



Developing Astronomy Globally

Global Cornerstone Project

Brief Description

A cornerstone project that responds to the acknowledgement that astronomy needs to be developed, both professionally (universities, research), publicly (communication, media, amateur groups) and educationally (schools) in various countries that do not have strong astronomy communities. The implementation would be focussed on training and development at each of the levels mentioned above. This cornerstone would focus on developing countries and parts of developed countries which are lagging. It will include such activities as research exchange programmes, young astronomer development programmes, astronomy communication training including workshops and resource sharing, infrastructure development where possible (good amateur telescopes in developing countries), online collaborations/courses linking both underhand well-resourced countries. To ensure maximum impact, strong partnerships and collaborations are necessary and efforts must be built upon the existing work of IAU Commission 46 and other such development efforts.

Task group

Kevin Govender (South Africa)
Norio Kaifu (Japan)
Filipe Pires (Portugal)
Barbara Villone (Italy)

kg@sao.ac.za
Kaifunorio@aol.com
Pires@astro.up.pt
villone@to.infn.it

Implementation

Implementation of this cornerstone will rely on strong collaborations with each of the other cornerstone projects as well as a working relationship with the IAU Commission 46 and other similar bodies with common objective.

Three areas of focus need to be considered in terms of development:

- (i) Professional development: This will target universities and existing research facilities in order to build professional astronomy research capacity within the country.
- (ii) Development of public understanding of astronomy: This will target the general public and take the form of activities and events that stimulate an interest in astronomy. This focus area includes the development of an amateur astronomy community.
- (iii) School-level education development: This will target schools and youth. It will focus on taking astronomy to the classroom (and

beyond) and stimulating an interest in Mathematics and Science amongst young people.

These focus areas will be implemented differently according to the status of astronomy in each area within each targeted country. In order to optimise the process, target countries will be categorised according to four status levels (a. well established; b. in need of support; c. nonexistent with strong potential; d. non-existent with limited potential) within each respective focus area:

Professional Development:

- Well established (existing research community with regular publications)
- In need of support (available champions in astronomy but limited publications and clear need for support)
- Non existent with strong potential (no champions or astronomy community but potential and infrastructure exists within university physics departments or other research institutions to introduce astronomy)
- Non existent with limited potential (no astronomy and no infrastructure to work with)

Development of public understanding of astronomy:

- Well established (astronomy promoted amongst the public; co-ordinating infrastructure as well as amateur astronomy organisations present)
- In need of support (available champions but limited public engagement and clear need for support)
- Non existent with strong potential (no champion or public awareness of astronomy but potential and infrastructure exists within other areas such as science promotion structures)
- Non existent with limited potential (no public awareness and no infrastructure to work with)

School-level education development:

- Well established (astronomy promoted amongst schools; astronomy already part of the school curriculum)
- In need of support (available champions but limited promotion in schools and little to no astronomy in school curriculum; where astronomy is included in curriculum, support is still needed in teaching it)
- Non existent with strong potential (no champion or promotion of astronomy to schools but potential and infrastructure exists within government education departments and education related institutions)
- Non existent with limited potential (no promotion to schools and no infrastructure to work with)

Within each of these areas actions will be taken according to the status of that particular country. Although it must be acknowledged that every country will have to be dealt with differently depending on various other and sometimes unforeseen circumstances (e.g. language barriers, cultural beliefs, history, political status, conflict, economy, etc) general actions would usually include the following (per status):

- Well established:
 - a. Link with global IYA community and obtain participation in other cornerstone projects as well as general IYA to enhance astronomy activity during 2009
 - b. Investigate possibility of the country becoming a regional node to support neighbouring countries

- . In need of support:
 - a. Establish strong links with champions and explore ways to improve current status
 - b. Link with global community around specific projects (which would arise from the first point)
 - c. Explore regional strengths in neighbouring countries

- Non existent with strong potential:
 - a. Find champions within existing infrastructures and treat as above.

- Non existent with limited potential:
 - a. Discuss potentials within the country with the government
 - b. Include regional strengths in discussions – explore the possibility of neighbouring countries driving the process.

Summary of specific actions depending on status:

	(a) Well established	(b) In need of Support	c) Non-existent with strong potential	d) Non-existent with limited potential
(i) Professional	- regional hub	-Link with IAU network -Regional student/researcher exchanges -scholarship programmes	-student training overseas (with clause to return) - C46 TAD/ISYA possibilities	- high level discussions with government - explore potential in neighbouring countries
(ii) Public	- regional hub	- provide training for champions	-training workshop on	- high level discussions

	- link to IYA	- feed public info and stories to champion - train facilitators to run public events	“communicating astronomy to public” -link with regional hub -provide resources for public outreach	with government -explore potential in neighbouring countries
(iii) Schools	- regional hub - link to IYA	- provide training for champions -provide education resources	-training workshop on “astronomy in the classroom” -link with regional hub -provide resources -explore developing astronomy in the school curriculum (work with Galileo Teacher cornerstone)	- high level discussions with government - explore potential in neighbouring countries

Deliverables

1. Recognisable improvement of status within at least one focus area in each target country.
2. Strong international support networks and collaborative projects that last beyond 2009.
3. Regional nodes in developing areas to support neighbouring countries.

Timetable

March 2008	Survey of target countries and establishment of respective status in each focus area
July 2008	Appointment of FTE for co-ordination Implementation plan for each target country based on status and survey results
September 2008	Finalisation of generic “Guidelines for development of astronomy” and “Guidelines for participation in IYA2009”
October – December 2008	Regional workshops and rollout of “Guidelines for developing astronomy” as well as “Guidelines for

	participation in IYA2009”
2009	Implementation of specific activities for IYA in each country (with support as necessary) as well as regional development workshops coupled to IYA events.
January to June 2010	Follow up and consolidation of development projects and survey of progress
October 2010	Report back to CAP2010 with representation from all or most target countries

Budget Estimate

Developing Astronomy Globally

Coordinator, 1 FTE, 24 month	40000
Subsistence and Travel (100 international trips @ 2kEuro each)	200000
Resources (25 countries @ 25kEuro each)	625000
Regional Workshops (5 workshops @ 100kEuro each)	500000
Scholarship programme for capacity development (3 per country in each of 25 countries @ 10kEuro each)	750000
SUM	2.115.000