

### [ $\square$ IMS-05] Host galaxy of tidal disruption object, Swift J1644+57

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We present long-term optical to NIR data of the tidal disruption object, Swift J1644+57. The data were obtained with CQUEAN, UKIRT WFCAM observations. We analyze the morphology of the host galaxy of this object and decompose the bulge component using high resolution HST WFC3 images. We conclude that the host galaxy is bulge dominant. We also estimate the multi-band fluxes of the host galaxy through the light curves based on the long-term observational data. We fit the SED models to the multi-band fluxes of the host galaxy and determine its stellar mass. Finally, we estimate the mass of the central super massive black hole which is thought to be the main role of the tidal disruption event. The estimated stellar mass and black hole mass are  $10^{9.1}M_{\odot}$ ,  $10^{6.8}M_{\odot}$  respectively. We compare our results to other results that have studied before.

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### [ $\square$ IMS-06] Color evolution of HBC 722 in the post-outburst phase

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We present collections of optical photometry for a pre-main sequence star HBC 722. It showed large amplitude optical outburst ( $\Delta V=4.7$  mag) in 2010 and classified as a FU Orionis type object. We have been observing HBC 722 from 2011 April to 2013 May, using Camera for QUasars in EARly uNiverse (CQUEAN) attached to the 2.1 m Otto Struve telescope at the McDonald Observatory. Time-series monitoring data (minute-scale interval) were obtained in SDSS r, i and z bands to see short-scale behaviors as well as trace the long-term brightness changes after the eruption in 2010. Interestingly, it started to brighten from 2011 early summer and became brighter than the first outburst peak in our 2013 May observation. We expect that the recovering phase would result from re-increase of disk accretion rate, might attribute to distinctive short-scale color features. In this presentation, we report long- and short-timescale optical behaviors of HBC 722 in the post-outburst phase.