Recovery of early surface data; development of a data rescue registry (FFCUL)

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WP3 – Earth Systems Observations

Task 3.1 – Data rescue for in-situ observations, quality control and metadata   (112 persons/month)

- ✓ **D3.1 Data catalogue   Month 6**
- ✓ **D3.2 Priorities for data rescue   Month 6**
- **D3.4 In-situ data for reanalysis   Month 24**
- **D3.5 In-situ data (other)   Month 30**
- **D3.6 Quality controled version of D3.4 Month 36**
- **D3.7 Quality controled version of D3.5 Month 33**

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1 - Data rescue of Portuguese former colonies Angola, Mozambique and Macao sub-daily surface data

• **Inventories for Angola, Mozambique and Macao updated and priorities set**

• **Angola Anuários (10 stations) 1937 -1974 already imaged and digitised (1947-1968) - OCR**

• **Mozambique Anuários (9 stations) 1909-1960 being imaged; 1909-1914 and 1947-1960 to be digitised - OCR**

• **Macao (South China Sea – Rob Allan – METO collaboration) 1894-1914 temperature, wind and relative humidity digitised up to 1903 - Typing**

2 - Digitisation of early Spanish upper air data (5 stations)

• **Spanish pilot balloon data 1913-1915 for Madrid, La Coruña, Barcelona being digitised (1913-14 finalised); Cañadas del Teide (Canary Isles) 1912-1915 and Ebro from 1930 to be started - Typing**

• **We'll need another group to help us with QC for upper air data. Directions have to be converted with care. Ex:** WNW 8° N; **values given between levels**

3 - Recovery of Chilean surface and maritime data

Existing Records

Surface Stations
43 stations

Ship Logs
58 ships

From 1950 to 1958

Records of 41 stations in *.jpg* format from UPAC

From 1959 to 1999

Records of 25 stations in *.xls* format from METEOCHILE

From 1861 to 1884

Records of 9 ships: 7136 images

From 1955 to 1957

Records of 52 ships: 10242 images

Not all stations have data in this period;

Frequently miss some variables like Td, MSL Pressure and Relative Humidity

Frequently miss some variables

Inventory completed

Digitisation priority given to 1955 to 1957 Typing

Digitisation of Surface data 1950-1958 is progressing. 1950 and 1953 completed. 1951 started digitisation by subcontracting - Typing.

3 - Recovery of Chilean surface data

Surface Stations of Chile (1950 - 1958)

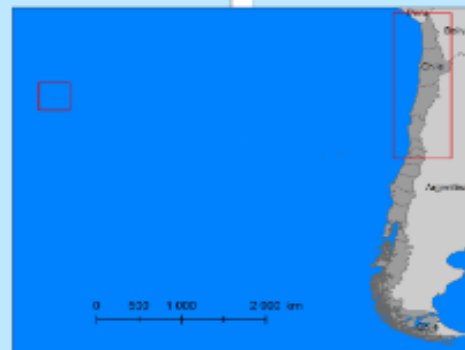Valparaíso Region - Meteorological Station of Easter Island

Isla de Pascua, AP. Mataveri

Regions - North
- Tarapacá
- Antofagasta
- Atacama
- Coquimbo
- Valparaíso

Arica, AP. Chacalluta
Arica, AD. El Buitre
Iquique, AD. Cavancha
Antofagasta, AP. Cerro Moreno
Chañaral, AD.
Copiapó, AD.
Vallenar, AD.
La Serena, DFMET.
Ovalle, AD. El Tuquí
Quintero
Cristo Redentor
El Belloto

