BLACK HOLES IN DENSE STAR CLUSTERS
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TITLE: Dynamical Mass Measurements of ULXs in the Near-Infrared

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Are ultraluminous X-ray sources powered by stellar or intermediate mass black holes? To answer this question we need reliable mass measurements of these systems. The best way to do this would be to measure the radial velocity curves of the companion stars and thus derive the mass functions for these black holes. This has proven to be very difficult for ULXs because the optical light from these systems is dominated by the accretion disc. However, for ULXs with red supergiant donor stars, that are intrinsically bright in the near-infrared it may be possible to measure their radial velocity curves in that part of the spectrum. We have conducted a survey of nearby ULXs to search for near-infrared counterparts. Of our 62 targets, 11 have a counterpart that could potentially be a red supergiant (Heida et al. 2014). Spectroscopic follow-up of some of these candidates has revealed that a few are indeed red supergiants, for which we will now attempt to measure radial velocity curves.