India Meteorological Department

FDP STORM Bulletin No.76 (20-05-2017)

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

The Northern Limit of Monsoon (NLM) continues to pass through Lat.5.0°N/Long. 80.0° E, Lat. 8.0° N/Long. 87.0° E, Lat. 13.0 °N/ Long. 92.0° E and Lat. 16.0° N/ Long. 95.0° E.

Conditions are likely to become favourable for further advance of southwest monsoon into some more parts of southwest, southeast and east central Bay of Bengal after 3 days.

The upper air cyclonic circulation over Punjab & neighbourhood extending upto 0.9 Km above mean sea level persists. However the trough from this system to southeast Madhya Pradesh across northeast Rajasthan extending upto 0.9 km above mean sea level has become less marked.

An upper air cyclonic circulation lies over southwest Rajasthan & neighbourhood and extends upto 2.1 Km above mean sea level.

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

The upper air cyclonic circulation over south Chhattisgarh & adjoining Odisha extending upto 0.9 km above mean sea level persists. A trough runs from this system to south Coastal Andhra Pradesh and extends upto 1.5 Km above mean sea level.

A trough in westerlies runs roughly along Long. 92.0° E and north of Lat. 23° N between 2.1 Km to 3.6 Km above mean sea level.

The trough at mean sea level from south coastal Andhra Pradesh to Comorin area persists and now runs off Tamilnadu coast.

The trough from Bihar to west central Bay of Bengal off north Andhra Pradesh coast at 1.5 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):

Convective Activity: Nil.

Western Disturbance:

Scattered multi-layered clouds were seen over J & K, Himachal Pradesh, Punjab, Haryana, Delhi and Uttarakhand in association with WD over the Area.

Cloud Description:

Scattered low/medium clouds with embedded isolated weak convection were seen over E Meghalaya, Karnataka, Andhra Pradesh, Tamilnadu and Bay Islands. Scattered low/medium clouds were seen over Uttar Pradesh, Chhattisgarh, Sikkim, NE states, Rajasthan, SE Madhya Pradesh, S Marathawada, and rest parts of South India.

Arabian Sea:

Scattered low/medium clouds with embedded intense to very intense convection were seen over south Arabian Sea.

Bay of Bengal & Andaman Sea:

Scattered low/medium clouds with embedded intense to very intense convection were seen over S Bay of Bengal. Isolated low/medium clouds with embedded moderate to intense convection were seen over N Andaman Sea.

Past Weather:

Convection:-

Moderate to Intense convection was observed over J&k Himachal Pradesh Punjab North Rajasthan Uttarakhand North West Uttar Pradesh, Bihar Jharkhand Odisha West Bengal Assam Tripura Mizoram South Interior Karnataka Andhra Pradesh Kerala Tamilnadu .

OLR:-

Upto **200** wm^{-2} was observed over WEST J&K. Upto **230** wm^{-2} was observed over Rest J&K, Himachal Pradesh, Uttarakhand South East Uttar Pradesh North Rajasthan Meghalaya Arunachal Pradesh Assam Manipur. Upto **250** wm^{-2} was observed over Delhi Sikkim Nagaland. South Interior Karnataka South Andhra Pradesh Kerala Tamilnadu

Westerly Trough & Jet-Stream:

No Trough & Jet Stream observed over India.

Dynamic Features:

Low to Medium wind shear is observed over India.

Positive shear tendency is observed over the India.

A positive Vorticity field is observed over Saurashtra Rajasthan North Andhra Pradesh South Chhattisgarh.

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

Precipitation:

IMR:

Rainfall Up to **30** mm was observed over West J&K. Rainfall Up to **20** mm was observed over Himachal Pradesh Uttarakhand North Rajasthan. Rainfall Up to **10** mm was observed over Punjab Haryana Delhi West Uttar Pradesh Coastal Odisha Meghalaya East Assam West Gangetic West Bengal Manipur Mizoram Tripura.

HEM:.

Rainfall Up to 70 mm was observed over South West J&K Himachal Pradesh Uttarakhand Meghalaya South Interior Karnataka adjoining Tamilnadu.

Rainfall Up to 14 mm was observed over Coastal Karnataka Coastal Odisha.

Rainfall Up to 07 mm was observed over Punjab Haryana Delhi North Rajasthan West Uttar Pradesh West Bengal Rest North East States

RADAR and RAPID Observation:

No significant convection was seen in DWR Composite at 1200hrs IST today.

RAPID RGB Satellite imagery at 1130hrs IST indicated convective clouds over Lakshadweep & mimicry Islands area. It also indicated isolated convective clouds over E Meghalaya adjoining Assam, E Assam and Manipur.

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

Higher Dust concentration was observed over north-west Africa . Dust concentration is expected to increase over north India for next five days. High PM10 concentration was observed over Rajasthan and is expected to increase over north India in 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 evolution of heat low over NW India and adjoining Pakistan with MSLP values lower than 994hPa.

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

A CYCIR is seen over Arabian Sea: from Day-0 to Day-4 moving westwards.

Over South Interior Karnataka a CYCIR at 925 hPa is seen near in Day-0 to Day-2 which is moving eastwards over Bay of Bengal in Day-3 and 4..

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

Weaker core winds at 12 UTC on all days over India..

3. Convergence at 850 hPa:

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

Day0: West RJ,
Day1: East UP, Himachal Pradesh, West RJ, Odisha,
Day2: Jharkhand, Odisha, Telangana,
Day3: Gangetic WB, Jharkhand, Odisha, Telangana, NI Karnataka,
Day4: Jharkhand, West UP, East RJ, Odisha, West MP, Madhya Maharashtra, NI Karnataka

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

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

Day0: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Gangetic WB, Bihar, Himachal Pradesh, TN Puducherry,
Day1: Arunachal Pradesh, Assam Meghalaya, Himachal Pradesh, Jammu Kashmir,
Day2: Arunachal Pradesh, Assam Meghalaya, TN Puducherry, Kerala,
Day3: Arunachal Pradesh, Assam Meghalaya, Jharkhand, Odisha, TN Puducherry, Kerala,
Day4: Arunachal Pradesh, Assam Meghalaya, Jharkhand, TN Puducherry, NI Karnataka.

