Notes on the Retention, Curation and Display of Historical Artefacts at the Royal Observatory Edinburgh
** DRAFT ***

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Purpose of this Document

The purpose of this document is to summarise current recommendations and best practice about the retention, curation and display of historical artefacts at scientific institutions, as these might apply to the Royal Observatory Edinburgh and, in particular, in the context of the impending renovation of the 1894 building. Some sources of advice and information on these matters are listed.

The suggested readership is members of staff either involved curation of historic items at the Observatory or who are involved in the preparations for the refurbishment.

Typograpical note

The main body of this document uses a serif font like this. Notes and queries to be resolved before producing the final version are underlined and use this sans-serif font.

Management Summary

1. Modern museum best practice recommends that related artefacts, archives and records and books which have played a significant rôle in an institution should be retained together in their original institution so as to preserve the context in which they were jointly used.

2. If dispersal is necessary efforts should always be made to re-home items in suitable museums or libraries. When items are transferred to external institutions the original institution should retain records of what has been transferred and where it has gone to, so that items can be accessed if necessary.

3. Guidelines for retention and dispersal are necessary in order to make consistent decisions across the collection and to assess new items for possible inclusion. Storage space is, in practice, always an issue. The Observatory does not currently have such an 'accessions policy' and should develop one.

4. The criteria for retaining artefacts should include their importance in the history of the Observatory (that is, the part they played in previous work on-site, not just in the overall history of science). Some importance should be attached to items, which while not important to the Observatory were important in its locality (Edinburgh, or Lothian, or Scotland).

5. An important prerequisite for the management, retention and curation of historic artefacts is the compilation of a list of the items that the Observatory holds. Such a list may take the form of either an inventory or preferably a catalogue. An inventory is a simple list comprising a unique sequence number (or 'inventory number') and a name or brief description. A catalogue, in this context, is a more comprehensive list with additional fields such as date, maker, a more comprehensive description, notes on provenance before acquisition by the Observatory, notes on use at the Observatory and, particularly useful and important, references to photographs (often filenames). No specialist software is needed to hold either type of list: a simple spreadsheet is adequate.

6. Items to be retained should be stored in suitable conditions in order to preserve them from premature decay.

7. Numerous sources of advice and expertise are available; some are listed in Section 8. Sadly (but unsurprisingly) there are no sources of unconditional funds to assist with curation and preservation.

Revision history

Version 0.1, 10 August 2025: First draft (ACD).

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1 Introduction

The present document seeks to summarise the current recommendations, best practice and guidelines for the retention, curation and display of historic scientific, and particularly astronomical, artefacts and material as they may apply to the collections at the Royal Observatory Edinburgh and, in particular, in the context of the forthcoming renovation of the 1894 building. Various sources of advice and expertise are available and these are listed (see Section 8). Unsurprisingly there are no unconstrained sources of external funds to assist with curation and preservation. STFC provides funds for the proper upkeep of the Observatory and its contents, including the historic items. Additional funds may be sought from various external sources. Topics to be covered in the document include:

- assembling a list of historic items (Section 2),
- engaging the Observatory's staff and students with the historic collections (Section **??**),
- guidelines for retention and disposal (Section 3),
- curation (Section 4),
- and display of the items (Section 6).

Much of what is discussed below is common sense, though it seems useful to document it. The document is largely concerned with archives of historic objects: instruments, telescopes, *etc.* It gives some consideration to document archives (laboratory notebooks, observing logs, internal documents ('grey literature'), letters, *etc.*), but these are not its focus. It does not consider modern electronic, 'born digital' computer-readable documents; though these are now important, indeed ubiquitous, they are simply beyond the scope of the present discussion.

The document is written in the context of the renovation of the 1894 building but may be of wider use.

1.1 Uses of an artefact archive

The uses of an an archive of historic artefacts include, but are not limited to:

- Allow historians of astronomy, and science, to study the actual objects used by astronomers at the Observatory, better understand their limitations and better appreciate the working practices and procedures described in research publications.
- Suitable items can be put on display to be viewed existing staff, new staff and visitors. Many staff will be interested and engaged by these items and new staff can gain a wider understanding of the institution that they have joined.
- Items can be used as educational displays for the public, either on-site (in institutions which have a public visitor centre or similar) or as loans to temporary exhibitions mounted by external institutions.

The Observatory has made some important contributions to the development of astronomy since its founding two hundred years ago. These contributions could be better known amongst historians of astronomy, historians of science more generally and the general public. A well documented archive would assist towards this end.

