

The Archives Project at SAAO

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Summary: We describe the history of the SAAO Archives and the scope and limits of the current project. It was originally intended to scan, classify and inventory the collections of photographic material within the Observatory but it became evident on examination of the “collections”, or rather accumulations, that a wider approach was desirable.

Introduction

SAAO incorporates the Royal Observatory, Cape of Good Hope, founded in 1820, and so can claim to be the oldest scientific institution in Africa.

Unlike the situation of most observatories overseas of comparable age, little effort has generally been made to keep up an organized archive. The institutional memory time scale has been short, of order 30 years, and may have been aggravated by the fact that relatively few staff members were of local South African origin.

The plan

The plan has been to collect together the surviving archives at SAAO. We have generally aimed to move historical material from random unsuitable places around the Observatory and consolidate it as far as possible in the Archive room where it can be cared for.

Among the categories that we regard as of possible significance are: items that are very old (>150 years or so), directors' correspondence, personnel records, photographs, plate logbooks, samples of ledger series etc.

Any material we have discarded consists of essentially log books and papers that meant a lot to the people involved but the precise conditions and adjustments etc relevant to which are now forgotten. It is presumed in general that any data worth publishing have been published.

History of archives at Royal Observatory/ SAAO.

It is evident that Gill and his predecessors made a serious effort to preserve the archives of the Royal Observatory but that they have not been cared for well since.

Many archives were fortunately sent to the Royal Greenwich Observatory (RGO) around 1970 before the transfer to SAAO that took place at the end of 1971. These now are safely stored in Cambridge University Library in good conditions under the heading RGO15. For more information:

<https://janus.lib.cam.ac.uk/db/node.xsp?id=EAD%2FGBR%2F0180%2FRGO%2015>

What was known to be in the Archives when we started

Not all archival items were sent to the RGO and much of what remains has not been conserved at all well. Very little still exists in Cape Town from the times of Fallows (1820-31) and Henderson (1831-33). Progressively more is found from Maclear (1833-70) and Stone (1870-79). Gill (1879-1907) was by far the most famous astronomer at the Royal Observatory and conducted an enormous correspondence. Though what is still to be found here is just a fraction of the original whole, it is still a substantial amount, mostly arranged in bound volumes, some of them very fragile. The subjects of these are indexed following a scheme originated by GB Airy, a former Astronomer Royal of England. Much of Gill's successor Hough's correspondence is also preserved. Following his time, the correspondence items that remain are mainly in boxes. The last director of the Royal Observatory (R.H. Stoy 1950-1968) and the Officer-in-charge (G.A. Harding 1969-71) who succeeded him left substantial amounts of correspondence, as did A.W.J. Cousins, perhaps the most famous of the astronomers at the Royal Observatory in its last years. From the SAAO period, a good fraction of Woolley's correspondence has been saved as well as the letters of later directors. However, the advent of email has meant that the preservation of correspondence has become sporadic in recent years.

Former Physical Treatment of the Paper Archives.

Gill had a "record room" constructed, now the home of the IAU Office for Development. At some stage the records were removed and it became the Royal Naval Association Club, a sort of pub (they were ejected during Woolley's directorate of SAAO). During the 1970s it was used as a tea room and a lecture room.



The records themselves seem to have been banished to an unsuitable corrugated iron hut at about the flood line, on a site near the entrance to the garages of the present Technical Building. Of course, as might have been foreseen, they got flooded and damaged, some of them irretrievably, by water and heat

Fig 1. Workbench in the Archives Room

The present Archives room was built as the Steavenson 30-inch observatory around 1961. Following the removal of the telescope, piers and dome it served as the Electronics Laboratory from sometime around 1970 until about 1980, after which the latter was moved to the Riverside House. The archives must have been placed in the present building around 1980 and acknowledgement is made here of the work by the former librarian, Mrs Ethleen Lastovica, to ensure their preservation.

