India Meteorological Department

FDP STORM Bulletin No.101 (14-06-2017)

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

The southwest monsoon has further advanced into remaining parts of Coastal Andhra Pradesh, west central & northwest Bay of Bengal, some parts of south Chhattisgarh and some more parts of Odisha. 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, Jagdalpur, Bhawanipatna, Chandbali , Digha, Kolkata, Krishnanagar, Darjeeling and Lat. 27.4°N/Long 87.7°E.

Conditions are likely to become favourable for further advance of southwest monsoon into some more parts of Gujarat region, Madhya Maharashtra, remaining parts of Marathwada, some parts of Vidarbha, some more parts of Chhattisgarh, Odisha, remaining parts of West Bengal and some parts of Jharkhand and Bihar after 3-4 days.

The upper air cyclonic circulation over west Assam & neighbourhood, now lies over central parts of Assam & neighbourhood and extends upto 0.9 km above mean sea level.

The trough at mean sea level from Punjab to west Assam, now runs from Punjab to Assam across Haryana, Uttar Pradesh & Bihar and extends upto 0.9 Km above mean sea level with two embedded upper air cyclonic circulations, 1st over East Uttar Pradesh & neighbourhood persists and now extends upto 0.9 km above mean sea level; 2nd over west Assam & neighbourhood, now lies over central parts of Assam & neighbourhood and extends upto 0.9 km above mean sea level. However, the 3rd embedded upper air cyclonic circulation over Haryana & neighbourhood has become less marked.

The upper air cyclonic circulation over south Chhattisgarh & neighbourhood, now lies over south coastal Odisha & neighbourhood between 3.1 and 5.8 km above mean sea level. The trough runs from this cyclonic circulation to south Konkan between 3.1 and 4.5 km above mean sea level.

The upper air cyclonic circulation over central Pakistan & adjoining West Rajasthan extending upto 1.5 km above mean sea level persists.

The off shore trough off Karnataka Kerala coast persists.

A trough runs from eastern parts of Bihar to south coastal Odisha between 2.1 & 3.1 km above mean sea level.

The western disturbance as an upper air cyclonic circulation over eastern parts of Jammu & Kashmir extending upto 5.8 km above mean sea level has moved away eastwards

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 Tibet adjoining China and area between Lat 37.0N to 50.0N, Long 70.0E to 90.0E in association with WD over the area.

Cloud Description:

Scattered low/medium clouds with embedded moderate to intense convection were seen over Meghalaya adjoining Assam, South Madhya Maharashtra, Northeast coastal Andhra Pradesh and adjoining WC Bay.

Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over Arunachal Pradesh, rest Assam, North Interior Karnataka and Bay Islands.

Scattered low/medium clouds were seen over J & K, North Himachal Pradesh, East Haryana, East Uttar Pradesh and rest parts of the country.

Arabian Sea: Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over EC & SE Arabian Sea.

Bay of Bengal & Andaman Sea:

Scattered low/medium clouds with embedded intense convection were seen over C & N Bay Arakan Coast. Scattered low/medium clouds with embedded isolated moderate to intense convection were seen over North Andaman Sea.

Past Weather:

Convection:-

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

Moderate to Intense convection was observed over J&K Himachal Pradesh Gujarat Madhya Pradesh Maharashtra rest North East States.

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

OLR:-

Upto **200** wm^{-2} was observed over Marathwada West Arunachal Pradesh West Assam Meghalaya Mizoram Tripura South East Odisha Telangana Rayalaseema Central Karnataka North West Tamilnadu Central Kerala North East Andhra Pradesh.

Upto **230** wm^{-2} was observed over J&K Rest North East States Rest Karnataka Rest Andhra Pradesh West Bengal South Jharkhand East Bihar Rest Odisha Rest Chhattisgarh South Madhya Pradesh Rest Maharashtra

Westerly Trough & Jet-Stream: 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 India.

A Positive Vorticity field is observed over Rayalaseema Chhattisgarh.

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

Precipitation:

IMR:

Rainfall from **70** mm was observed over East Bihar adjoining North East Jharkhand North East Andhra Pradesh

Rainfall from **50** mm was observed over Marathwada West Assam Mizoram Tripura.

Rainfall Up to **30** mm was observed over South East Madhya Pradesh Extreme North West Bihar .

Rainfall Up to **20** mm was observed over South Madhya Pradesh Telangana.

Rainfall Up to **10** mm was observed over Extreme North J&K Rest Maharashtra Karnataka Rest Andhra Pradesh Odisha West Bengal Sikkim Kerala North West Tamilnadu Rest North East States.

HEM:
Rainfall Up to **70** mm was observed over west Arunachal Pradesh Meghalaya North East Jharkhand North Chhattisgarh South East Madhya Pradesh Marathwada Madhya Maharashtra North East Andhra Pradesh Telangana North Karnataka and Kerala. Rainfall Up to **14** mm was observed over West Assam Mizoram..Rainfall Up to **07** mm was observed over rest North East states East Bihar rest Jharkhand West Bengal Rest Andhra Pradesh Odisha Rest Chhattisgarh Rest Karnataka North Tamilnadu Rest Maharashtra.

RADAR and RAPID Observation:

DWR Composite at 1320hrs IST indicated significant isolated convection South Haryana, Delhi adjoing Rajasthan.
RAPID RGB Satellite imagery at 1300hrs IST indicated significant convective clouds over South Haryana, Delhi adjoining Rajasthan, Meghalaya adjoining Assam, South Odisha and North coastal Andhra Pradesh.

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 increase over north India for next five days.
High PM10 concentration was observed over western part of the country and Pakistan; it is expected to increase over north India and IGP 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 show heat low over NW India and adjoining Pakistan with MSLP values lower than 990hPa in day 2-4.
12UTC charts on days from Day 0-2: show a zone of wind discontinuity at 925 hPa; SW-NE extending from Maharashtra across MP to Jharkhand
12 UTC charts in Day 0-2: Feeble Western Disturbance is seen over eastern parts of J&K. System moves eastward and gets deeper in Day 3.
00UTC charts in Day 0-1: Offshore trough off Maharashtra/Karnataka coast
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,
Day1: TN Puducherry,
Day2: Assam Meghalaya,
Day3: Assam Meghalaya,
Day4: NE NMMT,
4. Low level Vorticity:-Positive Vorticity (>15 x 10^{-5}/s):
(Day/Index: Subdivisions with Lower Level Vortex > 15 x 10^-5 /s):
Day0: Jharkhand, Bihar, Himachal Pradesh, TN Puducherry,
Day1: Arunachal Pradesh, Assam Meghalaya, Uttarakhand, Himachal Pradesh, TN Puducherry,
Day2: Assam Meghalaya, TN Puducherry,
Day3: Arunachal Pradesh, Assam Meghalaya, Uttarakhand, Himachal Pradesh, TN Puducherry,
Day4: Assam Meghalaya, Uttarakhand, Himachal Pradesh, TN Puducherry, Kerala