2 Inventories and Catalogues

The first desideratum, necessary before any real progress can be made, is to assemble a comprehensive list of the all the historic items in an institution. Such a list is necessary to assess the scope, size and limit of the collection. The amount of information collected for each item can vary; the terms 'inventory' and 'catalogue' are often used to denote the extrema of the range.

- An **inventory** is a simple list of items, comprising just an unique identifying sequence number (the 'inventory number') and a name or brief description.
- A **catalogue** also has a sequence number and a name or brief description but also has additional information, such as the maker, year made and a fuller description and file names of photographs. The photographs are particularly important as they help to identify items. Table 1 lists some possible fields for a catalogue.

There is no simple dichotomy between an inventory or catalogue. It is preferable to include such fields as seem desirable and leave them blank for items for which details are not known, rather than not to have the fields at all. The sequence number, name or brief description and, where possible, photographs are particularly important. A simple spreadsheet is perfectly adequate to hold this information. There is no need for a complex database with a Web interface of the sort offered by public museums, archives and libraries.

unique sequence number (the 'inventory number')
name or brief description
maker
place made
year made
a fuller description
present condition
provenance
year acquired by the Observatory
use at the Observatory
file names of photographs
references to relevant publications

Table 1: Possible fields for inclusion in a catalogue of artefacts

The Observatory has an archive catalogue which mostly includes paper documents rather than artefacts and itself is only available as a paper document. It was compiled by Mary Smyth in (from memory) the early 1970s and hence does not include more recent material. Currently there is no comprehensive list of historic artefacts, though an effort is underway to compile one.

3 Retention and Disposal

In practice the choice between retention and disposal of artefacts is almost always a compromise, largely because storage space is always finite and often has to contend with other

possible uses of the same space. Modern museum best practice is to keep artefacts, records and manuscripts (notebooks, observing logs, drafts of papers *etc*), astronomical plates and printed books together. This approach gives researchers studying the items, or the broader work of the Observatory, a better idea of the context in which they were used and makes it easier to consult related items. Give references here?

The criteria for selecting items for retention obviously include the contribution that they made to the development of astronomy, or science more generally. However, items which made an important contribution to, or illustrate the history of, the Observatory or one or more of its members of staff, should also usually be considered for retention. For example a commercial thermometer / hygrometer *circa* 1970 does not, in itself, seem likely to be worth retaining. However, if it was extensively used during site testing for the proposed Northern Hemisphere Observatory in the early 1970s it might be. If disposal is necessary then attempts should be made to find an institution, typically a Museum or Library, that will take the item. In this case it is desirable to preserve some record of where the item has gone, again to aid researchers. The Observatory is fortunate in that there are various local institutions which may be willing to accept items. Examples include the National Museums Scotland, the National Library of Scotland and the University of Edinburgh Library Special Collections. Indeed the Observatory has had an agreement with the National Museums Scotland (and its predecessors) to pass on obsolete instruments that are no longer required since the early twentieth century.

Historians of astronomy or science are not just interested in final results as they appeared in published papers, but also in how these results were arrived at. Consequently they are also interested in working papers, laboratory notebooks, observing logs, drafts of papers, correspondence and other transient documents. Newspaper cuttings and press releases can be of interest as a non-technical 'way in' to a topic and may give a wider, non-technical background omitted from more technical material.

4 Curation

Any archive, whether of artefacts, documents, or both requires curation. Curation of the Observatory's current archive is the responsibility of the Librarian. This arrangement is sensible as many of the tasks are analogous to managing a library and there is no obvious reason why it should not continue. The curation task for an archive include, but are not limited to:

1. Providing access to items in the archive, both for members of staff and visiting scholars.
2. Assisting users to access the archive inventory or catalogue to find items they may be interested in.
3. Running the accessions policy, taking advice from staff with suitable expertise as needed. An 'accessions committee' may be created to advise the Librarian as needed.
4. Periodically checking the state of preservation of items in the archive and arranging conservation as needed.
5. Arrange that items are stored in suitable containers (archival storage boxes, silver-safe envelopes for photographic material *etc*).

6. Ensuring that the environmental conditions of store rooms are suitable for the items that they contain (temperature, humidity, light levels, absence of dust, absence of vibration *etc*).

