

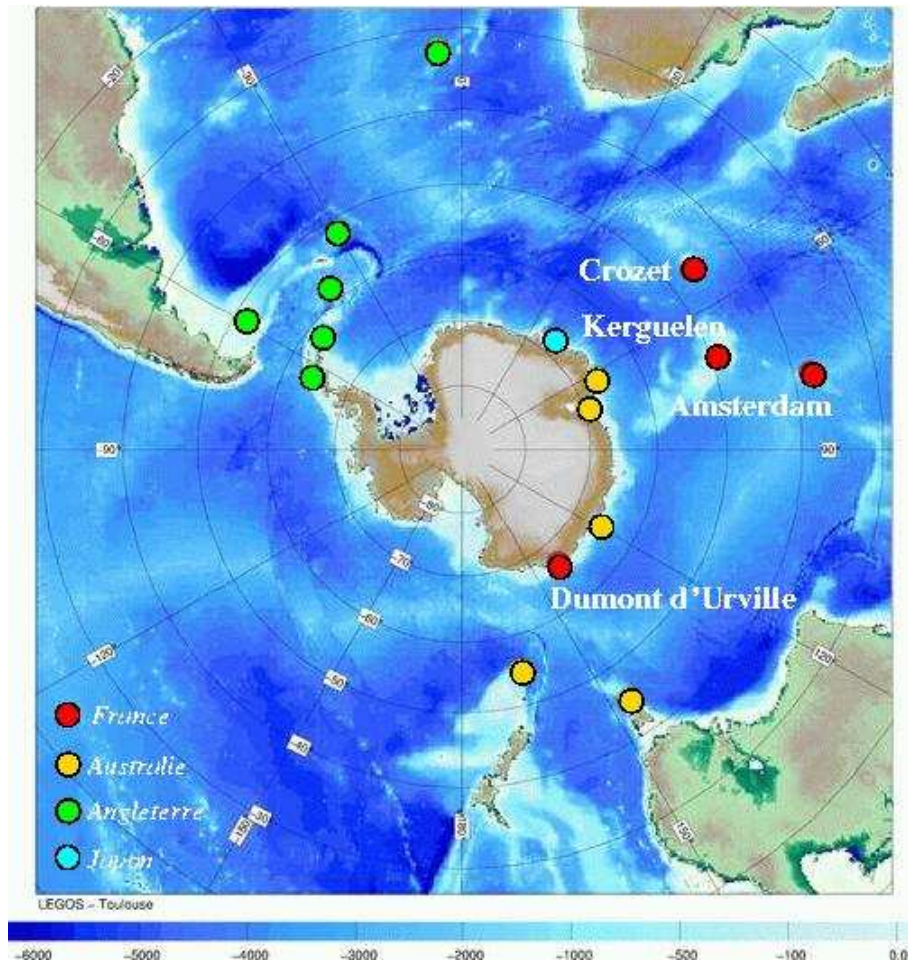
# ROSAME

## *Geodetic fixing: state and prospects*

*L. Testut, C. Le Provost and P. Téchiné*

**KERGUELEN ISLANDS** *Photo: Antoine Guillot (Nivmer 2000)*

## Réseau d'Observation Sub-Antarctique et Antarctique du niveau de la Mer

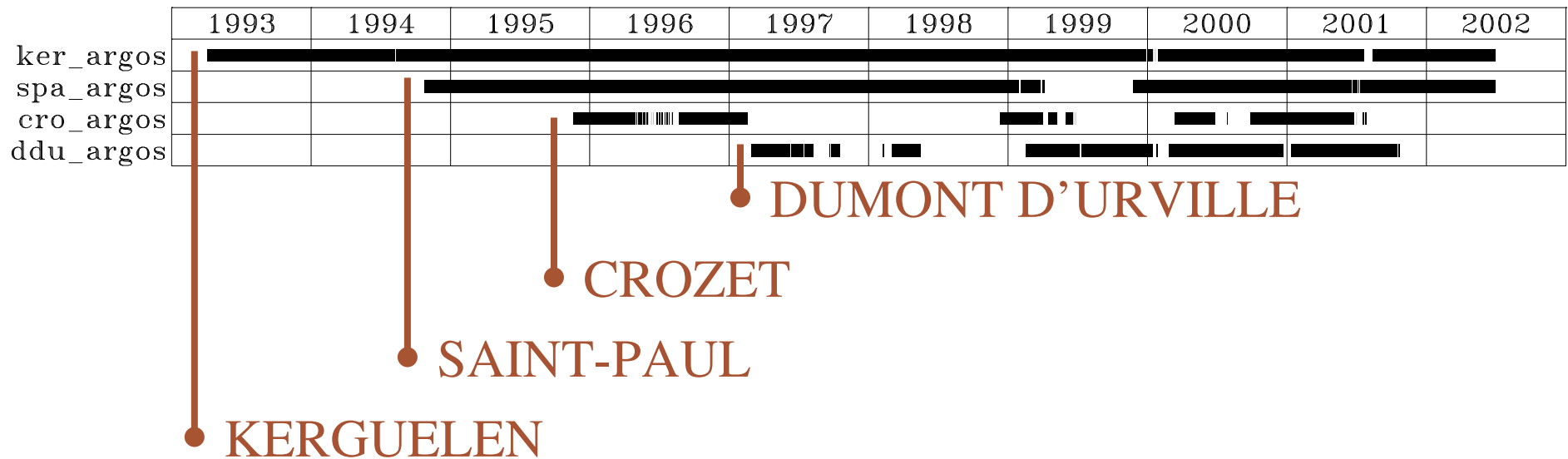


- Antarctic and South Indian Ocean Tide Gauges Networks
- Part of the French contribution to GLOSS
- Part of global networks of monitoring southern ocean
- 4 coastal tides gauges
- 2 moorings (Crozet - Amsterdam)
- Monitoring Antarctic Circumpolar Current
- Altimeter calibration
- Monitoring the long term sea level

# Georeferencing of ROSAME TG

- G. Woppelman and C. Le Provost. NIVMER 1994

Available data of coastal ROSAME Tide Gauges



# Kerguelen

(70°13 E – 49°20 S)



