

WTIO30 FMEE 131240

RSMC / TROPICAL CYCLONE CENTER / LA REUNION

TROPICAL CYCLONE FORECAST WARNING (SOUTH-WEST INDIAN OCEAN)

0.A WARNING NUMBER: 10/2/20232024

1.A SEVERE TROPICAL STORM 2 (BELAL)

2.A POSITION 2024/01/13 AT 1200 UTC:

WITHIN 20 NM RADIUS OF POINT 16.8 S / 54.0 E

(SIXTEEN DECIMAL EIGHT DEGREES SOUTH AND
FIFTY FOUR DECIMAL ZERO DEGREES EAST)

MOVEMENT: SOUTH-WEST 13 KT

3.A DVORAK ANALYSIS: 4.0/4.0/D 1.5/12 H

4.A CENTRAL PRESSURE: 986 HPA

5.A MAX AVERAGE WIND SPEED (10 MN): 55 KT

RADIUS OF MAXIMUM WINDS (RMW): 22 KM

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

28 KT NE: 150 SE: 220 SW: 185 NW: 150

34 KT NE: 65 SE: 75 SW: 75 NW: 65

48 KT NE: 35 SE: 35 SW: 40 NW: 35

64 KT NE: 0 SE: 0 SW: 0 NW: 0

7.A FIRST CLOSED ISOBAR (PRESSURE / AVERAGE DIAM): 1009 HPA / 1000 KM

8.A VERTICAL EXTENSION OF CYCLONE CIRCULATION: DEEP

1.B FORECASTS (WINDS RADII IN KM):

12H: 2024/01/14 00 UTC: 18.4 S / 53.4 E, VENT MAX= 085 KT, TROPICAL CYCLONE

28 KT NE: 185 SE: 195 SW: 175 NW: 155

34 KT NE: 100 SE: 95 SW: 95 NW: 100

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

64 KT NE: 35 SE: 30 SW: 35 NW: 30

24H: 2024/01/14 12 UTC: 19.8 S / 53.8 E, VENT MAX= 110 KT, INTENSE TROPICAL
CYCLONE

28 KT NE: 220 SE: 240 SW: 185 NW: 195

34 KT NE: 130 SE: 130 SW: 110 NW: 130

48 KT NE: 65 SE: 65 SW: 65 NW: 75

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

36H: 2024/01/15 00 UTC: 20.6 S / 54.8 E, VENT MAX= 110 KT, INTENSE TROPICAL
CYCLONE

28 KT NE: 230 SE: 260 SW: 175 NW: 205

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

48 KT NE: 75 SE: 65 SW: 65 NW: 75

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

48H: 2024/01/15 12 UTC: 21.4 S / 56.0 E, VENT MAX= 090 KT, INTENSE TROPICAL CYCLONE

28 KT NE: 220 SE: 185 SW: 205 NW: 185

34 KT NE: 130 SE: 100 SW: 120 NW: 120

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

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

60H: 2024/01/16 00 UTC: 21.9 S / 57.2 E, VENT MAX= 080 KT, TROPICAL CYCLONE

28 KT NE: 250 SE: 295 SW: 250 NW: 175

34 KT NE: 140 SE: 175 SW: 130 NW: 110

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

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

72H: 2024/01/16 12 UTC: 21.9 S / 58.4 E, VENT MAX= 080 KT, TROPICAL CYCLONE

28 KT NE: 270 SE: 350 SW: 280 NW: 220

34 KT NE: 150 SE: 220 SW: 155 NW: 150

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

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

2.B LONGER-RANGE OUTLOOK:

96H: 2024/01/17 12 UTC: 21.9 S / 60.5 E, VENT MAX= 075 KT, TROPICAL CYCLONE

28 KT NE: 270 SE: 350 SW: 285 NW: 240

34 KT NE: 150 SE: 205 SW: 165 NW: 155

48 KT NE: 75 SE: 65 SW: 65 NW: 85

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

120H: 2024/01/18 12 UTC: 22.0 S / 62.0 E, VENT MAX= 070 KT, TROPICAL CYCLONE

28 KT NE: 240 SE: 260 SW: 270 NW: 205

34 KT NE: 130 SE: 150 SW: 140 NW: 130

48 KT NE: 70 SE: 60 SW: 60 NW: 70

64 KT NE: 50 SE: 50 SW: 60 NW: 60

2.C ADDITIONAL INFORMATION:

FT=CI=4.0

OVER THE PAST 6 HOURS, BELAL'S CLOUD PATTERN HAS CLEARLY KEPT IMPROVING, TRANSITIONING FROM A STRONGLY-WRAPPED CURVED BAND TO A CDO CONFIGURATION WITH VERY COLD CLOUD TOPS (-90C). STRONG LIGHTNING ACTIVITY HAS BEEN DETECTED NEAR THE CENTER, WHICH IS A LIKELY SIGN OF UNDERGOING RAPID INTENSIFICATION. THE CIRRUS CLOUDS SPREADING TO THE NORTH-WEST AND SOUTH OF THE SYSTEM CONFIRM CURRENT EXCELLENT UPPER-LEVEL DIVERGENCE CONDITIONS. INTENSITY IS ESTIMATED AT 55KT, MAINLY BASED ON SUBJECTIVE DVORAK ANALYSIS AT 4.0.

BELAL IS CURRENTLY BEING STEERED SOUTH-SOUTHWESTWARDS BY A RIDGE LOCATED TO THE EAST AND SOUTHEAST OF THE SYSTEM. FROM SUNDAY, AS THE RIDGE OF HIGH PRESSURE GRADUALLY STRENGTHENS TO THE NORTHEAST OF THE SYSTEM, BELAL SHOULD TURN SOUTHEAST, APPROACHING THE MASCARENE ISLANDS DURING SUNDAY NIGHT. THE PRESENT FORECAST CONTINUES TO EXPECT BELAL TO TRACK IN THE IMMEDIATE VICINITY OF REUNION ISLAND ON MONDAY

MORNING. AS IT PASSES CLOSE TO THE ISLANDS, THE UNCERTAINTY OVER ITS TRACK WHILE IT PASSES CLOSE TO THE MASCARENE ISLANDS IS OF ABOUT 100 TO 150 KM. FROM TUESDAY ONWARDS, BELAL'S MOVEMENT SHOULD SLOW DOWN AND UNCERTAINTY OVER ITS TRACK INCREASES DUE TO MORE CONTRADICTORY STEERING FLOWS (COMPETITION BETWEEN A RIDGE OF HIGH PRESSURE TO THE WEST OF THE SYSTEM AND THE RIDGE TO THE NORTHEAST).

IN THE SHORT TERM, BELAL IS BENEFITING FROM VERY GOOD ENVIRONMENTAL CONDITIONS, WITH GOOD LOW-LEVEL MOISTURE FEED AND CONVERGENCE, VERY WARM WATERS WITH HIGH ENERGY CONTENT, LOW WIND SHEAR AND EXCELLENT UPPER-LEVEL DIVERGENCE. THESE CONDITIONS, TOGETHER WITH THE SMALL SIZE OF THE SYSTEM'S INNER CORE, SUGGEST A HIGH POTENTIAL FOR RAPID INTENSIFICATION BETWEEN NOW AND SUNDAY EVENING. INTENSE TROPICAL CYCLONE STAGE SHOULD THUS BE REACHED BY TOMORROW SUNDAY. THE SYSTEM'S INTENSITY COULD THEN STAGNATE OR DIMINISH AS IT PASSES CLOSE TO THE ISLANDS, DUE TO INTERNAL MECHANISMS (POSSIBLE EYEWALL REPLACEMENT CYCLE), POSSIBLE LAND INTERACTION, BUT ALSO DUE TO INCREASING SOUTHWESTERLY MID-SHEAR AS IT PASSES THE MASCARENE ISLANDS, WHICH COULD TEMPORARILY BRING DRY AIR INTO THE SYSTEM'S WESTERN SEMI-CIRCLE. ON TUESDAY AND WEDNESDAY, DESPITE A SLIGHT DROP IN OCEANIC HEAT CONTENT AND THE PRESENCE OF MODERATE WIND SHEAR, MOST MODELS SUGGEST THAT BELAL COULD REMAIN AT A QUITE MATURE STAGE.

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 MAJOR IMPACT EXCEEDS 60%.
- GALE FORCE WINDS EXPECTED FROM SUNDAY EVENING 18UTC, STORM FORCE LIKELY FROM MONDAY 00UTC WITH THE POSSIBILITY OF HURRICANE FORCE. CLOSEST PASSAGE AROUND MONDAY MORNING.
- 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. FORECASTS WILL NEED TO BE ADJUSTED.
- HEAVY RAINFALL AROUND 100-200MM IN 24H FROM MONDAY TO TUESDAY MORNING.
- WAVES OVER 4M SUNDAY NIGHT AND OVER 6M DURING ON MONDAY.