

CanSat Training Program for High School Students in the Philippines

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Overview

- The Philippines has a **growing number of enthusiasts** in astronomy and space science.
- The country doesn't have a **concrete space science curriculum** integrated in the basic education.
- When it comes to space technology, the country **doesn't have access to space** and thus, **reliant on foreign satellites**. The country also have **small space R&D and industry**.
- The Philippines still doesn't have a **space agency** but progressing towards developing a **space policy**.



Vision-Mission

A **CanSat Training Program** in the Philippines would allow the current generation of students to be trained in space mission analysis and design allowing the development of a pool of trained personnel in aerospace and astronautics thereby paving the way for the creation of a space agency involved in high-technology level of research and development.

The eventual creation of this pool of trained personnel, through the CanSat Training Program, would be beneficial to the Filipino people through research and development in various aspects of astronautics.

Space Science Program on CanSats



- The Space Science Program (SSP) is a pioneering program developed by **Dr. Rogel Mari Sese**, one of the country's top astrophysicists. The aim of the SSP is to educate the students in the field of astronomy and space science.
- Students enrolled in Level 5 (Grades 9 and 10) of the SSP are being taught on basic satellite technology through introduction of CanSats.

MODULE 01:

SPACE SCIENCE PROGRAM
LEVEL 5 STUDENT'S MANUAL

Introduction to Circuits

MODULE 02:

SPACE SCIENCE PROGRAM
LEVEL 5 STUDENT'S MANUAL

Resistors in Series and Parallel

MODULE 03:

SPACE SCIENCE PROGRAM
LEVEL 5 STUDENT'S MANUAL

Introduction to Arduino Micro

MODULE 04:

SPACE SCIENCE PROGRAM
LEVEL 5 STUDENT'S MANUAL

Arduino Programming

MODULE 05:

SPACE SCIENCE PROGRAM
LEVEL 5 STUDENT'S MANUAL

Sensors and Actuators

OBJECTIVES

At the end of this module, you need to:

- 1) Identify basic Identify different sensors that can be used;
- 2) Describe how different sensors can be used to obtain several parameters described in the CanSat mission plan;
- 3) Describe the mechanism of Servo motor;
- 4) Integrate sensors and actuators to the CanSat system;

Space Science Program on CanSats

- Launch mechanisms are being thought of such as using [balloons](#) or [rockets](#). The feasibility of using [drones](#) for CanSat launching is being developed.



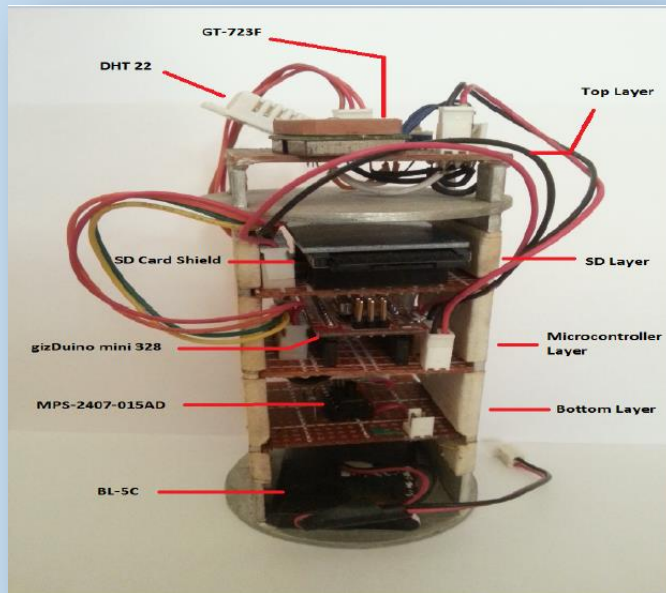
Space Science Program in the Philippines



- The Space Science Program (SSP) is pioneered by [Dr. Rogel Mari Sese](#).
- Dr. Sese is currently the President of Regulus SpaceTech Inc., a pioneering space technology company in the country that focuses on space research and development, education and consultancy services.
- Also, he is currently the Focal Person of the PSSEP of DOST-SEI, Chair of SEAYAC, and Point of Contact for UNISEC-Global.
- He joined CLTP 4 last July 22 – Aug. 16, 2013.

