

# MONITORING EXPLOSIVE CYCLONES ON THE COAST OF THE ANTARCTIC CONTINENT

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JULY 2017

During this month, 14 events were registered among the 13 research stations that we used as references for the monitoring of explosive cyclones located on the coast of Antarctic, in the stations of: Halley, Syowa, Casey, Mawson, Davis, Frei, Neumayer, Palmer and Dumont D'Urville, totaling 8 more cases than in the previous month,. The most intense cyclone recorded was at the Davis station on July 17th with sustained winds of up to 43.5 m/s (97 mph). The cyclone which registered the lowest atmospheric pressure at sea level was also at the Davis station, with values reaching 949.8 hPa.

Throughout 2017 the station with the largest number of events has been the Australian Casey with 10 cases, followed by the French station of Dumont D'Urville, with 7 cases. The Halley English station (WMO 89022) recorded its first explosive cyclone this year. So far, only Marambio and McMurdo have not yet registered any explosive cyclones. Russia's Russkaya station operated intermittently and so it was not possible to use its data to determine if an explosive cyclone possibly struck this location.

## STATISTICS OF THE MONTH

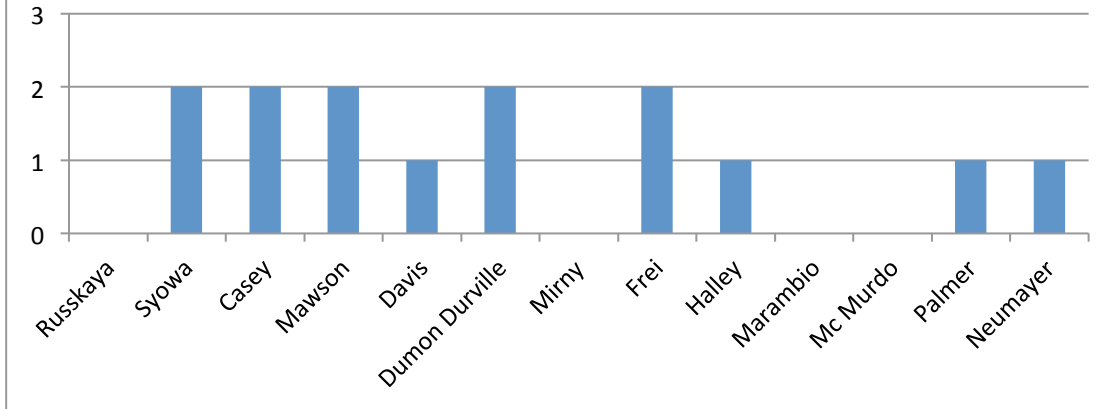
Classification	Bergeron Scale	Intensity	Total of cases registered in the month
B1	1 a 1.2	Weak	09
B2	1.3 a 1.8	Moderate	05
B3	>1.8	Strong	00

Highest pressure drop	Lowest recorded pressure	Highest sustained wind	Average minimum pressures	Mean of pressure drops
-37.1 hPa/24H	949.8 hPa	43.5 m/s (97.3 mph)	960.0 hPa	-28.7 hPa/24H
Halley Station July 28	Davis Station July 17	Davis Station July 17		