Bolivia
Chile
Argentina

Records from Chilean Air Force (1950 - 1958) concerning 41 surface stations:
- Missing 2 stations of 15 to complete 1953.
- Are already completely digitized 5 stations of 9 for 1950.
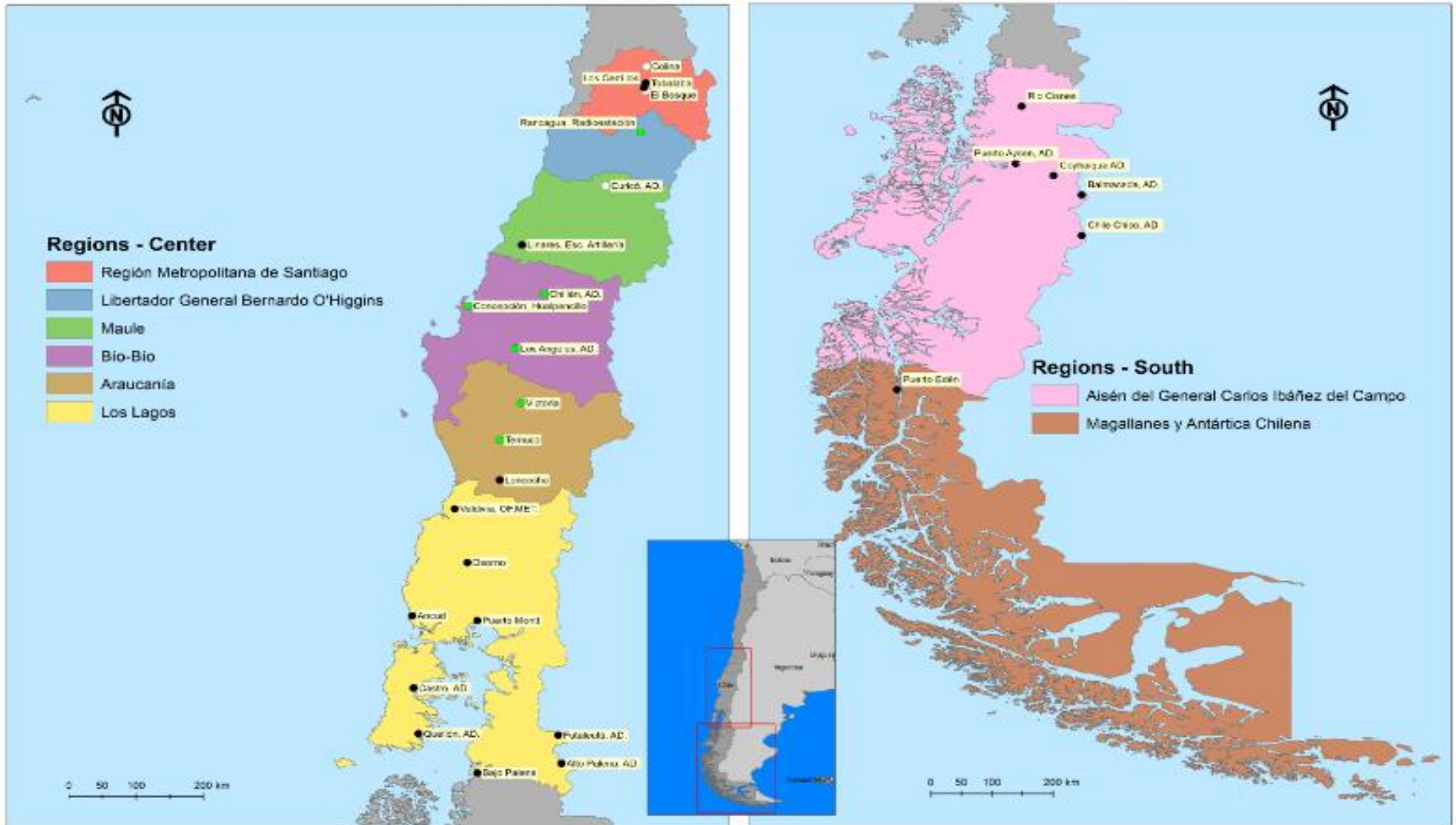
- Undigitized
- Digitized for 1953
- Digitized for 1950
- Digitized for 1950 and 1953

3 - Recovery of Chilean surface data

Surface Stations of Chile (1950 - 1958)

