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## Science Goals of Far-Ultraviolet Imaging Spectrograph on KAISTAT-4

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The scientific goals and mission objectives of Far-Ultraviolet Imaging Spectrograph (FIMS), selected as the primary payload for KAISTSAT-4, will be presented. Additional science programs and preliminary schemes for target selection, data reduction, and data distribution will be also discussed briefly. FIMS is an imaging spectrograph optimized for the observation of diffuse emission from galaxies in the far-ultraviolet band to determine how stellar energy injected into the interstellar medium drives the structure and evolution of galaxies. FIMS will also provide remote sensing observation of earth's airglow and aurora for direct comparisons with data from other space physics payloads. The primary science goals in astrophysics address following questions : 1) energy flow through the hot ( $10^{4.5-6}$ K) plasmas and their state and history, 2) the morphology of the local and global cooling structure, and 3) the nature, distribution, and life cycle of galactic H<sub>2</sub> and dust. FIMS, together with other payloads for space physics research, will also study 4) height distribution and solar angle dependence of FUV emission from upper atmosphere and its correlation with solar activity and 5) small scale (> 10km) features of aurora with spectral information.