

C3S Data Rescue Service

Southern Hemisphere Data Rescue Foci

ARGENTINA

Linked to ACRE Argentina - led by Dr. Pablo Canziani, Investigador Principal CONICET, Unidad de Investigación y Desarrollo de las Ingenierías, Facultad Regional Buenos Aires, Universidad Tecnológica Nacional (UTN), Buenos Aires, Argentina. The UTN will coordinate activities with other national organisations such as Armada de la República Argentina, Prefectura Naval Argentina, Servicio Meteorológico Nacional, MinCyT and national and provincial archives. Contacts with private shipping companies or the institutes of no longer existing companies as well as estancias re historical ship log books and weather records.

- Logbooks from Argentine ships and ‘stationary’ ships in port
- Observations from lighthouses
- Digitisation of Buenos Aires observations from the 1820s onwards
- Gaps in DWD old German colonial observations between 1903 and 1930
- Observations from old railway companies
- Argentine Daily Weather Reports (DWRs) from 1902-1980, which are held by the Met Office Archives in the UK. These DWRs not only contain daily observations of many ECVs for Argentina (e.g. pressure, temperature, winds, relative humidity and precipitation) but also contain similar records for neighbouring countries, and will be scanned and digitised in order to improve historical weather data coverage in the wider South American sphere. In ISPDv4, the most currently available version of the ISPD, there are no data for Argentina prior to 1939 (<http://www1.ncdc.noaa.gov/pub/data/ispd/add-station/v4.0/>).

PUBLICATION

DIMENSIONS (mm)

NUMBER OF VOLUMES

PAGES

Argentine daily weather reports,

<http://library.metoffice.gov.uk/record=b1524463~S7>

Feb 1902 – Sep 1915 (MO Archive) 500 x 330
50 (Bound) 18,980

Oct 1915 – Jul 1938 (MO Archive) 300 x 530 (pages folded, need
opening out) 59 (Bound) 35,040

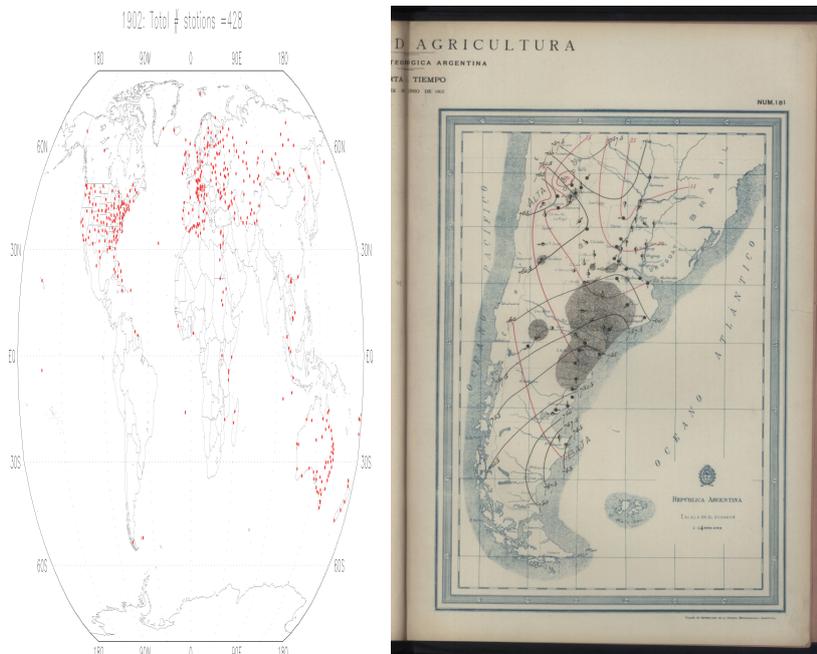
Aug 1938 – Jul 1956 (MO Archive) 400 x 570
35 (Bound) 27,740

Mar 1958 – 1980 (1975-1980 incomplete) 480 x 340 (MO Archive)
38 (Bound) 32,120

SO FAR, WE HAVE ONLY SCANNED VOLUMES FROM FEB 1902-JUN 1929

(Scans will appear on http://browse.ceda.ac.uk/browse/badc/corral/images/metobs/south_america/Argentina)

• 2018-19 C3S Data Rescue Service Capacity Building Workshop



LHS: Shows a complete lack of any station observations for Argentina in ISPDv4 in 1902, as opposed to the RHS where the distribution of the 58 Argentine weather station observations in 1902 is shown by the black and half black-half white dots. RHS figure also displays hand drawn isobars (black lines) and isotherms (red lines) based on the station pressure and temperature observations over Argentina for 1902. The red dots show the only two stations available in 1902 for this region - Punta Arenas, Chile and Cape Pembroke Lighthouse, Falkland Islands (Malvinas).

