

MONITORING EXPLOSIVE CYCLONES ON THE COAST OF THE ANTARCTIC CONTINENT

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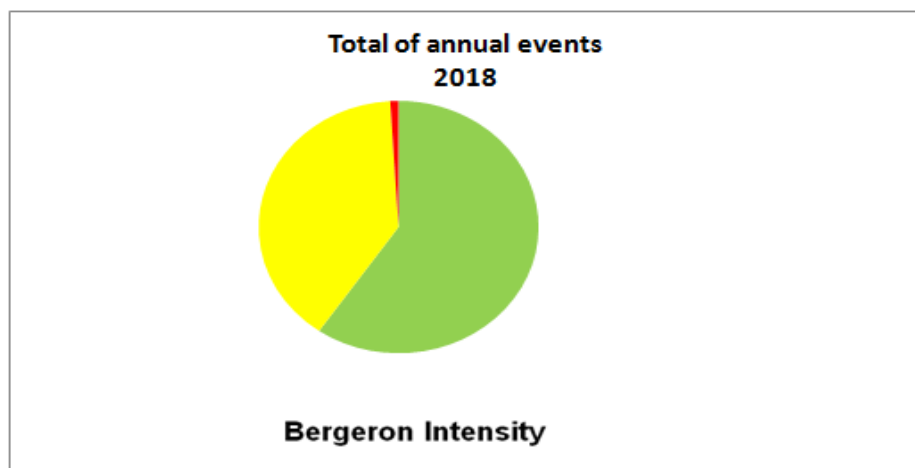
DECEMBER 2018

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, Fossil Bluff, Marambio, Palmer, and Syowa. The most intense cyclone recorded was no. 101/2018 at the Palmer station on the 6th with sustained winds of up to 20 m/s (45 mph). The cyclone with the lowest recorded atmospheric pressure at sea level was no. 104/2018 at the Marambio station, with values reaching 951.5 hPa.

