

# MONITORING EXPLOSIVE CYCLONES ON THE COAST OF THE ANTARCTIC CONTINENT

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

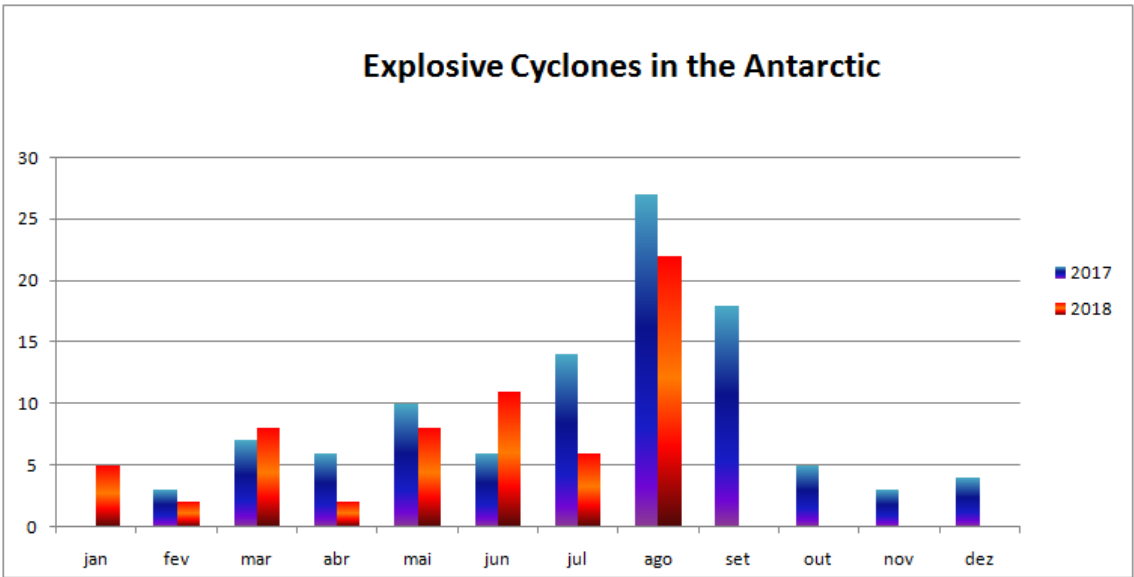
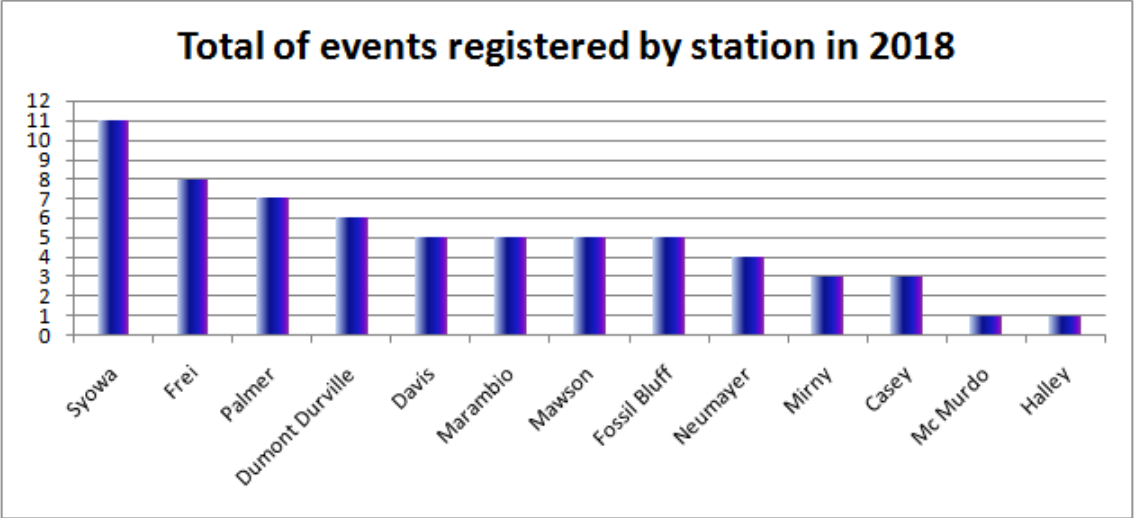
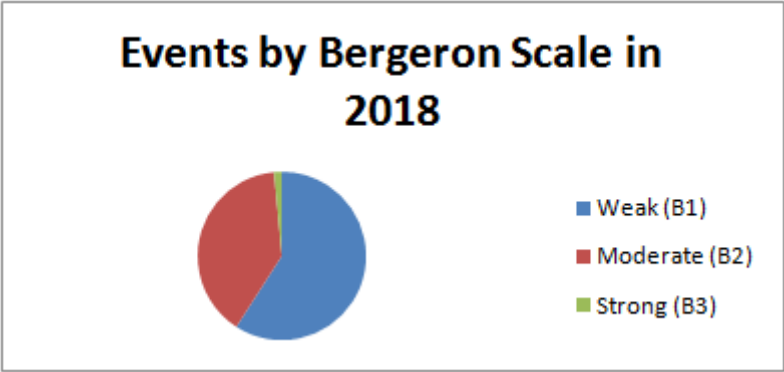
## AUGUST 2018

During this month, 22 events were registered among the 13 research stations located on the coast of the Antarctic utilized as references for the monitoring of bomb cyclones, there was an increase in cases in comparison to the previous month (+214%), but, when compared to the same period of the previous year (August 2017), there was a reduction of 19%. The stations hit by cyclones this month were: Neumayer, Frei, Palmer, Marambio, Syowa, Fossil Bluff, Dumont D'Urville, Mawson, Davis, and Halley. The most intense cyclone recorded was number 51/2018 at the Mawson station on August 05th with sustained winds of up to 35.5 m/s (79 mph). The cyclone which registered the lowest atmospheric pressure at sea level was the number 48/2018 at the Palmer station, with values reaching 943.3 hPa.

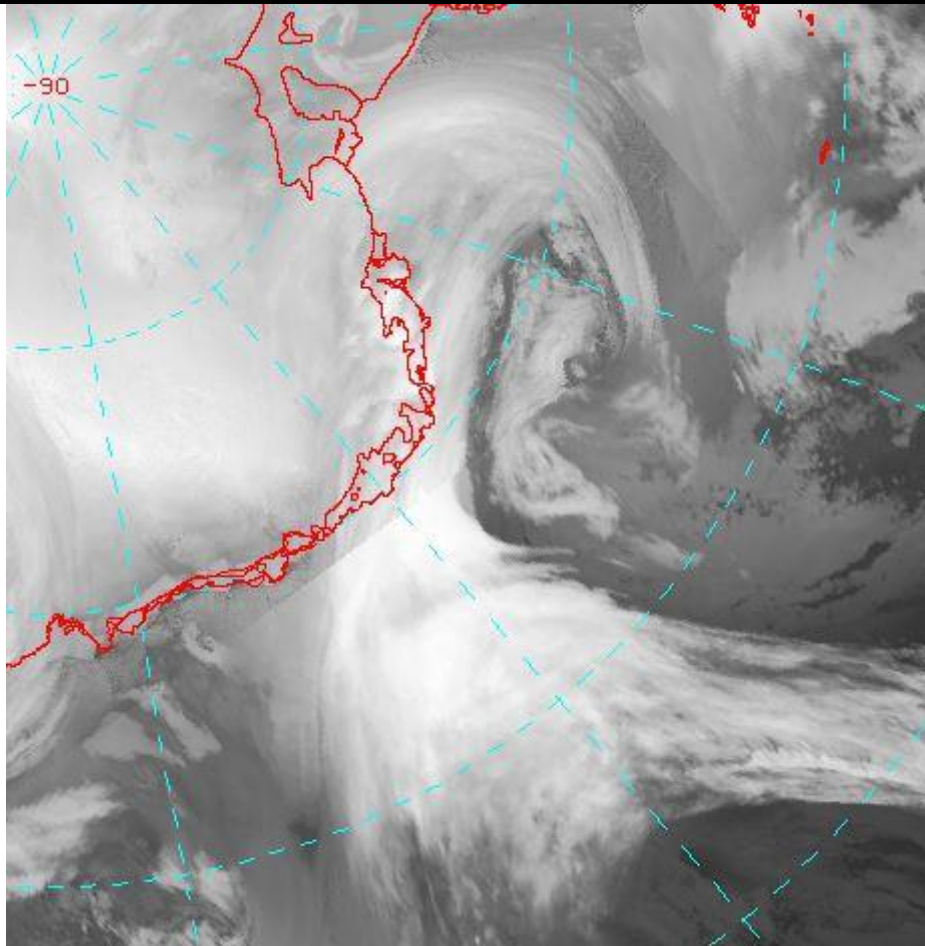
### STATISTICS OF THE MONTH

Classification	Bergeron Scale	Intensity	Total of cases registered in the month
<b>B1</b>	1 a 1.2	Weak	11
<b>B2</b>	1.3 a 1.8	Moderate	11
<b>B3</b>	>1.8	Strong	0

