Astrophysics in Burkina Faso

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• History of the ASTRO project in Burkina Faso
• Move of the Marly telescope from Chile to Burkina Faso (research telescope)
• What about the Asteroid Grand Challenge
History of the project

• Summer 2006: Demand from the Minister of Higher Education and Research to come in Burkina Faso to start an Astrophysics department
• Summer 2007: An Astrophysics program is created within the Physics department (LPCE) at the Université de Ouagadougou
• The teaching Observatory (ODAUO) is inaugurated on 26 November 2007
Connaissant votre aptitude à fédérer les énergies, j’apprécierais particulièrement que vous puissiez mobiliser encore plus de partenaires, notamment les amis du Burkina, pour consolider ce qui est entrepris.

En vous assurant de mon soutien, ainsi que de celui du Gouvernement burkinabè pour toute suite que vous voudriez donner à vos actions, je vous réitère mes encouragements et vous prie d’agréer, Professeur, l’expression de ma parfaite considération.

Bien cordialement,

Blaise COMPAORE
Teaching Observatory (ODAUO)
Teaching Observatory (ODAUO)

Built in 5 weeks
Teaching Observatory (ODAUO)
Teaching Observatory (ODAUO)

Inauguration 26 November 2007

http://www.astro.univ-ouaga.org/
Teaching Observatory (ODAUO)

3K x 2K – 9 μm pixels + tip-tilt AO + UBVRI – RRGBL - Hα OIII IF
Teaching Program

- Two courses at the undergraduate level:
  - Introduction to solar system Astrophysics and to stellar Astrophysics
  - Introduction to Galactic and Extragalactic Astrophysics and to Cosmology
- 2007: > 100 students
- 2009: > 110 students
- 2010: > 120 students
- 2011: ~100 students
Teaching Program
Teaching Program
Teaching Program

- The formation in Astronomy/Astrophysics is really given at the Msc level (20-40 students):
  - Galactic Astronomy* (end 2011)
  - Extragalactic Astronomy* (jan-mar 2009)
  - Cosmology* (jan 2011)
  - Interstellar Matter
  - Stellar Evolution* (mar-apr 2010)
  - Stellar Atmospheres* (mar-apr 2010)
  - Instrumentation
Teaching Program

Stellar Atmospheres - Msc at UdeO by Carmelle Robert, UL

Stellar Evolution - Msc at UdeO by Laurent Drissen, UL

March 2010
History of the Marly telescope

- Installed in 1975 on mont Chiran, in France, *site testing* for the future CFHT
- Moved at the OHP in 1987
- Put in crates in 1995 and sent to Chile for the EROS2 project (wide corrected field: 3°)

Marly telescope in Chile with the EROS II instrumentation
Relocation of the Marly telescope

Dismantling of the telescope at the La Silla Observatory October 2009
Marly Project

- Decision taken by the Science Council of the OAMP: 2008/12/02
- Move of the telescope October 2009: 30K$ (UdeM)
- Arrival in Ouagadougou: January 2010
- Instrumentation (LAE & LAM: FP + WF camera)
- Electrification: solar energy - provided by Taiwan (November 2013) note: 1st telescope powered by a star!
Choice of site
Choice of site
Choice of site

Mount Djaogari (459 m) (coordinates: 13° 46’ 16.98” N / 0° 08’ 00” W)
~25 km south of Dori & ~250 km north-east of Ouagadougou (~2h30)
Drawings of the Observatory

WIYN Observatory
KPNO, Az, USA
Choice of site

1er sommet

Site de la résidence

Site du télescope

Village de Djouga

École de Djouga

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Start of the construction

Road to the summit of mount Djaogari

Summit ready for the construction – Nov 2013

Start of the construction – Feb 2014
Formation of HQP

- 1 student (Zacharie Kam Sié) will be finishing his thesis in Astronomy end of this month (Université de Montréal) and was already recruited by the Université de Ouagadougou last November.

- 1 engineer (Issa Ouattara) is doing his PhD in Astronomical Instrumentation in Marseille to support the instrumentation on the new telescope and should be finishing by the end of this year.

- 1 student (Issouf Kafando) did a Msc at the Université de Moncton and is now doing his PhD at Université Laval, in Québec (end in 2015).
Formation of HQP

- 2 students (Amidou Sorgho & Blaise Tapsoba) came in SA through the NASSP program at the Honours level. They are now doing their Msc and should start their PhD at the end of 2014
- 1 student (Marie Korsaga) is starting her PhD in co-supervision between UCT and Marseille (LAM)

- In ~3 years time, there will be 5 PhD in Astronomy and 1 PhD in Engineering that will form the core of the Astronomy group at the Université de Ouagadougou
Research projects

Spiral structure of the Milky Way from the distribution of HII regions

Fabry-Perot based project
Research projects

$\text{H\alpha}$ Survey of the Milky Way from the Southern Hemisphere – La Silla, Chili

Project in BF: $\text{H\alpha}$ Survey of the Milky Way from the Northern Hemisphere + $13^\circ$
Research projects

Diffuse Hα at large R

Mscs: I. Dicaire & J. Hlavacek-Larrondo
• Surely room for more research projects on the 1m telescope, such as those discussed during this workshop.

Equipment

• Most NEO survey work is done by 1-m to 2-m class wide-field telescopes

Christensen’s talk, yesterday
Le Burkina Faso; l'observatoire au Mont Djaougari

Coordonnées du site:
00° 08' 22.61" W
13° 46' 32.51" N
**This is a world-wide effort**

- *Target Asteroids!* has attracted over 201 participants from 33 countries covering every continent except Antarctica

- But biases are obvious

May be a nice project for the OAD
Small telescopes – Citizen science