

MONITORING EXPLOSIVE CYCLONES ON THE COAST OF THE ANTARCTIC CONTINENT

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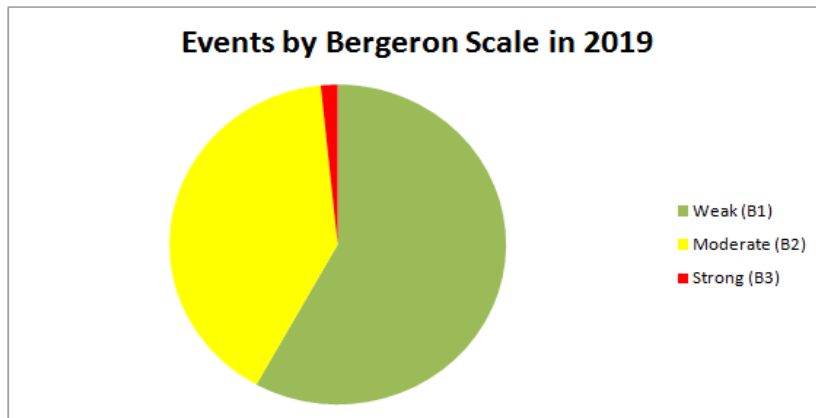
SEPTEMBER 2019

