China National Report for the AST-11

(Submitted by Jianping Xu)

The Second Institute of Oceanography, SOA

1. The Status of implementation (major achievements and problems in 2009)

1.1 Floats deployed and their performance

China Argo deployed 15 Apex profilers through 2 cruises in April and July 2009 respectively in which 6 were APF-8C and 9 APF-9A.   All the floats were deployed in the western Pacific Ocean near the Luzon Strait. Two of them are equipped with Aanderra Optode.   By the end of 2009, China has deployed 66 Argo floats, and 31 are still in normal operation.
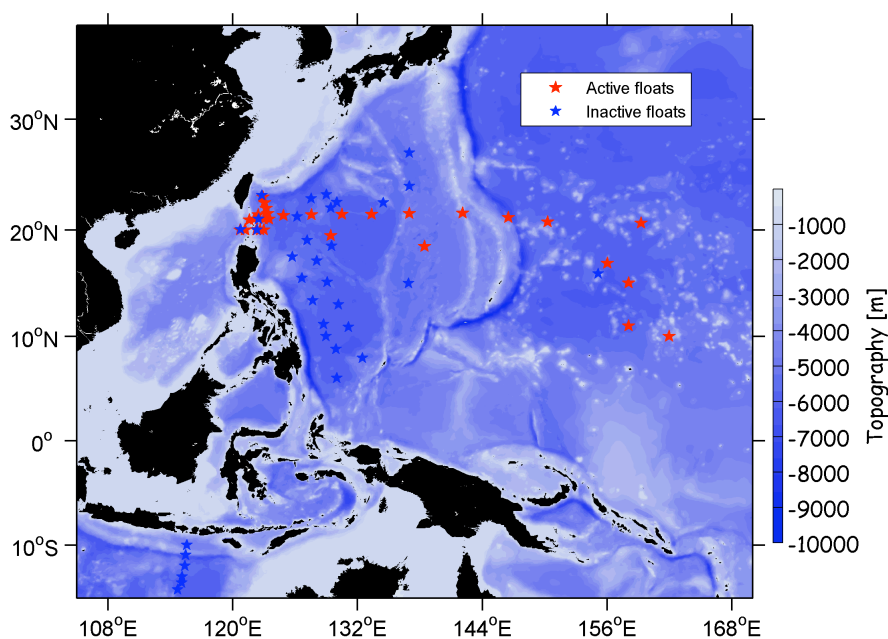

Fig.1   The launch positions of profiling floats during 2002-2009.

A float (WMO ID: 2901153) was retrieved by chance by a Philippine fisherman in the vicinity of 20.30ºN, 121.50ºE near the Batanes Island on June 29, 2009.   After replacing the damaged fitting that connects the conductivity sensor and the outside tube with a new one provided by TELEDYNE Webb Research, the float was redeployed by Philippine fishermen.

1.2 Technical problems encountered and solved

Most of the APF-8C profilers deployed in last 2 years encountered TNPD problem, but their T/S measurements didn't show significant anomalies. Due to the Druck microleak problem, we sent back 40 Apex profilers for transducer replacement after Sea-Bird announced a recall of SBE41 and SBE41 CP CTDs on Argo floats.
The technicians from the China Argo Real-time Data center installed lithium battery packs in 2 Apex floats this year, and both of them have sent back observations.

1.3 Status of contributions to Argo data management

The China Argo Real-time Data Center processed over 1,154 profiles from 38 floats this year. All the data were submitted to GDACs within 24 hours after collection through RTQC, and were inserted into GTS at CLS.

1.4 Status of delayed mode quality control process

A total number of 2,357 D-files which accounts for 68% of all the profiles have been submitted to GDACs. OW tool is used to correct salinity drift. The difficulty in DM salinity correction lies in the fact that some of our floats are drifting along the western boundary current (the Kuroshio) resulting in variable salinities. Sea Surface Pressure correction hasn't been implemented yet.

2. Present level of and future prospects for national funding for Argo

China Argo deployment is mainly funded by the Ministry of Science and Technology (MOST) and the State Oceanic Administration (SOA). About 100 Argo floats for the next 2-3 years have been funded, in which 50 floats are from the Second Institute of Oceanography, and another 50 floats (purchased at the end of 2008, and to be deployed in the first half of 2010) from the East China Sea Branch, SOA. However, the present support to float deployment is still from some research programs.