Highest pressure drop	Lowest recorded pressure	Highest sustained wind
-43.3 hpa/24h	943.3 hPa	35.5 m/s
Frei	Palmer	Mawson
Aug. 24th	Aug. 03th	Aug. 05

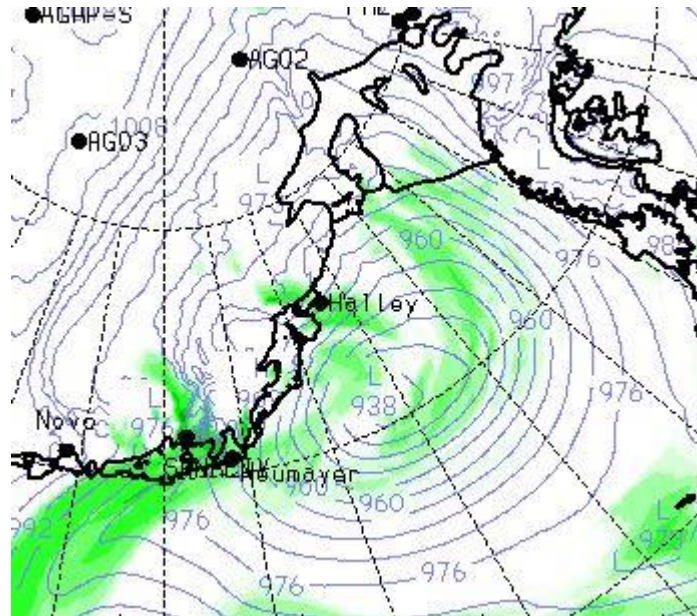


**BOMB CYCLONE N°45/2018- DATA: AUG/01/2018**  
**LOCAL: NEUMAYER STATION – WMO 89002 (OPERATED BY GERMANY)**



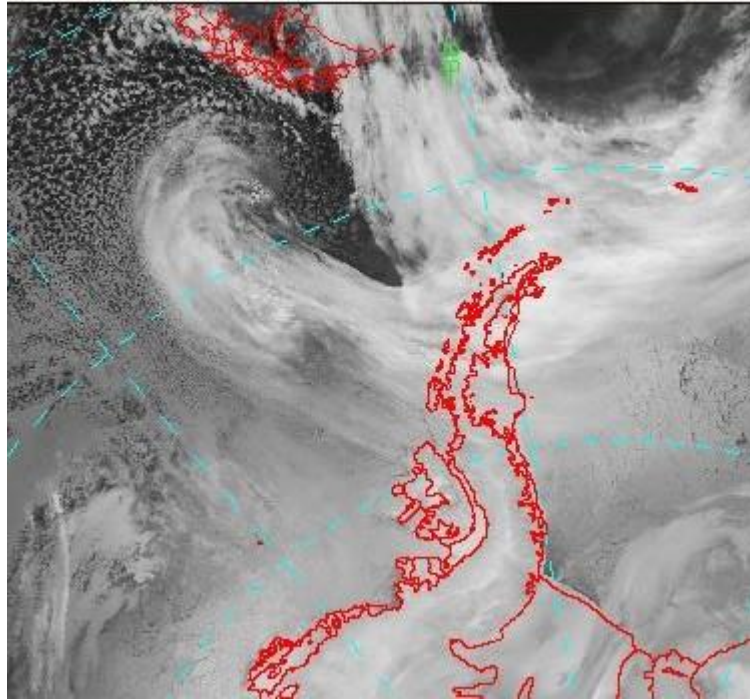
Drop of pressure in 24h	-32.0 hPa
Minimum pressure registred on station	969.8 hPa
Min. pressure estimation in the cyclone core	936 hPa
Sustined maximum wind	32.5 m/s (73 mph)
Maximum wind gust	None m/s (mph)
Bergeron	1.3 (moderate)

**BOMB CYCLONE N°46/2018- DATA: AUG/01/2018**  
**LOCAL: HALLEY STATION – WMO 89022 (OPERATED BY U.K.)**



Drop of pressure in 24h	-33.1 hPa
Minimum pressure registred on station	958.7 hPa
Min. pressure estimation in the cyclone core	938 hPa
Sustined maximum wind	24.0 m/s (54 mph)
Maximum wind gust	None m/s (mph)
Bergeron	1.4 (moderate)

**BOMB CYCLONE Nº47/2018- DATA: AUG/03/2018**  
**LOCAL: FREI STATION – WMO 89056 (OPERATED BY CHILE)**

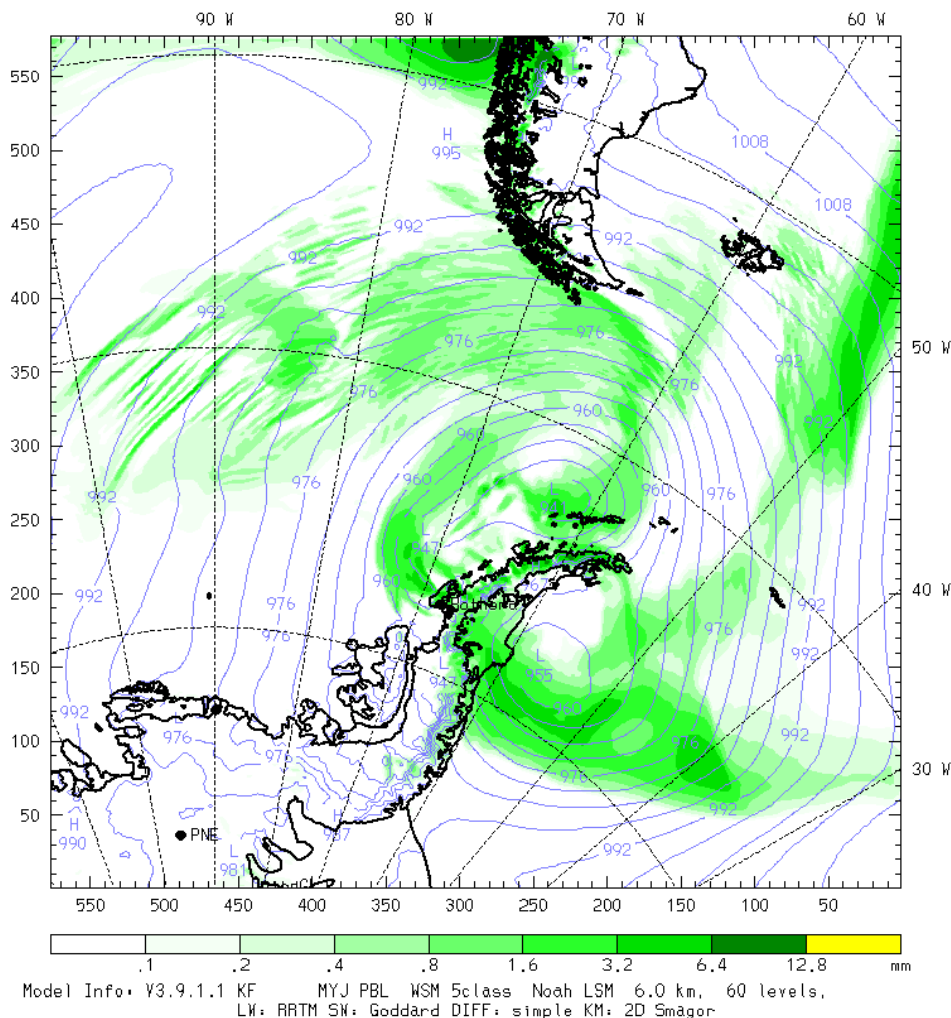


Drop of pressure in 24h	-32.8 hPa
Minimum pressure registered on station	952.1 hPa
Min. pressure estimation in the cyclone core	941 hPa
Sustained maximum wind	26.0 m/s (58 mph)
Maximum wind gust	27.0 m/s (60 mph)
Bergeron	1.4 (moderate)