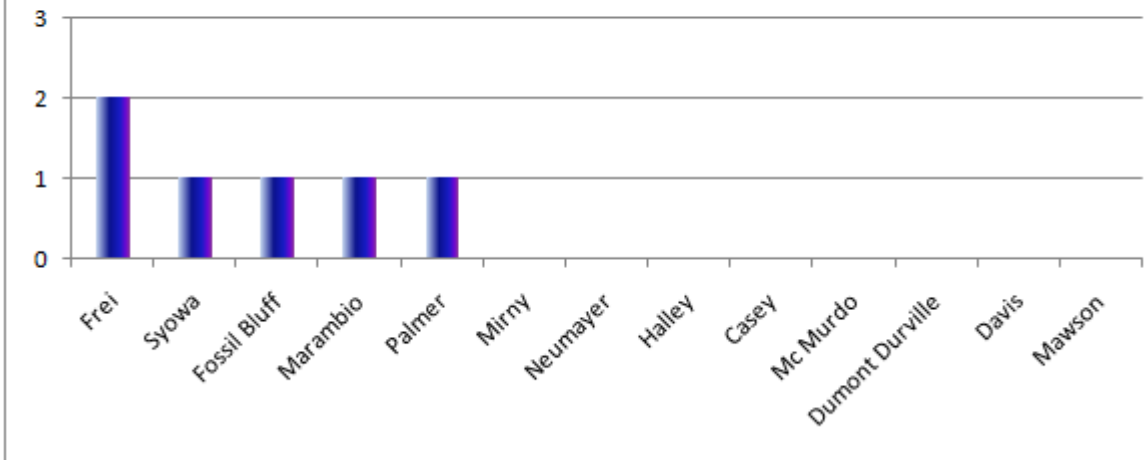
STATISTICS OF THE MONTH

| 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 |

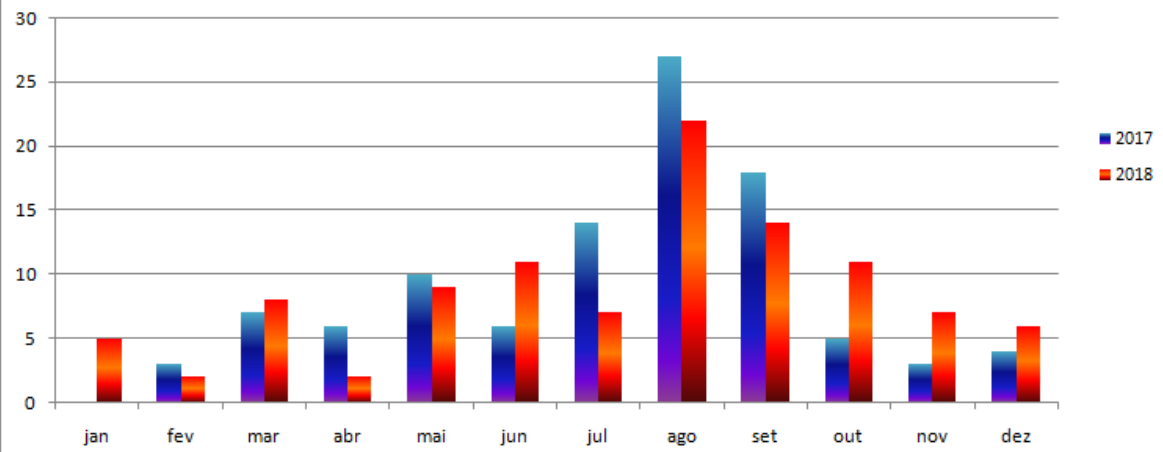
| Highest pressure drop | Lowest recorded pressure | Highest sustained wind |
|-----------------------|--------------------------|------------------------|
| -43.1 hPa/24h | 951.5 hPa | 20.0 m/s |
| Marambio | Marambio | Palmer |
| Dec. 07th | Dec. 07th | Dec. 06th |



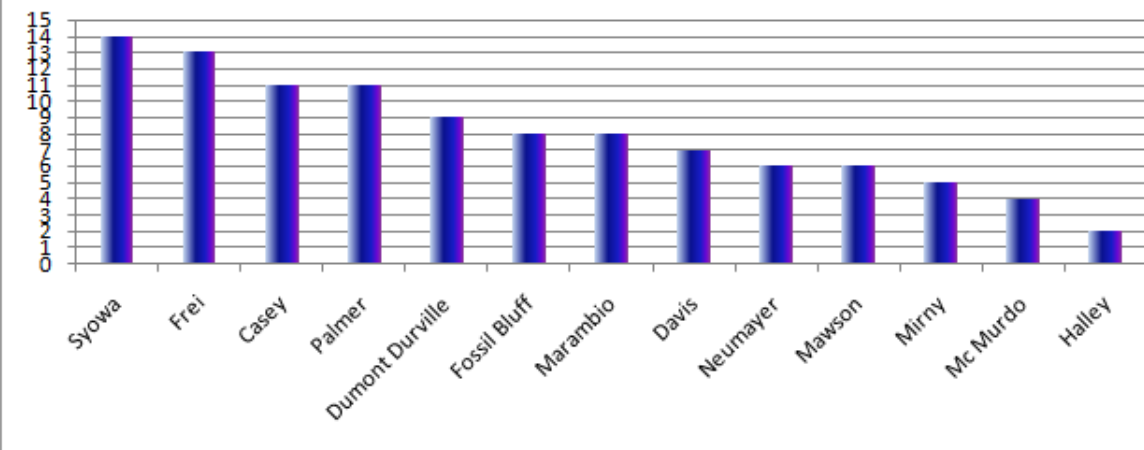
Total of events registered in each station in the month of December/2018



