



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

**FROM: RSMC –TROPICAL CYCLONES, NEW DELHI**

**TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)**  
**STORM WARNING CENTRE, BANGKOK (THAILAND)**  
**STORM WARNING CENTRE, COLOMBO (SRILANKA)**  
**STORM WARNING CENTRE, DHAKA (BANGLADESH)**  
**STORM WARNING CENTRE, KARACHI (PAKISTAN)**  
**METEOROLOGICAL OFFICE, MALE (MALDIVES)**  
**OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**  
**YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)**  
**NATIONAL CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)**  
**PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)**  
**IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)**  
**QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)**

**TROPICAL CYCLONE ADVISORY NO. 11 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 2000 UTC OF 26.09.2021 BASED ON 1800 UTC OF 26.09.2021.**

**SUB: CYCLONIC STORM 'GULAB' (PRONOUNCED AS GUL-AAB) OVER NORTH ANDHRA PRADESH AND SOUTH ODISHA**

THE CYCLONIC STORM 'GULAB' (PRONOUNCED AS GUL-AAB) OVER NORTH COASTAL ANDHRA PRADESH MOVED WESTWARDS WITH A SPEED OF 21 KMPH DURING LAST 06 HOURS AND LAY CENTERED AT 1800 UTC OF 26<sup>TH</sup> SEPTEMBER 2021 OVER NORTH ANDHRA PRADESH AND ADJOINING SOUTH ODISHA NEAR LAT. 18.4°N AND LONG. 83.4°E, ABOUT 190 KM WEST-SOUTHWEST OF GOPALPUR (43049) & 70 KM WEST OF KALINGAPATNAM (43105).

IT IS LIKELY TO MOVE WEST-NORTHWESTWARDS AND WEAKEN INTO A DEEP DEPRESSION DURING NEXT 06 HOURS AND FURTHER INTO A DEPRESSION DURING SUBSEQUENT 06 HOURS.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION LAT. °N/ LONG. °E	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
26.09.21/1800	18.4/83.4	60-70 GUSTING TO 80	CYCLONIC STORM
27.09.21/0000	18.5/82.4	50-60 GUSTING TO 70	DEEP DEPRESSION
27.09.21/0600	18.6/81.6	40-50 GUSTING TO 60	DEPRESSION
27.09.21/1200	18.7/80.8	30-40 GUSTING TO 50	WELL MARKED LOW

AS PER INSAT-3D IMAGERY AT 1800 UTC OF 26<sup>th</sup> SEP. MINIMUM CLOUD TOP TEMPERATURE IS -93°C. ASSOCIATED BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL BETWEEN LATITUDE 15.0°N & 18.5°N AND LONGITUDE 81.0°E & 85.5°E AND SOUTH COASTAL ODISHA & NORTH COASTAL ANDHRA PRADESH.

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 35 KNOTS GUSTING TO 45 KNOTS. THE SEA CONDITION WILL BE HIGH OVER NORTHWEST & ADJOINING WESTCENTRAL BOB FOR NEXT 6 HOURS AND ROUGH TO VERY ROUGH DURING SUBSEQUENT 24 HOURS. THE ESTIMATED CENTRAL PRESSURE IS 994 HPA.