**BOMB CYCLONE Nº48/2018- DATA: AUG/03/2018**  
**LOCAL: PALMER STATION – WMO 89061 (OPERATED BY U.S.A.)**

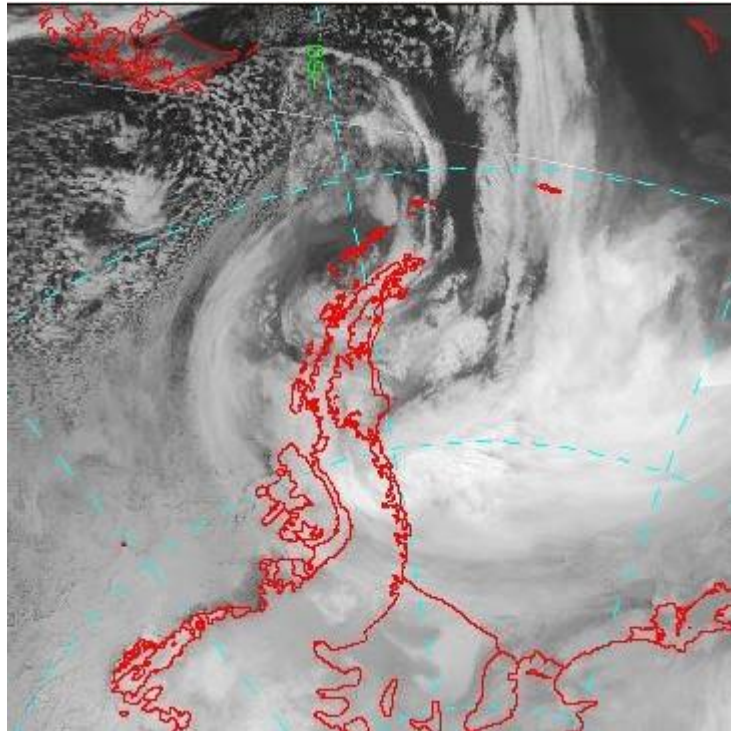
AMPS -- Palmer 6-km nest  
 Fcst. 27 h  
 Total precip. in past 3 h  
 Sea-level pressure

Init. 00 UTC Fri 03 Aug 18  
 Valid. 03 UTC Sat 04 Aug 18



Drop of pressure in 24h	-38.5 hPa
Minimum pressure registered on station	943.3 hPa
Min. pressure estimation in the cyclone core	941 hPa
Sustained maximum wind	18.0 m/s (40 mph)
Maximum wind gust	None m/s (mph)
Bergeron	moderate (1.6)

**BOMB CYCLONE Nº49/2018- DATA: AUG/04/2018**  
**LOCAL: MARAMBIO STATION – WMO 89055 (OPERATED BY ARGENTINA)**

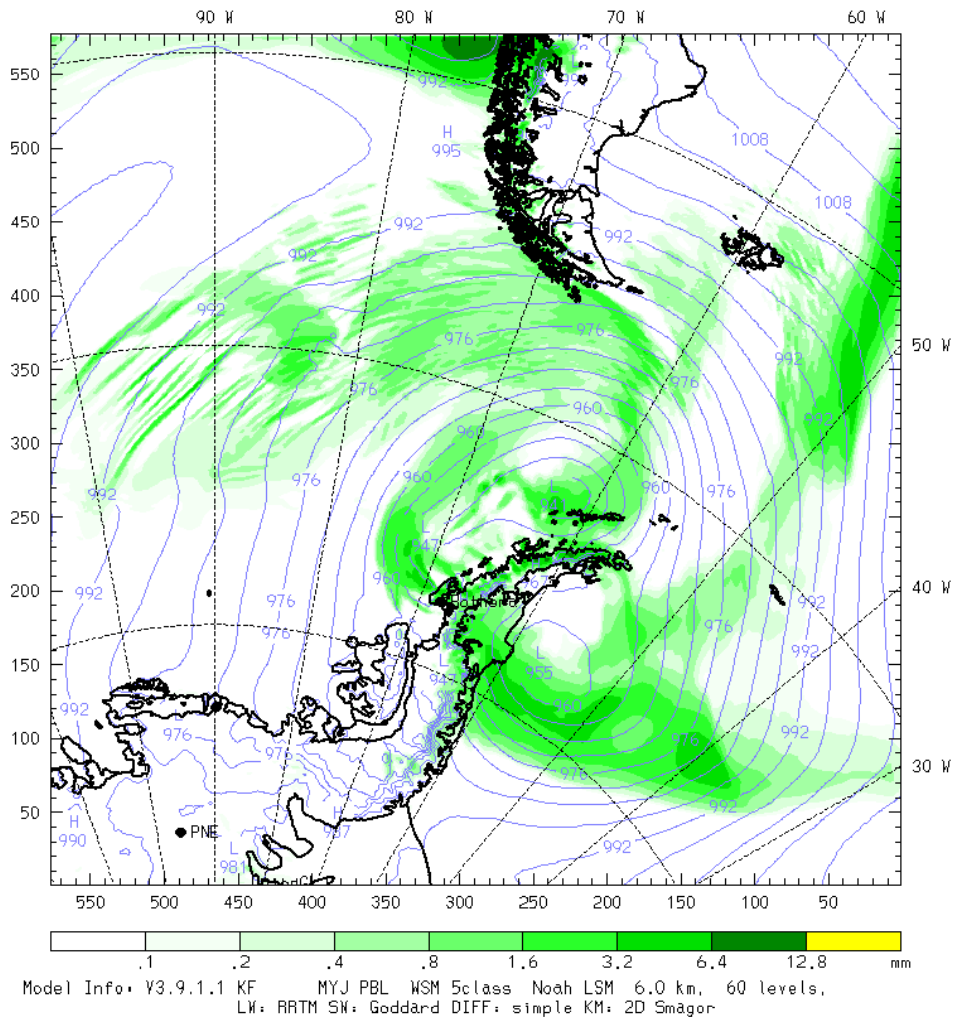


Drop of pressure in 24h	-25.9 hPa
Minimum pressure registered on station	959.8 hPa
Min. pressure estimation in the cyclone core	941 hPa
Sustained maximum wind	16.5 m/s (37 mph)
Maximum wind gust	None m/s (mph)
Bergeron	1.1 (weak)

**BOMB CYCLONE N°50/2018- DATA: AUG/04/2018**  
**LOCAL: FOSSIL BLUFF STATION – WMO 89065 (OPERATED BY U.K.)**

AMPS -- Palmer 6-km nest  
 Fcst. 27 h  
 Total precip. in past 3 h  
 Sea-level pressure

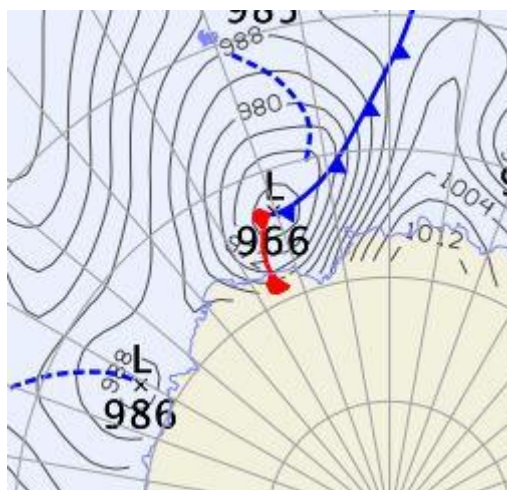
Init. 00 UTC Fri 03 Aug 18  
 Valid. 03 UTC Sat 04 Aug 18



Drop of pressure in 24h	- 30.9hPa
Minimum pressure registered on station	954.4 hPa
Min. pressure estimation in the cyclone core	941 hPa
Sustained maximum wind	4.0 m/s (09 mph)
Maximum wind gust	None m/s (mph)
Bergeron	1.3 (moderate)