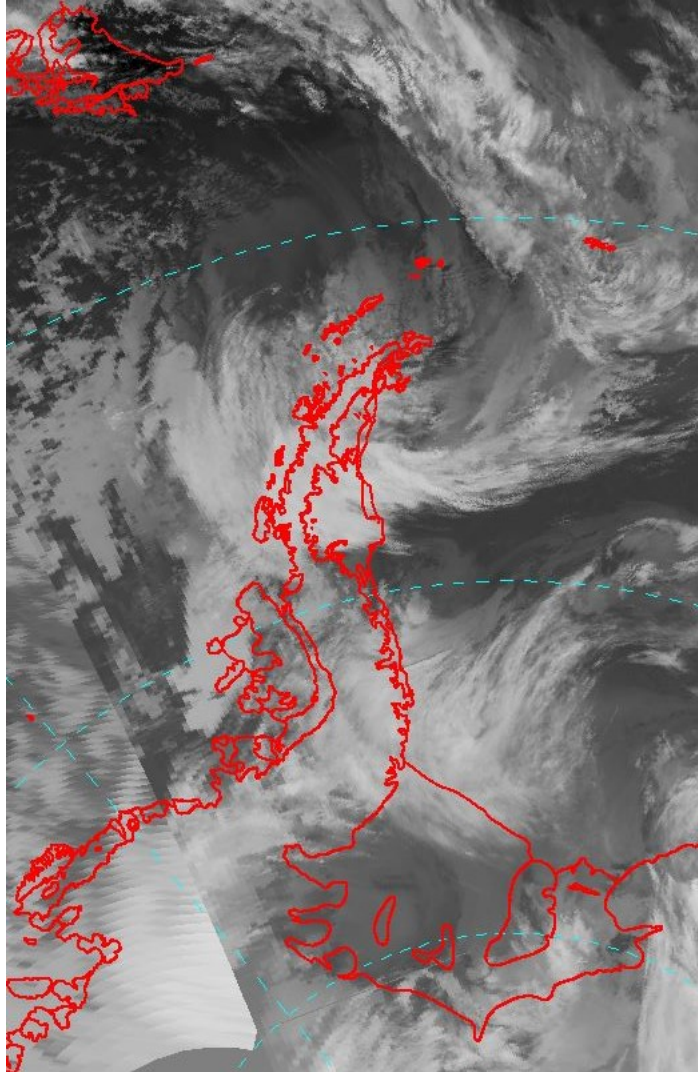
Explosive Cyclones in the Antarctic



Total of events registered by station in 2018

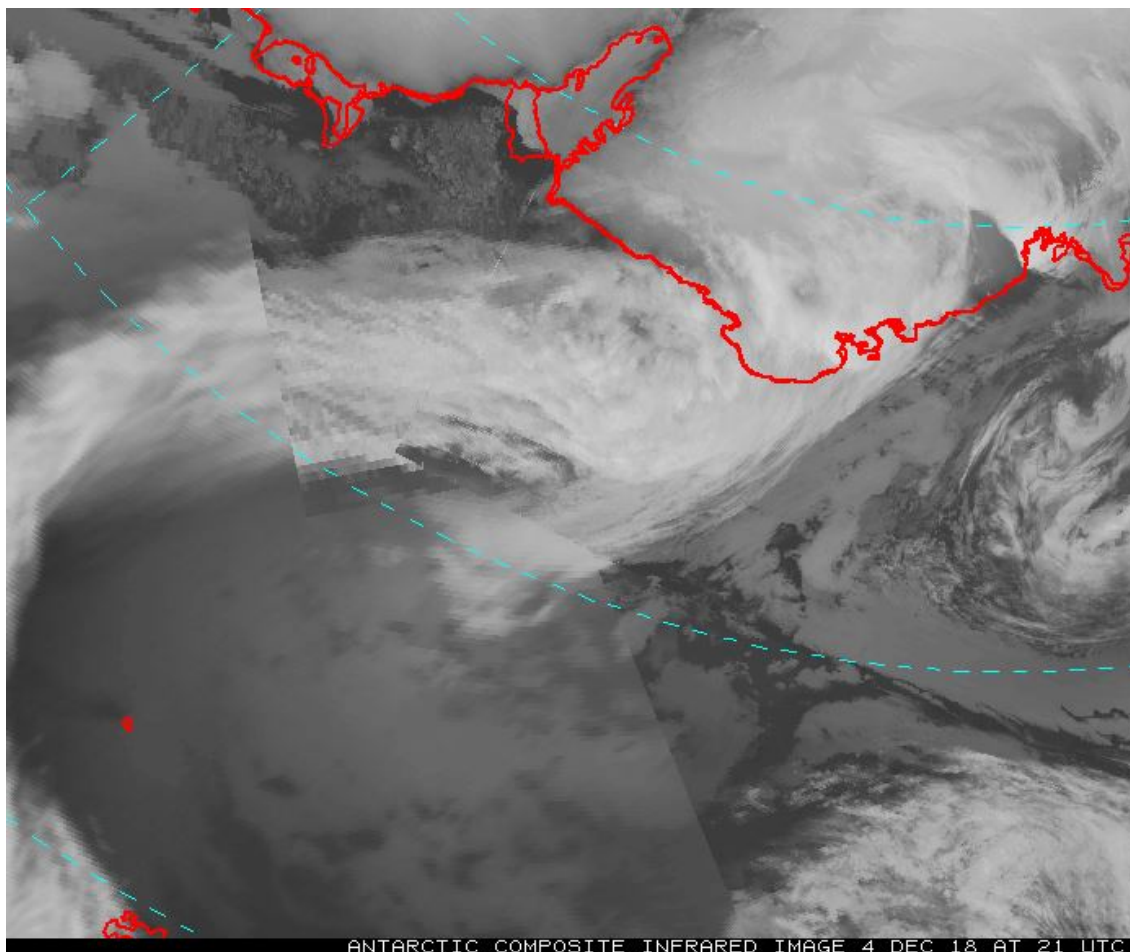


BOMB CYCLONE N°99/2018- DATA: DEC./02/2018
LOCAL: FREI STATION – WMO 89056 (OPERATED BY CHILE)



