajkot	W India	Gujarat	Lightening
		Nagpur	C India	Maharashtra(Vidarbha)	Lightening
		Hyderabad	S India	Telangana	Thunderstorm
11-06-17	1800UTC	North Lakhimpur	NE India	Assam	Thunderstorm
		Chandbali	E India	Odisha	Thunderstorm
11-06-17	2100UTC	Sholapur	W India	Maharashtra	Thunderstorm
12-06-17	0000UTC	Baroda	W India	Gujarat	Thunderstorm
12-06-17	0300UTC	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
Visakhapatnam	11/06/17	0300 UTC 0600 UTC	Isolated single cells formed in NNE at 180 KM with 6 KM max ht. with max. reflectivity of 45dBz. Convictive region of cb cells formed from NE to SE 70 km from radar with max reflectivity 50 dBz and height of 14kms.	Continued to be formed and moving SEly	Gradually decrease in reflectivity .		-
	11/06/17	0600 UTC 0900 UTC	Isolated single cells formed in Wly direction at 70KM with 8 KM max ht. with max reflectivity of 45dBz. Convictive region of cb cells formed from NE to SE 50 km from radar with max reflectivity 45 dBz and height of 10km.	moving Ely	Convective region cells gradually decreasing in reflectivity and moved away from radar range.		-
	11/06/17	0900 UTC 1200 UTC	Squally line CB cells formed in Wly direction from station to 250 km with 12 KM max ht. with max reflectivity of 50dBz..	moving Ely	gradually decreasing in reflectivity.		-
	11/06/17	1200 UTC 1500 UTC	Convictive region in which cb cells at WESTERLY 180kms with max reflectivity 49 dbz and average height 8kms.	Moving Easterly.	-	-	-
	11/06/17	1500 UTC 1800 UTC	Convictive region Westerly 200kms from radar with max reflectivity 40dbz .	Easterly	Not indicative for development of cells.	-	-
	11/06/17	1800 UTC 0000 UTC	Cb cell well organized WSW 138kms from radar with max reflectivity 49 dbz and vertical height 9kms.	Formed at 22:41 UTC and moving Easterly.	Dissipating stage.	-	-
	12/06/17	0000 UTC 0300 UTC	Squally line CB cells SE 74kms with max reflectivity 50 dbz and average height 14kms.	Developing since last observation and moving Easterly	Formed a squally line of cb cells.	-	-

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	12/06/17	11/ 0300 - 0600 UTC	Multiple cells Max dBZ=42.5 Ht.=6-8 KMS	Echoes formed NE and E sector . their movement ne wards	-------	-	Kalsi, Dehradun, Mussorie
		11/0600 - 0900 UTC	Isolated cells Max dBZ=47.5 Ht.=4-5 KMS	echoes formed north of DWR movement S - wards	--------	----------	Patiala and adjoining area
		11/ 0900 - 1200 UTC	NO ECHOS				
		11/ 1200 - 1500 UTC	NO ECHOS				
		11/ 1500 - 1800 UTC	NO ECHOS				
Jaipur	12/06/17	0302-0352 UTC	Single cell with average height of 5.0 km & maximum reflectivity 50 dBZ	Single cell develop 0302 to 0352 UTC of 11/06/2017 towards West of Jaipur and moved to South Wards at speed 30-35 km/hr	Cell starts forming from 0302 to 0352 of 10/06/2017 at W of Jaipur and reaches maximum reflectivity during 0332-0342 UTC and died down 0352 UTC.	-	Nagaur
	12/06/17	1212-1432 UTC	Multiple cells with average height of 5.5 km & maximum reflectivity 56 dBZ	Multiple Cells develop 1212 to 1432 UTC of 11/06/2017 towards SW of Jaipur and moved to SE Wards at speed 35-40 km/hr	Cells starts forming from 1212 UTC of 10/06/2017 AT SW of Jaipur and reaches maximum reflectivity during 1402-1412 UTC and died down 14321 UTC.	Thunderstorm/ rain at isolate places	Bhilwara, Chittorgarh
	12/02/2017	0202-0300 UTC	Multiple cells with average height of 5.5 km & maximum reflectivity 55 dBZ	Multiple Cells develop 0202 and continued beyond 0300 UTC of 12/06/2017 towards NW of Jaipur and moved to SE Wards at speed 35-40 km/hr	Cells starts forming from 0202 and continued beyond 0300 UTC of 12/06/2017 reflectivity during 0252.	Thunderstorm/ rain at isolate places	Bikaner, Churu, Sikar