**BOMB CYCLONE N°51/2018- DATA: AUG/05/2018**  
**LOCAL: MAWSON STATION – WMO 89564 (OPERATED BY**  
**AUSTRALIA)**

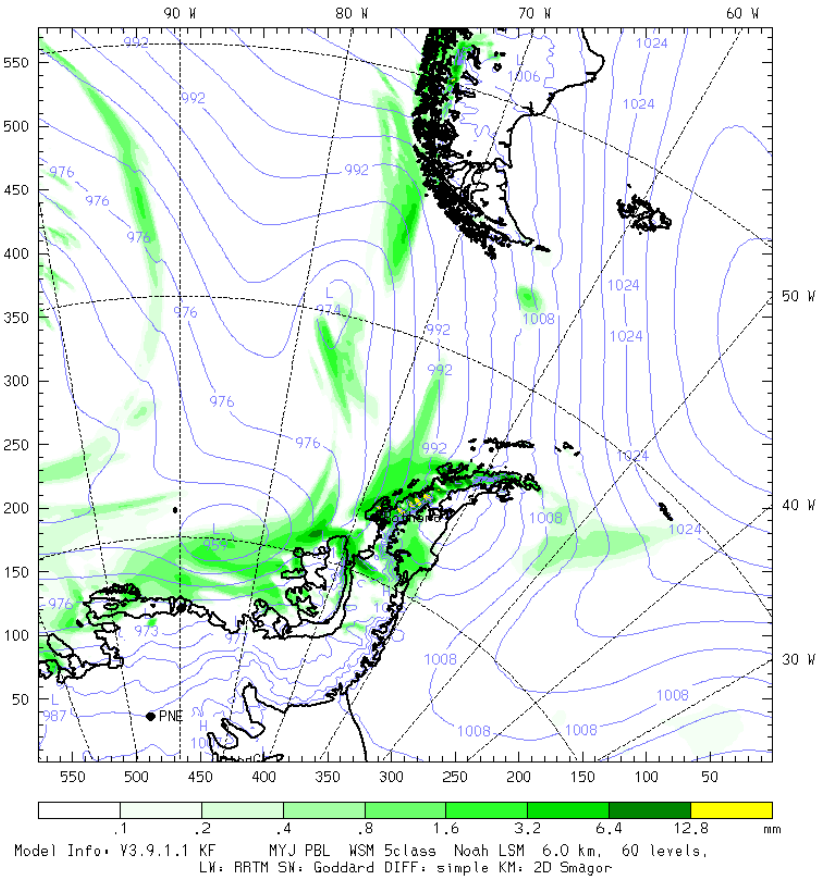


Drop of pressure in 24h	-28.4 hPa
Minimum pressure registered on station	969.9 Pa
Min. pressure estimation in the cyclone core	966 hPa
Sustained maximum wind	35.5 m/s (79 mph)
Maximum wind gust	47.0 m/s (105 mph)
Bergeron	1.2 (weak)

**BOMB CYCLONE N°52/2018- DATA: AUG/09/2018**  
**LOCAL: PALMER STATION – WMO 89061 (OPERATED BY U.S.A.)**

AMPS -- Palmer 6-km nest  
 Fcst. 3 h  
 Total precip. in past 3 h  
 Sea-level pressure

Init. 12 UTC Thu 09 Aug 18  
 Valid. 15 UTC Thu 09 Aug 18

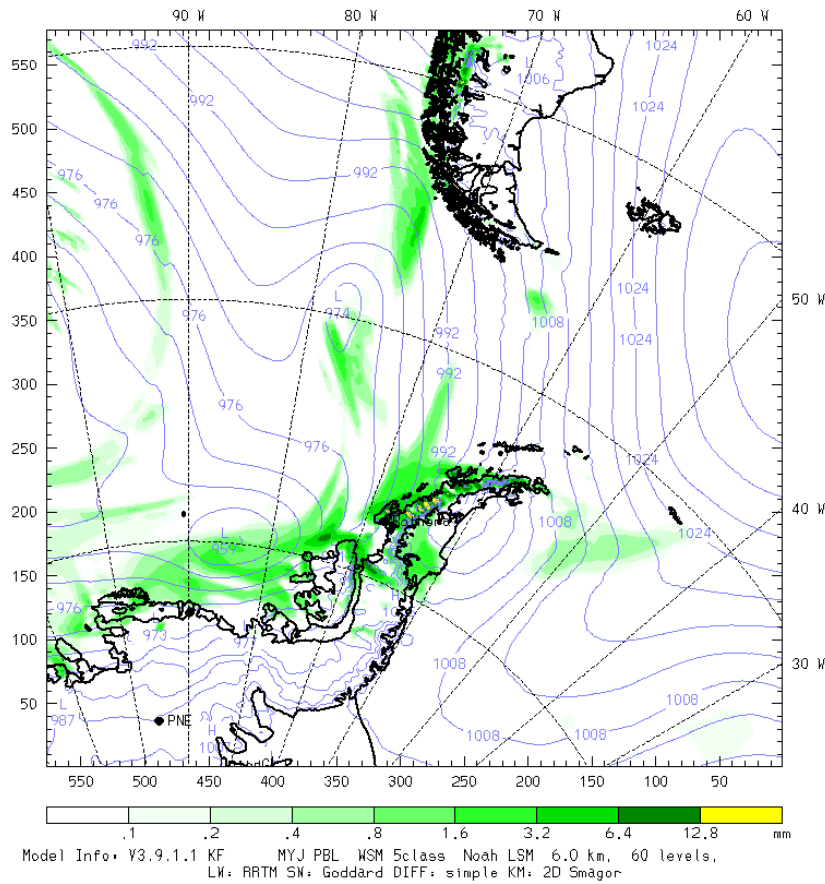


Drop of pressure in 24h	-28.0 hPa
Minimum pressure registered on station	984.8 hPa
Min. pressure estimation in the cyclone core	961 hPa
Sustained maximum wind	28.0 m/s (63 mph)
Maximum wind gust	None m/s (mph)
Bergeron	1.2 (weak)

**BOMB CYCLONE N°53/2018- DATA: AUG/09/2018**  
**LOCAL: FOSSIL BLUFF STATION – WMO 89065 (OPERATED BY U.K.)**

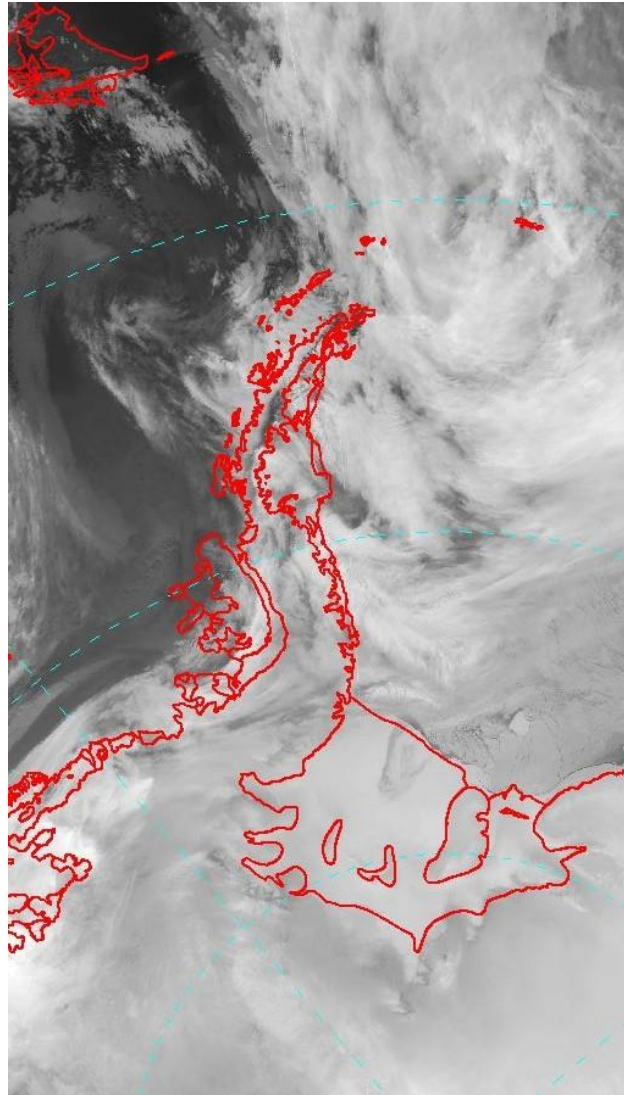
AMPS -- Palmer 6-km nest  
 Fcst. 3 h  
 Total precip. in past 3 h  
 Sea-level pressure

