**Variable Star Search Process**

All of the steps of the process should be recorded in the [Variable Star Search Results 2015](https://docs.google.com/spreadsheets/d/1iLLsXYh8iCogMfdz6xlmR_v8Z0N3kJ7P-YUIJGXPWqY/edit#gid=0) (referred to as the VSS spreadsheet in this document) google spreadsheet doc that is also found in this folder.

First, you will choose a batch of images to scan. Go to the VSS spreadsheet and sign up for that batch of images. Record the date when the images were taken (not when they were scanned).

1. Use the VSS utility to look for variable stars. If you find candidates, record all of them in the google spreadsheet with RA and Dec.

2. Take a quick screenshot of the lightcurve for each of the candidates. The filename of the screenshot should be recorded as \*\_MPO\_x.pdf where \*is replaced by the date and x is replaced by the number of the candidate in the batch. So, if you find four candidates on 20150130, you should produce four screenshots labelled 20150130\_MPO\_1.pdf, 20150130\_MPO\_2.pdf, 20150130\_MPO\_3.pdf, and 20150130\_MPO\_4. Add the screenshots to the folder labelled [VSS Candidate Lightcurves](https://drive.google.com/drive/#folders/0B44FvvLeyjLKemlFRlRqRWVXMXc/0B44FvvLeyjLKUF9zZXl6ZU11Y3c/0B44FvvLeyjLKfmxwOG0wV252Q21PcUhlRlpPUC1nV1J5R0FkRU14SHB3VUE4WXFFaGR3cUk), and link to the appropriate file within the google spreadsheet. (If you don’t know how to make a hyperlink, see Ms. Odden.)

3. Go to the international Variable Star Index [Variable Star Plotter](http://www.aavso.org/vsp) page. Input the coordinates of interest to see if your candidates have already been discovered. (If you choose the right sized window, you should be able to check for all variables in a field with a single search.) If your candidates are known variables, there isn’t much point in following up, so move on!

4. Now go to the [Catalina Sky Survey Data Release 2 catalogue](http://nunuku.cacr.caltech.edu/cgi-bin/getcssconedb_release_img.cgi). Input the coordinates of each of the variable stars to see if you have a match. If you do, use the service to look for a period and take a screenshot. (Directions for using CSS Data Release 2 here.) Finish filling out the VSS spreadsheet for each of the candidates, taking screenshots with filenames formatted as \*\_CSS\_x.pdf, and adding them to the [VSS Candidate Lightcurves](https://drive.google.com/drive/#folders/0B44FvvLeyjLKemlFRlRqRWVXMXc/0B44FvvLeyjLKUF9zZXl6ZU11Y3c/0B44FvvLeyjLKfmxwOG0wV252Q21PcUhlRlpPUC1nV1J5R0FkRU14SHB3VUE4WXFFaGR3cUk) folder as appropriate.

5. If you have data from CSS and PAO (the Phillips Academy Observatory), there is a way to merge it all together at the AAVSO using their [Lightcurve Generator](http://www.aavso.org/lcg). I don’t know much about this yet, but we need to learn to use it. We should also start uploading our observations of these variables to the AAVSO. Someone should figure out how to do this and write up an instruction guide for future variable star searchers (hint, hint).

5. We may chose to follow up on the best candidates with our telescope at PA.

6. The final step of the process is to register candidates at the International Variable Star Index. The process is described [here](http://docs.google.com/document/d/1J2vagyGvRTa84kAUbxW3n9czaUaC_2b7vX8jp31T1eY/edit). Thanks to Isabel Taylor ‘15 for producing this document. Discoveries registered at the VSX should be noted on the google doc, with a hyperlink.