

IAU Division C – Education, Outreach and Heritage

Commission C.C4 Working Group:
WINDOWS TO THE UNIVERSE –
CLASSICAL AND MODERN OBSERVATORIES
Triennial Report for 2022–2024

Gudrun Wolfschmidt

Chair: Gudrun Wolfschmidt (Germany)

Vice-Chair: Ian Glass (South Africa)

OC: Remi A. Cabanac (France), Premana W. Premadi (Indonesia)

MEMBERS: Alan Batten (Canada), Juan Antonio Belmonte Avilés (Spain), David Bohlender (Canada), Remi A. Cabanac (France), Daniel Cunnama (South Africa), Beatriz García (Argentina), Dale Gary (USA), Ian Glass (South Africa), Richard Green (USA), Andreas Hänel (Germany), James Hesser (Canada), Matthias Hünsch (Germany), Françoise Le Guet Tully (France), James Lequeux (France), Premana W. Premadi (Indonesia), Miguel Roth (Chile), Clive Ruggles (UK), B. S. Shylaja (India), Malcolm Smith (Chile), Robert Smith (Chile), Richard Wainscoat (USA), Constance Walker (USA), Gudrun Wolfschmidt (Germany).

1 Introduction

This WG has been established in 2019 as a combination of two former WGs: “*Classical Observatories from the Renaissance to the 20th Century*” and the Inter-Commission B7-C4 WG “*Windows to the Universe: High-Mountain Observatories, and other astronomical sites of the late 20th and early 21st centuries*”.

The WG is working in close cooperation with C.C4 in order to advance and support 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).

The COVID-19 pandemic had posed a major challenge for everyone. After the conference about Kazan observatories in December 2019, the planned conference *Astronomical observatories of Kazan University in culture and science of the World* took place as Zoom Meeting in April 2021.

In addition, there were several online events between members of C4 and the WGs, e. g. a Zoom meeting of G. Wolfschmidt with Premana W. Premadi (Lembang, Indonesia), March 2021, and another one with Lydia Cidale (La Plata, Argentina), April 2021,

and with Michael Burton, Armagh, May 2021 (discussing a serial transnational Unesco application for Irish Observatories).

For the 2022–2024 triennium, we could restart our activities and we will focus on the following aspects.

2 UNESCO World Heritage

The CC4 and WG were successful with the inscription of “properties” as UNESCO World Heritage (in July 2021 in Fuzhou, China, or in September 2023 in Riyadh, KSA).

After the UNESCO declared the Radio Astronomy Observatory of Jodrell Bank, United Kingdom, as World Heritage site in 2019 (<https://whc.unesco.org/en/list/1594/>), three more astronomical sites (observatories and a historical planetarium) were included as World Heritage.¹

- 2021 (<https://whc.unesco.org/en/list/1618/>): Paseo del Prado and Buen Retiro, Madrid, Spain, was included as a ‘Cultural Landscape of Arts and Sciences’, including the *Real Observatorio Astronómico de Madrid*² in Neoclassical style (1790) – the first classical observatory on the WHL.
- 2023 (<https://whc.unesco.org/en/list/1678/>): *Astronomical Observatories of Kazan Federal University* (1837 and 1901),³ Tatarstan, Russia.
- 2023 (<https://whc.unesco.org/en/list/1683/>): *Eise Eisinga Planetarium*, Franeker, The Netherlands (1774–1781), an impressive mechanical scale model of the solar system, a predecessor of the ceiling and projection planetariums of the 20th and 21st centuries.

Gudrun Wolfschmidt was directly involved in the candidatures as advisor or external ICOMOS reviewer during the process.

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; the result will be published end of 2023.

¹ In addition, as mentioned in the C.C4 Triennial Report, also several archaeoastronomical sites were inscribed in 2021 and 2023: *Chankillo Archaeoastronomical Complex*, Peru, a prehistoric site (250–200 BC) (<https://whc.unesco.org/en/list/1624/>, 2021), Prehistoric Sites of *Talayotic Menorca*, a cyclopean island odyssey from the Bronze Age (1600 BCE) to the Late Iron Age (123 BCE), Balearic Islands, Spain (<https://whc.unesco.org/en/list/1528/>, 2023), and *Hopewell Ceremonial Earthworks*, Ohio, USA, built between 2,000 and 1,600 years ago (<https://whc.unesco.org/en/list/1639/>, 2023).

² OAH: <https://web.astronomicalheritage.net/show-entity?identity=166&idsubentity=1>.

³ OAH: Old Observatory of Kazan Federal University: <https://web.astronomicalheritage.net/show-entity?identity=115&idsubentity=1>, and Engelhardt Astronomical Observatory: <https://web.astronomicalheritage.net/show-entity?identity=158&idsubentity=1>.

