

India Meteorological Department FDP STORM Bulletin No. 9 (15-03-2018)

1. CURRENT SYNOPTIC SITUATION:

NWFC INFERENCE (0300UTC of the Day):

• The well marked low pressure area over Lakshadweep and adjoining southeast Arabian Sea persists. Associated cyclonic circulation extends upto mid-tropospheric level. System is likely to move north-northwestwards and weaken gradually over southeast & adjoining eastcentral Arabian Sea during next 24 hours.

♦ The Western Disturbance as a cyclonic circulation now lies over north Pakistan and adjoining Jammu & Kashmir at 3.1 km above mean sea with a trough aloft in mid & upper tropospheric westerlies with its axis at 5.8 km above mean sea level roughly along Long. 70°E to the north of Lat. 25°N.

• The induced upper air cyclonic circulation over Punjab & neighbourhood now lies over Punjab & adjoining Haryana and extends upto 1.5 km above mean sea level.

♦ A trough runs from the above system to Telangana, across southwest Uttar Pradesh, East Madhya Pradesh and East Vidarbha and extends upto 1.5 km above mean sea level.

• The trough from east Bihar to Manipur across north Bangladesh has become less marked however the embedded cyclonic circulation over Sub-Himalayan West Bengal and adjoining Bihar & Jharkhand now lies over east Bangladesh & neighbourhood and extends upto 2.1 km above mean sea level.

• The cyclonic circulation over north Madhya Maharashtra & adjoining Madhya Pradesh extending upto 1.5 km above mean sea level has become less marked.

SATELLITE OBSERVATIONS during past 24hrs and current observation:

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

LOW LEVEL CIRCULATION (LLC) OVER ARSEA:-

Broken low/medium clouds with embedded intense to very intense convection seen over Southeast Arabian Sea & neighbourhood in association with LLC over the area.

WESTERN DISTURBANCE (WD):

Broken low/medium clouds with embedded moderate to intense convection was observed over Jammu & Kashmir, North Himachal Pradesh and Uttarakhand and over the area between Lat 37.0N to Lat 47.0N Long 75.0E to 96.0E in association with WD over the area.

Clouds description within India:

Scattered low/medium clouds with embedded weak to moderate convection seen over Uttar Pradesh, Haryana, Nagaland, Manipur, Meghalaya, Assam and Bay Islands.

Scattered low/medium clouds with embedded weak convection seen over Sikkim, Arunachal Pradesh, Jharkhand, Bihar, Chhattisgarh, Odisha, South Gangetic west Bengal,

Broken low/medium clouds with embedded weak convection seen over Madhya Pradesh, Maharashtra, Goa,

Broken low/medium clouds with embedded isolated moderate to intense convection was observed South coastal Karnataka, South Interior Karnataka, Kerala, Tamilnadu,

Arabian Sea:

Broken low medium clouds with embedded moderate to intense convection seen over rest Southeast Arabian Sea Comorin adjoining Indian.

Bay of Bengal & Andaman Sea:

Scattered low/medium clouds with embedded moderate to intense convection seen over North Srilanka, Gulf of Mannar. No significant clouds over Bay of Bengal and Andaman Sea.

Past Weather:

Convection (during last 24 hrs):-

Intense to very Intense convection was observed over Kerala South interior Karnataka Tamilnadu Lakshadweep and Moderate to intense convection observed over J&K Himachal Pradesh Uttarakhand Haryana North-East States and weak to Moderate convection observed over Madhya Pradesh Karnataka Maharashtra Rayalaseema South Coastal Andhra Pradesh.

OLR:

Upto 150 was observed over North and South Jammu & Kashmir

Upto 230 wm⁻² observed over rest J&K North Himachal Pradesh Haryana North Uttarakhand east Uttar Pradesh east Madhya Pradesh North West and South Bihar North Jharkhand south Chhattisgarh Sikkim Arunachal Pradesh Nagaland Manipur Assam Meghalaya Kerala Tamilnadu

Upto 250 wm⁻² observed over Karnataka Rayalaseema South Coastal Andhra Pradesh & rest North-East States.

Synoptic features:

Westerly Trough & Jet-Stream: Trough in westerlies roughly along Longitude 65°E to the north of Latitude 25°N.

