

IAU Division C – Education, Outreach and Heritage

Commission C.C4 Working Group:
WINDOWS TO THE UNIVERSE –
CLASSICAL AND MODERN OBSERVATORIES

Gudrun Wolfschmidt

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1 Activities (2022)

The WG was established to advance and support in close cooperation with C.C4 the development and coordination of nominations of classical and modern astronomical observatory sites from the Renaissance to the 21st century for inscription on the UNESCO World Heritage List (WHL).

In October 30, 2021, the application of “Hamburg Observatory in Bergedorf” (under monument protection since 1996, acknowledged as national heritage in 2008) was sent by the Free and Hanseatic City of Hamburg for the update of the German Tentative List for the nomination of cultural heritage properties for the UNESCO world heritage list. In September 2022, the evaluation took place. We were told that the result will be published in autumn 2023.

In Hamburg Observatory, we organized in summer 2022 (still with some Covid-19 restrictions) a heritage day with guided tours and a lecture, and in September the Open Monument Day. In addition, we are active with the inventory of the scientific instruments, part of the collections of the University of Hamburg; there is a web portal created: *FUNDus* Portal: https://www.fundus.uni-hamburg.de/de/collections/large_instruments und Schmidt-Museum: <https://www.fundus.de>.

uni-hamburg.de/de/collections/schmidt_museum. In addition, an online archive of 70,000 photographic plates was compiled since 2010 by Detlef Groote: <https://plate-archive.hs.uni-hamburg.de/index.php/en/>. The survey of the sky was carried out in cooperation with the observatories in Potsdam, Bamberg and Tartu, Estonia: 47,000 astronomical photographic plates from the years 1905 to 1998, which were taken with a wide variety of telescopes (13 in Hamburg and 11 in other countries), including the image archive photos of observatories, astronomers and instruments as well as construction drawings of more than 13,000 objects, and the Bernhard Schmidt Archive with ca. 10,000 objects.

Areg Mickaelian has reported about the *Astronomical Plate Archives* as Astronomical Heritage: We run at the *Byurakan Astrophysical Observatory* (BAO) BAO Plate Archive project (<https://www.aras.am/BAO/PlateArchive/eng/>), which includes the digitization of all 37,500 plates and other carriers of astronomical observations obtained in BAO, astrometric solution, extraction and other software, creation of the database, etc. Similarly, in the frame of our collaboration, such a project is active at the Abastumani Astrophysical Observatory in Georgia. Recently the Kazakhstan Virtual Observatory (KazVO) project was created and entered the International Virtual Observatory Alliance (IVOA, <https://ivoa.net/>). It is the 5th VO project in the IVOA from Asia (Armenia, China, India, Japan, Kazakhstan).

Ian Glass has reported: At the *Cape Observatory* (SAAO/Royal Observatory, Cape of Good Hope), which dates from 1820, a major effort to ensure the preservation of antique items has continued. This has involved searching the entire establishment for significant material that has been abandoned or neglected. Most of the work done during 2022 consisted of the scanning and cataloguing of photographic and other visual materials. Artefacts, either antique and/or of interest to the history of the establishment, have been photographed, labelled, catalogued and placed within the SAAO Astronomical Museum. As many as possible have been placed on display as it is felt that there is little point in preserving items if they cannot be seen. The remaining fixed telescopes and domes at the Cape have suffered from neglect for several decades and efforts are continuing to create an awareness of their historic value and devote resources to preserving them. The library of the SAAO, which contains inter alia many early journals, has largely been re-shelved into “Compactus” mobile units, reflecting the general trend towards abandoning printed journals in favour of on-line access.

Ian Glass: At *Boyden Observatory*, the non-profit Centre for Astronomical Heritage worked on the document and image collection held in the Boyden Observatory Museum. The collection has been indexed, and a large portion of the material was rehoused in archivally-stable conditions, catalogued, and digitized, resulting in 25,000 scanned items. The work was generously funded by the British Library’s “Endangered Archives Programme” (<https://eap.bl.uk/collection/EAP1190-1/search>) and the Arcadia Fund. Work continues on the Boyden collection, digitizing more material and developing collection management software.

