Acta Oceanol. Sin., 2017, Vol. 36, No. 11, P. 115
DOI: 10.1007/s13131-017-1142-8
http://www.hyxb.org.cn
E-mail: hyxbe@263.net

News and Views

Chinese GF-1 and GF-3 satellites observed the giant iceberg calving off the Larsen C Ice Shelf

SHI Lijian[1, 2*], WANG Qimao[1, 2], ZENG Tao[1, 2], LIANG Chao[1, 2]

[1] National Satellite Ocean Application Service (NSOAS), State Oceanic Administration, Beijing 100081, China

[2] Key Laboratory of Space Ocean Remote Sensing and Application, State Oceanic Administration, Beijing 100081, China

Received 21 September 2017; accepted 17 October 2017

A massive iceberg, named A-68 by National Ice Center (NIC) officially, calved away from the Larsen C Ice Shelf in Antarctica on July 12, 2017. The iceberg A-68 is about 5 800 km^2, weighs more than a trillion tons and it is one of the biggest ever recorded icebergs. Chinese satellites Gaofen-1 (GF-1) and Gaofen-3 (GF-3) data was used to monitoring the propagation of the rift and the iceberg by National Satellite Ocean Application Service (NSOAS).

Figure 1a shows the GF-3 synthetic aperture radar (SAR) image with Fine Swath 2 (FSII) mode and 10 m spatial resolution over the Larsen C Ice Shelf captured on December 26, 2016 and Fig. 1b is the subset of Fig. 1a. Larsen C Ice shelf and sea ice can be distinguished obviously in SAR image. The growing rift and its endpoint can be identified clearly from Fig. 1b. Figure 2a shows the GF-1 wide field of view camera (WFV) image with 16 m spatial resolution over the iceberg acquired on July 30, 2017 and Fig. 2b shows the sub-image of Fig. 2a. The A-68 iceberg has broken into several smaller icebergs and the largest iceberg, A-68A, is located at 67°56′S and 60°55′W and measured about 151 km × 46 km. The second largest iceberg, A-68B, is located at 67°15′S and 60°49′W and measured about 12 km × 5 km. The other pieces are too small to be named by NIC. These icebergs are expected to drift along the Antarctic Peninsula in the Weddell Gyre and continue to fracture into smaller icebergs over the next several months.

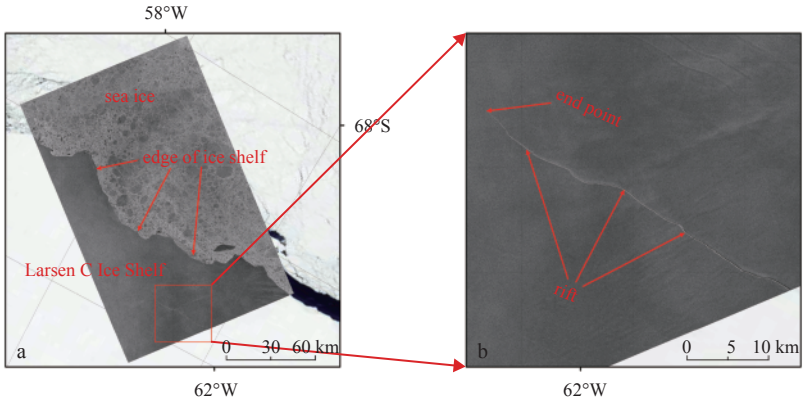

Fig. 1. GF-3 SAR image over Larsen C Ice Shelf (a) and the sub-image with rift and its end point (b).

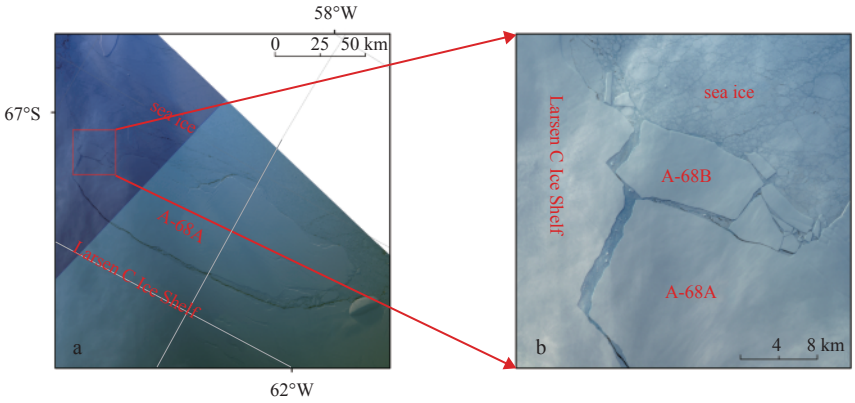

Fig. 2. GF-1 WFV images (a) and the sub-image (b) over the new icebergs.

Foundation item: The National Key Research and Development Program of China under contract Nos 2016YFC1402704 and 2016YFC1401007; the International Science and Technology Cooperation Project of China under contract No. 2011DFA22260.
*Corresponding author, E-mail: shilj@mail.nsoas.org.cn