Init. 12 UTC Thu 09 Aug 18  
 Valid. 15 UTC Thu 09 Aug 18



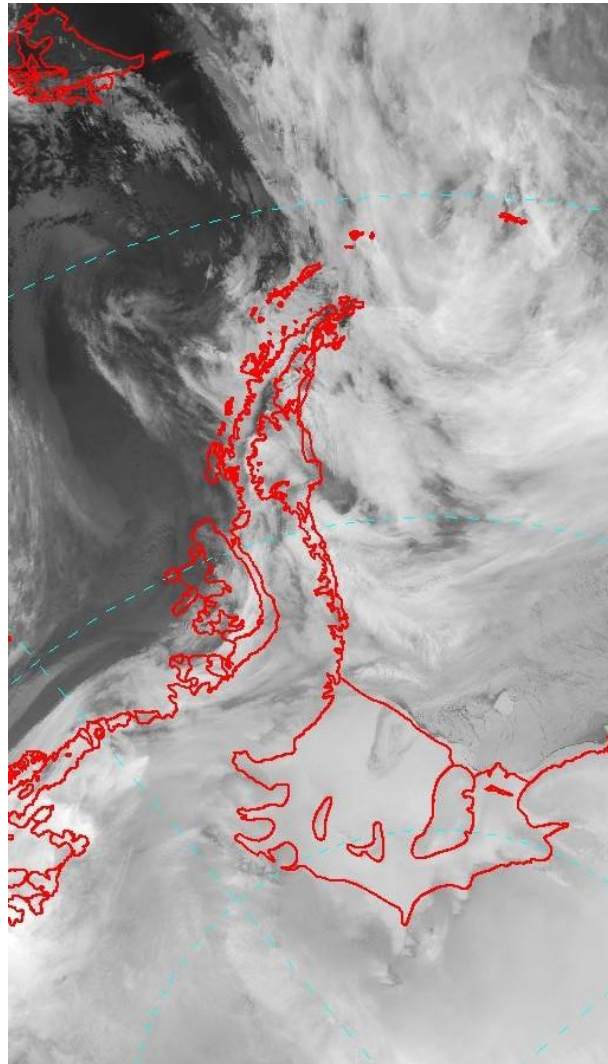
Drop of pressure in 24h	-37.2 hPa
Minimum pressure registered on station	978.5 hPa
Min. pressure estimation in the cyclone core	961 hPa
Sustained maximum wind	11.0 m/s (25 mph)
Maximum wind gust	None m/s (mph)
Bergeron	1.6 (moderate)

**BOMB CYCLONE Nº54/2018- DATA: AUG/10/2018**  
**LOCAL: FREI STATION – WMO 89056 (OPERATED BY CHILE)**



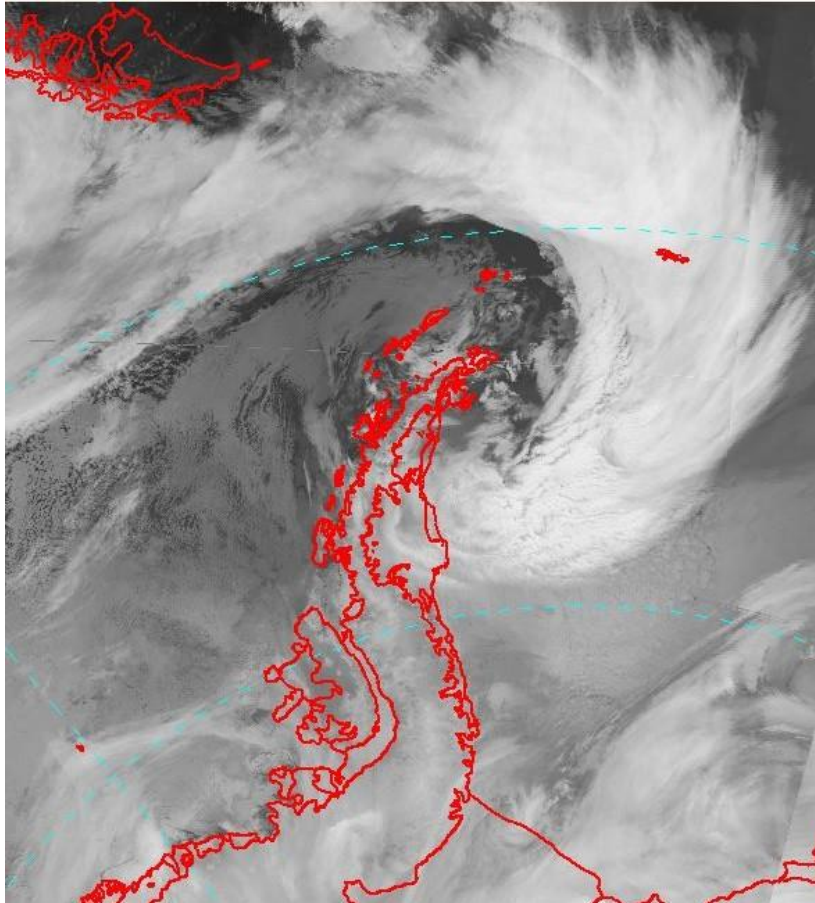
Drop of pressure in 24h	-25.2 hPa
Minimum pressure registered on station	994.0 hPa
Min. pressure estimation in the cyclone core	961 hPa
Sustained maximum wind	24.5 m/s (55 mph)
Maximum wind gust	None m/s (mph)
Bergeron	1.1 (weak)

**BOMB CYCLONE Nº55/2018- DATA: AUG/10/2018**  
**LOCAL: MARAMBIO STATION – WMO 89055 (OPERATED BY**  
**ARGENTINA)**



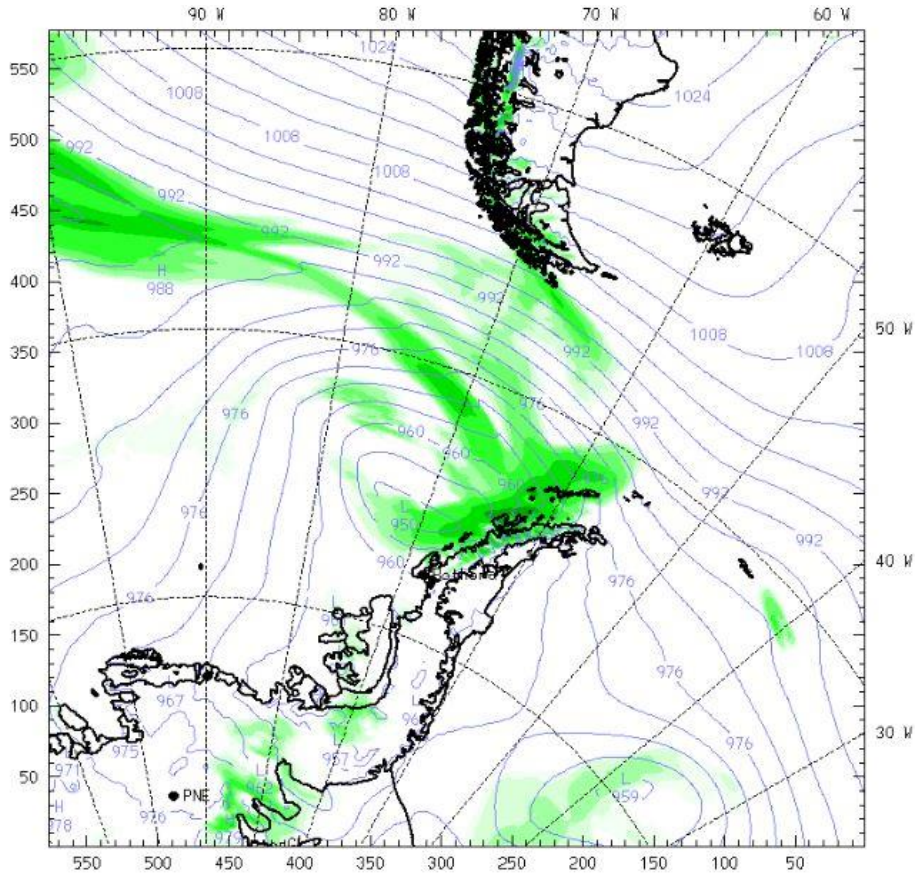
Drop of pressure in 24h	-25.3 hPa
Minimum pressure registered on station	988.8 hPa
Min. pressure estimation in the cyclone core	984 hPa
Sustained maximum wind	20.0 m/s (45 mph)
Maximum wind gust	None m/s (mph)
Bergeron	1.1 (weak)