Dynamic Features:

Negative shear tendency is observed over north Rajasthan Punjab Jammu & Kashmir Himachal Pradesh East Uttar Pradesh Bihar Jharkhand Gangetic West Bengal North-East States and Positive shear tendency over rest parts of India.

Medium to high wind shear is observed over North & Central India and low wind shear over South Peninsula region.

A positive Vorticity field is observed over Jammu & Kashmir Himachal Pradesh Punjab Haryana Rajasthan Uttar Pradesh North Maharashtra north Chhattisgarh Bihar Jharkhand Gangetic West Bengal.

Negative Low Level Convergence is observed over East Uttar Pradesh north Bihar West Bengal and Positive Low Level Convergence over rest parts of India.

Precipitation:

IMR:

Rainfall 70-90 mm observed over North Jammu & Kashmir, South Interior Karnataka and

Rainfall 30-50 mm observed over rest J&K Kerala and

Rainfall 1-10 mm observed over rest J&K North Himachal North Uttrakhand North Arunachal Pradesh rest Karnataka, Kerala Tamilnadu South Andhra Pradesh

HEM:

Rainfall upto 140 mm observed over West J&K south Tamilnadu north Kerala south Karnataka and

Rainfall upto 14 mm observed over North Kerala North Tamilnadu Karnataka North-East States.

RADAR and RAPID RGB Observation:

Light to Moderate convection was seen in domain of DWR Thiruvananthapuram, Srinagar, Patiala and Lucknow around 1730IST. Light convection is seen over East Himachal Pradesh, Uttarakhand, South Interior Karnataka, Kerala and interior Tamilnadu in RAPID RGB Satellite imagery at 1630IST.

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

Higher Dust concentration was observed over Arab countries and north- western part of India. Dust concentration is expected to decrease over north-western part of India for next five days. PM10 concentration is expected to increase over IGP in next five days. Particulate matter concentration is expected to remain in moderate to poor category for next 2 days in Delhi.

Delhi – SAFAR analysis & Forecast	15.03.2018	16.03.2018
PM10 (micro-g/m ³)	238	215
PM2.5 (micro-g/m ³)	106	95

2. NWP MODEL GUIDANCE:

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

1. Weather Systems: Low level CYCIRs, Troughs:

12 UTC of Day 0-1: CYCIR over Arabian Sea moving west-northwestward
12 UTC of Day 0: 850 hPa Trough over Punjab and adjoin area
12 UTC of Day 0-4: Trough at 850 hPa over East and NE India & adjoining Bangladesh in Day 0-3
00 UTC of Day 0-2: Trough at 850 hPa over Central India

Confluence & wind Discontinuity regions:

12 UTC of Day 0- 4: NE–SW wind discontinuity over central India extending from Maharashtra-Madhya Pradesh-Chhattisgarh-Odisha.
 In Day 0-2 N-S wind discontinuity over southern peninsular India
 Synoptic Systems: 12 UTC of Day 0-3: Anticyclone at 925 hPa over Bay of Bengal leading to moisture incursion over Indian land
 12 UTC of Day 0-1: At 500 hPa Western disturbance as trough over J&K.

2. Location of jet and jet core (>60kt) at 500hPa: Weaker core winds at 12 UTC on all days except Day 1 over India.

3. Convergence at 850 hPa:

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

Day0: NE NMMT, Jharkhand, Odisha, Coastal AP, Rayalaseema, SI Karnataka,

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Gangetic WB, Jharkhand, East Rajasthan, Odisha, East Madhya Pradesh, Chhattisgarh, Coastal AP, Rayalaseema, SI Karnataka,

Day2: Arunachal Pradesh, Assam Meghalaya, Gangetic WB, Jharkhand, Odisha, East Madhya Pradesh, Chhattisgarh, Coastal Karnataka,

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Odisha, Madhya Maharashtra, Coastal AP,