Trace of daily barometric mean sea level pressure in mmHg for 58 stations in Argentina, Uruguay and Paraguay for June 1902 from data in the Argentine DWRs.

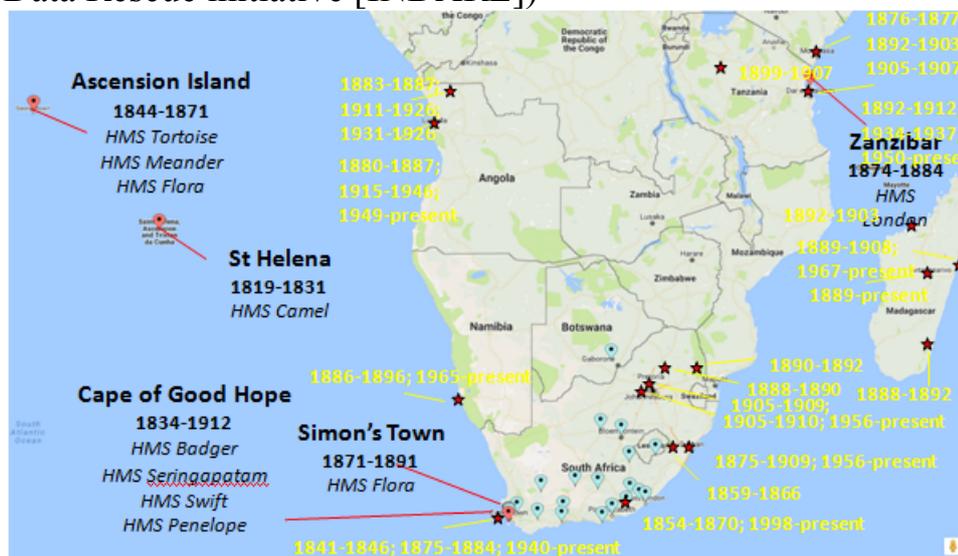
SOUTH AFRICA

Linked to ACRE South Africa - led by Prof. Stefan Grab, School of Geography, Archaeology and Environmental Studies, University of the Witwatersrand ([UWits](#)), Johannesburg, South Africa. With this regional focus, we are looking to establish a southern African data rescue component with the South African Weather Service (SAWS) within the Weather and Climate Science to Services Partnership project for South Africa (WCSSP South Africa). The longest and most promising continuous single station record in South Africa is that from the Royal Astronomical Observatory in Cape Town (today known as the South African Astronomical Observatory – SAAO). Original Meteorological records have been found and photographed by [UWits](#) scholars at the SAAO and Cambridge University Archives. The record includes the ECVs of daily rainfall, temperature, barometric pressure and wind. Currently two PhD students are working with this historic daily record, which begins in 1834 and continues to this day. This record requires calibration and quality checking; hence additional records from the former Cape Colony would be invaluable in this process.

- Photograph and digitise Gordon's meteorological Journal of daily barometric and some temperature readings from 22 Sept 1789 to 21 June 1792 for Cape Town, *Meteorological Diaries kept at the Cape Town Port Office* (Harbour Masters records), archived in the Cape

Town Archives (1829-1893), and the *Meteorological Diaries for the Cape Colony* (1821 onwards).

- Recovery and digitisation of daily to sub-daily data for the South African stations shown in light blue, covering the period 1875-1909 held at the SAWS photographed and digitized (see in light blue markers below). It should be noted that the only stations that have had their daily to sub-daily data digitised by **ACRE** and partners (see in black stars below), and that have been incorporated into ISPDv4 and used in reanalyses, are Cape Town, Kimberley and Durban. Digitisation by local students will provide them with both vital experience and provide vital income.
- Recovery, imaging and digitisation of historical weather observations taken by ‘stationary’ ships in ports around southern Africa and nearby islands (see below)
- Support digitisation for *The Mauritius Project* (ACRE & Indian Data Rescue initiative [INDARE])



Terrestrial stations and ‘stationary ships’ with instrumental weather observations in and around southern Africa from the second half of the 19th Century. Black stars with centres in red denote stations that have had their daily to sub-daily data digitised by ACRE and partners over the periods shown in yellow text. Light blue markers are for stations with daily to sub-daily data from 1875-1909 that have not been imaged or digitised. Red markers denote ‘stationary ships’ located in harbours for many years or even decades making daily to sub-daily weather observations that have not been imaged or digitised.