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

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

Day0: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Saurashtra Kutch, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, SI Karnataka, Kerala,

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Bihar, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Guj Reg, Saurashtra Kutch, Konkan Goa, Coastal AP, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Bihar, Uttarakhand, Hry Chd Delhi, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Guj Reg, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Coastal AP, Telangana, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day3: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day4: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Guj Reg, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala

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

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

Day0: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Hry Chd Delhi, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Guj Reg, Saurashtra Kutch, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka, Kerala,

Day1: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic WB, Bihar, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Guj Reg, Saurashtra Kutch, Madhya Maharashtra, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, West UP, Uttarakhand, Hry Chd Delhi, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, Guj Reg, Saurashtra Kutch, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,

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

Day4: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka.

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

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

Day0: Arunachal Pradesh, Sub Himalayan WB, East UP, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, East MP, Guj Reg, Saurashtra Kutch, Coastal AP, Telangana, TN Puducherry,

Day1: Arunachal Pradesh, Sub Himalayan WB, Bihar, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Guj Reg, Saurashtra Kutch, Coastal AP, TN Puducherry,

Day2: Arunachal Pradesh, Sub Himalayan WB, Bihar, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, West MP, Guj Reg, Saurashtra Kutch, Coastal AP, SI Karnataka,

Day3: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana,

Day4: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Guj Reg, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Marathawada, Vidarbha, Chhattisgarh, Telangana, Rayalaseema, NI Karnataka

8. Rainfall and thunder storm activity:

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

Day1: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Andaman Nicobar,

Day2: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB,

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

Day4: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir,

Day5: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Kerala.

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

1. Weather Systems:

00 UTC analyses shows a CICIR over Chhattisgarh and adjoining Odisha region and is associated with a N-S oriented trough from Jharkhand, centre of the CICIR, extending through Odisha, Chhattisgarh and Coastal AP region almost persists during next 5 days.

A CICIR over south Bay of Bengal and adjoining central Bay of Bengal on day 1, which is likely to be a system from day 2 onwards while moving northwest-ward. .

Another CYCIR over northwest Rajasthan, adjoining Punjab on day 3 to day 5.

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

No presence of jet core over the Indian region for the next 5 days except over a smaller region south of Delhi in the analysis chart.

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

Analysis shows low level positive vorticity mainly over the foothills of Himalaya, eastern coastal states over GWB, Odisha, Coastal AP and Chhattisgarh region and also over the Northwest parts of Rajasthan

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

T-Storm Initiation Index (> 4): Significant threshold values are noticed over Jharkhand, GWB, Odisha, Chhattisgarh and coastal AP in the analysis field. Forecast shows high threshold values over west coast of India, Northwest India along with the eastern coastal states covering Jharkhand, GWB, Odisha, Coastal AP during next 3 days.

Lifted Index (< -2): The areas with index less than -2 mainly lies over Bihar, GWB, Odisha, coastal AP during next 3 days along with that over the west coast regions and northwest parts of India.

Sweat Index (> 400): 00UTC shows significant values over major parts along Bihar, Jharkhand, GWB, Chhattisgarh, Odisha, Coastal AP and also over west coast of India and north-western parts of India.

CAPE (> 1000): Mostly over UP, Bihar, Jharkhand; along east coast of India over GWB, Odisha Chhattisgarh, coastal AP and TN regions; over the western coast and north-western parts of India during the next 3days.

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

5. Rainfall and thunderstorm activity:

10-40 mm rainfall is forecasted tomorrow over NE states, parts of coastal Odisha and coastal AP, TN and Kerala region, foot hills and parts of NW India.

Rainfall activity over these regions likely to continue for next 2-3 days with likely increase of areas over the north-western parts of India.

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

Not Received

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:

Day-1 & Day-2:

Presently, the Northern Limit of Monsoon (NLM) continues to pass through Lat.5.0°N/Long. 80.0° E, Lat. 8.0° N/Long. 87.0° E, Lat. 13.0 °N/ Long. 92.0° E and Lat. 16.0° N/ Long. 95.0° E. Conditions are likely to become favourable for further advance of southwest monsoon into some more parts of southwest, southeast and east-central Bay of Bengal after 3 days, with which the rainfall activity over Bay islands will pick up.

The upper air cyclonic circulation which persists over Punjab & neighbourhood is expected to give rise to thunder storm with squalls on day 1 and thunder storm accompanied by hail on day 2 over Punjab, Haryana and neighbouring regions.

An upper air cyclonic circulation lies over southwest Rajasthan & neighbourhood and extends upto 2.1 Km above mean sea level. Moisture incursion is taking place in the lower levels from Arabian Sea and as a result, thunderstorm with squall is expected on day 1 and day 2 over Rajasthan.

The upper air cyclonic circulation lies over central Uttar Pradesh & neighbourhood and extending upto 0.9 Km above mean sea level and the overlying upper level divergence will favour the development of thunder squall on day1 over UP.
The trough in westerlies which runs roughly along Long. 92.0° E to the north of Lat. 23° N between 2.1 Km to 3.6 Km above mean sea level will cause thunderstorm with gusty winds to develop over Assam and Meghalaya on day 1.

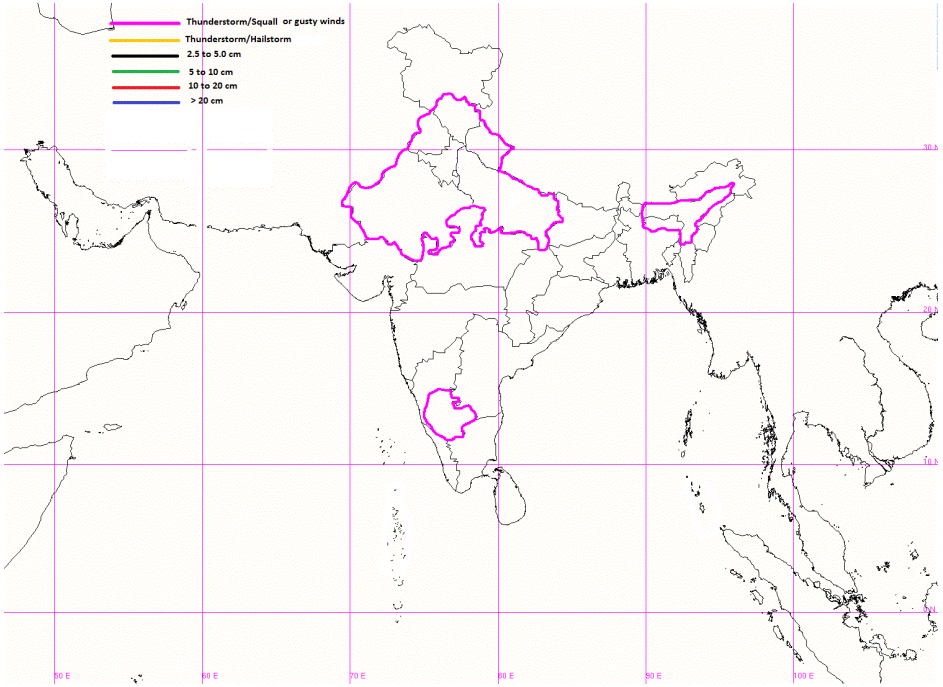
24 hour Advisory for IOP:

South Interior Karnataka,
Himachal Pradesh, Uttarakhand, Punjab, Haryana, Rajasthan, East and west UP
Assam, Meghalaya

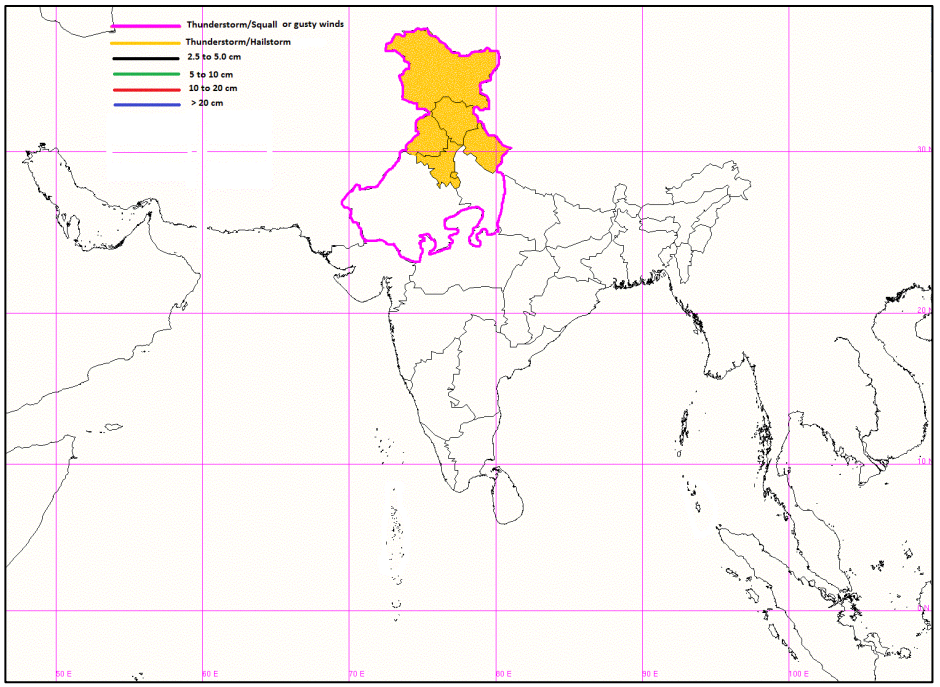
48 hour Advisory for IOP:

Jammu & Kashmir, Himachal Pradesh, Uttarakhand, West UP,
West and East Rajasthan
Punjab, Haryana,

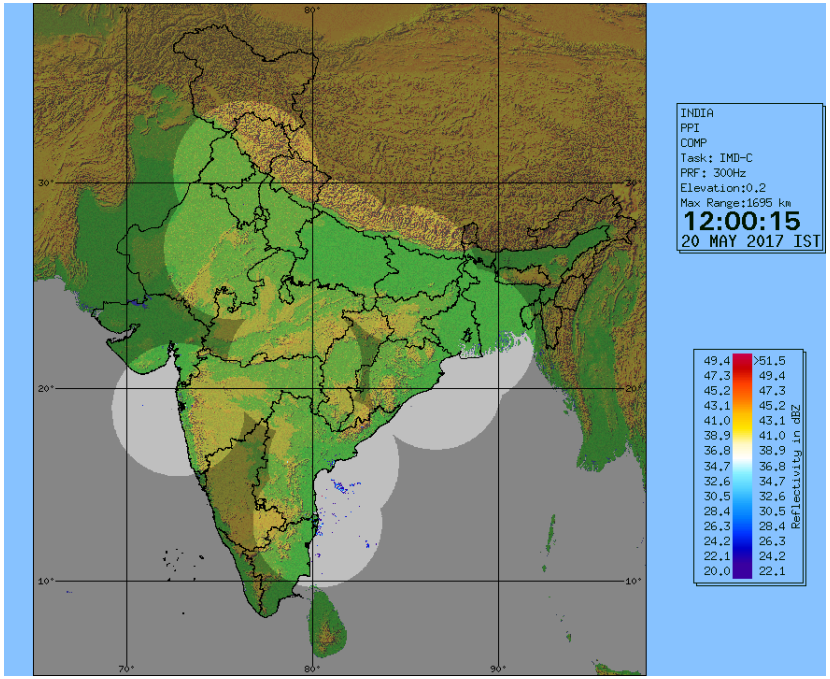
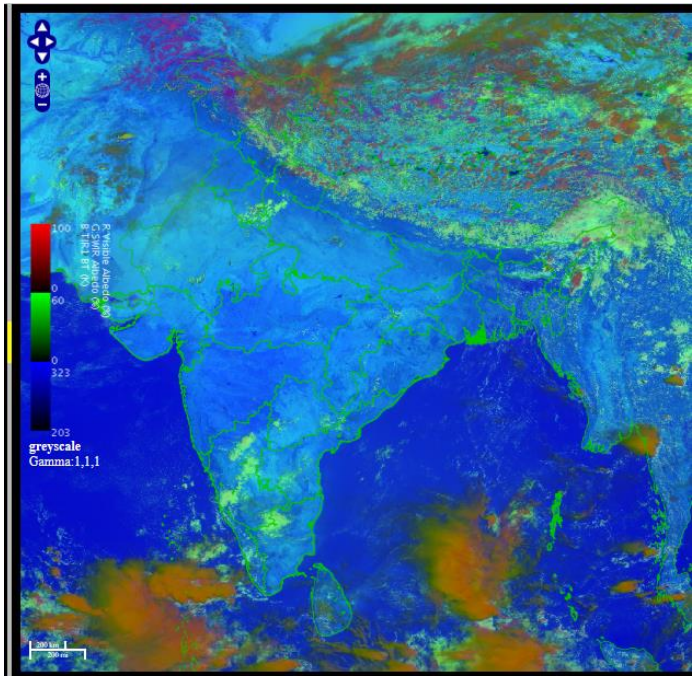
For NCMRWF NWP products:(http://www.ncmrwf.gov.in/HomePage/NEPS-prod-1.php)
For IMD NWP products:(http://nwp.imd.gov.in/diagpro new.php)
For Synoptic plotted data and charts
http://amssdelhi.gov.in/
http://www.amsskolkata.gov.in/
For RAPID tool:
http://rapid.imd.gov.in/
Low Level Winds
http://satellite.imd.gov.in/archive/INSAT-3D-IMAGER/3D-PRODUCTS/AMV/LLW/MAR 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/
Satellite sounder based T- Phigram
http://satellite.imd.gov.in/map skm2.html