For Boyden Observatory, Bloemfontein, I have already compiled an OAH entry (<https://www3.astronomicalheritage.net/index.php/show-entity?identity=234&>

idsubentity=1) with material, especially photos, donated by Dawid Van Jaarsveldt.

During the last year, Gudrun Wolfschmidt added a considerable number of observatories for the IAU List, the web portal *Outstanding Astronomical Heritage* (OAH):¹ This IAU List presents observatories which are outstanding in science and in the history of astronomy, but do not necessarily demonstrate potential *Outstanding Universal Value* which would be needed for inscription on the *World Heritage List*. For example, the period from the Renaissance to the middle of the 20th century was an extremely rich one for the history of astronomy, with many observatories from this period playing a significant role because of the cutting-edge scientific research carried out there. However, because the actual building may be damaged or destroyed, and the original instruments may no longer exist in situ or at all, they have no chance for the UNESCO list. I have now collected in the OAH List (observatories from Renaissance to 20th century) nearly one hundred observatories in Europe (only a few are missing), and about 40 in the rest of the world (there could be added much more, especially in the USA many are missing, also some in Asia and only a few in Middle and Southern America, Australia, and Africa).

Heritage in Danger

The three (Kharkiv, Mykolaiv, and Odessa) of seven Ukrainian observatories with relevant astronomical value for humanity are currently at risk due to the war in Ukraine and were designated as Heritage in Danger in spring 2021.

I defined one more observatory as heritage in danger in December 2022: the Holmdel Horn Antenna at Bell Telephone Laboratories in Holmdel, New Jersey, USA, designated as a “National Historic Landmark” in 1988, and added by me to the OAH List in 2022,² because of the discovery of the cosmic microwave background radiation (CMBR) of 3 K by Robert Wilson and Arno Penzias in 1965. The Holmdel Township Committee recently authorized an investigation into whether the property where the Horn Antenna resides should be designated as “an area in need of redevelopment”. Consequently, this property is in danger of becoming a high-density residential development and the future of the Horn Antenna is at stake.

Conferences:

- In March 2022, I was invited as an advisor for the planned transnational serial application of the three Irish Observatories, Armagh Observatory, UK, Dublin Dunsink Observatory, and Birr Castle (Lord Rosse Observatory), Ireland, for the Unesco WH list.
- I gave a lecture *Polish astronomical academic heritage in the context of world cultural heritage* in the 1st panel ‘Academic heritage for world science’ of the conference Academic heritage for the future of science, University of Warsaw Museum, April 26–29, 2022.

¹ <https://www3.astronomicalheritage.net/index.php/heritage/outstanding-astronomical-heritage>.

² [https://www3.astronomicalheritage.net/index.php/show-entity?identity=247&idsubentity=](https://www3.astronomicalheritage.net/index.php/show-entity?identity=247&idsubentity=1)

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- I participated via Zoom in the IAU GA Korea (August 2022).
- The Oxford XII and SIAC VIII Conference “*Living skies*” – *Astronomies, cultures and societies*. “*Cielos vivos*” – *Astronomías, culturas y sociedades* (<http://dawson.fcaglp.unlp.edu.ar/>), shifted since 2020, finally took place in La Plata, Argentina, Oct. 31 to Friday Nov. 4, 2022 with a post-conference trip: Saturday, Nov. 5–6, 2022. I was member of the SOC, and participated with a lecture *Cultural Heritage of Observatories – Changing Structures over Time*. A number of C.C4 and WG members participated. In addition, a round table on astronomical heritage was organized (where I was one of the four invited speakers); this activity is in reference to our goal of achieving greater visibility in the academic expert community. My contribution was sent to the editors for the proceedings in March 2023.

