

[PST-01] **A Discovery of Double Eclipsing Binary System V994 Her – photometric Evidences**

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We discovered V994 Her as a quintuple system corresponding to a hierarchy of ab-cd-e, which is composed of a double eclipsing binary and a distant companion. To confirm its multiplicity we made CCD photometric observations of V994 Her with B and V bands for 18 nights using the 24-inch reflecting telescope at Sobaeksan Observatory, and with V band only for 38 nights using the 16-inch reflecting telescope at Chungbuk National University Observatory. From the detailed photometric analysis including light curve synthesis, we found that there exist, at least, three possible evidences for multiplicity in V994 Her system. Firstly, light curves themselves show the apparent double eclipsing phenomenon with two orbital periods of 2.083 days and 1.420 days respectively, from which we infer a double eclipsing ab and cd configuration. Secondly, the simulated light curve, which was reproduced with two light elements and light curve synthesis, does fit satisfactorily to the observed light curve. Thirdly, the positions of components in V994 Her system on the color-magnitude diagram indicate that they may have the same distance.

[PST-02] **Radio Image of Cygnus X-3**

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Cygnus X-3 is a representative compact binary with Wolf-Rayet Companion star. The nature of the compact object is still unknown. It is also a radio-bright source. We present radio image of Cygnus X-3 observed by Japanese very long baseline interferometry.