

HIST: ST-based Solutions for World Heritage Protection and Sustainable Development

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for Natural and Cultural Heritage under the auspices of UNESCO (HIST)**

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Who We Are



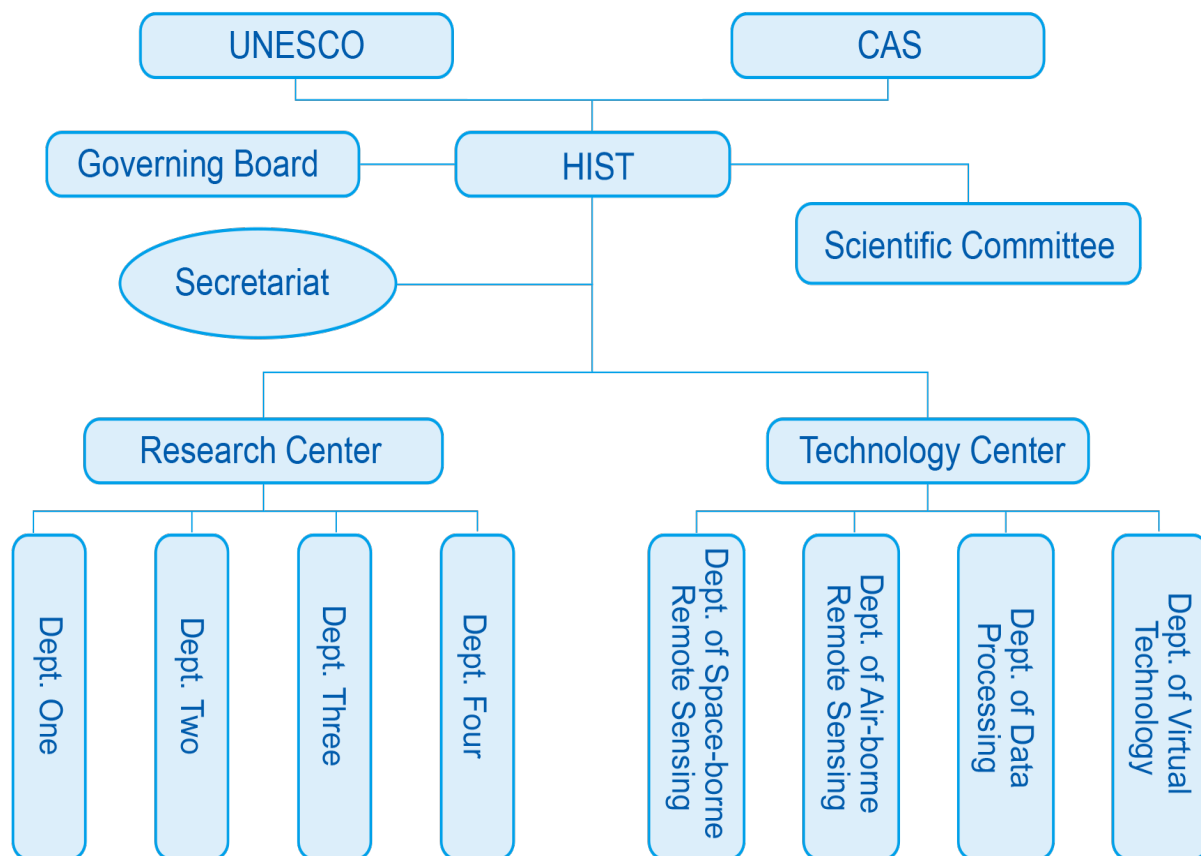
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Educational, Scientific and
Cultural Organization



International Centre on Space Technologies for
Natural and Cultural Heritage
under the auspices of UNESCO

Our Vision in Brief: accessible space technology, shared data, ideas, and knowledge

Organization Structure



Governing Board

*9 leading experts from
UNESCO, IUCN, ICOMOS*



- **64** Scientists & Staffs
- **30** Graduate Students
- **19** SC Members



Mission and Objective



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MISSION

Make full use of space technologies to help UNESCO and its Member States to better protect and manage UNESCO-designated sites and promote their sustainable development.