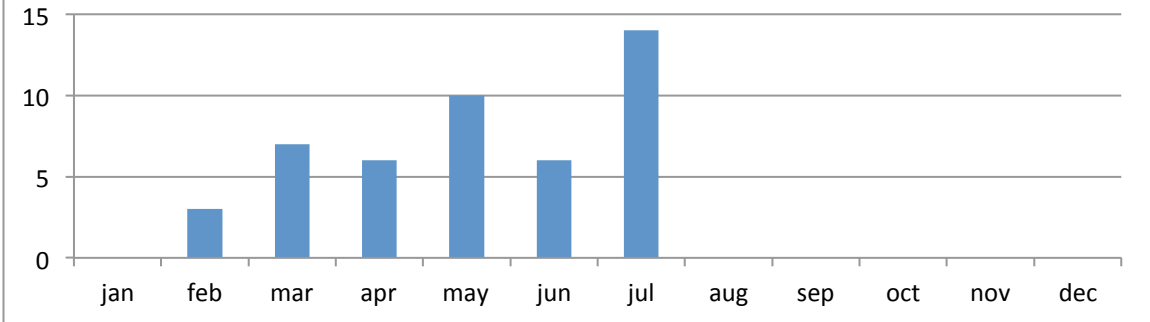
### Events by Bergeron Scale in 2017



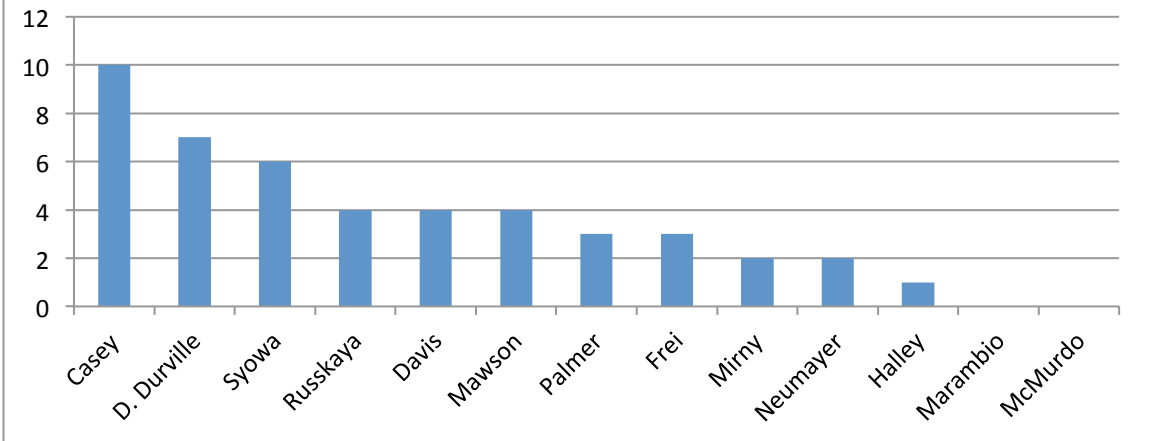
### Total of events registered in each station in the month of July/2017



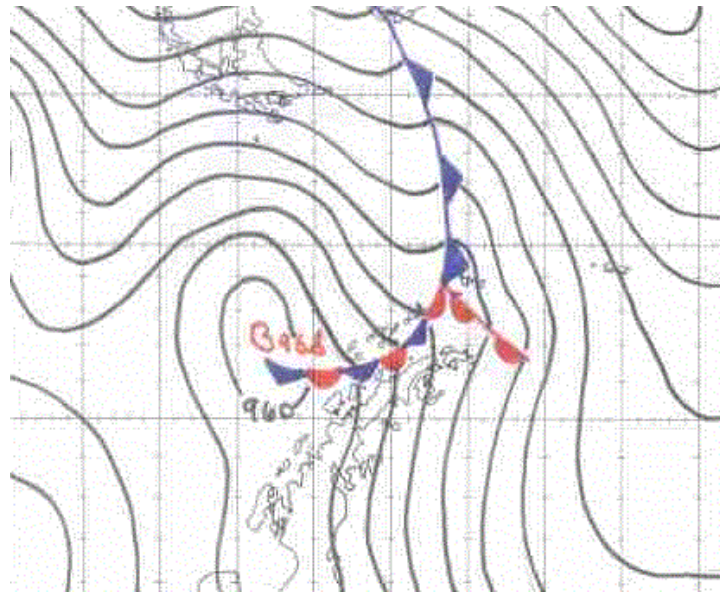
### Explosive Cyclones in the Antarctic Total of monthly events



### Total of events registered by station in 2017



**EXPLOSIVE CYCLONE N°33/2017- DATA: 02/JULY/2017**  
**LOCAL: FREI STATION – WMO 89056 (OPERATED BY CHIL)**



DROP OF PRESSURE IN 24H: 25.9 hPa  
MINIMUM PRESSURE REGISTERED ON STATION: 962.9 hPa  
MINIMUM PRESSURE ESTIMATED IN THE CYCLONE CORE: 958.0 hPa  
SUSTAINED MAXIMUM WIND: 22.5 m/s (50 mph)  
MAXIMUM WIND GUST: 28.5 m/s (64.0 mph)  
BERGERON: 1.1 (WEAK)

