



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI SPECIAL TROPICAL WEATHER OUTLOOK

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 28.08.2024

SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 168 HOURS ISSUED AT 1500 UTC OF 28.08.2024 BASED ON 1200 UTC OF 28.08.2024.

LAND DEPRESSION OVER NORTHWEST INDIA:

SUB: (A) DEEP DEPRESSION OVER SAURASHTRA & KACHCHH

THE DEEP DEPRESSION OVER SAURASHTRA & KACHCHH REMAINED PRACTICALLY STATIONARY DURING PAST 6 HOURS AND LAY CENTERED AT 1200 UTC OF TODAY, THE 28TH AUGUST OVER THE SAME REGION NEAR LATITUDE 23.7°N AND LONGITUDE 69.7 °E, 50 KM NORTH-NORTHWEST OF BHUJ (GUJARAT), 100 KM EAST-NORTHEAST OF NALIYA (GUJARAT) AND 290 KM EAST-SOUTHEAST OF KARACHI (PAKISTAN).

IT IS LIKELY TO MOVE SLOWLY WEST-SOUTHWESTWARDS ACROSS SAURASHTRA & KACHCHH REGION AND REACH SAURASHTRA & KACHCHH COAST & ADJOINING AREAS OF PAKISTAN COAST AND NORTHEAST ARABIAN SEA BY 0000 UTC OF 29TH AUGUST. IT IS LIKELY TO CONTINUE TO MOVE WEST-SOUTHWESTWARDS AND EMERGE INTO NORTHEAST ARABIAN SEA OFF KACHCHH AND ADJOINING SAURASHTRA & PAKISTAN COASTS BY 0000 UTC OF 30TH AUGUST. WHILE MOVING WEST-SOUTHWESTWARDS OVER NORTHEAST ARABIAN SEA AWAY FROM THE INDIAN COAST, THERE IS A POSSIBILITY OF ITS TEMPORARY AND MARGINAL INTENSIFICATION OVER NORTHEAST ARABIAN SEA ON 30TH AUGUST.

INSAT 3DR IMAGERY, AT 1200 UTC OF 28TH AUGUST SHOWS BANDING FEATURES IN THE SOUTHERN SECTOR. INTENSE CLOUD MASS IS SEEN OVER SAURASHTRA AND KACHCHH, ADJOINING PAKISTAN AND NORTHEAST ARABIAN SEA. SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION OVER KACHCHH & SAURASHTRA, SOUTH PAKISTAN, NORTHEAST ARABIAN SEA, GULF OF KACHCHH (MINIMUM CTT MINUS 93⁰C) AND MODERATE TO INTENSE CONVECTION LAY OVER REST GUJARAT, GULF OF CAMBAY. MUTISATELLITE BASED WINDS INDICATE STRONGER WINDS IN THE WESTERN SECTOR.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 30 KTS GUSTING TO 40 KTS. ESTIMATED CENTRAL PRESSURE IS 991 HPA. AT 1200 UTC, BHUJ REPORTED MEAN SEA LEVEL PRESSURE OF 993.3 HPA & PRESSURE CHANGE IN 24 HOURS AS -0.6 HPA WITH DEPARTURE FROM NORMAL AS -7.9 HPA. KANDLA REPORTED MEAN SEA LEVEL PRESSURE OF 993.3 HPA & PRESSURE CHANGE IN 24 HOURS AS -0.3 HPA WITH DEPARTURE FROM NORMAL AS -7.8 HPA. NALIYA REPORTED MEAN SEA LEVEL

Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION):NIL: 0%, LOW: 1-33%, , MODERATE: 34-66% AND HIGH: 67-100%
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PRESSURE OF 995.2 HPA WITH DEPARTURE FROM NORMAL AS -7.3 HPA.

(II) ARABIAN SEA:

SEA CONDITION AND ADVISORY FOR FISHERMEN IN ASSOCIATION WITH THE MOVEMENT OF THE SYSTEM OVER SAURASHTRA & KUTCH AND ADJOINING PAKISTAN AND NORTHEAST ARABIAN SEA FROM INDIA DURING 28TH-30TH AUGUST:

- SQUALLY WIND SPEED REACHING 55-65 KMPH GUSTING TO 75 KMPH IS LIKELY TO PREVAIL ALONG & OFF GUJARAT COASTS & ADJOINING PAKISTAN COASTS AND NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA DURING 28TH-30TH AUGUST.
- SQUALLY WEATHER WITH ROUGH TO VERY ROUGH SEA CONDITIONS IS VERY LIKELY TO PREVAIL ALONG & OFF GUJARAT & ADJOINING PAKISTAN AND NORTH MAHARASHTRA COASTS AND NORTHEAST & ADJOINING EASTCENTRAL ARABIAN SEA TILL 30TH AUGUST.
- FISHERMEN ARE ADVISED NOT VENTURE INTO NORTHEAST & ADJOINING EASTCENTRAL ARABIAN SEA AND ALONG & OFF GUJARAT & ADJOINING PAKISTAN AND NORTH MAHARASHTRA COASTS TILL 30TH AUGUST.

