

Scientific (Astro) tourism activities in Armenia and in South West and Central Asian region

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Abstract

Scientific Tourism activities have been initiated in a number of countries during the recent decades. Armenia was among the first countries developing Scientific Tourism and most probably the first to develop Astro Tourism. We were the first to introduce the term “Astronomical Tourism” (or “Astro Tourism”). This includes visits to astronomy-related sites (astronomical observatories, astronomical institutes, astronomy-related university departments, ancient sky/astronomy-related sites, medieval universities, planetariums, space/astronomy museums, etc.) but not only. The organization of astronomical meetings, schools, camps and other events with involvement of many visitors, we also consider as Astro Tourism activities. We give an overview of our activities, including the main project; development of Astro Tourism in the SWCA region. A detailed study of Astro Tourism sites in Armenia, Georgia, Iran, Kazakhstan, Tajikistan, Turkey and (in addition) Uzbekistan was carried out, namely, modern astronomical observatories and institutes, ancient astronomy-related sites, medieval universities, planetariums, astronomy/space museums, etc. A webpage was built representing Astro Tourism in SWCA region. We also discuss the Scientific Tourism and Tourism in general as disciplines for studies and not only as service. We will share our experience on Scientific/Astro tourism activities and discuss how different items may be implemented in different regions.

1. Scientific (Astro) Tourism Initiatives and Activities in Armenia and in South West and Central Asia

We have started Scientific (Astro) tourism activities in 2009, since the International Year of Astronomy (IYA-2009). It was one of our main initiatives. Several projects have been accomplished, including the webpage of the Byurakan Astrophysical Observatory (BAO) as a scientific tourism centre (www.aras.am/BAO/SciTourism/eng), BAO visits page (<https://www.bao.am/visits/tours.php>) and those funded as IAU OAD projects (<http://iau-swa-road.aras.am/eng/AstroTourism/>) and IAU-100 projects (<http://astrotourism.aras.am>). We have accomplished the following activities:

- Developing the vision and the strategy of the Scientific Tourism
- Seminars on Scientific Tourism for scientists and tourism representatives
- Cognitive tours to Scientific Tourism sites for representatives of Travel Agencies
- Scientific Tourism Conferences in BAO, Armenian Institute of Tourism (AIT) and elsewhere
- Building of Scientific and Astro Tourism webpages
- Printing a map of Armenia with Scientific Tourism sites, “*Armenia – Land of Science*” (where 4 types of sites are given: 1) ancient sites, 2) medieval universities, 3) astronomical observatories/institutes, 4) planetariums/museums)
- Screening a film about Scientific Tourism sites in Armenia
- Opening Scientific Tourism Chair (the 1st such Chair) at AIT
- B.Sc. and M.Sc. theses on Scientific Tourism by students

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- Talks at different science/astronomy meetings on the Scientific Tourism
- Articles on the Scientific Tourism in scientific and popular journals

We collaborate with Tourism related organizations in Armenia, namely RA Ministry of Economy Tourism Committee, Armenian Tourism Federation, Armenia Tourism Board, Armenian Tourism Development Agency, Armenian Tourism Development Foundation (ATDF), Armenian Institute of Tourism (AIT, a branch of Russian International Academy of Tourism), Union of Incoming Tour Operators of Armenia and The Armenian Guides Guild (AGG).

2. Scientific (Astro) Tourism Items and Sites

We classify the Scientific (Astro) Tourism items and sites as follows:

- Astronomical/Astrophysical Observatories
- Astronomical/Astrophysical and Space related Institutes
- Related University Departments/Faculties/Chairs
- Space Centers
- Ancient Observatories and Sites
- Sun/Fire Temples
- Sundials
- Astronomical Rock Art / Petroglyphs
- Astronomical/Space Museums
- Planetariums
- Science Cities / Science Centers