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
Karaikal	11.06.17	1.1200Z - 1500Z	1) isolated cells in SW direction 150 km range with max reflectivity of 45dBz and Average height of 06 km.	no movement	1.Cells started forming at 1742IST and dissipated at 1852IST	nil	
	12.06.17			Nil			
Paradeep	11/06/17	0300-2200	Convective regions seen in the southern sector of the RADAR between 90-270 degrees (clockwise) and with av. Reflectivity value of 30 dBZ and heights of 12 km. These convective regions later shift to the eastern sector (0-180 degrees).	Position: Southern and later in the Eastern sector of radar at a distance of 0-250 km approx. scattered in the zone. Movement: NWly.	NIL	RAIN with possibility of TS.	Dhenkanal Bhadrak, Jajpur, Nayagarh, Jagatsinghpur, Angul, Keonjhargarh, Mayurbhanj, Khorda, Cuttack, Deogarh, Baleshwar, Puri 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	12/06/17	110300 - 111150	Multiple cells formed SE OF DWR Agartala at a distance of 110km with Maximum cell Height 15 **km** and maximum reflectivity 50 **dBZ at 0610 UTC**	Formed SE at a distance 110 km of DWR and moves N West wards with around 45 kmph.	Cells dissipated at 1150 UTC over W BD.	TS with rain	Dhalai, w –khowai N- unokoti
		110600 - 111640	Multiple cells formed E SE OF DWR Agartala at a distance of 220 km with Maximum cell Height 15 **km** and maximum reflectivity 45 **dBZ at 1240 UTC**	Formed 220 km ESE of DWR and moved North wards at around 55kmph	Cells dissipated at 1640 UTC over Meghalaya	N/A	N/A
		110610 - 080252	Multiple cells formed SW OF DWR Agartala at a distance of 150 km with Maximum cell Height 14 **km** and maximum reflectivity 44 **dBZ at 1120 UTC**	Formed 150 km SW of DWR and moved NE wards at around 40kmph	Cells dissipated at 1440 UTC over BD	N/A	N/A
		111330 - 112010	Multiple cells formed SE OF DWR Agartala at a distance of 130 km with Maximum cell Height 15 **km** and maximum reflectivity 44 **dBZ at 1130 UTC**	Formed 130 km SE of DWR and moved NW wards at around 65kmph	Cells dissipated at 2010 UTC over BD	N/A	N/A
		110610 - -------	Multiple cells formed S of DWR Agartala at a distance of 100 km with Maximum cell Height 08 **km** and maximum reflectivity 41 **dBZ at 2240 UTC. Continuous cells were coming from sea to land.**	Formed 100 km S of DWR and moved NE wards at around 45kmph	Persists over Mizoram, Tripura and BD	N/A	N/A
Bhuj	09/06/2017	0430 (UTC) TO 1200 (UTC)	Multiple cell at height from 03 to 15 Kms. with maximum 56 dBZ.	50 to 200 Kms. In SW, successively 50 to 150 Kms. In NE and SE.	Observed during 05:13 to 1200 UTC.	TS or TSRA.	(1) Kutch (2) Rajkot (3) Jamnagar (4) Amreli (5) Bhavnagar (6) Junagadh

Radar Station name DWR Machilipatnam	Date	Time interval of observation (UTC)	Organization of the cells (Isolated single cells/multiple cells/ convective regions/ squall lines) with height of 20dBZ echo top and maximum reflectivity	Formation w.r.t radar station and Direction of movement	Remarks	Associated severe weather if any	Districts affected
	03Z of 11.06.2017 to 03Z of 12.06.2017	0621 to 1331 UTC	Isolated Multiple cells average height of 5.7 km with maximum reflectivity of 57.5dBZ.	NNW (133KM) and moving E ly direction with average speed of 35.0kmph	Cell started forming at 0621 UTC, at NNW(185 km) from Radar the maximum reflectivity during 0921 UTC to 1031 UTC and died down at 1331 UTC	Possibility of Thunder storm with rain and winds.	Mahabubabad, Khammam,Bhadradri-Kothagudem, EastGodavari, WestGodavari Districts
	03Z of 11.06.2017 to 03Z of 12.06.2017	2111 to 0221 UTC	Isolated Multiple cells average height of 4.5 km with maximum reflectivity of 54.dBZ.	NNE(229KM) and moving E ly direction with average speed of 33.0kmph	Cell started forming at 2111UTC, at N (226km) from Radar the maximum reflectivity during 2221UTCto2301 UTC and died down at 0221UTC	Possibility of Thunder storm with rain and winds.	Dantewara, Malkangir, Visakhapatnam Districts.
	03Z of 11.06.2017 to 03Z of 12.06.2017	2241to 0041 UTC	Isolated Multiple cells average height of 4.5 km with maximum reflectivity of 56.5dBZ.	NE (127KM) and moving E ly direction and finally entered in Sea with average speed of 36.0kmph	Cell started forming at 2241UTC, at NE (127km) from Radar the maximum reflectivity during 2311UTC to 0041 UTC	Possibility of Thunder storm with rain and winds.	East Godavari District.