5. Showalter Index: -3 to -4[Very unstable]: (Day/Index: Subdivisions with Showalter Index < -4):

Day0: 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, Gujarat region, Saurashtra Kutch, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Telangana,

Day1: Arunachal Pradesh, 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, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, NI Karnataka,

Day2: Arunachal Pradesh, 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, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana,

Day3: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, West Rajasthan, Odisha, West MP, East MP, Gujarat region, Saurashtra Kutch, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP,

Day4: 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, Vidarbha, Chhattisgarh,

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, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West Rajasthan, East Rajasthan, Odisha, West MP, East MP, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka, Day1: Arunachal Pradesh, 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, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka,

Day2: 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, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, Telangana,

Day3: 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, East Rajasthan, Odisha, West MP, East MP, Madhya Maharashtra, Vidarbha, Chhattisgarh,

Day4: 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, East Rajasthan, Odisha, West MP, East MP, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, 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, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West Rajasthan, East Rajasthan,

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

Day2: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, East UP, West UP, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, West Rajasthan, East Rajasthan, West MP, East MP, Gujarat region, Vidarbha, Chhattisgarh,

Day3: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, West Rajasthan,

Day4: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, West Rajasthan,

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, Bihar, Jammu Kashmir, Odisha, Gujarat region, Konkan Goa, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, SI Karnataka, Kerala,

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

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Bihar, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Odisha, West MP, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, TN Puducherry, Coastal Karnataka, SI Karnataka, Kerala,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Bihar, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, Gujarat region, Konkan Goa, Madhya Maharashtra, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

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

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

1. Weather Systems:

The analysis based on 00 UTC shows a trough at mean sea level from Punjab to west Assam and adjoining areas. Forecasts show the persistence of the trough for all the 5 days and thereby extending to parts of Central India.

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 Punjab, UP, the Gangetic plains, foot hills of Himalaya, parts of Central India, south peninsula and parts of the north eastern states along with isolated pockets over the east coast region.

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): Above threshold values are mostly over Gujarat and Rajasthan and over isolated pockets of GWB and Odisha Coast during next 5 days.

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

Total Total Index (> 50): Greater than threshold value over northwest India Delhi, UP and parts of MP and adjoining central India during next 5 days.

Sweat Index (>300): Higher than threshold value almost all over the country except parts of NW India and isolated pockets over Delhi, UP, Bihar and isolated pockets in the South peninsula.

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 NE states.

5. Rainfall and thunderstorm activity:

20-70 mm: rainfall over major regions of the east coast and west coast and over major regions of the NE states during the next 5 days. 20-70 mm: rainfall over parts of Maharashtra and isolated pockets of coastal Andhra Pradesh during next 5 days.

40-70 mm: rainfall and more over Konkan coast, coastal AP and Telangana and isolated pockets over the NE states during the next 5 days.

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

1. Model Reflectivity (Max. dBz):

15-35 dBZ Model reflectivity over south peninsula, AP, Odisha, GWB and over NE states during next 24 hours and over isolated pockets of SHWB, Telangana and 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 major regions of 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 the foothills of the Himalayas, Gujarat, central India, east UP, Bihar, NE states and major regions bordering the east coast of the country during next 3 days.

CIN (50-150): Over North West parts of India, east UP, Bihar, parts of central India and south peninsula during next three days.

3. Rainfall and thunderstorm activity:

70-130 mm and more: over SHWB, Telangana and adjoining areas for the next 72 hours.

20-70 mm: over the foothills of the Himalayas, NE states, west coast, Odisha coast, and parts of Central India for the next 72 hours.

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:

Day-1 & Day-2:

In association with the upper air cyclonic circulation in the lower levels, over central parts of Assam & neighbourhood, heavy rainfall activity is likely over the North East Indian region on day 1 and 2.

The upper air cyclonic circulation in the middle troposphere, over south coastal Odisha & neighbourhood and trough in the lower levels, extending from eastern parts of Bihar to south coastal Odisha, is likely to bring thunderstorm activity over North and Eastern India and parts of central India on day 1.

The shear line at 700 hPa, which runs from the above circulation to south Konkan, is likely to bring heavy rainfall into central India on day 1 and 2. The offshore trough off Kerala, Karnataka coast persists, and is likely to bring heavy rainfall along the Karnataka coast of west peninsular India on day 1 and 2.

24 hour Advisory for IOP:
Assam, Meghalaya,
Nagaland, Manipur, Mizoram and Tripura
Sub Himalayan West Bengal, Sikkim,
Chhattisgarh, Marathwada, Vidarbha,
Coastal Karnataka, Telangana, Coastal Andhra Pradesh
Madhya Maharashtra, Entire Madhya Pradesh,
Uttar Pradesh, Haryana, Delhi
Bihar, Jharkhand,
Interior Odisha, East Gangetic West Bengal

48 hour Advisory for IOP:
Assam, Meghalaya,
Nagaland, Manipur, Mizoram and Tripura
Sub Himalayan West Bengal, Sikkim,
Chhattisgarh, Madhya Maharashtra, Marathwada, Vidarbha
Coastal Karnataka, Telangana, Coastal Andhra Pradesh