**EXPLOSIVE CYCLONE N°34/2017- DATA: 02/JULY/2017**  
**LOCAL: CASEY STATION – WMO 89611 (OPERATED BY AUSTRALIA)**

NO IMAGE

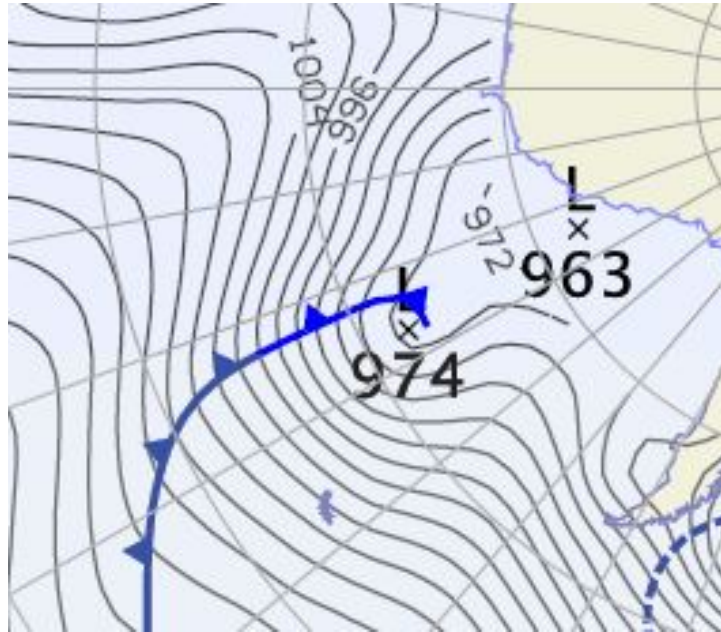
DROP OF PRESSURE IN 24H: 24.6 hPa  
MINIMUM PRESSURE REGISTERED ON STATION: 961.7 hPa  
MINIMUM PRESSURE ESTIMATED IN THE CYCLONE CORE: None hPa  
SUSTAINED MAXIMUM WIND: 37.1 m/s (83.0 mph)  
BERGERON: 1.0 (WEAK)

**EXPLOSIVE CYCLONE N°35/2017- DATA: 04/JULY/2017**  
**LOCAL: SYOWA STATION – WMO 89532 (OPERATED BY JAPAN)**

NO IMAGE

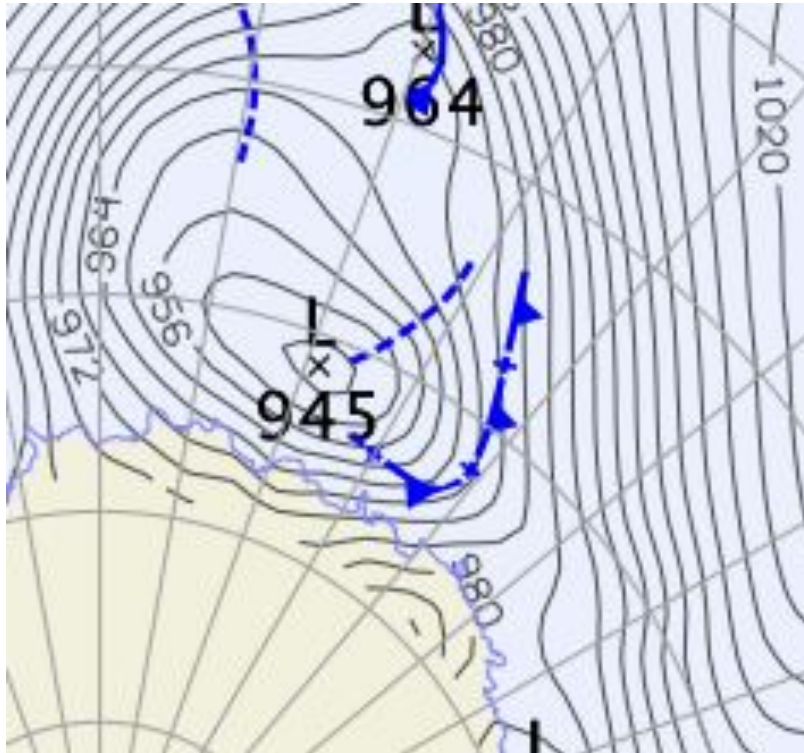
DROP OF PRESSURE IN 24H: 33.0 hPa  
MINIMUM PRESSURE REGISTERED ON STATION: 958.1 hPa  
MINIMUM PRESSURE ESTIMATED IN THE CYCLONE CORE: 944.0 hPa  
SUSTAINED MAXIMUM WIND: 27.5 m/s (61.0 mph)  
BERGERON: 1.4 (MODERATE)

**EXPLOSIVE CYCLONE N°36/2017- DATA: 08/JULY/2017**  
**LOCAL: NEUMAYER STATION – WMO 89002 (OPERATED BY GERMANY)**



DROP OF PRESSURE IN 24H: 27.8 hPa  
MINIMUM PRESSURE REGISTERED ON STATION: 969.1 hPa  
MINIMUM PRESSURE ESTIMATED IN THE CYCLONE CORE: 963.0 hPa  
SUSTAINED MAXIMUM WIND: 14.5 m/s (32 mph)  
BERGERON: 1.2 (WEAK)

