



India Meteorological Department
FDP STORM Bulletin No.78 (22-05-2017)

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.

An upper air cyclonic circulation lies over South East Bay of Bengal & adjoining equatorial Indian Ocean between 1.5 Km & 3.1 Km above mean sea level. With the development of this upper air cyclonic circulation, conditions are becoming favourable for further advance of southwest monsoon into some more parts of southwest, southeast and east-central Bay of Bengal during next 2-3 days.

The Western Disturbance as an upper air cyclonic circulation over north Pakistan & neighbourhood, now lies over north Pakistan and adjoining Jammu & Kashmir between 3.6 and 5.8 Km above mean sea level, with a trough aloft runs roughly along Long. 72.0° E and north of Lat. 25.0° N.

An induced upper air cyclonic circulation lies over Punjab & neighbourhood between 1.5 and 2.1 Km above mean sea level.

The upper air cyclonic circulation over northwest Uttar Pradesh & neighbourhood between 2.1 and 3.6 Km above mean sea level has become less marked.

The upper air cyclonic circulation over southwest Rajasthan & adjoining south Pakistan persists and now extends upto 2.1 Km above mean sea level.

The trough from west Bihar to north Chhattisgarh, extending upto 0.9 Km above mean sea level has become less marked.

The upper air cyclonic circulation over south Chhattisgarh & adjoining Odisha extending upto 0.9 km above mean sea level and trough from this system to Rayalaseema extending upto 0.9 Km above mean sea level has become less marked.

The trough in westerlies roughly along Long. 93.0°E and north of Lat. 23.0° N between 2.1 Km to 3.6 Km above mean sea level has moved away.

The upper air cyclonic circulation over Rayalaseema & neighbourhood at 1.5 Km above mean sea level persists.

An upper air cyclonic circulation lies over southeast Uttar Pradesh & neighbourhood and extends upto 0.9 km above mean sea level. A trough runs from this system to interior Odisha across north Chhattisgarh and extends upto 0.9 Km above mean sea level.

An upper air cyclonic circulation lies over southwest and adjoining west central Arabian Sea and extends upto 1.5 km above mean sea level.

SATELLITE OBSERVATIONS during past 24hrs and current observation:

Current Observation (based on 0900UTC imagery of INSAT 3D):

Convective Activity:

Cell No	Date/time (UTC)	Location/Area	MIN CTT (- DEG C)	Movement	Remarks
1	22/0000	C Meghalaya	74		Developing
	0100	E Meghalaya adjoining Assam	65		
	0200	DO	52		Dissipating
	0300	Meghalaya adjoining Assam	57		
	0400	DO	--		Dissipated

2	0600	SW Assam adjoining Meghalaya	65	--	Developing
	0700	C Assam	69		
	0800	SE Assam	69		
	0900	E Assam adjoining Nagaland	68		
3	22/0700	E Bangladesh	78	--	--
	0800	E Bangladesh adjoining Meghalaya	77		
	0900	E Bangladesh, E Meghalaya N Tripura adjoining Mizoram	73		
4	22/0900	Coastal Tamilnadu, Kerala adjoining Arabian Sea	80	--	--
5	22/0900	SE Tamilnadu	83	--	--

Western Disturbance:

Scattered multi-layered clouds with embedded weak to moderate convection seen over J & K adjoining Pakistan, Himachal Pradesh, E Punjab, E Haryana, Delhi, NW Uttar Pradesh and Uttarakhand in association with WD over the Area.

Westerly Trough:

Trough in westerlies runs roughly along 73.0°E north of lat 25.0°N

Cloud Description:

Scattered low/medium clouds with embedded intense to very intense convection were seen over Coastal Kerala and SE Tamilnadu. Scattered low/medium clouds with embedded moderate to intense convection were seen over S adjoining C Odisha, E Meghalaya, E Bangladesh, N Tripura adjoining Mizoram, E Assam, adjoining Nagaland, N parts of Coastal Andhra Pradesh and Lakshadweep. Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over Jharkhand, rest Odisha and rest parts of the region except N Telangana. Scattered low/medium clouds were seen over rest Punjab, C Uttar Pradesh, Chhattisgarh, S Bihar, Sikkim, rest NE states, NE Rajasthan, Madhya Pradesh and Maharashtra.

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. Scattered low/medium clouds with embedded moderate to intense convection were seen over Andaman Sea.

Past Weather:

Convection:-

Moderate to Intense convection was observed over J&K Himachal Pradesh Punjab Rajasthan Haryana Delhi Uttarakhand Uttar Pradesh East Bihar East Jharkhand West Bengal Arunachal Assam Meghalaya Telangana Andhra Pradesh South Interior Karnataka Kerala Tamilnadu .

OLR:-

Upto 200 wm^{-2} was observed over J&K Himachal Pradesh South Interior Karnataka Kerala Tamilnadu.

Upto 230 wm^{-2} was observed over Punjab Haryana Rajasthan Uttarakhand Sikkim Arunachal Pradesh Andhra Pradesh

Westerly Trough & Jet-Stream:

Trough in Westerlies runs roughly along Longitude 73.0E north of Latitude 25.0N.

No Jet Stream is observed over India Dynamic Features:

Dynamic Features:

Low to Medium wind shear is observed over India.

Negative shear tendency is observed over Saurashtra J&K Himachal Pradesh and Positive shear tendency is observed over rest parts of India

A positive Vorticity field is observed over Saurashtra Punjab Haryana Uttar Pradesh East Madhya Pradesh Chhattisgarh Andhra Pradesh Odisha Jharkhand West Bengal .

Negative low level convergence is observed over North-West & Central parts of India and Positive low level convergence observed over rest parts of India

Precipitation:**IMR:**

Rainfall Up to **30** mm was observed over south Parts of North Coastal Andhra Pradesh. Rainfall Up to **20** mm was observed over J&K Himachal Pradesh Meghalaya.

Rainfall Up to **10** mm was observed over Punjab Rajasthan Haryana Delhi North-West Uttar Pradesh Uttarakhand East Bihar West Bengal West Assam South Interior Karnataka Kerala Tamilnadu.

HEM:.

Rainfall Up to **70** mm was observed over South West J&K Himachal Pradesh West Uttarakhand East Meghalaya.

Rainfall Up to **14** mm was observed over Rajasthan south Parts of North Coastal Andhra Pradesh South Interior Karnataka.

Rainfall Up to **07** mm was observed over Punjab Haryana Delhi North West Uttar Pradesh East Uttarakhand East Bihar rest North-East States East Gujarat Kerala West Tamilnadu.

RADAR and RAPID Observation:

DWR Composite at 1630hrs IST indicated significant convection over Northern parts of Tamilnadu, N Coastal Andhra Pradesh adjoining Odisha, Rayalaseema, C parts of Odisha and E Jharkhand.

RAPID RGB Satellite imagery at 1600hrs IST indicated convective clouds over J & K, Himachal Pradesh adjoining Punjab, adjoining Haryana, Uttarakhand adjoining W Uttar Pradesh, S Assam, Nagaland, Mizoram, Kerala, South Interior Karnataka, Tamilnadu, Andhra Pradesh, Telangana, Odisha, E Jharkhand adjoining Gangetic West Bengal and Lakshadweep & Minicoy Islands.

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 992hPa on Day-3 and 4.

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

A CYCIR is seen over Arabian Sea: from Day-2 to Day-4 moving westwards.

A CYCIR is seen over Bay fo Bengal: from Day-2 to Day-4 moving northwards AP-Odisha Coast on day-5.