For NCMRWF NWP products:(http://www.ncmrwf.gov.in/HomePage/NEPS-prod-1.php)
For IMD NWP products:(http://nwp.imd.gov.in/diagpro new.php)
For Synoptic plotted data and charts
http://amssdelhi.gov.in/
http://www.amsskolkata.gov.in/
For RAPID tool:
http://rapid.imd.gov.in/
Low Level Winds
http://satellite.imd.gov.in/archive/INSAT-3D-IMAGER/3D-PRODUCTS/AMV/LLW/MAR 2017/?C=M;O=D
Upper level winds
http://satellite.imd.gov.in/archive/INSAT-3D-IMAGER/3D-PRODUCTS/AMV/HLW/MAR 2017/?C=M;O=D
Past24hourHEMandIMRrainfall(upto03UTCoftoday)
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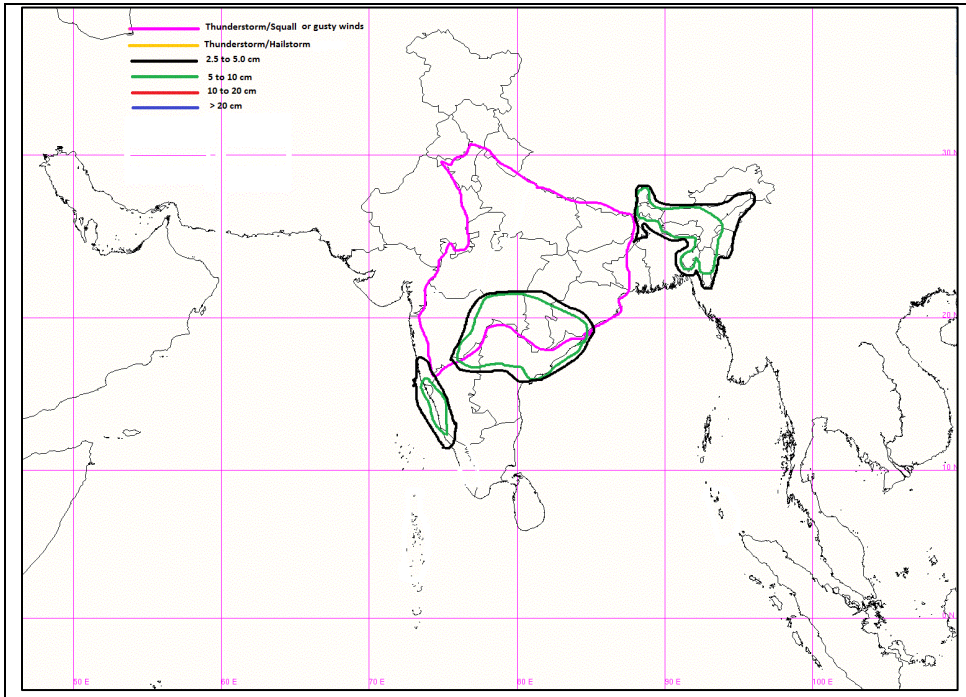
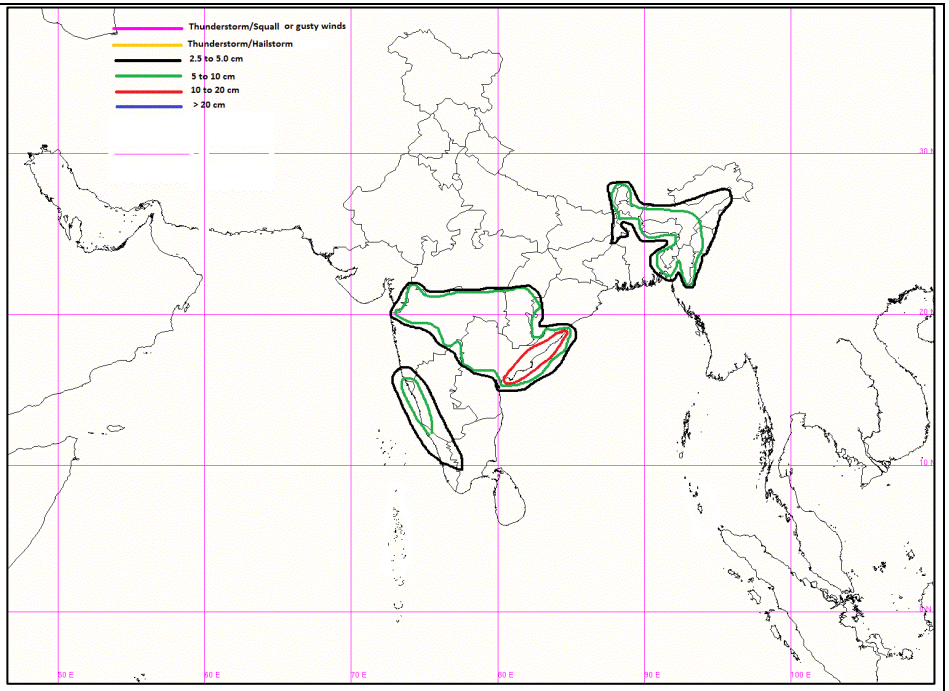
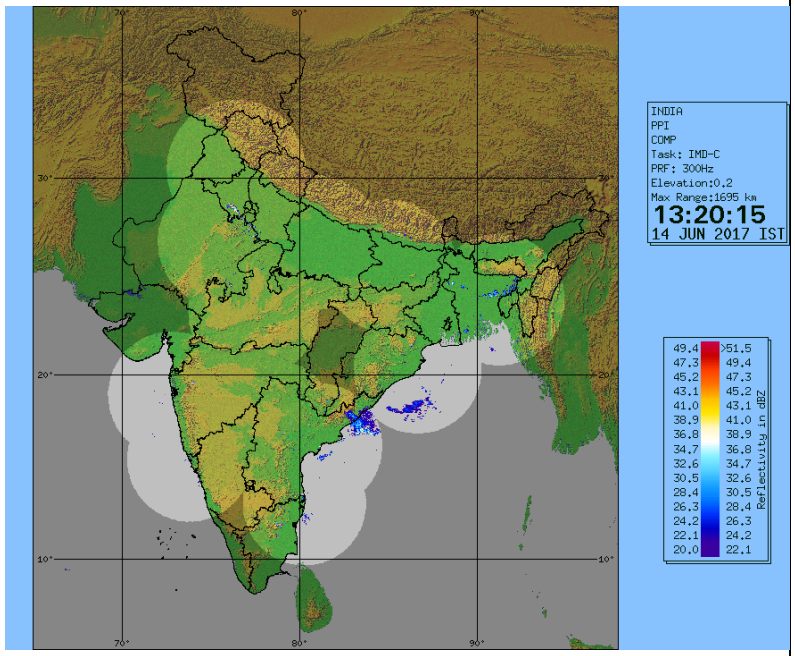
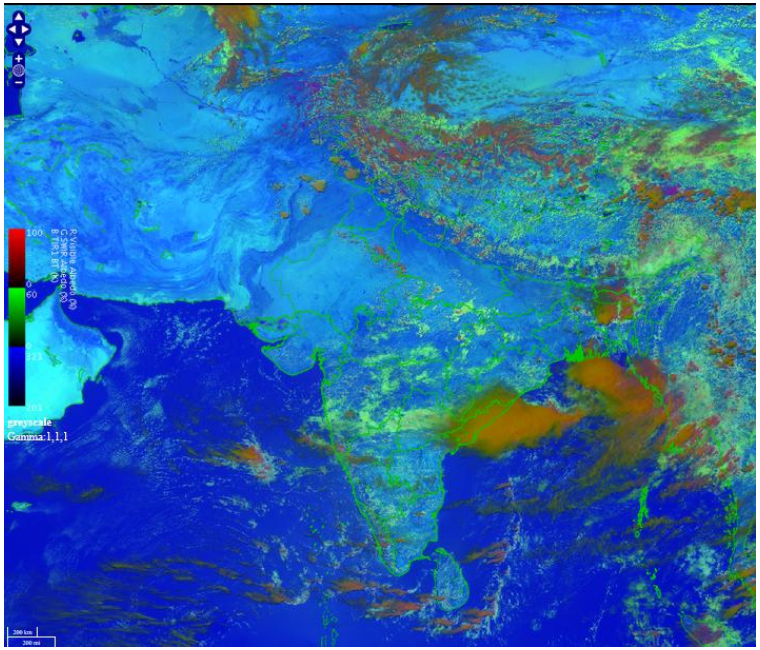


IOP Advisory for 24 hours



IOP Advisory for 48 hours

	
DWR composite at 1320 hrs IST	**RAPID RGB Satellite Imagery at 1300 hrs IST of today**