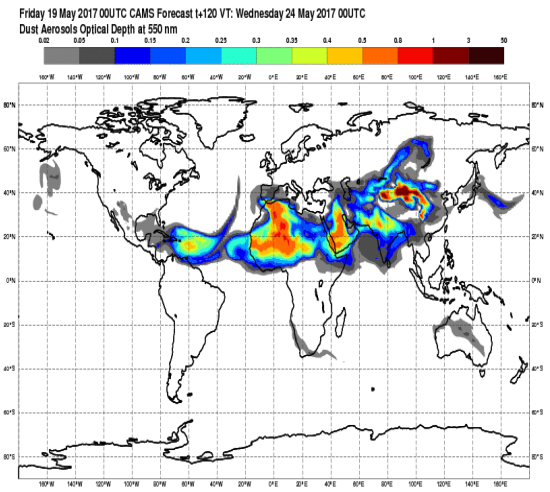


IOP Advisory for 24 hours

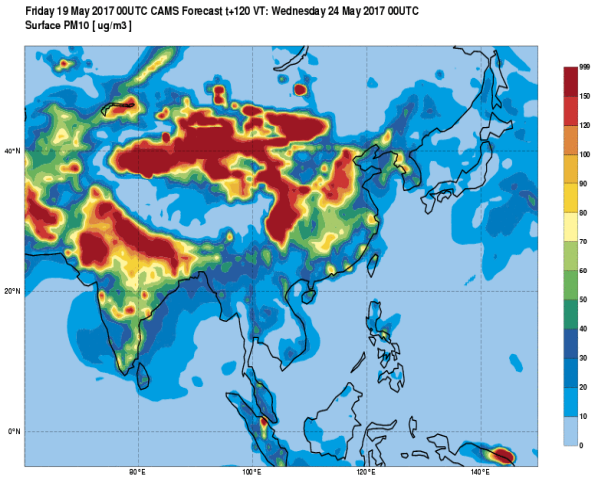


IOP Advisory for 48 hours

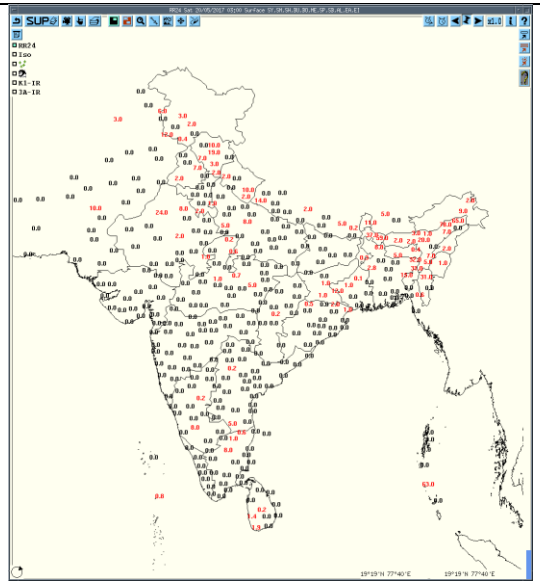
	
DWR Composite at 1200 hrs IST	**RAPID RGB Satellite Imagery at 1130 hrs IST of today**



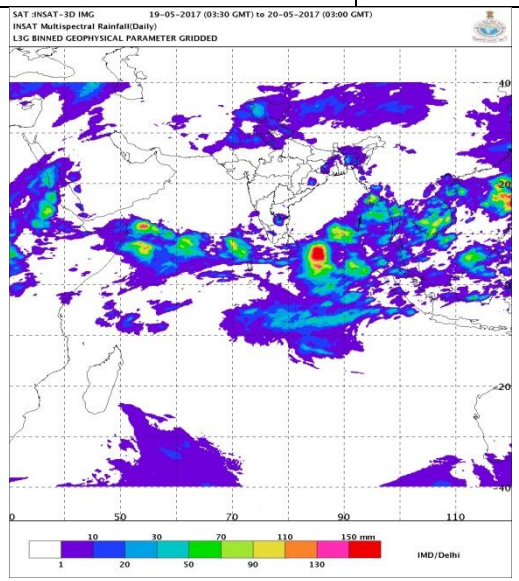
Forecast Dust Concentration for 00UTC of 24th May



