

[GC03] Near-Infrared Surface Brightness Distribution of Ultra Luminous Infrared Galaxies and QSO Host Galaxies

최준영<sup>1</sup>, 변용익<sup>1</sup>, 김동찬<sup>2</sup>

<sup>1</sup>*Yonsei University*, <sup>2</sup>*University of Maryland*

Ultra-luminous infrared galaxies (ULIRGs) are among the brightest objects in the infrared sky. With compact nuclear starburst and signs of highly obscured AGN activity, they also show characteristics similar to quasars. We have been analyzing CFHT near-infrared images of ULIRGs and infrared quasars to decompose the central point source and extract the surface brightness distribution of host galaxy. The properties of host galaxies are expected to be a key of understanding the evolutionary sequence of ULIRGs and quasars.

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[GC04] An HST ACS Survey of Bright Star Clusters in M51

Narae Hwang<sup>1</sup>, Myung Gyoon Lee<sup>1</sup>

<sup>1</sup>*Department of Physics & Astronomy, Seoul National University*

We present a study of bright star cluster population with  $V < 23$  ( $M_V < -6.6$ ) mag of Whirlpool galaxy M51 based on HST ACS BVI mosaic images taken by the Hubble Heritage Team to commemorate the HST's 15th anniversary. We have found about 3,500 star clusters using SExtractor and visual inspection. We have estimated their ages from BVI photometry, using the 'spectral energy distribution (SED)' fitting method. A resultant catalog of M51 star clusters is the unique data set in its complete coverage of M51 system (including NGC 5195) and in its depth only available with HST. We will present the photometric and physical properties of star clusters in M51 as well as their spatial distribution.