**EXPLOSIVE CYCLONE N°37/2017- DATA: 10/JULY/2017**  
**LOCAL: CASEY STATION – WMO 89611 (OPERATED BY AUSTRALIA)**



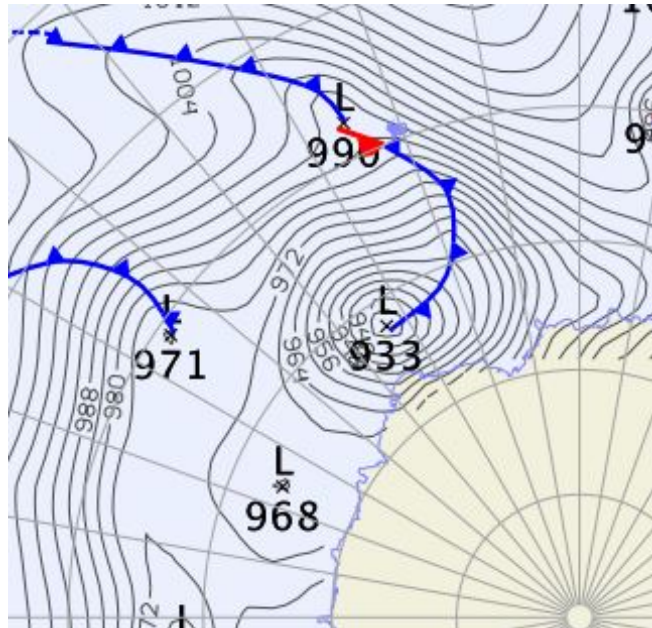
DROP OF PRESSURE IN 24H: 26.0 hPa  
MINIMUM PRESSURE REGISTERED ON STATION: 957.6 hPa  
MINIMUM PRESSURE ESTIMATED IN THE CYCLONE CORE: 945.0 hPa  
SUSTAINED MAXIMUM WIND: 27.0 m/s (60.0 mph)  
MAXIMUM WIND GUST: 35.5 m/s (79 mph)  
BERGERON: 1.1 (WEAK)

**EXPLOSIVE CYCLONE N°38/2017- DATA: 11/JULY/2017**  
**LOCAL: SYOWA STATION – WMO 89532 (OPERATED BY JAPAN)**

NO IMAGE

DROP OF PRESSURE IN 24H: 24.4 hPa  
MINIMUM PRESSURE REGISTERED ON STATION: 964.2 hPa  
MINIMUM PRESSURE ESTIMATED IN THE CYCLONE CORE: 952 hPa  
SUSTAINED MAXIMUM WIND: 21.1 m/s (47.0 mph)  
BERGERON: 1.0 (WEAK)

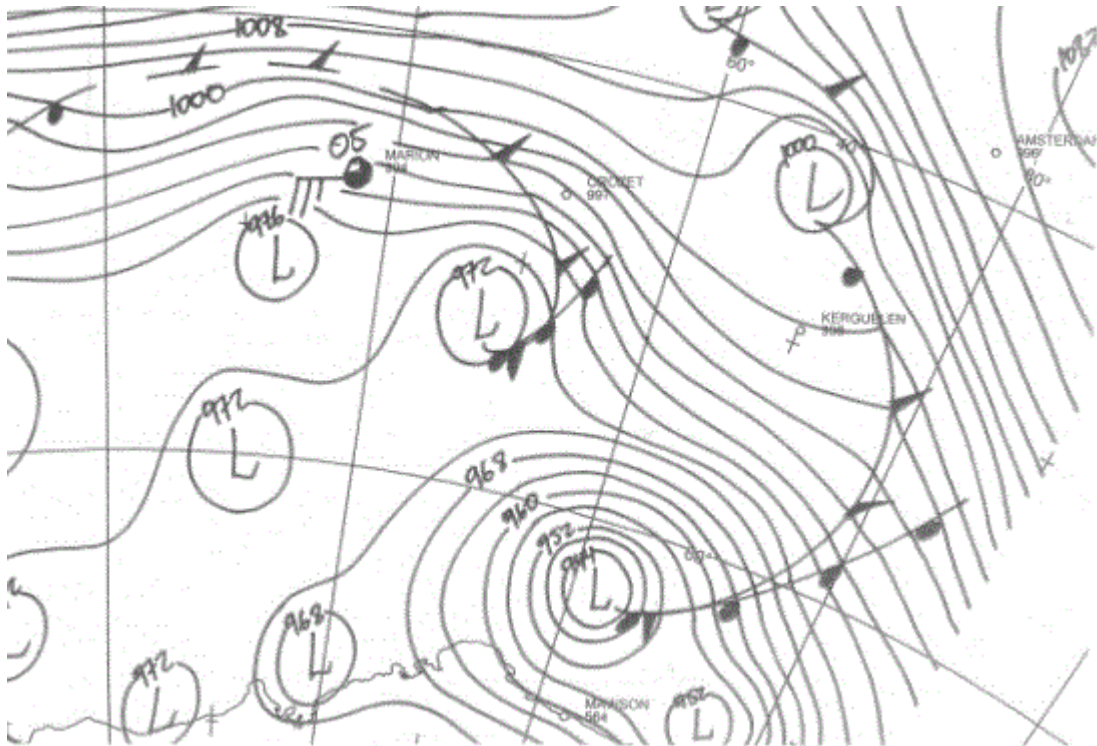
**EXPLOSIVE CYCLONE N°39/2017- DATA: 17/JULY/2017**  
**LOCAL: DAVIS STATION – WMO 89571 (OPERATED BY AUSTRALIA)**



