Peter Garnavich – Notre Dame – Colloquium 9/5/2019

The Spin Cycle: Rapidly Rotating Magnetized White Dwarfs in Close Binaries The most dynamic types of cataclysmic variable stars are ones where the accreting white dwarf is magnetized and its rotation is not locked the orbital period. These are often called intermediate polars (IPs) or asynchronous polars (APs) depending on the white dwarfs field strength. I will discuss two of the most exciting and nearby polars and their recent activities. FO Aquarii has been dubbed the "King of the IPs" because of the large amplitude variations produced by the 20 minute spin period of its white dwarf. Recently it has gone into a series of low states that reveal a variety of periodicities. The low states may be related to the long-term evolution of the spin rate of its white dwarf. AR Scorpii is a one-of-a-kind white dwarf pulsar. This unique system was identified only four years ago, and the source of its light variations are still in dispute.