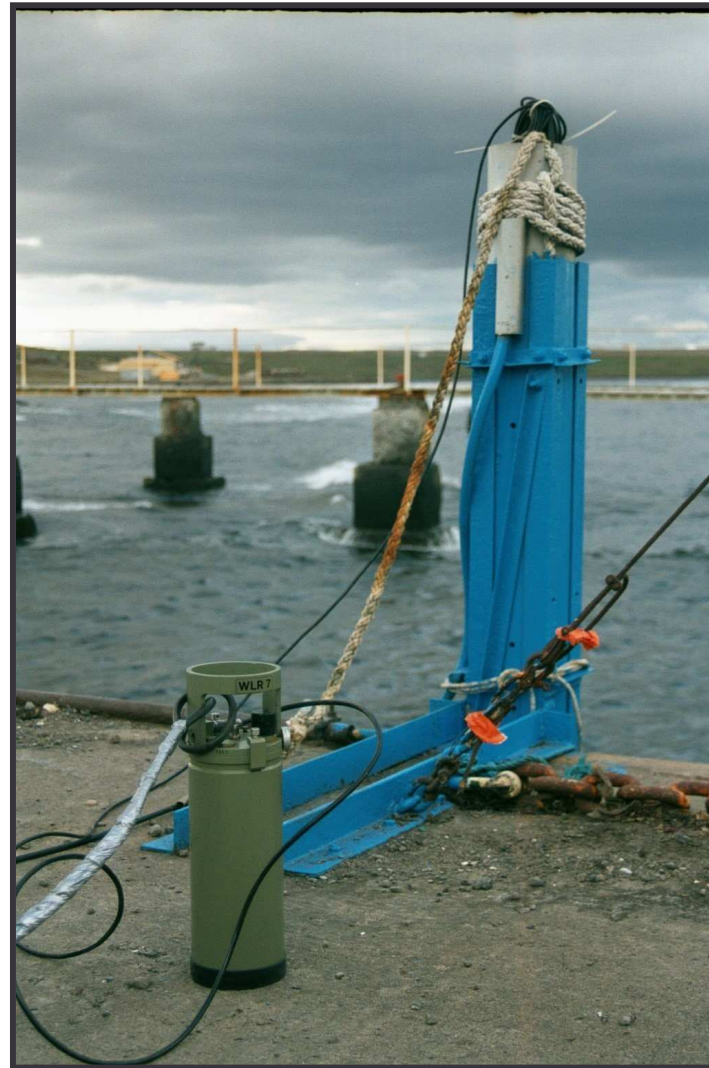
**TG: Pressure Gauge**

**Type: WLR7 Aanderaa**

**Inst. date: 1993**

**Time sampling: 1h**

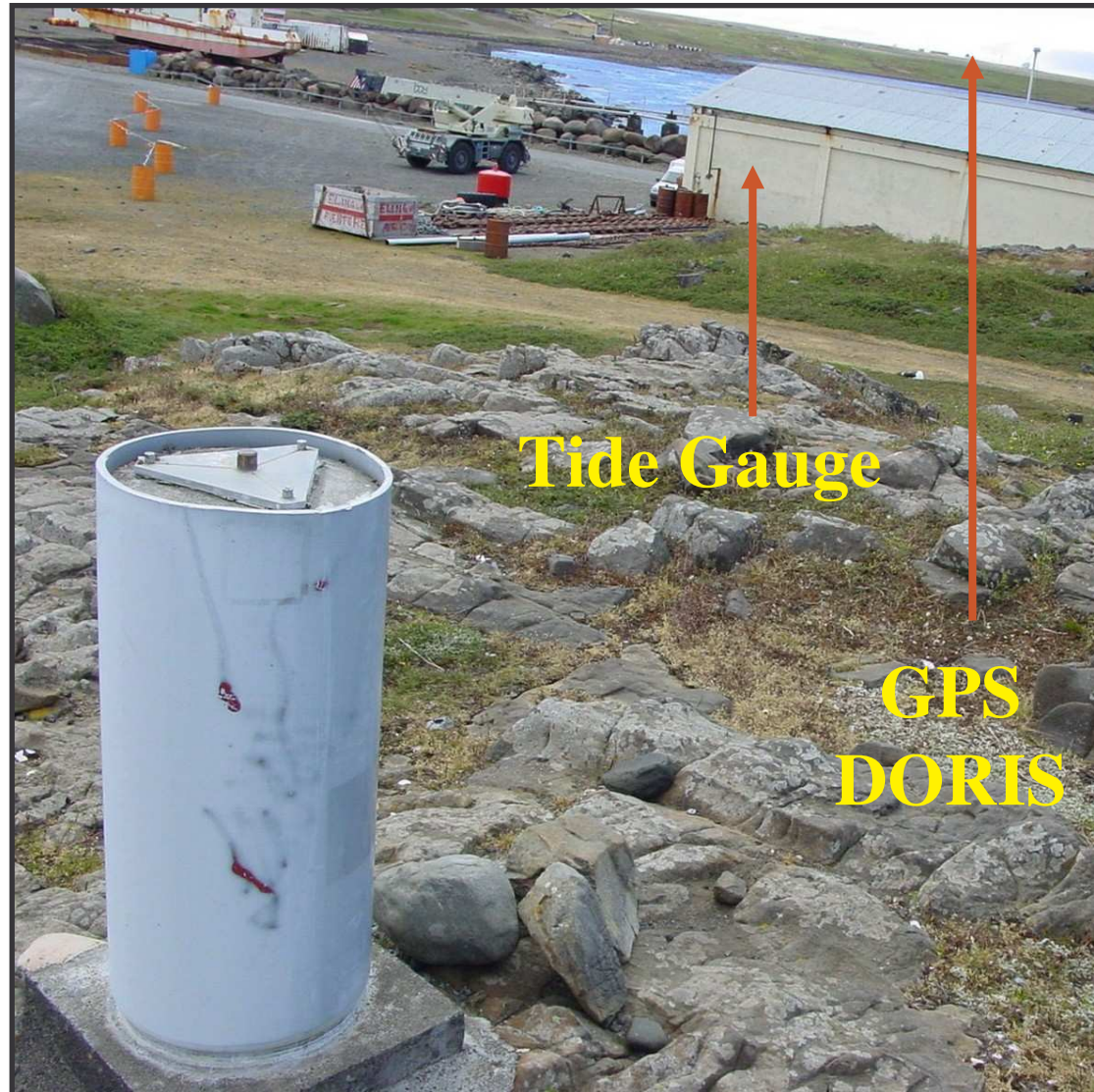
**Transmission: Argos**

