

MONITORING EXPLOSIVE CYCLONES ON THE COAST OF THE ANTARCTIC CONTINENT



By Romao, M. and Pires, L. B. M.



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SEPTEMBER 2020

During this month, 10 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 affected by cyclones this month were: Frei, Casey, Syowa, Palmer, Marambio, Neumayer and Davis. There was a increase (15%) in the number of cyclones in comparison to the same month of the previous year (2019).

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	05
B3	> 1.8	Strong	00

HIGHEST PRESSURE DROP	LOWEST RECORDED PRESSURE	HIGHEST SUSTAINED WIND
-44.3 hPa/24h	933.1 hPa	41.5 m/s
Palmer	Palmer	Casey
Sep. 14	Sep. 14	Sep. 09



BERGERON INTENSITY TOTAL OF ANNUAL EVENTS IN 2020

TOTAL OF EVENTS REGISTERED BY STATION IN 2020



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TOTAL EXPLOSIVE CYCLONES IN THE ANTARCTIC



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BOMB CYCLONE N°53/2020- DATE: SEP./08/2020

LOCAL: SYOWA STATION – WMO 89532 (OPERATED BY JAPAN)
Drop of pressure
in 24h -26.8

	in 24h	-26.8 hPa
	Min. pressure registered on station	960.5 hPa
	Min. pressure estimation in the cyclone core	953 hPa
	Sustained maximum wind	06 m/s (13 mph)
- son	Maximum wind gust	None m/s (mph)
	Bergeron	1.1 (weak)

BOMB CYCLONE N°54/2020- DATE: SEP./09/2020

LOCAL: FREI STATION - WMO 89056 (OPERATED BY CHILE)

	Drop of pressure in 24h	-27.8 hPa
	Min. pressure registered on station	970.0 hPa
	Min. pressure estimation in the cyclone core	970 hPa
	Sustained maximum wind	17.5 m/s (39 mph)
	Maximum wind gust	22.5 m/s (50 mph)
	Bergeron	1.2 (weak)

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BOMB CYCLONE N°55/2020- DATE: SEP./09/2020

Drop of pressure in 24h	-40.8 hPa
Min. pressure registered on station	940.4 hPa
Min. pressure estimation in the cyclone core	936 hPa
Sustained maximum wind	41.5 m/s (93 mph)
Maximum wind gust	67.0 m/s (150 mph)
Bergeron	1.7 (Moderate)

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

BOMB CYCLONE N°56/2020- DATE: SEP./14/2020



LOCAL: FREI STATION - WMO 89056 (OPERATED BY CHILE)

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BOMB CYCLONE N°57/2020- DATE: SEP./14/2020

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

	Drop of pressure in 24h	-44.3 hPa
	Min. pressure registered on station	933.1 hPa
e market in the second s	Min. pressure estimation in the cyclone core	931 hPa
a good with the	Sustained maximum wind	18.0 m/s (mph)
	Maximum wind gust	None m/s (40 mph)
	Bergeron	1.8 (Mod.)

BOMB CYCLONE N°58/2020- DATE: SEP./14/2020

LOCAL: NEUMAYER STATION - WMO 89022 (OPERATED BY GERMANY)



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BOMB CYCLONE N°59/2020- DATE: SEP./15/2020

Drop of pressure -36.7 hPa in 24h Min. pressure registered on 941.7 hPa station Min. pressure estimation in the 931 hPa cyclone core Sustained 27.0 m/s (60 mph) maximum wind None Maximum wind m/s gust (mph) Bergeron 1.5 (Mod.)

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

BOMB CYCLONE N°60/2020- DATE: SEP./17/2020

LOCAL: FREI STATION - WMO 89056 (OPERATED BY CHILE)

	Drop of pressure in 24h	-25.1 hPa
	Min. pressure registered on station	950.5 hPa
	Min. pressure estimation in the cyclone core	945 hPa
of the Contraction of the contra	Sustained maximum wind	19.5 m/s (44 mph)
A CAR CAR	Maximum wind gust	25.0 m/s (56 mph)
· 057	Bergeron	1.0 (weak)

BOMB CYCLONE N°61/2020- DATE: SEP./23/2020

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

20°//	Drop of pressure in 24h	-33.1 hPa
1029	Min. pressure registered on station	955.6 hPa
388	Min. pressure estimation in the cyclone core	947 hPa
973	Sustained maximum wind	27.5 m/s (61 mph)
	Maximum wind gust	40.0 m/s (89 mph)
	Bergeron	1.4 (mod.)

BOMB CYCLONE N°62/2020- DATE: SEP./24/2020

LOCAL: FREI STATION – WMO 89056 (OPERATED BY CHILE)

	Drop of pressure in 24h	-27.1 hPa
A CONTRACT OF A	Min. pressure registered on station	959.0 hPa
	Min. pressure estimation in the cyclone core	959 hPa
Aline Contraction	Sustained maximum wind	15.5 m/s (35 mph)
Ball Grant S	Maximum wind gust	17.0 m/s (38 mph)
	Bergeron	1.1 (Weak)

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VIDEOS

Explosive Cyclone (Bomb Cyclone) in Casey antarctic station - Sep/09/2020

https://youtu.be/QbXfTmBIEWQ

Explosive Cyclone (Bomb Cyclone) in Frei antarctic station - Sep/24/2020

https://youtu.be/T7eeqeZNDLk

SOURCES

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