

MONITORING EXPLOSIVE CYCLONES ON THE COAST OF THE ANTARCTIC CONTINENT

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

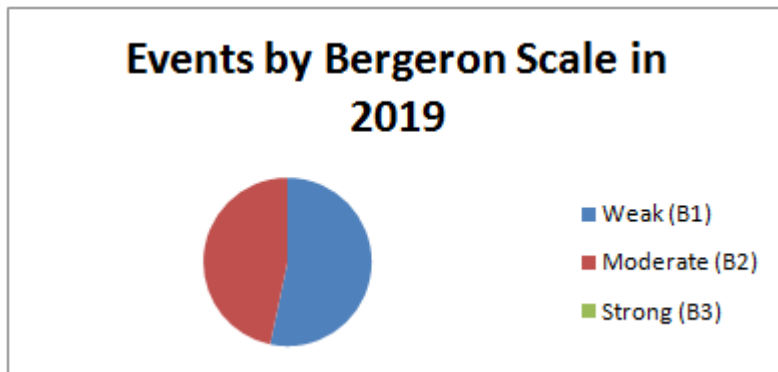
APRIL 2019

During this month, 09 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, Fossil Bluff, Mirny, Dumont D'Urville, and Mawson. The most intense cyclone recorded was no.10/2019 at the Mawson station on 07th with sustained winds of up to 37.1 m/s (83 mph). The cyclone with the lowest recorded atmospheric pressure at sea level was the no. 14/2019 at the Palmer station, with values reaching 948.7 hPa.

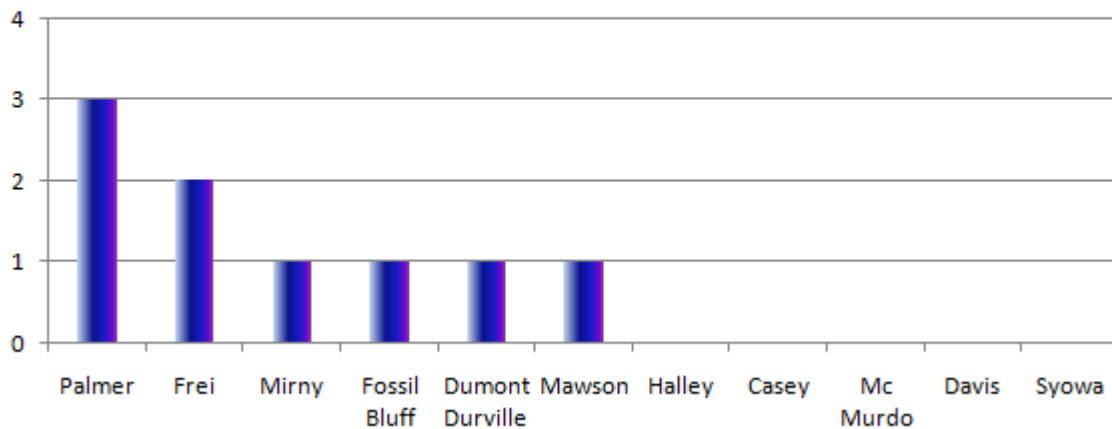
STATISTICS OF THE MONTH

Classification	Bergeron Scale	Intensity	Total of cases registered in the month
B1	1 a 1.2	Weak	05
B2	1.3 a 1.8	Moderate	04
B3	>1.8	Strong	00

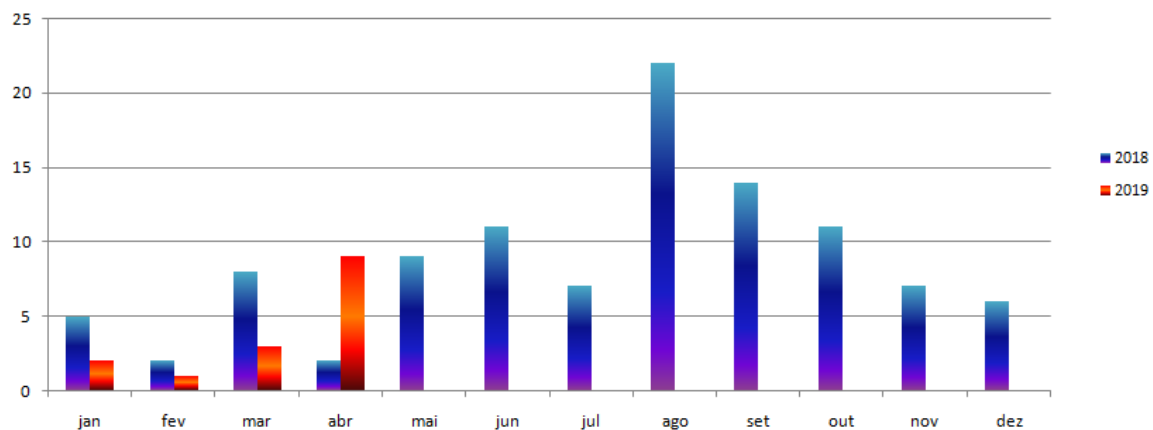
Highest pressure drop	Lowest recorded pressure	Highest sustained wind
39.3 hpa/24h	948.7 hPa	37.1 m/s
Mirny	Palmer	Mawson
Apr.30th	Apr. 13th	Apr.07th