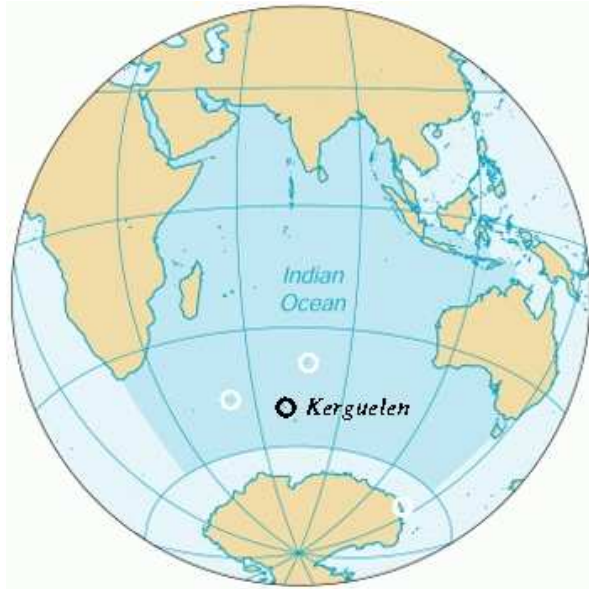


# GPS equipment



- GPS IGS site (cnes)
- DORIS (cnes)
- GPS Pillar (1994)
- Network of TGBMs

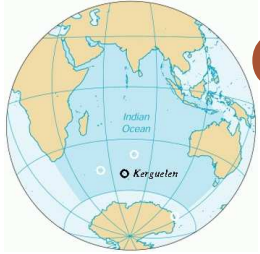




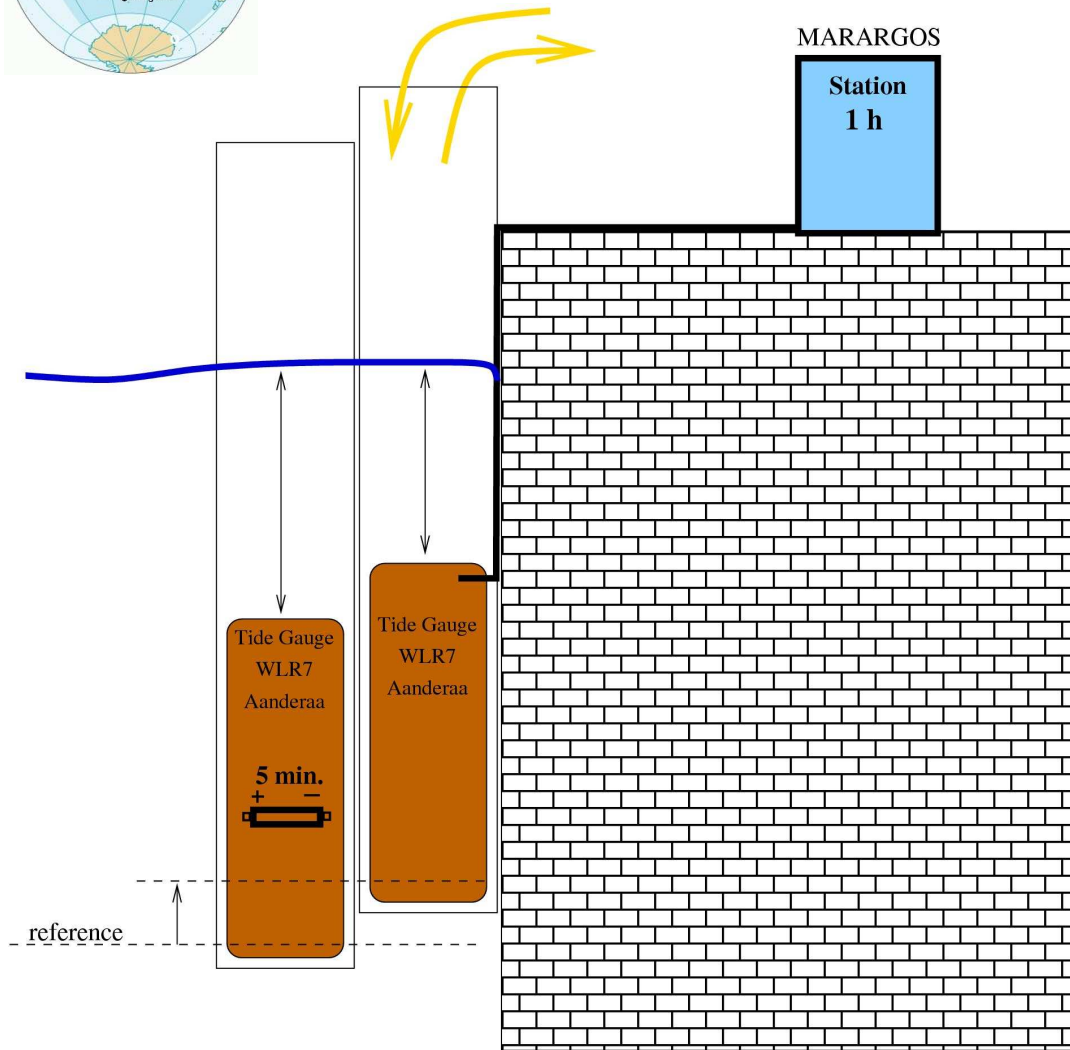
# Prospect

- Install a GPS
- Initiate a levelling program (IGN)
- Monitoring the instrumental reference





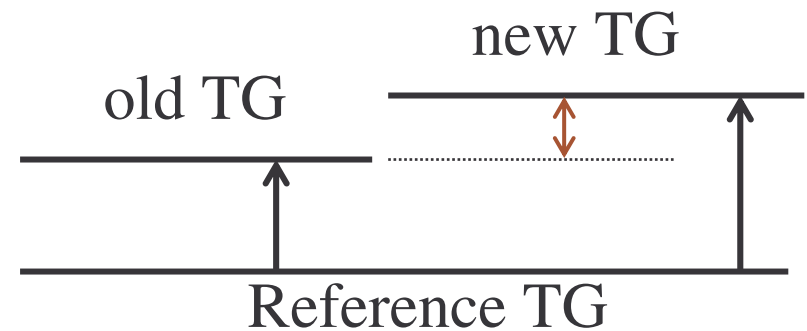
# Calibration of the Pressure Gauge (Kerguelen)