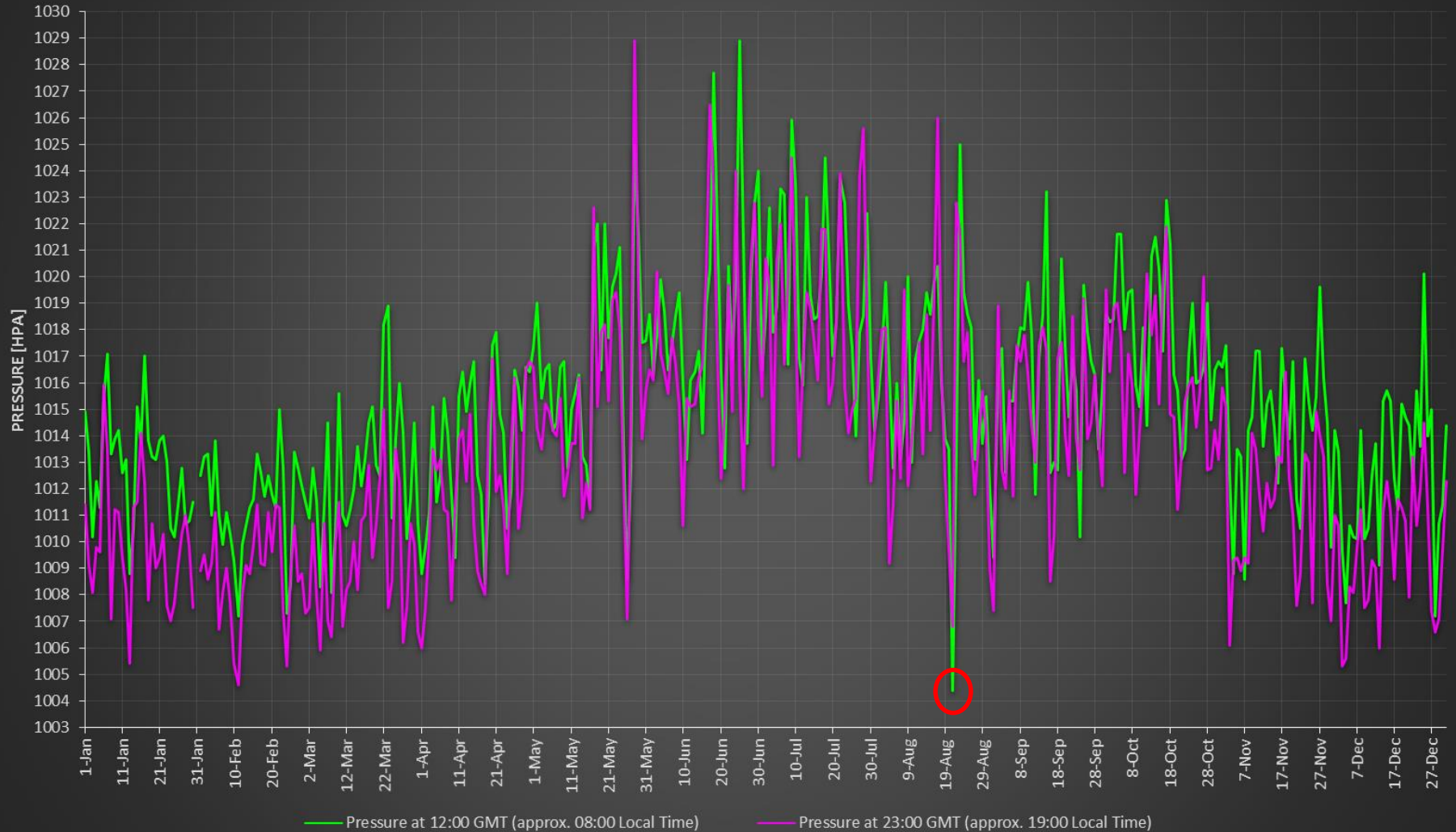Annual cycle shown in the daily Tmax and Tmin for Colina in 1953

