Chapter 2.3

THE PRESENT STATUS OF ASTRONOMY IN SRI LANKA

I. Medagangoda
Arthur C. Clarke Institute for Modern Technologies
Sri Lanka
indika@accmt.ac.lk

Abstract The experience of the ACCIMT in Astronomy application and the plans for the future are described.

Introduction

As an outcome of the United Nations/European Space Agency workshop held in Colombo, Sri Lanka, in 1995, hosted by the Arthur C Clarke Institute for Modern Technologies (ACCIMT), Sri Lanka was bestowed a 45-cm Cassegrain telescope by the Japanese government under their Cultural Grant Aid programme. Although astronomy used to be taught in schools in Sri Lanka a few decades ago, for reasons that are unclear it has been excluded from the education curriculum until the recent past. For this reason, astronomy was rarely discussed among the general public, and was also not a subject much in demand in universities.

At the time the telescope was installed at the Arthur C Clarke Institute, there were only two scientists working at the Institute. Although they had graduated from renowned universities, neither had a formal education or hands-on experience in astronomy. Having identified the need for the scientists at the Arthur C Clarke Institute to receive some exposure to astronomy abroad, the Besei Astronomical Observatory (BAO) and the Japanese International Co-operation Agency (JICA) came forward to offer training opportunities in Japan. As a result of this, one scientist was trained in photometry. The other was able to receive training at the South African Astronomical Observatory (SAAO) in South Africa. On return to Sri
Lanka, these scientists started working with the photometer of the 45-cm reflector. To their disappointment, they found that the photometer could not be brought in focus at the Cassegrain focus of the telescope. They realized that the cause of this problem could be a position mismatch of the secondary mirror of the photometer’s telescope. After much correspondence with the telescope manufacturer, the staff members were able to obtain the necessary spacers to rectify the problem.

Having fixed the focusing problem, they found that the telescope site was not suitable for photometric observation because of a high tendency for localized cloud formation in this area (microclimate), and also because of severe light pollution. For these reasons, they abandoned the idea of conducting photometric observations at this site. The fact that the telescope site was inappropriate for photometric observations was highlighted in the report given by the Japanese astronomer, Mr. Osamu Oshima of Bessei Astronomical Observatory, who visited ACCIMT last year.

1. CCD Camera Installation

Since the Institute was unable to conduct photometric observations, the only remaining alternative was to try spectroscopic observations. The spectrograph equipped with the telescope used an old photographic method and was bit cumbersome for the novices at ACCIMT. At this juncture, in August 2000, JICA (Japan) and Bessei Astronomical Observatory made a donation of materials including two Santa Barbara Instrument Group (SBIG) charge coupled device (CCD) cameras, a laptop computer, astronomical software and books, of about US$8,000 in value, to the Arthur C Clarke Institute to improve the telescope facility. Under the guidance of a Japanese astronomer, Mr. Ohshima, the staff was able to replace the old photographic system of the spectrograph with one of two CCD cameras.

The solar spectrum was the first spectrum to be captured through the ST 7 CCD camera in the vicinity of H\(\alpha\). We used a spectrograph with a Fe Hollow cathode lamp to calibrate the solar spectrum. We also obtained few spectra of bright stars such as Arcturus, Spica and Vega, in the same wavelength region. We were also able to obtain the spectrum of a star called Delta Scorpii and observed the strong H\(\alpha\) emission line.