At some point an air conditioner was installed to stabilise somewhat the temperature of the Archives room (ideally, it should be less than 21C and the Relative Humidity should be between 30% and 50% for the preservation of paper materials). A de-humidifier has been installed more recently to keep the RH at about 50%. The conditions are monitored digitally. The room is usually kept in darkness by blinds over the windows in order to keep out UV light which is also deleterious. The roof of this building was re-sealed about 10(?) years ago but the walls are sometimes quite damp, in part because the lawn sprayers often wet them.

In recent years there was a tendency to dump piles of documents in the Archives room without any thought as to whether they were likely to be of lasting significance, to the extent that the passageways between the bookcases were almost impassable. We have had to go through these, as with other matter, to see what is significant.

In order to make space we have removed various old measuring instruments, mainly plate-measuring machines, to the Astronomical Museum storeroom in the McClean dome. We also retrieved and installed two large metal bookcases that we found in quite good condition at the Observatory dump.

Glass plate archives

At one stage the Observatory possessed a very large number of glass photographic plates, probably of order 100,000. These were stored in purpose-built steel cabinets in a room above where the Computer Group now is (former MRM Building).

Most of the plate collection was junked during Charles's directorate. Much of the discarded part comprised parallax plates taken on the McClean telescope but there were major collections of Astrographic plates of various epochs, especially of the Cape Astrographic Zone. Others plates had been taken for a variety of purposes, including objective prism and other spectra.

However, a small number of Royal Observatory plates of comets and various other things were saved by A Slotegraaf and are now kept in the Archives building. Additionally, the direct photographic plates taken at the Radcliffe Observatory in Pretoria were kept. The Archive also contains a cabinet of photographic plates taken

with the MRM telescope, some of them after its move to Sutherland. There still remains a large collection of early 20th Century spectroscopic plates taken with the McClean Spectrograph in a cupboard in the McClean building, though small numbers of these are also to be found in the Archive room.

Paper Archives that we have looked at or will look at

In addition to the official correspondence of the Observatory kept in the Archives room, there were several other major accumulations around the Observatory.

Fig 2. Pile largely of damaged papers in the NITR Prefab Hut.



In the former NITR prefab building next to the Riverside House, we found of order two thousand ledgers relating to photographic observations, measurements thereof and reduction to standard coordinates. These appear to have been in the main the records of the Astrometry Department and they seem to have been dumped in a part of the garage under the Technical Building following the demise of its head, Mr J Churms. Here some of them became wet and ended up in poor condition. At some point they were removed to the aforementioned NITR prefab hut near Riverside House. This building is at the flood line and sorting through its contents was of high priority. In the belief that nobody today could understand precisely what these items signify and that anything useful has been published, we have discarded them, with the exception of some samples. (However, it should be noted that we went through the piles of material at least twice and saved, at least temporarily, items of correspondence, photographs and other material potentially of historical interest.) We found there about 1000 small notebooks in metal boxes, spanning from 1838 Feb 24 to 1956 Feb 17, evidently containing immediate notes taken at the telescopes, in addition to Meteorological notebooks spanning 1840 May 13 to 2006 Nov 30. These have been kept and sorted. The interesting items have been transferred to the Archive and the NITR hut has been completely emptied.



Fig 3. General view of NITR hut before we started work there.

Interspersed with the Churms detritus were a good many items probably borrowed by him from other places around the Observatory and never returned.

Sorting the out the Archives Room itself

In the Archive itself, we found vast numbers of data ledgers mainly relating to the Reversible Transit Circle and to photometry. We have preserved in general the first and last of each series in order to convey the complexity and immense effort expended in the past on these instruments. In general, only samples of data ledgers have been kept, on the grounds that anything useful will have been published and little can be understood in detail today.

We have also discarded chart and Teletype rolls relating to the SAAO infrared programmes but have kept (under the 18-inch telescope) the computer reductions (in view of the Great SAAO Computer Crash of February 2016). There are many other categories of records, such as the directors' correspondence already mentioned, many of which have been kept. We may or may not undertake the detailed sorting of these. There are also certain personnel and other records of various kinds from the Royal Observatory, the Republic Observatory, the Radcliffe Observatory and the SAAO.

Some items (included in the Written Archives Catalogue) are still stored under the 18-inch dome.

Technical Building Basement etc

Small amounts of interesting correspondence have been found in the garages beneath the Technical Building and in the library storeroom above the Computer Section. These have been removed to the Archive.