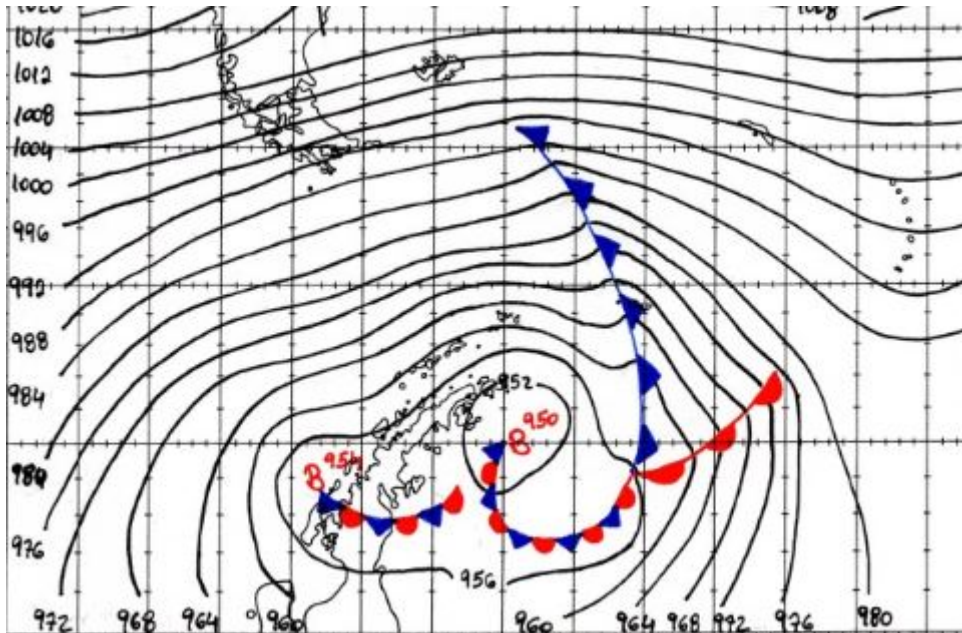
| | |
|--|-------------------|
| Drop of pressure in 24h | 24.0 hPa |
| Minimum pressure registred on station | 962.0 hPa |
| Min. pressure estimation in the cyclone core | 955 hPa |
| Sustined maximum wind | 19.0 m/s (42 mph) |
| Maximum wind gust | 24.5 m/s (55 mph) |
| Bergeron | 1.0 (weak) |

BOMB CYCLONE N°100/2018- DATA: DEC./04/2018
LOCAL: SYOWA STATION – WMO 89532 (OPERATED BY JAPAN)



