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Follow-up of bright very metal-poor star candidates discovered by narrow-band survey

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Chemical abundance of metal-poor stars is a clue to understand the chemical evolution of the early Universe. However, the metal-poor stars discovered by previous surveys are faint and it is difficult to measure their abundance of many elements with high precision. Therefore, we performed a photometric survey using the wide-field CMOS camera (Tomo-e Gozen Camera) on the Kiso Schmidt telescope with narrow-band filters sensitive to stellar metallicity to search for bright metal-poor stars. Very metal-poor star candidates with [Fe/H] < -2 were selected for follow-up medium-resolution spectroscopy with the Nayuta telescope. We establish a method for analyzing medium-dispersion spectra using 43 stars with metallicity measurements and determine the metallicity and abundance of alpha-elements of ~300 metal-poor star candidates that we have followed up so far. As a result, nine new very metal-poor stars and two low-alpha stars were discovered. In this talk, we present the results of the follow-up and the metal-poor star candidate selection methods.

Primary author: OKADA, Hiroko (University of Hyogo)

Co-authors: TOMINAGA, Nozomu (NAOJ); HONDA, Satoshi (University of Hyogo); AOKI, Wako (National Astronomical Observatory of Japan); FURUTSUKA, Kurumi (Univ. of Hyogo); MOROKUMA, Tomoki (Chiba Institute of Technology)

Presenter: OKADA, Hiroko (University of Hyogo)

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