

MONITORING EXPLOSIVE CYCLONES ON THE COAST OF THE ANTARCTIC CONTINENT

BY ROMAO, M. AND PIRES, L. B. M.

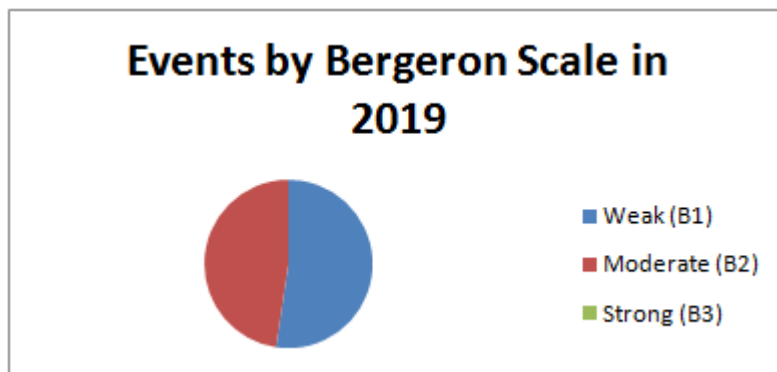
MAY 2019

During this month, 06 events were recorded among the 13 research stations located on the coast of the Antarctic utilized as references for the monitoring of bomb cyclones. The stations that were affected by cyclones this month were: Frei, Palmer, Syowa, Casey, and Marambio. The most intense cyclone recorded was no. 18/2019 at the Palmer station on the 11th with sustained winds of up to 39.0 m/s (87 mph). The cyclone with the lowest recorded atmospheric pressure at sea level also was no. 18/2019 at the Palmer station, with values reaching 943.0 hPa.

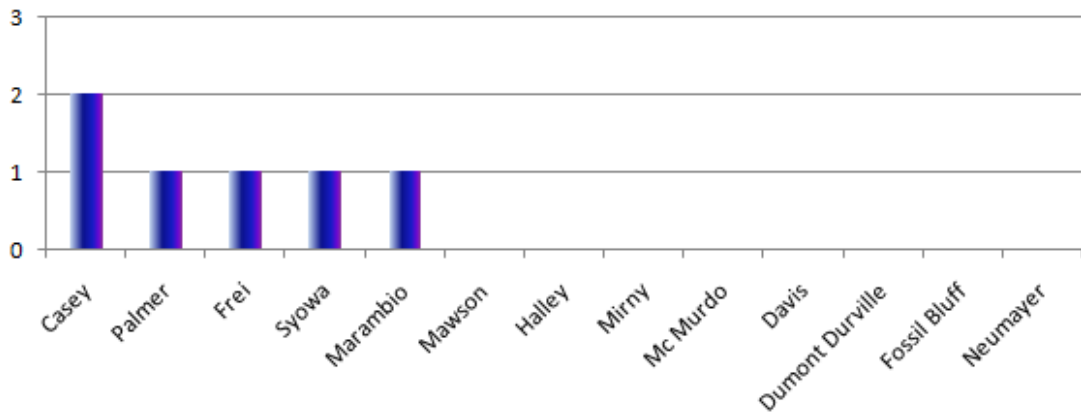
STATISTICS OF THE MONTH

Classification	Bergeron Scale	Intensity	Total of cases registered in the month
B1	1 a 1.2	Weak	03
B2	1.3 a 1.8	Moderate	03
B3	>1.8	Strong	00

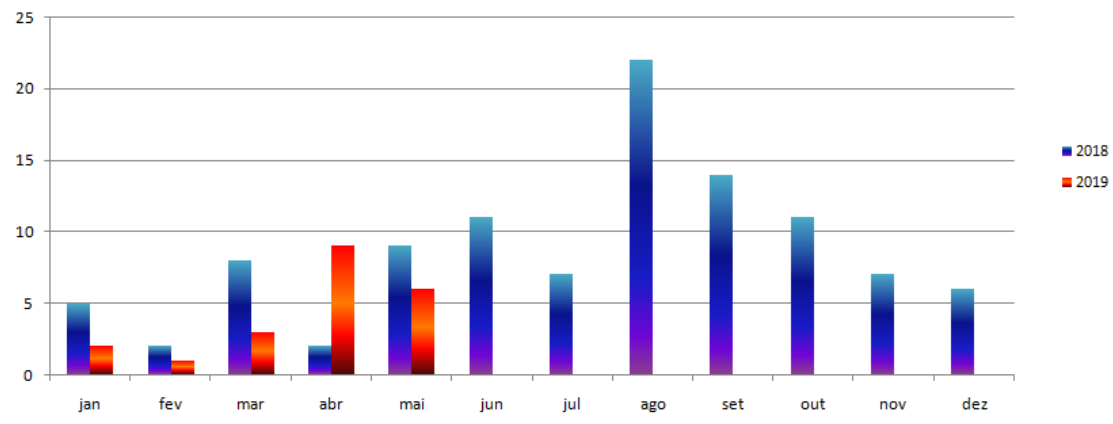
Highest pressure drop	Lowest recorded pressure	Highest sustained wind
36.7 hPa/24h	943.0	39.0 m/s
Palmer	Palmer	Palmer
May 11th	May 11th	May 11th