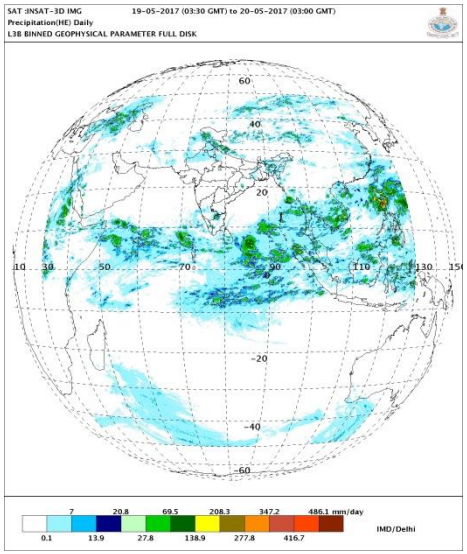
PM10 Forecast for 00UTC of 24th May



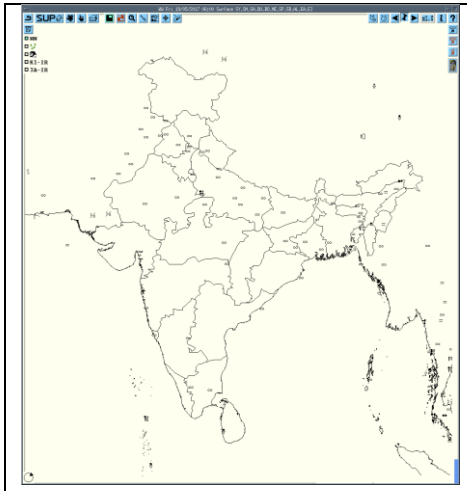
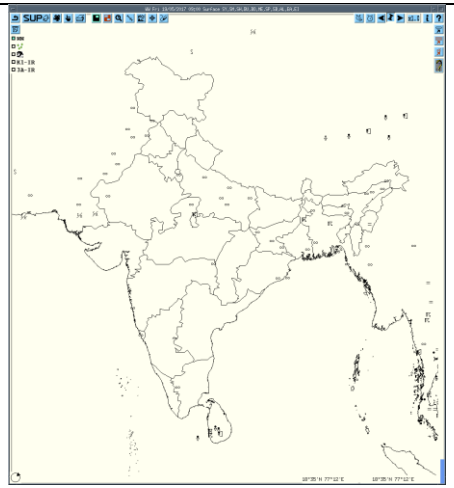
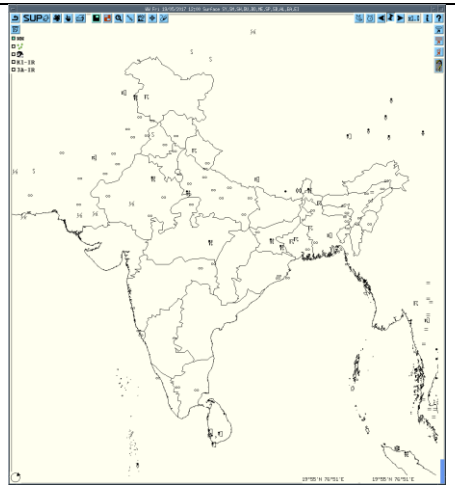
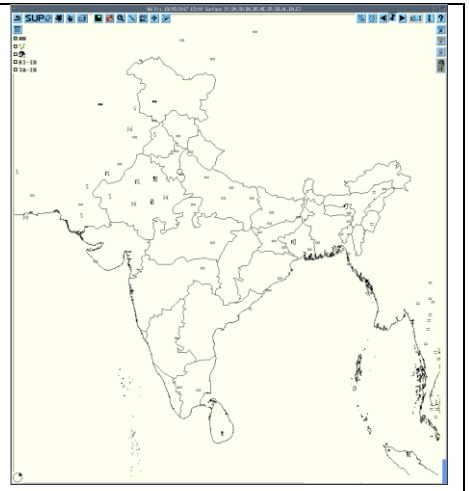
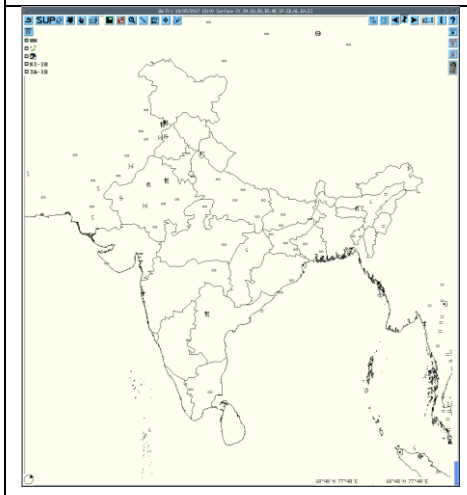
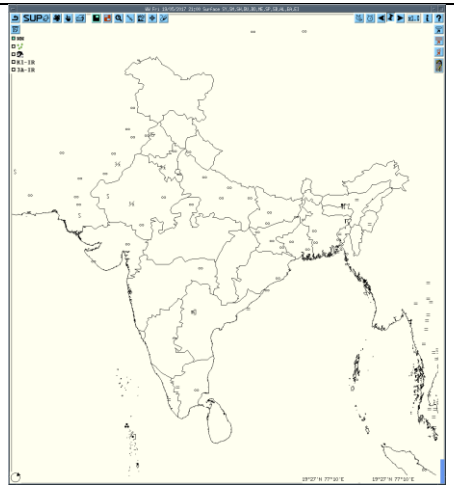
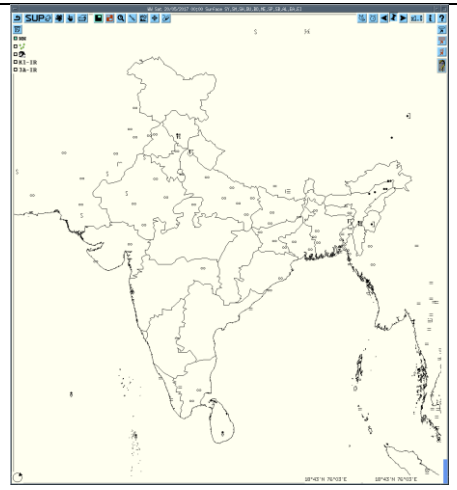
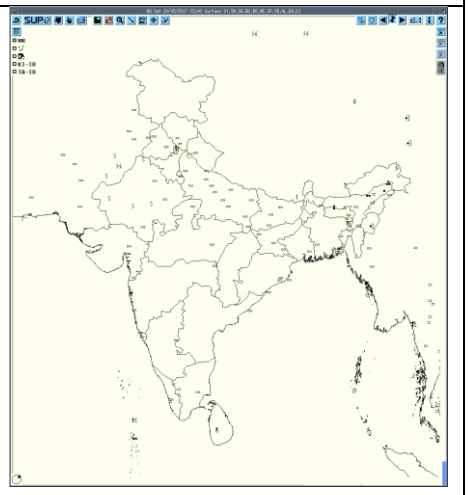
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today



