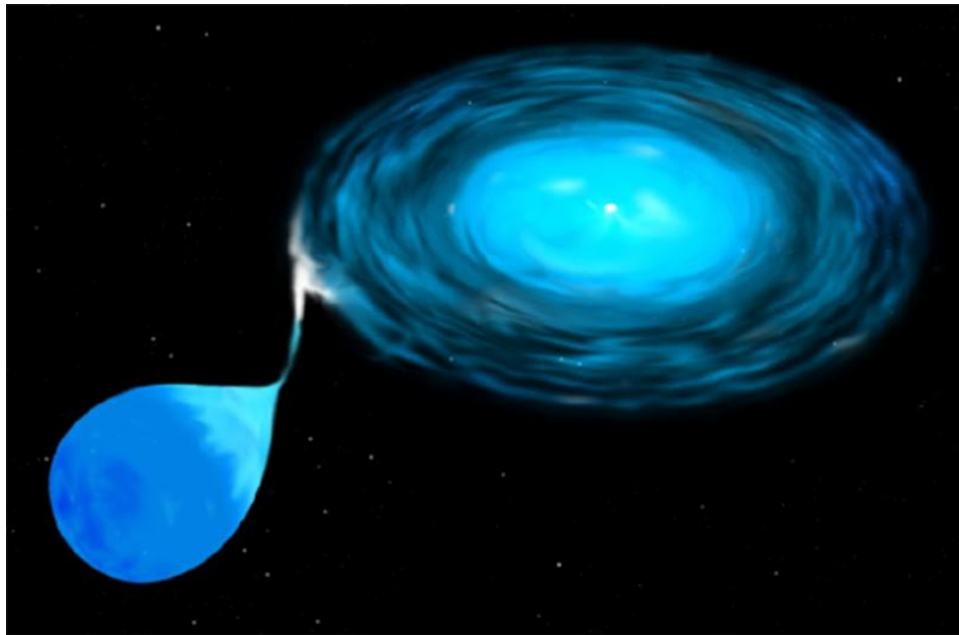


11.4: Cataclysmic Variables

Cataclysmic variables are binary stars, which consist of a white dwarf primary and an orbiting secondary star. The secondary star is transferring matter to the primary star. This causes the primary star to irregularly outburst a significant increase in brightness. Cataclysmic variables were originally called **novae** (singular: nova) from the Latin term *new*, since the star seemingly appeared out of nowhere. After the outburst, the cataclysmic variable will eventually dim back down significantly until more stellar fuel is transferred from the secondary star to the primary star. This process will go on until there is no more stellar fuel to transfer.

The primary star (upper right) is pulling stellar material off the secondary star (lower left). Once a significant amount of mass builds up on the primary star, it will outburst and brighten significantly. Then the star will dim back down, repeating the process as long as fuel is available from its secondary star.



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