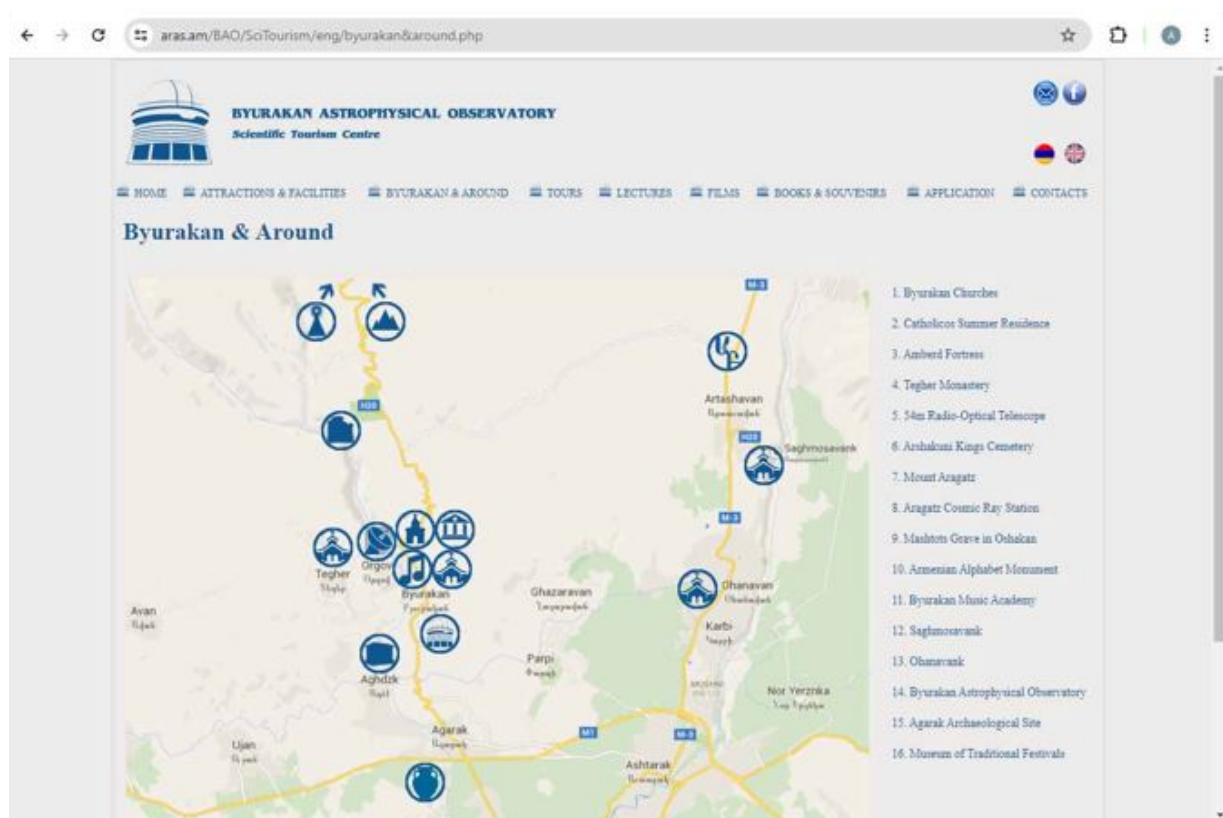


Figure 1. BAO Scientific Tourism webpage with sightseeing around BAO.