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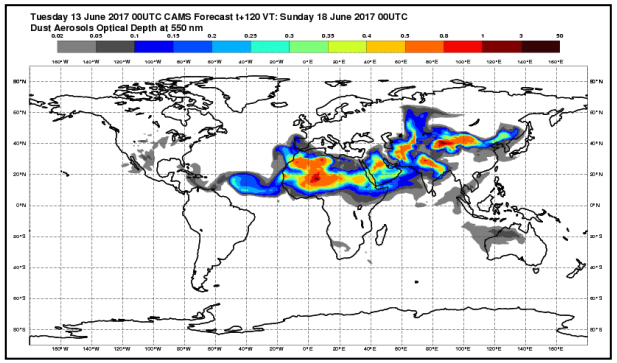
<td> 
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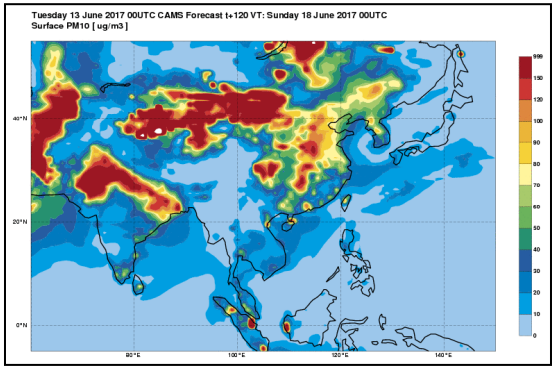
<td> 
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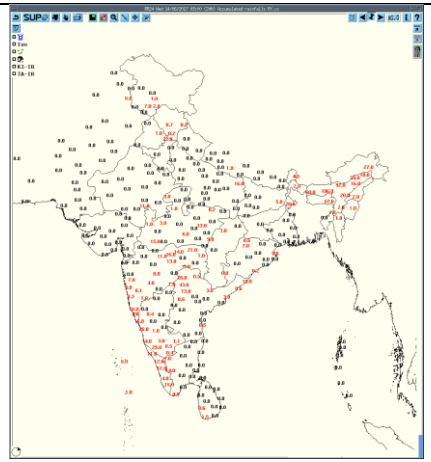
<td>  </td>
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<td>Forecast Dust Concentration for 00UTC of 17th June</td>
<td>PM10 Forecast for 00UTC of 17th June</td>
<td>Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today</td>
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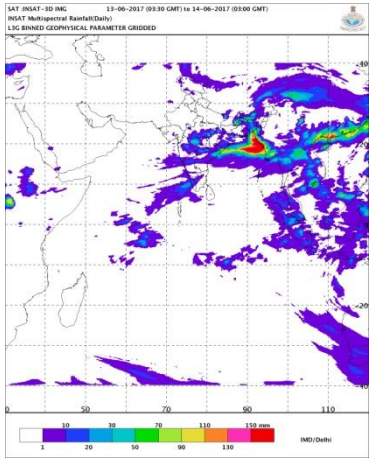
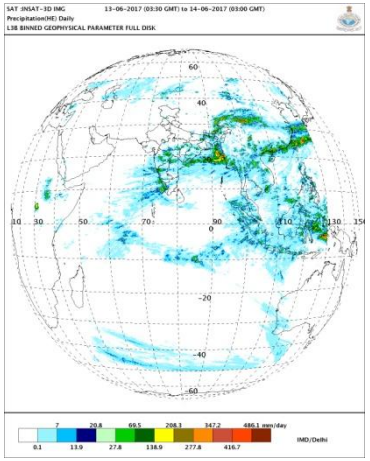