CLOUDS ASSOCIATED WITH ARABIAN SEA:

SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTHEAST & ADJOINING EASTCENTRAL ARABIAN SEA AND GULF OF KATCHCHH. SCATTERED LOW/MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION OVER GULF OF CAMBAY, SOUTHEAST ARABIAN SEA AND WEAK TO MODERATE CONVECTION LAY OVER REST ARABIAN SEA LAKSHADWEEP ISLANDS & COMORIN AREA.

***PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION) DURING NEXT 168 HRS OVER ARABIAN SEA:**

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
MOD	HIGH	HIGH	-	-	-	-

***NOTE: EVERY 24HR FORECAST IS VALID UPTO 0300 UTC (0830 IST) OF NEXT DAY (-) INDICATES GENESIS HAS ALREADY OCCURRED.**

(III) BAY OF BENGAL:

A CYCLONIC CIRCULATION IS SEEN OVER EASTCENTRAL BAY OF BENGAL AND ADJOINING AREAS, FROM 0.9 TO 5.8 KM ABOVE MEAN SEA LEVEL. UNDER IT'S INFLUENCE, A FRESH LOW PRESSURE AREA IS LIKELY TO FORM OVER EASTCENTRAL BAY OF BENGAL AND NEIGHBOURHOOD ON 29TH AUGUST. IT IS LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS SOUTH ODISHA AND NORTH ANDHRA PRADESH COASTS DURING SUBSEQUENT TWO DAYS.

SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER CENTRAL & SOUTH BAY OF BENGAL, ANDAMAN SEA 7 GULF OF MARTABAN 7 TENASSERIM COAST.

***PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION) DURING NEXT 168 HRS:**

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
-	LOW	MOD	MOD	-	-	-

***NOTE: EVERY 24HR FORECAST IS VALID UPTO 0300 UTC (0830 IST) OF NEXT DAY**

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX CURRENTLY LIES IN PHASE 4 WITH AMPLITUDE GREATER THAN 1. IT IS LIKELY TO MOVE ACROSS PHASE 4 AND 5 WITH AMPLITUDE REMAINING MORE THAN 1 DURING NEXT 5 DAYS. THE NCICS FORECASTS INDICATE SIGNIFICANT PRESENCE OF CONVECTIVELY COUPLED EQUATORIAL ROSSBY WAVES (ERW) PROPAGATING WESTWARDS STARTING FROM BAY OF BENGAL, CENTRAL INDIA AND CENTRAL ARABIAN SEA DURING NEXT 5 DAYS. THE WESTERLY WINDS (5-7 MPS) ARE LIKELY OVER THE SAME REGION AND STRONG EASTERLIES (5-7 MPS) OVER THE NORTHWESTERN PARTS OF INDIA AND NORTHEAST ARABIAN SEA DURING NEXT FIVE DAYS. THE EASTWARD-MOVING KELVIN WAVES (KW) ARE ALSO LIKELY OVER SOUTHEAST ARABIAN SEA. THESE FEATURES ARE FAVOURABLE FOR ENHANCEMENT OF CONVECTIVE ACTIVITY OVER THE ARABIAN SEA AND ALSO OVER THE BAY OF BENGAL.