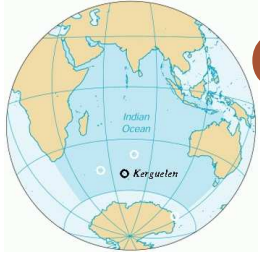


- Waves in the stilling well
- Pressure transducer drift

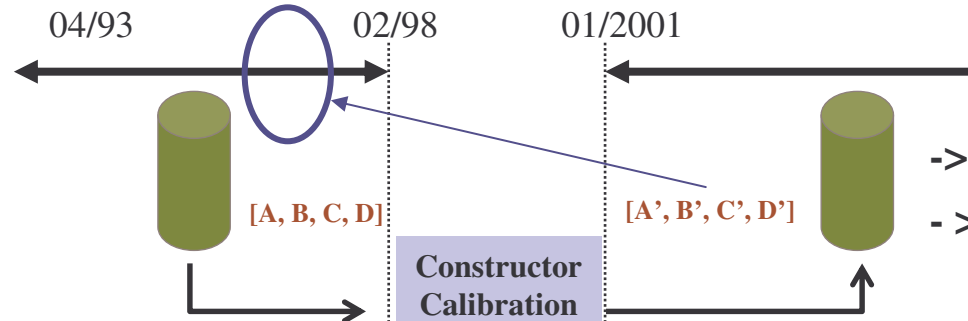
Drift  $\sim 0.2$  cm/yr

**$+1.3 \pm 2$  cm (0.97)**





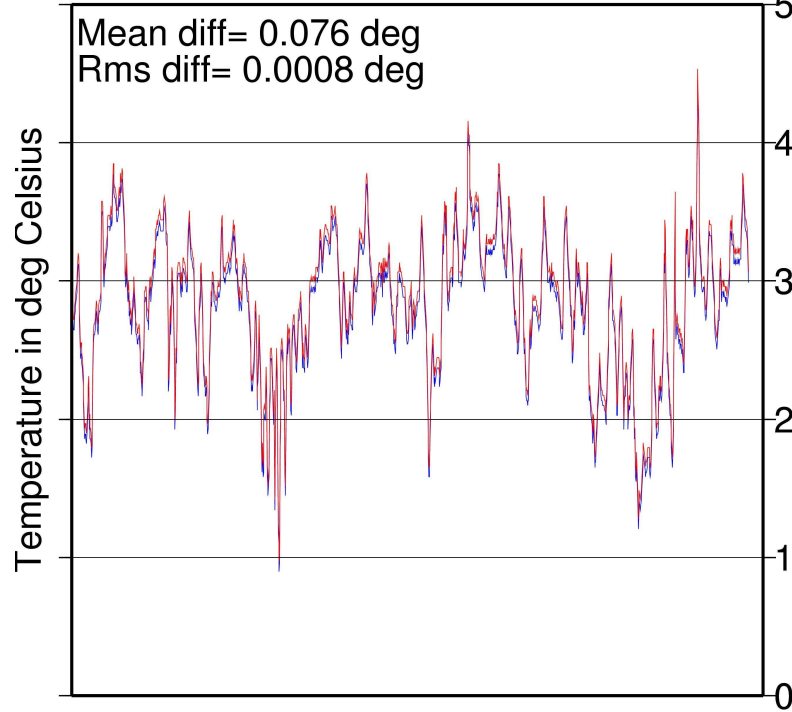
# Calibration of the Pressure Gauge (Kerguelen)