DROP OF PRESSURE IN 24H: 32.0 hPa  
MINIMUM PRESSURE REGISTERED ON STATION: 949.8 hPa  
MINIMUM PRESSURE ESTIMATED IN THE CYCLONE CORE: 933.0 hPa  
SUSTINED MAXIMUM WIND: 43.5 m/s (97.0 mph)  
MAXIMUM WIND GUST: 53.5 m/s (120 mph)  
BERGERON: 1.3 (MODERATE)



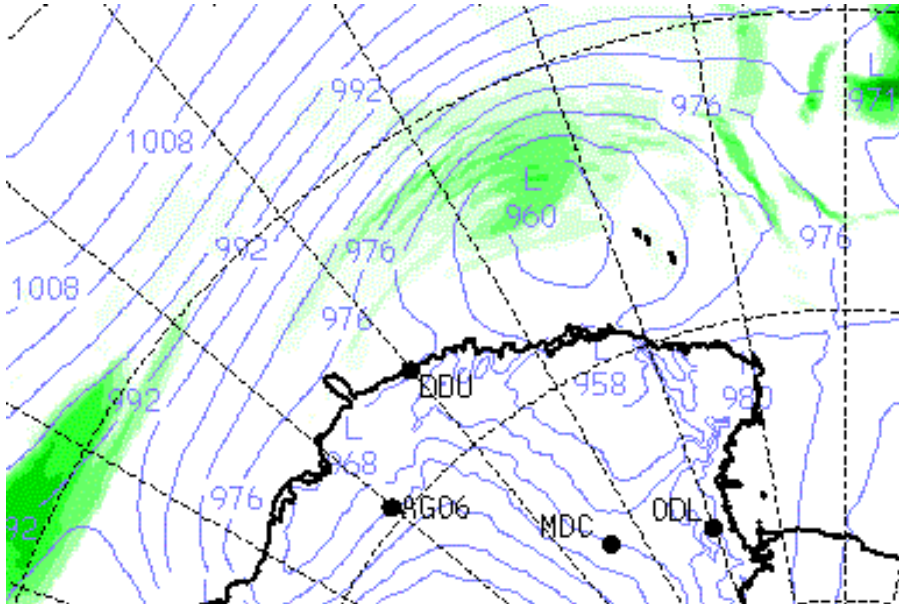
**EXPLOSIVE CYCLONE N°40/2017- DATA: 17/JULY/2017**  
**LOCAL: MAWSON STATION – WMO 89564 (OPERATED BY AUSTRALIA)**



DROP OF PRESSURE IN 24H: 27.0 hPa  
MINIMUM PRESSURE REGISTERED ON STATION: 951.8 hPa  
MINIMUM PRESSURE ESTIMATED IN THE CYCLONE CORE: 944.0 hPa  
SUSTAINED MAXIMUM WIND: 40.5 m/s (90.0 mph)  
MAXIMUM WIND GUST: 48.5 m/s (108 mph)  
BERGERON: 1.1 (WEAK)