To assist UNESCO's programme, as well as Member States that desire it, to receive such assistance on the use of applied space technologies for UNESCO's activities related to natural and cultural heritage, sustainable development education, climate change and natural disasters.



SDGSAT-1: providing customized data for global heritage monitoring and SDG evaluation



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Launched on Nov. 5th 2021, depicting anthropic interaction with Earth's environment

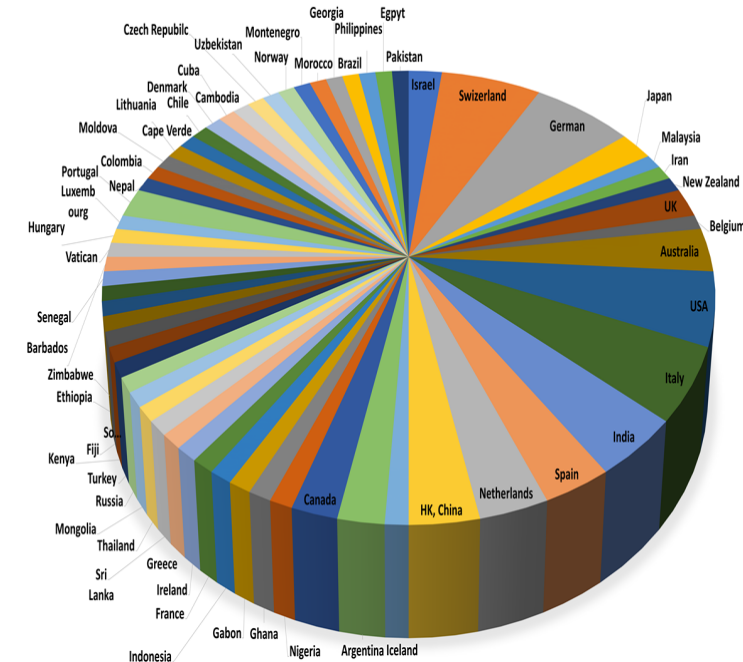


Synergistically observing day and night, with three sensors 300km swath width

- Glimmer Imager: 10m panchromatic & / 40m RGB
- TIR: 3 bands, 0.2K temp. recognition
- Multispectral: 2 deep blue & 1 red edge bands

SDGSAT-1 Satellite

Countries and Regions Distribution Statistics for Overseas Researchers of SDGSAT-1 Users



SDGSAT-1 images shared with users from **88** countries and regions

SDGSAT-1 Open Science Program was launched in Sep. 2022.

Data are available Free-of-Charge globally. Users from **88** countries and regions are using the data.

CAS EO Satellite Ground Station Network



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North Pole
Station



Miyun Station
Headquarter



Kashi Station

Kunming Station
Sanya
Station



The receiving coverage of ground station network can cover China's total territory and 70% of land area in Asia. The North Polar Station can improve the capability to rapidly access global remote sensing data.

Digital Heritage Platform Developed by HIST

A prototype monitoring & evaluation info service system for NH & CH

2D (Video presentation)

3D (Video presentation)

The system modules



The Natural and Cultural Heritage Monitoring and Assessment Information Service System was established in 2023 after five years of collaborative research. It has realized **the integrated integration of multiple functional modules, including monitoring and protection, assessment and warning, decision support, and visual display.**

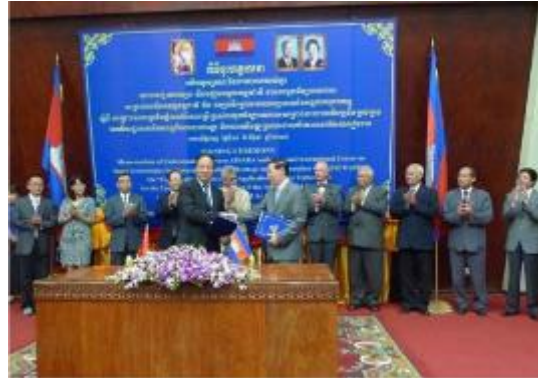
China-Cambodia Cooperation on Remote Sensing for Environment of Angkor Site



