Exoplanet Atmospheric Characterization Project: Target Aquisition and Defocusing Notes

Updated: 5/5/17

**Target Aquisition**

Given the skysize of the images and the number of targets a simple target aquisition procedure has been developed.

After slewing to a system for the first time in the night take a 20 second, g-filter, exposure. Open DS9 and in the upper 'Analysis' Tab pick 'Image Servers'>'SAO-DSS'. In the popup fill in the alpha=RA\_target and delta=Dec\_target in hh:mm:ss and +dd:mm:ss form. Set Width and Height to 40' and retrieve. Once the skypatch downloads you must rotate it in the upper 'Zoom' Tab pick 90 Degrees (to orient the downloaded patch with WIRO images) and compare this downloaded image with your g-filter exposure. To distinguish the target star from other nearby stars in the upper 'Edit' Tab pick 'Region' and click anywhere inside the downloaded skypatch to make a small green circle appear. Click the circle and in the popup enter the target RA and Dec for the 'Center' entries. Reduce the radius of your circle as needed to identify the target star. Once you have distinguished your target star you can start taking exposures based on the brightness of the target star.

**Realtime Photometry Check**

Due to the variable nature of the observable brightnesses of/between the target systems a simple realtime photometry checking procedure has been developed to ensure exposures are worthwhile (not overexposed).