

Global Astronomy Survey : Rwanda

First Submission: Pheneas Nkundabakura [see human resources section] 30 March 2008

SPoC Approved: Yes

1. Professional (Research) Astronomy:

(i) Number of universities offering Astronomy (and their names)

Some statistics in Education sector in Rwanda :

Primary School

The teaching language for Primary years 1 to 3 is Kinyarwanda. In years 4 to 6 this becomes English or French.

- 2172 Schools
 - 1,636,563 Pupils
 - 26,024 Teachers
- (Statistics of 2002/03)

Secondary Schools

The teaching language is English or French.

- 405 Schools
 - 179,153 Pupils
 - 6,329 Teachers
- (Statistics 2005/06)

Tertiary education

There are 20 high education institutes (6 Public / 14 Private). The first university in Rwanda (National University of Rwanda - NUR) was opened by the government in 1963. The number of students enrolled at high education institution are about 26,796 [2006](39% of students are female).

About astronomy:

- Before 1994, "Elements of Astronomy" and "Special relativity" were taught the National University of Rwanda.
- These days only "Special relativity" is part of the physics curriculum at Universities or Institutes who have a physics department.

(ii) Number of universities offering Physics (and their names)

1. National University of Rwanda [NUR](www.nur.ac.rw)
2. Kigali Institute of Science and Technology[KIST](www.kist.ac.rw)
3. Kigali Institute of Education [KIE](www.kie.ac.rw)
4. Adventist University of Central Africa [UAAC]
5. Higher Agriculture and Veterinary Institute [ISAE](www.isae.ac.rw)
6. Kibungo University of Agriculture, Technology and Education [UNATEK],
7. Institute of Higher learning of Ruhengeri [INES] (www.ines.ac.rw)

(iii) Number of academics who have been trained in Astronomy (ideally with their names and levels of qualification)

- 1) Pheneas Nkundabakura, PhD student, Astrophysics, University of the Free State.
(email: nkundapheneas@yahoo.fr)
- 2) Jean Uwamahoro, MSc student, Space physics, University of Rhodes .
(email: uwamahorojean@yahoo.fr)
- 3) Jean Claude Kubwimana, Msc Student, Cosmology, University of Cape Town
(email: johnclaukub@yahoo.fr)
- 4)Francois Nsengiyumva , Honours student, Astrophysics, University of Cape Town
(email: nsengaf2000@yahoo.fr)

(iv) Number of astronomical facilities (observatories, telescopes, etc) and as much detail about each as possible (websites/contact details)

No Observatory , No planetarium, No Science Center, No telescope.

(v) Self evaluation (according to the different phases above, how would you rate your country in terms of Professional Astronomy?

“Phase 3”

Although Rwanda doesn't have a strong astronomy community, it is currently showing strong potential in the form of astronomy/astrophysics and related sciences people who are in training and who are willing to drive the development of astronomy in the future in the country.

2. Public Understanding of Astronomy:

(i) What governmental astronomy/science outreach programmes for the public take place (co-ordinated either by government departments or national facilities)

None

(ii) What non-governmental astronomy/science outreach programmes for the public take place (NGO activities or international programmes that your country is involved in)

None

(iii) Comment on the presence of astronomy in the media (TV, radio, newspapers). Is it very prominent? Are there specific programmes on astronomy? Is the media generally willing to publish news on astronomy?

- No specific programs for astronomy outreach on TV or radio in Rwanda.
- Specific events like eclipses can be highlighted by the National Radio when journalists are informed in advance.

(iv) Comment on the presence of astronomy/science in the general culture of the people. Are there any specific challenges or setbacks? Is astronomy a welcome subject of conversation?

-Astronomy is not often discussed as it is at the village. However people are very interested when listening to an astronomer.

(v) Self evaluation (according to the different phases above, how would you rate your country in terms of Public Understanding of Astronomy?

“Phase 4”

3. Astronomy in Schools:

(i) What governmental astronomy/science education and outreach programmes for schools take place (co-ordinated either by government departments or national facilities)

None

(ii) What non-governmental astronomy/science education and outreach programmes for schools take place (NGO activities or international programmes that your country is involved in)

Only last year did we start to organise talks on Astronomy at some schools and at higher education institutions. The last one was organised at the Institute of Higher learning of Ruhengeri on 5 January 2008. This programme will continue for IYA 2009.

(iii) Comment on the presence of astronomy in the school curriculum. Is it part of the school curriculum? Is it very prominent? What age groups?

1) The earth as part of the solar system is taught in Geography in relation to earth's climate in primary and secondary schools.

2) An introduction to Astronomy is taught as a chapter in the first year course of Physical Geography at Kigali institute of Education.

There is a need to introduce an astronomy curriculum in secondary schools and at the university level in the future.

(iv) Comment on the status of astronomy/science in schools. Are there any specific challenges or setbacks? Sufficient number of students studying maths and science? General interest in maths/science/astronomy in schools?

There is a sufficient number of students doing Sciences and Maths at all levels of Education. For the implementation of Astronomy in the education system we need teachers well trained in astronomy and reasonable astronomy infrastructure (telescopes, planetariums, science centers...)

(v) Self evaluation (according to the different phases above, how would you rate your country in terms of Astronomy in Schools?

“Phase 3”

4. Any other general comments or information that you feel would be useful for this survey?

See Website: <http://Rwanda.lya2009.googlepages.com/home>

Taking the current state of astronomy in RWANDA into account, the International Astronomical Union (IAU) could/ should help over the next 10 years in terms of developing astronomy the following:

A. Vision .

Developing astronomy in Rwanda will pass through:

1. Building the astronomy community in the country (build and support human resources).
2. Building the astronomical infrastructures

A. Missions

This vision will be realized through the two following missions:

- i. Teaching astronomy and show its interest in schools and Universities
- ii. Awareness and increase of the knowledge of astronomy in the public

B. Objectives:

The teaching astronomy in schools and universities will be done through:

- i. Educational Resource Development (including astronomy Curricula) and Distribution
- ii. Promotion and encouragement of post-graduate studies
- iii. Equipping Universities and schools with necessary infrastructure and resources

The awareness and increase of the knowledge of astronomy in the public will be done through:

- i. Public Resource Development and Distribution
- ii. Public programmes and astronomical events

C. ACTIONS:

Vision	Objectives	Actions (in which the IAC can help)	period	Priority
1. Teaching astronomy	Educational Resource Development	-Distribution of astronomy resources for education and learning (books, posters, movies, DVDs, ...)	2009	1
		-Develop astronomy curricula at all level of education.	2011	2
		-Open a department of Astronomy at least in one of the high institutions of learning	2012	2
		-Should a big optical telescope for research	2013	2
	Promotion and encouragement of post-graduate studies in astronomy and related subjects.	Post-graduate courses in astronomy and related subjects.	At least 2 hours per year	1
	Equipping universities and schools with necessary infrastructure	-Each university or tertiary institution of high education (20 high institutions : 6 public and 14 private) will be equipped with a small (telescope-like) telescope. Primary (2172 primary schools) and secondary (204 secondary schools) schools will receive very small telescopes like: http://www.bvsc.com/	2009	1

2. Awareness and increase of knowledge of astronomy in the public	Public Resource Development and Distribution	Construct and equip a planetarium (planetarium) with a science center in the capital city of Rwanda.	2009	1
	Public programmes and events	Small Telescopes which can be used for watching night/day skies, eclipses ... for the public.	2009	1