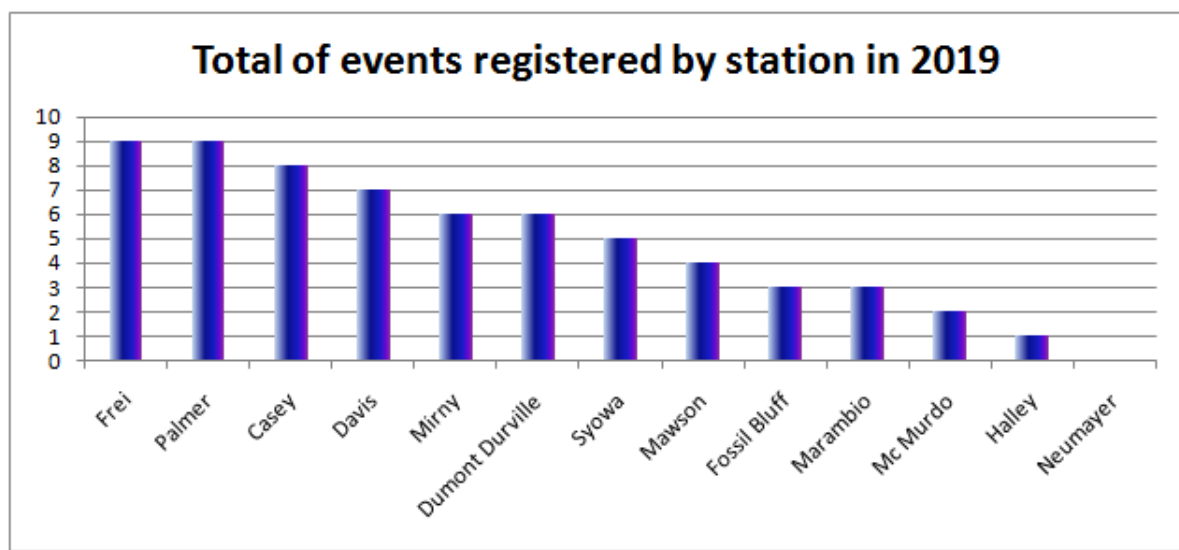
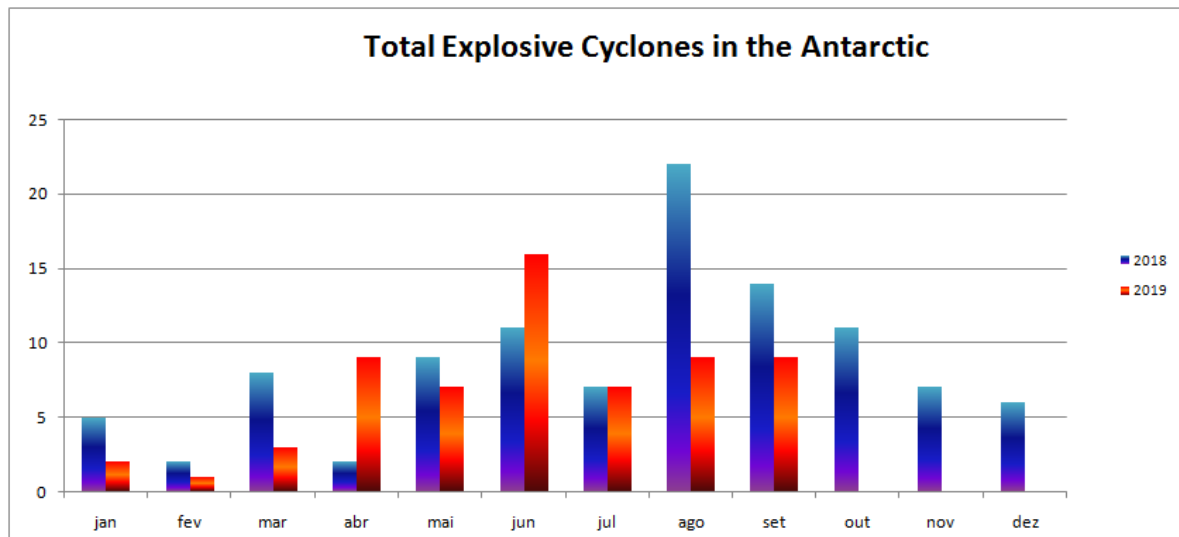
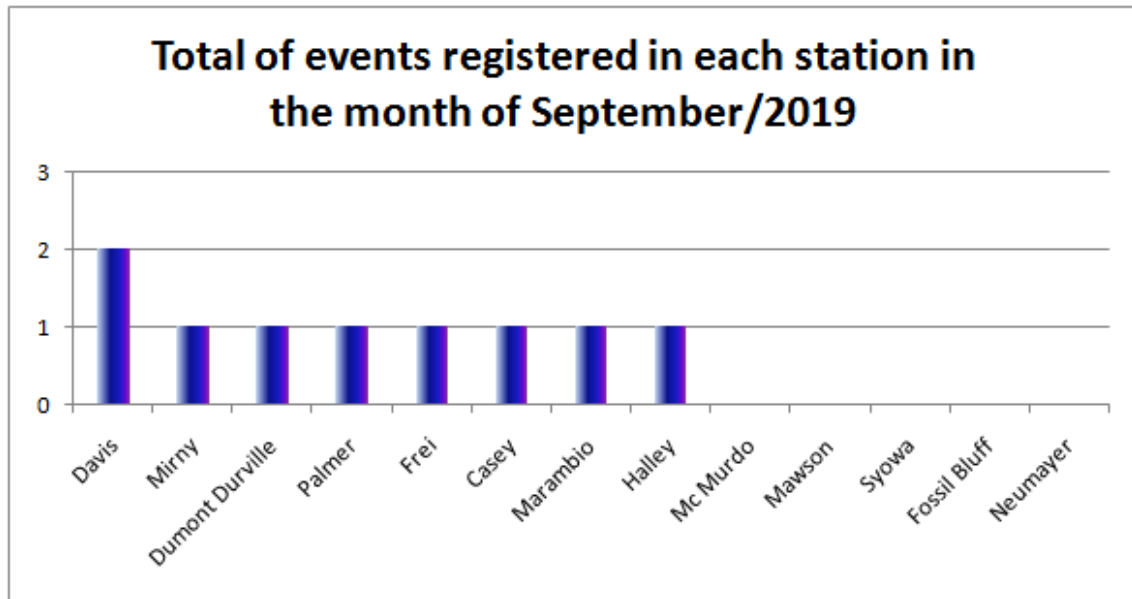
During this month, 09 events were registered among the 13 research stations located on the coast of the Antarctic utilized as references for the monitoring of bomb cyclones. The stations hit by cyclones this month were: Frei, Casey, Dumont D'Urville, Davis, Halley, Marambio, and Palmer. The most intense cyclone recorded was no.62/2019 at the Dumont D'Urville station on 20th with sustained winds of up to 33.0 m/s (74 mph). The cyclone which registered the lowest atmospheric pressure at sea level was the no.59/2019 at the Halley station, with values reaching 943.0 hPa. There was a significant decrease in the number of cases in comparison to the same month of the previous year (36%).

STATISTICS OF THE MONTH

| Classification | Bergeron Scale | Intensity | Total of cases registered in the month |
|----------------|----------------|-----------|--|
| B1 | 1 a 1.2 | Weak | 06 |
| B2 | 1.3 a 1.8 | Moderate | 02 |
| B3 | >1.8 | Strong | 01 |

| Highest pressure drop | Lowest recorded pressure | Highest sustained wind |
|-------------------------------|--------------------------|-------------------------------|
| -47.4 hPa/24h | 943.0 hPa | 33.0 m/s |
| Dumont D'Urville Sep. 20th | Halley Sep. 12th | Dumont D'Urville Sep. 20th |





BOMB CYCLONE Nº55/2019- DATE: SEPTEMBER/03/2019

LOCAL: DAVIS STATION – WMO 89571 (OPERATED BY AUSTRALIA)

| | |
|---|-------------------|
| Drop of pressure in 24h | -25.2 hPa |
| Minimum pressure registered on station | 977.4 hPa |
| Minimum pressure estimation in the cyclone core | 951 hPa |
| Sustained maximum wind | 10.8 m/s (24 mph) |
| Maximum wind gust | none m/s (mph) |
| Bergeron | 1.1 (weak) |