Day4: Odisha, Madhya Maharashtra, Coastal AP,

4. Spatial distribution of Low level Vorticity:

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

Day0: Assam Meghalaya, Sub Himalayan WB, Gangetic WB, Jharkhand, Uttarakhand, Odisha, Vidarbha, NI Karnataka, Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Gangetic WB, Uttarakhand, Himachal Pradesh, Odisha, East Madhya Pradesh, Chhattisgarh, Coastal AP, Telangana, Day2: Arunachal Pradesh, Assam Meghalaya, Sub Himalayan WB, Gangetic WB, Bihar, Uttarakhand, Himachal Pradesh, Coastal AP, Day3: Arunachal Pradesh, Assam Meghalaya, Uttarakhand, Odisha, Coastal AP, Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Himachal Pradesh

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

Day/Index: Subdivisions with Showalter Index < -4

Day0: Arunachal Pradesh, Sub Himalayan WB, Bihar, Punjab, Himachal Pradesh, Jammu Kashmir,

Day1: Assam Meghalaya, NE NMMT, Sub Himalayan WB, Jammu Kashmir, Coastal AP, Tamilnadu Puducherry,

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

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Coastal Karnataka, SI Karnataka, Kerala,

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

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

Day/Index: Subdivisions with K Index > 40

Day0: Arunachal Pradesh, Sub Himalayan WB, Rayalaseema, Tamilnadu Puducherry, Coastal Karnataka, SI Karnataka, Kerala, Day1: Konkan Goa, Madhya Maharashtra, Coastal AP, Telangana, Rayalaseema, Tamilnadu Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka,

Day2: Arunachal Pradesh, Tamilnadu Puducherry, Coastal Karnataka, SI Karnataka,

Day3: NE NMMT, Coastal Karnataka,

Day4: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Coastal Karnataka, NI Karnataka, Kerala

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, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Haryana, Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West Rajasthan, East Rajasthan,

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, East UP, West UP, Uttarakhand, Haryana,

Chandigarh, Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West Rajasthan, East Rajasthan, West Madhya Pradesh,

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir, Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Himachal Pradesh, Jammu Kashmir,

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

8. Rainfall and thunder storm activity:

Day/Index: Subdivisions with Precipitation > 2 cm

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Punjab, Himachal Pradesh, Jammu Kashmir, Telangana, Tamilnadu Puducherry, SI Karnataka, Kerala,

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Chhattisgarh, Coastal AP, Telangana, Rayalaseema, Tamilnadu Puducherry, Coastal Karnataka, SI Karnataka,

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Coastal AP, Rayalaseema, Tamilnadu Puducherry, SI Karnataka, Kerala, Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Tamilnadu Puducherry, Kerala,

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

1. Synoptic Systems:

The analysis based on 00 UTC shows an induced cyclonic circulation in the lower tropospheric levels over Punjab and adjoining areas associated with the trough in upper level westerlies gradually moves eastward in day 1 over west Uttar Pradesh and adjoining areas and moving further eastward it lies as a trough over East Uttar Pradesh in day 2. A trough in lower troposphere is seen from Punjab to Telangana extending over west Uttar Pradesh, East Madhya Pradesh and east Vidarbha. The trough orients along nearly northeast-southwest direction from North Bihar to Madhya Maharashtra in day 1 and persists in day 2. The eastern end of the trough moves southward and extends from GWB to Madhya Maharashtra in day 3. In the analysis, another north-south oriented trough over SHWB, Assam and Meghalaya region to GWB persists for 3 days. The cyclonic circulation over Southeast Arabian associated with the well-marked low pressure area over the region gradually weakens as it moves further north-westward direction over east-central Arabian Seas in next 3 days.

2. Location of Jet and Jet Core (>60kt) at 500hPa:

Although the presence of strong westerlies is found but no jet core over the Indian region for the next 3 days.

3. Low Level Vorticity {850hPa Positive Vorticity (>12 x 10⁻¹/s)}:

Mostly associated with the cyclonic circulation and along the trough also seen along foothills of Himalayas from Punjab to north eastern states during next 3 days.

4. Spatial distribution of T-storm Initiation Index, Lifted Index, Total Total Index, CAPE, CIN and Sweat Index [High potential for thunderstorm]:

T-Storm Initiation Index (> 4): Higher than threshold value 4 over parts of Gujarat, Rajasthan, East Uttar Pradesh, parts of Assam, Meghalaya and Tripura, south Konkan & Goa, coastal Andhra Pradesh and Tamil Nadu in day 1. During day 2: over parts of East

Madhya Pradesh, Telangana, Chhattisgarh Jharkhand, Gangetic West Bengal and SHWB. Over North-eastern States, Gangetic west Bengal and Odisha, Andhra Pradesh, Rayalaseema, Interior Karnataka, coastal Karnataka and south Konkan & Goa on day 3.

