

Development of an Environmental Plot and Generator for the NASA Infrared Telescope Facility (IRTF)

Noah E. Luis

Institute for Astronomy (IFA), Hilo, Hawaii
Research Advisor and Supervisor: K. Miranda Hawarden-Ogata
Home Institution: University of Hawaii at Hilo

Recently the IRTF decided to monitor its environmental conditions surrounding the mirror and telescope's facility with units of temperature, humidity, wind speed, and wind direction. An inherited initial implementation for a web-based plot generator was a basis for working. Optimizing, adding features, and verifying the program's usability were the main tasks. A lot of reading from the data file archive was being done redundantly. This slowed the plot process down. Required error checking mechanisms were not inserted into the code. The new implementation reads data into main memory all at once, manipulated, and stored in such a way to minimize the amount of memory used. This in turn speeds up the plot process. The plot generator utilizes HTML, TCL, and POST-SCRIPT languages to generate PDF and text files of the collected data. This program will assist in finding patterns in the environment of the telescope to assist in future observing with IRTF.



Noah E. Luis was born in the town of Hilo located on the Big Island of Hawaii. He graduated from Waiakea High School in 2001. Currently, he is attending the University of Hawaii at Hilo and is majoring in Computer Science. Noah works for the NASA Infrared Telescope Facility (IRTF) located within the Institute For Astronomy (IFA). Recently, he has started a student programming position where he will be assisting two systems programmer in reimplementing the IRTF's system for maneuvering the telescope for observing.