



India Meteorological Department
FDP STORM Bulletin No. 36 (10-04-2017)

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

SYNOPTIC FEATURES:

The trough from Lakshadweep area to north Andhra Pradesh with an embedded upper air cyclonic circulation over Telangana and adjoining north Andhra Pradesh, now runs in lower level westerlies from Marathwada to North Interior Karnataka with an embedded upper air cyclonic circulation over North Interior Karnataka & neighbourhood and extends upto 0.9 km above mean sea level.

A trough runs from interior Tamilnadu to Comorin area and extends upto 0.9 km above mean sea level.

The trough from north Gangetic West Bengal to south Chhattisgarh across interior Odisha extending upto 0.9 km above mean sea level persists.

The upper air cyclonic circulation over Malaya peninsula and adjoining Tenasserim coast now lies over Tenasserim coast & adjoining Andaman Sea and extends upto 2.1 km above mean sea level.

An upper air cyclonic circulation lies over Assam & neighbourhood and extends upto 0.9 km above mean sea level.

Strong surface winds very likely to continue over Indo- Gangetic plains during next 48 hours.

A fresh feeble Western Disturbance very likely to affect western Himalayan region from 13th April onwards.

SATELLITE OBSERVATIONS during past 24hrs and current observation (based on 0300UTC imagery of INSAT 3D):

Cloud Description:

Scattered low/medium clouds with embedded moderate to intense convection were seen over Bay Islands. Scattered low/medium clouds were seen over J & K, Himachal Pradesh, Sikkim, north eastern states, Karnataka, Kerala, Tamilnadu and Lakshadweep.

Arabian Sea:

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

Bay of Bengal & Andaman Sea:

Scattered low/medium clouds with embedded intense to very intense convection were seen over southeast Bay and Andaman Sea.

Convection:

Light to moderate convection was observed over Odisha, West Bengal, North East states, Karnataka, Kerala and Andhra Pradesh.

OLR:- Up to 200 wm^{-2} was over Extreme North East J&K, Extreme North East Arunachal Pradesh. Up to 230 wm^{-2} was over Rest J & K, North East Himachal Pradesh, North Uttarakhand, Rest North East Arunachal Pradesh, Sikkim, South Interior Karnataka adjoining North Kerala and South Kerala.

Jet Stream:

No Jet stream and trough observed over India.

Dynamic Features:

Positive shear tendency observed over except Negative shear tendency observed over J&K, Saurashtra and West Bengal.

Low wind shear observed over south and moderate wind shear observed over North India and weak to moderate wind shear observed over Central India.

A positive Vorticity field is seen over Uttarakhand, Uttar Pradesh, Bihar, West Bengal, South East Madhya Pradesh adjoining Odisha, Vidarbha, South Interior Karnataka adjoining Kerala.

Positive Low Level Convergence observed over India except Negative low level convergence observed over Vidarbha, North Tamilnadu adjoining South Andhra Pradesh and West Bengal.

Precipitation:

IMR: Rainfall Upto **30mm** was observed over Extreme South Kerala. Rainfall upto **20mm** was observed over Extreme North East Odisha, South Interior Karnataka, Rest South Kerala. Rainfall upto **10mm** was observed over J&K, North Himachal Pradesh, East Arunachal Pradesh, North Manipur, South Gangetic West Bengal and extreme North West Interior Karnataka.

HEM: Rainfall upto 70mm was observed over Extreme South Interior Karnataka, Extreme South Kerala. Rainfall upto 70mm was observed over North Manipur, Extreme North East Odisha, Rest South Interior Karnataka, Extreme North west North Interior Karnataka. Rainfall Upto 7mm was observed over South Gangetic West Bengal, East Arunachal Pradesh, Nagaland and rest South Kerala.

RADAR and RAPID observation:

No significant convection was seen in DWR composite of 1140hrs IST and RAPID RGB Satellite imagery of 1200 hrs IST.

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

No major dust concentration was observed over Arabian Peninsula and west Rajasthan . Dust concentration is expected to increase over western India for next three days.

2. NWP MODEL GUIDANCE:

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

1. Weather Systems:

12UTC Charts on all days from Day0-4 show trough in MSLP over J & K extending NW-SE.

12UTC charts on all days from Day0-4 show Wind discontinuity at 925 hPa over two regions: (i) SW-NE extending from northern Karnataka-Telangana region to Odisha-WB region. (ii) S-N extending from southern parts of TN to northern parts of Karnataka-Telangana region

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

12UTC on day-0 strong core is seen widespread extending from parts of WB to most parts of NE India. On Day 1 strong over Assam, Meghalaya . At all subsequent times the core strength is weaker.

3. Convergence at 850 hPa:

At 12UTC on Day-1 to Day-4: High values along the Western Ghats in Karnataka and Maharashtra, parts of Odisha and WB along with adjoining Jharkhand and Chhattisgarh.

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

At 12UTC on Day-0 to Day-2 high values mainly along the IG plains extending NW to SE-wards covering parts of HP, Uttarakhand and UP.

Day-0 to Day-1 over some parts of Assam

At 00UTC on Day-1 to Day-2 & Day5: along the line of low level confluence. In Day-1 to Day-3 along the Maharashtra coast and over isolated locations in NW India over Rajasthan and adjoining Pakistan.

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

Day-0 at 12UTC: Prominent over large west coast of Karnataka some parts of Odisha-AP coasts, Arunachal and Nagaland.

Day 1to3: Same as in day-0 with subdued activity over coastal Odisha, AP and WB. Enhanced activity over west coast of Karnataka, Kerala and Maharashtra. On day-3 enhanced values over Bihar, WB and Adjoining Bangladesh.

Day-4: Enhanced values over parts of IG plains over Uttarakhand Bihar-WB, western Assam and Arunachal.

