[구ST-03] A New channel of the Astrometric Method to break Severely Degenerate Binary Microlensing Events

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Photometrically observed binary microlensing events always have the close and wide binary solutions together. These close/wide degeneracies are rooted in the similarity of the lens equation of two solutions, so that it is very difficult to find a unique solution. However, if the source is lensed by one of the binary lens components in wide binary lensing events, after finishing the lensing event, the event induced by the other lens can be additionally detected. The astrometric possibility of detecting the signature of the lens causing later event in wide binary lensing events is much larger than the photometric one. In this paper, we investigate whether the close/wide degeneracies in binary microlensing events can be resolved from additionally detecting the astrometric signature of the lensing causing later event in wide binary lensing events. From this investigation, we find that if the future astrometric follow-up observation such as SIM PlanetQuest is carried out, the degeneracy can be easily resolved. And we investigate the feasibility of using the proposed method to resolve the degeneracies of previously observed four binary lensing events. From the results, we find that although the degeneracies of three of them cannot be resolved, for one event, it is possible to resolve the degeneracy through the astrometric follow-up observation.

[구ST-04] Preliminary results of SSPEC : Equivalent width measurement code

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We have developed the automatic code in IDL (tentative name, SSPEC) for equivalent width measurement of stellar spectra. This is a part of the research program for "the chemical composition of exoplanet systems". In order to reduce the time for the equivalent width measurement of the spectra, the code for automatic measurement is developed. The code uses the text file of echelle stellar spectra (1D or 2D) and the line list, and then outputs the equivalent width results with MOOG code (Sneden, 1973) form. The interface of the program is designed with an interactive IDL GUI form to be able to modify the continuum level. The results of the code include the FWHM, the central wavelength, the continuum level, and the fitting result with graphic output file. We have tested the code comparing the manual measurement of IRAF splot task with the result of SSPEC for the real echelle spectra of BOES. Using the synthetic spectrum with the random noise and the specific resolution, the SSPEC results for each spectra were compared with the original EW of the synthesized lines.