$$\rightarrow T(^{\circ}\text{C}) = a + bR + cR^2 + dR^3$$

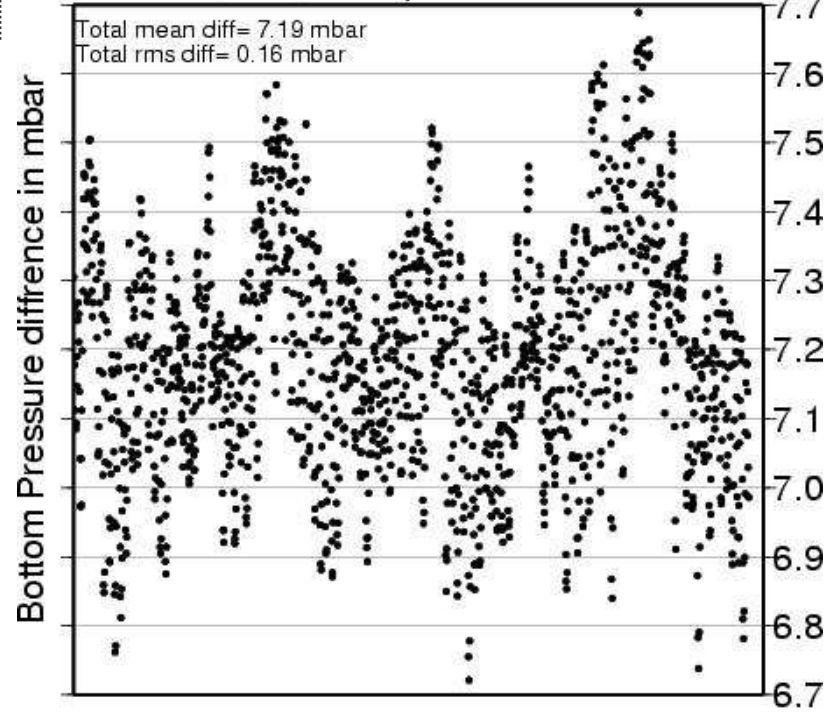
$$\rightarrow \text{Pressure} = A_T + B_T R + C_T R^2 + D_T R^3$$

Cross-calibration of pressure sensor 1351



Period from 07/97 to 08/97

Cross-calibration of pressure sensor 1351



Period from 07/97 to 08/97



# Saint-Paul

(77°32 E - 38°42 S)