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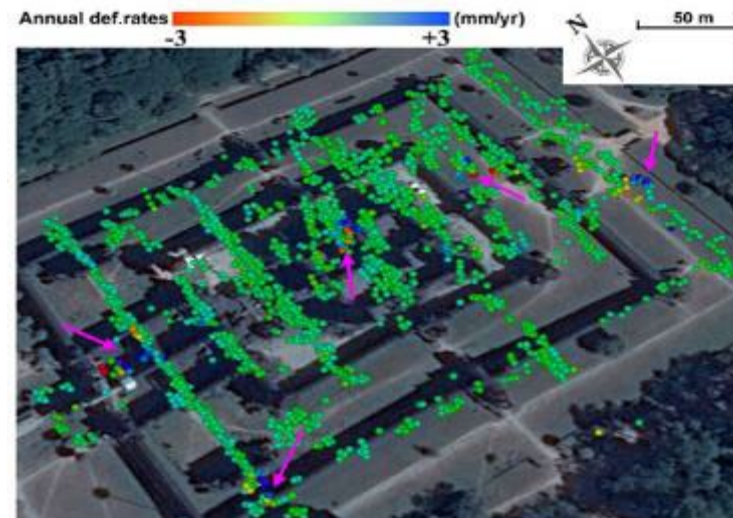
SCIENCE ADVANCES | RESEARCH ARTICLE

ENVIRONMENTAL STUDIES

Radar interferometry offers new insights into threats to the Angkor site

Fulong Chen,^{1,2*} Huadong Guo,^{1,2} Peifeng Ma,³ Hui Lin,³ Cheng Wang,^{1,2}
Natarajan Ishwaran,^{1,2} Peou Hang⁴

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China-Tunisia Joint Research on Space Archaeology and Cultural Heritage

