

mospheric lines, the farthest *UV* and X rays. These magnetic fields are developed by a dynamo action generated in the interaction between rotation and the depth of the convection zone.

For some years, observations have been carried out at Cerro Tololo and Cerro La Silla Observatories as part of a photometric and spectroscopic program. Of all observed systems, more data related to BD-0°210 and V824 Ara systems is available. For both systems the result of data analysis is consistent with the hypothesis of the existence of colder regions in the photospheric surface. In the case of BD-0°210 it can be inferred that at least two spots account for cold regions distribution.

The filling factor and the estimated temperature for both the still region and the spot are shown in the table below. It was possible to obtain this information by applying the Vogt model for spot temperature determination from *V* and *R* color variation.

System	Still Region T°	Spot Temperature	Filling Factor
BD-0°210	5135	3865	22%
V824 Ara	5485	3515	25%

#### OPTICAL STUDY OF LMXBs WITH HIGH TEMPORAL RESOLUTION FROM CASLEO. EVIDENCE OF NON-THERMAL FLARES FROM MXB 1735-44

G. Beskin, S. Neizvestny, V. Plokhotnichenko,  
M. Popova, and A. Zhuravkov  
Special Astronomical Observatory, Russia  
and

O. Benvenuto, C. Feinstein, and M. Méndez  
Fac. de Ciencias Astronómicas y Geofísicas  
Universidad Nacional de La Plata, Argentina

We present a search for ultrafast optical variability ( $10^{-7}$  – 10 s) among some LMXBs using MANIA complex attached to the 2.15-m telescope of CASLEO, Argentina. Two flares of 0.25 s duration were recorded from the MXB 1735-44 X-ray burster. Object brightness increased 15–30 times in 0.05–0.06 s, while these flares also displayed fine structure (time scales 0.005–0.006 s, with a confidence level > 95%). Brightness temperatures were obtained for the non-thermal process during accretion of material onto a compact object.

#### IDENTIFICATION OF NEW SYMBIOTIC STARS

D. Cieslinski and F. Elizalde

Instituto Nacional de Pesquisas Espaciais, Brazil

and

J.E. Steiner

Instituto Astronômico e Geofísico, USP, Brazil

We present optical and near infrared spectroscopy of the stars V417 Cen, V704 Cen, RT Cru, H1-25 and NSV11776 which confirms the symbiotic nature for these systems. The stars RT Cru, H1-25 and NSV11776 are classified for the first time as symbiotics, while V17 Cen is quoted as yellow symbiotic in Steiner, Cieslinski, & Jablonski (1988, CTIO 25th Anniversary Symposium, ASP Conference Series), and V704 Cen as a possible symbiotic in Allen (1984, Proc. ASA, 5, 369). The stars H1-25 and NSV11776 were misclassified as planetary nebulae in Perek & Kohoutek (1967, Catalogue of Galactic Planetary Nebulae) and in Steiner et al. (1988), respectively. RT Cru, on the other hand, is classified as IA (i.e., irregular variable with early (O-A) spectral type) in the 4th edition of General Catalogue of Variable Stars (Kholopov et al. 1985).

We have also obtained *UBVRI* photometry and differential fast photometry (1–2 hours of length) in *V* band for some of these objects. The star RT Cru presents flickering with amplitude ~0.03–0.05 mag and timescales of ~10–20 minutes, while the other stars apparently do not show any variations.

Both, spectroscopic and photometric observations were taken at CNPq/Laboratório Nacional de Astrofísica (LNA), Brazil.

#### FURTHER OCCULTATIONS OF THE CENTRAL STAR IN NGC 2346?

R. Costero, M. Peña, W.J. Schuster,  
M. Tapia, and J. Echevarría

Instituto de Astronomía

Universidad Nacional Autónoma de México

V651 Mon, the central star of the planetary nebula NGC 2346, is a well known spectroscopic binary with an orbital period of nearly 16 days. It consists of an A-type star and a hot, dense companion (c.f. Méndez & Niemela 1981, ApJ, 250, 240). About ten years ago, the system went into a long series of large optical and infrared variations with a modulation similar to the orbital period (Kohoutek 1982, IBVS 2113; Kohoutek 1983, MNRAS, 204, 92; Méndez, Gathier, & Niemela 1982, A&A, 116, L15; Roth et al. 1984, A&A, 137, L9). These first light fluc-