ANTARCTIC

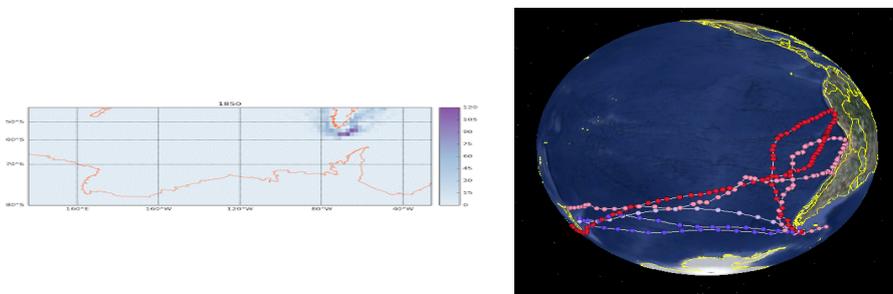
Linked to ACRE Antarctica (<http://www.met-acre.org/data-projects-and-regional-chapters/acre-antarctica>) – is led by Dr. Drew Lorrey, National Institute of Water and Atmospheric Research (NIWA), Auckland, New Zealand, with initial funding under the *New Zealand Deep South National Science Challenge* (<http://www.deepsouthchallenge.co.nz/>) as part of the program on ‘Assessing and validating the New Zealand Earth System Model (NZESM) using modern and historic observations’. In **ACRE Antarctica**, critical past weather observations are being rescued across the Southern Ocean sector shown below, as part of a *Southern Ocean Sea-Ice, Meteorology and Oceanography Present Data Recovery* effort, in conjunction with **Clive Wilkinson** and the **Met Office**, for the purpose of extending Southern Hemisphere coverage within global reanalyses as far back as possible into the 1800s. Sources as diverse as the British Antarctic Survey, the UK National Archives, UK National

Meteorological Library & Archive, Scott Polar Research Institute at Cambridge University, the Whaling Museum and Vestfold Archives at Sandefjord, in Norway, the Åland Maritime Museum at Mariehamn in Finland, the Museo Marítimo Nacional at Valparaíso in Chile, and the marine records of Deutscher Wetterdienst (DWD) have been examined.

Primary work consists of identifying data resources, digital scanning, data digitisation, quality control, and archiving of the observations. Rescued data are being archived and made publicly available through the ISPD and [NIWA's](#) database.

The C3S Data Rescue Service will support **ACRE Antarctica** through:

- a citizen science project which will be developed to digitise the historical marine data rescue recovered and imaged across the Southern Ocean sector of **ACRE Antarctica** (see below). Priorities are:
 - Transport & immigration vessels: e.g. British merchant ships from Australia and New Zealand to South America; annual/ biannual cruises by the Armada Argentina to Antarctica since 1903
 - Whaling & sealing ships
 - Exploration vessels
- the variables/observations focused on (which align to ECVs) will be surface pressure, air temperature, sea surface temperature and sea ice, with the main aim of improving the reanalysis and length of observations in order to reconstruct better high mid-latitude climate modes of the Southern Hemisphere.



[Animation of the current marine data coverage in ACRE Antarctica domain based on ISPD holdings.](#) There are thousands of un-digitised logs containing weather observations from high latitude transits of the South Pacific and the Drake Passage by just UK merchant shipping - 1855-1939. This panel shows the tracks of five British merchant ships from Australia and New Zealand to South America and the Drake Passage c. 1886-7.

- 10th ACRE Workshop & C3S Data Rescue Services Capacity

Building Workshop, NIWA, Auckland, NZ: 4th-8th December 2017

The above three data rescue activities will receive the following support from C3S Data Rescue Service WP3.

Météo-France & NIWA (ACRE Pacific) will provide additional inventories of sources, inventories of the images and list of data to be rescued in the Pacific (SW Pacific, New Caledonia, Wallis et Futuna, Vanuatu and Polynesia) and **Météo-France & INDARE/UWits (ACRE South Africa)** African region (southern Africa, Madagascar, Reunion and the Comoros). **JLU** will provide data digitisation and QC support to

any of the Argentine and South African data rescue efforts. [CIRES](#) is the main partner with experience in generating historical reanalysis fields from rescued meteorological data, and their 20CR uncertainty field provides important input to guiding the selection of high-priority data rescue targets for each of the three regions above.