
Wednesday - April 19, 2017

Overview of the Project Tasks:

1. Get DATA
2. Separate the data into field and filter.
3. Reduce the raw data (bias subtraction and flat field reduction).
4. Run the data through the photometry pipeline where astrometry and photometry is done on every object in the field.
5. Identify all known objects in the field by querying Horizons with code Michael has written.
6. Extract photometry and astrometry from the pipeline.
7. Use VARTOOLS to characterize the light curves by determining period and aspect ratio using the generalized Lomb-Scargle periodogram.
8. Submit astrometry to MPC.
9. We need to take the VARTOOLS output and configure it for characteristic analysis.

Current Status of CODE Needed for Each Task: I have color coded red and green so that we can have a better idea of what the outstanding tasks are and what is already complete.

1. Get DATA
 - Kathryn has downloaded the data onto a drive.
 - In the meantime, we can use the test data found on monsoon in /scratch/ag765/manos
2. Separate the data into field and filter.
 - Kathryn has written this script. DONE.
 - She will reduce the data this evening.
3. Reduce the raw data (bias subtraction and flat field reduction).
 - Code is already written. DONE.
4. Run the data through the photometry pipeline where astrometry and photometry is done on every object in the field.
 - Code is already written and ready to go on Monsoon. I confirmed the error was fixed. DONE.
5. Identify all known objects in the field by querying Horizons with code Michael has written.
 - Code is still being modified by Michael. I do not have it yet.

6. Extract photometry and astrometry from the pipeline.
 - This is the last step of the PP. Already written. We should check the output of the Horizons query to make sure it is consistent with the PP.
7. Use VARTOOLS to characterize the light curves by determining period and aspect ratio using the generalized Lomb-Scargle periodogram.
 - Colin has requested that VARTOOLS be loaded onto Monsoon for us.
 - In the meantime, it is up and running on the VM. There are many flags, and we just need to choose which ones we want for period, false positive probability, amplitude, etc.
 - Colin has written code to take the PP output and configure it to be an input in VARTOOLS. DONE.
8. Submit astrometry to MPC.
 - We need to take the output of the astrometry data and format it for MPC submission.
9. We need to take the VARTOOLS output and configure it for characteristic analysis.

Other Updates:

- Chad has requested all of our emails be added to the NAU domain.
- Chad has also requested an AST520 group workspace for us.

Tasks:

- Kathryn: Thank you, focus on crushing your thesis defense for now!
- Colin: Just try to complete whatever step you are on before you leave next week. Aaron and Nathan will take over with the characterization portion, so prep them by documenting, or informing them of all the steps that are needed so they are prepared to take over.
- Nathan/Aaron: Take over for Colin while he is gone next week. Make sure you are up to date with exactly what needs to be done to keep this piece moving while he is gone. He has done a lot so far!
- Chris: When you get the code from Michael it would be great if you could check the output format to make sure we can re-feed it into the last step of the PP (I believe it will be pp_utils.py for the extraction). If it isn't could you write a script to reformat.
- Michael: Work on reformatting the output of the astrometry for MPC submission.
- Annika: Work on formatting the VARTOOLS output to configure it for characteristic analysis.