

WTIO30 FMEE 140054

RSMC / TROPICAL CYCLONE CENTER / LA REUNION

TROPICAL CYCLONE FORECAST WARNING (SOUTH-WEST INDIAN OCEAN)

0.A WARNING NUMBER: 12/2/20232024

1.A TROPICAL CYCLONE 2 (BELAL)

2.A POSITION 2024/01/14 AT 0000 UTC:

WITHIN 20 NM RADIUS OF POINT 18.4 S / 53.5 E

(EIGHTEEN DECIMAL FOUR DEGREES SOUTH AND
FIFTY THREE DECIMAL FIVE DEGREES EAST)

MOVEMENT: SOUTH-SOUTH-WEST 9 KT

3.A DVORAK ANALYSIS: 4.5/4.5/D 2.0/24 H

4.A CENTRAL PRESSURE: 975 HPA

5.A MAX AVERAGE WIND SPEED (10 MN): 65 KT

RADIUS OF MAXIMUM WINDS (RMW): 37 KM

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

28 KT NE: 185 SE: 220 SW: 220 NW: 220

34 KT NE: 130 SE: 150 SW: 150 NW: 150

48 KT NE: 95 SE: 95 SW: 90 NW: 95

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

7.A FIRST CLOSED ISOBAR (PRESSURE / AVERAGE DIAM): 1009 HPA / 1300 KM

8.A VERTICAL EXTENSION OF CYCLONE CIRCULATION: DEEP

1.B FORECASTS (WINDS RADII IN KM):

12H: 2024/01/14 12 UTC: 19.6 S / 53.3 E, VENT MAX= 080 KT, TROPICAL CYCLONE

28 KT NE: 230 SE: 230 SW: 195 NW: 205

34 KT NE: 140 SE: 140 SW: 100 NW: 120

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

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

24H: 2024/01/15 00 UTC: 20.4 S / 54.1 E, VENT MAX= 090 KT, INTENSE TROPICAL
CYCLONE

28 KT NE: 240 SE: 280 SW: 230 NW: 215

34 KT NE: 150 SE: 175 SW: 155 NW: 130

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

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

36H: 2024/01/15 12 UTC: 21.1 S / 55.6 E, VENT MAX= 090 KT, INTENSE TROPICAL
CYCLONE

28 KT NE: 250 SE: 280 SW: 230 NW: 215

34 KT NE: 150 SE: 165 SW: 155 NW: 130

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

64 KT NE: 45 SE: 45 SW: 55 NW: 35

48H: 2024/01/16 00 UTC: 21.7 S / 57.0 E, VENT MAX= 085 KT, TROPICAL CYCLONE
28 KT NE: 270 SE: 325 SW: 270 NW: 230
34 KT NE: 155 SE: 215 SW: 175 NW: 150
48 KT NE: 75 SE: 85 SW: 85 NW: 75
64 KT NE: 45 SE: 45 SW: 45 NW: 45

60H: 2024/01/16 12 UTC: 22.2 S / 58.6 E, VENT MAX= 080 KT, TROPICAL CYCLONE
28 KT NE: 285 SE: 360 SW: 315 NW: 230
34 KT NE: 165 SE: 240 SW: 205 NW: 140
48 KT NE: 85 SE: 95 SW: 85 NW: 75
64 KT NE: 45 SE: 45 SW: 55 NW: 45

72H: 2024/01/17 00 UTC: 22.6 S / 60.1 E, VENT MAX= 075 KT, TROPICAL CYCLONE
28 KT NE: 270 SE: 350 SW: 295 NW: 220
34 KT NE: 155 SE: 215 SW: 195 NW: 130
48 KT NE: 85 SE: 95 SW: 95 NW: 85
64 KT NE: 55 SE: 55 SW: 65 NW: 55

2.B LONGER-RANGE OUTLOOK:

96H: 2024/01/18 00 UTC: 22.8 S / 62.6 E, VENT MAX= 075 KT, TROPICAL CYCLONE
28 KT NE: 260 SE: 315 SW: 315 NW: 230
34 KT NE: 155 SE: 185 SW: 185 NW: 140
48 KT NE: 95 SE: 95 SW: 95 NW: 75
64 KT NE: 55 SE: 55 SW: 65 NW: 55

120H: 2024/01/19 00 UTC: 22.5 S / 63.2 E, VENT MAX= 070 KT, TROPICAL CYCLONE
28 KT NE: 260 SE: 270 SW: 280 NW: 230
34 KT NE: 155 SE: 165 SW: 175 NW: 140
48 KT NE: 90 SE: 80 SW: 80 NW: 80
64 KT NE: 60 SE: 60 SW: 60 NW: 60

2.C ADDITIONAL INFORMATION:

FT=CI=4.5-

OVER THE LAST 6 HOURS, BELAL'S CLOUD PATTERN HAS CONTINUED TO IMPROVE, WITH THE CENTER INCREASINGLY EMBEDDED WITHIN A VERY COLD CDO. AMSR2 MICROWAVE DATA, AND ESPECIALLY RADAR IMAGES FROM COLORADO, SHOW THE DEVELOPMENT OF A WELL-DEFINED EYE OVER THE LAST FEW HOURS. IN THE LATEST INFRARED IMAGES, A HOT SPOT HAS APPEARED. CONSEQUENTLY, AND IN AGREEMENT WITH THE SUBJECTIVE DVORAK ANALYSES, BELAL IS CONSIDERED TO HAVE REACHED THE TROPICAL CYCLONE STAGE. FURTHERMORE, IN VIEW OF THE MICROWAVE DATA, IT CANNOT BE RULED OUT THAT A EYEWALL REPLACEMENT CYCLE WILL BEGIN WITHIN THE NEXT 24 HOURS.