Lydia Cidale reports: *La Plata*, the Argentine National Monument Commission’s report was unanimous, but the past president of Argentina did not sign the resolution. Therefore, we are still waiting. Unfortunately, the National Monument Commission has now changed.

We still hope, that in the future, we can put forward a serial transnational UNESCO application of La Plata – Hamburg together, and perhaps with some more observatories.

3 Activities during the Triennium (2021 to 2024)

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, and in 2023, a Long Night of Museums (after the three years break). 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*: https://www.fundus.uni-hamburg.de/de/collections/large_instruments, and Schmidt Museum: https://www.fundus.uni-hamburg.de/de/collections/schmidt_museum.

In addition, an online archive of 70.000 photographic plates was compiled, it started in 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 entries, and the Bernhard Schmidt Archive with ca. 10,000 entries.

Areg Mickaelian has reported about the *Astronomical Plate Archives* as Astronomical Heritage: In 2011, we managed to include *The First Byurakan Survey* (FBS or Markarian Survey) 1874 low-dispersion spectroscopic plates collection in UNESCO *Memory of the World* Documentary Heritage list. These objective prism photographic plates contained at that time the largest number of spectra (40 million). We should also include in our plans inclusion of such heritage (plate archives) in UNESCO and/or IAU OAH. The *Byurakan Astrophysical Observatory* (BAO) BAO Plate Archive project (<https://www.aras.am/BAO/PlateArchive/eng>) 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 the triennium 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 during the triennium 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/>) 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 entry⁴ with material, especially photos, provided by Dawid Van Jaarsveldt.

Promoting the three Irish Observatories around 1800 for the Unesco list. They are already presented in the IAU List *Outstanding Astronomical Heritage*:

- Dunsink Observatory in Dublin, Ireland
(<https://www3.astronomicalheritage.net/index.php/show-entity?identity=194&idsubentity=1>),
- Armagh Observatory, Northern Ireland, UK (Michael Burton)
(<https://www3.astronomicalheritage.net/index.php/show-entity?identity=161&idsubentity=1>)
- Lord Rosse’s Leviathan of Parsonstown in Birr Castle, Ireland – the world’s largest telescope for 72 years
(<https://www3.astronomicalheritage.net/index.php/show-entity?identity=198&idsubentity=1>).

A Study Tour, March 20–24, 2022, was planned by Michael Burton, director of Armagh, in order to visit the Irish observatories, to discuss the topic with key persons like IAU C4 members, relevant stakeholders and national Unesco people, and to evaluate the possibilities of a serial transnational Unesco application. The first step is to get the observatories on the national tentative lists of UK and Ireland. A possible OUV could be: Irish Observatories around 1800 – breakthrough in observatory architecture (first domes and central column supporting the telescope) and innovative

⁴ OAH: <https://www3.astronomicalheritage.net/index.php/show-entity?identity=234&idsubentity=1>.

instrumentation and telescope equatorial mounting – key contribution to the enigma of the spiral nebulae leading to the concept of galaxies, and changing / expanding humanity’s perception about its place in the cosmos (criteria #4, #2, and #6).

3.1 *Outstanding Astronomical Heritage* (OAH)

During the triennium, Gudrun Wolfschmidt added a considerable number of observatories for the IAU List, the web portal *Outstanding Astronomical Heritage* (OAH):⁵ The database manager Rüdiger Schultz, Vienna, has updated and improved the system in the last months.

This IAU List presents observatories which are outstanding in science and in 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 to enter the UNESCO list.

I have now collected in the OAH List (observatories from Renaissance to 20th century) about one hundred observatories in Europe (only a few are missing in France, UK, and Italy), and about 40 in the rest of the world (there could be added much more, especially in the USA and Canada, many are missing, also some in Asia, especially in India, but Middle and Southern America, Australia, and Africa are nearly complete).

3.2 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 ongoing war in Ukraine and were designated as Heritage in Danger in spring 2021. They are still are in particular danger, fragments of downed rockets have fallen on the observatories, the roofs of the observation pavilions and the laboratory buildings were partially damaged, but the telescopes and instruments have not been seriously affected so far. But observation stations outside the cities suffered serious losses. 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 2022,⁶ because of the discovery of the cosmic microwave background radiation (CMBR) of 3K 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

⁵ New link: <https://web.astronomicalheritage.net/heritage/outstanding-astronomical-heritage>.

⁶ <https://www3.astronomicalheritage.net/index.php/show-entity?identity=247&idsubentity=1>.

property is in danger of becoming a high-density residential development and the future of the Horn Antenna is at stake.

