

WTIO30 FMEE 231253

RSMC / TROPICAL CYCLONE CENTER / LA REUNION

TROPICAL CYCLONE FORECAST WARNING (SOUTH-WEST INDIAN OCEAN)

0.A WARNING NUMBER: 10/4/20222023

1.A INTENSE TROPICAL CYCLONE 4 (DARIAN)

2.A POSITION 2022/12/23 AT 1200 UTC:

WITHIN 10 NM RADIUS OF POINT 12.4 S / 83.8 E

(TWELVE DECIMAL FOUR DEGREES SOUTH AND  
EIGHTY THREE DECIMAL EIGHT DEGREES EAST)

MOVEMENT: WEST 8 KT

3.A DVORAK ANALYSIS: 6.5/6.5/D 1.0/12 H

4.A CENTRAL PRESSURE: 935 HPA

5.A MAX AVERAGE WIND SPEED (10 MN): 100 KT

RADIUS OF MAXIMUM WINDS (RMW): 10 NM

6.A EXTENSION OF WIND BY QUADRANTS (KM):

28 KT NE: 230 SE: 295 SW: 240 NW: 195

34 KT NE: 155 SE: 260 SW: 185 NW: 150

48 KT NE: 95 SE: 110 SW: 70 NW: 75

64 KT NE: 45 SE: 65 SW: 65 NW: 55

7.A FIRST CLOSED ISOBAR (PRESSURE / AVERAGE DIAM): 1005 HPA / 1000 KM

8.A VERTICAL EXTENSION OF CYCLONE CIRCULATION: DEEP

1.B FORECASTS (WINDS RADII IN KM):

12H: 2022/12/24 00 UTC: 12.5 S / 82.7 E, VENT MAX= 105 KT, INTENSE TROPICAL  
CYCLONE

28 KT NE: 220 SE: 345 SW: 350 NW: 215

34 KT NE: 155 SE: 195 SW: 195 NW: 140

48 KT NE: 85 SE: 95 SW: 75 NW: 85

64 KT NE: 65 SE: 65 SW: 65 NW: 55

24H: 2022/12/24 12 UTC: 12.9 S / 82.8 E, VENT MAX= 105 KT, INTENSE TROPICAL  
CYCLONE

28 KT NE: 260 SE: 350 SW: 345 NW: 220

34 KT NE: 175 SE: 195 SW: 215 NW: 150

48 KT NE: 85 SE: 95 SW: 85 NW: 85

64 KT NE: 65 SE: 65 SW: 65 NW: 65

36H: 2022/12/25 00 UTC: 14.1 S / 83.5 E, VENT MAX= 095 KT, INTENSE TROPICAL  
CYCLONE

28 KT NE: 280 SE: 360 SW: 325 NW: 250

34 KT NE: 185 SE: 205 SW: 205 NW: 150

48 KT NE: 85 SE: 95 SW: 85 NW: 85  
64 KT NE: 65 SE: 65 SW: 65 NW: 65

48H: 2022/12/25 12 UTC: 15.5 S / 84.0 E, VENT MAX= 090 KT, INTENSE TROPICAL CYCLONE

28 KT NE: 250 SE: 360 SW: 345 NW: 250  
34 KT NE: 165 SE: 215 SW: 215 NW: 165  
48 KT NE: 95 SE: 95 SW: 85 NW: 85  
64 KT NE: 65 SE: 65 SW: 65 NW: 55

60H: 2022/12/26 00 UTC: 16.1 S / 84.0 E, VENT MAX= 080 KT, TROPICAL CYCLONE

28 KT NE: 270 SE: 400 SW: 380 NW: 240  
34 KT NE: 175 SE: 240 SW: 220 NW: 155  
48 KT NE: 95 SE: 95 SW: 85 NW: 85  
64 KT NE: 65 SE: 65 SW: 65 NW: 55

72H: 2022/12/26 12 UTC: 16.6 S / 83.9 E, VENT MAX= 075 KT, TROPICAL CYCLONE

28 KT NE: 280 SE: 435 SW: 405 NW: 240  
34 KT NE: 175 SE: 260 SW: 250 NW: 150  
48 KT NE: 85 SE: 100 SW: 95 NW: 85  
64 KT NE: 65 SE: 65 SW: 75 NW: 55