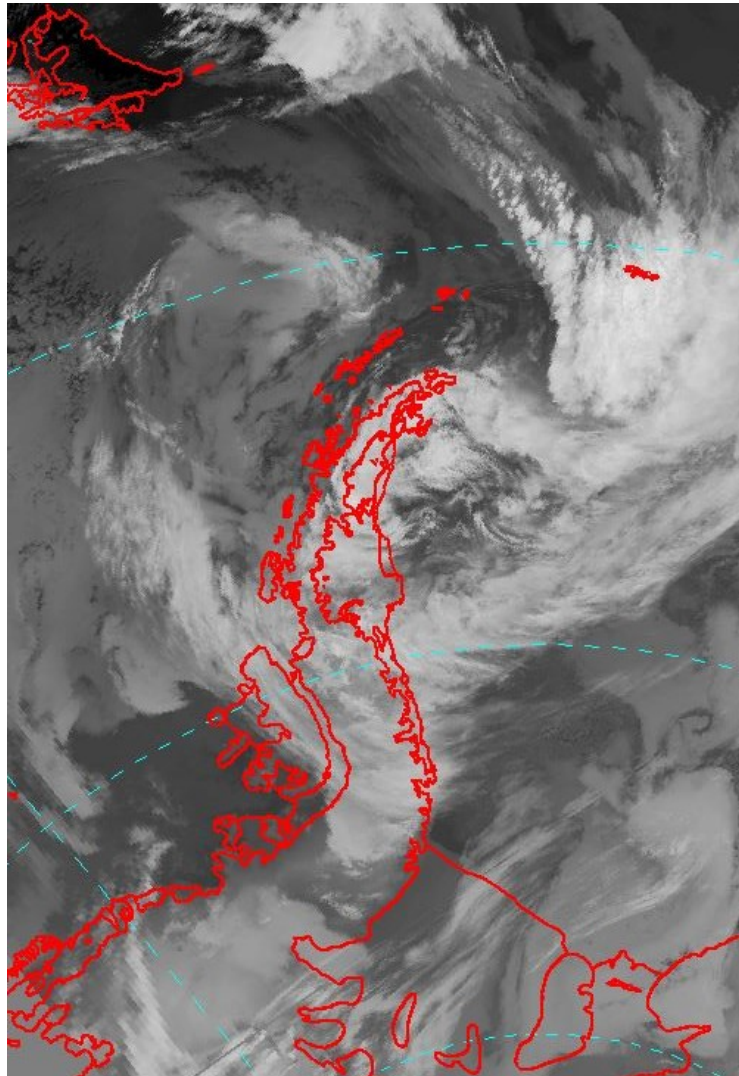
| | |
|--|-------------------|
| Drop of pressure in 24h | 25.4 hPa |
| Minimum pressure registred on station | 965.8 hPa |
| Min. pressure estimation in the cyclone core | 948 hPa |
| Sustined maximum wind | 19.0 m/s (42 mph) |
| Maximum wind gust | none m/s (mph) |
| Bergeron | 1.1 (weak) |

BOMB CYCLONE N°101/2018- DATA: DEC. /06/2018
LOCAL: PALMER STATION – WMO 89061 (OPERATED BY U.S.A.)



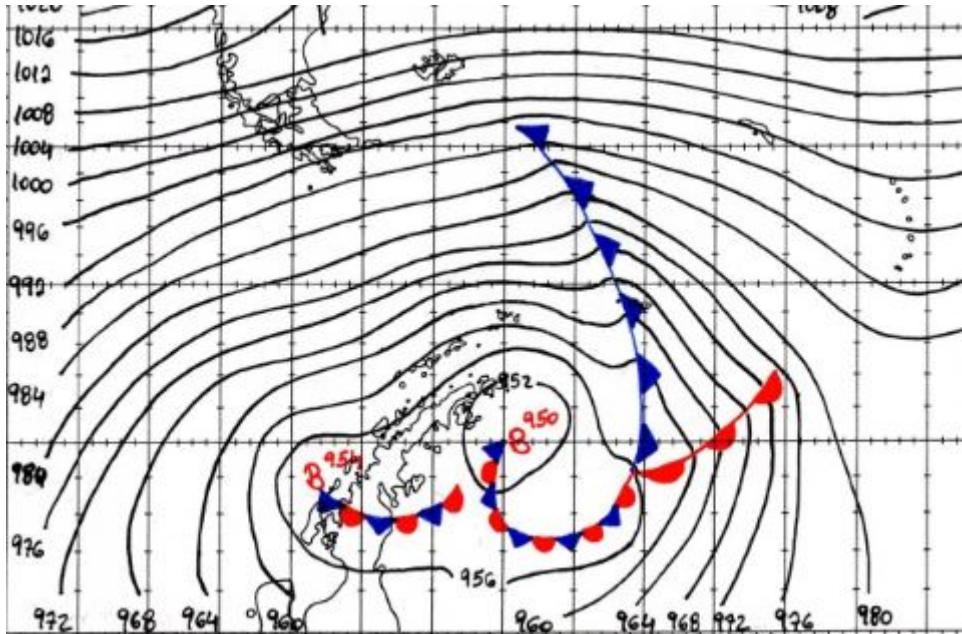
| | |
|--|-------------------|
| Drop of pressure in 24h | 37.6 hPa |
| Minimum pressure registred on station | 953.0 hPa |
| Min. pressure estimation in the cyclone core | 947 hPa |
| Sustined maximum wind | 20.0 m/s (45 mph) |
| Maximum wind gust | none m/s (mph) |
| Bergeron | 1.6 (moderate) |

BOMB CYCLONE N°102/2018- DATA: DEC./06/2018
LOCAL: FOSSIL BLUFF STATION – WMO 89065 (OPERATED BY
U.K.)