Old Clock Room

The current (ie, since the start of SAAO) administrative and personnel archives are kept in the "Old Clock Room" in apparently good order. Also there (still) are various observing books related to the Radcliffe Observatory and the 74-inch spectrograph in Sutherland.

Under the 18-inch

This is air conditioned and so a fairly favourable environment. Nevertheless it was found that some water runs down the NE wall when it is raining. Certain items were

dried out and stored on shelves away from this area. A dehumidifier has been installed.

The contents were found on 20 June 2016 to be: Annual reports from ca 1870s to present, SAAO reprints and preprints, SAAO Circulars, Palomar and similar sky atlases, old photometry teletype printouts, reprints from RO time of *MNRAS* articles, Director's correspondence (Feast period), historical files compiled by E Lastovica, IAU Circulars, Library accounts and some other items.



Some items have been removed to the Archives Room. The photometry print-outs should probably be junked.

Fig 4. Within the 18-inch dome a lot of Astronomical Society material was dumped. This has been put back in its original place in the McClean Office after removal of duplicates.

Resources Centre

This building, which over the years received several additions, was the engine room (for the generator) in the 19th century as well as the instrument workshop. It was used as a “Resources Centre” for teaching, under Case Rijdsdijk. We were told that this structure, in poor condition, was to be condemned. It is below the flood line.



Fig 5. The Resources Centre as it was when we found it. Many items that we judged to be irrelevant to the SAAO Archive are presumably still there.

The Resources Centre contains a large amount of relatively recent material. We have found it to consist of large numbers of duplicate journals, the office detritus of Thebe Medupe, some SAAO administrative records, much SALT Project Office material, thousands of handwritten data cards, etc. We have removed a few items likely to be of historic interest.

West Wing Basement, Main Building



Fig 6. Part of the West basement, Main Building.

We had to clear numerous empty cardboard boxes to gain access to these rooms. These are a fire hazard.

There are three rooms. The first one contains boxes of journals displaced from the library, probably during the previous librarian's reorganization.

The middle room is locked; its contents are believed to be a private wine cellar.

The last basement room when first examined contained papers of Stobie and possibly some of Charles. It is somewhat damp and its ceiling and walls are decaying and dropping plaster fragments and dust. Many papers appear to be minutes of, and papers for, various NRF meetings and other bureaucratic matters and are perhaps irrelevant to the history of SAAO *per se*. There are many papers relating to SALT and some to Stobie's scientific work such as the Edinburgh-Cape survey. We labelled many of the unlabeled file boxes according to their contents. We placed old posters over the files to protect them to some extent from the falling plaster. Some material such as papers relating to Radcliffe and the history of the Observatory were taken to the Archives room.

This area is highly unsuitable for document storage on account of the problems mentioned. Fishmoths also abound.

Astrographic

We have looked at the material in the Astrographic Building's cupboards (near the front door). We found a large number of lantern slides (old UK standard or US standard), some of them commercial slides from Lick Observatory but also some unusual ones such as images of comets including several by Allis of the 1882 comet. These have been removed to the Archive. Some antique wooden frames for making prints were removed to the Museum Dark Room.

Other items in these cupboards are large numbers of Radcliffe reprints from Pretoria and before. Also rough work for various topics by MW Feast. These are suffering from the poor storage conditions, but have been left in place.

This building has large numbers of journals belonging to MW Feast near the front door. The contents of Feast's office were not examined.

Lyot

The Lyot Building may contain items of interest. However, it is cluttered with junk – old telescopes etc. We believe that we have removed anything of archival interest.

MRM Building - Technical Drawings/ Plans

Some cabinets of drawings from the drawing office that formerly were placed in the Technical Building had been stored for some time in the wet basement thereof. When this was noticed they were moved to the Library Store above the Computer Department (MRM Building). These have not been sorted by us but an archival group from the NRF has been working on them. They include mechanical drawings of the telescopes and various instruments as well as architectural drawings of many of the buildings on the grounds, layout of underground ducts etc.