Lifted Index (< -2): the spatial coverage of the index nearly follows the pattern of T-storm initiation index during all three days over peninsular India and North-Eastern India but it does not show any significant zone over central and east India.

Total Total Index (> 50) : Above threshold value mostly over parts of GWB and Orissa and most parts of northwest India and adjoining areas on day1 and 2. It extends eastward over Gangetic plains during day 3.

Sweat Index (> 300): Mostly it follows the spatial coverage pattern of T-Storm Initiation Index and some areas over J & K, Himachal and Uttarakhand.

CAPE (> 1000): Mostly along southern part of west coast and east coast during next 3 days.

CIN (50-150): Over parts of Gujarat and adjoining Rajasthan, East Uttar Pradesh and coastal Andhra Pradesh on day 1. Over parts of Vidarbha, East Madhya Pradesh, Chhattisgarh, Jharkhand and GWB on day 2, over parts Jharkhand, Orissa, GWB, Assam and Meghalaya on day3.

5. Rainfall Activity:

40-70 mm Rainfall: over parts of Arunachal Pradesh in day 1 and 2, over parts of South interior Karnataka, adjoining Tamilnadu and Rayalaseema in day 3.

10-40 mm Rainfall: Over Kerala and costal and south interior Karnataka and parts of Arunachal Pradesh on day 1; over parts of Arunachal Pradesh, south interior Karnataka, Rayalaseema, coastal Andhra Pradesh and Adjoining Tamilnadu on day 2; Over parts of NNMT, Arunachal Pradesh, Kerala, south interior Karnataka, adjoining Rayalaseema and Tamilnadu on 3.

Up to10 mm rainfall: Over rest of the peninsular India during next 3 days. Over parts of J & K, Himachal Pradesh, Uttarakhand, Uttar Pradesh and rest of NE States on day 1, over parts of Marathwada, Vidarbha, East Madhya Pradesh, Chhattisgarh, Jharkhand, Orissa and GWB during next 2 days.

IMD WRF (9km based on 00UTC of the day):

1. Model Reflectivity (Max. dBz):

> 20 dBZ Model Reflectivity: On day 1 over parts of J&K, Himachal, Punjab, Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, Vidarbha, Madhya Pradesh, Madhya Maharashtra, Konkan and Goa and Arunachal Pradesh; During day 2, over parts of Arunachal Pradesh, Telangana and adjoining south Chhattisgarh and Marathwada; On day 3, Arunachal Pradesh, Marathwada and North Interior Karnataka.

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

Total Total Index (> 50) : Above threshold value is observed over most parts of the country except south peninsula, Bihar, Jharkhand Orissa and eastern states on day 1 and 2, Above threshold value is observed over most parts of the country except south peninsula on day 3.

K-Index (> 35): Less than threshold value is observed over the country during the next 2 days.

CAPE (> 1000): Greater than threshold value over the southern part of west coast, east coast, and parts of Kerala, Tamil Nadu, Konkan and Goa NE states during the next 72 hours. Over some parts of Rajasthan, Uttar Pradesh, coastal Andhra Pradesh, Tamil Nadu, Konkan and Goa and adjoining areas during next 24 hours.

CIN (50-150): Mostly over Punjab, Haryana, Uttar Pradesh, west coast, east coast, Gangetic West Bengal and parts of north eastern states during next 3 days.

3. Rainfall and thunderstorm activity:

Rainfall 40-70 mm: over parts of Arunachal Pradesh on day 1 and 2.

Rainfall 10-40 mm: over parts of J&K, Himachal Pradesh and Uttarakhand on day1; over parts of Kerala, South interior Karnataka, south Tamil Nadu on day 1 and 2; over coastal Karnataka, Konkan and Goa and Kerala on day 3; Over parts of Assam, Arunachal Pradesh, Tripura and adjoining areas during next 3 days.

