אוניברסיטת אריאל בשומרון

R&D Ascom Standards

Presenter: Alon Eshed
Instructor: Yossi Zaguri

35

1.Contribution/project goal

The goal of the project is to produce an Auto-Focus mechanism that uses the Ascom platform using the Full Width half maximum algorithm.

2. Introduction

ASCOM is the general name for enabling technology based on universal connectivity between astronomy apps/programs and the devices they use. ASCOM has thus opened up astronomy software innovation by eliminating the need to write special code for each device. ASCOM itself represents the definitions or patterns which are called Interfaces. These establish the universal language used between apps and devices.

3. Methods/algorithms/Alternatives or Design Considerations

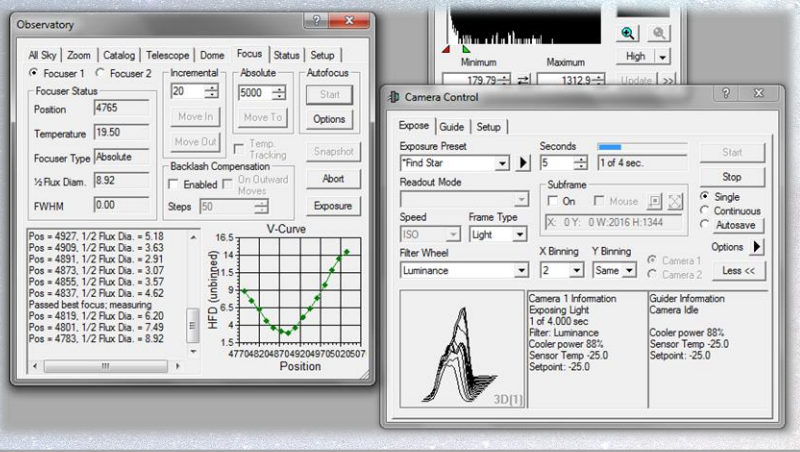
full width at half maximum (FWHM) is the difference between the two values of the independent variable at which the dependent variable is equal to half of its maximum value.
The lower this value, the better focus we will get. To implement this algorithm, I researched and tested several infrastructures: maxim dl astronomical software, Nighttime Imaging 'N' Astronomy.

4. Selected Approach

I used the MaxIm DL infrastructure for implementing focus automation.
MaxIm DL is an astronomical software created by Cyanogen Imaging for the intended purpose of astronomical imaging.

5. Solution Description (Algorithms, Modulation, Patterns, Infrastructure, UI, Functionality)

Using windows IPC, code automation, camera focus, using Ascom Standards, controlled Maxim DL Astro photometry package, and implemented FWHM algorithm to achieve Auto Focus.
The automation process allows the selection of the focuser we want to work with, allows the selection of the camera we want to connect to the telescope and then begins the autofocus process, performing a multi-star shooting process, for each photo checks the FWHM value And adjusts the focus according to the image data in order to reach the lowest FWHM value and thus get a focused telescope and ready to perform various tasks.



ASCOM

DIFFRACTION
ASTRONOMY + SCIENTIFIC IMAGING SOLUTIONS