CanSats in the Philippines

CanSats are starting to become familiarized in Philippine universities as themes in projects and researches.



EFFECT OF INTEGRATING MULTIPLE SENSORS IN A CAN SATELLITE (CAN SAT)

by

PATRICK HARRY M. BALITE

An Undergraduate Thesis submitted to the Physics Division
Institute of Mathematical Sciences and Physics
College of Arts and Sciences
University of the Philippines Los Baños

In Partial Fulfillment of the Requirements
for the Degree of
Bachelor of Science in Applied Physics



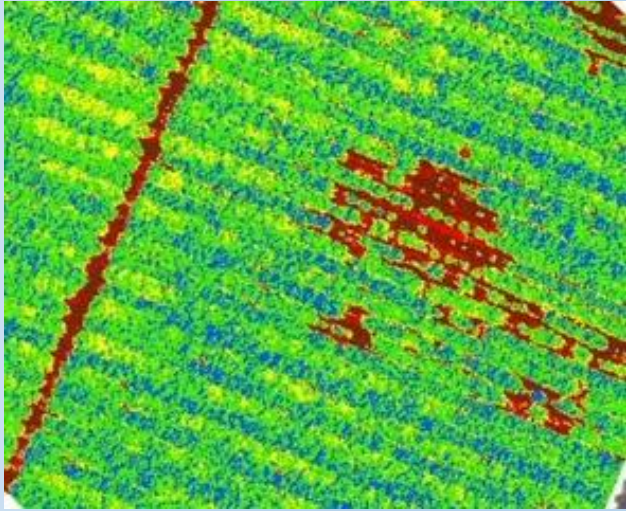
Temperature Profiling using CanSat

Harvey N. Cruzado, Shereyl A. Daguinod, Nicole D. Olayres,
Robert Dave K. Alonzo, Emmanuel L. Quiambao, Kazandra C. Vicente, and
Adrian Josele G. Quional*

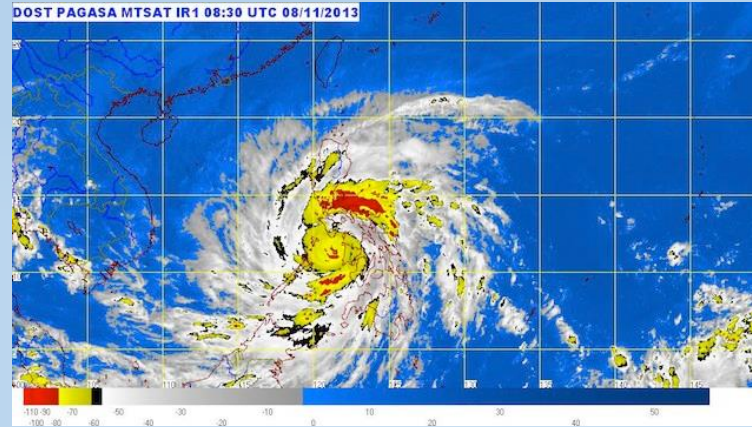
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Applications of Space Science



Agriculture



Meteorology



Forestry and Environment



Space Technology



Disaster Management



Education

Possible Future Plans for the Philippines

- Develop a concrete space science education program integrated in the country's basic education curriculum. CanSat education should be included.
- Increase the number of space-based industry in the Philippines.
- Dedicated space technology (specifically on nano/micro/pico-satellites) courses and degree programs should be included in the tertiary education (undergraduate level).
- Crafting of Philippine space policy and formation of a future space agency.
- Establishment of a UNISEC chapter in the Philippines.

Thank you for your attention!

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