BOMB CYCLONE Nº56/2019- DATE: SEPTEMBER/11/2019

LOCAL: MARAMBIO STATION – WMO 89055 (OPERATED BY ARGENTINA)

| | |
|---|-------------------|
| Drop of pressure in 24h | -28.8 hPa |
| Minimum pressure registered on station | 951.9 hPa |
| Minimum pressure estimation in the cyclone core | 950 hPa |
| Sustained maximum wind | 21.0 m/s (47 mph) |
| Maximum wind gust | none m/s (mph) |
| Bergeron | 1.2 (weak) |

BOMB CYCLONE Nº57/2019- DATE: SEPTEMBER/11/2019

LOCAL: FREI STATION – WMO 89055 (OPERATED BY CHILE)

| | |
|---|-------------------|
| Drop of pressure in 24h | -28.0 hPa |
| Minimum pressure registered on station | 964.0 hPa |
| Minimum pressure estimation in the cyclone core | 950 hPa |
| Sustained maximum wind | 19.0 m/s (42 mph) |
| Maximum wind gust | 22.5 m/s (50 mph) |
| Bergeron | 1.2 (weak) |

BOMB CYCLONE №58/2019- DATE: SEPTEMBER/11/2019

LOCAL: PALMER STATION – WMO 89061 (OPERATED BY U.S.A.)

| | |
|---|-------------------|
| Drop of pressure in 24h | -33.3 hPa |
| Minimum pressure registered on station | 953.5 hPa |
| Minimum pressure estimation in the cyclone core | 950 hPa |
| Sustained maximum wind | 29.0 m/s (65 mph) |
| Maximum wind gust | none m/s (mph) |
| Bergeron | 1.4 (moderate) |

BOMB CYCLONE №59/2019- DATE: SEPTEMBER/11/2019

LOCAL: MIRNY STATION – WMO 89592 (OPERATED BY RUSSIA)

| | |
|---|-------------------|
| Drop of pressure in 24h | -27.5 hPa |
| Minimum pressure registered on station | 970.3 hPa |
| Minimum pressure estimation in the cyclone core | 958 hPa |
| Sustained maximum wind | 26.0 m/s (58 mph) |
| Maximum wind gust | none m/s (mph) |
| Bergeron | 1.1 (weak) |

BOMB CYCLONE №60/2019- DATE: SEPTEMBER/12/2019

LOCAL: HALLEY STATION – WMO 89022 (OPERATED BY U.K.)

| | |
|---|-------------------|
| Drop of pressure in 24h | -30.9 hPa |
| Minimum pressure registered on station | 943.0 hPa |
| Minimum pressure estimation in the cyclone core | 938 hPa |
| Sustained maximum wind | 28.0 m/s (63 mph) |
| Maximum wind gust | none m/s (mph) |
| Bergeron | 1.3 (moderate) |

BOMB CYCLONE N°61/2019- DATE: SEPTEMBER/13/2019

LOCAL: CASEY STATION – WMO 89611 (OPERATED BY AUSTRALIA)

| | |
|---|-------------------|
| Drop of pressure in 24h | -29.3 hPa |
| Minimum pressure registered on station | 951.5 hPa |
| Minimum pressure estimation in the cyclone core | 943 hPa |
| Sustained maximum wind | 33.0 m/s (74 mph) |
| Maximum wind gust | 39.0 m/s (87 mph) |
| Bergeron | 1.2 (weak) |

BOMB CYCLONE N°62/2019- DATE: SEPTEMBER/18/2019

LOCAL: DAVIS STATION – WMO 89571 (OPERATED BY AUSTRALIA)

| | |
|---|-------------------|
| Drop of pressure in 24h | -24.2 hPa |
| Minimum pressure registered on station | 949.7 hPa |
| Minimum pressure estimation in the cyclone core | 949 hPa |
| Sustained maximum wind | 29.0 m/s (65 mph) |
| Maximum wind gust | 42.5 m/s (95 mph) |
| Bergeron | 1.0 (weak) |

BOMB CYCLONE N°64/2019- DATE: SEPTEMBER/20/2019

LOCAL: DUMONT D'URVILLE STATION – WMO 89642 (OPERATED BY FRANCE)

| | |
|---|--------------------|
| Drop of pressure in 24h | -47.4 hPa |
| Minimum pressure registered on station | 953.4 hPa |
| Minimum pressure estimation in the cyclone core | 953 hPa |
| Sustained maximum wind | 33.0 m/s (74 mph) |
| Maximum wind gust | 48.5 m/s (108 mph) |
| Bergeron | 2.0 (strong) |

Sources:

AMRC – UW Madison

<https://worldview.earthdata.nasa.gov>

<http://www.bom.gov.au>

<https://data.aad.gov.au>

<http://www.smn.gov.ar>

<http://meteoarmada.directemar.cl>