Daily Maximum and Minimum Temperatures - Colina 1953
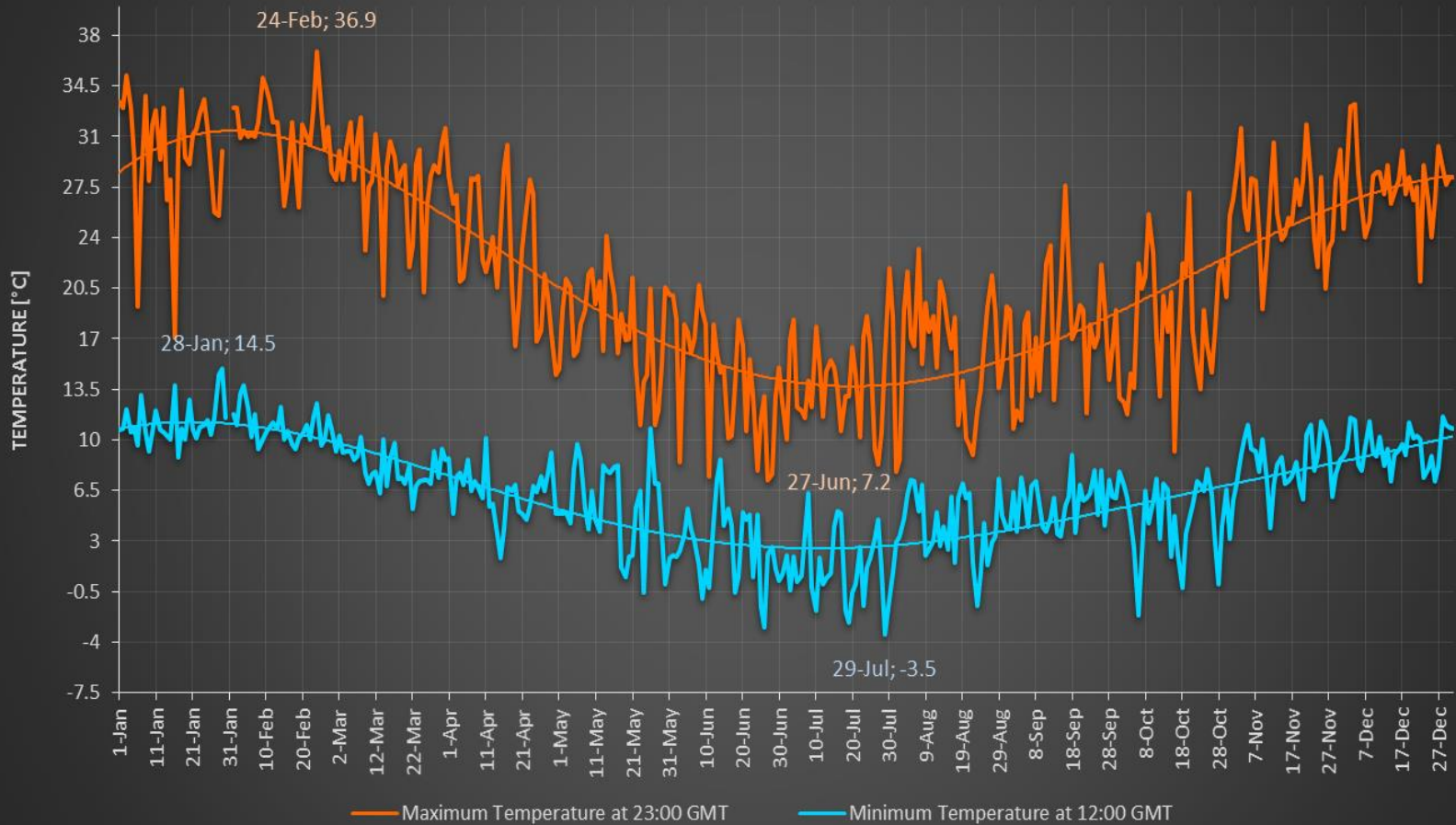
3 - Recovery of Chilean surface data

Annual cycle shown in the daily mslp for Colina in 1953 at 12 (green)   and 23 (purple) GMT

Mean Sea Level Pressure - Colina 1953

— Pressure at 12:00 GMT (approx. 08:00 Local Time)   — Pressure at 23:00 GMT (approx. 19:00 Local Time)

4 - Global Registry of historical data rescue efforts

Development of a global registry that will list sources of meteorological data including surface, upper air, maritime and other relevant data

Main source of information for data rescue community

- Avoid duplication of efforts (inventorising, imaging, digitising)

- Compilation of inventories from large data rescue projects and recently digitised data, such as ERA-CLIM, ISPD, ISTI, ECA&D, EURO4M, ICOADS, CHUAN, ACRE ,etc.

- A Metadata Base tool was developed by UBERN that includes surface, upper air and transmission records and will also incorporate ships logbooks in ERA-CLIM2 (Chile and Portugal at least). It is on-line (http://www.oeschger-data.unibe.ch/metads/index.php?_site=dataset&item-id=ds_eraclim_surf) and is editable – new records can be added (Stickler et al, 2014, BAMS)

Example of ERA-CLIM MetadataBase (surface stations)

UBERN gave FFCUL the original code for this metadata tool - Starting point. More user friendly than current version.

Written in JavaScript dhtmlxGrid (ideal for editable tables in websites) will be coded in Linux environment, continued collaboration with UBERN, and very close collaboration with ACRE partners (inventories). Link with WMO Global Rescue Inventories efforts.