3. Scientific (Astro) Tourism Projects for Armenia and South West and Central Asia

We have run several **projects related to Scientific (Astro) Tourism**. A major project was the development of Astro Tourism in South West and Central Asia (<http://astrotourism.aras.am>) resulted in building of an official webpage for Astro Tourism and suggestion to the IAU other regions to join with similar webpages for all regions. In total, 4 funded projects were accomplished:

- IAU Office of Astronomy for Development (OAD) grant 2016: *Development of Astro Tourism in SWA*
- Swiss Development Cooperation (SDC) grant 2016: *Development of Scientific Tourism in Armenia*
- Stepan Gishyan fund grant 2018-2019: *Development of Scientific Tourism in Armenia*
- IAU-100 grant 2019 (extension of OAD-2016 grant): *Astro Tourism in SWCA*



Seminars on Scientific Tourism for scientists and tourism representatives (topics: Extraterrestrial Civilizations, Ancient Astronomy, etc.), **Cognitive Tours** to Scientific Tourism sites for representatives of Travel Agencies, **Scientific Tourism Conferences** in BAO, Armenian Institute of Tourism (AIT) and elsewhere have been organized. For the first time in Armenia, tourism representatives were gathered together to discuss scientific tourism matters.

Scientific and Astro Tourism webpages were built, in total, 4 webpages: BAO as a scientific tourism centre: www.aras.am//BAO/SciTourism/eng; BAO visits page: <https://www.bao.am/visits/tours.php>; IAU OAD project Astro Tourism in SWA: <http://iau-swa-road.aras.am/eng/AstroTourism/> and IAU-100 project Astro Tourism in SWCA: <http://astrotourism.aras.am>.

We have prepared and published an **Armenian Scientific Tourism map**, where 4 types of site are given: 1) ancient sites, 2) medieval universities, 3) astronomical observatories/institutes, 4) planetariums/museums.

A **film about Scientific Tourism sites** in Armenia was screened. This was the result of our visits and cognitive tours to all these sites and collection of all possible information from the Internet and elsewhere, taking many photos.



Figure 2. The main page of the project Astro Tourism in SWCA.



Figure 3. Armenia, Iran and Uzbekistan maps from the project Astro Tourism in SWCA with Astro Tourism sites.

4. The vision, the strategy and the development of the Scientific Tourism

The Scientific Tourism comes to prove that Tourism is not only service but a discipline to be studied, coordinated and properly managed. The Scientific Tourism may be expressed in the following:

- Touristic studies (Touristic discipline); History, Theory and Statistics of the Tourism
- Developing the vision and the strategy of the Scientific Tourism
- Identification of the types of science-related sightseeing
- Identification of Science related sightseeing in each country
- Organizing Scientific Tourism Sites Cognitive Tours, Visits
- Seminars and Conferences on Scientific Tourism
- Scientific Meetings: attracting people to travel
- Organizing Summer/Winter Schools and Camps for students and school children
- Visits to Planetariums, Science Cities, Science/Astronomy Museums
- Opening Tourism Chairs at the universities, Tourism Education, Preparing Experts
- Archaeoastronomy & Cultural Astronomy Studies
- Publication of articles on the (Scientific) Tourism in scientific and popular journals

In addition, there should be scientific research and dissemination for Scientific (Astro) Tourism as well; Talks at different science/astronomy meetings on the Scientific Tourism, articles on the Scientific Tourism in scientific and popular journals. Concerning the Scientific Tourism education in Armenia, we have opened Scientific Tourism Chair (one of the 1st such Chairs in the world) at the Armenian Institute of Tourism (AIT). There are many B.Sc. and M.Sc. theses on Scientific Tourism by students both from AIT and several other universities having tourism-related faculties or chairs (in Armenia, in total 12 such units).

Related Links

- Byurakan Astrophysical Observatory (BAO): <https://www.bao.am>
 IAU SWCA ROAD: <http://iau-swa-road.aras.am/eng>
 Armenian Astronomical Society (ArAS): <https://www.aras.am>
 Armenian Virtual Observatory (ArVO): <https://aras.am/Arvo/arvo.htm>
 BAO as a scientific tourism centre: www.aras.am/BAO/SciTourism/eng
 BAO visits page: <https://www.bao.am/visits/tours.php>
 IAU OAD project Astro Tourism in SWA: <http://iau-swa-road.aras.am/eng/AstroTourism/>
 IAU-100 project Astro Tourism in SWCA: <http://astrotourism.aras.am>

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