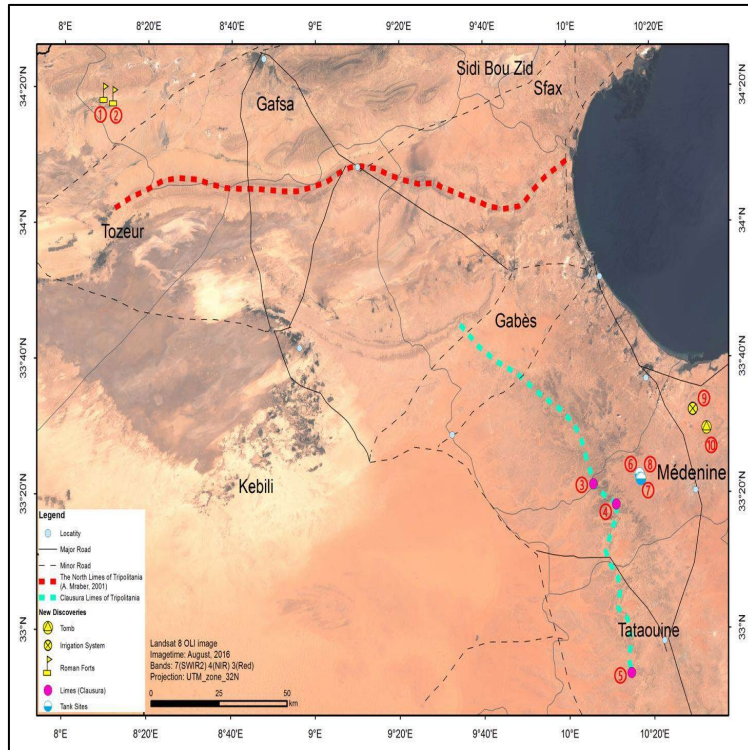


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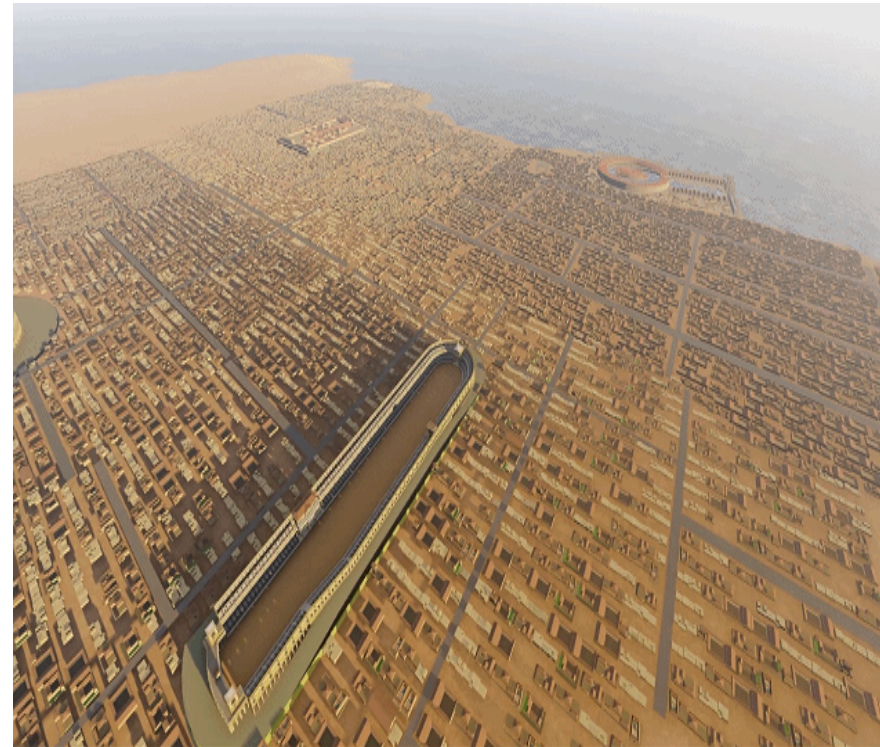


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HIST partnered with Tunisian National Heritage Institute (INP), Tunisian Arid Regions Institute (IRA), Italian National Research Council (CNR) and other partners **discovered 10 new archaeological sites in Tunisia dating to ancient Rome using Chinese space-based remote sensing technology.**