**BOMB CYCLONE Nº56/2018- DATA: AUG/19/2018**  
**LOCAL: FREI STATION – WMO 89056 (OPERATED BY CHILE)**



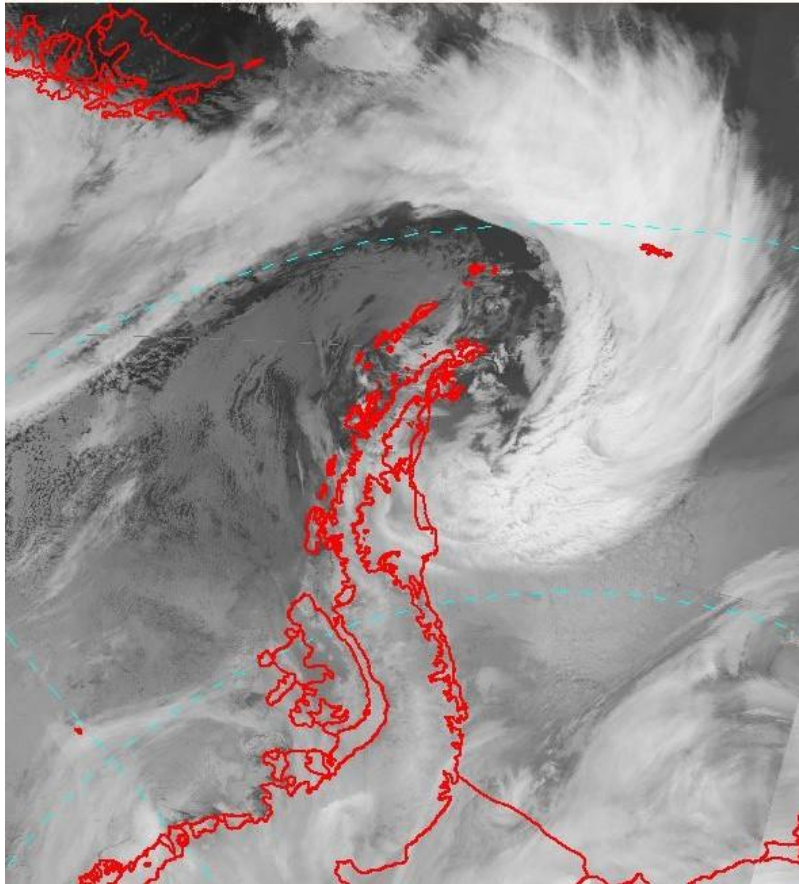
Drop of pressure in 24h	-28.0 hPa
Minimum pressure registered on station	955.7 hPa
Min. pressure estimation in the cyclone core	948 hPa
Sustained maximum wind	25.0 m/s (56 mph)
Maximum wind gust	30.0 m/s (67 mph)
Bergeron	1.2 (weak)

**BOMB CYCLONE N°57/2018- DATA: AUG/19/2018**  
**LOCAL: PALMER STATION – WMO 89061 (OPERATED BY U.S.A.)**



Drop of pressure in 24h	-27.1 hPa
Minimum pressure registered on station	948.0 hPa
Min. pressure estimation in the cyclone core	948 hPa
Sustained maximum wind	31 m/s (69 mph)
Maximum wind gust	None m/s (mph)
Bergeron	1.1 (weak)

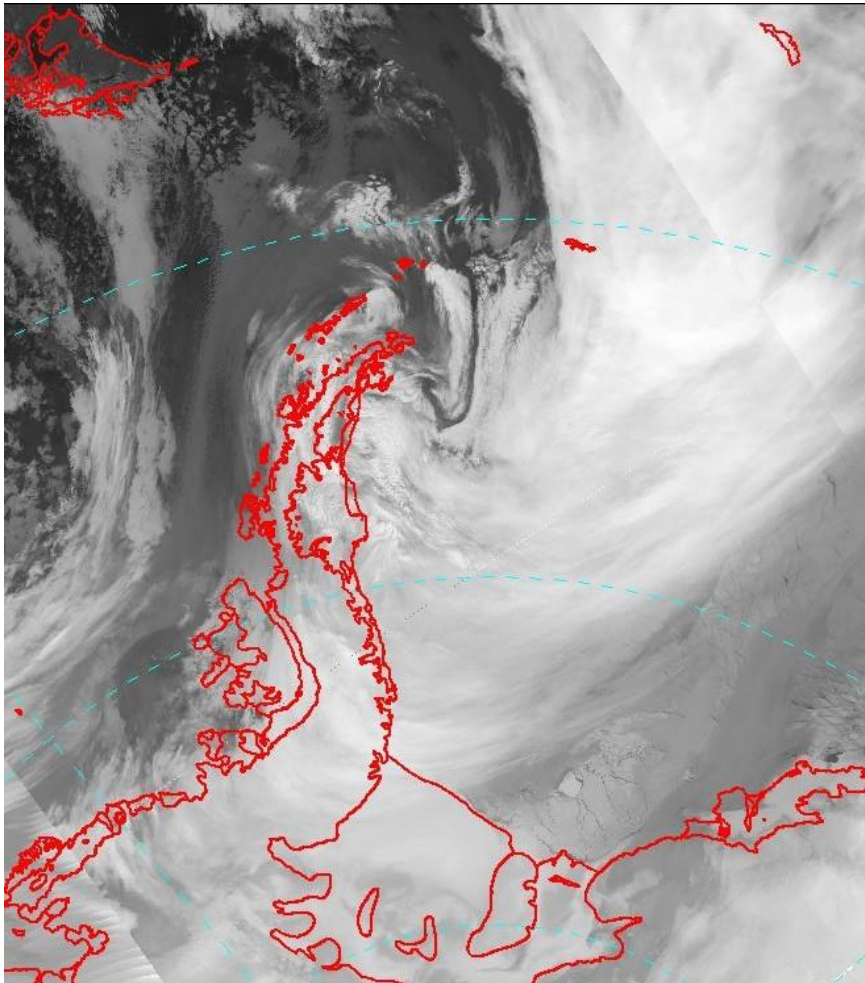
**BOMB CYCLONE Nº58/2018- DATA: AUG/19/2018**  
**LOCAL: MARAMBIO STATION – WMO 89055 (OPERATED BY**  
**ARGENTINA)**



Drop of pressure in 24h	-26.8 hPa
Minimum pressure registered on station	949.0 hPa
Min. pressure estimation in the cyclone core	948 hPa
Sustained maximum wind	28.5 m/s (64 mph)
Maximum wind gust	None m/s (mph)
Bergeron	1.1 (weak)