4 Conferences and Advisor

- 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.
- 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 speaker); 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.

5 Publications

- Glass, Ian: 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/>.
- 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; Vol. 57) 2022. (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.

- Paulowitz, Bernd (World Heritage Coordinator of Hamburg); Matthias Hün- sch, Alexandra Kruse, Perry Lange, Uta K. Mense, Agnes Seemann & Gudrun Wolfschmidt: Hamburger Sternwarte in Bergedorf. Bewerbung der Freien und Hansestadt Hamburg auf die Fortschreibung der deutschen Anmelde- liste (Tentativliste) zur Nominierung von Kulturerbegütern für die UNESCO-Liste des Kultur- und Naturerbes der Welt. Freie und Hansestadt Hamburg: Behörde für Kultur und Medien, Denkmalschutzamt, Welterbekoordination (30. Oktober 2021). https://www.fhsev.de/Wolfschmidt/buch/Unesco-Bewerbungsdokument-KMK-WHL_Hamburger-Sternwarte-2021-10-30.pdf.
- Prignitz, Christoph, ed. by Gudrun Wolfschmidt: *Time for Hamburg – A Pocket Watch of the Observatory and its Historical Context*. Zeit für Hamburg – Eine Uhr der Sternwarte und ihr historisches Umfeld. Mit Beiträgen und heraus- gegeben von Gudrun Wolfschmidt. Hamburg: tredition (Nuncius Hamburgensis; Vol. 56) 2021.
- Wolfschmidt, Gudrun: Cultural Heritage of Observatories in the Context with the IAU-UNESCO Initiative – Highlights in the Development of Architecture. In: *Advancing Cultural Astronomy: Studies in Honour of Clive Ruggles*. Ed. by Efronsyni Boutsikas, Steve McCluskey & John Steele. New York, Berlin, Heidelberg: Springer 2021, p. 291–314.
- Wolfschmidt, Gudrun: 150 Years of O’Gyalla / Hurbanovo Observatory. Hvezdáreň v Hurbanove má 150 rokov. V priazni bohyně Niké (4). In: *Kozmos* 6 (2021), p. 35–48, here p. 47.
- Wolfschmidt, Gudrun: Cultural Heritage of Observatories – IAU List “Outstand- ing Astronomical Heritage”. In: Hoffmann, Susanne M. & Gudrun Wolfschmidt (eds.): *Astronomy in Culture – Cultures of Astronomy*. Hamburg: tredition (Nuncius Hamburgensis; Vol. 57) 2022, p. 103–146.
- Wolfschmidt, Gudrun: Carte Stellari dell’Accademia di Berlino / Berlin Aca- demic Star Charts. In: *Cosmic Pages – Atlanti stellari negli osservatori astro- nomici italiani. Star Atlases in the Italian Astronomical Observatories*. Ed. by Ileana Chinnici & Mauro Gargano. Paris: Arteum 2022, p. 153–157.
- Wolfschmidt, Gudrun (ed.): *Instruments, Methods and Discoveries for Innova- tive Developments in Astronomy*. Instrumente, Methoden und Entdeckungen für innovative Entwicklungen in der Astronomie. Hamburg: tredition (Nuncius Hamburgensis; Vol. 52) 2023 (400 pages).
- Wolfschmidt, Gudrun (ed.): *Transformations in Space and Time: Heaven – Home – Understanding of the World*. Wandlungen in Raum und Zeit: Himmel – Heimat – Weltverständnis. Hamburg: tredition (Nuncius Hamburgensis; Vol. 58) 2023 (388 pages).
- Wolfschmidt, Gudrun: Repsold Company as a Global Player – Meridian Circles from the first in 1802 to the modern computerised in 1967. La société Repsold

comme acteur mondial – du premier cercle méridien en 1802 au système informatisé moderne en 1967. In: Une culture de la précision: les cercles méridiens aux XIXe et XXe siècles, une diversité d’ensembles instrumentaux pour des travaux partagés et convergents. Sous la direction de Daniel Belteki, Julien Gressot, Loïc Jeanson & Jean Davoigneau. *Journal Cahiers François Viète – Épistémologie, Histoire, Sciences & Techniques* (Nantes Université), Série III (2023), No. 14, p. 101–140 (ISBN: 978-2-493550-05-7). Online: [cahierscfv/3989](https://doi.org/10.4000/cahierscfv/3989) (ISSN: 2780-9986), DOI [10.4000/cahierscfv.3989](https://doi.org/10.4000/cahierscfv.3989).