BED-based Archaeological Discoveries of Rome Limes



VR of the Carthage WHS



Fine monitoring of land cover changes in boundary areas of natural WHSs

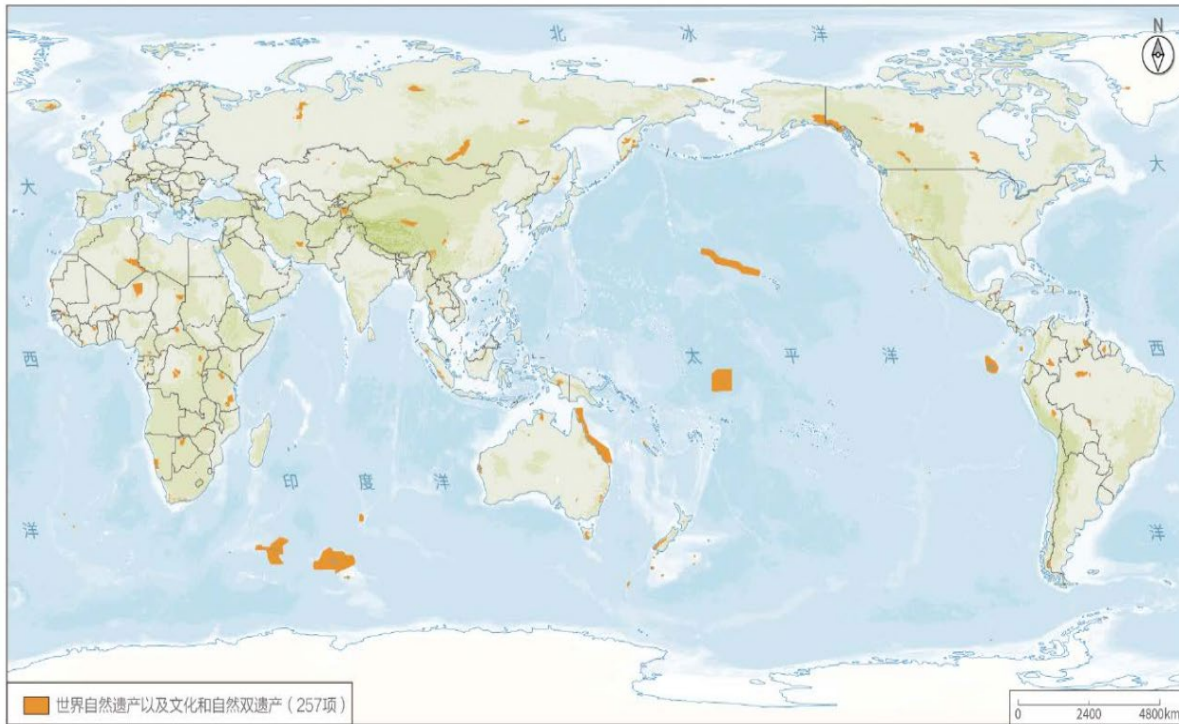


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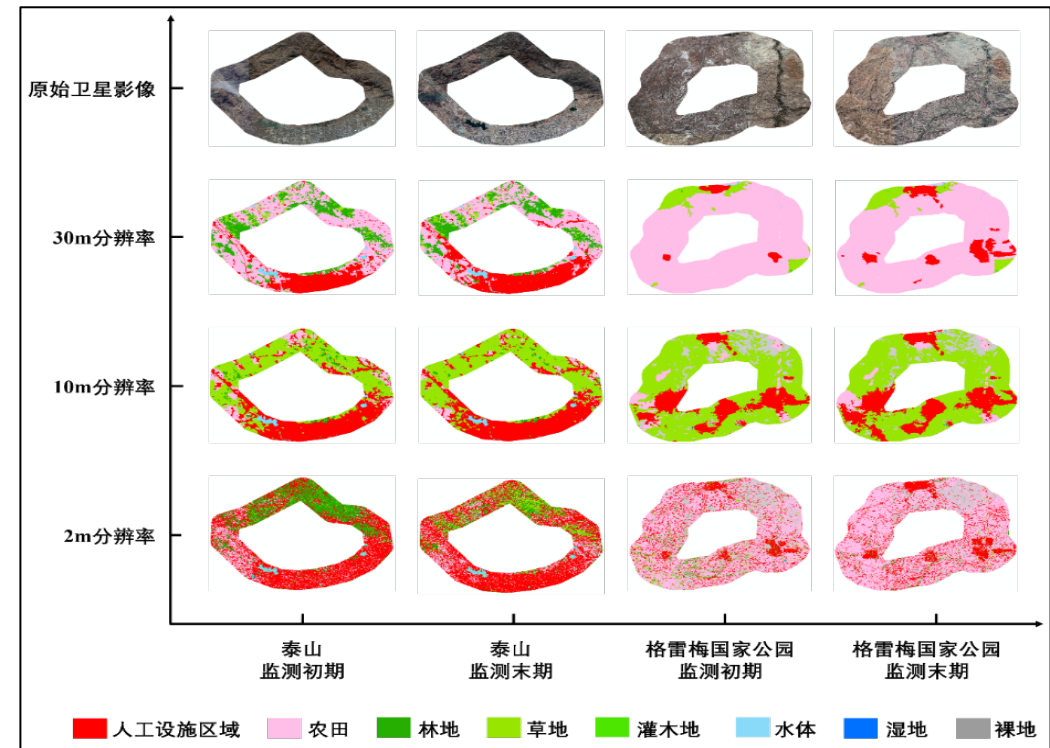


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- ❑ Build a geospatial database of the boundaries of 257 natural WHSs.
- ❑ Fine monitoring results show that **76%** have no significant changes in land cover, **8%** have weakened land cover changes, and **16%** have intensified land cover changes.