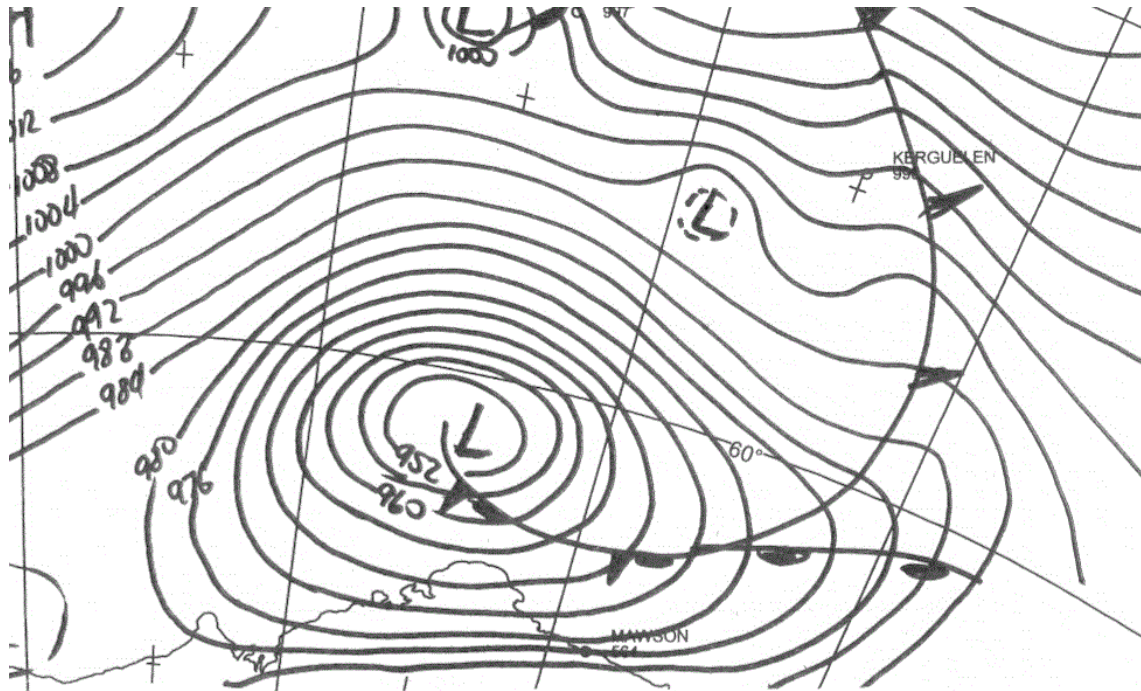


**EXPLOSIVE CYCLONE N°41/2017- DATA: 19/JULY/2017**  
**LOCAL: DUMONT D'URVILLE STATION – WMO 89642 (OPERATED BY**  
**FRANCE)**



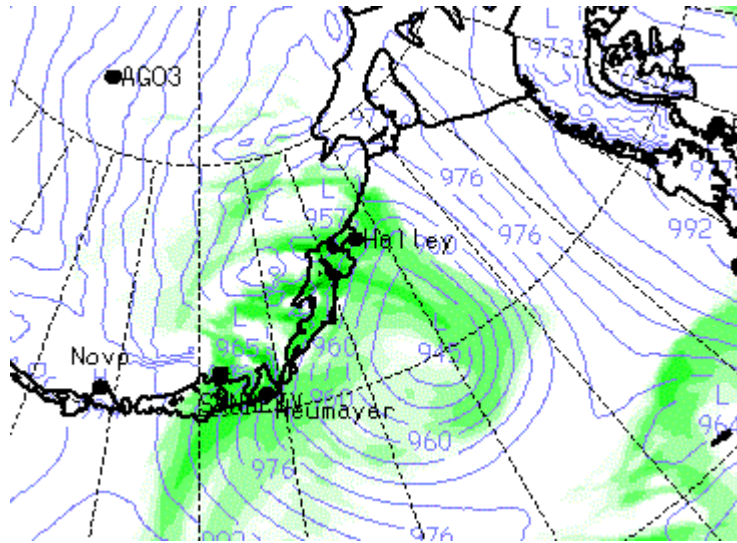
DROP OF PRESSURE IN 24H: 25.9 hPa  
MINIMUM PRESSURE REGISTERED ON STATION: 969.6 hPa  
MINIMUM PRESSURE ESTIMATED IN THE CYCLONE CORE: 960.0 hPa  
SUSTINED MAXIMUM WIND: 6.5 m/s (15.0 mph)  
MAXIMUM WIND GUST: 16.0 m/s (36 mph)  
BERGERON: 1.1 (WEAK)

