Astronomy Development in the Philippines
Opportunities and Challenges

M.B.N. (Thijs) Kouwenhoven 柯文采

1 Kavli Institute for Astronomy and Astrophysics, Peking University, China
2 International Astronomical Union PPGF Fellow
3 Rizal Technological University, Philippines

Rogel Mari Sese - University of the Philippines Los Baños
Eliseo Lucero-Prisno III - Cardiff University, UK

Communicating Astronomy with the Public, October 2011, Beijing
北京大学 Peking University
北京大学 - 科维理天文与天体物理研究所
Kavli Institute for Astronomy and Astrophysics, Peking University
Outline

- Introduction
- The Balud Project - astronomy for young children
- The status of astronomy in the Philippines
- Challenges, opportunities, and recommendations
The Philippines

- Population: ~$10^8$ (10% living abroad)
- GDP/capita: ~$4000$ US$/year
- Official languages: English, Tagalog
- Religions: Catholicism (98%), Islam
- Weather: Tropical maritime climate
Why astronomy in a developing country?

A hand full of professional astronomers can:

- Stimulate critical thinking among millions; it addresses the “Big Questions”
- Stimulate thousands of young minds to pursue careers in science, technology and engineering

Everyone can observe celestial events

(compare with: quantum optics, solid state physics, nuclear physics)
More funding for astronomy research?
The Balud Project

- Mission: to improve the living conditions in the rural parts of developing countries
- Mostly focused on education and health
- ~ 15 volunteers from different countries

See also our poster!
Report to the International Astronomical Union
Executive Committee
and to the IAU Commission 46 President
on the Status of Astronomy and Astrophysics
in the Republic of the Philippines

for IAU Commission 46, Program Group for the
World-wide Development of Astronomy (PGWWDA)

M.B.N. (Thijs) Kouwenhoven¹² - 柯文采

¹ Kavli Institute for Astronomy and Astrophysics,
Peking University, Beijing, China
² IAU Peter and Patricia Gruber Foundation Fellow

9 February 2011

Summary

This report describes the status of astronomy in the Philippines, based on a ten-day visit there by the writer in December 2010, sponsored by the International Astronomical Union. The visit was hosted by different organizations and institutes, but mainly by the Department of Science and Technology (DOST) - Philippine Atmospheric, Geophysical, and Astronomical Services Administration (PAGASA), by the DOST-Science Education Institute (SEI), and by Rizal Technological University (RTU).
DOST - PAGASA

Philippine Atmospheric, Geophysical & Astronomical Services Administration

- PAGASA observatory
- National timekeeping
- Planetarium, mobile planetarium, lectures
- National and international contact point
- Coordination of astronomical activities in the country
DOST - SEI
Science Education institute

- Scholarships
- Science and technology outreach activities
- Science fairs
Many politicians do not give a high priority to science and technology.

Others prefer science and technology that can contribute to directly solving existing problems in the country.
Community activities

- Astronomical societies
  - Philippine Astronomical Society
  - Astronomical League of the Philippines
  - Astronomy societies at various universities
  - Active individuals

- Such organizations provide the seeds for the development of astronomy research and education.
Astronomical League of the Philippines - Baywalk Manila
The education system

- Elementary astronomy is included in the curricula of elementary and secondary schools
- Strong physics and astronomy education at the Philippine Science High School System (11 schools)
- Maritime schools still teach the seafarers the art of celestial navigation
Commercial activities
WASHINGTON (AP) — Astronomers believe they have found a second planet outside our solar system that seems to be in the right zone for life, just barely.

But it would not be a short, hot, rocky and beyond uncomfortable European astronaut owned to discover across 20 years ago.

‘SUPER-EARTH’
Hot new planet could be in a habitable zone, barely

MISS Angola Leila Lopes (left) is crowned Miss Universe 2011 by Miss Universe 2010 Ximena Navarrete of Mexico, in Rio de Janeiro, Brazil on Monday. The 23-year-old beauty student from Angola was the favorite to win after surviving the second and third eliminations. She arrived in Brazil with her parents. She is known for her sense of humor and her fashion sense. She is the second African woman to win the title. She is the third African woman to win the title.

(Continued on Page 7)
Parents

- Students, teachers, parents generally have a positive attitude towards astronomy.
- But most developing countries do not have a strong social insurance system.
- Family members often discourage children to take up a career in the natural sciences. Doctors, lawyers, and businessmen are preferred.
Astronomy at universities

- Rizal Technological University
- University of the Philippines Los Baños
- University of the Philippines Diliman
- University of San Carlos
- Mindanao State University
- (Philippine Normal University)
Rizal Technological University

The first ever to offer astronomy degrees (diploma, BSc, MSc)

Recent graduates filling up the niches in astronomy education, commerce, research
Astronomy at universities

Concerns of university officials:

- “We cannot compete internationally”
- “No qualified teachers”
- “Will we get enough students?”
- “Will the graduates find a job?”
Observations (1)

- Many groups and individuals are focused on optical imaging observations using small telescopes
- Little activity in:
  - Computational/theoretical astrophysics
  - Radio astronomy
  - Spectroscopy
  - Data mining public archives
Observations (2)

- Communication and outreach
  - loads of activities
- Education
  - lack of qualified teachers
  - K-12 under way
- Research
  - need for international exchange and exposure

Funding is very limited, but not the main problem
Recommendations
to the international community

- Teacher training by foreign professionals
- International exchange: students, conference grants
- Exposure to computational astronomy, radio astronomy, archives, spectroscopy

- Individuals: give a seminar during your holiday!
Salamat po!
谢谢！