

WTIO30 FMEE 211836

RSMC / TROPICAL CYCLONE CENTER / LA REUNION

TROPICAL CYCLONE FORECAST WARNING (SOUTH-WEST INDIAN OCEAN)

0.A WARNING NUMBER: 3/4/20222023

1.A INTENSE TROPICAL CYCLONE 4 (DARIAN)

2.A POSITION 2022/12/21 AT 1800 UTC:

WITHIN 20 NM RADIUS OF POINT 13.5 S / 89.1 E
(THIRTEEN DECIMAL FIVE DEGREES SOUTH AND
EIGHTY NINE DECIMAL ONE DEGREES EAST)

MOVEMENT: WEST 10 KT

3.A DVORAK ANALYSIS: 5.5/6.5/W 1.5/6 H

4.A CENTRAL PRESSURE: 939 HPA

5.A MAX AVERAGE WIND SPEED (10 MN): 105 KT

RADIUS OF MAXIMUM WINDS (RMW): 20

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

28 KT NE: 165 SE: 445 SW: 405 NW: 215

34 KT NE: 110 SE: 185 SW: 220 NW: 140

48 KT NE: 85 SE: 120 SW: 120 NW: 100

64 KT NE: 65 SE: 95 SW: 95 NW: 75

7.A FIRST CLOSED ISOBAR (PRESSURE / AVERAGE DIAM): 1005 HPA / 700 KM

8.A VERTICAL EXTENSION OF CYCLONE CIRCULATION: DEEP

1.B FORECASTS (WINDS RADII IN KM):

12H: 2022/12/22 06 UTC: 13.2 S / 87.6 E, VENT MAX= 105 KT, INTENSE TROPICAL
CYCLONE

28 KT NE: 165 SE: 350 SW: 315 NW: 185

34 KT NE: 120 SE: 155 SW: 195 NW: 120

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

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

24H: 2022/12/22 18 UTC: 13.1 S / 86.0 E, VENT MAX= 100 KT, INTENSE TROPICAL
CYCLONE

28 KT NE: 165 SE: 370 SW: 325 NW: 195

34 KT NE: 120 SE: 175 SW: 205 NW: 120

48 KT NE: 75 SE: 85 SW: 100 NW: 75

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

36H: 2022/12/23 06 UTC: 13.1 S / 84.3 E, VENT MAX= 100 KT, INTENSE TROPICAL
CYCLONE

28 KT NE: 185 SE: 360 SW: 325 NW: 195

34 KT NE: 130 SE: 165 SW: 205 NW: 130

48 KT NE: 85 SE: 85 SW: 100 NW: 75
64 KT NE: 55 SE: 65 SW: 55 NW: 55

48H: 2022/12/23 18 UTC: 13.1 S / 82.9 E, VENT MAX= 110 KT, INTENSE TROPICAL CYCLONE

28 KT NE: 195 SE: 370 SW: 350 NW: 220
34 KT NE: 140 SE: 165 SW: 215 NW: 140
48 KT NE: 85 SE: 95 SW: 110 NW: 85
64 KT NE: 65 SE: 65 SW: 65 NW: 65

60H: 2022/12/24 06 UTC: 13.4 S / 82.2 E, VENT MAX= 110 KT, INTENSE TROPICAL CYCLONE

28 KT NE: 220 SE: 380 SW: 390 NW: 240
34 KT NE: 155 SE: 175 SW: 220 NW: 155
48 KT NE: 85 SE: 95 SW: 110 NW: 85
64 KT NE: 65 SE: 65 SW: 65 NW: 65

72H: 2022/12/24 18 UTC: 14.0 S / 81.9 E, VENT MAX= 100 KT, INTENSE TROPICAL CYCLONE

28 KT NE: 230 SE: 390 SW: 390 NW: 240
34 KT NE: 155 SE: 185 SW: 215 NW: 155
48 KT NE: 85 SE: 95 SW: 110 NW: 85
64 KT NE: 65 SE: 65 SW: 65 NW: 65

