

Poster at Splinter Meeting

Splinter I

PSN J12304185+4137498 IN NGC 4490: A LBV GIANT ERUPTION
IN A LMC-LIKE GALAXY

A. Müller¹, A. Becker¹, D.J. Bomans^{1,2}, K. Weis¹, H. Meusinger³,
D. Dimitrov⁴

¹*Astronomical Institute of the Ruhr-University Bochum*

²*RUB Research Department Plasmas with Complex Interactions*

³*Thüringer Landessternwarte Tautenburg*

⁴*Institute of Astronomy and Bulgarian National Astronomical Observatory*

Luminous Blue Variables (LBVs) are massive evolved stars in a transitional phase from the MS to the WR state. Variability is seen either in photometric variations that are caused by a change in the spectral type and that last from a few years to decades. Additionally LBVs are subject to giant eruptions, short and spontaneous photometric outbursts. SN imposters are SN-like events that for one or the other reasons (brightness, spectrum, lightcurve) are not clearly a SN. Many of these are good candidates for being an LBV giant eruption. However a giant eruption may look like a SN imposter but not all SN imposters may be LBV giant eruptions.

In 2011 a transient appeared in the interacting, very late type galaxy NGC 4490. Its nature is of particular interest due to the sub-solar metallicity of the host galaxy and a claim of an quite low luminosity progenitor star (Fraser et al. 2011). We monitored the transient with the 2m telescope at Tautenburg, the 2m telescope at the Rozhen Observatory and the 2.2m telescope at Calar Alto. Additionally we used archival data from the 2.5m INT, the Calar Alto 2.2m, the 8.2m SUBARU, as well HST and SWIFT. From all these data light curves and color index plots for the transient are made. The derived parameters and the properties of the spectra are compared to other LBV giant eruptions. Using our data we estimate the pre-outburst and outburst properties, like luminosity, effective temperature and mass-loss rate of the star. We discuss the nature, evolutionary state, and current status of the star to further explore relations between LBVs, supernova imposters, and supernova type II_n.