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 > 15×10^{-5} /s):

Day0: Jharkhand, West RJ, Odisha, East MP, Madhya Maharashtra, Chhattisgarh, NI Karnataka,

Day1: Gangetic WB, Jharkhand, Chhattisgarh,

Day2: Arunachal Pradesh, Assam Meghalaya, Jharkhand, Bihar, West UP, West RJ, Odisha, Madhya Maharashtra, Chhattisgarh, Telangana,

Day3: Jharkhand, East RJ, West MP, East MP, Madhya Maharashtra, Vidarbha, Chhattisgarh, Telangana, Rayalaseema, TN Puducherry, NI Karnataka, SI Karnataka,

Day4: Madhya Maharashtra, Chhattisgarh, Coastal AP, NI Karnataka

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

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

Day0: Arunachal Pradesh, Assam Meghalaya,

Day1: Arunachal Pradesh, Assam Meghalaya,

Day2: Arunachal Pradesh, Assam Meghalaya, Saurashtra Kutch, TN Puducherry,

Day3: Assam Meghalaya, Jharkhand, Bihar, West MP, East MP, TN Puducherry, Kerala,

Day4: Arunachal Pradesh, Assam Meghalaya, Bihar, 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, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Guj Reg, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day1: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, 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, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day3: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, 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, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, Guj Reg, Saurashtra Kutch, Madhya Maharashtra, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, SI Karnataka, Kerala,

Day1: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,

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

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

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Odisha, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, 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, Bihar, East UP, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, Guj Reg, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Coastal AP, Telangana, TN Puducherry,

Day1: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Konkan Goa, Madhya Maharashtra, Coastal AP, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,

Day2: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, Odisha, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,

Day3: Arunachal Pradesh, Sub Himalayan WB, Bihar, Uttarakhand, Himachal Pradesh, Jammu Kashmir, East RJ, Vidarbha, Chhattisgarh, Coastal AP, Rayalaseema, TN Puducherry, Coastal Karnataka, NI Karnataka,

Day4: Arunachal Pradesh, Sub Himalayan WB, Bihar, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, Konkan Goa, Madhya Maharashtra, Vidarbha, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, Coastal Karnataka, NI Karnataka, SI Karnataka

8. Rainfall and thunder storm activity:

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

Day1: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Himachal Pradesh, Jammu Kashmir, TN Puducherry, Kerala,

Day2: Arunachal Pradesh, Assam Meghalaya, Himachal Pradesh, Kerala,

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Uttarakhand, Jammu Kashmir, TN Puducherry, Coastal Karnataka, Kerala,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Uttarakhand, TN Puducherry, SI Karnataka, Kerala,

Day5: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Uttarakhand, Jammu Kashmir, Kerala

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

1. Weather Systems:

00 UTC analysis shows an east west trough over UP, Bihar, Jharkhand and adjoining areas. The analysis also shows a trough at low level from this system passing through Odisha and North Andhra. The N-S oriented trough from west UP and Bihar along north Odisha and thereby extending up to interior parts of Tamil Nadu is seen persisting during next 4 to 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 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 (>12 x 10⁻⁵/s) mainly over the foothills of Himalaya, along with Interior Odisha, Chhattisgarh and adjoining east MP. The high vorticity belts are mainly confined over regions of Odisha, Chhattisgarh region along with the Himalayan foothills during next 3 days .

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

Analysis shows low level positive vorticity (>12 x 10⁻⁵/s) mainly over the foothills of Himalaya, along with Interior Odisha, Chhattisgarh and adjoining east MP. The high vorticity belts are mainly confined over regions of Odisha, Chhattisgarh region along with the Himalayan foothills during next 3 days.

5. Rainfall and thunderstorm activity:

10-40 mm rainfall is forecasted tomorrow over isolated pockets in the north east states and in the Kerala region and is expected to persist for the next 5 days.

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

1. Model Reflectivity (Max. dBz):

15-40 dBZ over parts of Delhi, UP and adjoining areas during today

15-40 dbz over parts of the north eastern states in the early morning hours of tomorrow

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

CAPE (> 1000): Mostly along GWB, Odisha, coastal AP and TN and along the west coast during next 3 days.

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

3. Rainfall and thunderstorm activity:

10-40 mm over few pockets in north eastern region and is expected to persist for the next 3 days.

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:

Day-1 & Day-2:

In association with the upper air cyclonic circulation over South East Bay of Bengal & adjoining equatorial Indian Ocean rainfall is likely to increase over the next two days over Andaman and Nicobar Islands.

The western disturbance over north Pakistan and adjoining Jammu & Kashmir and the two upper air cyclonic circulations- one over Punjab and the other over southeast Uttar Pradesh & neighbourhood, thunderstorm activity is expected during the next two days throughout North India. The zone of thunderstorm activity is likely to shift eastwards on day 2.

In association with the upper air cyclonic circulation over Rayalaseema & neighbourhood, and the upper air cyclonic circulation over southwest Arabian Sea, weather is also likely over the south-west peninsular coast of India during the next two days.

24 hour Advisory for IOP:

Nicobar Islands

Eastern parts of Sub Himalayan West Bengal,

Assam, Meghalaya, Manipur, Mizoram and Tripura

South Interior Karnataka, Rayalaseema, Interior Tamil Nadu, Kerala, Coastal Andhra Pradesh

North-west Madhya Pradesh, Jharkhand, Bihar, Orissa, Gangetic West Bengal

Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Uttar Pradesh and Rajasthan

48 hour Advisory for IOP:

Andaman and Nicobar Islands

Assam, Meghalaya

South Interior Karnataka, Rayalaseema, Interior Tamil Nadu, Kerala

Jharkhand

Himachal Pradesh, Uttarakhand, Haryana, West UP, East Rajasthan

For NCMRWF NWP products:(<http://www.ncmrwf.gov.in/HomePage/NEPS-prod-1.php>)

For IMD NWP products:(http://nwp.imd.gov.in/diagpro_new.php)

For Synoptic plotted data and charts

<http://amssdelhi.gov.in/>

<http://www.amsskolkata.gov.in/>

For RAPID tool:

<http://rapid.imd.gov.in/>

Low Level Winds

http://satellite.imd.gov.in/archive/INSAT-3D-IMAGER/3D-PRODUCTS/AMV/LLW/MAR_2017/?C=M;O=D

Upper level winds

http://satellite.imd.gov.in/archive/INSAT-3D-IMAGER/3D-PRODUCTS/AMV/HLW/MAR_2017/?C=M;O=D

Past24hourHEMandIMRrainfall(upto03UTCoftoday)

IMR: http://satellite.imd.gov.in/img/3Ddaily_imr.jpg

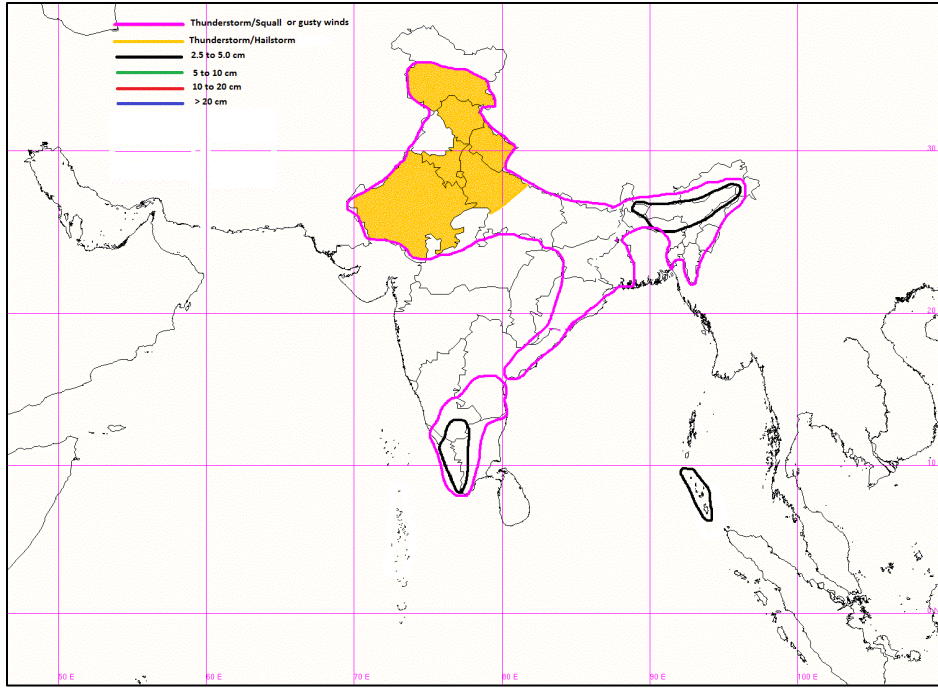
HEM: http://satellite.imd.gov.in/img/3Ddaily_he.jpg