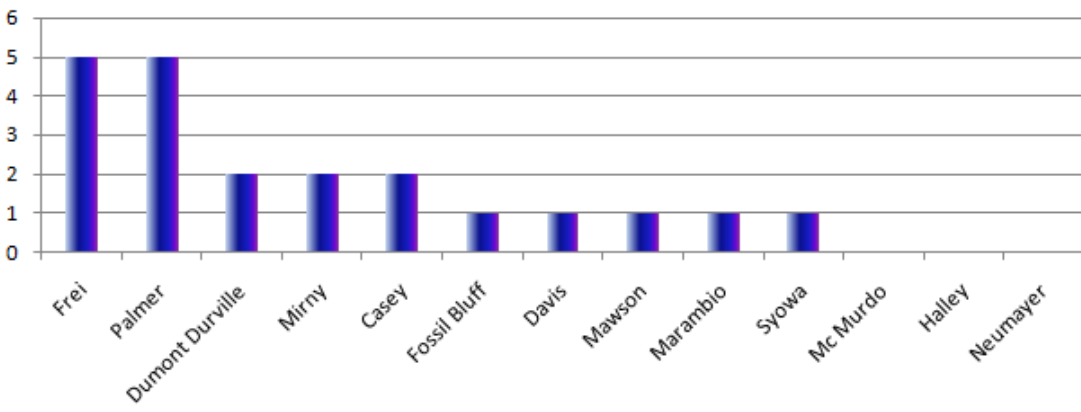
Total of events registered in each station in the month of May/2019



Explosive Cyclones in the Antarctic



Total of events registered by station in 2019



BOMB CYCLONE N°16/2019- DATE: MAY/03/2019
LOCAL: DAVIS STATION – WMO 89571 (OPERATED BY AUSTRALIA)

Drop of pressure in 24h	-28.5 hPa
Minimum pressure registered on station	975.8 hPa
Minimum pressure estimation in the cyclone core	973 hPa
Sustained maximum wind	8.0 m/s (18 mph)
Maximum wind gust	10.0 m/s (22 mph)
Bergeron	1.2 (weak)

BOMB CYCLONE N°17/2019- DATE: MAY/04/2019
LOCAL: SYOWA STATION – WMO 89532 (OPERATED BY JAPAN)

Drop of pressure in 24h	-24.8 hPa
Minimum pressure registered on station	977.4 hPa
Minimum pressure estimation in the cyclone core	943 hPa
Sustained maximum wind	5.7 m/s (mph)
Maximum wind gust	none m/s (mph)
Bergeron	1.0 (weak)

BOMB CYCLONE N°18/2019- DATE: MAY/09/2019
LOCAL: CASEY STATION – WMO 89611 (OPERATED BY AUSTRALIA)

Drop of pressure in 24h	-29.8 hPa
Minimum pressure registered on station	958.1 hPa
Minimum pressure estimation in the cyclone core	946 hPa
Sustained maximum wind	33.0 m/s (74 mph)
Maximum wind gust	35.0 m/s (78 mph)
Bergeron	1.2 (weak)

BOMB CYCLONE Nº19/2019- DATE: MAY/11/2019
LOCAL: PALMER STATION – WMO 89061 (OPERATED BY U.S.A.)

Drop of pressure in 24h	-36.7 hPa
Minimum pressure registered on station	943.0 hPa
Minimum pressure estimation in the cyclone core	943.0 hPa
Sustained maximum wind	39.0 m/s (87 mph)
Maximum wind gust	none m/s (mph)
Bergeron	1.5 (moderate)

BOMB CYCLONE Nº20/2019- DATE: MAY/11/2019
LOCAL: FREI STATION – WMO 89056 (OPERATED BY CHILE)

Drop of pressure in 24h	-35.2 hPa
Minimum pressure registered on station	954.9 hPa
Minimum pressure estimation in the cyclone core	943 hPa
Sustained maximum wind	18.0 m/s (40 mph)
Maximum wind gust	24.0 m/s (54 mph)
Bergeron	1.5 (moderate)

BOMB CYCLONE Nº21/2019- DATE: MAY/11/2019
**LOCAL: MARAMBIO STATION – WMO 89055 (OPERATED BY
ARGENTINA)**

Drop of pressure in 24h	-31.3 hPa
Minimum pressure registered on station	948.5 hPa
Minimum pressure estimation in the cyclone core	943 hPa
Sustained maximum wind	19.5 m/s (44 mph)
Maximum wind gust	none m/s (mph)
Bergeron	1.3 (moderate)

BOMB CYCLONE Nº22/2019- DATE: MAY/31/2019
LOCAL: CASEY STATION – WMO 89611 (OPERATED BY
AUSTRALIA)

Drop of pressure in 24h	-28.8 hPa
Minimum pressure registered on station	965.0 hPa
Minimum pressure estimation in the cyclone core	953 hPa
Sustained maximum wind	6.5 m/s (15 mph)
Maximum wind gust	8.0 m/s (18 mph)
Bergeron	1.2 (weak)

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>