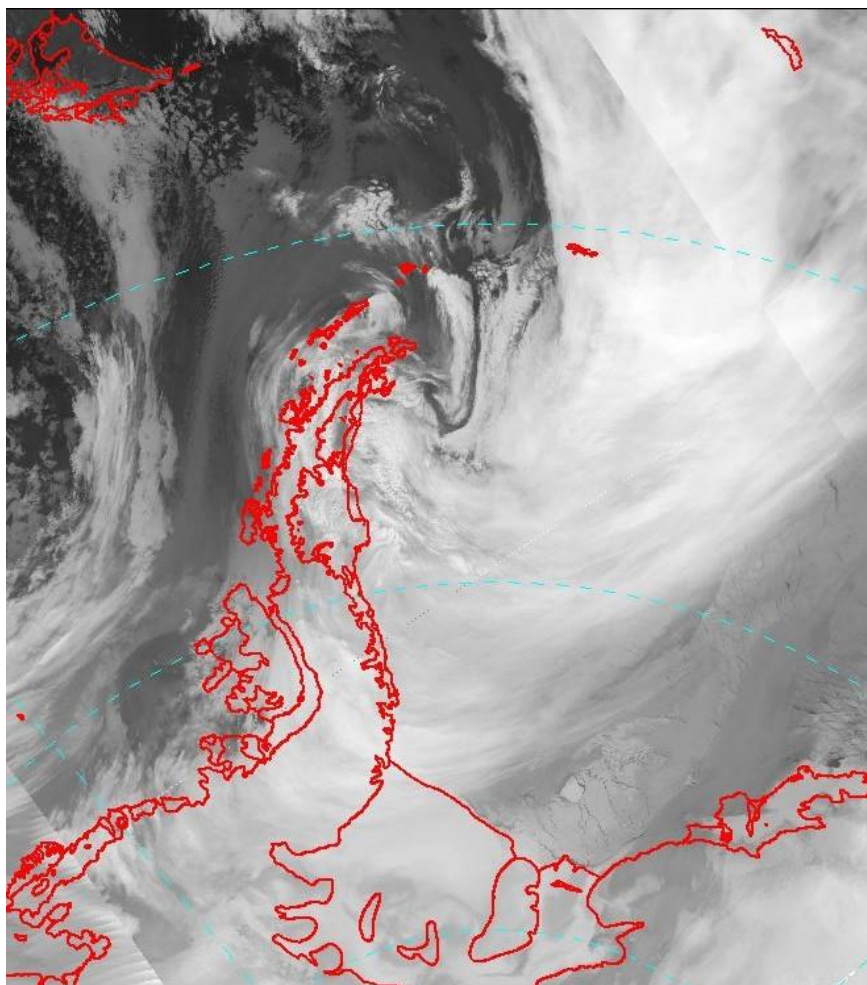


**BOMB CYCLONE Nº59/2018- DATA: AUG/24/2018**  
**LOCAL: FREI STATION – WMO 89056 (OPERATED BY CHILE )**



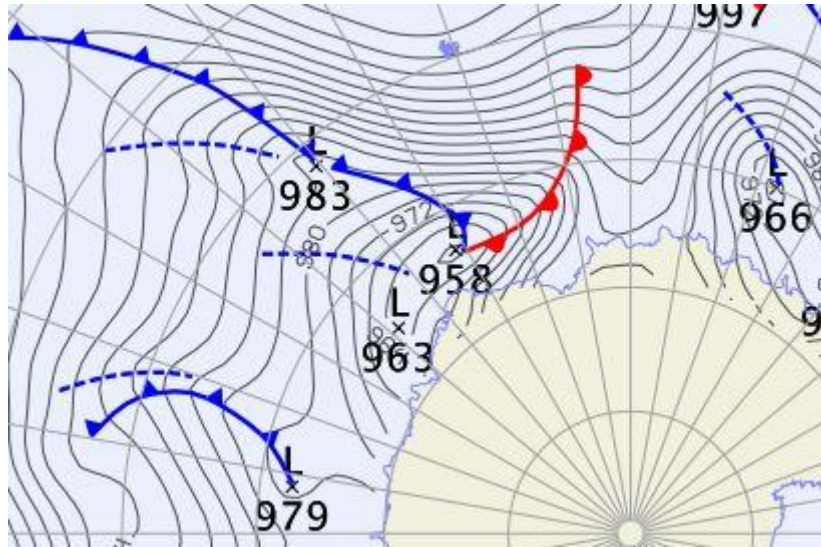
Drop of pressure in 24h	-43.3 hPa
Minimum pressure registered on station	962.6 hPa
Min. pressure estimation in the cyclone core	958 hPa
Sustained maximum wind	22.5 m/s (50 mph)
Maximum wind gust	31.0 m/s (69 mph)
Bergeron	1.8 (moderate)

**BOMB CYCLONE Nº60/2018- DATA: AUG/24/2018**  
**LOCAL: MARAMBIO STATION – WMO 89055 (OPERATED BY**  
**ARGENTINA)**



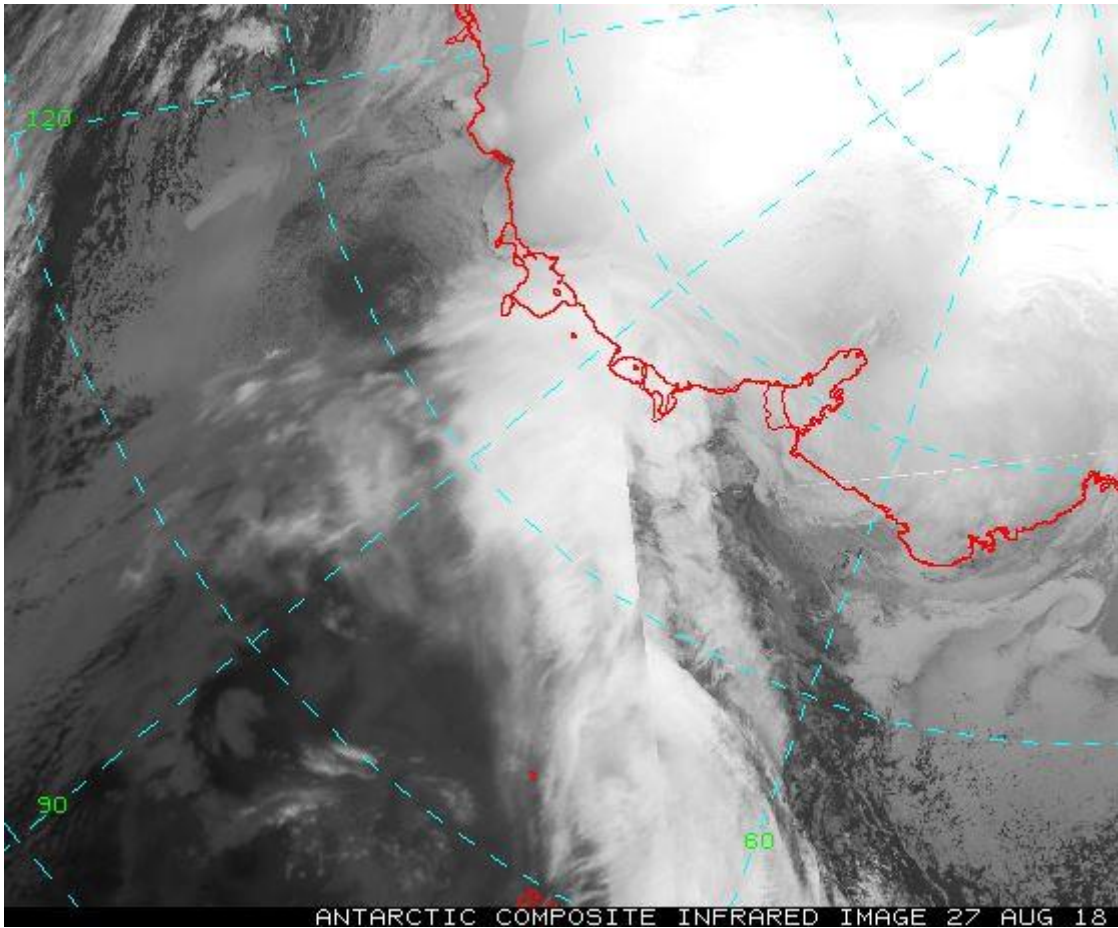
Drop of pressure in 24h	-34.9 hPa
Minimum pressure registered on station	966.5 hPa
Min. pressure estimation in the cyclone core	957 hPa
Sustained maximum wind	25.5 m/s (57 mph)
Maximum wind gust	None m/s (mph)
Bergeron	1.5 (moderate)

**BOMB CYCLONE N°61/2018- DATA: AUG/27/2018**  
**LOCAL: MAWSON STATION – WMO 89564 (OPERATED BY**  
**AUSTRALIA)**



Drop of pressure in 24h	-33.9 hPa
Minimum pressure registered on station	964.3 hPa
Min. pressure estimation in the cyclone core	958 hPa
Sustained maximum wind	34.0 m/s (76 mph)
Maximum wind gust	39.5 m/s (88 mph)
Bergeron	1.4 (moderate)