Geospatial product of the boundary of natural WHSs (2023)



Land cover change monitoring in typical natural WHSs

Global SDGs Data Products



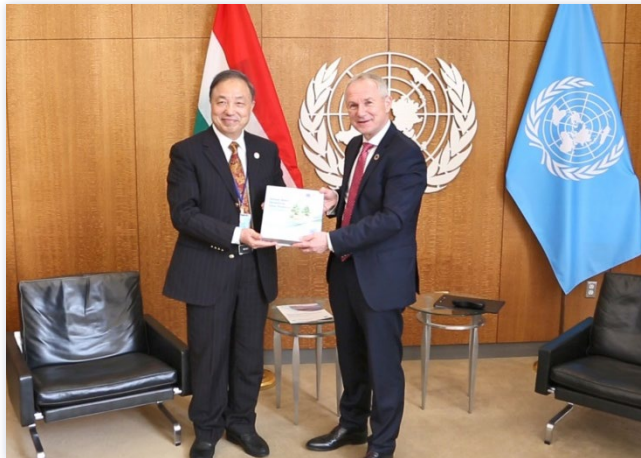
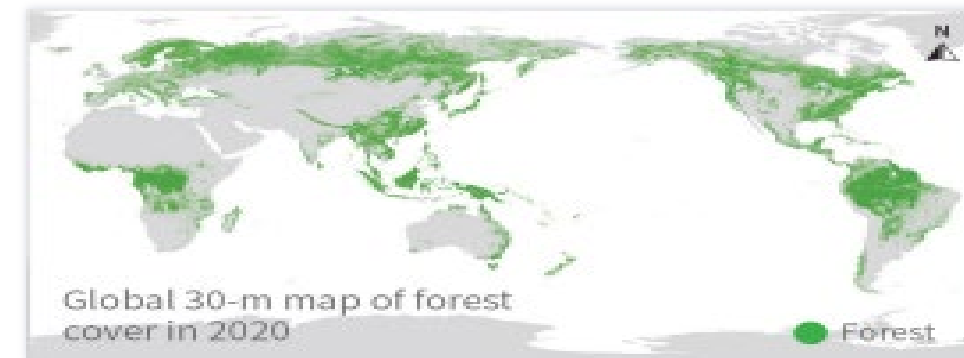
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Big Earth Data in Support of SDGs