<td colspan="2">  </td>
<td colspan="2">  </td>
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<td colspan="2">IMR Rainfall</td>
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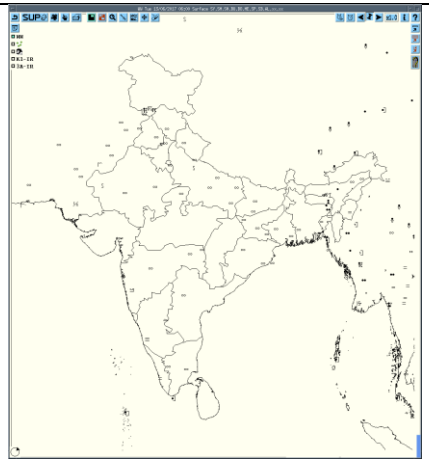
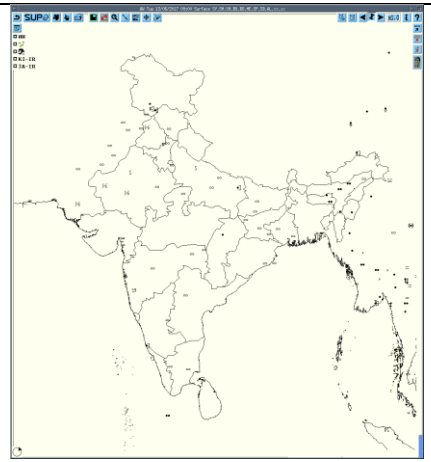
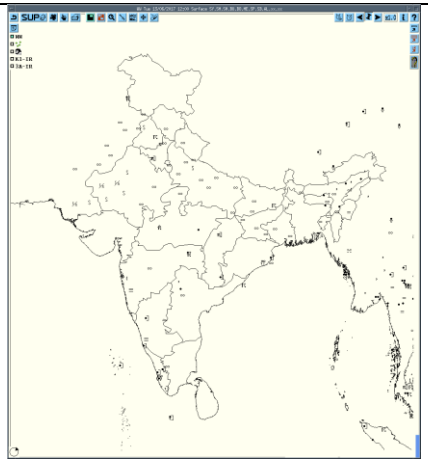
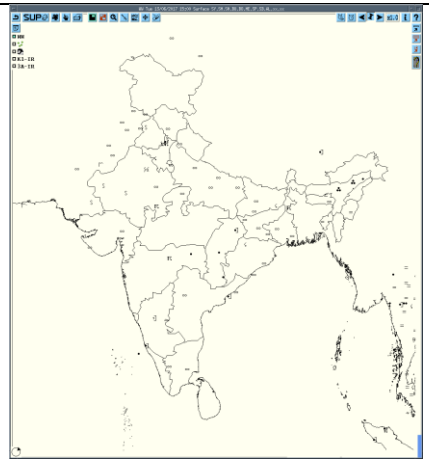
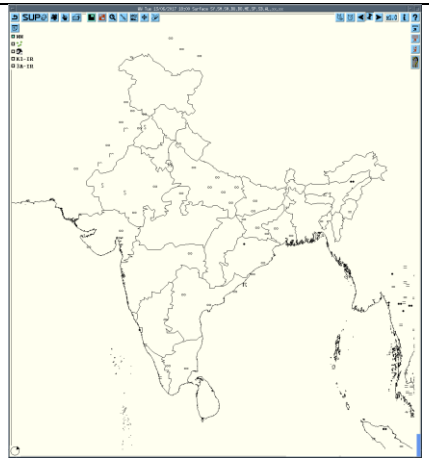
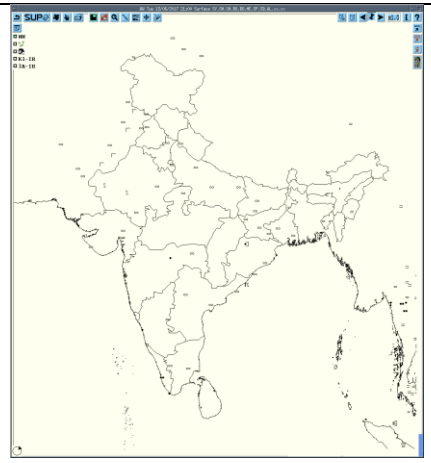
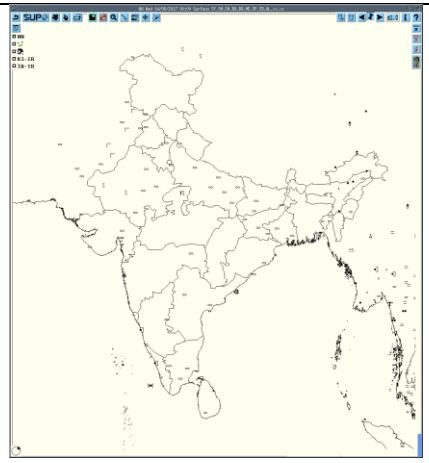
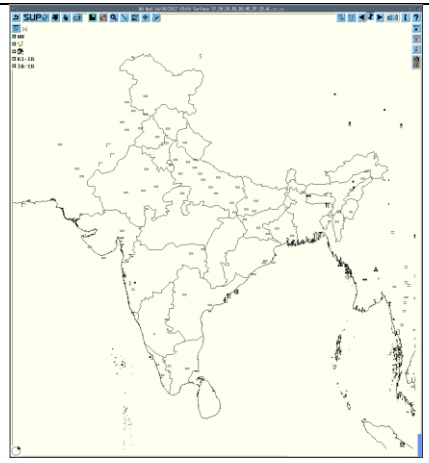
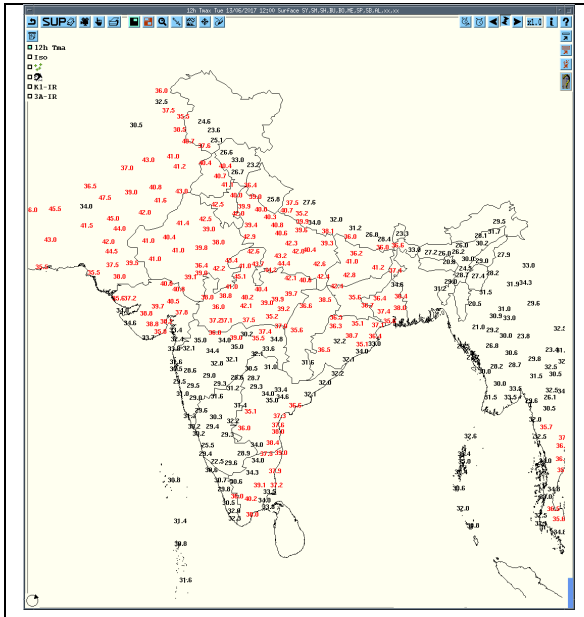
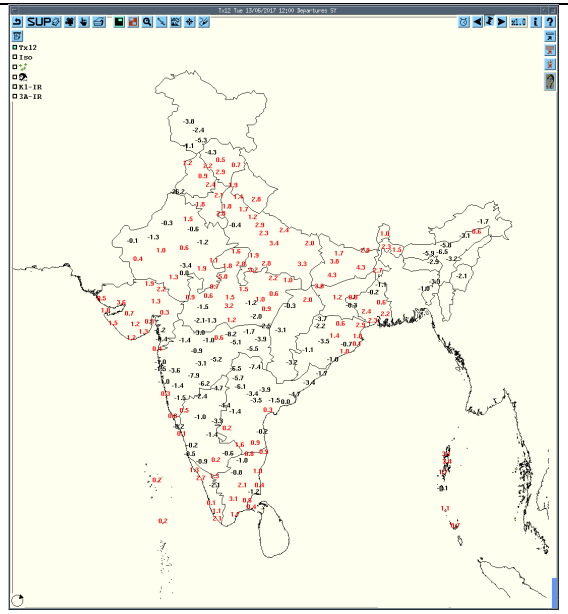
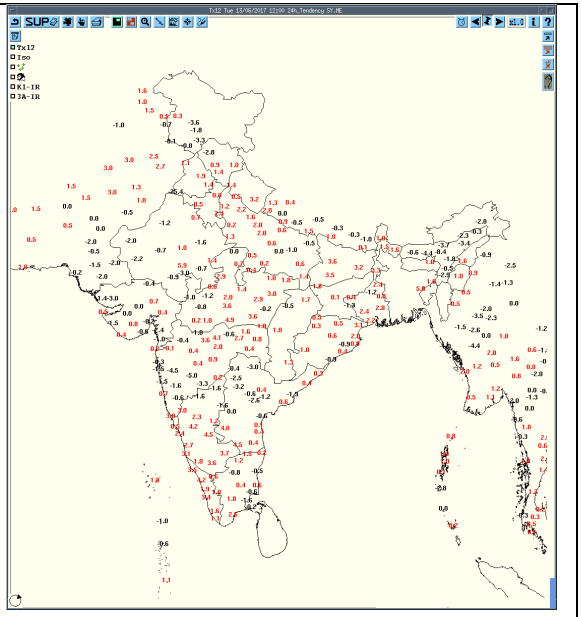









