



Working Group Proposed to Preserve Archival Records:

Report on the 2012 Workshop on Developing a Plan for Preserving Astronomy's Archival Records



Jennifer Lynn Bartlett (U. S. Naval Observatory) & Workshop Participants

Workshop Held April 2012



Some Workshop participants during guided discussions on April 18: (left to right) T. Girard (Yale), J. Lattis (Univ. Wisconsin-Madison), W. Osborn (Yerkes), G. Good (AIP), J. Anderson (AIP), and E. Griffin (Dominion Astrophys. Obs.). Photograph by M. Castelaz (PARI).

The AAS and American Institute of Physics (AIP) co-hosted the Workshop on April 18–19, 2012 at the AIP offices in College Park, Maryland. The 39 participants were selected for their experience in working with archival data for scientific, historical, and custodial purposes; they represented 20 United States, 2 Canadian, and 4 overseas organizations.

The Workshop was created to formulate a plan for the long-term preservation of irreplaceable astronomical data with continuing scientific value. For instance, photographic plates with which participants were most familiar represent more than 100 years of recorded observations that could be vital for new discoveries about topics of current interest, including near-Earth objects, galaxy formation, and stellar evolution; many future investigations may be impossible without the proper conservation, cataloging, and digitizing of plate archives. Towards this end, the attendees participated in a series of round-table discussions and one break-out session that tackled the definition of the “archival records” of primary concern, their current location and condition, the risks posed to them, and associated responsibilities. The tasks needed to ensure the preservation of historical data and to encourage their use were also analyzed and prioritized.



Some Workshop participants planning discussions for April 19: (left to right) I. Shelton (seated behind; Univ. Toronto/Mt. Alison Univ.), J. Lattis (Univ. Wisconsin-Madison), E. Gates (Lick), A. Jacob (Sydney Obs.), E. Bouton (NRAO), E. Griffin (Dominion Astrophys. Obs.), W. Osborn (back to camera; Yerkes). Photograph by G. Good (AIP).

Prioritizing Preservation

While considerable astronomical archival material is at risk, the Workshop charge directed participants to focus on observations that represent an extensive, but largely unexploited, source of data regarding the changes over time in intensity, position, or spectral characteristics of astronomical objects. Modern computing techniques, improved measuring tools, and increased electronic storage capacity now enable the extraction of more content, detail, and complexity from older media.

Under ideal circumstances, all historic observations still extant would be preserved and digitized. However, the finite resources available dictate the need for criteria by which to prioritize such projects. Workshop participants considered

- ✓ photographic plates, films, & their essential metadata:
 - handwritten logs
 - inscriptions on physical plates
 - manuals
 - calibration information
- ✓ magnetic tapes
 - specialized drives to read
- ✓ strip-charts
- ✓ punched tape or cards
- ✗ data routinely archived elsewhere
 - ⊕ new programs are assuming responsibility for their own observations
- ✗ instruments
 - ⊕ best handled by other specialized organizations
- ✗ records of purely historical interest
 - ⊕ best handled by other specialized organizations
- ? records of both scientific and historical interest



Yale Plate Vault, Gibbs Laboratory. Photograph by T. Girard (Yale).

Because research interests and needs are constantly changing, current scientific trends should not determine which records are archived but could be used to select material for digitization. When ranking preservation efforts, Workshop participants recommended considering

- ? information density of the records
- ? amount of data already published
- ? format & associated materials required to use them effectively
 - ? specific reader required
 - ? interpretive metadata available
- ? current condition
- ✗ >80% data lost, conservation not justified by scientific content
- ? expected rate of deterioration

Working Group Proposal Prepared

A new AAS Working Group on Time Domain Astronomy (WGTA) will be proposed as a result of the recent Workshop. On behalf of the astronomical community, the proposed WGTA will encourage and advise on the preservation of historical observations in a scientifically meaningful form for future analysis in pursuit of new science. As large scale modern surveys focus on time-domain astronomy, archival observations can open a similar window on the past; initial photometry from the Digital Access to a Sky Century @ Harvard (Grindlay *et al.* 2012; DASCH) project is uncovering new types of variable stars and enhancing our knowledge of stellar evolution (Tang 2012).

In order to flesh out and finalize the preservation plan begun during the Workshop and to execute that plan effectively, a continuing organization is required; occasional meetings, such as this Workshop and the 2007 Workshop on a National Plan for Preserving Astronomical Photographic Data (Osborn & Robbins 2009) do not maintain the necessary momentum and have not drawn adequate attention. The proposed WGTA would also be able to serve as a community resource on preservation, promote awareness, and assist with soliciting financial support. The AAS is the ideal host for the proposed working group because it

- ✓ has visibility throughout North America
- ✓ is highly respected within the concerned communities
- ✓ provides an appropriate administrative & financial support structure
- ✓ can accept charitable contributions

Having concluded that a new working group is needed to ensure the continued availability of historic observations, Participants elected an *ad hoc* committee to prepare a proposal for such a group to the AAS. The WGTA should be organized with an executive committee composed of 10 AAS members representing

- ✓ data from modern surveys
- ✓ data from heritage material
- ✓ data management
- ✓ data standardization and integration
- ✓ follow-up observations of astronomical time-domain discoveries
- ✓ integration of time-domain data into virtual observatories

As needed, the WGTA should be able to invite consultants who are not AAS members to participate.

The *ad hoc* committee members

- J. Lattis (lattis@astro.wisc.edu, Univ. Wisconsin-Madison), co-chair
- W. Osborn (osborlwh@cmich.edu, Yerkes), co-chair
- M. Castelaz (PARI)
- J. Glaspey (Kitt Peak)
- G. Good (AIP)
- J. Grindlay (Harvard Coll. Obs.)
- E. Griffin (Dominion Astrophys. Obs.)
- I. Shelton (Univ. Toronto/Mt. Alison Univ.)

AAS Executive Director K. Marvel was also recommended as an *ex-officio* consultant. In addition, the committee was directed to solicit participation from individuals experienced in the collection of modern time-domain observations.

Update: The *ad hoc* committee plans to submit their proposal to the AAS Council for consideration at the June Council meeting. Although a draft proposal is available from the chairmen for review, additional input from the large synoptic surveys community is being sought. Comments and suggestions from all interested parties are welcome. The draft proposal will be circulated among Workshop participants and other concerned communities parties later this year.

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Yale Plate Vault, Gibbs Laboratory. Photograph by T. Girard (Yale).

For More Information

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Visit the WGAH Web Site:
http://aas.org/comms/Working_Group_on_the_Preservation_of_Astronomical_Heritage