**EXPLOSIVE CYCLONE N°42/2017- DATA: 27/JULY/2017**  
**LOCAL: MAWSON STATION – WMO 89564 (OPERATED BY AUSTRALIA)**



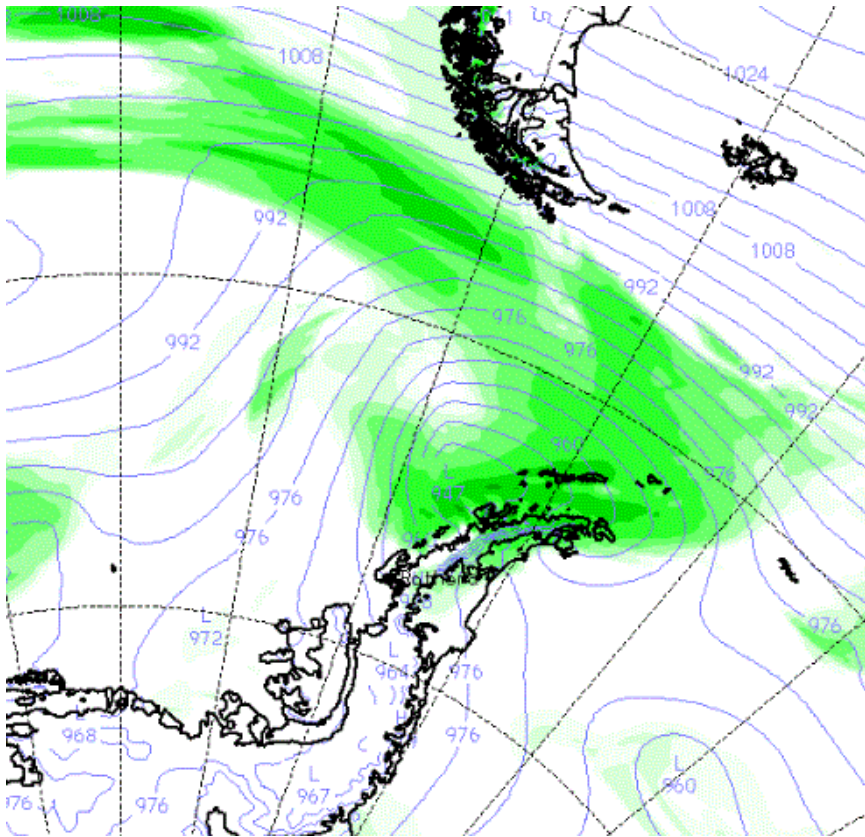
DROP OF PRESSURE IN 24H: 30.7 hPa  
MINIMUM PRESSURE REGISTERED ON STATION: 971.8 hPa  
MINIMUM PRESSURE ESTIMATED IN THE CYCLONE CORE: 952.0 hPa  
SUSTINED MAXIMUM WIND: 36.5 m/s (82.0 mph)  
MAXIMUM WIND GUST: 42.5 m/s (95 mph)  
BERGERON: 1.3 (MODERATE)

**EXPLOSIVE CYCLONE N°43/2017- DATA: 28/JULY/2017**  
**LOCAL: HALLEY STATION – WMO 89022 (OPERATED BY UNITED KINGDOM)**



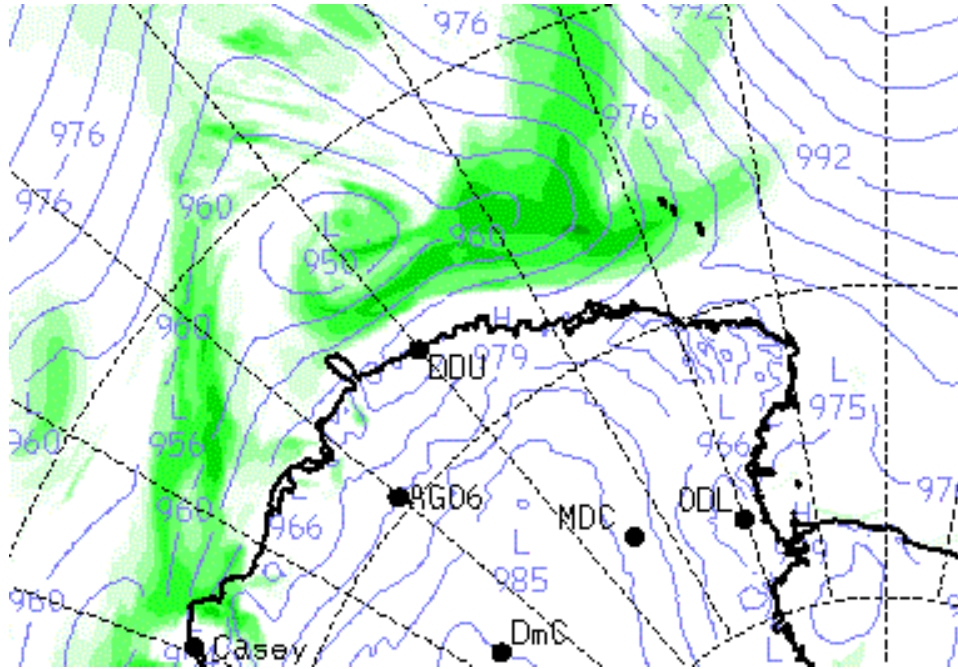
DROP OF PRESSURE IN 24H: 37.1 hPa  
MINIMUM PRESSURE REGISTERED ON STATION: 960.1 hPa  
MINIMUM PRESSURE ESTIMATED IN THE CYCLONE CORE: 945.0 hPa  
SUSTINED MAXIMUM WIND: 17.5 m/s (39.0 mph)  
BERGERON: 1.5 (MODERATE)

