

Observations and Light Curve Analysis of Variable Objects in M31 Galaxy

**A. Valcheva¹, P. Nedialkov¹, E. Ovcharov¹, G. Ganchev¹, M. Minev¹,
A. Kostov², V. Ivanov³**

¹Department of Astronomy, Faculty of Physics, University of Sofia, Bulgaria

²Institute of Astronomy with NAO Rozhen, Bulgarian Academy of Sciences, Bulgaria

³European Southern Observatory, Casilla 19, Santiago 19001, Chile

Abstract. We present the results of our long-term photometric observations of several novae and a dozen LBV stars in M31 galaxy. The observations were carried out with the 14'' Newtonian telescope at Students Astronomical Observatory Plana and 50/70 cm Schmidt telescope at NAO Rozhen and cover a period of nearly a year. The objects photometric behavior is studied via light curves. For novae, additional archival data are used to construct detailed light curves and to obtain some important parameters – type, maximum brightness, rate of decline. LBVs light curves are studied for long and short term variability.