

FINAL REPORT
from the meeting
“Astronomy and World Heritage: Across Time and Continents”
held in Kazan, Tatarstan, Russian Federation,
Aug 19–23, 2009

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Acknowledgements

The participants sincerely commended Mr Mintimer Shaymiev, President of the Republic of Tatarstan, and the Government of the Republic of Tatarstan for the hosting and exceptional organization, under UNESCO patronage, of the International Conference “Astronomy and World Heritage: Across Time and Continents” held in Kazan from 19 to 23 August 2009.

The participants expressed their special thanks to Mr Farid Mukhametshin, Chairperson of the State Council of the Republic of Tatarstan, Prof Myakzyum Salakhov, Rector of Kazan State University, Prof. Nail Sakhbullin, Head of the Department of Astronomy at Kazan State University and Prof. Yuri Nefedev, Director of the Engelhard Astronomical Observatory (EAO).

Resolution

This resolution has been prepared and adopted by <90> internationally recognised experts in astronomy and astrophysics, cosmic exploration, the history of astronomy, archaeoastronomy, cultural astronomy, history, archaeology, and architecture, at the closing ceremony of the International Conference on Astronomy and World Heritage: Between Time and Continents, held in Kazan, Tatarstan, Russian Federation, August 19–23, 2009.

Definitions

Tangible astronomical heritage is the material evidence relating to astronomy and representations of astronomy. Astronomy is characterised by the observation and coherent interpretation of celestial objects and events from the earliest stages of human evolution through to the modern world, including but not confined to the history of contemporary science. It forms part of the efforts by all human beings to comprehend the observable world or universe—the cosmos—within which they dwell and to understand their place within it.

The following are the principal categories of tangible astronomical heritage:

- Observatories as “scientific monuments”.
- Material representations of the results of astronomical observations and contextual understanding: constructions, architecture and urbanism related to applied astronomy and/or bearing astronomical information.
- Properties whose design and/or landscape setting have significance in relation to celestial objects or events.
- Monuments, sites and cultural landscapes related to the history of astronomy and/or human cultural practices related to astronomy.
- Sites related to space exploration¹

¹ A special expert group Chaired by Academician Marov, with participation of Academician Boyartchuk and Cosmonaut Gretchko, submitted a proposal to include in the Thematic Study on astronomical heritage **Space Technological Sites** as technological heritage connected with space exploration (see Annex IV).

Recommendations

In order to help the expert community to apply the resolution, this meeting recommends:

1. In conformity with Article 3 of the *Convention 1972*, that it is for each State Party to the World Heritage Convention who wish to submit nominations of cultural and natural sites relating to astronomical heritage for inscription on the World Heritage List, to identify and delineate properties situated on its territory and that the existing World Heritage criteria, as indicated in the *Operational Guidelines*, can be used for the assessment of outstanding universal value of the cultural and natural properties.
2. That the activities achieved since the creation of the Astronomy and World Heritage Initiative as well as the resolution presented above (hereinafter the “Kazan resolution”) and related documents should be examined by the World Heritage Committee during its 34th session in 2010.
3. That a special meeting be arranged as soon as possible between the IAU Working Group and ICOMOS so as:
 - (i) to discuss the application of the Kazan resolution within the World Heritage Convention;
 - (ii) to discuss the possibility of the eventual revision of the Operational Guidelines Annex III; and
 - (iii) to discuss the potential for serial nominations relating to astronomy.*
4. To revise the Operational Guidelines Annex III in order to add new items on the inscription of specific properties connected with astronomy, as well as the definition and categories of tangible astronomical heritage presented in this Kazan resolution.²
5. That a unified website be set up for the Astronomy and World Heritage Initiative, integrating its cultural and natural aspects.†
6. To promote the creation of networks between directors of observatories to consider astronomical heritage issues.
7. To promote inter-convention recognition so that both the tangible and intangible nature of astronomical heritage can be recognised and managed at astronomical heritage sites.

² In this regard, the participants took into account the recommendations of the Science meeting held in January 2008, and in particular Paragraph 25 mentioning that specific guidance for sites of scientific and/or technological heritage should be incorporated into Annex 3 of the Operational Guidelines.

