

X18a Wide and Deep Mapping of NGC 5466 with Subaru/HSC and *NB395*

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In the  $\Lambda$ CDM framework, the remnants of accreted globular clusters survive in stellar halos as stellar streams. Owing to their long dynamical timescales, these structures preserve past accretion information over gigayear timescales and serve as important tracers of galaxy formation. While nearby streams ( $< 10$  kpc) have been well studied, those at larger distances ( $> 10$  kpc) remain underexplored due to their faintness and contamination by foreground disk stars.

We observed the globular cluster NGC 5466 (located at 16 kpc) and its stellar stream using the metallicity-sensitive narrow-band filter *NB395* on Subaru/HSC. In a previous talk (Ogami et al. 2023, ASJ Spring Meeting X54a), we identified member stars down to  $i_0 < 21$  using *NB395* combined with Gaia proper motions. However, this method was limited to brighter stars due to the nature of Gaia data. In this talk, we present an improved method based on a k-nearest neighbor algorithm using *NB395*,  $g$ ,  $i$  color-magnitudes and color-color space to select candidates down to  $i < 22.5$ . Our analysis identifies member stars extending beyond the tidal radius ( $> 90$  pc) of NGC 5466. Its radial density profile follows a power-law with an index of  $\gamma = -5.59^{+0.31}_{-0.21}$ , consistent with typical values for Galactic globular clusters. Additionally, we detect a spatial gap along this stream, possibly indicating external perturbations.