

Chapter 5

Outreach

Objective: To provide Thai-language information on space physics and astrophysics to the public, and to expose students to space physics research and research techniques.

Note: The Principal Investigator was also involved in both of these subprojects. In addition to the two specific topics below, the PI has also given invited lectures and television, newspaper, and radio interviews (see 7.7).

This is the “outreach” portion of our research project. In addition to the two specific topics below, we have also given invited lectures and radio and TV interviews (see 3.3).

5.1 Thaispaceweather.com

- Researchers: Luerluck Pimsuwan, Autcharapun Treegate, Achara Seripienlert, Watcharawuth Krittinatham, Paisan Tooprakai, and others
- Type of Work: Dissemination
- Key point: Successful dissemination of information on space weather and space physics.
- Status: Ongoing
- Output: website (www.thaispaceweather.com)

We maintain a public-interest website, www.thaispaceweather.com, the first Thai-language website devoted to space weather. This has become one of the top websites in the nation dedicated to astronomy, with regular news items in Thai (though the frequency has decreased since the graduation of Watcharawuth Krittinatham). During January, 2010, our website received over 26,000 unique visitors in one month. Further statistics are provided in Attachment 72. This website has even been included in a set of links to Thai news sites, and it is the number one link found by Google for “Earth’s magnetic field” (in Thai).

There are links to our website from various major Thai web servers, such as www.pantip.com and www.sanook.com. During the teaching term, we have a steady readership of over 900 visits per weekday. We have also received good questions, addressed to our website, from multiple high school students. In one case, this led to contact with Pat Wongpan, then a high-school student, that led him to do a good-quality summer research project with our group. He continued working with us throughout his four years as an undergraduate student at Mahidol U., and for a time as a “post-bacheloral researcher” as he prepared for graduate study abroad. We are quite proud that our website helped inspire a student to pursue research in this field.

5.2 Teaching laboratory experiment on cosmic rays and neutrons

- Researchers: Alejandro Saiz (Mahidol U.), Thana Yeeram
- Type of Work: Experiment, teaching
- Key point: Teaching laboratory experiment for undergraduate students on cosmic rays and neutron detection.
- Status: Ongoing

For the Princess Sirindhorn Neutron Monitor (see 4.1), we have received donations of a total of 23 neutron counter tubes. We have decided to deploy 18 tubes inside lead and polyethylene to make up a full “supermonitor” at Doi Inthanon. Three more tubes are “bare” counters (i.e., without lead and polyethylene) in the station building at Doi Inthanon. The bare / neutron monitor count ratio could provide some spectral information, as the monitor has enhanced sensitivity to more energetic atmospheric secondary neutrons. The 2 remaining tubes have been placed at Mahidol U. and Ubol Ratchathani U. for purposes of teaching and training, including the electronics workshops (see 4.2).

As the Department of Physics at Mahidol U. has a required laboratory course for 3rd-year students, who rotate to perform labs with different research groups, we have set up a teaching laboratory experiment called “Cosmic Rays and Neutrons” for this course. We start with a PowerPoint presentation about our research and neutron monitors. The students then take data from a neutron counter tube (we call it a MicroMonitor) and a pressure sensor (purchased for this purpose by Dr. Alejandro Sáiz using his TRF Young Researcher Grant). They also view counter pulses on an oscilloscope, examine pulse height analysis data from PSNM, and perform a pressure correction to analyze the MicroMonitor data. We intend to continue this in the future in order to expose all undergraduate students in the department to space physics research and research techniques.