VORTICITY AT 850 HPA LEVEL IS AROUND $250 \times 10^{-5} \text{ S}^{-1}$ NEAR THE SYSTEM AREA EXTENDING UPTO 200 HPA. SHEAR TENDENCY IS INCREASING OVER SYSTEM AREA AND DECREASING TOWARDS SOUTH PAKISTAN. THE LOW LEVEL CONVERGENCE IS ABOUT $15 \times 10^{-5} \text{ S}^{-1}$ TO THE WEST OF SYSTEM AREA. UPPER LEVEL DIVERGENCE IS ABOUT $20 \times 10^{-5} \text{ S}^{-1}$ TO THE WEST OF SYSTEM AREA EXTENDING UPTO NORTHEAST ARABIAN SEA. THE WIND SHEAR IS MODERATE (15-20 KNOTS) OVER THE SYSTEM AREA. CURRENTLY, THE DEEP DEPRESSION OVER SAURASHTRA & KACHCHH IS IN A FAVOURABLE ENVIRONMENT WITH GOOD EQUATORWARD AND POLEWARD OUTFLOW, MODERATE WIND SHEAR AND HIGH POSITIVE VORTICITY. UPPER TROPOSPHERIC RIDGE IS PASSING ALONG 27°N IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER NORTH PAKISTAN. A TROUGH IS EXTENDING UPTO 30°N ALONG 64°E . UNDER THE INFLUENCE OF THESE SYSTEMS, THE SYSTEM HAS BECOME ALMOST STATIONARY. DEEP MEAN LAYER WIND SPEED (200-850 HPA) IS INDICATING VERY SLOW MOVEMENT OF SYSTEM.

MOST OF THE NUMERICAL WEATHER PREDICTION MODELS (IMD GFS, NCEP GFS, GEFS, ECMWF, AND NCUM) INDICATE THAT THE EXISTING DEEP DEPRESSION OVER SAURASHTRA & KACHCHH LIKELY TO MOVE WEST-SOUTHWESTWARDS ACROSS SAURASHTRA & KACHCHH. THERE IS A CONSENSUS AMONG VARIOUS MODELS THAT THE SYSTEM WOULD PERSIST OVER SAURASHTRA & KACHCHH REGION DURING 28TH TO 30TH AUGUST. HOWEVER, THERE IS VARIATION AMONG MODELS WITH RESPECT TO INTENSIFICATION OF SYSTEM WITH NCUM GROUP STILL SHOWING HIGHER INTENSIFICATION UPTO VERY SEVERE CYCLONIC STORM AND ECMWF & GFS GROUP ARE INDICATING PEAK INTENSIFICATION UPTO MARGINAL CYCLONIC STORM ONLY. ECMWF AND NCEP GFS ARE ALSO INDICATING DRY AIR INCURSION INTO THE SYSTEM AREA FROM 29TH/ 1200 UTC ONWARDS. IMD MME IS ALSO INDICATING NEAR WESTWARDS MOVEMENT TOWARDS OMAN COAST AND INTENSIFICATION INTO A MARGINAL CYCLONE AROUND 30TH AUGUST/ 1200 UTC BEFORE EMERGING INTO NORTHEAST ARABIAN SEA. MOST OF THE MODELS ARE INDICATING THE SYSTEM TO REACH OMAN COAST AS A LOW PRESSURE AREA.

OVER THE BAY OF BENGAL, MOST OF THE MODELS ARE INDICATING DEVELOPMENT OF LOW PRESSURE AREA OVER CENTRAL BAY OF BENGAL AROUND 29TH AUGUST WITH WEST-NORTHWESTWARDS MOVEMENT TOWARDS SOUTH ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS. MODELS ARE ALSO INDICATING INTENSIFICATION OF THE SYSTEM INTO A DEPRESSION AROUND 29TH/1200 UTC (ECMWF), 30TH/1200 UTC (NCUM) & IMD GFS (31ST/1200 UTC). ACCORDINGLY, LOW TO MODERATE PROBABILITY IS ASSIGNED TO FORMATION OF DEPRESSION OVER NORTHWEST & ADJOINING WESTCENTRAL BAY OF BENGAL DURING NEXT 2-3 DAYS.