Academic Publications

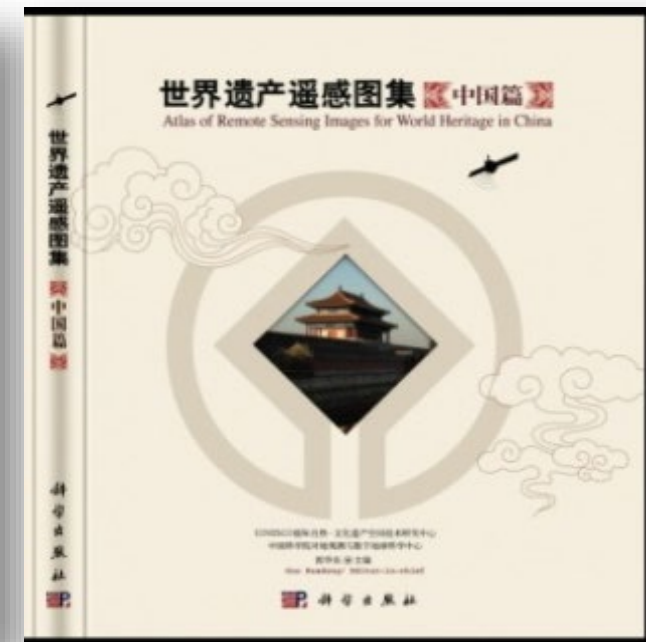
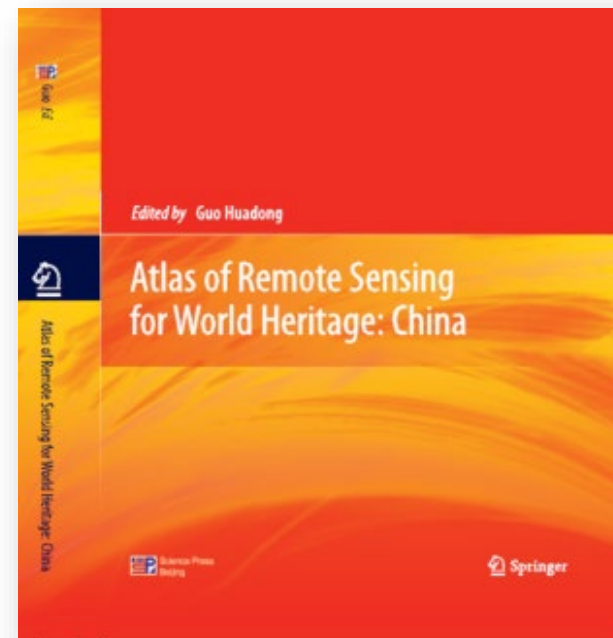
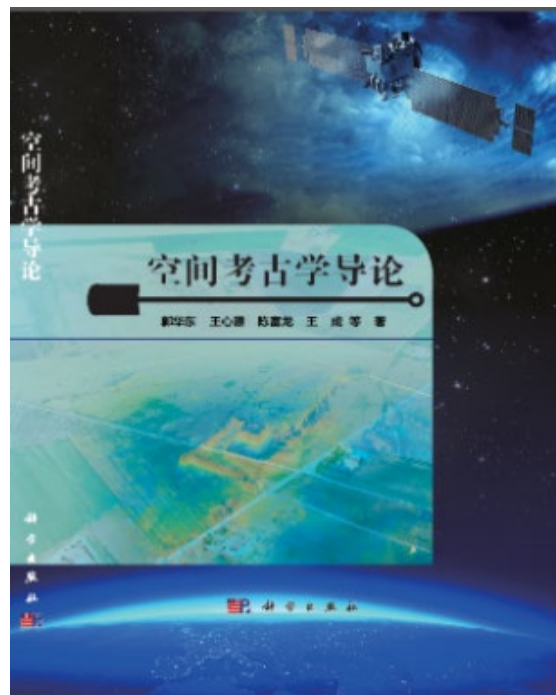
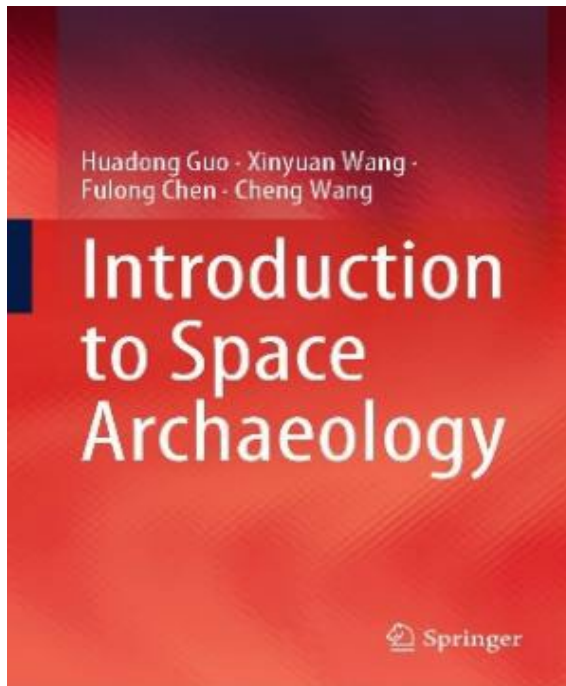


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HIST published more than 10 monographs on space technology for heritage conservation, two maps-the Environmental Context of World Cultural Heritage along Silk Road, and received honors from various organizations.



Global network



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HIST has established links with research organizations in over **50 UNESCO Member States** and more than **10 international organizations**.



Participate the TFM and GCSMS



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© **TFM**: A technology facilitation mechanism was adopted to facilitate the 2030 Agenda

© **GCSMS**: To identify the most appropriate institutional arrangements and funding mechanisms required to co-construct and deliver on the **Science Missions for Sustainability**