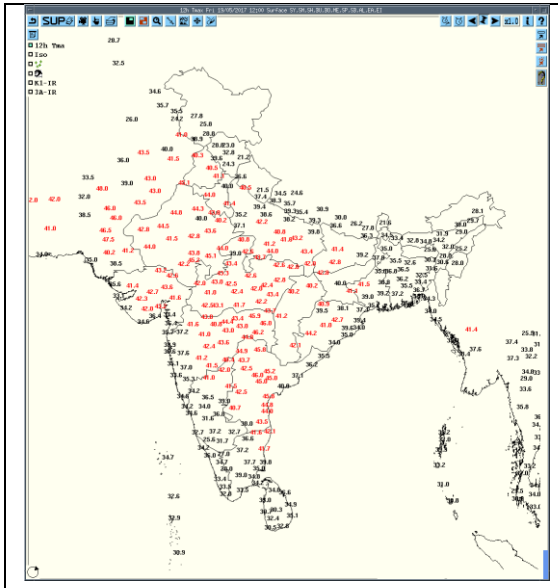
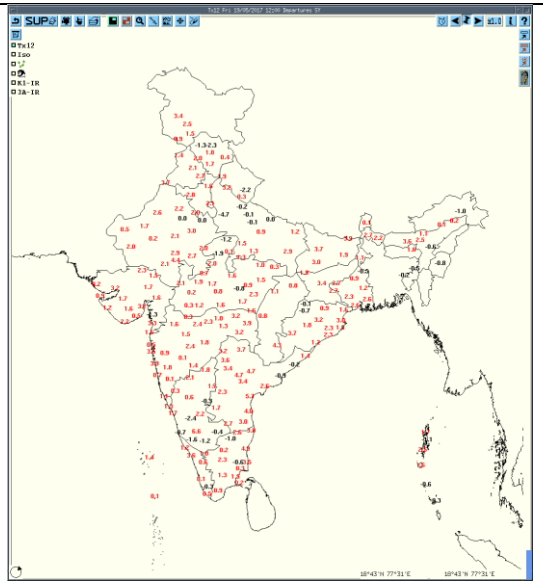
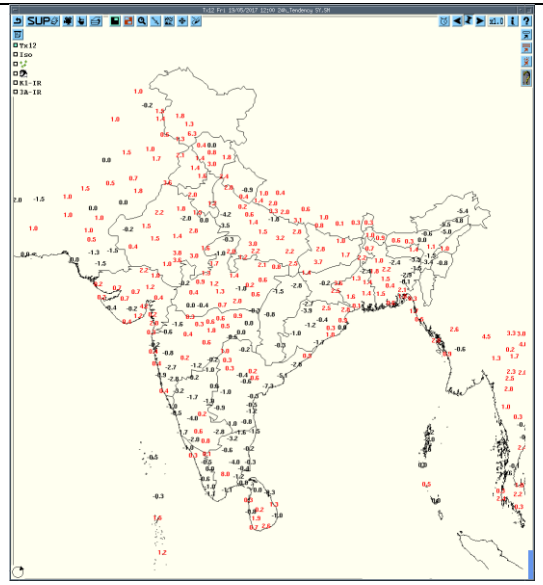
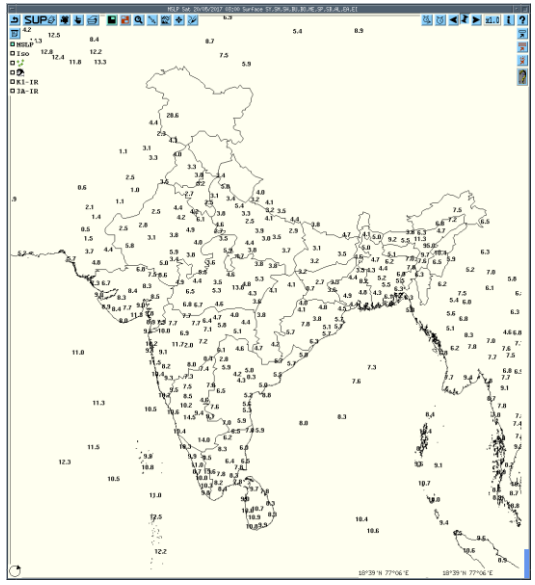
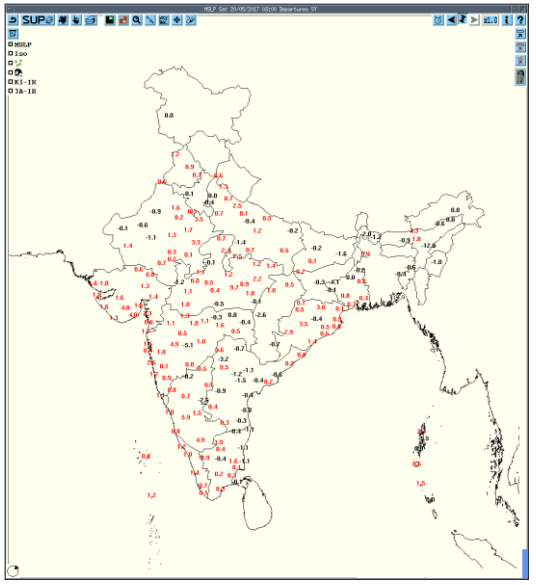
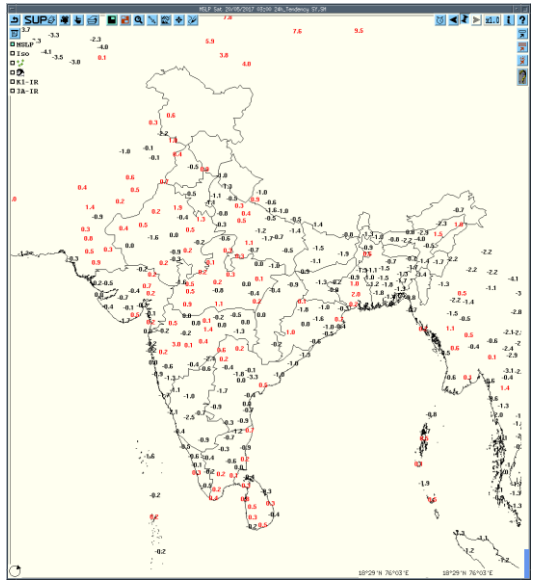
IMR Rainfall