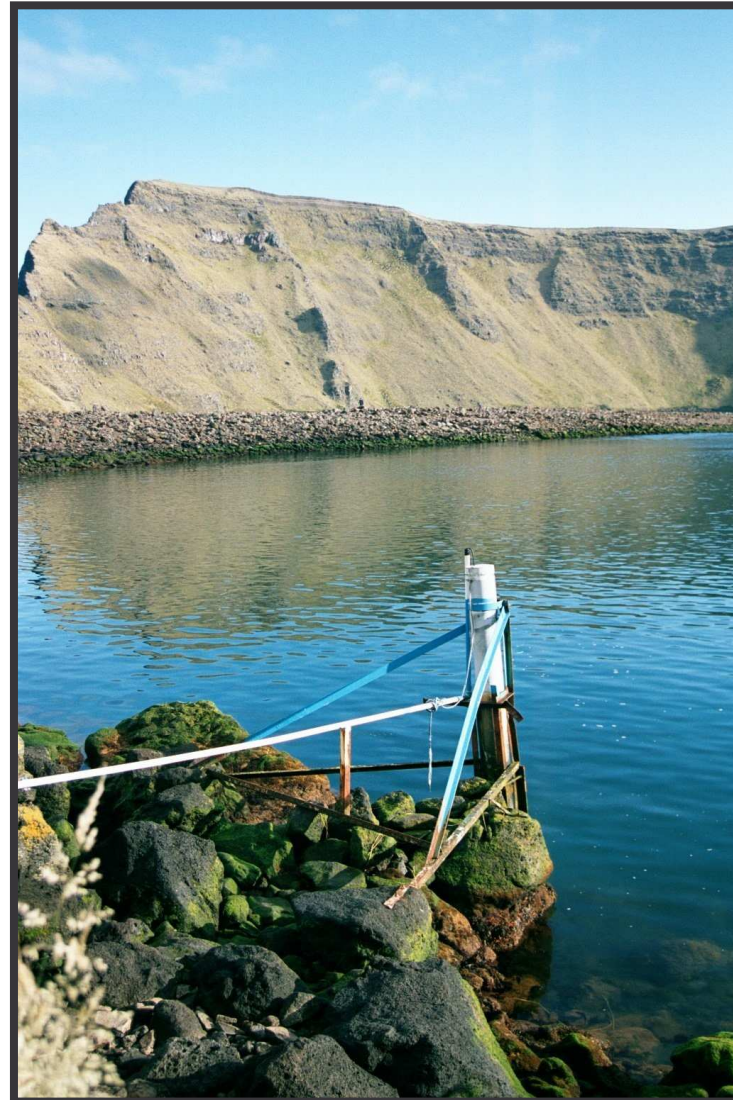
**TG: Pressure Gauge**

**Type:WLR7 Aanderaa**

**Inst. date: 1994**

**Time sampling: 1h**

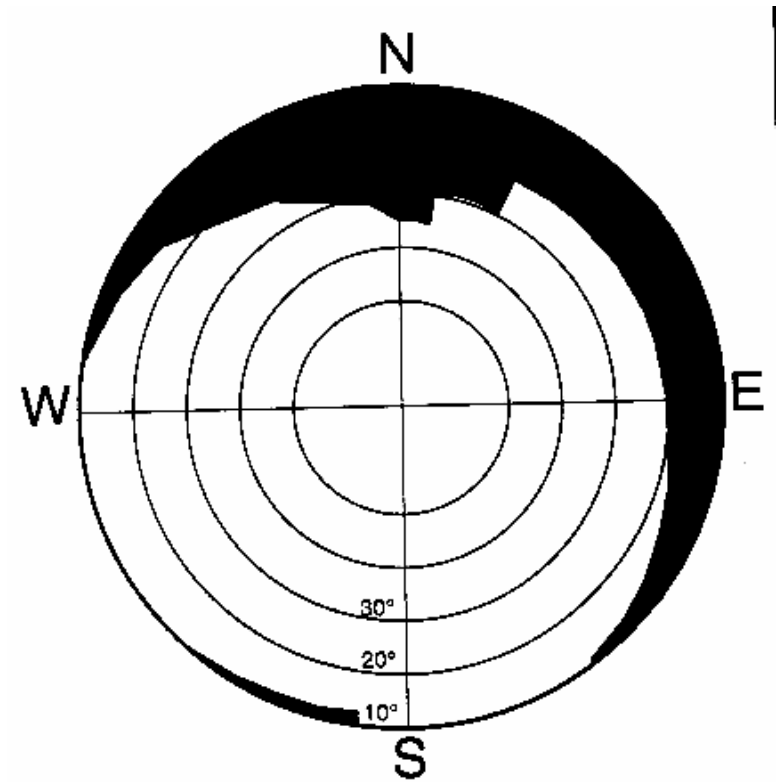
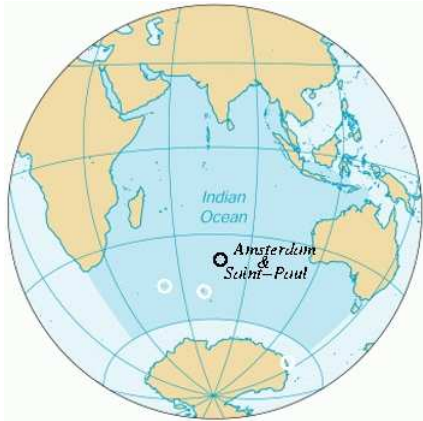
**Transmission: Argos**

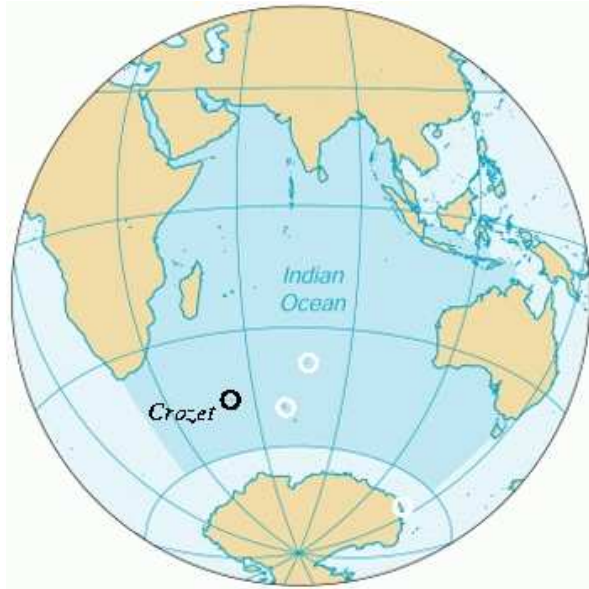


- No power supply
- Nobody

# Saint-Paul

(77°32' E - 38°42' S)