8. To promote the recognition of the ability to see natural starlight in a truly dark night sky as a contributing factor in protected area management.‡

Additional proposals

The following should be taken into account during the process of judging applications:

- * We recommend additionally that suitable case studies be identified for serial nomination. These would include:
 - A group of ancient monuments whose relationship to astronomy is established by recognising common characteristics among the group.
 - A thematically linked group of properties relating to the heritage of modern scientific astronomy, such as the observatories involved in the *Carte du Ciel* project, observatories representing the transition to astrophysics, solar observatories, or meridian lines in churches.
 - “Space horizons”: serial cultural sites connected with space exploration.
 - “Windows to the universe”: the sites of the world’s largest contemporary observatories including their natural components.

- † This website would be developed with the support of the Starlight Initiative, within the framework of the existing UNESCO-IAU Memorandum of Understanding and any project agreement yet to be developed on this issue.

- ‡ It is therefore important to recognise the importance of the protection of natural and cultural sites which contribute by their exceptional night landscape to astronomical research worldwide. It is also important to recognise that light pollution can be considered an imminent threat to the environment, including its impacts on animal and plant life. It is necessary to join efforts to promote adapted lighting and to develop a common approach to the safeguarding of exceptional night landscapes. Co-ordination and information-sharing could be enhanced, in coordination with the “Starlight” Initiative, between the UNESCO World Heritage Convention, the UNESCO Man and the Biosphere Programme (MAB), the Ramsar Convention, the Organization of the World Heritage Cities (OWHC), the World Commission on Protected Areas (WCPA) and other Conventions, programmes and international organizations related to the conservation of cultural and natural heritage.

The participants encourage the “Starlight” Initiative to further develop, in coordination with IUCN and all concerned Programmes and organizations, inputs for the effective management of existing protected areas and sites.

Annex I. List of Members of the International Astronomical Union's Working Group on Astronomy and World Heritage

Abalakin, Viktor (Russia)	Kak, Subhash (India/USA)
Badolati, Ennio (Italy)	Kepler, S.O. (Brazil)
Batten, Alan (Canada)	Kochhar, Rajesh (India)
Belmonte, Juan (Spain)	Krupp, Edwin C. (USA)
Bhathal, Ragbir (Australia)	Locher, Kurt (Switzerland)
Brosche, Peter (Germany)	Maglova-Stoeva, Penka (Bulgaria)
Davoigneau, Jean (France)	Mason, Brian (USA)
Débarbat, Suzanne (France)	Mickaelian, Areg (Armenia)
DeVorkin, David (USA)	Nha Il-Seong (Korea)
Dluzhnevskaya, Olga (Russia)	Osório, José (Portugal)
Dürbeck, Hilmar W. (Germany)	Pettersen, Bjorn R. (Norway)
Ehgamberdiev, Shuhrat (Uzbekistan)	Pineda de Carías, María Cristina (Honduras)
Engels, Dieter (Germany)	Pinigin, Gennadiy (Ukraine)
Epifania, Priscilla (Indonesia)	Pompeia, Luciana (Brazil)
Ferlet, Roger (France)	Pozhalova, Zhanna (Ukraine)
Fujiwara, Tomoko (Japan)	Rappenglück, Michael (Germany)
Funes, José (Vatican)	Ruggles, Clive (UK) [Chair]
Glass, Ian S. (South Africa)	Shi Yun-li (China)
Griffin, Elizabeth (Canada)	Simonia, Irakli (Georgia)
Gurshtein, Alexander (Russia/USA)	Smith, Malcolm (Chile)
Hearnshaw, John (New Zealand)	Steele, John (UK/USA)
Helou, George (USA)	Szabados, Laszlo (Hungary)
Hidayat, Bambang (Indonesia)	Tully, Françoise Le Guet (France)
Hockey, Thomas (USA) [Secretary]	Wainscoat, Richard (USA)
Holbrook, Jarita (USA)	Wolfschmidt, Gudrun (Germany) [Vice-Chair]
Incerti, Manuela (Italy)	Yang Hong-Jin (Korea).
Iwaniszewski, Stanisław (Poland/Mexico)	

Annex II. List of Conference Participants

<to be added>

Annex III. Conference Programme

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Annex IV. Space Heritage Technological Sites

Groups of Space Technological Sites include Launch Pads and related structures, such as the Gagarin Launch Pad in the Bayconur area (Russian Federation), and historical sites where the pioneering concepts of space flight and the design of original space vehicles were tested, such as Kaluga town and the K.E. Tsiolkovsky Museum of Cosmonautics (Russian Federation), with their intrinsically related natural landscapes.