IAU WG Data Driven Astronomy Education and Public Outreach (DAEPO)

Annual Report for the period Jan to Dec, 2019

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In 2019, DAEPO kept acting as a forum for members to discuss the value of astronomical data in EPO and provided guidelines, curriculum, data resources, tools for data driven EPO activities. WG members keep pushing the boundary of astronomy education and public outreach. Some highlights are listed below.

"Data to Dome" and IVOA

In May, International Virtual Observatory Alliance (IVOA) Interoperability meeting was held in Paris, France. President of the International Planetarium Society (IPS), Mark SubbaRao (WG member) was invited by Chenzhou Cui (WG Chair) to attend the meeting and gave a keynote speech on the topic "Data to Dome", which helps bring the real scientific data to present in planetarium. Pushing the cooperation between IVOA and IPS was one of the most important achievements of DAEPO in 2019. Two more WG members, Shanshan Li and Giulia Iafrate also attended the meeting and gave talks about their work related to DAEPO. Talk titles are listed below.

- Mark SubbaRao, *Data to Dome*
- Chenzhou Cui, *IVOA HiPS Implementation in the Framework of Worldwide Telescope*
- Giulia Iafrate, *VR experience at INAF-OATs*
- Shanshan Li, *Training for the future, ML and AI*

"Data to Dome" keynote speech by Mark SubbaRao at IVOA Meeting

OAD Special Workshop in Xinchang, China

From Jun 20 to 21, 2019, Astronomy for Development Forum was held in Xinchang, China as part of the 2nd China - South Africa Workshop on Big Data Challenge in Astronomy. Nearly 40 representatives from China and South Africa who were engaged in astronomical education and public outreach attended the meeting. The forum was organized by DAEPO WG, IAU OAD and OAD East Asia Regional Office (EA-ROAD). Astronomy for development, data-driven astronomical education and public outreach activities and experiences in China, South Africa and even in East Asian countries were exchanged and shared. Representatives also visited the newly built Xinchang Astronomical Science and Technology Museum. The theme of the museum is "Astronomy for a Better World". It is the first astronomical museum opening to the public that focuses on the topic of "astronomy and social development". Worldwide Telescope (WWT) interactive exhibits and Virtual Observatory databases were used in the museum. Kevin Govender (WG member) from IAU Office of Astronomy for Development (OAD) and Thijs Kouwenhoven from EA-ROAD participated the forum. Chenzhou Cui and Shanshan Li hosted the forum.

OAD forum hosted by DAEPO WG

Support and participating of IAUS358

IAU Symposium Astronomy for Equity, Diversity and Inclusion (IAUS358) was held in Tokyo, Nov 12-15, 2019. As a roadmap to action within the framework of the IAU 100th Anniversary, the symposium aimed at all astronomy professionals that wish to bring inclusiveness to their research and diversity to their teams, practices, work environments and institutions.

DAEPO WG was a support IAU Scientific Body of this symposium. DAEPO member Beatriz Garcia from Instituto de Tecnologías en Detección y Astropartículas (ITeDA) was listed in the SOC. She acted as the chair of panel session Astronomy for Society Inclusion, Diversity, Equity. She led the discussion on the importance of data to the development of human society. Shanshan Li gave a talk titled "Worldwide Telescope, an Ideal Platform for Equitable Astronomy".

Support of IAUS367

IAUS 367, Education and Heritage in the Era of Big Data in Astronomy, will be held from December 9 to 14, 2020 in San Carlos de Bariloche, Argentina. Beatriz García (WG member) leads the SOC and the LOC. WG members, Chenzhou Cui and Paulo S. Bretones are SOC members. Shanshan Li is listed as one of the invited speakers. More information about the symposium is available at:

http://sion.frm.utn.edu.ar/iaus367/

Astro-data AI contest

In addition to the above highlights, two contests encouraging college students to use AI algorithm analysis astronomical data were organized by the WG together with FutureLab and KAGGLE. 517 teams, over one thousand students from several countries took part in the events.