5 Storage

Items should stored in conditions which prevent or minimise their deterioration over time. Typically they should be stored in rooms which are clean, dry, draught-free and not subject to vibration. Depending on the nature of the material it may be desirable to keep the room dark to avoid the effects of sunlight. There may also be constraints on on the type of artificial lighting installed. The National Library of Scotland provides some useful advice on suitable storage conditions for books[1]. Table 2 shows the suggested range of temperature and relative humidity for books. These conditions are usually suitable for most other items, and indeed in some cases may be relaxed somewhat. Additional constraints apply to the storage of photographic material[2].

Temperature	16C to 19C
Relative humidity	45% to 60%

Table 2: Recommended temperature and relative humidity ranges for storing books

6 Display

Members of the public are not normally allowed on-site at the Observatory, with the notable exception of groups attending Visitor Centre events. Consequently any items put on display are for the benefit of members of staff or their visitors. So, useful criteria for selecting items for display include items that:

- are visually attractive or striking,
- are scientifically important either in the history of the Observatory or the history of astronomy more widely,
- which the Observatory wishes to use to promote its work; models or replicas of instruments built, or contributed to, by the ATC being the obvious example.

Delicate items, at least, should be housed in display cases. The Visitor Centre manages its own displays and may wish to borrow items from the archive to include in them. Again if delicate or valuable items are used they should be in display cases.

[1] See URL: `see: https://www.nls.uk/collections/rare-books/beginners/caring-for-rare-books`

[2] see my note *Recommendations for Moving and Temporarily Storing the ROE Photographic Plate Collections*, version 1.0, 11 July 2024.

7 Transport

Occasionally items may need to be moved off-site, perhaps for refurbishment or loan to an external institution or exhibition. Transport arrangements should take account of the fragility (or sturdiness) of the items, and a degree of common sense is appropriate. There may be insurance considerations. For delicate items specialist movers, typically used by museums and art galleries can be contracted[3].

8 Advice and Assistance

A number of organisations can offer advice and assistance with the operation of astronomical archives. Some are briefly listed here.

Maybe expand a bit?

8.1 IUHPST/DHST Scientific Instrument Commission

`https://scientific-instrument-commission.org/`

The Scientific Instrument Commission (SIC) is a Commission of the Division for the History of Science and Technology (DHST) of the International Union for the History and Philosophy of Science and Technology (IUHPST). It encourages and promotes scholarly research on the history of scientific instruments. The SIC encourages preservation and documentation of collections of instruments and their use within the wider discipline of the history of science.

8.2 IAU

The IAU has two Commissions concerned with the history of astronomy, C3 and C4.

Commission C3 History of Astronomy

`https://www.iau.org/CommissionC3/`

The remit of Commission C3 is the history of astronomy in its broadest sense. I believe that it used to have Working Groups, some of which were concerned the preservation and curation of instruments, observatories, etc, but I can no longer find any trace of these.

Commission C4 World Heritage and Astronomy

`https://www.iau.org/CommissionC4/`

Commission C4 is concerned with getting astronomical observatories and sites listed as UNESCO World Heritage Sites.

8.3 AAS/HAD WGPAH

`https://aas.org/comms/working-group-preservation-astronomical-heritage-wgpah`

The Working Group on the Preservation of Astronomical Heritage (WGPAH) is a Working Group of the History of Astronomy Division (HAD) of the American Astronomical Society.

[3]Some examples are included in *Recommendations for Moving and Temporarily Storing the ROE Photographic Plate Collections*, *op. cit.* (see footnote 2, above).

Its remit is to develop and disseminate procedures, criteria and priorities for identifying, designating, and preserving astronomical structures, instruments, and records so that they will continue to be available for astronomical and historical research, for the teaching of astronomy, and for outreach to the general public.

8.4 American Physical Society

`https://www.aip.org/library/donate-materials`

The American Physical Society offers some advice on saving personal papers and archival records. (From the above link scroll down to 'Saving Archival Collections' and open the tab.)

8.5 Computer Conservation Society

https://www.computerconservationsociety.org/doc_rescue.htm

The Computer Conservation Society, a Specialist Group of the British Computer Society, also offers some advice on archiving personal papers. Unsurprisingly the content is aimed towards computer science academics and people working in the computer industry.

9 Acknowledgments

I am grateful to Dr Ileana Chinnici, Curator of the Museum at the *Osservatorio Astronomico di Palermo* for extremely useful discussions and advice.

I also gratefully acknowledge drawing on material presented by Dr Sara Schechner, Curator of the Collection of Historical Scientific Instruments at Harvard, to the meeting of the Alliance of Historic Observatories held during the autumn 2024.

add any others here...

Any mistakes, of course, remain my own.