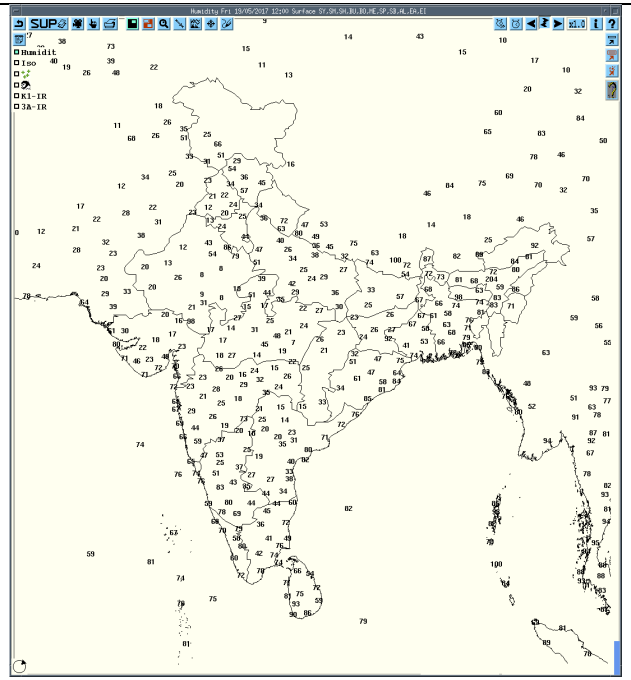
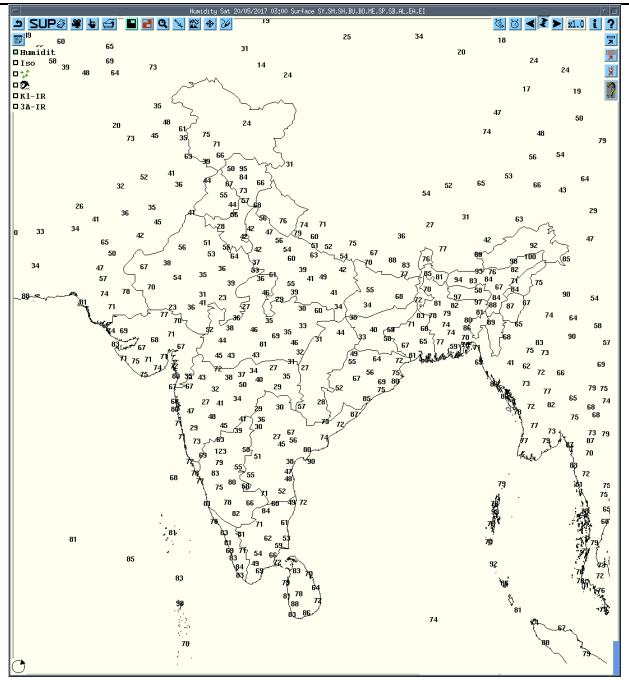


HEM Rainfall

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**	**Tendency MSLP**

	
RH at 12UTC yesterday	**RH at 03UTC today**

Realized weather past 24hours (Based on SYNERGIE Products)					
Date	**Time of Reporting**	**Name of Station Reporting**	**Region**	**STATE**	**Weather Event**
18-05-17	0600UTC	Minicoy	S India	Andaman & Nicobar Islands	Thunderstorm
		Agra	NW India	Uttar Pradesh	Thunderstorm
		Kailasahar	NE India	Tripura	Thunderstorm
19-05-17	0900UTC	Jhansi	NW India	Uttar Pradesh	Thunderstorm
		Malda	E India	West Bengal	Thunderstorm
19-05-17	1200UTC	Kupwara, Banihal	NW India	J & K	Thunderstorm
		Tehri	NW India	Uttarakhand	Thunderstorm
		Agra	NW India	Uttar Pradesh	Thunderstorm
		Churu	NW India	Rajasthan	Thunderstorm
		Jabalpur	C India	Madhya Pradesh	Thunderstorm
		Gangtok	E India	Sikkim	Thunderstorm
		Cooch Behar, Panagarh, Bankura	E India	West Bengal	Thunderstorm
		Jabalpur, Ranchi	E India	Jharkhand	Thunderstorm
19-05-17	1500UTC	Bikaner, Churu	NW India	Rajasthan	Thunderstorm
		Ajmer	NW India	Rajasthan	Thunderstorm with Duststorm
		Bankura	E India	West Bengal	Lightening
19-05-17	1800UTC	Jammu	NW India	J & K	Thunderstorm
		Dehradun	NW India	Uttarakhand	Thunderstorm
		Churu	NW India	Rajasthan	Thunderstorm
		Bikaner	**NW India**	**Rajasthan**	**Thunderstorm with hail**
		Guwahati	**NE India**	**Assam**	**Thunderstorm with hail**
		Tezpur	NE India	Assam	Lightening
		Pendra Road	C India	Chhattisgarh	Lightening
		Hyderabad	S India	Telangana	Thunderstorm
19-05-17	2100UTC	Amritsar	NW India	Punjab	Duststorm
		Guwahati	NE India	Assam	Thunderstorm
		Hyderabad	S India	Telangana	Thunderstorm
20-05-17	0000UTC	Sundernagar	NW India	Himachal Pradesh	Thunderstorm
		Dehradun	NW India	Uttarakhand	Thunderstorm
		Silchar	NE India	Assam	Thunderstorm
20-05-17	0300 UTC	Chandigarh	NW India	Chandigarh	Thunderstorm
		Minicoy	S India	Andaman & Nicobar Islands	Thunderstorm

Past 24 hours DWR Report:

Radar Station name	Date of Reporting	Time interval of observation (UTC)	Organization of the cells (Isolated single cells/multiple cells/ convective regions/ squall lines) with height of 20 dBZ echo top and maximum reflectivity	Formation w.r.t radar station and Direction of movement	Remarks	Associated severe weather if any	Districts affected
JAIPUR	20-05-17	190300-190612	Multiple cell with average height of 6.5 km maximum reflectivity 55.5 dBZ	Cell develop 0300 to 0612 UTC towards north -east of jaipur and movment south-east at speed 12-24 km/hr	Cells continuous forming from 0300 UTC NE & E of Jaipur and maximum refelectivity during 0412-0542 UTC and died down at 0612 utc	---	Alwar, Bharatpur, Dausa, Karauli
		190632-200032	Multiple cells with average height of 8.0 km maximum reflectivity 52.0 dBZ	Multiple Cells develop 0632 to 0002 UTC towards North East,north & Nort West and moves towards south east at speed 21 to 40 km/hr.	Cells continuous forming from 0632 UTC North East, north ,west,south-west & Nort West of Jaipur and maximum refelectivity during 0900-1332 UTC and died down at 0002 UTC	Moderate Thunderstorm and hail-storm at isolated places	Sikar,ajmer nagaur Dausa, Karauli,alawar,churu,jhunjhunu Bharatpur, dholpur
Patna	20-05-17	190300-200300	Nil	--	---	---	---
Patiala	20-05-17	190302-190902	No significant Echo	---	-------	-----	--------
		190902-191202	Multiple cells Max= 50.0 dBz Ht.= 11-13 km	Formation in NE,SW sector. MOVEMENT SE-WARDS.	-------	----------	RAMPUR,UTTERKASHI,MOHINDERGARH
		191202-191502	Multiple cells Max= 53.5 dBz Ht.=12-13 km	Formation in NE sector. MOVEMENT SE-WARDS.			MOHINDERGARH, GANGOTRI LOHARU