3hourly Past weather at 06, 09, 12, 15, 18, 21UTC of yesterday and 00 & 03 hrs UTC of today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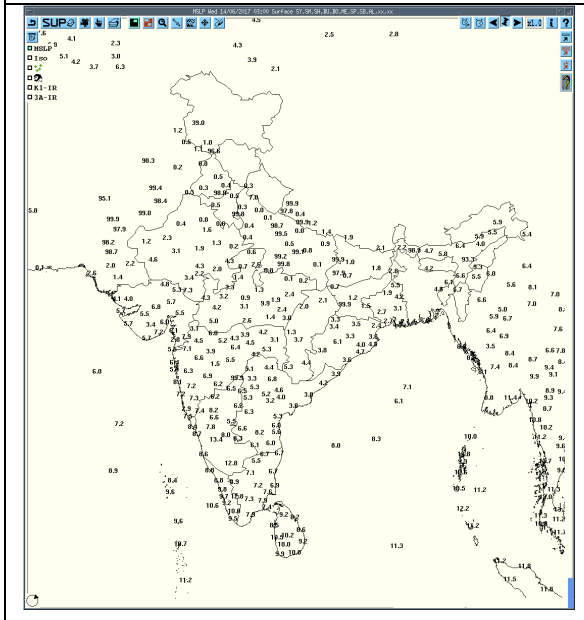
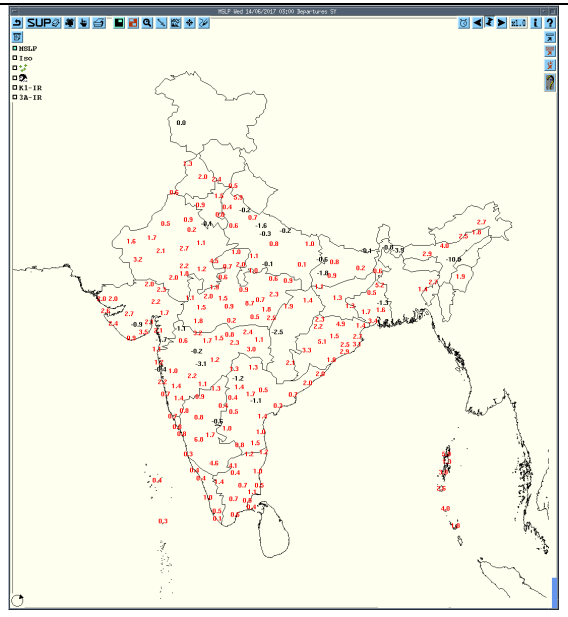
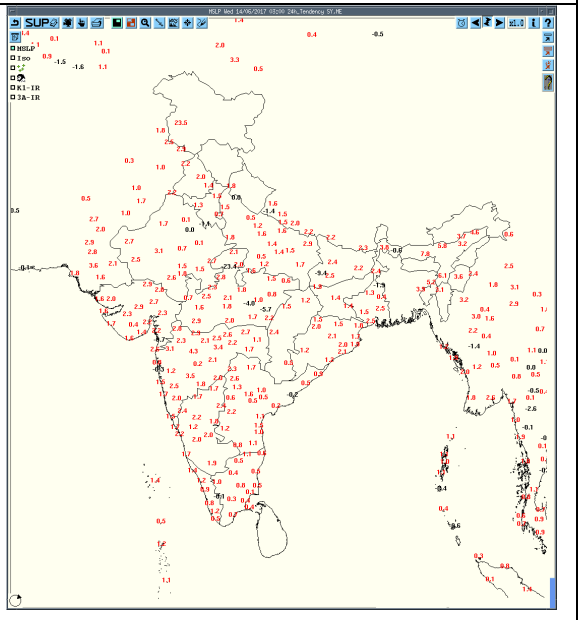
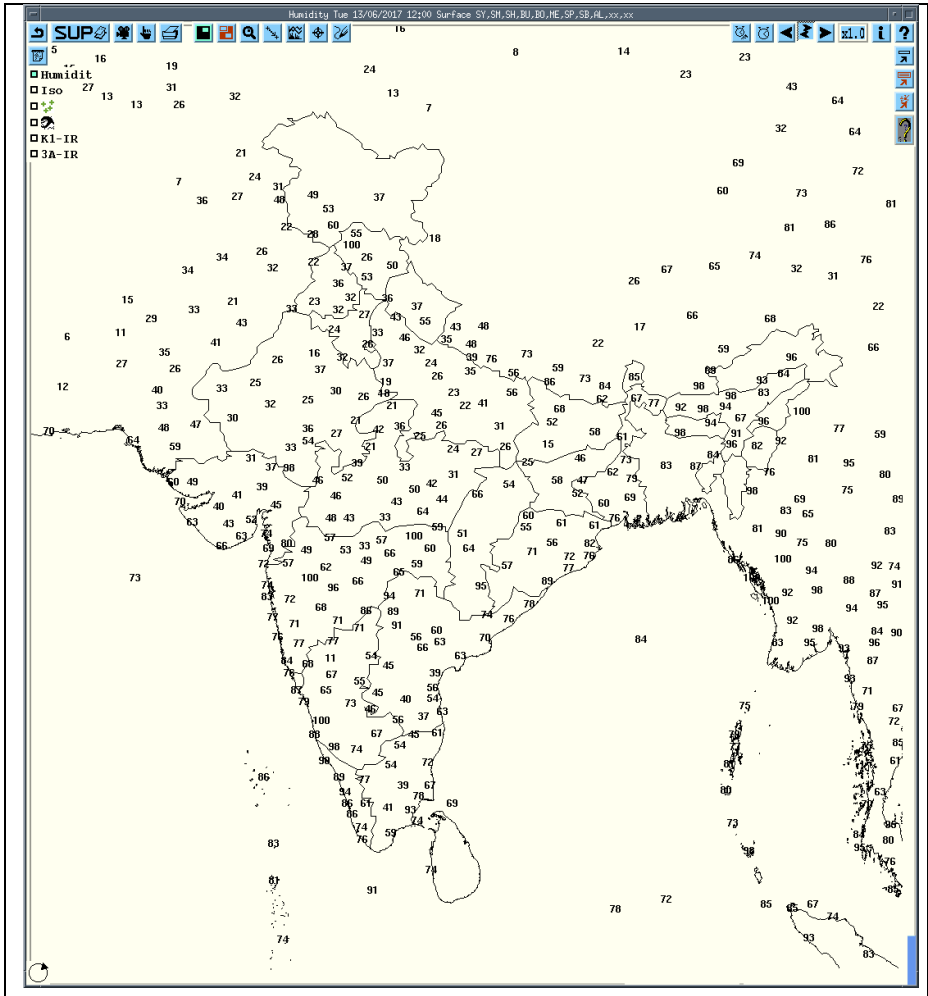
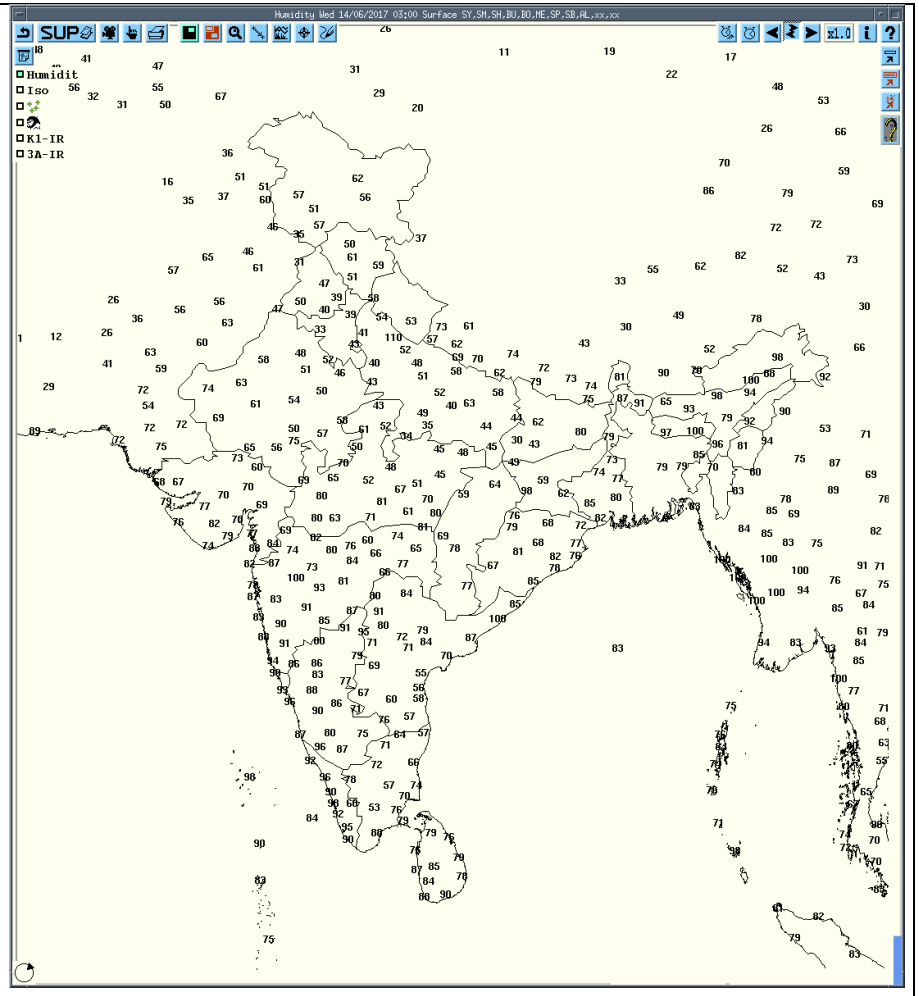
		