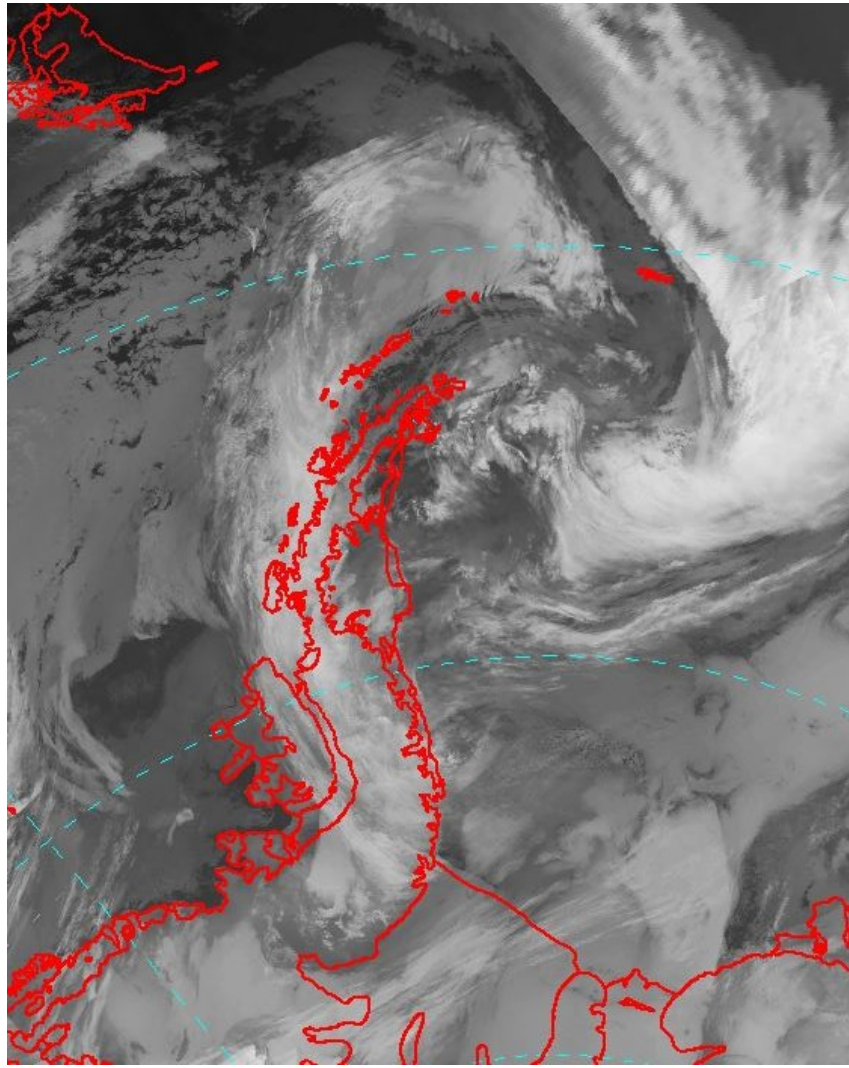
| | |
|--|------------------|
| Drop of pressure in 24h | 28.9 hPa |
| Minimum pressure registred on station | 959.3 hPa |
| Min. pressure estimation in the cyclone core | 947 hPa |
| Sustined maximum wind | 9.5 m/s (21 mph) |
| Maximum wind gust | none m/s (mph) |
| Bergeron | 1.2 (weak) |

BOMB CYCLONE N°103/2018- DATA: DEC./07/2018
LOCAL: FREI STATION – WMO 89056 (OPERATED BY CHILE)



| | |
|--|-------------------|
| Drop of pressure in 24h | 39.0 hPa |
| Minimum pressure registred on station | 957.8 hPa |
| Min. pressure estimation in the cyclone core | 947 hPa |
| Sustined maximum wind | 16.0 m/s (36 mph) |
| Maximum wind gust | 20.0 m/s (45 mph) |
| Bergeron | (moderate) |

BOMB CYCLONE N°104/2018- DATA: DEC./07/2018
LOCAL: MARAMBIO STATION – WMO 89055 (OPERATED BY
ARGENTINA)



| | |
|--|-------------------|
| Drop of pressure in 24h | 43.1 hPa |
| Minimum pressure registred on station | 951.5 hPa |
| Min. pressure estimation in the cyclone core | 947 hPa |
| Sustined maximum wind | 19.0 m/s (42 mph) |
| Maximum wind gust | none m/s (mph) |
| Bergeron | 1.8 (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>