Session:	**[B2B-3] S3 : Stars, Exoplanets and Stellar Systems**
Date:	August 19, 2014 (Tuesday)
Time:	14:00~15:30
Room:	Room C (Room 104)
Chair:	Shengbang Qian (Yunnan Observatories)

[B2B-3-1]   14:00~14:20

[Invited] Recurrent Novae in the Multi-Wavelength Observations Era

G. C. Anupama (Indian Institute of Astrophysics, India)

Recurrent novae are a subclass of cataclysmic variable stars that have more than one recorded nova outbursts. The recurrent novae are a small but heterogeneous class of objects, with only about 10 such systems known in our own galaxy. A few recurrent novae are long period binaries with a red giant secondary, very similar to the symbiotic stars, while the others have a main sequence, or slightly evolved late type secondary, very similar to the classical novae. The recent outbursts of the recurrent novae, RS Oph (2006), U Sco (2010), T Pyx (2011) and V745 Sco (2013) have been studied in detail in all wavebands, and have provided several new and interesting insights into these rare objects. The properties of the recurrent novae based on multi-waveband observations will be discussed in this review.

[B2B-3-2]   14:20~14:35

Study of Superhumps in Recently Discovered SU UMa Dwarf Novae

Irina Voloshina (Sternberg Astronomical Institute, Russia) and Vladimir Metlov

Dwarf novae belong to the class of cataclysmic variables and represent the close binary systems on the late evolutionary stages. They consist of a white dwarf and a red dwarf which fills its Roche lobe and transfers mass to the white dwarf. The gas stream flows from the secondary to the primary white dwarf forming an accretion disk around it. Dwarf novae undergo outburst in semi-periodic intervals of time, when the brightness increases of 3 to 5 magnitude. SU UMa exhibit the special phenomenon, so-called «superhumps», on the light curve during superoutbursts (outbursts of larger amplitude and longer than normal ones). Superhumps represent an increase of the system brightness on the small part of the orbital light curve which repeated with the period a few percents longer than the orbital one. The amplitude of superhumps is around 0.1-0.3 mag. The orbital periods of these novae are about 80-180 min. The purpose of our study was an analysis of time-resolved photometry of program stars during superoutbursts which have been occurred in these systems during the last years.
Our observations were carried out with CCD device on 50 cm and 60 cm telescopes of Sternberg Astronomical Institute Observatory in Crimea, mostly in R band. Superhumps were detected in the light curves of all systems. The amplitudes and periods of detected modulations were estimated. Evolution of superhumps was followed up and classification specified for all novae.

[B2B-3-3]   14:35~14:50

Investigation of Galactic Classical and Recurrent Novae with Ground-based Observations and the Solar Mass Imager (SMEI)

Farung Surina (Chiangrai Rajabhat University, Thailand), Michael F. Bode, Matthew J. Darnley, and Rebekah Hounsell

Classical novae (CNe) are interacting binary systems whose outbursts are powered by a thermonuclear runaway in accreted material on the surface of a white dwarf (WD). The secondary stars in such systems fill their Roche lobe and material is transferred onto the WD primary star via an accretion disk. Recurrent novae

(RNe) show many similarities to CNe, but have had more than one recorded outburst. RNe play an important role as one of the suspected progenitor systems of Type Ia supernovae which are used as primary distance indicators in cosmology. Thus, it is important to investigate the nature of their central binary systems to determine the relation between the parameters of the central system and outburst type, and finally ascertain the population of novae that might be available to give rise to the progenitors of Type Ia SNe. Low outburst amplitude is adopted as a criterion that may help distinguish RNe from CNe and was therefore used to select targets for observations from ground-based observations including the Liverpool Telescope and the Southern African Large Telescope and also the full-sky space-based archive of the Solar Mass Ejection Imager (SMEI). We found that at least four objects currently classified as CNe are suggested to be RNe candidates based on their quiescent spectra. We also Searched the SMEI archive for additional outbursts of bright CNe that might otherwise have been missed but did not find conclusive example.

| [B2B-3-4] | 14:50~15:05 |

Expansion Velocity and Spectroscopic Classification of Nova Delphini 2013

Rhisa Azaliah (Institut Teknologi Bandung, Indonesia), Hakim Luthfi Malasan, Gabriela Kezia Haans, and Saeful Akhyar

Low resolution spectrum of Nova Delphini 2013 (V339 Del) in the optical range have been obtained at Bosscha Observatory, Indonesia during its maximum light (V = 4.3). Spectrum was monitored and taken from August, 16th until 27th, 2013. The GAO-ITB RTS 20.3 cm telescope, SBIG DSS-7 spectrograph and SBIG ST-7 XE as the detector have been employed throughout the observations. The spectra show P-Cygni profiles in Balmer, Na'I'D and Fe II lines, from which we determined shell expansion velocity of 1421.66 ± 139.18 km/s, 1227.54 ± 121.57 km/s and 1402.86 km/s, respectively. Our spectroscopic observations followed spectrum evolution of V339 Del from the pre-maximum phase to early Orion phase. The characteristic of the nova Delphini 2013 resembles those of Fe II-type of nova.

| Poster Session | 15:05~15:30 |

Chairs: **Irina Voloshina** (Sternberg Astronomical Institute)

Shengbang Qian (Yunnan Observatories)