MSLP	**Departure MSLP**	**Tendency MSLP**



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**
13-06-17	0600UTC	Katra, Batote, Bhaderwah	NW India	J & K	Thunderstorm
13-06-17	0900UTC	Batote	NW India	J & K	Thunderstorm
13-06-17	1200UTC	Ludhiana	NW India	Punjab	Thunderstorm
		Hissar	NW India	Haryana	Thunderstorm
		Shajapur	C India	Madhya Pradesh	Thunderstorm
		Pendra Road	C India	Chhattisgarh	Thunderstorm
		Nagpur	C India	Vidarbha	Thunderstorm
		Calingapatnam	S India	Andhra Pradesh	Thunderstorm
13-06-17	1500UTC	Ambala	NW India	Haryana	Thunderstorm
		Kota	NW India	Rajasthan	Thunderstorm
		Akola	C India	Vidarbha	Thunderstorm
		Jharsuguda	E India	Odisha	Lightening
13-06-17	1800UTC	Calingapatnam	S India	Andhra Pradesh	Thunderstorm
13-06-17	2100UTC	Calingapatnam	S India	Andhra Pradesh	Thunderstorm
14-06-17	0000UTC	Gwalior	C India	Madhya Pradesh	Thunderstorm
		Vishakhapatnam	S India	Andhra Pradesh	Thunderstorm
14-06-17	0300UTC	Cherrapunji	NE India	Meghalaya	Thunderstorm
		Vishakhapatnam, Tuni	S India	Andhra Pradesh	Thunderstorm

Past 24 hours DWR Report:

Radar Station Name	Date	Time Interval of Observation	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	13.06.17	1.1542-1612IST	1) isolated cell in WSW direction 130 km range with max reflectivity of 95dBz and Average height of 08 km.	1.Moving towards easterly Direction	1.Cells started forming at 1542IST and dissipated at 1612IST	N/A	N/A
		2.1632-1712IST	2) isolated cell in SW direction 200 km range with max reflectivity of 55dBz and Average height of 08 km.	2.Moving towards easterly Direction	2.Cells started forming at 1632 IST and dissipated at 1712IST		
		3.1942-2133IST	3). Isolated cell at 160km range in SW direction at height of 9km with max reflectivity 95dBz	3.Moving towards easterly direction	3. cell started forming at 1942IST and dissipated at 2133IST		
	14.06.17			Nil			
Agartala	14.06.17	130302 UTC - 130942 UTC	Multiple cells formed all around OF DWR Agartala at a distance of 40km with Maximum cell Height 09 **km** and maximum reflectivity 45.50 **dBZ at 0302 UTC**	Formed all around of DWR Agartala at a distance of 40km and moves anti clockwise direction with around 90 kmph.	Dissipated in SE direction at a distance of 220 km at 0922 UTC	N/A	N/A
		131552 UTC - 140302 UTC	Multiple cells formed North OF DWR Agartala at a distance of 140 km with Maximum cell Height 14 **km** and maximum reflectivity 16.50 **dBZ at 1552 UTC**	Formed 140 km North of DWR and moved W wards at around 3kmph	Persists over NW & NNE direction at 100 km from DWR Agartala station	N/A	N/A
Bhuj	14.06.17	130300 UTC - 140300 UTC	NIL	NIL	NIL	NIL	NIL

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	14.06.17	13/0300 13/0600	Squally line of cb cells over SSE sector 120km from radar with max reflectivity 51 dBZ and average height 11kms.	Squally line of cb cells are continued to be formed since last observation and moving Easterly.	Formation of squally line of cb cells reflectivity decreasing	-	-
		13/0600 13/0900	A squally line of cb cells organized over SE sector 80kms SE of radar with max reflectivity 57dbz and average height 10kms.	Squally line of cb cells since last observation and moving Easterly.	-	-	-
		13/0900 13/1200	Isolated cb cells over NORTH (115kms) and SE (104kms) with max reflectivity 51 dBZ and average height 13kms.	Cb cells are since last observation and moving Easterly.	Isolated cells are being formed continuously and corresponding Max reflectivity are reducing.	-	-
		13/1200 13/1500	Isolated cb cells over Nly, NEly and SWly with max reflectivity 45 dBZ and average height 09kms.	Cb cells are since last observation and moving Easterly.	cells are forming after developing dissipating.	-	-
		13/1500 13/1800	Isolated cb cells over Nly, NEly and Sly with max reflectivity 45 dBZ and average height 14kms.	Cb cells are since last observation and moving Easterly.	Cells are forming after developing dissipating.	-	-
		13/1800 14/0000	Convective zone Ely 100km to 250km. Squally line of CB cells from Wly 100km to Ely 200km. Max reflectivity 50 dBZ and average height 14kms	Cb cells are since last observation and moving Easterly.	cells are forming after developing dissipating.	-	-
		14/0000 14/0300	Squally line cb cells passing through VSK from WSW to East with max reflectivity 52 dBZ and average height 14 kms.	Squally line of cb cells are continued to be formed since last observation and moving Easterly.	Squally line cb cells have been continuing since yesterday 13-06-17.	Heavy thunderstorms and moderate rain.	-