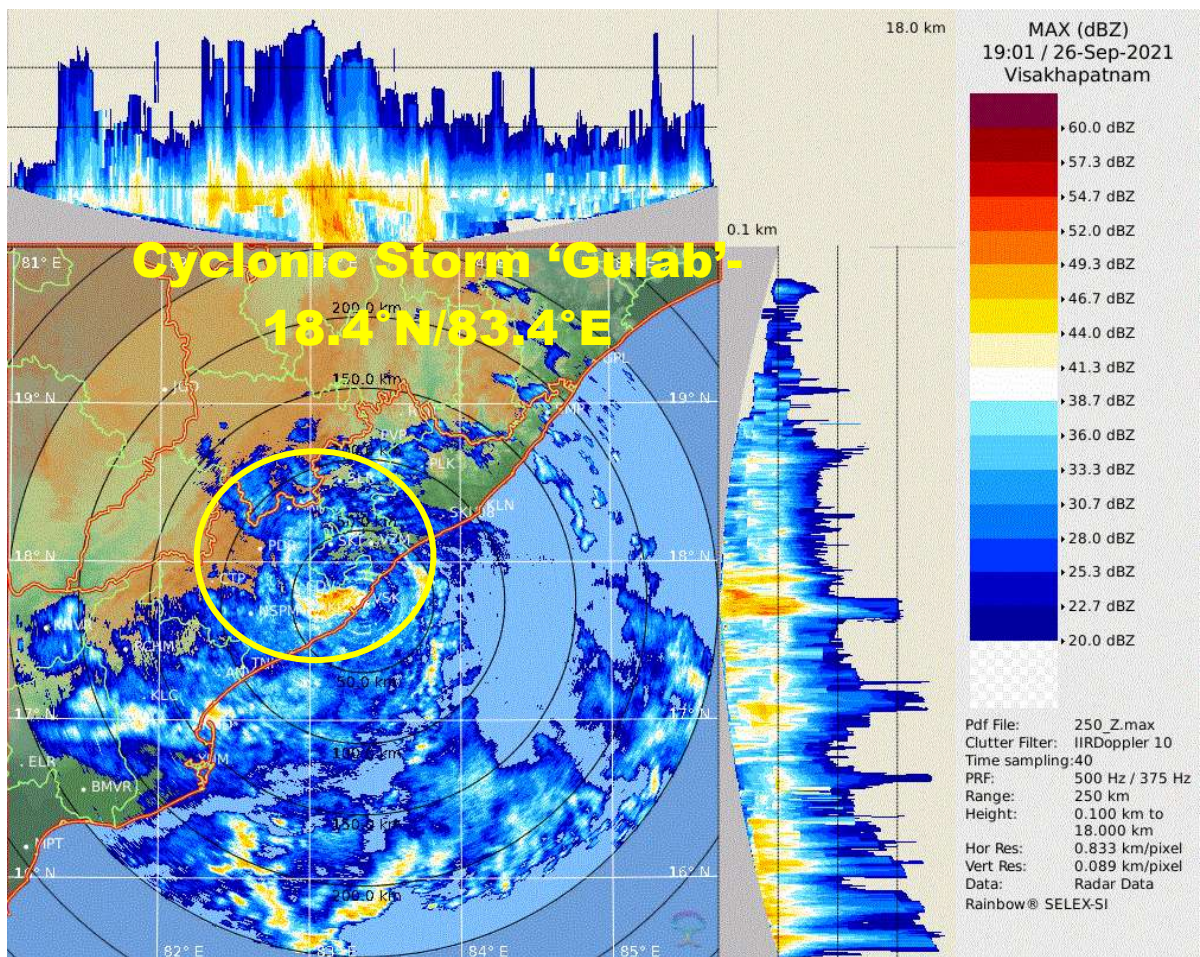
**REMARKS:**

SEA SURFACE TEMPERATURE (SST) IS ABOUT 28-29°C OVER CENTRAL & ADJOINING NORTH BAY OF BENGAL (BOB) AND TROPICAL CYCLONE HEAT POTENTIAL (TCHP) IS ABOUT 80-90 KJ/CM<sup>2</sup> OVER THE SAME AREA. MADDEN JULIAN OSCILLATION (MJO) INDEX IS LYING IN PHASE 4 WITH AMPLITUDE MORE THAN 1. A ZONE OF POSITIVE LOW LEVEL VORTICITY ( $150 \times 10^{-6} \text{S}^{-1}$ ) LIES AROUND THE SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO UPPER TROPOSPHERIC LEVEL. A ZONE OF POSITIVE LOWER LEVEL CONVERGENCE OF  $20 \times 10^{-5} \text{S}^{-1}$  LIES TO THE SOUTHWEST OF SYSTEM CENTRE. POSITIVE UPPER LEVEL DIVERGENCE OF  $10 \times 10^{-5} \text{S}^{-1}$  IS ALSO SEEN TO THE SOUTHWEST OF SYSTEM CENTRE. VERTICAL WIND SHEAR (VWS) IS ABOUT 15-20 KTS OVER NORTHWEST AND ADJOINING CENTRAL BOB AND ALONG THE FORECAST TRACK. THE UPPER TROPOSPHERIC RIDGE IS SEEN NEAR 25°N. THE SYSTEM IS LYING IN THE SOUTHERN PERIPHERY OF THE RIDGE NEAR 25°N AND WILL BE STEERED NEARLY WESTWARDS DURING NEXT 12 HOURS.