3. Summary of deployment plans

Due to Druck microleak problem, 40 floats were returned and another 10 floats' delivery was delayed in 2009, so there will be more floats to be deployed in 2010. We are designing a special cruise for Argo deployment, and more than 40 Argo floats (including 12 iridium floats) will be deployed in the Western Pacific warm pool (see Fig.1). The lack of deployment opportunities in the open oceans is one of the difficulties we encountered in recent years.
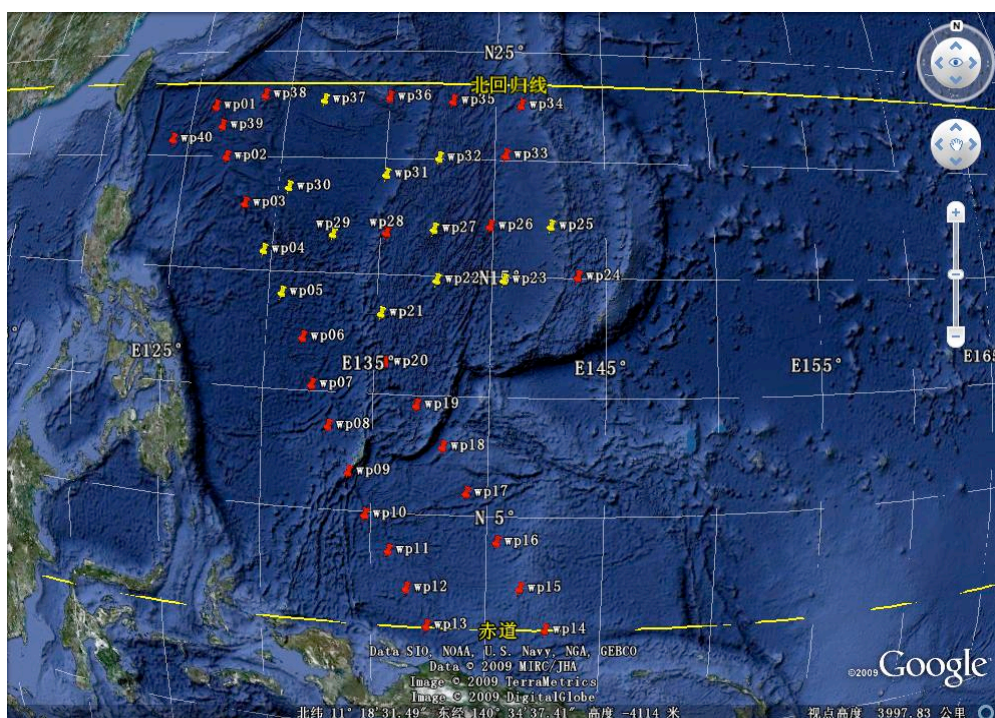

Fig.1   The designed launch positions of Argo floats.   The red pins are floats using Argos satellites, and yellow pins are iridium floats .

4. Summary of national research and operational uses of Argo data as well as contributions to Argo Regional Centers

National Marine Data & Information Service (NMDIS) has developed a 23-year regional reanalysis product of temperature, salinity and currents for the China coastal waters and their adjacent seas named the China Ocean Reanalysis (CORA) using Argo, CTD, BT, SSHA and SST data. This release of reanalysis covers a period from

January 1986 to December 2008, with a time span of 23 years and the model area is set from 99°E to 148°E and from 10°S to 52°N, which covers the Bohai Bay, the Yellow Sea, the East China Sea, the South China Sea and their adjacent waters. The products are monthly mean fields with a spatial grid resolution set to 0.5° and 25 vertical levels.

The National Marine Environmental Forecasting Center developed a monthly product which has a horizontal resolution of $2^{o}\times1^{o}$ in the tropical Pacific Ocean. Argo data are also used in their ocean data assimilation system (http://www.nmefc.gov.cn/NewsShow.aspx?FID=20081113125648859113&CID=20081222114941699974).

The China Argo Real-time Data Center continues collecting global Argo data monthly, and implementing visual QC before releasing on the ftp server. The data are available on ftp.argo.org.cn/pub/ARGO/global/.