**BOMB CYCLONE N°62/2018- DATA: AUG/27/2018**  
**LOCAL: DAVIS STATION – WMO 89571 (OPERATED BY AUSTRALIA)**



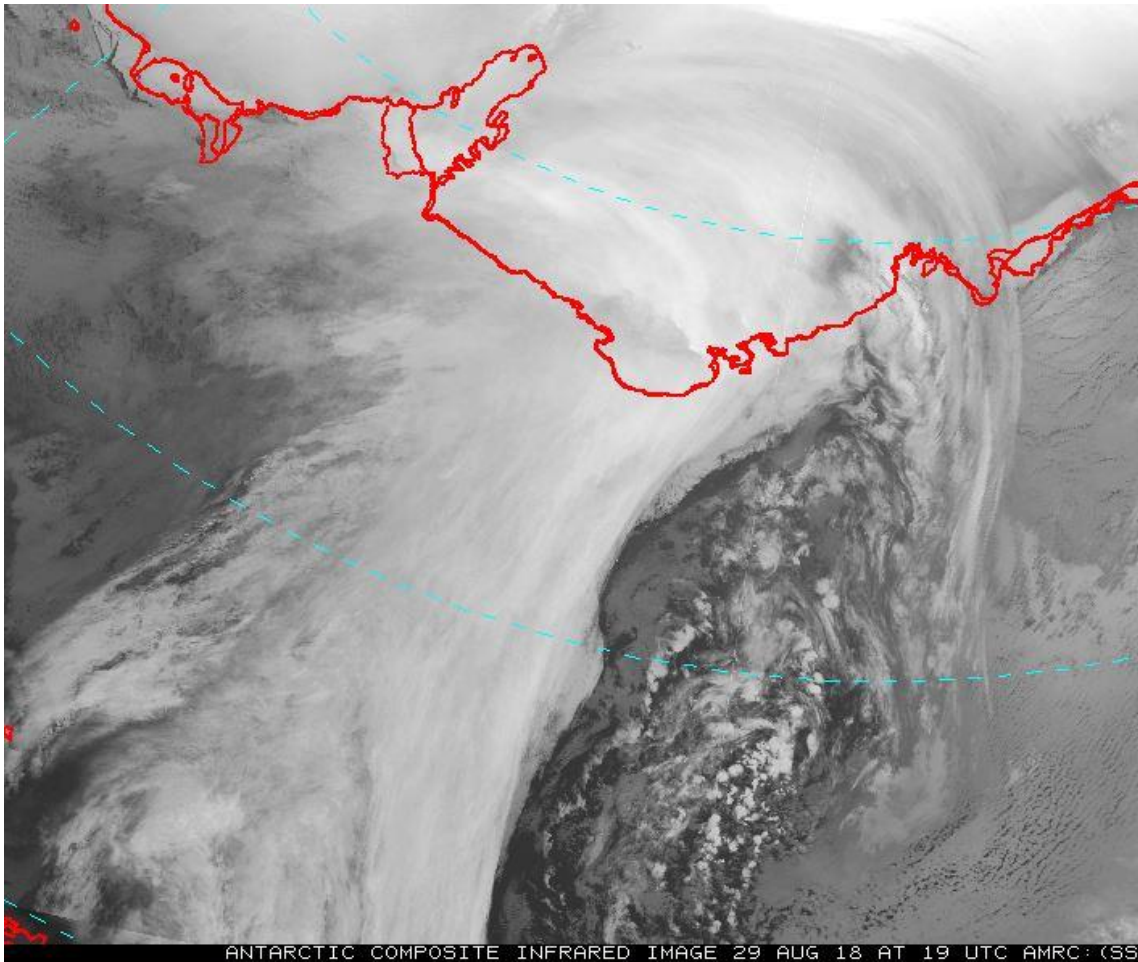
Drop of pressure in 24h	-35.8 hPa
Minimum pressure registered on station	956.3 hPa
Min. pressure estimation in the cyclone core	956 hPa
Sustained maximum wind	35.8 m/s (80 mph)
Maximum wind gust	40.5 m/s (91 mph)
Bergeron	1.5 (moderate)

**BOMB CYCLONE N°63/2018- DATA: AUG/29/2018**  
**LOCAL: DUMONT D'URVILLE STATION – WMO 89642 (OPERATED BY**  
**FRANCE)**

No image

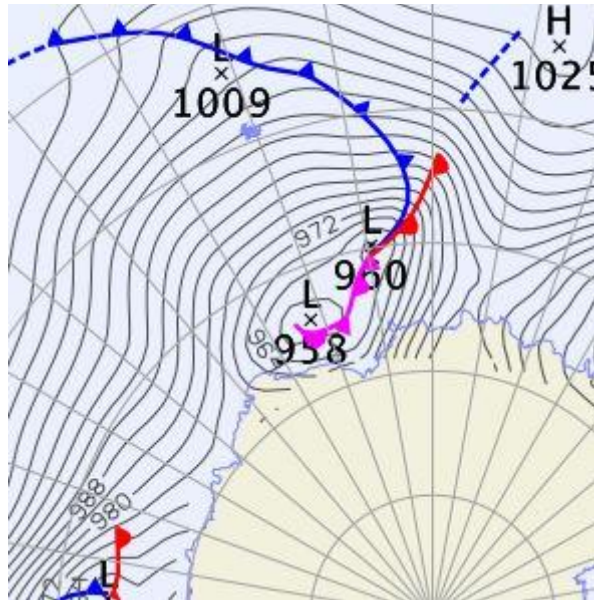
Drop of pressure in 24h	-25.4 hPa
Minimum pressure registered on station	949.1 hPa
Min. pressure estimation in the cyclone core	943 hPa
Sustained maximum wind	20.5 m/s (46 mph)
Maximum wind gust	30.0 m/s (67 mph)
Bergeron	1.1 (weak)

**BOMB CYCLONE N°64/2018- DATA: AUG/29/2018**  
**LOCAL: SYOWA STATION – WMO 89532 (OPERATED BY JAPAN)**



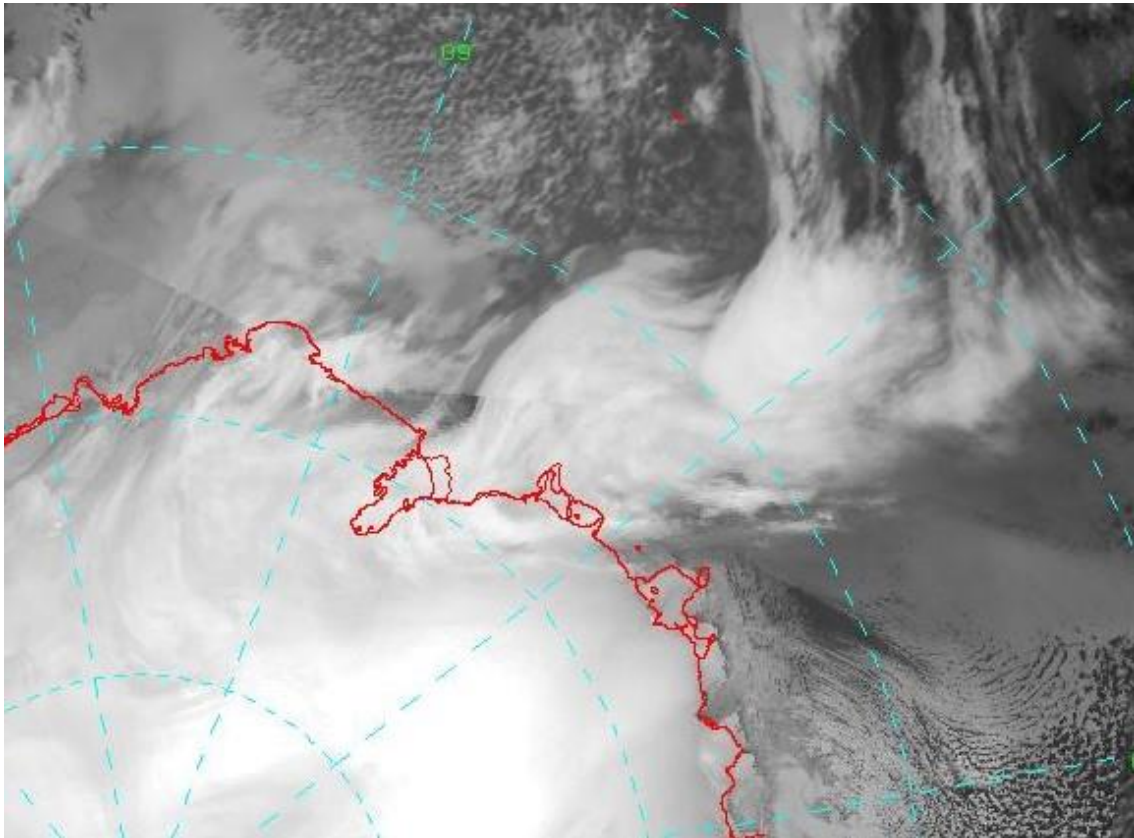
Drop of pressure in 24h	-33.8 hPa
Minimum pressure registered on station	947.3 hPa
Min. pressure estimation in the cyclone core	943 hPa
Sustained maximum wind	21.6 m/s (48 mph)
Maximum wind gust	None m/s (mph)
Bergeron	1.4 (moderate)

**BOMB CYCLONE N°65/2018- DATA: AUG/31/2018**  
**LOCAL: DAVIS STATION – WMO 89571 (OPERATED BY AUSTRALIA)**



Drop of pressure in 24h	-27.4 hPa
Minimum pressure registered on station	970.1 hPa
Min. pressure estimation in the cyclone core	960 hPa
Sustained maximum wind	24.0 m/s (54 mph)
Maximum wind gust	33.0 m/s (74 mph)
Bergeron	1.1 (weak)

**BOMB CYCLONE Nº66/2018- DATA: AUG/31/2018**  
**LOCAL: MAWSON STATION – WMO 89564 (OPERATED BY**  
**AUSTRALIA)**



Drop of pressure in 24h	-24.4 hPa
Minimum pressure registered on station	964.7 hPa
Min. pressure estimation in the cyclone core	955 hPa
Sustained maximum wind	32.5 m/s (73 mph)
Maximum wind gust	38.5 m/s (86 mph)
Bergeron	1.0 (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>