ForRadarimagesofthepast24hoursincludingmosaicofimages:

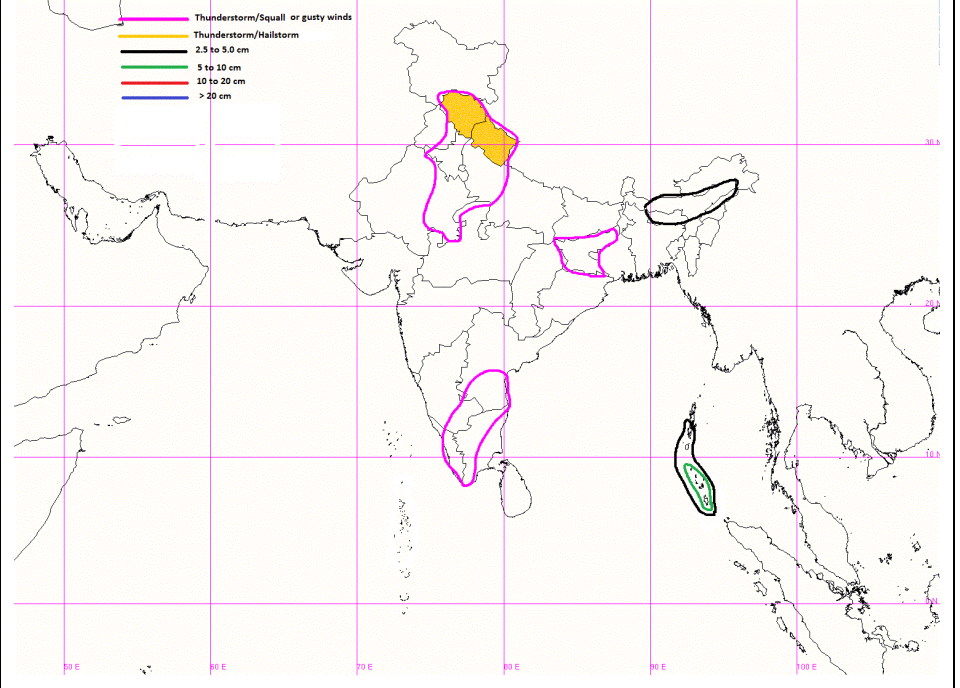
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Satellite sounder based T- Phigram

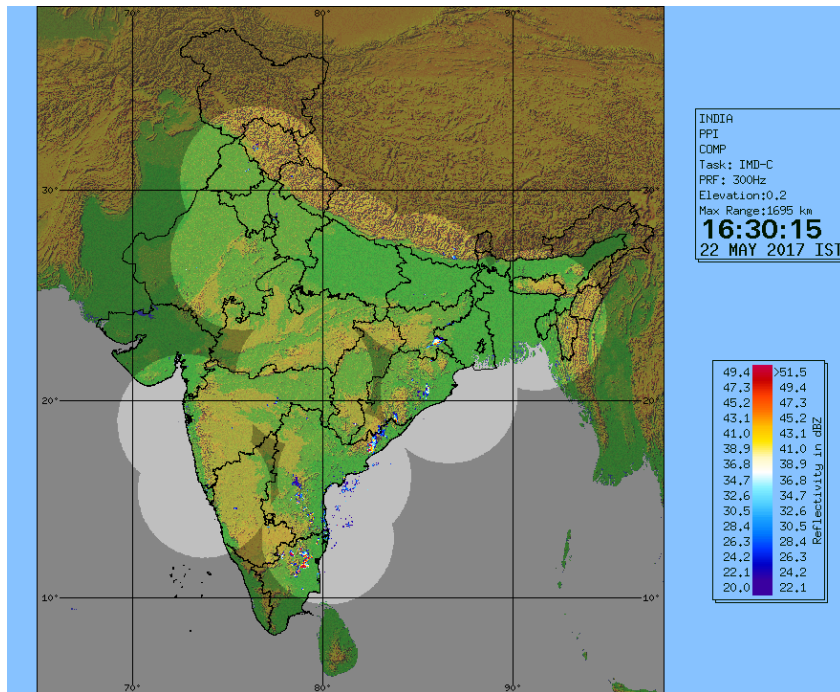
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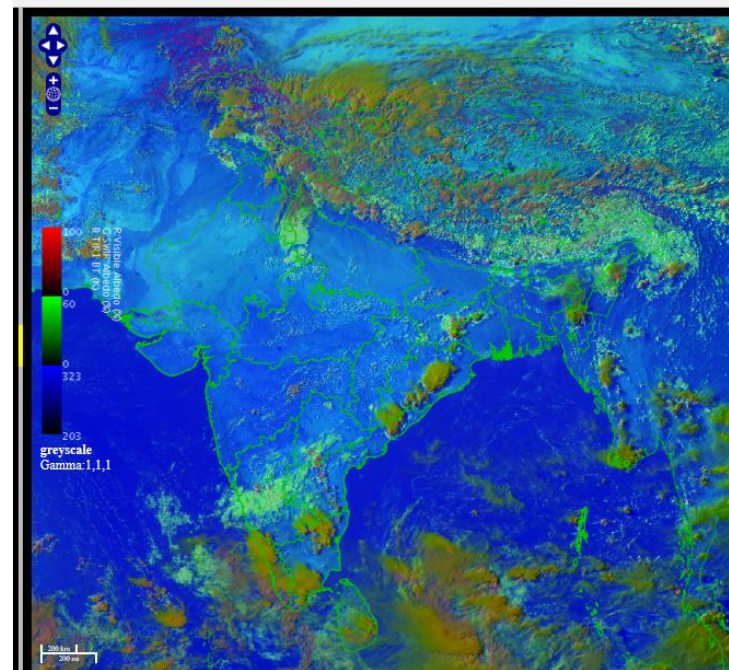
IOP Advisory for 24 hours