- Wolfschmidt, Gudrun: Hamburger Sternwarte – 400 Jahre Astronomie in Hamburg – 100 Jahre Forschung an der Hamburger Universität. In: *100 Jahre Universität Hamburg. Studien zur Hamburger Universitäts- und Wissenschaftsgeschichte in vier Bänden. Band 4*. Herausgegeben von Rainer Nicolaysen, Eckart Krause & Gunnar B. Zimmermann. Göttingen: Wallstein 2024, p. 305–331.
- Wolfschmidt, Gudrun: Chapter 4. The Built Environment – Observatories in the Renaissance. In: Steele, John; McCluskey, Stephen & Efrosyni Boutsikas (ed.): *Vol. 3: A Cultural History of the Universe in the Age of Renaissance*. Edited by Lindsey Starkey. London, Oxford: Bloomsbury Academic, forthcoming.
- Wolfschmidt, Gudrun & James Lequeux: Reckoning and Keeping Time. In: Cunningham, Cliff (ed.): *Vol. 4: A Cultural History of the Universe in the Age of Enlightenment*. Edited by Lindsey Starkey. London, Oxford: Bloomsbury Academic, forthcoming.
- Wolfschmidt, Gudrun: Observatories, Planetariums and Science Museums – Buildings with Connection to the Universe in the 20th/21st Centuries. In: *Vol. 6. A Cultural History of the Universe in the Modern Age (1920 to the present)*. Edited by Jarita C. Holbrook. London, Oxford: Bloomsbury Academic, forthcoming.
- Wolfschmidt, Gudrun: Timekeeping in Hamburg Observatory and Time Balls. In: *Astronomical Observatories and Chronometry: Time, Science and Instruments (18th–20th century)*. Studies in Honour of Paolo Brenni. Ed. by Gianenrico Bernasconi & Ileana Chinnici. Berlin, New York: Springer, forthcoming.
- Wolfschmidt, Gudrun: Astro Walk in the footsteps of Copernicus and Kepler. In: *Between Ancient and Modern Astronomy*. Proceedings of the 30th SEAC, Polish Academy of Sciences, Warsaw, Poland, September 6–9, 2023. Ed. by Michał Gilewski. Warsaw, forthcoming.
- Wolfschmidt, Gudrun: Cultural Heritage of Observatories – Changing Structures over Time. Patrimonio cultural de los observatorios: estructuras cambiantes a lo largo del tiempo. In: *“Living skies”/ “Cielos vivos” – Astronomies, cultures and societies / Astronomías, culturas y sociedades*. Proceedings of the Oxford XII Conference in La Plata, Argentina, Nov. 2022. *Cosmovisiones / Cosmovisões*, forthcoming.

6 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) also 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),⁷ Galileo Galilei, Johannes Kepler, Isaac Newton or Einstein etc., as well as some important expedition observatories (like Siam Solar Eclipse Observatory in 1688),⁸ 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) or Baroque Jesuit or Benedictine observatories with astronomy, time keeping, meteorology, geomagnetism, seismology, and natural science (like Havana, Cuba, or Mathematical Tower, Kremsmünster, Austria).

Also early important public observatories (Urania and Archenhold Observatory, Berlin), planetariums (starting with mechanical planetariums like the Eisinga Planetarium Franeker or the Gottorf Globe, Schleswig, Germany, and St. Petersburg, Russia), 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* in the next triennium.

One of my future aims for the WG is also to create a “*Cultural Route of Astronomical Observatories*”,⁹ which focuses on the possible serial (multi-site) transnational nomination of a number of classical observatories in Europe, combining observatories

7 Three Copernicus’ observing places in Poland were added: Collegium Maius at the time of Copernicus, Jagiellonian University, Kraków/Cracow, <https://web.astronomicalheritage.net/show-entity?identity=253&idsubentity=1>, Heliograph (Astronomical Table), Olsztyn/Allenstein Castle, <https://web.astronomicalheritage.net/show-entity?identity=254&idsubentity=1>, and Copernicus observing site in Frauenburg / Frombork, <https://web.astronomicalheritage.net/show-entity?identity=255&idsubentity=1>.

8 Palace in Lop Buri, Siam, Thailand: <https://web.astronomicalheritage.net/show-entity?identity=239&idsubentity=1>.

9 Cf. Cultural Routes of the Council of Europe <https://www.coe.int/en/web/cultural-routes>.

in different states, connected by architectural and landscape features, by comparable scientific instrumentation or by scientific cooperations.

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. In this connection, also the preservation of a dark and quiet sky above the more modern observatories should be addressed.

Closing remark: There are a lot of ideas and tasks, what we can do – we should definitely continue our activity in the next triennium.

Gudrun Wolfschmidt

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

March 10, 2024