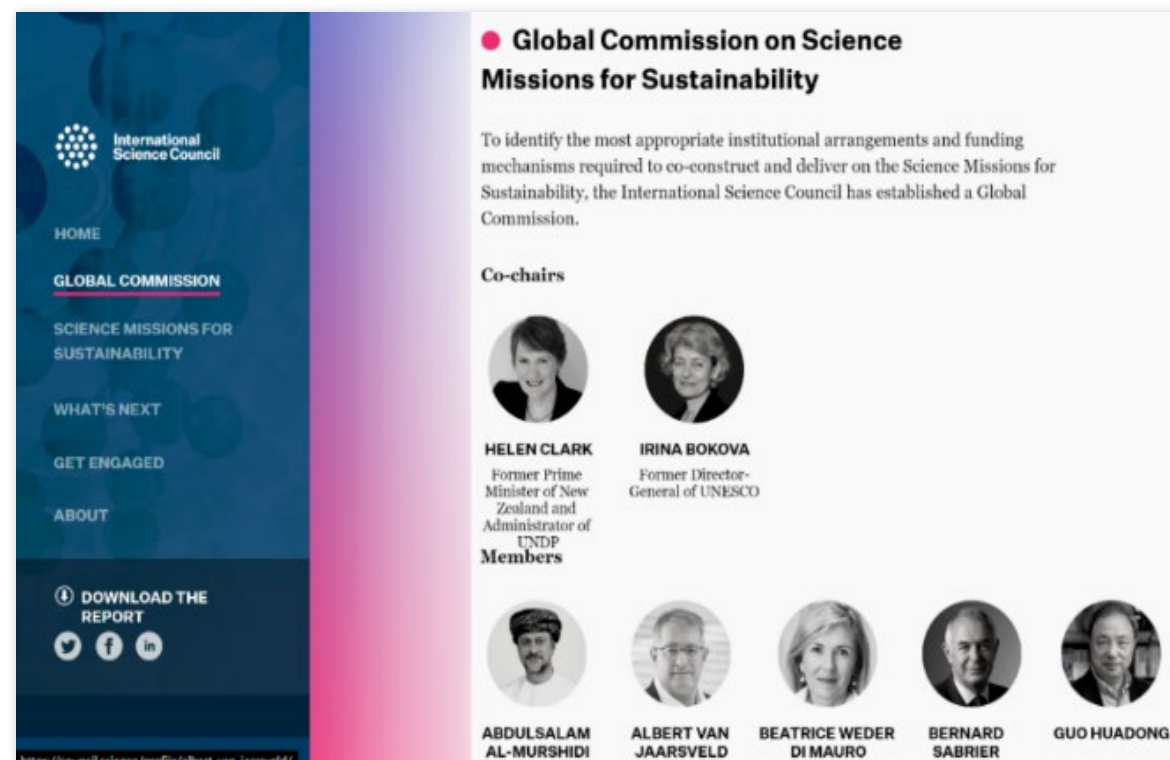
ONLINE PLATFORM AS A GATEWAY FOR
INFORMATION ON EXISTING STI INITIATIVES,
MECHANISMS AND PROGRAMS



UNITED NATIONS INTERAGENCY TASK TEAM
ON STI FOR THE SDGS (IATT), INCLUDING THE
10-MEMBER GROUP



Members of 10-Member Group (2018-2019) (extension of term until May 2021)



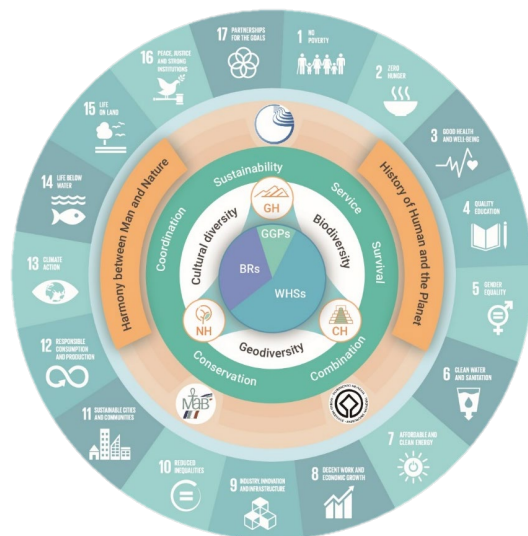
Advancing heritage-related UN SDGs through ST



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Threaten

Cultural and Natural Heritage

Indicate





Thanks

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