		191502-191802	Multiple cells Max= 54.0 dBz Ht.=9-11 km	Formation in NE,NW sector. MOVEMENT SE-WARDS.		-	AMRITSAR,DEHRADUN,MUSSORIE,BHUNTHER
		191802-192102	Multiple cells Max= 53.0 dBz Ht.=9-11 km	FORMATION IN WEST DIRECTION ,MOVEMENT IN EAST DIRECTION -			BARNALA,BATHINDA,KHANNA,LUDHIANA
		192102-200002	Multiple cells Max= 57.0 dBz Ht.=10-12 km	FORMATION IN WEST DIRECTION ,MOVEMENT IN EAST DIRECTION	-------	----------	CHANDIGARH,SANGRUR,KAITHAL, DEVOGARH
		192102-200252	Multiple cells Max= 52.0 dBz Ht.=9-11 km	FORMATION IN NORTH WEST DIRECTION ,MOVEMENT IN SOUTH EAST DIRECTION	----------	----------	AMBALA,LUDHIANA,ROPAR,CHANDIGARH,NANGAL, NAWANSHAHAR
Kolkata	20-05-17	190301-190901	NIL	NIL	NO ECHO	NIL	NIL
		190901-191211	1.Isolated single cells with maximum reflectivity of 63.0 dBz at 1131 UTC and maximum height of 13.2 km at 1031 UTC	1. N (244 km) moving in ESE-ly/ SE-ly direction with a speed of 43.6 kmph.	1. Isolated single cells formed in N at a distance of 244 km from Radar at 0911 UTC. Matured and dissipated at 1211 UTC in NNE at a distance of 201 km from Radar	Hailstorm/Thunderstorm /Squall/ Rain	N/A
		191011-191251	2. Isolated single cells with maximum reflectivity of 64.5 dBz at 1151 UTC and maximum height of 13.9 km at 1051 UTC	2. NW (191 km) moving SE-ly direction with a speed of 29.2 kmph.	2. Isolated single cells formed in NW at a distance of 191 km from Radar at 1011 UTC. Matured and dissipated at 1251 UTC in NW at a distance of 125 km from Radar	Hailstorm/Thunderstorm /Squall/ Rain	N/A
		191431-191931	Isolated single cells with maximum reflectivity of 58.5 dBz at 1641 UTC and maximum height of 8.15 km at 1631 UTC	1.WSW (245.8 km) moving in SE-ly direction	1. Isolated single cells formed in WSW at a distance of 245 km from Radar at 1431 UTC. Matured and dissipated at 1931 UTC in SW at a distance of 75 km from Radar	Hailstorm/Thunderstorm /Squall/ Rain	N/A

		200001-200300	NIL	NIL	NO ECHO	NIL	NIL
Agartala	20-05-17	190300 - 190800	Multiple cells with Maximum Height 13km and maximum reflectivity 41.5dBZ (at 0310 UTC over east Bangladesh	Formed 310 KM NW of AGT at 2000UTC of 18.05 2017 and moved SE wards with 50kmph	Cells Dissipated at 0800 UTC over Mizoram	TS with light / moderate rain	North, Unakoti district of Tripura, Mamit district of Mizoram
		190420 - 191020	Multiple cell Maximum Height 12km and maximum reflectivity 45 dBZ at 0620 UTC at west Tripura	Formed 40 km WSW of AGT and moved SE-wards at around 25 kmph	Cells Dissipated at 1020 UTC over south Mizoram and Adj Bangladesh	N/A	N/A
		180810 - 191330	Single cell Maximum Height 14km and maximum reflectivity 46.5 dBZ at 1012 UTC over East Bangladesh	Formed 130 km W, NW of AGT and moved E-wards at around25 kmph	Cells Dissipated at 1330 UTC over south Bangladesh	N/A	N/A
		191150 - 200010	Multiple with Maximum Height 14km and maximum reflectivity 43.5 dBZ at 1922 150km NW from DWR Agt.	Formed 350 KM NW of AGT and moved SE wards with 25kmph	Cell Dissipated at 0010 UTC over E-Meghalaya & South Assam	TS with light rain	East Khasi Hills district of Meghalaya
Paradeep	20-05-17	0300-0500	Convective regions formed at 0832hrs ist in wsw sector of Radar around 250km away with average reflectivity of 30dbz and height of 4 km.	Position- Lat-19.7 N Long-84.5 E Direction- Westerly	Isolated Cells formed over sea around 1002 hrs ist.	Rain	Koraput,Gajapati &Ganjam,
		0800-1900	Convetive regions became Isolated cells after 1450hrs IST in Western sector around 250km away from Radar Station at height starting from 5 kms to 14 kms with reflectivity of 30 dBZ	Position- Lat-20.2 N Long-84.4 E Direction- Westerly These clouds moved towards East direction and weakened gradually.	Dissipitated around 1500 utc.	Ts with rain	Nawarangpur, Bhawanipatna, Rayagada,Nayagarh, & Ganjam.

			to 50 dBZ . Also a single cell developed at North sector around 240km away from Radar at 1702 hrs Ist with reflectivity range 30-50dbz and average height of 10km.	Position- Lat-22.4 N Long-86.0 E Direction- Westerly. These clouds moved towards East direction and weakened gradually.	Dissipitated around 1900 utc.	Ts with rain	Jharsuguda, Sundargarh,Keonjhar, Mayurbhanj,Balasore.
Nagpur	20-05-17	0302-0742 0822-0942 0922-1122 1622-2352 0022 (20th May)	Single Multiple Multiple Multiple	230km-241km south direction, moving SE-LY. 77km-236km E dirtection 175km -208 km Edirection, moving SE-Ly 13km-82 km N direction, moving E-Ly	MaxZ height of clouds 5.6 -8.4 km MaxZ height of clouds 1.5- 8.2km MaxZ height of clouds 3.5-6 km MaxZ height of clouds 1.2-7.0 km	NIL	Isolated places of district Chandrapur, Pusad, Adlabad and Hingoli
		0002-0252	Nil	--	--	--	--
Srinagar	20-05-17	17 MAY 03Z to 208May 03Z(24hrs)	Multiple cells developed in all direction of DWR Srinanar at 0700utc with max. reflectivity 50-55 DBZ and average height 9 km	Developed at around 0700 utc till 1700utc .(From 2050utc-0300utc image not display due to non availability of internet)	Thunder and light rain reported from Phalgam . kukernag Qazigund	NIL	QUZIGUND
Karaikal	20-05-17	190300-200300	---	--	DWR U/S	---	---