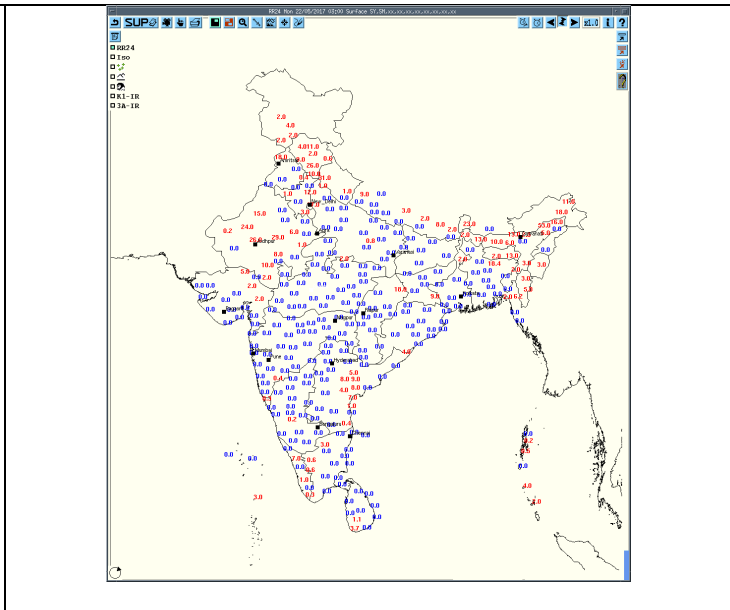
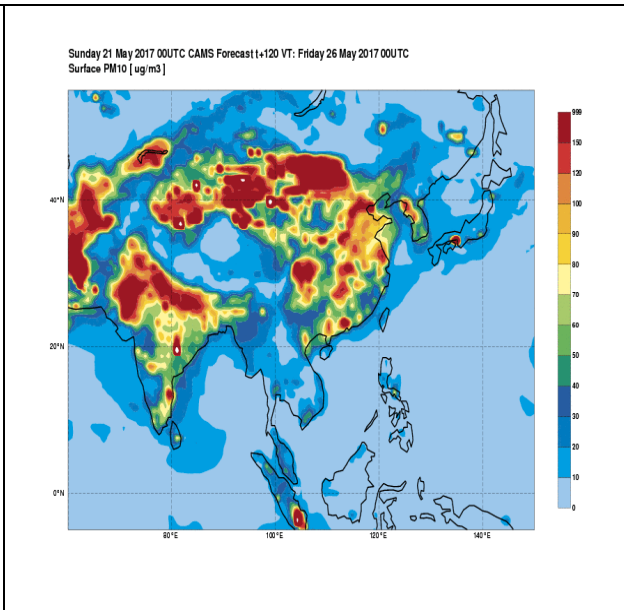
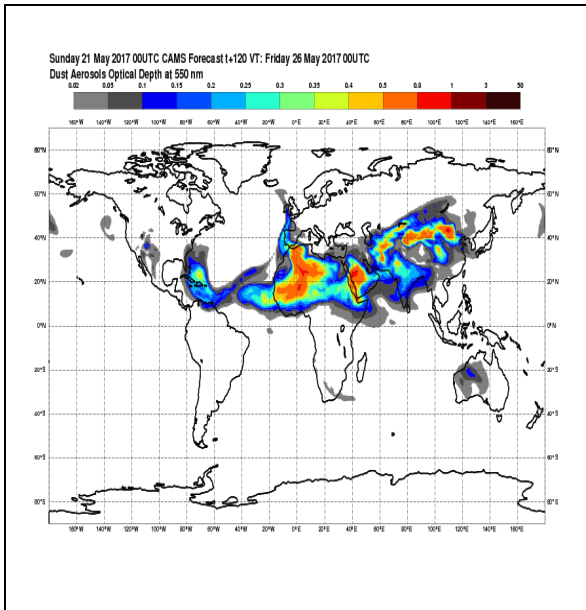
IOP Advisory for 48 hours



DWR Composite at 1630 hrs IST



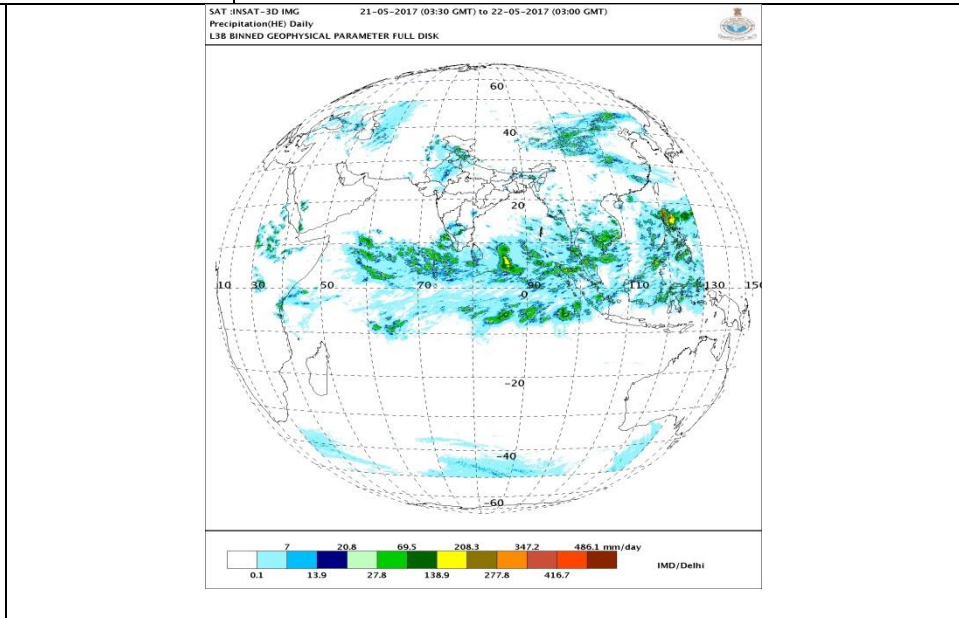
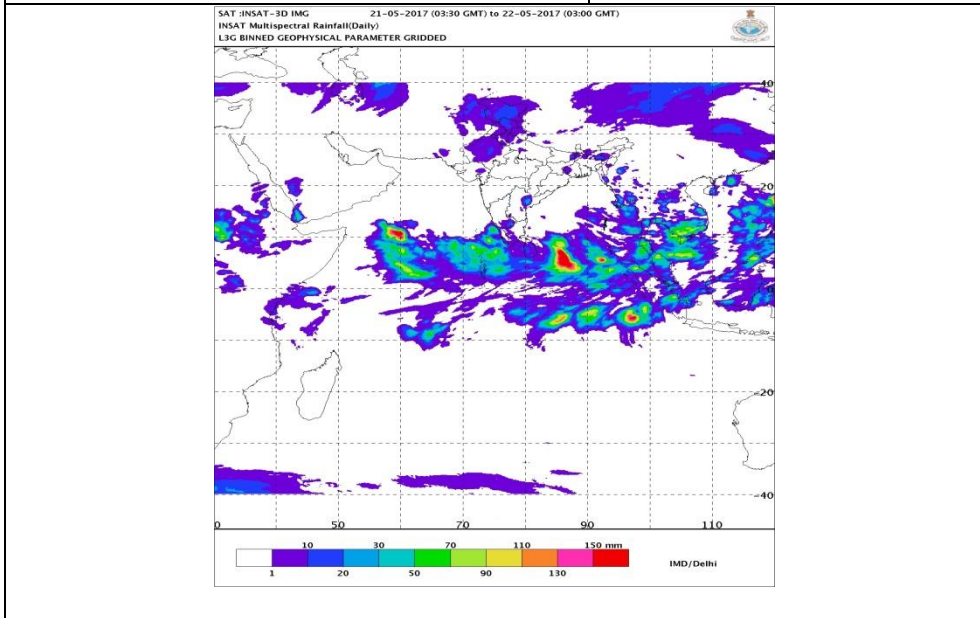
RAPID RGB Satellite Imagery at 1600 hrs IST of today



Forecast Dust Concentration for 00UTC of 26th May

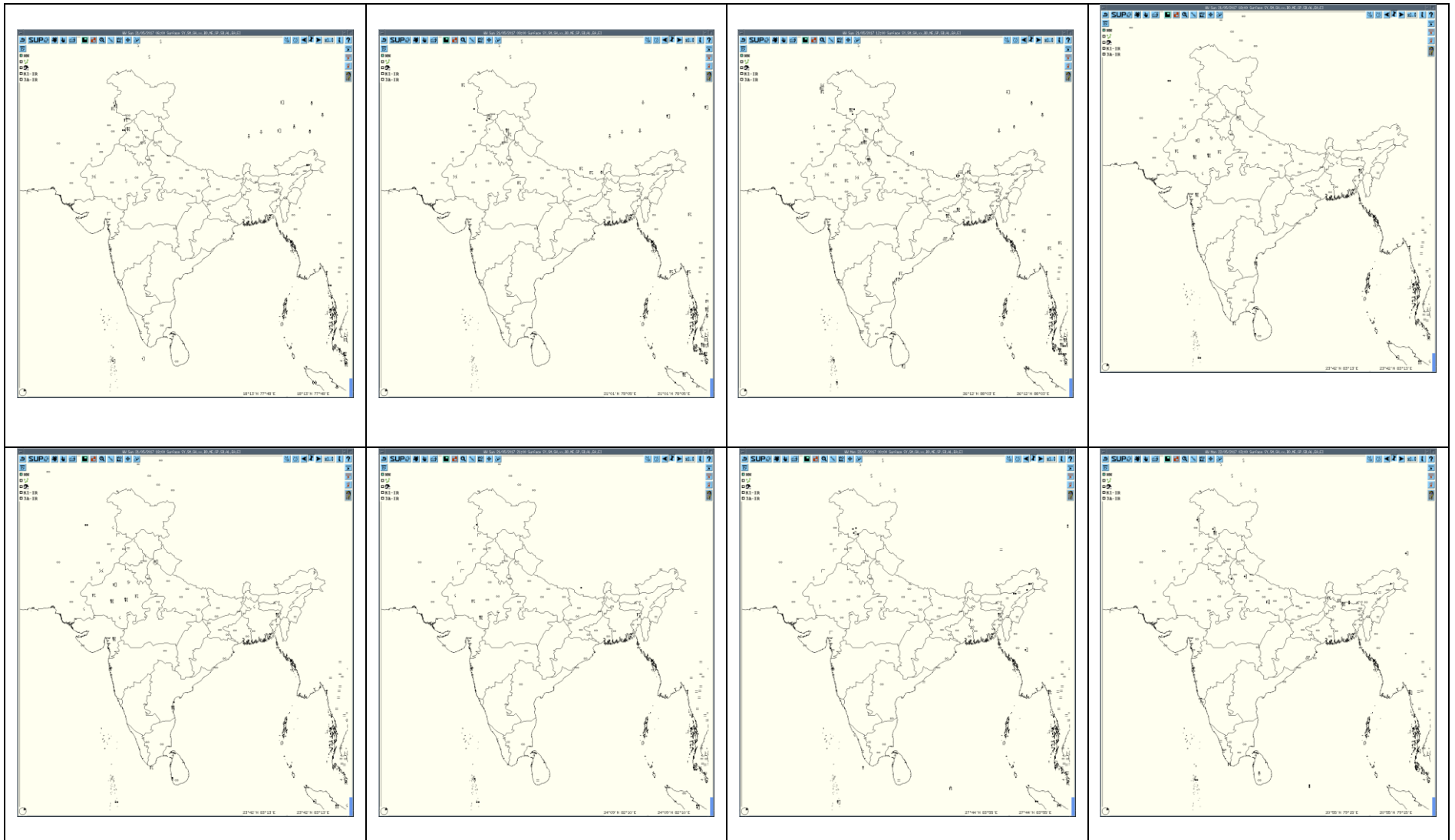
PM10 Forecast for 00UTC of 26th May

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

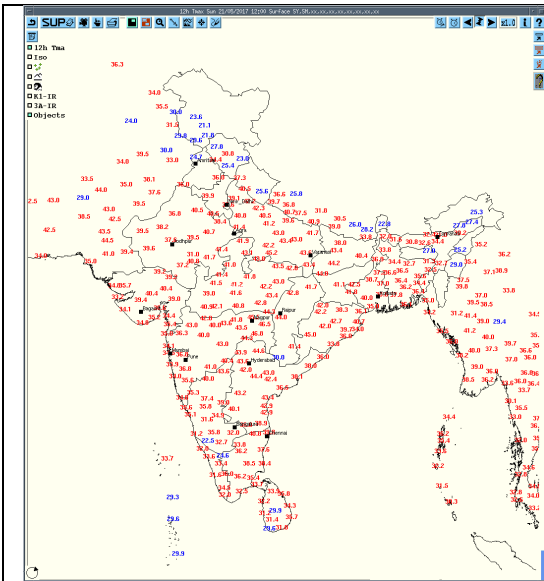


IMR Rainfall

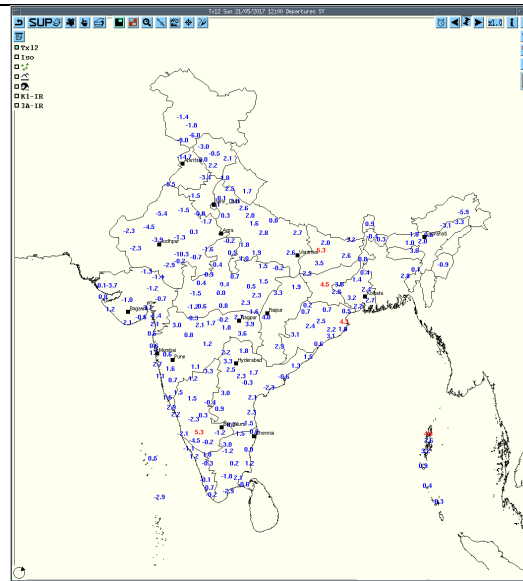
HEM Rainfall



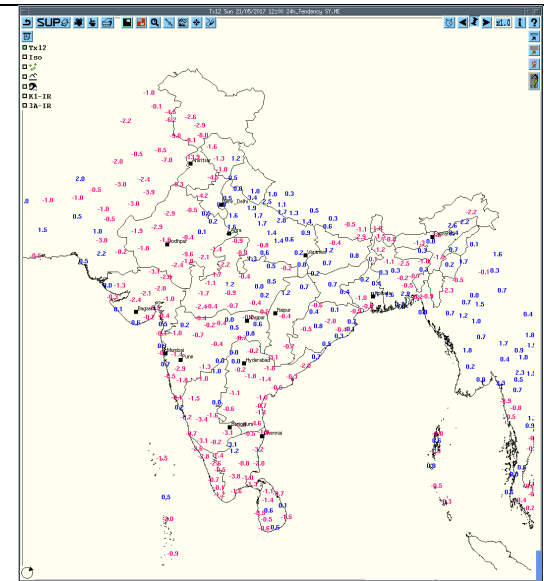
3hourly Past weather at 06,09,12,15,18,21UTC of yesterday and 00 & 03 hrs UTC of today



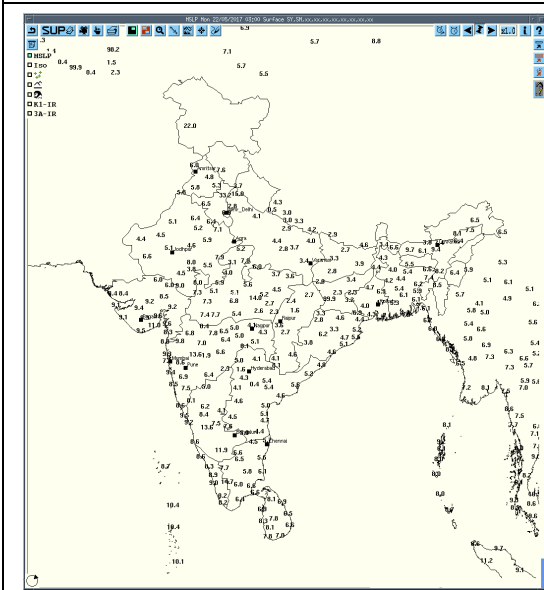
Tmax



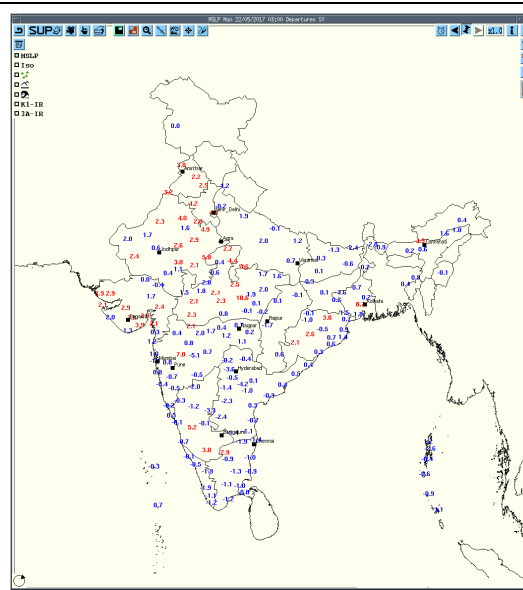
Departure Tmax



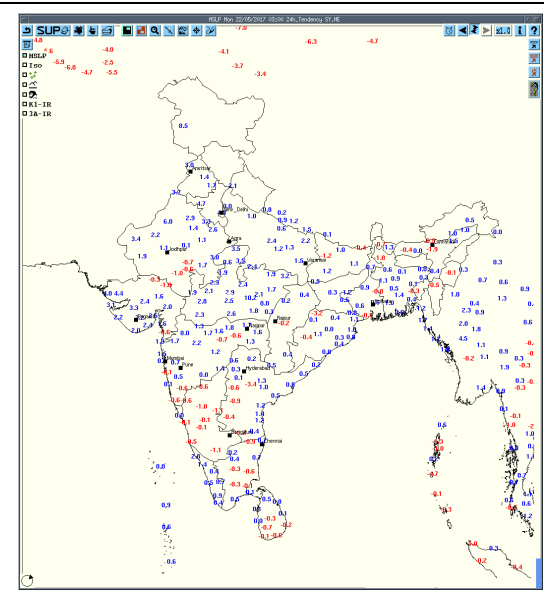
Tendency Tmax



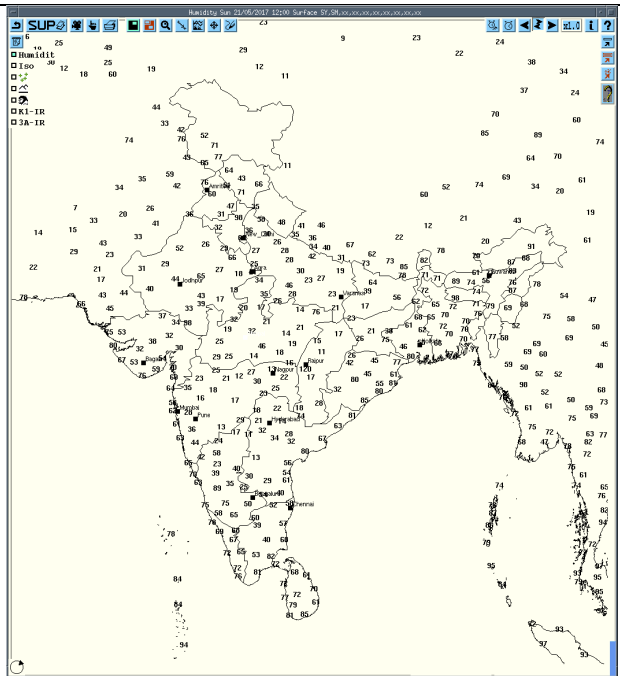
MSLP



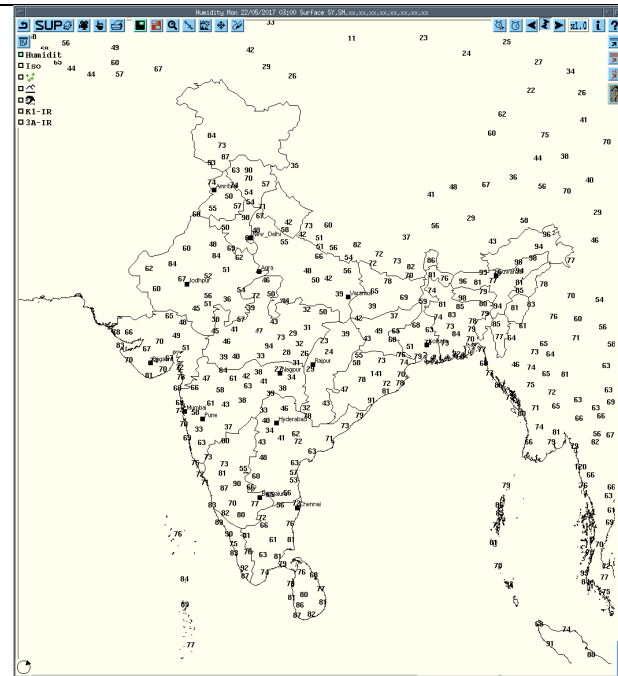
Departure MSLP



Tendency MSLP



RH at 12UTC yesterday



RH at 03UTC today

Realised TS/SQ/HS Data:

Realized weather past 24hours (Based on SYNERGIE Products)					
Date	Time of Reporting	Name of Station Reporting	Region	STATE	Weather Event
21-05-17	0600UTC	Amritsar	NW India	Punjab	Thunderstorm
21-05-17	0900UTC	Katra	NW India	J & K	Thunderstorm
		Sundernagar, Shimla	NW India	Himachal Pradesh	Thunderstorm
		Gwalior	C India	Madhya Pradesh	Thunderstorm
21-05-17	1200UTC	Banihal	NW India	J & K	Thunderstorm
		Sundernagar	NW India	Himachal Pradesh	Thunderstorm
		Ambala	NW India	Haryana	Thunderstorm
		Bikaner, Ajmer	NW India	Rajasthan	Thunderstorm
		Safdarjung, Palam, Delhi Ridge	NW India	Delhi	Thunderstorm
		Vijayawada, Bapatla, Ongole	S India	Andhra Pradesh	Thunderstorm
		Jamshedpur	E India	Jharkhand	Thunderstorm
Panagarh	E India	West Bengal	Thunderstorm		
21-05-17	1500UTC	Jodhpur	NW India	Rajasthan	Duststorm
		Ajmer, Jaipur	NW India	Rajasthan	Thunderstorm
		Chandigarh	NW India	Chandigarh	Lightening
		Dehradun	NW India	Uttarakhand	Thunderstorm
		Ahmedabad	W India	Gujarat	Thunderstorm
		Bengaluru	S India	Karnataka	Lightening
21-05-17	1800UTC	Jaisalmer, Bikaner, Jodhpur, Ajmer,	NW India	Rajasthan	Thunderstorm
		Churu	NW India	Rajasthan	Duststorm
		Udaipur	NW India	Rajasthan	Lightening
		Baroda	W India	Gujarat	Thunderstorm
		Kavali	S India	Andhra Pradesh	Thunderstorm
		Nellore	S India	Andhra Pradesh	Lightening
		Kanyakumari	S India	Tamilnadu	Thunderstorm
21-05-17	2100UTC	Tezpur	NE India	Assam	Lightening
		Jaisalmer, Jodhpur, Udaipur	NW India	Rajasthan	Thunderstorm
22-05-17	0000UTC	Kannur	S India	Kerala	Lightening
22-05-17	0300 UTC	Batote	NW India	J & K	Thunderstorm
		Fursatganj	NW India	Uttar Pradesh	Thunderstorm
		Bagdogra, Coochbehar	E India	West Bengal	Thunderstorm
		Thiruvananthapuram, Alappuzha	S India	Kerala	Thunderstorm

Realized TS/HS/SQ during past 24 hours ending at 0300UTC of today (received from RMCs/MCs)

Name of Station Reporting	Region	STATE	Weather Event (TS/Hail/Squall)	Date	Time of Commencement (IST)	Time of end (IST)
Jagdalpur	E India	Jharkhand	Thunderstorm	21-05-17	1900	1930
Ambala	NW India	Haryana	Thunderstorm	21-05-17	1545	1730
Amritsar	NW India	Punjab	Thunderstorm	21-05-17	0830	1400
Chandigarh	NW India	Chandigarh	Thunderstorm	21-05-17	1515	1615
Karnal	NW India	Haryana	Thunderstorm	21-05-17	During Evening	
Dehradun	NW India	Uttarakhand	Thunderstorm	21-05-17	1545 1830	1625 2238
			Squall from W direction with max speed 50kmph	21-05-17	2040	2055
Pantnagar	NW India	Uttarakhand	Thunderstorm	21-05-17	2030	2200
Tehri	NW India	Uttarakhand	Thunderstorm	21-05-17	1635 1900	1650 2200
Ahmedabad	W India	Gujarat	Thunderstorm	21-05-17	1920	2105
Shimla	NW India	Himachal Pradesh	Thunderstorm	21-05-17	1220 1740	1500 2100
Sundernagar	NW India	Himachal Pradesh	Thunderstorm	21-05-17	1150 1340 1540	1315 1445 1735
Gwalior	C India	Madhya Pradesh	Thunderstorm	21-05-17	1410	1610
Ajmer	NW India	Rajasthan	Thunderstorm	21-05-17	1530 1815	1549 2350
Jaipur	NW India	Rajasthan	Thunderstorm	21/22-05-17	211850	220040
Jaisalmer	NW India	Rajasthan	Thunderstorm	21/22-05-17	212240 220035	220115 220117
Bikaner	NW India	Rajasthan	Thunderstorm	21-05-17	1620 2040	1900 2300

Jodhpur	NW India	Rajasthan	Thunderstorm	21-05-17 22-05-17	2100 0135	2350 0350
Phalodi	NW India	Rajasthan	Thunderstorm	21-05-17	1830	2000
Banihal	NW India	J & K	Thunderstorm	21-05-17 22-05-17	1620 0420	1720 0740
Batote	NW India	J & K	Thunderstorm	22-05-17	0700	0830
Katra	NW India	J & K	Thunderstorm	21-05-17	1300 0110	1355 0205
Bhaderwah	NW India	J & K	Thunderstorm	22-05-17	0500	0510
Allahabad	NW India	Uttar Pradesh (East)	Thunderstorm	22-05-17	0400	0500
Fursatganj	NW India	Uttar Pradesh (East)	Thunderstorm	22-05-17	0600	0710
Moradabad	NW India	Uttar Pradesh (West)	Thunderstorm	22-05-17	0000	0400
Naziabad	NW India	Uttar Pradesh (West)	Thunderstorm	21-05-17	1900	2000
Dhubri	NE India	Assam & Meghalaya	Thunderstorm	22-05-17	0500	0522
Guwahati	NE India	Assam & Meghalaya	Thunderstorm	22-05-17	0235	0315
Dhubri	NE India	Assam & Meghalaya	Thunderstorm	22-05-17	0750	0828
Shillong	NE India	Assam & Meghalaya	Thunderstorm	22-05-17	0550	0615
Lengpui	NE India	Mizoram	Thunderstorm	22-05-17	0831	0840
Coochbehar	E India	West Bengal(SHWB)	Thunderstorm	22-05-17	0800	0830
Gangtok	E India	Sikkim	Thunderstorm	21-05-17	1245	1320
Tadong	E India	Sikkim	Thunderstorm	21-05-17	1335	1645
Malda	E India	West Bengal(SHWB)	Thunderstorm	21-05-17	1730	1805
Digha	E India	West Bengal(GWB)	Thunderstorm	21-05-17	2050	2115
			Lightening	21-05-17	2115	2200
Port Blair	E India	Andaman & Nicobar Islands	Lightening	21-05-17	1740	2150
Kochi (CIAL)	S India	Kerala	Thunderstorm	22-05-17	0300	0420
Kozhikode	S India	Kerala	Thunderstorm	22-05-17	0300 0630	0340 0645
Thiruvananthapuram AP	S India	Kerala	Thunderstorm	21-05-17 22-05-17	2054 0654	2354 0830
Minicoy	S India	Lakshadweep & Minicoy Islands	Thunderstorm	21-05-17	2025	2045

Dharmapuri	S India	Tamilnadu(North)	Thunderstorm	21-05-17	2100	2300
Kanyakumari	S India	Tamilnadu(North)	Thunderstorm	21/22-05-17	212315	220045
Vijayawada	S India	Andhra Pradesh(CAP)	Thunderstorm	21-05-17	1610	2045
Bapatla	S India	Andhra Pradesh(CAP)	Thunderstorm	21-05-17	1620	1900
Ongole	S India	Andhra Pradesh(CAP)	Thunderstorm	21-05-17	1555 2110	1800 2300
Kavali	S India	Andhra Pradesh(CAP)	Thunderstorm	21-05-17	2230 2315	2245 2335
Nellore	S India	Andhra Pradesh(CAP)	Thunderstorm	21/22-05-17	212340	220010
Bengaluru	S India	Karnataka (SIK)	Thunderstorm	21-05-17	2045	2210

Past 24 hours DWR Report:

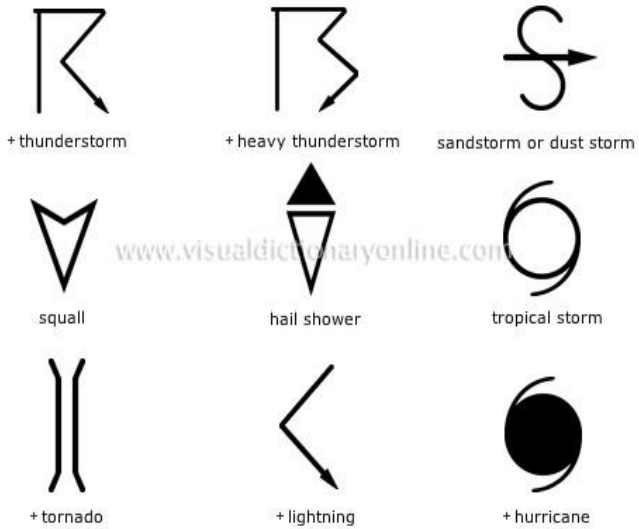
Radar Station name	Date of Reporting	Time interval of observation (UTC)	Organization of the cells (Isolated single cells/multiple cells/ convective regions/ squall lines) with height of 20 dBZ echo top and maximum reflectivity	Formation w.r.t radar station and Direction of movement	Remarks	Associated severe weather if any	Districts affected
Jaipur	22/05/17 22/05/17	210852- 212252	Multiple cell with average height of 7.5 km maximum reflectivity 56.5 dBZ	Cell develop 0842 to 2252 UTC towards NW, W,SW,NE of jaipur and movment E,NE at speed 35-40 km/hr	Cells continuous forming from 0852UTC W,NW,SW,NE of Jaipur and maximum refelectivity during 1052-1342 UTC and died down at 2212 UTC	Moderate Thunderstorm at a few and isolated places	Jaipur,Alwar,Dausa,Pali Rajasamand,Bhilwara,Nagaur,Tonk,Ajmer,Sikar,Chittaurgarh,Bundi,Kota,Bharatpur, Karauli, Sawaimadhopur and Bikaner

		212332-220302	Multiple cells with average height of 4.0 km maximum reflectivity 35.5 dBZ	Multiple Cells develop 2322 to 0302 UTC towards North,North East of Jaipur and movment towards east and North East at speed 45-50 km/hr.	Cells continuous forming from 2322 UTC North,North East of Jaipur and maximum refelectivity during 0052-0102UTC and died down at 0302 UTC	Moderate Thunderstorm at isolated places	Jhunjhunu, Pilani,AlwarSikar and Bharatpur
Nagpur	22-05-17	210302-220252	Nil	--	--	--	--
Paradeep	22-05-17	210300-212300	Isolated single cells seen developing in the NW sector of Radar with heights exceeding 14 kms, average reflectivity value of 30 dBZ and highest reflectivity value of 53 dBZ.	Formed in the NW sector of RADAR in the range of 330-355 degrees and at distance of 200 kms. Direction of movement is NWly.	NIL	TS with Rain.	Mayurbhanj, Keonjhar, Bhadrak and Baleshwar.
Bhuj	22-05-17	210430-211200	Nil	--	--	--	--
Patna	22-05-17	210300-220300	Nil	--	--	--	--
Lucknow	22-05-17	210912-211242	Single cell started forming over 180 Km WSW which after movement to 150 Km W developed in to a multiple cell system. This multiple cell system matured at around 1112 UTC spreading over 100 Km WSW to 120 Km SW from the station. The portion of system along WSW weakened & at around 1152 UTC core of the system was lying 80 Km SW. This intensity lasted	Previous single cell system moved easterly with avg. velocity 50 Km/h while the multiple cell system moved with velocity 60 Km/h easterly. The system started weakening at around 1412 UTC over 50 Km South & dissipated at 1542 UTC over 100 Km SE.	Radar was not operational between 1255 UTC to 1410 UTC due to power failure.	TS	Raebareli

			up to 1242 UTC. Maximum reflectivity was observed 46 dBZ & height reached 8 Km (20 dBZ echo top)				
		212212-220212	Multiple cell system formed 120 Km SSW to S, weakened with movement and reduced to a single cell system at around 0042 UTC over 50 Km South. Maximum reflectivity was 42 dBZ & height reached 7 Km (20 dBZ echo top).	The system moved with average velocity 50 Km/h NNE & dissipated at around 02212 UTC over 70 Km SE.		NIL	NIL
Patiala	22-05-17	210300-210600	Multiple cells Max= 47.5 dBZ Ht.= 07-10 km	Formation in NW sector. MOVEMENT NE-WARDS.	-----	-RA/TS	KAPURTHLA ; AMRITSAR; JALANDHAR.
		210600-210900	Multiple cells Max= 55.0 dBz Ht.= 09-11 km	Formation in NW sector. MOVEMENT NE-WARDS.	-----	TS/RA	CHANDIGARH; SHIMLA; HOSHIARPUR; NAWANSHAHR; KAPURTHLA; BILASPUR. .
		210900-211200	Multiple cells Max= 57.0 dBz Ht.= 09-12 km	Formation in NW sector. MOVEMENT NE-WARDS.	-----	TS/RA	KARNAL; FARIDABAD; AMBLA; PANIPAT; SONIPAT; JIND, CHANDIGARH; BILASPUR.
		2112300-211500	Multiple cells Max= 57.0 dBz Ht.= 09-12 km	Formation in NW sector. MOVEMENT NE-WARDS.	-----	TS/RA	KARNAL; PANIPAT; SONIPAT; SAHARNPUR; AMBALA.
		211500-211800	Multiple cells Max= 52.0 dBz Ht.=9-12 km	FORMATION IN NE SECTOR. DIRECTION ,MOVEMENT IN N-WARDS.RA/TS			KALSI; DEHRDOON; SHIMLA; SOLAN.

		211800-212100	NO SIGNIFICANT ECHO	-----	-----	-----	-----	
		212100-220000	NO SIGNIFICANT ECHO	-----	-----	-----	-----	
		220300-20300	NO SIGNIFICANT ECHO	-----	-----	-----	-----	
Machilipatnam	22-05-17	210901-211731	Convective region average height of 13 km with maximum reflectivity of 60.5dBZ in Krishna,64.5dBZ in Khammam, 60dBZ in Nalgonda,63dBZ in Suryapet ,61.5dBZ Prakasam, in Nellore 60dBZ, in Guntur 61.5dbZ respectively	NW,Wand SW and moving initially S ly direction and later E ly with average speed of 30 kmph	Cell started forming at 0901UTC, at NW (100km) from Radar the maximum reflectivity during 0901 to 1721 UTC and died down at 1731UTC	Possibility of Thunder storm with Hail and rain with moderate winds.	Bhadradri Kothagudem, Khammam, Suryapet,Nalgonda ,Krishna,Guntur, Prakasam,Nellore Districts	
Kolkata	22-05-17	210301–210711	NIL	NIL	NO ECHO	NIL	NIL	
		211011-211601	Isolated cell transformed into multicelled system with maximum reflectivity of 61.0 dBz at 1201 UTC and maximum height of 17.55 Km at 1301 UTC	NW (215 km) Moving in SE-ly direction.	A cell formed at 1011 UTC in NW (215 km) from radar. Matured and dissipated at 1601 UTC in NNW at a distance of 35.4 km from radar.	Thunderstorm Hail/ Rain	N/A	
		211611 – 212351	NIL	NIL	NO ECHO	NIL	NIL	
		220001 – 220301	NIL	NIL	NO ECHO	NIL	NIL	
Agartala	22-05-17	210300	DWR UNDER MAINENANCE					

		- 211240				
		211300 - 212340	Multiple cells with Maximum Height 14 km and maximum reflectivity 52 dBZ	Formed 320 km NW of DWR and moved SE-wards at around 50 kmph	Cells dissipated at 2340 UTC over Manipur	N/A N/A
		211520 - 212030	Multiple cells with Maximum Height 14 km and maximum reflectivity 51 dBZ	Formed 140 km NW of DWR and moved ESE-wards at around 15 kmph	Cells dissipated at 2030 UTC over Manipur	N/A N/A
		211620 - 220300	Multiple cells formed one after another with Maximum Height 12 km and maximum reflectivity 51 dBZ	Formed 350 km NW of DWR and moved SE-wards at around 45 kmph	At 0300 UTC, cells persisted over Meghalaya	N/A N/A
		211950 - 220300	Multiple cells with Maximum Height 15 km and maximum reflectivity 52 dBZ	Formed 220 km NW of DWR and moved SE-wards at around 45 kmph	At 0300 UTC, cells persisted over Manipur and Mizoram	TS with light rain North, Unakoti, Dhalai districts of Tripura



∞	haze
☁	smoke
☁	dust or sand storm
☁	fog
☁	drizzle
•	rain
✱	snow
▽	showers
△	hail
⚡	thunderstorm

Weather Symbols