Publications:

- Hoffmann, Susanne M. & Gudrun Wolfschmidt (eds.): *Astronomy in Culture – Cultures of Astronomy*. *Astronomie in der Kultur – Kulturen der Astronomie*. Featuring the Proceedings of the Splinter Meeting at the Annual Conference of the Astronomische Gesellschaft, Sept. 14–16, 2021. Hamburg: tredition (Nuncius Hamburgensis; Band 57) 2022. ISBN 978-3-347-71288-1 (Paperback), 978-3-347-71293-5 (Hardcover), 978-3-347-71294-2 (e-Book), (800 pages, 180 pages in colour).
- Hoffmann, Susanne M. & Gudrun Wolfschmidt: Foreword. II. The Conference in 2021. Introduction. 1. Astronomy in Culture. In: Hoffmann, Susanne M. & Gudrun Wolfschmidt (eds.): *Astronomy in Culture – Cultures of Astronomy*. Hamburg: tredition (Nuncius Hamburgensis; Band 57) 2022, p. XV–XVIII, p. 2–3..
- Wolfschmidt, Gudrun: Cultural Heritage of Observatories – IAU List “Outstanding Astronomical Heritage”. In: Hoffmann, Susanne M. & Gudrun Wolfschmidt (eds.): *Astronomy in Culture – Cultures of Astronomy*. Hamburg: tredition (Nuncius Hamburgensis; Band 57) 2022, p. 103–146.
- Wolfschmidt, Gudrun: Carte Stellari dell’Accademia di Berlino / Berlin Academic Star Charts. In: *Cosmic Pages – Atlanti stellari negli osservatori astronomici italiani*. *Star Atlases in the Italian Astronomical Observatories*. Ed. by Ileana Chinnici & Mauro Gargano. Paris: Arteum 2022, p. 153–157.
- A series of articles on the history of the Astronomical Society of Southern Africa, including its regional divisions and sections, was published in MNASSA for June 2022. Included in the same issue is “The Johannesburg Observatory Glass Plate Story” by Alec Jamieson, which concerns the preservation of the glass plates taken at the Franklin Adams Telescope. MNASSA can be downloaded from the website <https://www.mnassa.org.za/>.

2 Aims and Planned Future Activities

It is very important to preserve the heritage and culture related to astronomy. We want to promote the importance and links of astronomy with World Heritage. The main goal of this WG is, to give advice to stakeholders in order to push observatories for the recognition for the *UNESCO World Heritage List* or for the IAU List *Outstanding Astronomical Heritage* (OAH).

It is planned to add for the IAU List *Outstanding Astronomical Heritage* (OAH) some “recent” observatories (second half of 20th century), but also some very “early observatories” or “observing spots” of late Middle Ages and Renaissance.

My new idea is to add important places, where famous astronomers were active (e. g. their home, the places, where they studied, the university, where they did their research and observing) like Nikolaus Copernicus (2023 is his 550th birthday), Galileo Galilei, Johannes Kepler, Isaac Newton or Einstein etc., as well as some important expedition observatories (like Siam solar eclipse in 1688), the 1919 Eddington solar eclipse or Venus transit observatories.

We also have to widen our view, because Unesco has created the Initiative on *Heritage of Astronomy, Science and Technology* (HAST) (<https://whc.unesco.org/en/astronomy-science-technology>) in the 42nd session of the World Heritage Committee (Manama, 2018). We have to think, which sites can be proposed, for example science parks or science campus, e. g. Wissenschaftspark Albert Einstein on Telegrafenberg Potsdam with astronomy, solar physics, and Helmholtz Centre Potsdam / German Research Centre for Geosciences (GFZ). Also early important public observatories, planetariums, and museums for astronomy, science, and technology – like the Deutsches Museum in Munich with the first Zeiss planetarium in the world and two domes with a public observatory – should be included in the *Portal to the Heritage of Astronomy*.

For the future, it is intended to support observatories in sensitizing the public for the heritage issue by means of talks, meetings, exhibitions and other activities (this could also be done in cooperation with C1 “*Astronomy Education and Development*”) in order to achieve greater visibility within the community of professional and amateur astronomers and the public.

Gudrun Wolfschmidt

Chair of C4 WG Windows to the Universe: Classical and Modern Observatories

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