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Magnetic Cataclysmic Variables in the Catalina Real-time Transient Survey

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Abstract content
   (Max 300 words)
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Cataclysmic variables (CVs) are mass transferring binary stars consisting of a low mass main sequence donor star and an accreting white dwarf star. The presence of a strong magnetic field affects the trajectory of the mass causing it to flow along the magnetic field lines into the magnetic poles of the white dwarf. An intermediate polar has a truncated inner accretion disc whereas the stronger magnetic field of a polar prevents an accretion disc from forming. The Catalina Real-time Transient Survey (CRTS) detects and characterises transients in the Northern and Southern hemispheres. Magnetic CVs were originally discovered from their X-ray properties but with the long nine year observing baseline of the CRTS, it makes it ideal for identifying magnetic CVs from their long-term optical photometric properties. We aim to use the CRTS to study the global population of magnetic CVs in terms of their low-high state duty cycles and also individually selected magnetic CV candidates. These individually selected candidates have been followed up with photometric and spectroscopic observations that were taken with the 1.0/1.9m telescopes and SALT at SAAO in Sutherland.

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Main supervisor (name and email)
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