#### 2.B LONGER-RANGE OUTLOOK:

96H: 2022/12/27 12 UTC: 17.5 S / 81.6 E, VENT MAX= 065 KT, TROPICAL CYCLONE

28 KT NE: 250 SE: 500 SW: 380 NW: 215  
34 KT NE: 155 SE: 305 SW: 250 NW: 140  
48 KT NE: 85 SE: 110 SW: 120 NW: 65  
64 KT NE: 45 SE: 65 SW: 55 NW: 45

120H: 2022/12/28 12 UTC: 19.9 S / 76.7 E, VENT MAX= 050 KT, SEVERE TROPICAL STORM

28 KT NE: 260 SE: 455 SW: 335 NW: 195  
34 KT NE: 155 SE: 285 SW: 220 NW: 120  
48 KT NE: 60 SE: 80 SW: 110 NW: 50

#### 2.C ADDITIONAL INFORMATION:

T=6.5 CI=6.5

DURING THE LAST 6 HOURS, THE INTENSE TROPICAL CYCLONE DARIAN HAS CONTINUED TO INTENSIFY. GEOSTATIONARY SATELLITE IMAGES INDICATE A CLEAR WARMING OF THE EYE TEMPERATURE WITH A FLUCTUATING EXTENSION OF THE COLDER CLOUD TOP. THE DVORAK ANALYSIS FOR THE LAST HOURS IS 6.5. HOWEVER THE AMSR2 PASS FROM 0742Z SHOWS IN MICROWAVE A SLIGHTLY LESS CLEAR STRUCTURE AROUND THE EYE WALL WITH A POSSIBLE DISCONTINUITY IN THE WALL IN THE SOUTHEAST QUADRANT. TAKING INTO ACCOUNT THE DIFFERENT SUBJECTIVE AND OBJECTIVE ANALYSES (ADT, SATCON), THE CMRS ESTIMATES THE MAXIMUM WINDS OF THE SYSTEM AT 100KT.

DARIAN CONTINUES ITS TRACK TOWARDS THE WEST, GUIDED BY A RIDGE OF MID TO HIGH TROPOSPHERE LOCATED FURTHER SOUTH. OVERNIGHT AND TOMORROW, THE SYSTEM IS EXPECTED TO MAKE A SIGNIFICANT TURN TO THE SOUTH-SOUTHEAST OR SOUTHEAST WHILE SLOWING ITS PROGRESS. THIS CHANGE OF TRACK IS DRIVEN BY THE TEMPORARY WITHDRAWAL OF THE SUBTROPICAL

RIDGE AND THE RE-ESTABLISHMENT OF THE STEERING FLOW BY THE NEAR EQUATORIAL RIDGE TO THE NORTH. EARLY NEXT WEEK, DARIAN SHOULD AGAIN BEGIN A SOUTHWESTERLY TURN, IN CONJUNCTION WITH THE SWELLING OF THE SUBTROPICAL RIDGE TO THE SOUTH. THE CMRS FORECAST IS BASED ON A COMPROMISE BETWEEN THE BEST AVAILABLE GUIDANCE. THE DISPERSION IS RELATIVELY WEAK UNTIL SUNDAY THEN BECOMES MORE IMPORTANT AFTERWARDS, DURING THE COMPLEX PHASE OF THE DOUBLE SOUTHWARD TURN.

THE ENVIRONMENTAL CONDITIONS IN WHICH THE SYSTEM IS EVOLVING SEEM TO BE FAVORABLE FOR A RE-INTENSIFICATION NEXT NIGHT IN A WINDOW OF THE NEXT 24 HOURS BUT THIS COULD BE LIMITED BY THE SLOWER MOVEMENT OF THE SYSTEM (COOLING OF THE SST) AND ALSO BY A SLIGHT INCREASE IN THE TROPOSPHERE MEAN SHEAR TOMORROW EVENING. FROM TUESDAY, AN INCREASE IN DEEP SHEAR COMBINED WITH INCURSIONS OF DRY MID-TROPOSPHERE AIR AND A DECREASING OCEANIC POTENTIAL SHOULD CONTINUE TO WEAKEN THE SYSTEM.