

## X29a Identification of $> 40$ gravitationally magnified stars in a galaxy at redshift of 0.725

Yoshinobu Fudamoto (Chiba University, University of Arizona), Fengwu Sun (CfA Harvard), Jose M. Diego (CSIC), Liang Dai (UC Berkeley), Masamune Oguri (Chiba University) et al.

Since the launch of the James Webb Space Telescope (JWST), extragalactic astronomy studies have been revolutionized by its unprecedented capability. In particular, JWST not only allows us to detect galaxies at high redshift but also even allows us to access single stars that exist within each distant galaxy with the aid of large magnifications of strong gravitational lensings (e.g., Mothra; Diego+23, Earendel; Welch+23). Such single stars were also previously detected as transient micro-lensing events caused by variations of critical curves due to distorted sub-halo distributions in lensing clusters (e.g., Icarus; Kelly+18). The observations of lensed stars provide us with the opportunity to study stellar physics in distant galaxies. However, previous individual star observations are limited to a small number of sources — typically one or a few stars in a galaxy — and provide only limited information about stellar populations at cosmological distances. Here, we report a surprising discovery of  $> 40$  lensed stars within a single galaxy at  $z=0.725$  that are observed over the first and second years of JWST observations. In this talk, we report an analysis of the micro-lensing events and their stellar types based on their multi-wavelength photometry. Future JWST follow-up of the micro-lensing fields will provide us with detailed stellar properties of a galaxy around the cosmic noon. Similar observation strategy may enable such studies in galaxies with even at higher redshifts.