**EXPLOSIVE CYCLONE N°44/2017- DATA: 30/JULY/2017**  
**LOCAL: PALMER STATION – WMO 89061 (OPERATED BY USA)**



DROP OF PRESSURE IN 24H: 27.8 hPa  
MINIMUM PRESSURE REGISTERED ON STATION: 950.7 hPa  
MINIMUM PRESSURE ESTIMATED IN THE CYCLONE CORE: 945.0 hPa  
SUSTINED MAXIMUM WIND: 15.0 m/s (34.0 mph)  
BERGERON: 1.2 (WEAK)

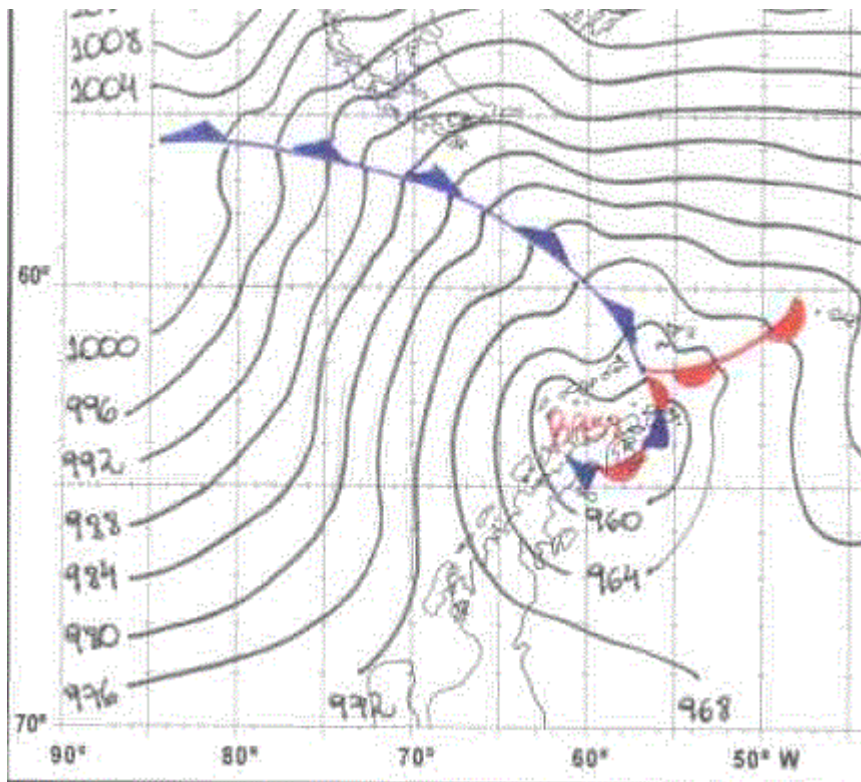
**EXPLOSIVE CYCLONE N°45/2017- DATA: 30/JULY/2017**  
**LOCAL: DUMONT D'URVILLE STATION – WMO 89642 (OPERATED BY**  
**FRANCE)**



DROP OF PRESSURE IN 24H: 27.8 hPa  
MINIMUM PRESSURE REGISTERED ON STATION: 961.2 hPa  
MINIMUM PRESSURE ESTIMATED IN THE CYCLONE CORE: 949.0 hPa  
SUSTINED MAXIMUM WIND: 26.5 m/s (59 mph)  
MAXIMUM WIND GUST: 40.5 m/s (91 mph)  
BERGERON: 1.2 (WEAK)



**EXPLOSIVE CYCLONE N°46/2017- DATA: 31/JULY/2017**  
**LOCAL: FREI STATION – WMO 89056 (OPERATED BY CHILE)**



DROP OF PRESSURE IN 24H: 32.0 hPa  
MINIMUM PRESSURE REGISTERED ON STATION: 951 hPa  
MINIMUM PRESSURE ESTIMATED IN THE CYCLONE CORE: 951 hPa  
SUSTINED MAXIMUM WIND: 22.5 m/s (50 mph)  
MAXIMUM WIND GUST: 28.5 m/s (64 mph)  
BERGERON: 1.3 (MODERATE)

**Sources:**

<https://worldview.earthdata.nasa.gov>

<http://www.weathersa.co.za>

<http://www.bom.gov.au>

<https://data.aad.gov.au>

<http://www.smn.gov.ar>

<http://meteoarmada.directemar.cl>