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	12/06/17	110300 -110730	NIL	NIL	N/A	N/A	N/A
		110730 -111030	Multiple Cell. Maximum Reflectivity : 48.5 dBZ Echo Top : 10 KM	Range: 105 KM from DWR Patna in NORTH-WEST direction. Movement- SOUTH-EASTERLY	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	N/A	Saran, Siwan, Gopalganj, Muzaffarpur, Vaishali, Bhojpur, Buxar, Jehanabad, Aurangabad, Nalanda, Lakhisarai
		100900 -111100	MULTIPLE CCELL. Maximum Reflectivity : 47.5 dBZ Echo Top : 12 KM	Range: 26.4 KM from DWR Patna in SOUTH direction. Movement-SOUTHERLY	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	N/A	Patna
		110930 -111130	MULTIPLE CCELL. Maximum Reflectivity : 51 dBZ Echo Top : 14 KM	Range: 49.6 KM from DWR Patna in SOUTH direction. Movement-SOUTHERLY	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	N/A	Gaya And Nawada
		111130 -120045	NIL	NIL	N/A	N/A	N/A
		120045 -120330	MULTIPLE CCELL. Maximum Reflectivity : 44.5 dBZ Echo Top : 8 KM	Range: 81.6 KM from DWR Patna in NORTH Direction. Movement-SOUTH-EASTERLY	Warning E-mail and Fax sent to State Disaster management Authority and Concern DMs	N/A	West Champaran, East Champaran, Sheohar, Sitamarhi, Madhubani, Gopalganj, Muzaffarpur, Darbhanga, Vaishali, Samastipur

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	11-06-17	0301-0341	NIL	NIL	NO ECHO	NIL	NIL
		0351-1901 UTC	Isolated cell developed with maximum reflectivity of 56.0 dBz at 0601 UTC and maximum height 8.6 km at 0441 UTC	E(98km) moving WSW-ly at a speed of 43 kmph	Isolated cells developed at E at a distance of 98 km from Radar at 0351 UTC transformed into scattered multi cells, Matured and dissipated at 0812 UTC in SW at a distance of 64 km from Radar.	Thunderstorm/ Rain	N/A
			Isolated cell developed with maximum reflectivity of 59.0 dBz at 0711 UTC and maximum height 13.2 km at 0651 UTC	NNE(67.8km) moving W-ly then WSW-ly at a speed of 48 kmph	Isolated cells developed at NNE at a distance of 67.8 km from Radar at 0541 UTC transformed into scattered multi cells, Matured and dissipated at 0842 UTC in W at a distance of 56 km from Radar.	Thunderstorm/ Rain	N/A
			Multi cells developed with maximum reflectivity of 59.0 dBz at 0731 UTC and maximum height more than 18 km at 0741 UTC	From NORTH (167.9km) to SW(147.5km) moving W-ly then WSW-ly at a speed of 36 kmph	Multi cells developed at from North at a distance of 167.9 km to SW at a distance of 147.5 km from Radar at 0701 UTC transformed into scattered multi cells, Matured and dissipated at 1131 UTC in WSW at a distance 181 km from Radar	Thunderstorm/ Rain	N/A
		0351-1901 UTC	Isolated cells / multi celled system with maximum reflectivity of 55.0 dBz at 0822 UTC and maximum height 17.3 km at 1751 UTC	SE to NE (132km) moving W-ly then SW-ly then S-ly	Isolated cells / multi celled system started developing between SE to NE at a distance of 132 km from Radar from 0441 to 1611 and dissipated at 1901 UTC in ENE at a distance of 207 km from Radar.	Thunderstorm/ Rain	N/A
		1912 – 2321 UTC	NIL	NIL	NOSIG ECHO	NIL	NIL
	12-06-17	0012-0302	NIL	NIL	NOSIG ECHO	NIL	NIL