

# Work Product Submission - GSoC 2016

ORGANIZATION : McGill Space Institute  
CONTRIBUTORS : Lisa Dang (McGill University)  
: Sudarsan Sundararajan (GSoC)  
E-MAIL : [sudmnr11@gmail.com](mailto:sudmnr11@gmail.com)

MENTOR : Prof. Nicolas Cowan  
McGill Space Institute

---

Project proposal [http://msi.mcgill.ca/Coders\\_for\\_Habitability.html](http://msi.mcgill.ca/Coders_for_Habitability.html)

Project documentation [https://github.com/sud11/gsoc\\_mcgill/wiki/Aperture-Photometry](https://github.com/sud11/gsoc_mcgill/wiki/Aperture-Photometry)

## Repositories -

[https://bitbucket.org/Lisa\\_Dang/a\\_photometry](https://bitbucket.org/Lisa_Dang/a_photometry)

[https://github.com/sud11/gsoc\\_mcgill](https://github.com/sud11/gsoc_mcgill)

## Commits made -

Description	Commit	Date
Included routine to make csv file for the list of badframes. Code tweaked to work in linux	<a href="#">55006d2</a>	2016-05-15
added outlier.py	<a href="#">ce49ba9</a>	2016-05-20
plots subgraphs	<a href="#">2d1234b</a>	2016-05-26
aperture_sum_err fix	<a href="#">89575da</a>	2016-05-26
Code snippet to read all fits files in the root directory	<a href="#">cc02be0</a>	2016-05-27
B normalised to mean and stacked datacubes	<a href="#">8025f4d</a>	2016-05-28
F,B,x0, y0 all normalized to mean, stacked and plotted	<a href="#">32d8375</a>	2016-05-28
tested the code with r46468096	<a href="#">0be6aea</a>	2016-05-29
outlier.py generated plot for datacubes from r46471424	<a href="#">cdfac29</a>	2016-05-29
Included panels for PSF width(x and y direction)	<a href="#">84bc924</a>	2016-05-31
badpixel in the aperture fix	<a href="#">48e899b</a>	2016-06-03
b must be calculated after sigmaclipping	<a href="#">443e4f3</a>	2016-06-06

Color tweaks for plots	<a href="#">ec1dd60</a>	2016-06-07
Added function for finding noisepixel parameter and centroiding by Gauss2dfit	<a href="#">2eaf477</a>	2016-06-08
Plot for F RMS for different aperture size	<a href="#">4a28962</a>	2016-06-11
Added panels for sigmaclipped rms and frames rms	<a href="#">d95c725</a>	2016-06-13
implemented basic multiprocessing	<a href="#">21d82ac</a>	2016-06-13
Lower bound was not added. Mistake rectified	<a href="#">c09e33d</a>	2016-06-13
Code to read files based on AINTBEG	<a href="#">e1529e0</a>	2016-06-22
plot lightcurve to test high pass filter	<a href="#">933b614</a>	2016-07-01
psf_photometry	<a href="#">dfdb65e</a>	2016-07-19
outputs a table. Tried with developer version of photutils	<a href="#">bc2bf73</a>	2016-07-22
Contour plot for rms scatter as a function of boxcar width and aperture	<a href="#">7ea339f</a>	2016-07-22
skips the runtime error - fixed	<a href="#">7f8745e</a>	2016-08-12
aperture_photometry + test files	<a href="#">46de40c</a>	2016-08-18
sigma clipping - fixed window - moving window - datacube based	<a href="#">484ae4c</a>	2016-08-18
rms.py + test	<a href="#">c3ecae4</a>	2016-08-18
centroiding methods + test	<a href="#">99e158b</a>	2016-08-18

Please follow this [link](#) for more details on the project and work accomplished.