**Report of the Astrolab project for the period July 2015 – June 2016**

**Michèle Gerbaldi and Jean-Pierre De Greve**

1. The 5th EAAS workshop in Addis Ababa, Ethiopia, 29 June – 1 July 2015:

P. Simpemba, Copperbelt University, Zambia, gave a presentation on ‘Experiences of the Starlight in the university lab’. The planned training sessions of M. Gerbaldi on ‘Planning photographic observations and data reduction’, met several difficulties in their execution. An extensive report is given in Annex 1.

1. The licensed software for data reduction, AstroArt5, was replaced by open source software IRIS, with extended documentation.
2. Distant training modules for Astrolab, with answers, were developed to train three abilities:
3. To select an eclipsing binary system to observe
4. To set up the observing time and to acquire the images
5. To reduce the data

(see Annex 2)

1. Anambra State University in Uli, Nigeria,
2. Joseph I. Oneghbu performed observations of Cepheid variables.
3. Progress report from Anambra.

Chika C. Onuchukwu C. C. produced a preliminary light-curve for the variable star, AY CAM, RA - 08 25 51.7, DEC - +77 13 07.0. Observationss were done with 60 sec and 120 sec exposure times.The light curve plot showed two minima separated by a period of 2.8 days, close to the actual period of 2.74 days.

The project was meant to stimulate the interest of the students in Astronomy. This was certainly achieved as two out of the eleven 300 level students indicated interest in majoring in astronomy. However, for the present twelve 400 level students, none preferred astronomy. Chika still has a 400 level student but he is struggling to do observations on Cepheid variable.  The major set back is sustaining the student’s interest.

In general, other benefits for the students include

* Learning how to make a presentation: the students were asked to write a short individual report and to present it to an audience in the department.
* Various academic uses of the internet.

Chika also reports that they prefer using the ASTROART software rather than IRIS.  Even with the manual, IRIS seems not easy to follow, he managed to put one student through it (but the student is not finding his feet). Hence, they will be using Astroart software for now.

1. Mbarara University of Science and technology, Rwanda.

Guided by M. Gerbaldi, Jean Damascene Mbarubucyeye did extensive observations of the short period variable WW Cnc. Four comparison stars were used. Part of the report has been written out. In that context a module on error estimation has been produced.

In Annex 3 , one of the Fig obtained for the differential photometry is given as well as the error estimation module. This work has been very well conducted by Jean Damascene Mbarubucyeye.

1. A grant from the OAD was obtained to organize a training workshop at the planned 2016 EAAS Conference. However, the EAAS was not successful in getting the necessary funding for its organization. We requested the OAD to use the grant for a training at a different location. An opportunity is coming up with a planned astronomy regional school at Copperbelt university, Zambia, in the month of November. The organizers will sent an invitation to Michele Gerbaldi to come and to be one of the lead lecturers. Hence, that offers a great opportunity to organize an Astrolab training for a varied audience.
2. Copperbelt University, Zambia:

Prospery Simpemba reports reasonable progress for Astrolab at the Copperbelt University. A total of 28 students took the astronomy course and used Astrolabb for their practical sessions. The time was not enough though for students to make complete reports of their work, as a result of repeated and prolonged closures of the university in the past period. However, the students tried to explore a series of variable binaries and checked for visibility at planned observation times for the New Mexico telescope. They noted that most of the binaries stars were actually at low altitudes during the period May to June when they were to schedule the observations. They did tutorials with the IRIS analysis software using materials sent to them by Michele Gerbaldi.

It is anticipated that there will be one final year student who will carry out a research project using Astrolab. This will be a more detailed research than he did in the second year. It is also hoped that the number of students coming to the second year in August will be around 20 to 30, and all of them will do projects with Astrolab.

The iTelescope account will be expiring and the Copperbelt group will need to get new credits for the observations. There is a possibility that the university can buy some observation credits on their education account. The group has a new member of staff who will assist Prospery Simpemba to perform astronomy projects.

Finally, a regional astronomy school is planned at Copperbelt University in November 2016.

1. Instruction manuals, as well as a set of distant training manuals were sent to Ligia Areas [ligiareas@yahoo.com](mailto:ligiareas@yahoo.com).

Ligia Areas was one of the participants of the ISYA-2015 taking place at Tegucigalpa (Honduras) . Ligia Areas is a teaching-assistant at the UNAM Managua (National university). A full day of training at UNAM Managua was given by Michele Gerbaldi on December, 14th, 2016, after the ISYA.

1. Technical University, Kenya:

Paul Baki was contacted and showed great interest. He indicated Adero Constant, Department of Physics and Space Sciences, [aderoconstant@gmail.com](mailto:aderoconstant@gmail.com) , as responsible for Astrolab.

The various manuals and the distant training modules were sent. Further, closer, guidance will start at the end of August.

1. Tanzania:

Dr. Noorali Jiwaji, from the The Open University of Tanzania, Faculty of Science Technology and Environmental Studies, Lecturer in Physics, at Dar Es Salaam showed interest to us iTelescope for eclipsing binaries. IRIS software was obtained and training modules were sent.