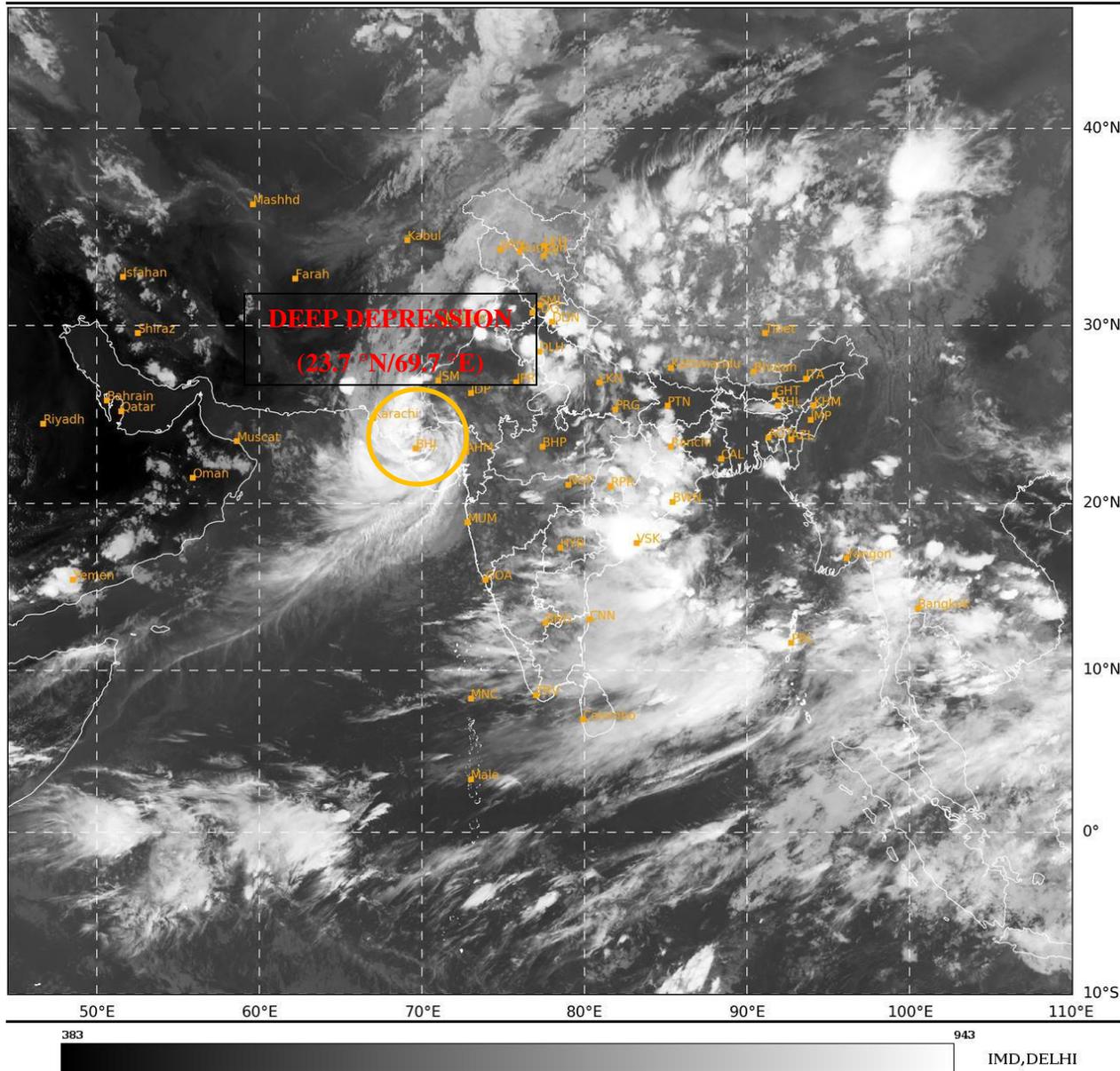
CONSIDERING ALL THE ABOVE, IT IS INFERRED THAT:

- (1) DEEP DEPRESSION OVER SAURASHTRA & KACHCHH IS LIKELY TO MOVE SLOWLY WEST-SOUTHWESTWARDS ACROSS SAURASHTRA & KACHCHH REGION AND REACH SAURASHTRA & KACHCHH COAST & ADJOINING AREAS OF PAKISTAN COAST AND NORTHEAST ARABIAN SEA BY 0000 UTC OF 29TH AUGUST. IT IS LIKELY TO CONTINUE TO MOVE WEST-SOUTHWESTWARDS AND EMERGE INTO NORTHEAST ARABIAN SEA OFF KACHCHH AND ADJOINING SAURASHTRA & PAKISTAN COASTS BY 0000 UTC OF 30TH AUGUST. WHILE MOVING WEST-SOUTHWESTWARDS OVER NORTHEAST ARABIAN SEA AWAY FROM THE INDIAN COAST, THERE IS A POSSIBILITY OF ITS TEMPORARY AND MARGINAL INTENSIFICATION OVER NORTHEAST ARABIAN SEA ON 30TH AUGUST.
- (2) A FRESH LOW PRESSURE AREA IS LIKELY TO FORM OVER EASTCENTRAL AND ADJOINING NORTH BAY OF BENGAL ON 29TH AUGUST. IT IS LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS SOUTH ODISHA AND NORTH ANDHRA PRADESH COASTS DURING SUBSEQUENT TWO DAYS.