Planning a complementary visualization tool for the registry to plot the available data for each period

1886
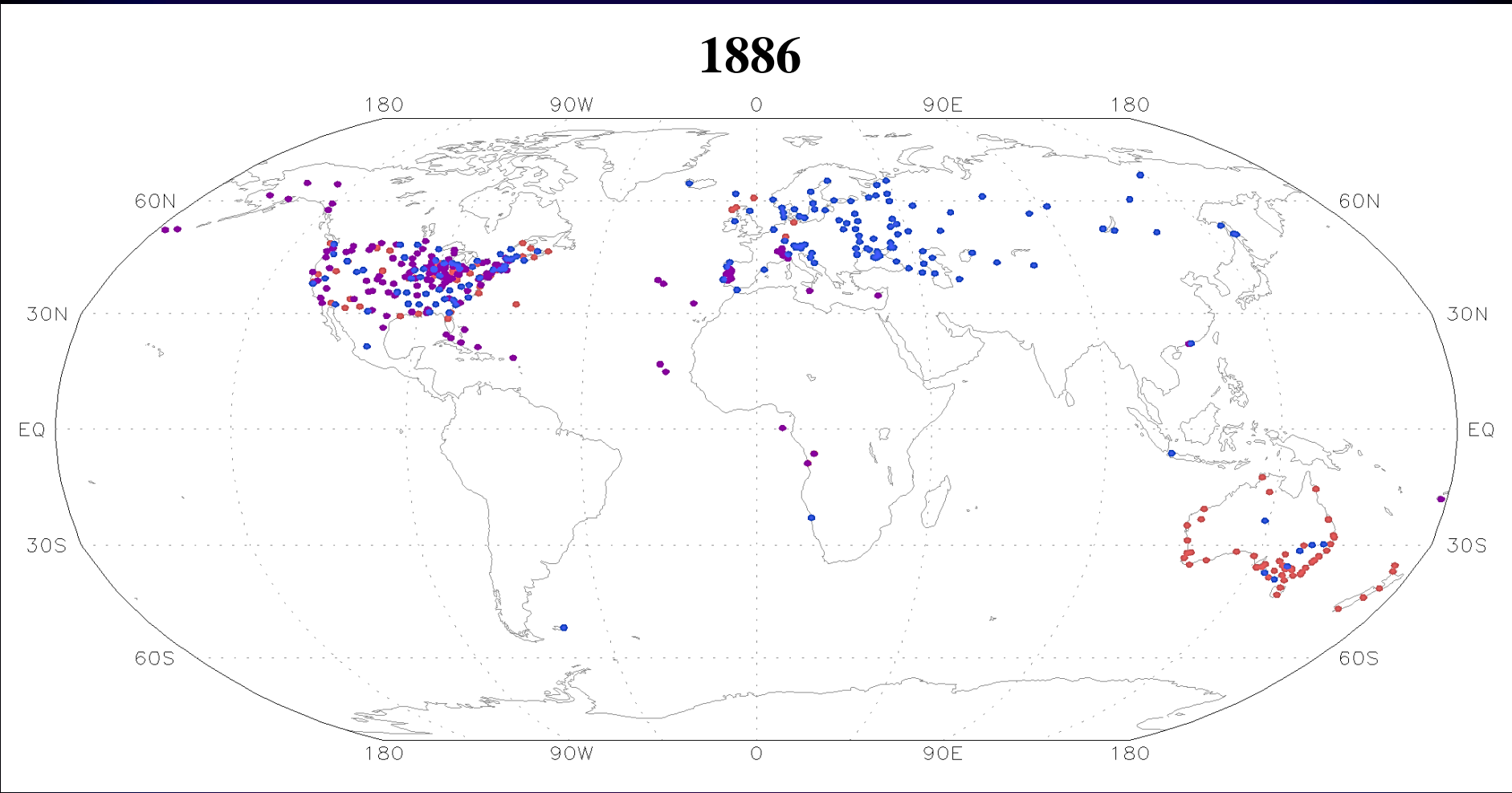
ISPDv2   ISPDv3.0   ISPDv4.0

Example taken from www.reanalyses.org

Global Registry

A 2-year fellowship will be open by FFCUL/IDL from 1st January 2015 in ERA-CLIM2 to develop the inventory.
Knowledge of JavaScript, HTM,etc will be required from applicants.

(And the chosen one will be trained as a meteorological observer as we all are at our old meteorological surface station)

We are after the possibility of having the inventory management included in the Climate Change COPERNICUS services, won by the ECMWF. IDL will apply with this project and a prototype to an eventual future call. Hopefully by May-June 2015 we will have a prototype ready.

Thanks for your attention