BELAL'S TRAJECTORY IS BEING DRIVEN BY A RIDGE OF HIGH PRESSURE LOCATED TO ITS EAST AND SOUTHEAST, FORCING IT TO HEAD SOUTH-SOUTHWEST THIS MORNING. TODAY, AS THE RIDGE OF HIGH PRESSURE GRADUALLY SHIFTS TO THE NORTHEAST OF THE SYSTEM, BELAL SHOULD TURN TO THE SOUTHEAST, APPROACHING THE GREAT MASCARENE ISLANDS LATE ON SUNDAY NIGHT. THE PRESENT FORECAST CONTINUES TO SEE THE METEOR EVOLVE IN THE IMMEDIATE

VICINITY OF THE ISLAND OF REUNION ON MONDAY. AS IT PASSES CLOSE TO THE SISTER ISLANDS, THE TRACK UNCERTAINTY IS IN THE ORDER OF 100 TO 150 KM, MAKING IT UNCERTAIN EXACTLY WHEN IT WILL PASS THE CLOSEST. SOME GUIDANCE SUGGEST AN EVEN LATER SCENARIO. FROM TUESDAY ONWARDS, BELAL'S MOVEMENT IS SET TO SLOW DOWN AND UNCERTAINTY ON ITS TRAJECTORY WILL INCREASE AS A RESULT OF MORE CONTRADICTORY STEERING FLOWS (COMPETITION BETWEEN A RIDGE OF HIGH PRESSURE TO THE WEST OF THE SYSTEM AND THE RIDGE TO THE NORTHEAST).

BELAL IS BENEFITING FROM VERY GOOD SHORT-TERM ENVIRONMENTAL CONDITIONS, WITH VERY WARM WATERS WITH HIGH ENERGY CONTENT, WEAKENING SHEAR AND EXCELLENT HIGH-LEVEL DIVERGENCE. THESE CONDITIONS ARGUE IN FAVOR OF A POTENTIAL FOR INTENSIFICATION UNTIL TONIGHT. THE INTENSE TROPICAL CYCLONE STAGE COULD THEREFORE BE REACHED TODAY. A POSSIBLE EYEWALL REPLACEMENT CYCLE COULD HOWEVER LIMIT THE PEAK INTENSITY. FROM MONDAY ONWARDS, THE GRADUAL INCREASE OF THE WEST-SOUTH-WESTERLY SHEAR AS WELL AS THE EVOLUTION CLOSE TO THE TOPOGRAPHY OF REUNION AND MAURITIUS COULD LEAD TO A GRADUAL WEAKENING OF THE SYSTEM. FURTHER OUT, THE SHEAR COULD WEAKEN TO SOME EXTENT. ON STILL-WARM WATERS, BELAL COULD CONTINUE TO EVOLVE AT SIGNIFICANT INTENSITY.

EXPECTED IMPACTS ON REUNION AND MAURITIUS OVER THE NEXT 72 HOURS :

REUNION :

- PASSAGE OF THE SYSTEM'S INTENSE CORE LIKELY WITHIN 100 KM OF THE ISLAND BETWEEN LATE SUNDAY NIGHT AND MONDAY. THE PROBABILITY OF A DIRECT HIT EXCEEDS 60%.
- GALE FORCE WINDS EXPECTED FROM SUNDAY EVENING 18UTC, STORM FORCE LIKELY BY THE END OF THE NIGHT, WITH THE POSSIBILITY OF HURRICANE FORCE DURING THE DAY.
- HEAVY RAINFALL OF 200-400MM IN 24HRS OVER THE LOWER PARTS OF THE ISLAND AND 1000-1500MM IN 24HRS OVER HIGH GROUNDS FROM SUNDAY NIGHT INTO MONDAY.
- WAVES OVER 4M FROM SUNDAY MORNING, RISING TO OVER 6M ON SUNDAY EVENING AND AROUND 8M ON MONDAY. THE HIGHEST WAVES MAY REACH TWICE THESE HEIGHTS.

MAURITIUS :

- PROBABLY A MORE PERIPHERAL INFLUENCE THAN FOR REUNION ISLAND, BUT WE CAN'T RULE OUT A MORE DIRECT INFLUENCE, GIVEN THE TRACK UNCERTAINTY.
- GALE FORCE WINDS LIKELY MONDAY EVENING. LOW PROBABILITY OF STORM FORCE WINDS.
- HEAVY RAINFALL AROUND 100-200MM IN 24H FROM MONDAY TO TUESDAY MORNING.
- WAVES OVER 4M SUNDAY NIGHT AND OVER 6M DURING ON MONDAY.