(M. SHARMA)
SCIENTIST-D
RSMC NEW DELHI

SAT : INSAT-3DR IMG
IMG_TIR1 10.8 um
L1C Mercator

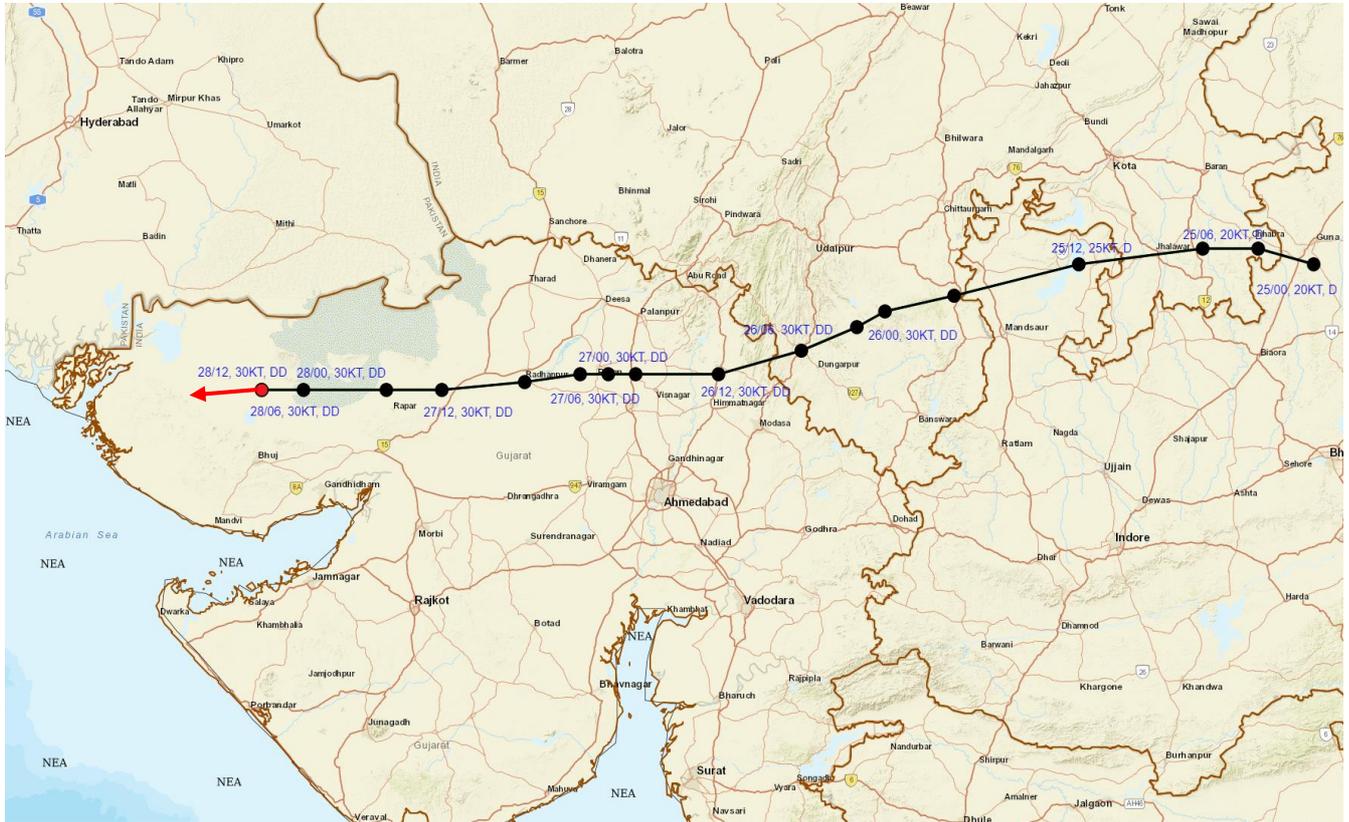
28-08-2024/(1345 to 1412) GMT
28-08-2024/(1915 to 1942) IST



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OBSERVED AND FORECAST TRACK OF DEEP DEPRESSION OVER SAURASHTRA & KACHCHH BASED ON 1200 UTC (1730 IST) OF 28TH AUGUST, 2024.



DATE/TIME IN UTC
IST=UTC + 0530
L: LOW PRESSURE AREA
WML: WELL MARKED LOW PRESSURE AREA
D: DEPRESSION (17-27 KT)
DD: DEEP DEPRESSION (28-33 KT)
CS: CYCLONIC STORM (34-47 KT)
SCS: SEVERE CYCLONIC STORM (48-63KT)
VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)
SuCS: SUPER CYCLONIC STORM \geq 120 KT)

- LESS THAN 34 KT
- 34-47 KT
- \geq 48 KT
- OBSERVED TRACK
- FORECAST TRACK
- CONE OF UNCERTAINTY

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