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

Day-0 at 12UTC: Prominent over large parts of southern peninsula covering west coast of Karnataka large parts of Arunachal and Nagaland.

Day 1to3: Same as in day-0 with subdued activity over coastal Odisha, AP and WB.

Day-4: Enhanced values over parts of IG plains over UP, Bihar and adjoining WB. and also over Arunachal

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

Day0 : at 12UTC : Over coast of Karnataka extending to NI Karnataka and Telangana. Progressively weak over AP and Odisha. Over NE India some parts of Arunachal and Nagaland.

Day-1&2: over coastal Karnataka and parts of Arunachal and adjoining Assam and parts of Uttarakhand.

Day-3: Prominent over Bihar, WB and adjoining Bangladesh. Arunachal, Assam, Meghalaya and Nagaland.

Day-3-4 at 12 UTC enhanced values of TTI are seen J & K, Himachal and Uttarakhand. Decreasing magnitudes over Bihar and WB. New developments over coastal Maharashtra

8. Rainfall and thunder storm activity:

Rainfall > 4cm/day: Day-1 over Arunachal Pradesh and Day-5 over western part of Assam and some parts of adjoining Meghalaya.

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:

Day 1 & Day 2:

Presently, the trough from Lakshadweep area to north Andhra Pradesh with an embedded upper air cyclonic circulation over Telangana and adjoining north Andhra Pradesh, now runs in lower level westerlies from Marathawada to North Interior Karnataka with an embedded upper air cyclonic circulation over North Interior Karnataka & neighbourhood and extends upto 0.9 km above mean sea level.

A trough runs from interior Tamilnadu to Comorin area and extends upto 0.9 km above mean sea level. The trough from north Gangetic West Bengal to south Chhattisgarh across interior Odisha extending upto 0.9 km above mean sea level persists. This will give rise to thundersquall with gusty wind over coastal Orissa, Gangetic west Bengal on Day-1.

An upper air cyclonic circulation lies over Assam & neighbourhood and extends upto 0.9 km above mean sea level, due to that thundersquall with gusty wind over Assam, Meghalaya and NMMT on Day-1 expected. On Day-2, Kerala and Karnataka will experience thunder squall with gusty wind activities.

24 hour Advisory for IOP:

Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura
Kerala, South and North Interior Karnataka
Gangetic West Bengal and Coastal Orissa

48 hour Advisory for IOP:

Kerala, South and North Interior Karnataka

ForNCMRWFNWPproducts:(<http://www.ncmrwf.gov.in/HomePage/NEPS-prod-1.php>)

ForIMDNWPproducts:(http://nwp.imd.gov.in/diagpro_new.php)

ForSynopticplotteddataandcharts

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

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

ForRAPIDtool:

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

LowLevelWinds

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

Upperlevelwinds

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

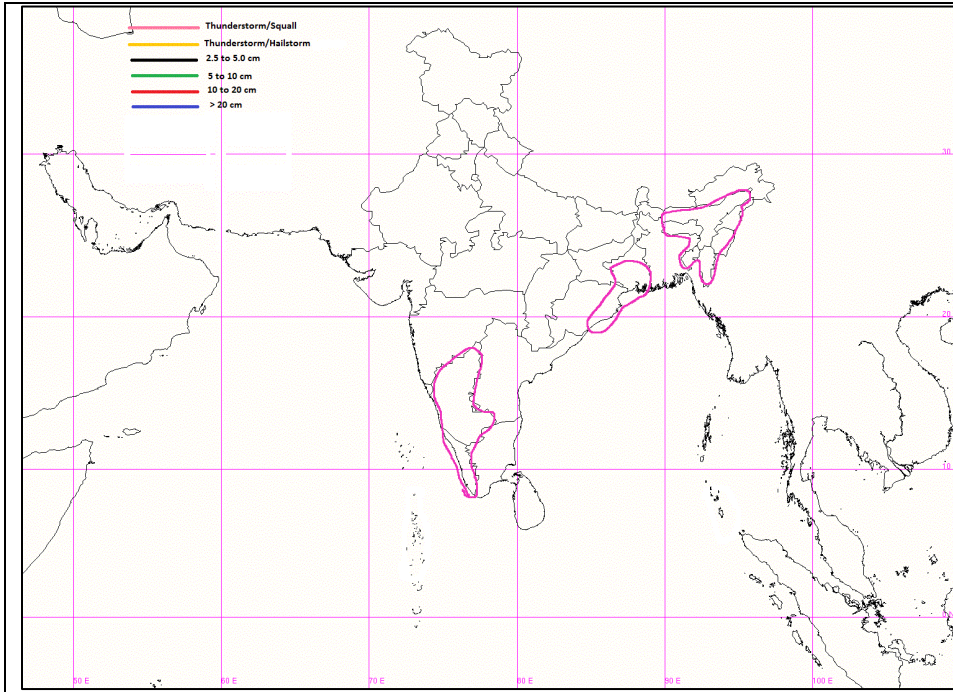
HEM:http://satellite.imd.gov.in/img/3Ddaily_he.jpg

ForRadarimagesofthepast24hoursincludingmosaicofimages:

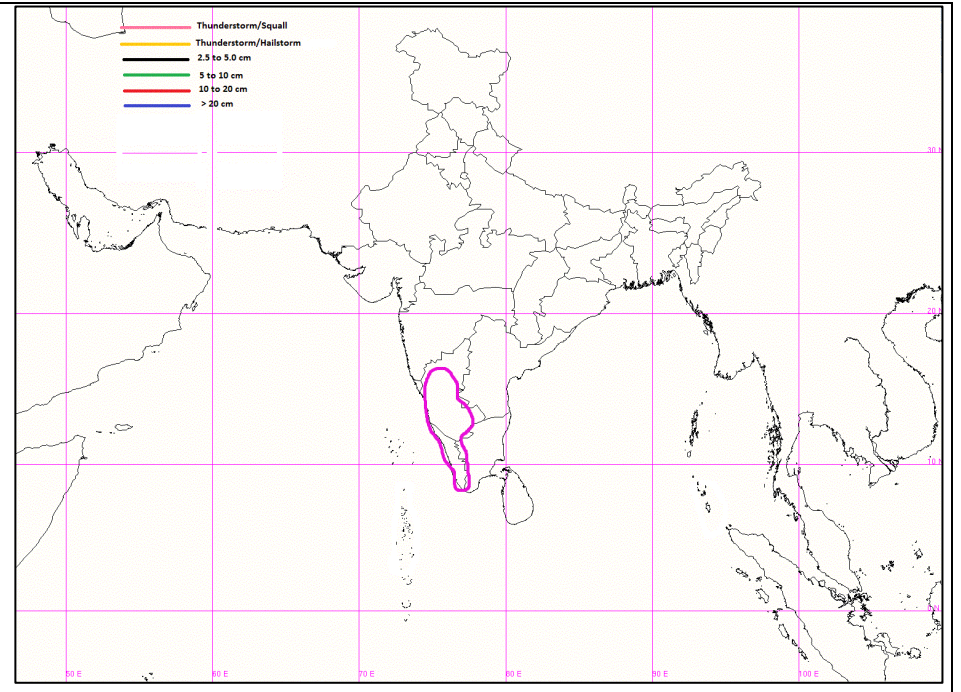
http://ddgmui.imd.gov.in/dwr_img/

Satellite sounder based T-Phi gram

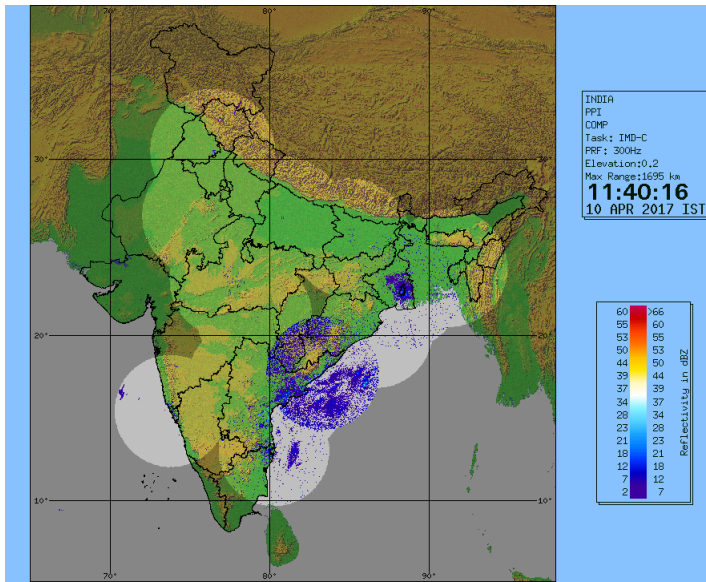
http://satellite.imd.gov.in/map_skm2.html



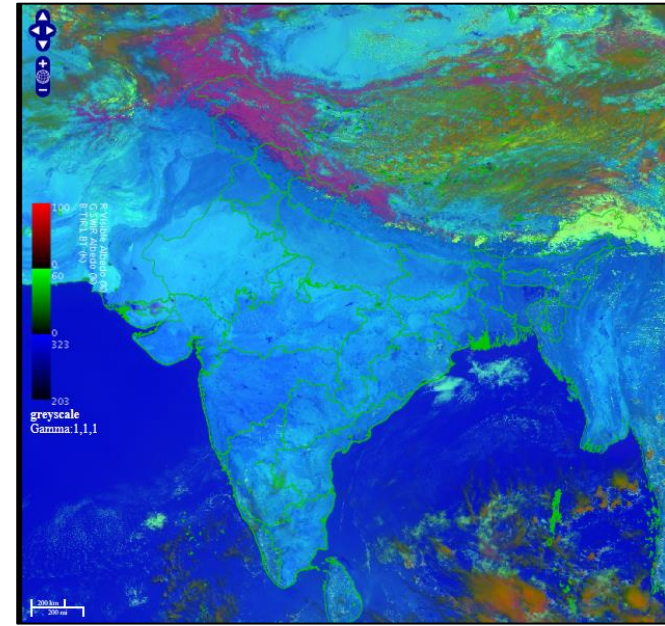
IOP Advisory for 24 hours



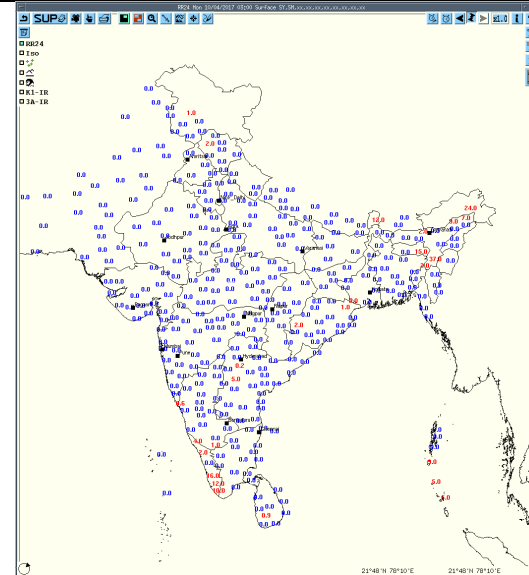
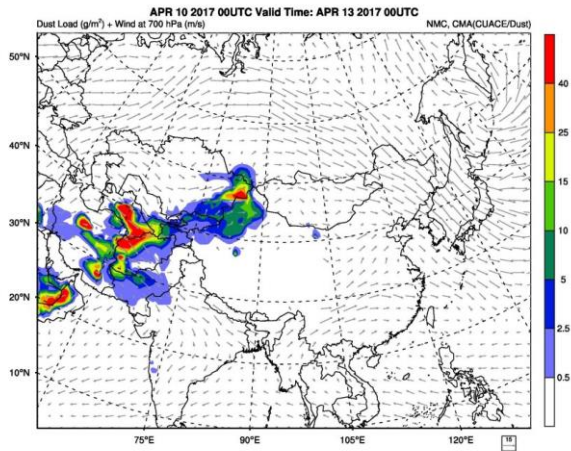
IOP Advisory for 48 hours



