New deleverables for ASM2 from China

Strengthening, Integrating and Sustaining Arctic Observations, Facilitating Access to Arctic Data, and Sharing Arctic Research Infrastructure

- From July to October 2017, the State Oceanic Administration completed its eighth Arctic expedition with the Xuelong icebreaker and obtained a large amount of field observation data.
- In collaboration with Finnish Meteorological Institute, Beijing Normal University has carried out arctic ice research using the ESA Sentinel-1 satellite data from FMI's Arctic satellite receiving station;
- Beijing Normal University has collaborated with the Shanghai Research Center for Micro-Satellite of the Chinese Academy of Sciences in satellite image shooting in the Arctic region using high-resolution nano-satellite.
- Beijing Normal University, Finnish Meteorological Institute and Greenland Institute of Natural Resources have worked together to push forward collaboration in taking and distributing Arctic images using Chinese remote sensing satellites in an effort to boost Arctic observations by China's satellite resources;
- Northwest Institute of Eco-Environment and Resources of the Chinese Academy of Sciences has carried out a field observation and research in Barrow, Alaska, and will conduct long-term comprehensive field observations there.
- China will launch a special Greenland remote sensing observation project to make enhanced observations of typical outlet glaciers in Greenland. Beijing Normal University, Wuhan University, the Chinese Academy of Sciences, and the China Meteorological Administration will participate in the project.
- Dr. Qiu Yubao of the Chinese Academy of Sciences and Professor Cheng Xiao of Beijing Normal University as Co-leads have actively participated in the GEOCRI coordination work under GEO, and pushed forward access to research data in cold and especially Arctic regions, attracting high attention and active participation from SAON and IEEE.

Understanding Regional and Global Dynamics of Arctic Change

- Beijing Normal University is monitoring sea ice dynamics in key areas of north, east and west shipping lanes in the Arctic to understand the impact of global warming on Arctic shipping lanes.
- After successfully completing the 2014-2015 image map of Greenland using Landsat-8, Beijing Normal University and Greenland Institute of Natural Resources are planning to make second- and third-phase mappings with Sentinel-2 and Gaofen-1 high-resolution satellite data so as to monitor the impact of global warming on Greenland glaciers.
- On February 12, 2018, the Earth Big Data Science Project, a Type A Strategic Priority Research Project of the Chinese Academy of Sciences, was officially launched. Aiming to establish an open international earth big data science center of global influence, this special project is committed to promoting and

realizing earth big data technology innovation, making major scientific discoveries and providing comprehensive one-stop macro decision support. The Arctic, the Antarctic and the Qinghai-Tibet Plateau will be focal research areas in this special project.

Assessing Vulnerability and Building Resilience of Arctic Environments and Societies

- The Chinese government has issued a white paper entitled *China's Arctic policy*. As an important stakeholder in the Arctic, China has proposed to better understand, protect and develop the Arctic and participate in Arctic governance. In order to promote interconnectivity and sustainable social and economic development in the Arctic, China has called for building a "Polar Silk Road" together. Global warming makes the opening of the Arctic region possible. Considering the vulnerability and importance of the Arctic ecosystem, a balance between development and protection should be achieved in resource development and infrastructure construction.
- *China's Arctic Policy* highlights the importance of Arctic environmental protection. For the first time, it lists “responsible tourism” as one of the ways to make rational use of Arctic.