

[KIM-01] UKIRT Widefield Infrared Survey for [Fe II] 1.64 μm

Jae-Joon Lee¹, Bon-Chul Koo², and the GEMS0 team

¹*Korea Astronomy and Space Science Institute*, ²*Seoul National University*

NIR Emission lines from singly-ionized Iron, in particular [Fe II] 1.64 μm , are good tracers of dense atomic gas in star-forming regions, around evolved stars, and in supernova remnants.

We are imaging about 180 square degrees along the Galactic Plane ($6^\circ < l < 65^\circ$; $-1.5^\circ < b < +1.5^\circ$) with the narrow band filter centered on the [Fe II] 1.64 μm line using WFCAM at UKIRT.

The observations will complement the UWISH2 survey, which have imaged the same area with the narrow band filter centered on the molecular hydrogen 1-0 S(1) emission line at 2.12 μm , and probe a dynamically active component of ISM. We present the goals and preliminary results of our survey.

[KIM-02] MIRIS: Science Programs

Woong-Seob Jeong¹, Toshio Matsumoto^{2,3}, Kwangil Seon¹, Jeonghyun Pyo¹, Dae-Hee Lee¹, Youngsik Park¹, Chang Hee Ree¹, Bongkon Moon¹, Sung-Joon Park¹, Uk-Won Nam¹, Jang-Hyun Park¹, Duk-Hang Lee^{1,4}, Sang-Mok Cha¹, Sungho Lee¹, In-Soo Yuk¹, Kyungjin Ahn⁵, Jungyeon Cho⁶, Hyung Mok Lee⁷, and Wonyong Han¹

¹*Korea Astronomy and Space Science Institute, Korea*, ²*ASIAA, Taiwan*,
³*ISAS/JAXA, Japan*, ⁴*UST, Korea*, ⁵*Chosun University, Korea*, ⁶*Chungnam National University, Korea*, ⁷*Seoul National University, Korea*

The main payload of Science and Technology Satellite 3 (STSAT-3), Multipurpose InfraRed Imaging System (MIRIS) is the first Korean infrared space mission to explore the near-infrared sky with a small astronomical instrument developed by KASI. The 3-cm passively cooled telescope with a wide field of view (3.67 deg. x 3.67 deg.) will be operated in the wavelength range from 0.9 to 2 μm . It will carry out wide-band imaging and the Paschen- α emission line survey. After the calibration of MIRIS in our laboratory, MIRIS has been delivered to SaTReC and successfully assembled into the STSAT-3.

The main purposes of MIRIS are to perform the observation of Cosmic Infrared Background (CIB) at two wide spectral bands (I and H band) and to survey the Galactic plane at 1.88 μm wavelength, the Paschen- α emission line. CIB observation enables us to reveal the nature of degree-scale CIB fluctuation detected by the IRTS (Infrared Telescope in Space) mission and to measure the absolute CIB level. The MIRIS will continuously monitor the seasonal variation of the zodiacal light towards the both north and south ecliptic poles for the purpose of calibration as well as the effective removal of zodiacal light. The Paschen- α emission line survey of Galactic plane helps us to understand the origin of Warm Ionized Medium (WIM) and to find the physical properties of interstellar turbulence related to star formation. Here, we also discuss the observation plan with MIRIS.