Workshop

Stellar End Products: The Low Mass - High Mass Connection

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Title:
Binary stars across the mass spectrum; from observations to theory and back

Abstract:
I will review the effects of binarity in stellar evolution, with an emphasis on low and intermediate mass stars. Binary star phenomena have been of great interest for a long time. Binaries have provided tools to determine particular stellar parameters (such as stellar masses, distances or sizes) and have allowed us to probe physical phenomena, such as accretion, that have a wide applicability. Today binarity has gained renewed interest because of the realisation of how commonly stars have binary companions, including planets, which interact with them during their life cycles. This realisation has opened new questions, and provided new avenues to explain well known astrophysical phenomena, such as, for example, the luminous blue variables. Another phenomenon that has been scrutinised with new eyes is the production of collimated planetary nebulae, which are more easily produced in binary interactions than in single stars. However, a large hurdle in generating binary scenarios for any observed phenomena is that the physics is complex and often models, such as hydrodynamics computations, too simplistic. I will review the status of these simulations with an eye to the vital connection between simulations and observations.