DWR Composite at 1140 hrs IST of today

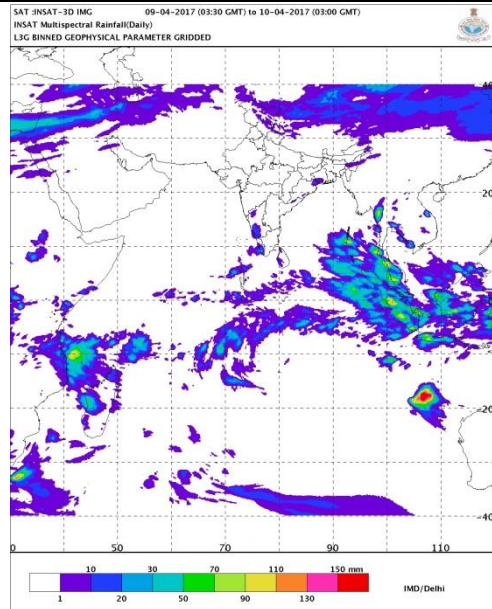


RAPID RGB Image of INSAT 3D at 1200hrs IST of today

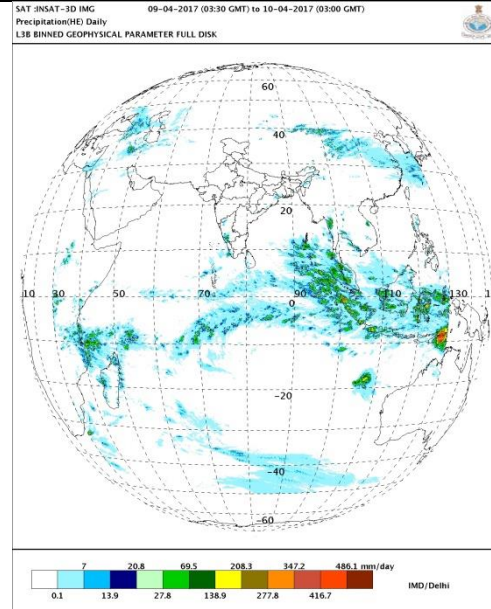


Forecast Dust Concentration for 00UTC of 13th April

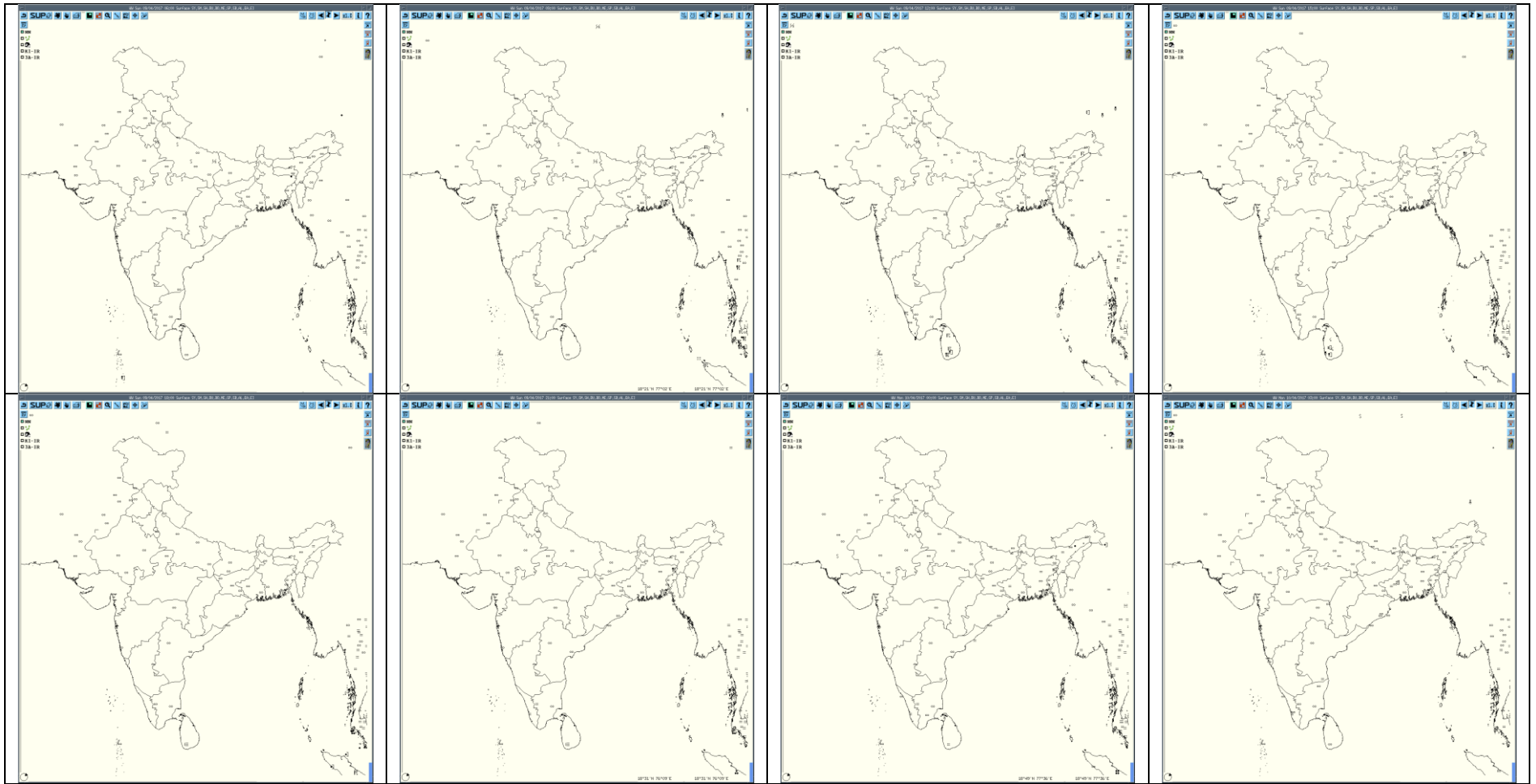
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today



