

Float of the month

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South Africa launches its first floats!

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Obtaining South African owned Argo floats is of importance primarily because the oceans surrounding South Africa are sparse of observations and floats. Another important reason behind funding an Argo float is to enable South Africa (through the South African Environmental Observation Network, SAEON and the South African National Antarctic Program, SANAP) to be more involved in the Argo project by being recognized on the Argo website, increasing South Africa's scientific capabilities internationally.

The first float, WMO number 1901469, was launched at 50.00S, 1.80E on 10 December 2009. The second float, WMO number 1901470, was launched at 40.00S, 10.00E on 15 December 2009.

The data collected by these Argo floats will feed into a network of floats around the world and add to the data being used to research the world's ocean systems. Dr Sebastian Swart is one of the South African scientists who used Argo data in his PhD research. Dr Swart's focus was on the Southern Ocean heat and salt fluxes, an area which has many unanswered questions. With the help of Argo data he was able to add new understanding to this topic. South African and international research being conducted south of South Africa and in the Southern Ocean region will benefit from the deployment of these floats as they provide more observations in a data poor area.

Argo floats will assist in the development of the understanding of the importance of long term monitoring of the oceans, specifically with the public and learners. Argo floats generate excitement and curiosity and thus aid bringing the public and learners closer to scientific research. Postgraduate students were involved in the deployment of the floats in the December 2009 cruise from Cape Town to Antarctica. Furthermore, the involvement of South Africa in the Argo programme also brings exposure and recognition for our local scientists to the international scientific community.

What happened to the two South African Argo floats deployed over December 2009?

This question is best answered by educators and learners of six schools forming the cluster of schools that SAEON Science Education is seeking to support. Learners and educators from 5 previously disadvantaged coastal community schools download and interact with some of the amazing temperature and salinity profiles of these floats. Additional activities for educational use written by the SEARED program have also been of great value to this program.

It has always been a challenge to integrate ocean sciences into schools sciences to encourage science-related skills. The Argo programme provides us with an opportunity to support school sciences. On December 4 2009, a group of dedicated educators convened on South Africa's historic Robben Island to investigate ways to elevate school sciences. We

were making history as the Robben Island Educator Workshop was the first of its kind in South Africa.

Dr. Isabelle Ansorge supported the workshop with content. An expert on the Southern Ocean (where the 2 floats were deployed), and physical oceanographer from the University of Cape Town, spent the night with the educators providing insight on floats, climate change and the role of oceans.

After the content had been presented (which included what Argo floats are, how they work and their importance in ocean sciences), educators discussed how the data could be used at schools. In almost all learning areas and subjects, Argo data activities would encourage outcomes as skills needed by the end users - the learners.

Boosting science skills

Educators and learners are able to download data and monitor ocean behaviour from their schoolyard. For example, in maths data handling there is an assessment standard that is enforced on most of the grade levels. Working with graphs that determine temperature against depth and salinity, interpreting the data and drawing conclusions from data sets would boost a number of science skills. And what makes it even more interesting, is that all of this works in real time.

During the lively discussions that followed the workshop, educator Naomi Julies from Hout Bay commented: "Getting learners to access data would not only deal with the fact that some learners are still intimidated by computers, but it will also leave them with a skill."

Nompucuko Poswa, a life science educator from Usasazo Secondary School said: "Working with different ecosystems as a requirement in grade 10 life sciences would come in handy now that the difficulty of working with ocean ecosystems would be addressed by the Argo programme."

Since purchasing and deploying the floats, South Africa has been welcomed into the Argo community, invited to sit on the Argo Steering Team and a representative from the South African Weather Services attended the Argo Steering Team meeting.



Photos above and to the right: preparation and deployment of a PROVOR float by South African scientists from the SA Agulhas.

Photos by Andre Harms

Photo below: SAEON photo of a recent oceanographic cruise with learners who are involved in the Argo program.