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
Paradeep	14.06.17	13/0300-13/2200	Isolated single/multiple cells seen in the NW & SW sector of the RADAR between300-355 degrees (clockwise) & 240-280 respectively and with highest Reflectivity values of the order of 37 dBZ and heights of 12 km.	Position: NW sector of radar at a distance of 150-200 km approx. scattered in the zone. Movement: NWly.	Convective regions seen in the southern sector of the RADAR in late night and early morning hours scattered from 100-250 kms in the sea area having SWly movement.	Rain	Bhadrak, Jajpur, Nayagarh, Keonjhargarh, Mayurbhanj, Khorda, Cuttack, Baleshwar, Puri Ganjam.
Jaipur	14/06/17	0302-0632 UTC	Multiple cell with average height of 5.5 km & maximum reflectivity 46.5 dBZ	Multiple cell develop to before 0300 UTC of 13/06/2017 towards North-West of Jaipur and moved to South- East Wards at speed 30-35 km/hr	Cell starts forming from before to 0300 of 13/06/2017 at NW of Jaipur and reaches maximum reflectivity during 0352-0422 UTC.	Thunderstorm/rain at isolate places	Jaipur, Sikar, Dausa, Alwar
	14/06/17	0912-1732	Multiple cell with average height of 6.0 km & maximum reflectivity 42 dBZ	Multiple cell develop to 0912 UTC of 13/06/2017 towards South-West of Jaipur and moved to South-East Wards at speed 30-35 km/hr	Cell starts forming from before to 0912 of 13/06/2017 at South-West of Jaipur and reaches maximum reflectivity during 0932-1042 UTC.	Thunderstorm/rain at isolated places	Chittorgarh, Jhalawar, Kota, Bundi

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
	14.06.17	13/0811 - 13/1221	Isolated Multiple cells average height of 4.5km with maximum reflectivity of 53 dBZ.	N(187KM) and moving NE ly direction with average speed of 22.0kmph	Cell started forming at 0811 UTC, at NW(227 km) from Radar the maximum reflectivity during 0941 UTC to 1011 UTC and died down at 1221 UTC	Possibility of Thunder storm with rain and winds.	Mahabubabad, Khammam, Bhadradri-Kothagudem, Dantewara, Malkangir,
		13/1101 - 13/1541	Isolated Multiple cells average height of 5.0 km with maximum reflectivity of 56.5 dBZ.	NE-139Kmand moving NE ly direction with average speed of 35.0kmph	Cell started forming at 1101UTC, at NE (45.4km) from Radar the maximum reflectivity during 1301 UTCto 1351 UTC and died down at 1541UTC	Possibility of Thunder storm with rain and winds.	Krishna, East, West Godavari districts.
		13/2201 - 13/2311	Isolated Multiple cells average height of 4.5 km with maximum reflectivity of 47.5 dBZ.	E (200KM) and moving NE ly direction with average speed of 20.0kmph	Cell started forming at 2201UTC, at E (200km) from Radar the maximum reflectivity during 2201 UTC to 2301 UTC and died down at 2311 UTC	Possibility of Thunder storm with rain and winds.	East Godavari, Visakhapatnam
		13/1951- 13/2231	Isolated Multiple cells average height of 5.8 km with maximum reflectivity of 53.0dBZ.	NE (208KM) and moving NE ly direction with average speed of 15.0kmph	Cell started forming at 1951UTC, at NE (175km) from Radar the maximum reflectivity during 2041 UTC to 2121 UTC and died down at 2231 UTC	Possibility of Thunder storm with rain and winds.	East Godavari, Visakhapatnam
		13/2351 - 14/0311	Isolated Multiple cells average height of 6.5 km with maximum reflectivity of 56.5dBZ.	NE (203KM) and moving NE ly direction with average speed of 25.0kmph	Cell started forming at 2351UTC, at NE (166km) from Radar the maximum reflectivity during 0211 UTC to 0311 UTC and slowly dissipated later.	Possibility of Thunder storm with rain and winds.	East&West Godavari, Visakhapatnam.
		13/2241- 14/0121	Isolated single cell average height 6.0Km with maximum reflectivity of 50.5dBZ.	N (198KM) and moving NE ly direction with average speed of 30.0kmph	Cell started forming at 2241UTC, at N (184km) from Radar the maximum reflectivity during 2251 UTC to 2351 UTC and died down at 0121 UTC.	Possibility of Thunder storm with rain and winds.	Bhadradri-Kothagudem,Malkangir. Dantewara

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	14.06.17	13/0300 13/0600	Multiple Isol Cells. DBZ 39.5. HT. 5-6 KMS.	North Sector. Movement . SE-Wards.	-------	----	----------.
		13/0600 13/0900	Multiple cells Max dBZ=54.0 Ht.=10-11 KMS	North & SW Sector. Movement SE-Wards	----------	RA/TS	Chamba, B-Dam, Sundernagar, Pehowa, Kaithal, Karnal, Panipat And Its Neighbourhood.
		13/0900 -13/1200	Multiple cells Max dBZ=520.0 Ht.=8-11 KMS	NW, N & NE Movement Movement E Wards		RA/TS	Zira, Moga, Ludhiana, Nawanshar, B-Dam.
		13/1200 13/1500	Multiple cells Max dBZ=48.5 Ht.=7-8 KMS	NW & SW Sector, Movement SE Wards		RA/TS	Ludhiana, Khanna, Nabha, Patiala, Chandigarh, Hissar, Jind, Ambala And Its Neighbourhood.
		13/1500 13/1800	Multiple cells Max dBZ=52.0 Ht.=9-10 KMS	SW Sector. Movement SE-Wards.	----------	RA/TS	Jind, Rohtak, Sonipat.
		13/1800 13/2100	No Significant Cell Development.				
		13/2100 14/0000	No Significant Cell Development.				
		14/0000 14/0300	No Significant Cell Development.				

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	14.06.17	0301-0851	NIL	NIL	NO ECHO	NIL	NIL
		0531-0950 UTC	1. Isolated single cells developed with maximum reflectivity of 59.5 dBz at 1000 UTC and maximum height 13.70 km at 1000 UTC.	WSW (209.5 km) moving towards ESE-ly	1. Isolated single cells started forming in WSW from 0901 UTC at a distance of 209.5 km from Radar, transformed into multi cells. Dissipated at 1241UTC in WSW at a distance of 205.6 km from radar.	Thunderstorm / Rain	N/A
		0901-1241 UTC	2. Isolated single cell developed with maximum reflectivity of 61.0 dBz at 1052 UTC and maximum height 14.60 km at 1122 UTC.	W (182 km) moving towards ESE-ly	2. Isolated single cell started forming in W at 1041 UTC at a distance of 182 km from Radar, matured, and Dissipated at 1241 UTC in W at a distance of 173.9 km from radar.	Thunderstorm / Squall /Hail / Rain	N/A
		1141-1251 UTC	3. Isolated single cells developed with maximum reflectivity of 67.0 dBz at 1151 UTC and maximum height 17.81 km at 1151 UTC.	NNW (248.5 km) moving towards SE-ly	3. Isolated single cells started forming in NNW from 1141 UTC at a distance of 248.5 km from Radar, Matured, Dissipated at 1251 UTC in NNW at a distance of 232.9 km from radar.	Thunderstorm / Squall /Hail / Rain	N/A
		1251-2352 UTC	NIL	NIL	NO ECHO	NIL	NIL
		0002-0301 UTC	NIL	NIL	NO ECHO	NIL	NIL