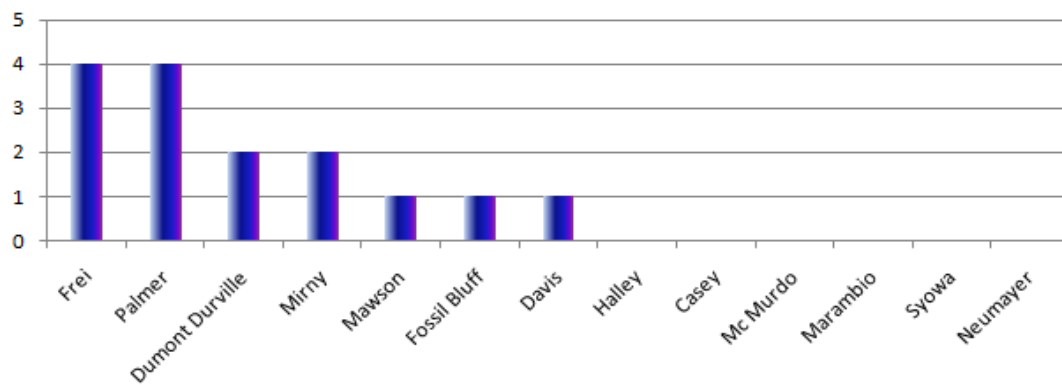
Total of events registered in each station in the month of April/2019



Explosive Cyclones in the Antarctic



Total of events registered by station in 2019



BOMB CYCLONE Nº07/2019- DATE: APR./03/2019
LOCAL: FREI STATION – WMO 89056 (OPERATED BY CHILE)

Drop of pressure in 24h	-33.0 hPa
Minimum pressure registered on station	964.0 hPa
Minimum pressure estimation in the cyclone core	958 hPa
Sustained maximum wind	18.5 m/s (41 mph)
Maximum wind gust	none m/s (mph)
Bergeron	1.4 (moderate)

BOMB CYCLONE Nº08/2019- DATE: APR./03/2019
LOCAL: PALMER STATION – WMO 89061 (OPERATED BY U.S.A.)

Drop of pressure in 24h	-26.1 hPa
Minimum pressure registered on station	962.2 hPa
Minimum pressure estimation in the cyclone core	958 hPa
Sustained maximum wind	12.0 m/s (27 mph)
Maximum wind gust	None m/s (mph)
Bergeron	(weak)

BOMB CYCLONE Nº09/2019- DATE: APR./07/2019
LOCAL: DUMONT D'URVILLE STATION – WMO 89642 (OPERATED BY FRANCE)

Drop of pressure in 24h	-28.8 hPa
Minimum pressure registered on station	970.6 hPa
Minimum pressure estimation in the cyclone core	958 hPa
Sustained maximum wind	34.5 m/s (77 mph)
Maximum wind gust	49.5 m/s (111 mph)
Bergeron	1.2 (weak)

BOMB CYCLONE Nº10/2019- DATE: APR./07/2019
LOCAL: MAWSON STATION – WMO 89564 (OPERATED BY AUSTRALIA)

Drop of pressure in 24h	-27.8 hPa
Minimum pressure registered on station	973.1 hPa
Minimum pressure estimation in the cyclone core	966 hPa
Sustained maximum wind	37.1 m/s (83 mph)
Maximum wind gust	46.9 m/s (105 mph)
Bergeron	1.2 (weak)

BOMB CYCLONE Nº11/2019- DATE: APR./11/2019
LOCAL: PALMER STATION – WMO 89061 (OPERATED BY U.S.A.)

Drop of pressure in 24h	-27.1 hPa
Minimum pressure registered on station	973.3 hPa
Minimum pressure estimation in the cyclone core	951 hPa
Sustained maximum wind	21.0 m/s (47 mph)
Maximum wind gust	None m/s (mph)
Bergeron	1.1 (weak)

BOMB CYCLONE Nº12/2019- DATE: APR./11/2019
LOCAL: FOSSIL BLUFF STATION – WMO 89065 (OPERATED BY U.K.)

Drop of pressure in 24h	- 33.8 hPa
Minimum pressure registered on station	958.1 hPa
Minimum pressure estimation in the cyclone core	951 hPa
Sustained maximum wind	18.5 m/s (41 mph)
Maximum wind gust	None m/s (mph)
Bergeron	1.4 (moderate)

BOMB CYCLONE Nº13/2019- DATE: APR./13/2019
LOCAL: FREI STATION – WMO 89056 (OPERATED BY CHILE)

Drop of pressure in 24h	-33.0 hPa
Minimum pressure registered on station	953.3 hPa
Minimum pressure estimation in the cyclone core	948 hPa
Sustained maximum wind	30.0 m/s (67 mph)
Maximum wind gust	37.0 m/s (83 mph)
Bergeron	1.4 (moderate)

BOMB CYCLONE Nº14/2019- DATE: APR./13/2019
LOCAL: PALMER STATION – WMO 89061 (OPERATED BY U.S.A.)

Drop of pressure in 24h	-24.2 hPa
Minimum pressure registered on station	948.7 hPa
Minimum pressure estimation in the cyclone core	948 hPa
Sustained maximum wind	26.0 m/s (58 mph)
Maximum wind gust	none m/s (mph)
Bergeron	1.0 (weak)

BOMB CYCLONE Nº15/2019- DATE: APR./30/2019
LOCAL: MIRNY STATION – WMO 89592 (OPERATED BY RUSSIA)

Drop of pressure in 24h	-39.3 hPa
Minimum pressure registered on station	959.7 hPa
Minimum pressure estimation in the cyclone core	940 hPa
Sustained maximum wind	28.0 m/s (63 mph)
Maximum wind gust	none m/s (mph)
Bergeron	1.6 (moderate)

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>