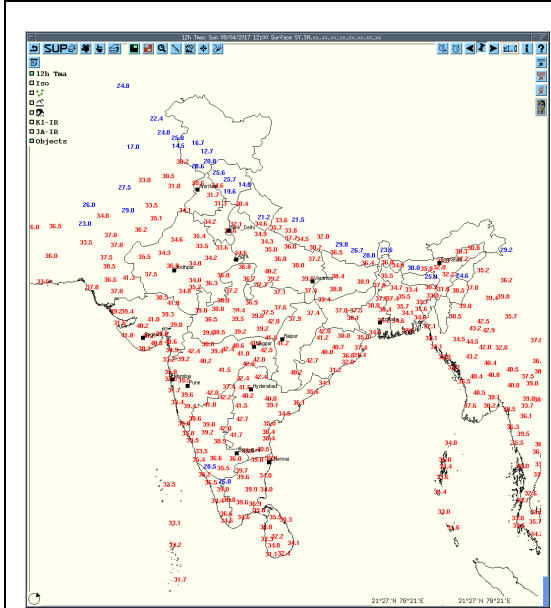
IMR Rainfall



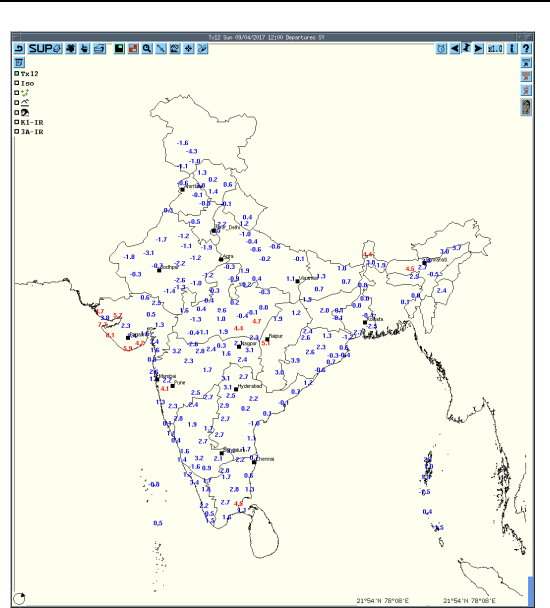
HEM Rainfall



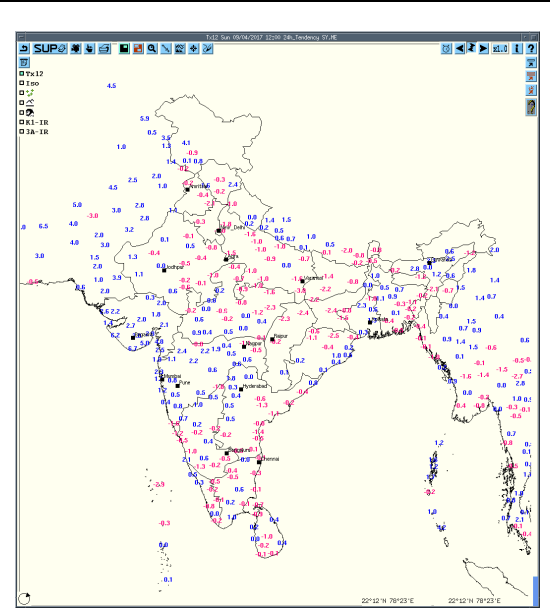
3hourly Past weather at 06, 09, 12, 15, 18, 21UTC of yesterday and 00 & 03 hrs UTC of today



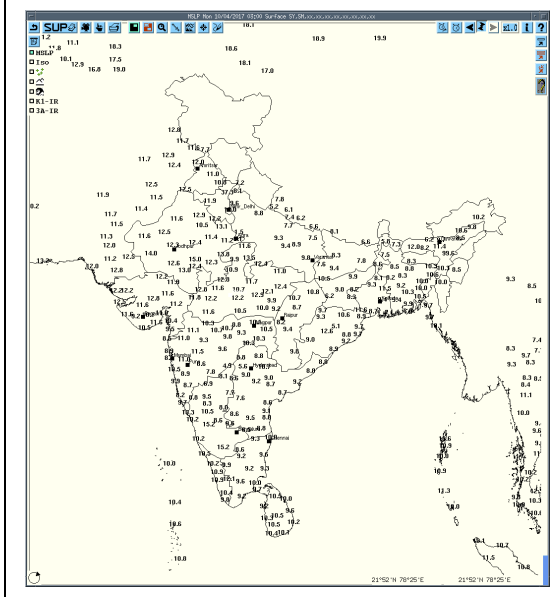
Tmax



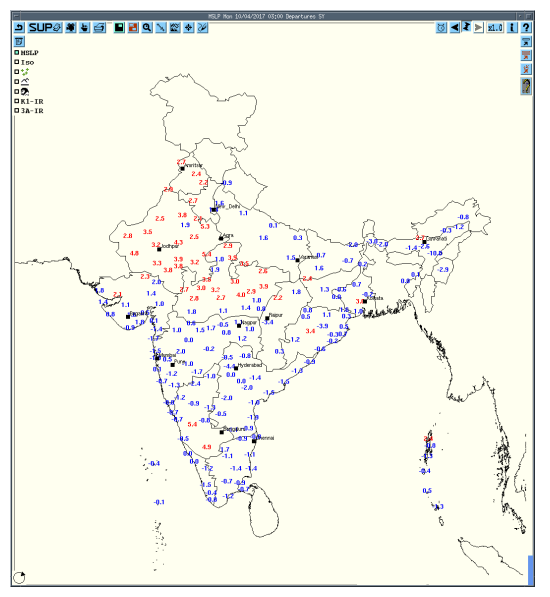
Departure Tmax



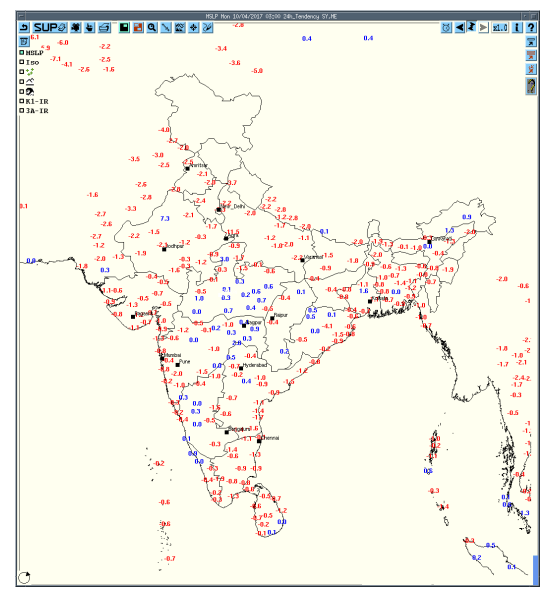
Tendency Tmax



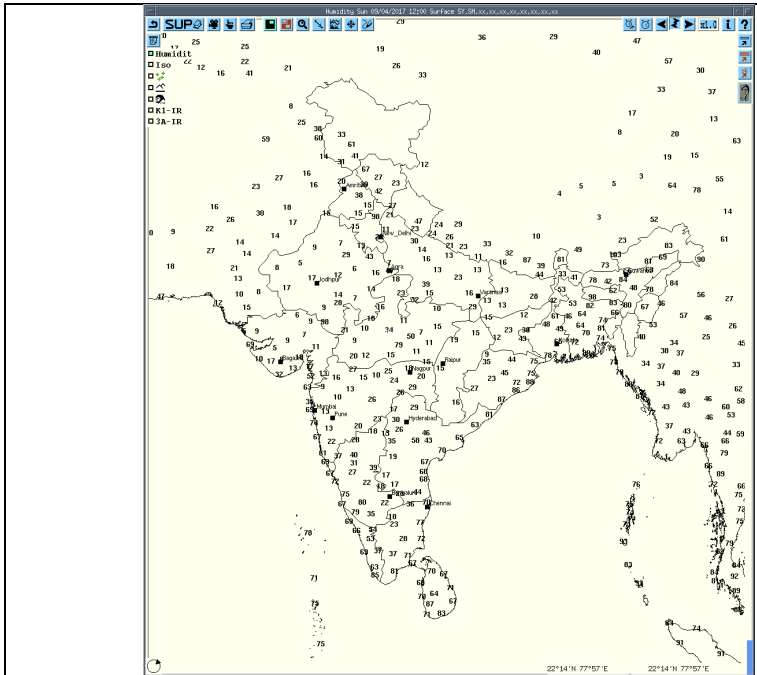
MSLP



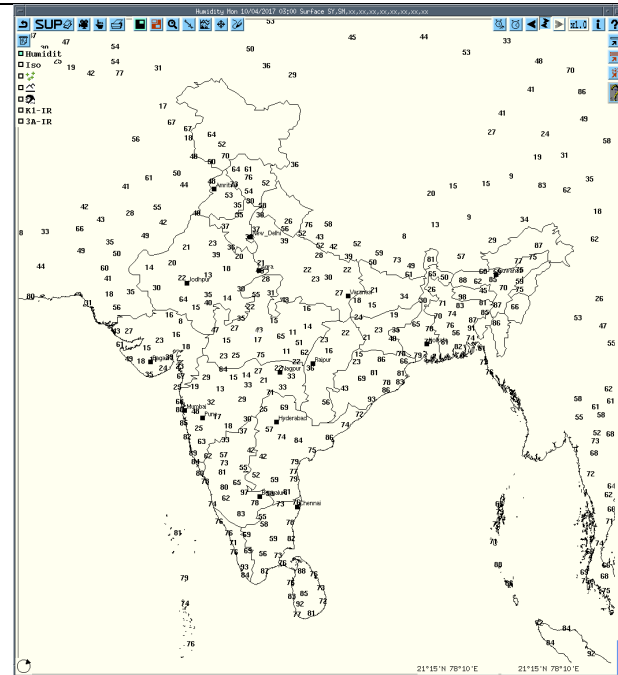
Departure MSLP



Tendency MSLP



RH at 12UTC yesterday



RH at 03UTC today

Realized weather past 24 hours (Based on SYNERGIE Products)