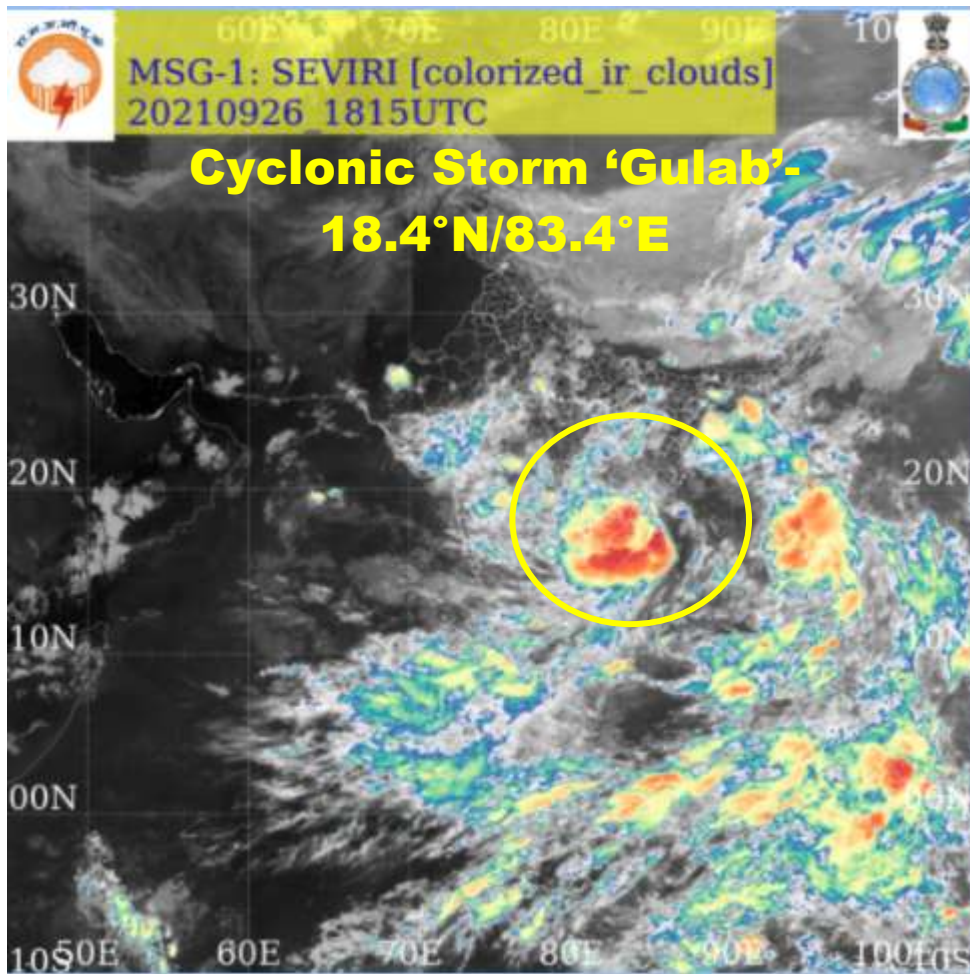
AFTER THE SYSTEM CROSSED THE COAST, THE WARM SEA, FAVOURABLE MJO CONDITIONS, LOW TO MODERATE VERTICAL WIND SHEAR HELPED SYSTEM TO MAINTAIN IT'S CYCLONIC STORM INTENSITY AND WEAKENED SLOWLY. THE SYSTEM WILL WEAKEN INTO A DEEP DEPRESSION DURING NEXT 06 HOURS. THE SYSTEM WILL MOVE NEARLY WESTWARDS DURING NEXT 12 HOURS.

THE NEXT BULLETIN WILL BE ISSUED AT 0000 UTC OF 27<sup>TH</sup> SEPTEMBER, 2021.

**(ANANDA KUMAR DAS)**  
**SCIENTIST-E, RSMC, NEW DELHI**



Reflectivity imagery from Doppler weather RADAR Vishakhapatnam based on 1900 UTC of 26TH September 2021.



**Cyclonic Storm 'Gulab'-  
18.4°N/83.4°E**



# OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF CYCLONIC STORM GULAB OVER NORTH ANDHRA PRADESH AND ADJOINING SOUTH ODISHA BASED ON 1800 UTC OF 26TH SEPTEMBER 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 (≥ 120 KT)

