

# Preserving the Past

## *Averting the crisis in Amateur Astronomical History and Heritage*

In the world scientific community the vital importance of the serious amateur contribution to astronomy is a sure datum (Dunlop & Gerbaldi 1988; Percy & Wilson 2000). It is a fact inscribed in monumental accounts of the discipline, such as J.D. North's magisterial *Cosmos* (2008: 364 [Peiresc], 377-379 [Hevelius], and 575-576 [Easton], *inter alia*). Astronomy's past can scarcely be written, its present planned, or its future anticipated without taking account of the contribution of amateurs. The proof can readily be cited; Herschel discovering the *Georgium sidus*, T.E.R. Phillips, B.M. Peek, and F.J. Hargreaves chronicling the Jovian atmosphere (Williams 1997: 9; Rogers 1995: 9-10), John Goodricke, J.E. Gore, E.E. Markwick, and Leslie C. Peltier collecting variable star data (the first three also analysed results), Anthony Wesley and Christopher Go discovering Jovian impact events initiating HST involvement, and amateur meteoriticists staffing scientific recovery or observation missions (Paulson 2009; Jenniskens 2006).

Astronomical activity creates valuable material vestiges. The *realia* typically comprise: 1) data in a variety of recording media; 2) instruments of observation, reduction, and storage; 3) scientific architecture, installations, and landscapes; 3) working collections of reference media – texts manuscript and printed, and graphic and plastic representations of data; and 4), cultural adaptations of scientific data in *belles-lettres*, the fine, minor, and performing arts. Regardless of the eminence of the producer, owner, or user of these things, or the importance of any discovery effected with them, like all artifacts and assemblages they are at constant risk of decay, disassociation, and destruction unless counter-measures are taken.

There are solid scientific, historical, and broadly cultural reasons for caring about the fate of the physical things with which amateurs *do* astronomy. A dedicated, experienced observer can accumulate a wealth of observations over a lifetime. Not all competent observations are submitted for reduction and dissemination to central clearing houses (*e.g.*, AAVSO, ALPO, BAA observing sections, IMO, *etc.*). Important events may be observed by only a very few observers (*e.g.*, famously Carrington's white-light flare), or a dedicated and experienced observer may witness and record a rare phenomenon for which few standard recording protocols or an infrastructure for reporting exist. In these cases the observer's primary record becomes *the* crucial scientific record. Should the logbooks, plates, sketches or unpublished letters recording such observations survive they are potentially available for data mining, which may result in valuable extensions to the temporal dimension of key data series. It is important to note that the primary records from which observations are submitted for

reduction and publication do not lose their scientific importance once the data is processed and distributed. If the original logbooks or plates are extant, they can aid in settling subsequent questions about the observations should controversy arise (*e.g.*, the notorious case of Fr. Hell's Transit observations). The *realia* of serious amateur astronomy is also the source material for writing its history, and much of that history remains imperfectly explored and virtually unknown.

Organized efforts in the professional astronomical community to document and preserve the material heritage of astronomy are relatively recent (Kroll 1999; Osborn & Robbins 2009; formation of the IAU's Division XII Commission 41 Working Groups – Archive, Historic Radio Astronomy, Historical Instruments, Astronomy and World Heritage), with both notable progress (glass plate inventories and digitisations) and disastrous losses to report (1997 fire-bombing of the Pulkovo Observatory Library). The worldwide professional astronomical community has realized the gains in expertise, financing, and influence to be made through international cooperation on preservation issues (mirroring trends in astronomical research). There is nothing comparable in the amateur sphere, where the losses continue at an alarming pace. The formulation and implementation of counter-measures face formidable difficulties, but that is hardly an excuse for inaction given what is at stake. This is all the more so given that nearly two decades have elapsed since Tom Williams' clarion call for action (Williams 1992).

The following initial measures are recommended:

- 1) formation of an international working group (WG) to: i) better characterize the nature and scope of the issue, and prioritize problems and targets (a "Red List"); ii) develop and propose ideas for preservation initiatives; iii) act as the initial laboratory for ideas and basic-level ongoing liaison between participating institutions. The WG structure should be flexible but not unwieldy. Sensible pacing is important, and budgeting of resources should be realistic. Representation from professional astronomy (*e.g.*, AAS-HAD, CASCA-Heritage, IAU, RAS) might not be misplaced;<sup>1</sup>
- 2) development of a universal protocol for preserving, inventorying and cataloguing, and making accessible the *realia* of amateur astronomy. Participation could be entirely voluntary, consultative, and transparent, and the protocol may or may not be prescriptive. The

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<sup>1</sup> It may be prudent to commence the WG with members drawn from no more than a handful of institutions, such as the BAA and RASC, with ALPO, AAVSO, Society for the History of Astronomy (SHA), and Antique Telescope Society (ATS). Expansion would be outward from that base as desirability, demand, and necessity dictate. A basic structure for the WG could consist of no more than: 1) a chair or co-chairs; 2) a representative from the historical section/committee/commission of each of the constituent institutions; 3) one or more representatives from professional astronomical organizations with heritage expertise, such as IAU Division XII Commission 41, AAS-HAD, or CASCA-Heritage; and 4), a few consultants (perhaps drawn from among those eminent in the astronomical archival or preservation fields in addition to those specified in 3). The production of at least an annual report for the constituent institutional sponsors and others would be wise.

- development of the protocol would involve carefully accessing the various modes of selection, preservation, and accessibility for practicality, utility, and projected rates of voluntary compliance (*i.e.*, success). Wide-spread consultation would be advisable;
- 3) development and launch of an education campaign directed at amateur astronomers, their families, and the general public about the importance of the preservation issue;
  - 4) compilation of resources for preservation. This could take several forms: i) a web portal to host content when it becomes available, not only providing access to WG documents (*e.g.*, position statements, protocols, model cases, the “Red List”, and links to 3<sup>rd</sup>-party preservation pages; and ii), the WG could compile a handbook on preserving the material basis of the history and heritage of amateur astronomy, to guide amateurs, amateur institutions, heirs of amateur astronomers, collectors, and other institutions. It could be made freely available on the internet in pdf form, or be published commercially (*e.g.*, BAA/RASC, or Springer, for instance).

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