Rainfall up to 10 mm: over parts of J&K, Himachal Pradesh and Uttarakhand, Uttar Pradesh, parts of Rajasthan, Bihar, Jharkhand, Chhattisgarh, East Madhya Pradesh, Vidarbha, South Maharashtra and Chhattisgarh on day1; over eastern states, GWB, south interior Karnataka, Rayalaseema, Kerala Tamilnadu and Andhra Pradesh on day 1 and 2; over Madhya Maharashtra, Konkan and Goa, coastal Karnataka and Kerala on day 3.

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:

- Present western disturbance lies over north Pakistan and adjoining Jammu & Kashmir and induced cyclonic circulation over Punjab and adjoining Haryana and considering model guidance; due to the above system Jammu & Kashmir experienced widespread precipitation activity during next 24 hours. The associated cloud mass from western parts of western Himalayan region moved eastwards. Thunderstorm with gusty winds likely over northwest Uttar Pradesh during next 24 hours.
- Due to trough from Punjab to Telangana across central India in lower levels and moisture incursion from Bay of Bengal through anti-cyclone over southwest Bay of Bengal and south westerly flow in mid-tropospheric levels westerly over north peninsular India and favourable dynamic conditions and model guidance; the thunderstorm with gusty winds likely over some parts of northern Peninsular, east and adjoining central India during next 48 hours.
- Due to upper air cyclonic circulation over east Bangladesh & neighbourhood in lower levels and upper air strong westerly flow over the region and model guidance indicated that the thunderstorm with gusty winds and hailstorm likely over Assam & Meghalaya and Nagaland, Manipur, Mizoram, Tripura on 16th and 17th March.

Day-1 & Day-2:

24 hour Advisory for IOP:	48 hour Advisory for IOP:
Rainfall:	Rainfall:
Lakshadweep and Minicoy Islands	NIL
Thunderstorm with associated phenomenon:	Thunderstorm with associated phenomenon:
West Uttar Pradesh	West Bengal & Sikkim, Bihar, Jharkhand, Odisha,
West Bengal & Sikkim, Jharkhand, Odisha,	Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura,
Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura,	North Interior Karnataka, South Interior Karnataka
West Madhya Pradesh, Vidarbha	Telangana, Rayalaseema, Coastal Andhra Pradesh, Tamilnadu
South Konkan & Goa, South Madhya Maharashtra, Marathwada	
Tamilnadu, Kerala, Karnataka, Telangana, Rayalaseema,	

Graphical Presentation of Potential Areas for Severe Weather:













Past 24 hours DWR Report:

DWR Station	Date of	Time	Organisation of cells (Isolated	Formation w.r.t. radar	Remarks	Associated	Districts affected
Name	Report	Interval	single cells/multiple	station and Direction of		Severe	
	-	of	cells/convective regions/squall	movement		Weather	
		Observ	lines) with height of 20 dBZ			if any	
		ation	echo top and maximum			-	
		(UTC)	reflectivity				
Agartala	15/03/18	14/0300	ISLTD SINGLE,47 dBZ,	100Kms ESE(Dhalai dist and	Dissipated locally.	Not known.	Not Kown.
		-	Ht 8kms approx.	adjoining Bangladesh)/No			
		15/0300		movement			
Lucknow	15/03/18	14/0300	NIL	NIL	NIL	NIL	NIL
		-					
		15/0300					
Jaipur	15/03/18	14/1832	Multiple cell with average height	Multiple cell develop from	Cell starts forming from	Thunderstorm/ra	Alwar, Churu, Sikar,
		-	4.0 km and maximum reflectivity	1832 UTC of 23/01/2018 in	14.03.2018 in W, WNW	in at Isolated	Jhunjhunu, and
		15/0302	49.0 dBZ	W, WNW, Jaipur and moved	of Jaipur and reaches	places	Nagaur district
				N, NE wards at speed 25-30	maximum reflectivity		
				km/hr	during 2342-0122 UTC of		
Patiala	15/02/19	14/1200		NW SECTOR MOVEMENT	15/03/2018 (continues.)		Bakhra Dam Bunthar
Fallala	15/05/16	- 1500	Ht 8-9 km	NE			Dharamshala and Its
		- 1000	11. 0-3 Km				adioing areas.
		14/1500	MULTIPLE CELLS 39.0 dBZ	NNE SECTOR MOVEMENT			Keylog, Chamba and
		-1800	Ht. 911km	E			Its adjoing areas.
		14/	MULTIPLE CELLS 38.0 dBZ	NW SECTOR MOVEMENT			Grudaspur, Amritsar,
		2100-	Ht. 9-11 km	NE			Uttarkashi and Its
		0000					adjoing areas.
		15/0000	MULTIPLE CELLS 42.0 dBZ	NW,SW SECTOR			Ferozpur, Amritsar,
		-0252	Ht. 9-10 km	MOVEMENT NE			Kapurthala, Jalandhar, Mandi, Dowdla, and Ita
							adioing areas
Visakhapatnam	15/03/18	14/03/1	0900 UTC	CB CELL of max reflectivity	Formed a line of cb cells	Likely to be	NII
, iouniapatiani	.0,00,10	8	1200 UTC	56dbz formed SW lv at a	and moving SElv .	dissipated with a	
		-		distance of 78kms with		possibility of	
				height 6kms		gusty winds in	
						the sea.	
		15/03/1	0000 UTC	Cb cell of 54dbz NNE ly with	-	-	NIL
		8	0300 UTC	height 4kms.			