Date	Time of Reporting	Name of Station Reporting	Region	STATE	Weather Event
09-04-17	0600 UTC	Nil	Nil	Nil	Nil
09-04-17	0900 UTC	Passighat	Northeast India	Arunachal Pradesh	Thunderstorm
09-04-17	1200 UTC	Bajpe	South India	Karnataka	Thunderstorm
		Karipur	South India	Kerala	Thunderstorm
		Dibrugarh	Northeast India	Assam	Thunderstorm
09-04-17	1500 UTC	Belgaum	South India	Karnataka	Thunderstorm
		Kurnool	South India	Andhra Pradesh	Lightening
		Dibrugarh	Northeast India	Assam	Thunderstorm
09-04-17	1800 UTC	Nil	Nil	Nil	Nil
09-04-17	2100 UTC	Nil	Nil	Nil	Nil
10-04-17	0000 UTC	Nil	Nil	Nil	Nil
10-04-17	0300 UTC	Nil	Nil	Nil	Nil

Past 24 hours DWR Report:

Radar Station name	Date	Time interval of observation (UTC)	Organization of the cells (Isolated single cells/multiple cells/ convective regions/ squall lines) with height of 20 dBZ echo top and maximum reflectivity	Formation w.r.t radar station and Direction of movement	Remarks	Associate d severe weather if any	Districts affected
Agartala	10-04-17	090320-090730	Multiple Cells with Maximum Height 15 km and maximum reflectivity 49 dBZ (at 0620 UTC over South Assam)	NNE (150 KM) from DWR Agartala, at 0320 UTC of 09.04.17 moving Eastwards at around 35 kmph	Cells dissipated at 0730 UTC of 09.04.17 over South Assam & Manipur	N/A	N/A
		091430-100200	Multiple Cells with Maximum Height 15 km and maximum reflectivity 49 dBZ (at 2120 UTC over South Assam)	North (150 KM) from DWR Agartala, at 1430 UTC of 09.04.17 initially moving Eastwards and later ESE-wards at around 40 kmph	Cells dissipated at 0200 UTC of 10.04.17 over South Assam & Northern Tripura	TS with moderate rain at Silchar (Assam)	North & Unakoti Districts of Tripura Cachar District of Assam
Hyderabad	10-04-17	090652-090842	Isolated cells with an average height of 8 Kms with max reflectivity of 58.5 dBZ	Formed at SSW Direction, moving in SSW direction at a speed of about 5Km/hr	Cells started forming at 0652 UTC at SSW Direction (42 Kms) from radar. Matured between 0742 & 0812 and dissipated at 0842 UTC	Not known	Not Known.
		091012-091242	Scattered cells with an average height of 9 Kms with a max reflectivity of 57.0 dBZ.	SSE and SSW directions , moving in SSW direction at a speed of approx 9 Km/hr.	Cells started forming at 1012 UTC at SSE and SSW Directions. Matured during 1052 to 1202 and dissipated at 1232 UTC.	Not known	Not known
		091252-091432	Isolated cells with an average height of 10 Kms with a max ref of 55.5 dBZ	SSW direction moving with an approx speed of 9 Km/hr	Cells started forming at SSW Direction (138 Kms) from radar. Moved in SSW direction. Matured between 1312-1352 and dissipated at 1412 UTC.	Not known	Not known
Machilipatnam	10-04-17	09821-091101	Isolated cells, multiple cells with average height of 12 km with maximum reflectivity of 65.5 dBZ	NE(227.7KM) moving in SW'ly direction, average speed of 12kmph	Cells started forming at 0831 UTC at NE(235 km) from radar. Maximum reflectivity during 0851 to 0921 and died down at 1041 UTC	Possibility of hail with strong winds.	Visakhpatnam near Chintapalle
		090831-090901	Isolated ,single cell with	NW(225KM) stationary.	Cells started forming at 0831	Possibility	Warangal,

			average height of 5.3 km with maximum reflectivity of 50.5 dBZ		UTC at NW (224 km) from radar. Maximum reflectivity during 0841 to 0851 and died down at 0901 UTC	of rain with wind.	
		090841-091021	Isolated singlecell with average height of 10.3km with maximum reflectivity of 59.5 dBZ	NNE (178KM) stationary	Cells started forming at 0841 UTC at NE (182 km) from radar. Maximum reflectivity during 0921 to 0941 and died down at 1021 UTC	Possibility of rain with moderate wind.	East Godavari, near Rampacho davaram
		090931-091101	Isolated single cell with average height of 9 km with maximum reflectivity of 58 dBZ	NW (214KM) moving in SE'ly direction with average speed of 10 kmph.	Cells started forming at 0931 UTC at NW (214 km) from radar. Maximum reflectivity during 1001 to 1021 and died down at 1101 UTC	Possibility of rain with moderate wind.	Warangal near Narsampet
		091111-091211	Isolated single cell with average height of 4.2 km with maximum reflectivity of 55 dBZ	NW (179KM) moving in S'ly direction with average speed of 7 kmph.	Cells started forming at 1111 UTC at NW (183 km) from radar. Maximum reflectivity during 1151 to 1201 and died down at 1211 UTC	Possibility of rain	Yellandu
Vishakhapat nam	10-04-17	090600-090900	Isolated cells NE 180km with average height of 13 km with max reflectivity 55dbz and Isolated cells WSW 106 km with average height of 14kms with max reflectivity 54dbz	NE (180kms) moving Ely	Cells are formed at 08.21UTC into a well conviction with reflectivity 55dbz. Max reflectivity during the period 08.41UTC to 09.01 UTC and start dissipating.	--	--
		090900-091200	Isolated single cells towards NW around 70km with average height of 13 km with max reflectivity 57dbz and NE around 190km with average height of 10km with max reflectivity 52dbz	NW (70kms) moving Ely	Cells are formed at 08.21UTC into a well conviction with reflectivity 57dbz. Max reflectivity during the period 09.11UTC to 10.01 UTC and start dissipating.	--	--
		091200-091500	Isolated single cells towards Nly around 70 and 145 km with average height of 9 km with max reflectivity 45dbz and NE around 200km with average height of 9 km with max reflectivity 50dbz	N (70,145km,) & NE(200km) moving SEly	Cells are formed at with Max reflectivity 50dbz during the period 14.41UTC to 14.51 UTC and start dissipating.	--	--
		091500-091800	Isolated single cells towards NE around 200km with average height of 9 km with max reflectivity	NE (200km,) moving SEly	Cells are start dissipating from 15.01 UTC and dissipated completely at 15.31 utc	--	--

			43dBZ				
		091800-092100	Isolated single cells towards S around 160km with average height of 6 km with max reflectivity 40dBZ	S (160km,) moving SWly	Cells are start forming at 20.21 UTC, not matured well and dissipating .	--	--
		100000-100300	Isolated single cells towards SW around 170km with average height of 5 km with max reflectivity 50dBZ	SW (Moving NWly)		--	--
Paradeep	10-04-17	090300-091500	Isolated cells with max. reflectivity value of 58 dBZ and av. heights of 12km approx. and exceeding 14kms. in later stages. A single isolated cell also observed at 267 deg. And at the range of 211kms. approx.	Position: NW sector of the radar between 300-359 degrees and in the range of 150- 200 kms. Movement: NWly	---	TS with rain	Mayurbhanj, Keonjhar , Dhenkanal, Jajpur, Cuttack, Nayagarh, Khorda.
Mohanbari	10-04-17	090442-090542	Cell type: Isolated Max. ht.: 9.0 Km MAX_Z: 57.5 dBZ	Distance- 124 Km Direction- NE Movement- NEly	Cell moved towards Ely and Max_Z found 57.5 dbZ with ht. 9.0 Kms at 0452 UTC at a distance 124 Kms. The cell started dissipating around 0522 UTC at a distance 160Kms.	N/A	Lohit
		090332-090922	Cell type: Multiple Max. ht.: 12.1 Km MAX_Z:- 58.5 dBZ	Distance- 74 Km Direction- NE Movement- NEly	The matured cell moved Ely with same intensity and ht. and started dissipating from 0942 UTC at a distance 140 Kms .	N/A	Tinsukia
		090602-091102	Cell type: Multiple Max. ht.- 12.1 Km MAX_Z:- 59.0 dBZ	Distance- 120 Km Direction- SW Movement- NEly	The cell was formed at around 0602UTC 210Km SW of station. Moves NEly and continue moving NEly.	N/A	Dibrugarh, Tinsukia
Kolkata	10-04-17	090311-090711	NIL	NIL	NO ECHO	NIL	NIL
			1.Isolated single cells with maximum height of 11.65 Km at 0741 UTC and maximum reflectivity of 52.0 dBz at 0751 UTC 2. Single cell forming from	WSW (212.6 km) and almost no movement. WSW (248.2 km) moving	Cell started forming at 0721 UTC at WSW (212.6 Km) from radar. Not matured, dissipated at 0911 UTC in WSW at a distance of 215.4 km from Radar. Cells started forming at 0901	Thunderstorm /Rain Thunderstorm	N/A N/A

		090721-091402	isolated cells with maximum height of 15.85 Km at 1001 UTC and maximum reflectivity of 61.5 dBz at 1001 UTC 3. Multicelled system developed from 2. with maximum height of 16.57 Km at 1051 UTC and maximum reflectivity of 65.0 dBz at 1051 UTC	in ESE-ly direction at a speed of 26.3 kmph. WSW (248.0 km) moving in E-ly direction at a speed of 30.6 kmph	UTC at WSW (248.2 Km) from radar. Combined and Matured, converted to multicelled system at 1041 UTC Multicelled system developed from 2. at 1041 UTC at WSW (248.0 Km) from radar. Matured, split at 1111 UTC in SW at a distance of 203.3 km from Radar.	orm /Rain/Hail Thunderstorm /Rain/Hail	N/A
		090721-091402	4. Isolated single cells with maximum height of 14.51 Km at 1141 UTC and maximum reflectivity of 58.0 dBz at 1111 UTC 5. Isolated single cell with maximum height of 17.55 Km at 1251 UTC and maximum reflectivity of 62.0 dBz at 1241 UTC	W to SW (196 km) moving in E-ly direction at a speed of 32.4 kmph. WSW (245.4 km) moving in ENE-ly direction at a speed of 32.4 kmph	Cells from 3. And some other cells formed from West to SW at a distance around 196 km from radar. Matured, dissipated at 1241 UTC in SW at a distance of 201.8 km from Radar. Cell started forming WSW (245.4 Km) from radar. Matured, dissipated at 1402 UTC in W at a distance of 180.8 km from Radar	Thunderstorm /Rain Thunderstorm /Hail/Rain	N/A N/A
		091412-092351	NIL	NIL	NO ECHO	NIL	NIL
		100001-100302	NIL	NIL	NO ECHO	NIL	NIL
Patna	10-04-17	090300-100300	Nil	Nil	Nil	Nil	Nil
Nagpur	10-04-17	090302-100302	Nil	Nil	Nil	Nil	Nil
Patiala	10-04-17	090302-100252	Nil	Nil	Nil	Nil	Nil
Lucknow	10-04-17	090648-091640*			*DWR U/S during 090300-090648 & 091640-100300		

∞	haze
⌋	smoke
⌋	dust or sand storm
≡	fog
⌋	drizzle
•	rain
*	snow
▽	showers
△	hail
⌋	thunderstorm
Weather Symbols	



+ thunderstorm



+ heavy thunderstorm



sandstorm or dust storm



squall



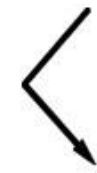
hail shower



tropical storm



+ tornado



+ lightning



+ hurricane

www.visualdictionaryonline.com