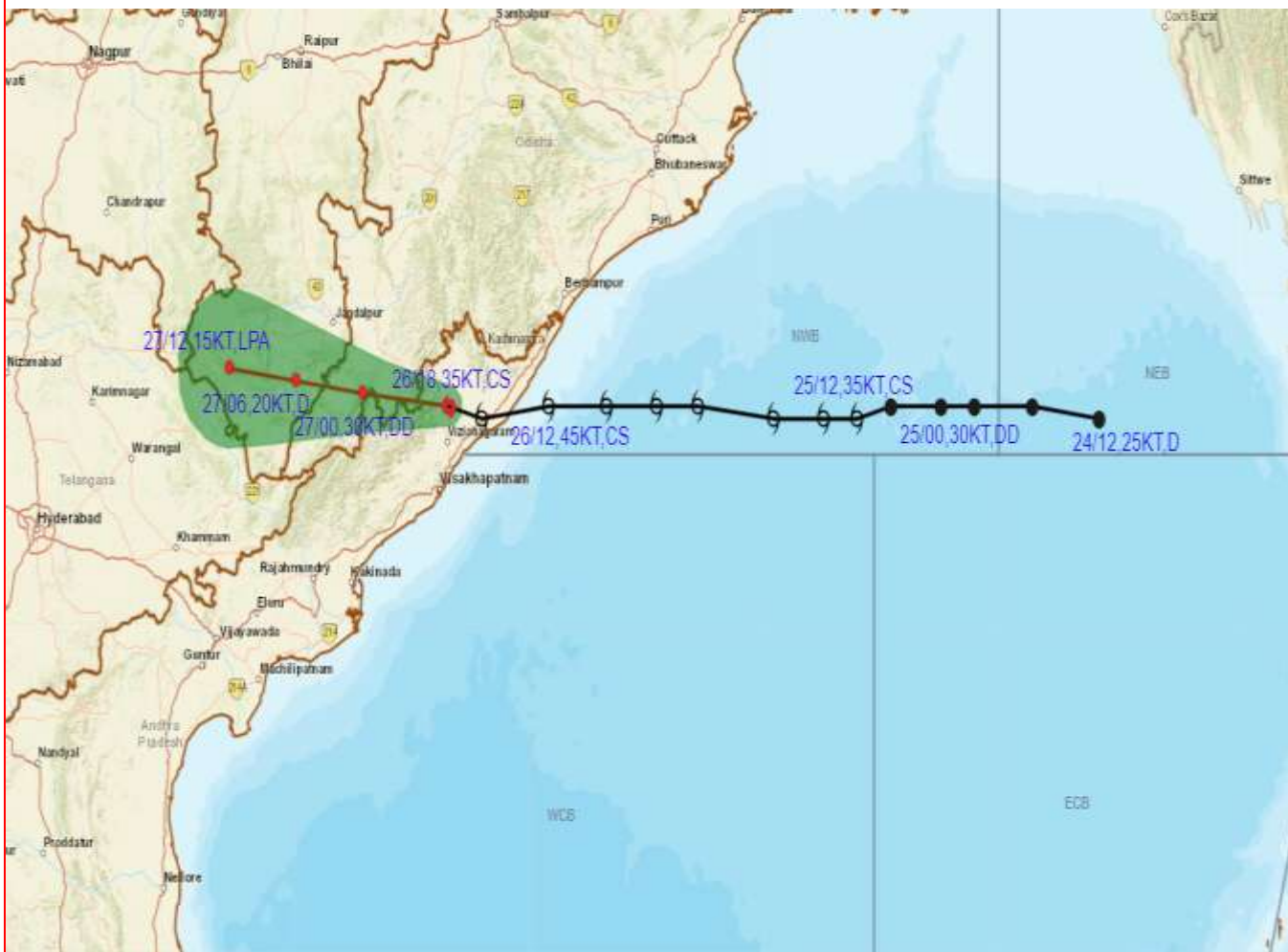
- LESS THAN 34 KT
- 34-47 KT
- ◐ ≥ 48 KT
- OBSERVED TRACK
- FORECAST TRACK
- ▲ CONE OF UNCERTAINTY
- AREA OF MAXIMUM SUSTAINED WIND SPEED:
- 28-33 KT (52-61 KMPH)
- 34-49 KT (62-91 KMPH)
- 50-63 KT (92-117 KMPH)
- ≥ 64 KT (≥118 KMPH)

### IMPACT OVER THE SEA

MSW (knot/kmph)	Impact	Action
28-33 (52-61)	Very rough seas	Total suspension of fishing operations
34-49 (62-91)	High to very high seas	Total suspension of fishing operations
50-63 (92-117)	Very high seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations



# OBSERVED AND FORECAST TRACK OF CYCLONIC STORM GULAB OVER NORTH ANDHRA PRADESH AND ADJOINING SOUTH ODISHA BASED ON 1800 UTC OF 26<sup>TH</sup> SEPTEMBER, 2024



**DATE/TIME IN UTC**

**IST=UTC + 0530**

**L: LOW PRESSURE AREA**

**WML: WELL MARKED LOW PRESSURE AREA**

**D: DEPRESSION (17-27 KT)**

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**SuCS: SUPER CYCLONIC STORM ( $\geq$  120 KT)**

LESS THAN 34 KT

34-47 KT

$\geq$  48 KT

OBSERVED TRACK

FORECAST TRACK

CONE OF UNCERTAINTY