Realised past 24hrs TS/SQ/HS Data:

Realised TS/HS/SQ during past 24 hours ending at 0300UTC of today(received from RMCs/MCs)						
Name of Station Reporting	Region	State/Sub Division	Weather Event (TS/Hail/Squall)	Date	Time of Commencem ent (IST)	Time of end (IST)
Daltonganj	East India	Bihar	Thunderstorm	15-03-18	0600	0610
Jabalpur	Central India	Chhattisgarh	Thunderstorm	15-03-18	0600	0715
Pamban	South India	Tamilnadu	Thunderstorm	14-03-18	2020	2025
Kannur	South India	Kerala	Thunderstorm	14-03-18	1350	1445
Karipur A P	South India	Kerala	Thunderstorm	14-03-18	1530 2340	1625 2340
Amini	South India	Lakshadweep Islands	Thunderstorm	14-03-18	1300 0615	1310 0620
Minicoy	South India	Lakshadweep Islands	Thunderstorm	14/15-03-18	1630 0500	2100 0830
Srinagar	Northwest	Jammu & Kashmir	Thunderstorm	14-03-18	2040 0215	2044 0230
Qazigund	Northwest	Jammu & Kashmir	Thunderstorm	14-03-18	2110	0110
Pahalgam	Northwest	Jammu & Kashmir	Thunderstorm	14-03-18	1350 1530 2050	1410 1600 2200
Kukernag	Northwest	Jammu & Kashmir	Thunderstorm	14-03-18	1615 0140	1630 0450
Jammu	Northwest	Jammu & Kashmir	Thunderstorm	14-03-18		
Banihal	Northwest	Jammu & Kashmir	Thunderstorm	14-03-18	1235 1545 0145 0805	1250 1555 0530 0830
Batote	Northwest	Jammu & Kashmir	Thunderstorm	14-03-18	0250	0830
			Hail (Diameter 1.0, 1.2, 1.5 cm)	15-03-18	0528 0610 0652	0530 0618 0653
Katra	Northwest	Jammu & Kashmir	Thunderstorm	14-03-18	0100	0700
			Hail (Diameter 2.0cm)		0200	0205
Bhaderwah	Northwest	Jammu & Kashmir	Thunderstorm	15-03-18	0500	0830
Pilani	Northwest	East Rajasthan	Thunderstorm	15-03-18	0715	0815
Sikar	Northwest	East Rajasthan	Thunderstorm	15-03-18	0400	0530
Jaisalmer	Northwest	West Rajasthan	Thunderstorm	14-03-18	1930	2045
Churu	Northwest	West Rajasthan	Thunderstorm	15-03-18	0620	0710

IMPORTANT LINKS:

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 RANDHRA PRADESHID tool: http://rAndhra Pradeshid.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/mAndhra Pradesh skm2.html

WEATHER SYMBOLS:



