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A New Collisional Ring Galaxy at $z = 0.111$: Auriga's Wheel

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We report the serendipitous discovery of a collision ring galaxy, identified as 2MASX J06470249+4554022, which we have dubbed 'Auriga's Wheel', found in a SUPRIME-CAM frame as part of a larger Milky Way survey. This peculiar class of galaxies is the result of a near head-on collision between typically, a late type and an early type galaxy. Subsequent GMOS-N long-slit spectroscopy has confirmed both the relative proximity of the components of this interacting pair and shown it to have a redshift of 0.111. Analysis of the spectroscopy reveals that the late type galaxy is a LINER class Active Galactic Nuclei while the early type galaxy is also potentially an AGN candidate, this is very uncommon amongst known collision ring galaxies. Preliminary modeling of the ring finds an expansion velocity of $\sim 200 \text{ km s}^{-1}$ consistent with our observations, making the collision about 50 Myr old. The ring currently has a radius of about 10 kpc and a bridge of stars and gas is also visible connecting the two galaxies.

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