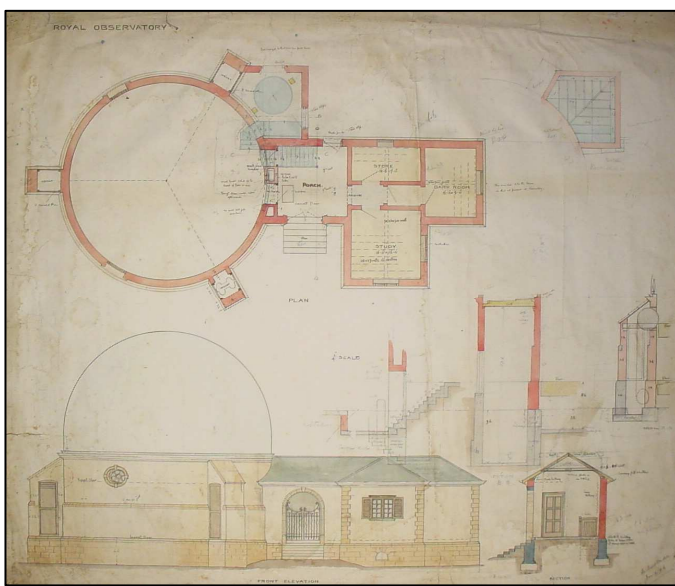


Fig 7. Herbert Baker's plan for the McClean telescope building.

Photographs

There was a cabinet in the Librarian's office containing large collection of photographs and albums, of various vintages, largely historical. These have been removed to the Archives. Around 9000 photographic prints have been numbered, provided with metadata, catalogued on-line and placed in custom acid-free cardboard containers by the Centre for Astronomical Heritage under contract to the National Research Foundation who intend to digitize them.

The "Weights and Measures" chest in the sitting room of the library contained a good many historical photographs and still contains a few.

A collection of large glass plate negatives from around 1900-1910 is in boxes in the Archives. These were digitized by Roy Emmerich a few years ago at high resolution and the files are still in existence, having escaped the Great Computer Crash of SAAO of February 2016.

They are available (only at SAAO or via vpn connection) at

http://ctfileservr.cape.sao.ac.za/staff/Photos/glass_plates/.

A great many photographs were found in the NITR prefab hut. These have been moved to the Archive Room and have been incorporated in the Photographic Print lists.

As an aside, the earliest photographs taken in what is now South Africa were those by Piazzzi Smyth of scenes around the Royal observatory. They are now in the UK at the Museum of the History of Science in Oxford and at the Royal Observatory, Edinburgh.

Artworks and Framed Photographs

There are a number of valuable artworks around the Observatory such as sketches by Thomas Bowler and CP Smyth. Also some maps. Many items were stacked willy-nilly on top of the library shelves in the former Transit Room of the Main Building.

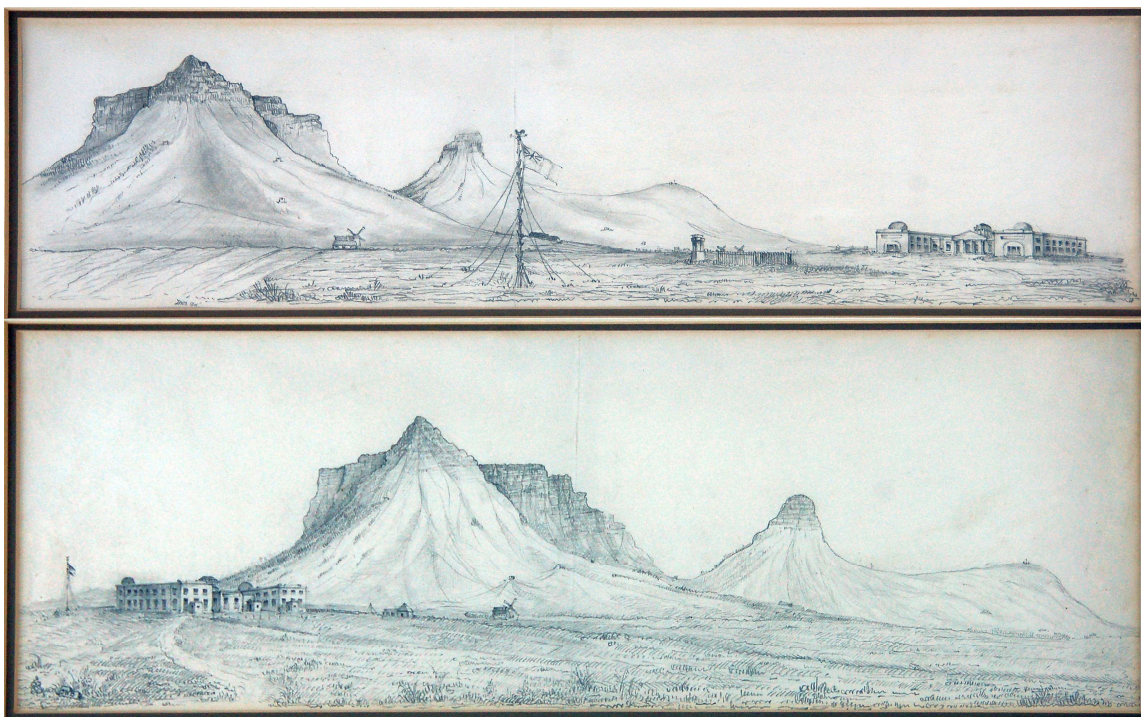


Fig 8. Two sketches of the Royal Observatory by the young Thomas Bowler (1812-1869), made around 1834.

These are now in the Archives Room except for some that are hanging on the walls of the Main Building.

Republic/Union/Transvaal Observatory

This observatory was merged with the Royal Observatory into the SAAO.

Many records exist in the CSIR Archives in Pretoria, stuck into bound volumes. See SAAO Archives item A0531 for indexes to these.

In addition, some records to do with the Republic Observatory have been found among the NITR prefab hut clutter and are now in the SAAO Archives.

The plate collection of the Republic Observatory has been salvaged by the Johannesburg Centre of the ASSA and is now at the Physics Department of Wits University.

Catalogues

The *Written Archives*, consisting of bound volumes, boxes etc of assorted written material, amounts to 558 items, most with sub-items. It was impossible to examine and catalogue every page. Some of the items contain hundreds of individual pieces of paper. In quite a few cases, the bound volumes are indexed,

The *Photographic Prints, as mentioned*, have been sorted and placed in archivally stable containers. Metadata have been prepared for each one. There are many duplicates. It is intended that these will be made available online.

The *Artworks and Framed Photographs* have been catalogued and metadata have been prepared. It is intended that thumbnails should become available online.

The *Slides* are old-fashioned large glass ones and are several hundred in number. Many are commercial items that were available from astronomical societies but some are probably quite special including the early photographs of the 1882 Comet by EH Allis. There are large numbers of 35-mm colour slides that have not been examined or catalogued as yet.

The *Glass Photographic Plates* comprise historic comet photographs and other items. There are many spectroscopic plates from the McClean telescope. There is a set of large negatives of Royal Observatory scenes and equipment, mostly dating from ca 1910. There is a cabinet full of plates taken with the MRM telescopes in Cape Town and Sutherland.

Items from the *Radcliffe Observatory* are also stored in the SAAO Archives. There is a bookcase full of documents, plate books and other records. There are cabinets containing all the extant Radcliffe spectra and “direct” Newtonian plates— it should be noted that many were taken away by various astronomers to be worked on and may not have been returned. The Radcliffe material is not being catalogued in the present project.

Some parts (such as comets) but not all of the plate collections are being catalogued. Most of the original plate books probably still exist, however.

Certain *miscellaneous items* such as film negatives, 35 mm slides, magnetic media and microfiches have not yet been dealt with. Some of these are in a steel cabinet in the former MRM Building, above the IT department. Others are in the Archives room.

Certain *recent additions* to the Archive have not been catalogued. One of these is a “fonds” of items found at the late Pat Booth’s house when she died (She was a friend of J. Churms). This contains items relating to the Astrometry Department. Another is a set of boxes relating to projects undertaken by the Instrument Workshop during the SAAO period.

Acknowledgements

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