2.B LONGER-RANGE OUTLOOK:

96H: 2022/12/25 18 UTC: 16.0 S / 82.6 E, VENT MAX= 085 KT, TROPICAL CYCLONE

28 KT NE: 240 SE: 415 SW: 370 NW: 250
34 KT NE: 155 SE: 215 SW: 230 NW: 155
48 KT NE: 85 SE: 95 SW: 120 NW: 85
64 KT NE: 45 SE: 45 SW: 45 NW: 65

120H: 2022/12/26 18 UTC: 17.0 S / 82.0 E, VENT MAX= 070 KT, TROPICAL CYCLONE

28 KT NE: 260 SE: 500 SW: 465 NW: 230
34 KT NE: 165 SE: 260 SW: 270 NW: 140
48 KT NE: 80 SE: 100 SW: 140 NW: 70
64 KT NE: 60 SE: 60 SW: 60 NW: 50

2.C ADDITIONAL INFORMATION:

T=5.5+ CI=6.5-

OVER THE PAST SIX HOURS, DARIAN'S CLOUD PATTERN HAS DETERIORATED SLIGHTLY WITH A GRADUALLY COOLING EYE AND FLUCTUATING CLOUD TOP TEMPERATURES. THE DVORAK SUBJECTIVE ANALYSIS , AVERAGED OVER THE LAST 3 HOURS FALLS TO 5.5+, WHICH IS CONSISTENT WITH THE MET/PT AS WELL AS A 12Z SMAP PASS GIVING AVERAGE WINDS SPEED OF ABOUT 95KT. THIS WEAKENING COULD BE EXPLAINED BY THE PROGRESSIVE ONSET OF A EYEWELL REPLACEMENT CYCLE AS SUGGESTED BY THE 0759Z AMSR2 OR THE 0947Z SSMIS.

DARIAN WILL CONTINUE ITS TRAJECTORY WESTWARDS, GUIDED BY A MID TO HIGH TROPOSPHERE RIDGE LOCATED FURTHER SOUTH. EARLY THIS WEEKEND, THE SYSTEM SHOULD BEGIN A SHARP TURN SOUTHWARD, WITH THE SHIFT OF THE SUBTROPICAL RIDGE TO THE WEST AND THE RESUMPTION OF THE STEERING FLOW

BY THE NEAR EQUATORIAL RIDGE TO THE NORTH. EARLY NEXT WEEK, DARIAN SHOULD AGAIN START A WESTWARD TURN WHILE SLOWING DOWN, IN CONNECTION WITH THE RESUMPTION OF AN EASTERLY FLOW GENERATED BY THE STRENGTHENING OF THE SUBTROPICAL RIDGE.

DARIAN IS CURRENTLY BENEFITING FROM GOOD ENVIRONMENTAL CONDITIONS, APART FROM A STRONG NORTHEASTERLY CONSTRAINT (20KT ACCORDING TO CIMSS DATA) COMPENSATED HOWEVER BY THE SYSTEM'S OWN DISPLACEMENT, A STRONG OCEANIC POTENTIAL, AS WELL AS A GOOD POLAR DIVERGENCE. IN THE NEXT 24 TO 36 HOURS, THE NORTHEASTERLY CONSTRAINT WILL REMAIN PRESENT WHICH COULD WEAKEN THE SYSTEM IN ITS WESTWARD MOVEMENT AT THE MARGIN. AT THE BEGINNING OF THE WEEKEND, WITH THE PASSAGE OF A MID-TROPOSPHERE TROUGH TO THE SOUTH, THE DIVERGENCE COULD TEMPORARILY IMPROVE THE INTENSITY OF DARIAN. AT THE END OF THE WEEKEND/BEGINNING OF NEXT WEEK, IN ITS SLOWING DOWN, DARIAN COULD MEET MUCH COOLER WATERS (LESS ENERGETIC POTENTIAL CUMULATED WITH UPWELLING) WHILE MOVING SOUTH, WHICH COULD WEAKEN THE SYSTEM DURABLY.