# Crozet

*(51°52 E – 46°25 S)*

**TG: Pressure Gauge**

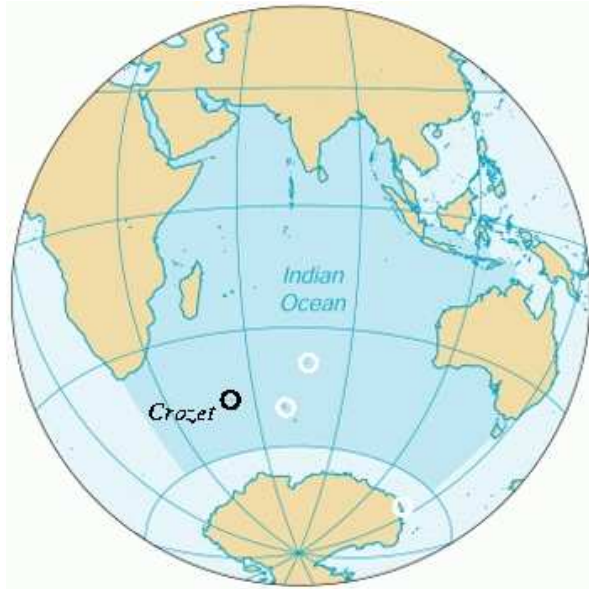
**Type:MORS**

**Inst. date: 1995**

**Time sampling:1h**

**System: Argos**





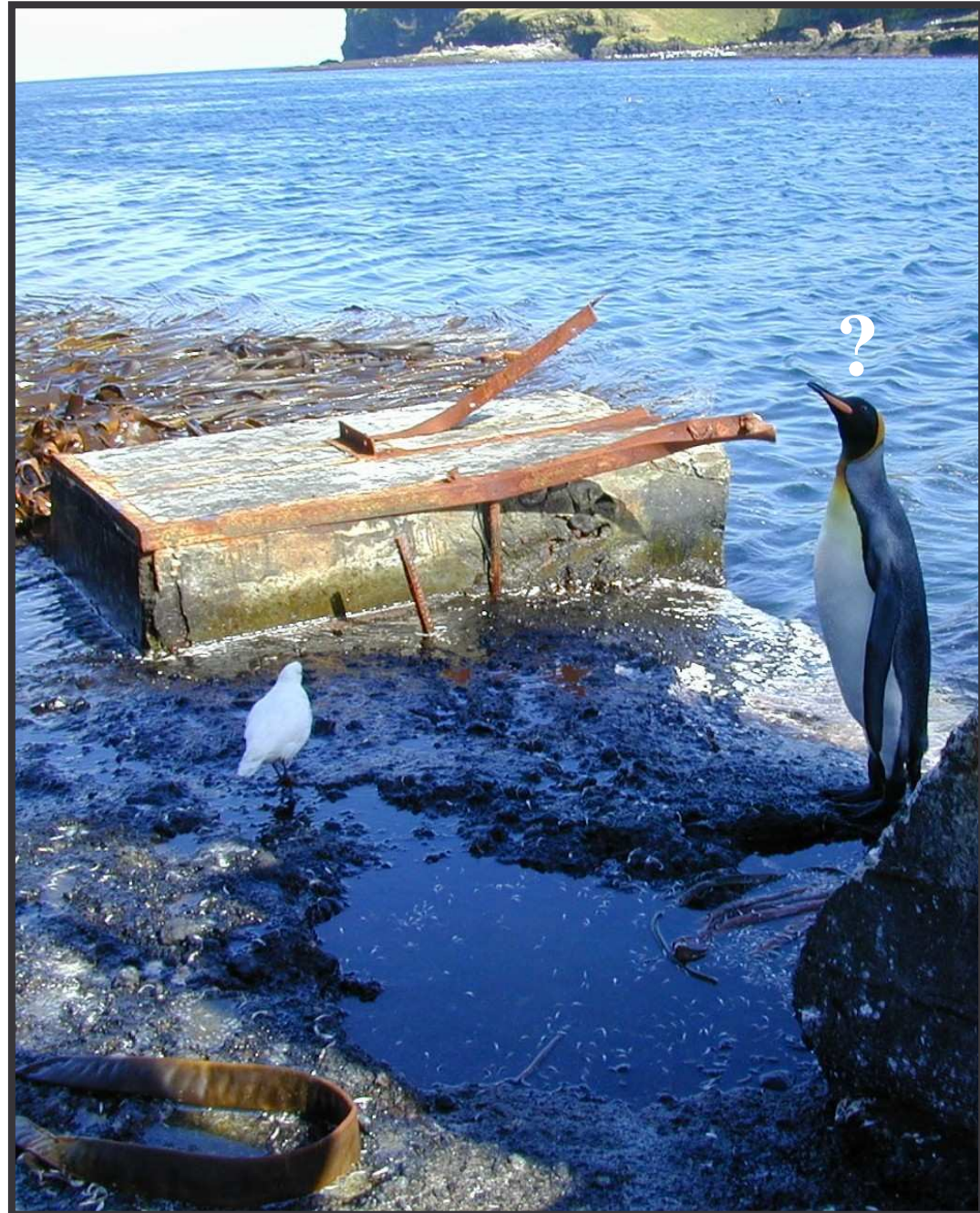
# Crozet

(51°52 E – 46°25 S)

- No power supply
- Difficult access
- Oceanic vandalism







# Dumont d'Urville *(140° E - 66°39 S)*

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**TG: Pressure Gauge**

**Type:MORS**

**Inst. date: 1997**

**Time sampling:30min/1h**

**System: Argos**



# CONCLUSION

Difficult task to maintain a TG network in such hostile conditions

- **Technical**
- **Logistic**
- **Financial**

# PERSPECTIVES

- CGPS@KERGUELEN
- Initiate a levelling program
- Rebuilt Crozet TG
- CGPS@CROZET