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Editors: A. Mateus, J. Gregorio-Hetem & R. Cid Fernandes

## AM 2217-490: A POLAR RING GALAXY UNDER CONSTRUCTION

P. Freitas-Lemes[1], I. Rodrigues[1], M. Faúndez-Abans[2], and O. Dors[1]

This work is part of a series of case studies of Polar Ring Galaxies (PRGs) (see also Posters GAL-1: 163, GAL-2: 178). A PRG is formed by an early type host galaxy (e.g. lenticular or elliptical), surrounded by a ring of gas and stars orbiting approximately at the polar plane of the host galaxy. AM2217-490 is an interesting case of PRG in formation, with a still asymmetrical ring that surrounds the host galaxy. Apparently, this bluish structure (characteristic of the rings of PRGs), is not yet in equilibrium with the host galaxy. This study is based on spectra on the range 6250–7250 Å obtained with the CTIO 1.5 m telescope - Chile. From them, we measure a heliocentric radial velocity of $9152 \pm 18$ km/s. The value of the ionization parameter ($\log U = -3.5$) is similar to that in interacting galaxies (Freitas-Lemes et al. 2013, submitted to MNRAS; and Krabbe et al. 2013, MNRAS Accepted), and lower than that of isolated ones. The electron density shows little variation along the major axis of the host galaxy, and a mean value typical of interacting galaxies. Diagnostic diagrams show that the nuclear region harbors an AGN, following a trend among polar ring galaxies. The low-resolution images of the SDSS show no tails or bridges connecting the galaxy to other objects, however, in a radius of 5 arcmin there are three other galaxies with similar speeds, featuring a group. A plausible hypothesis is that one of these galaxies may have interacted with AM2217-490, donating material to form the ring.

[1] UNIVAP /IPD, Av. Shishima Hifumi, 2911 - Urbanova - São José dos Campos - SP, priscila@univap.br, irapuan@uivap.br, olidors@univap.br
[2] MCTI/Laboratório Nacional de Astrofísica, Coordenação de Apoio Científico. Rua Estados Unidos 154 - Itajubá - MG, mfaundez@lna.br

## THE EFFECTS OF INTERACTION ON THE KINEMATICS AND ABUNDANCE OF AM 2229-735

P. Freitas-Lemes[1], I. Rodrigues[1], O. Dors[1], and M. Faúndez-Abans[2]

This observational study is about the effects of interaction on the kinematics and chemical abundance of the component galaxies of AM 2229-735. This system is formed by a disk galaxy, NED01, and a compact perturbed Sb(s)-like galaxy, NED02, the latter showing a tail and counter-tail arc-shaped feature. This system could be a progenitor of a polar ring galaxy. The sky-projected tail is very luminous and seems to connect the galaxies. Our study was based on BVRI broad band imagery as well as long-slit spectroscopy in the wavelength range 4100-8600 Å. We estimated heliocentric radial velocities of 17518±25 km/s (NED01) and 17326±27 km/s (NED02). Standard diagnostic diagrams were used to classify the main ionizing source of selected emission-line regions. It turns out that all regions are mainly ionized by massive stars. Using two empirical methods, we found that the HII regions in AM2229-735 have high metallicity: $12+log(O/H) = 8.3-8.6$ dex.

[1] UNIVAP /IPD, Av. Shishima Hifumi, 2911 - Urbanova - São José dos Campos - SP, priscila@univap.br, irapuan@uivap.br e olidors@univap.br
[2] MCTI/Laboratório Nacional de Astrofísica, Coordenação de Apoio Científico. Rua Estados Unidos 154, Itajubá, MG, mfaundez@lna.br

## THE IMPACT OF GAS BULK ROTATION ON THE LYMAN-$\alpha$ LINE

J. N. Garavito-Camargo[1], J. E. Forero-Romero[1], and M. Dijkstra[2]

We present results of radiative transfer calculations to measure the impact of gas bulk rotation on the morphology of the Lyman $\alpha$ line in galaxies. We model a galaxy as a sphere with a homogeneous mixture of dust and hydrogen at a constant temperature. These spheres have a solid-body rotation with maximum velocities in the range $0 - 300$ km s$^{-1}$ and neutral hydrogen optical depths in the range $\tau_{\rm H} = 10^5 - 10^7$. We also consider two kinds of spatial distribution for the radiation sources with respect to the sphere: central and homogeneous. We find that the line width and the intensity at the line's center increases with rotational velocity. In the case of homogeneously distributed sources, for large rotational velocities the line transforms from a double peak to a single peak at the line center. Under the same conditions the escape fraction increases $\sim 30\%$. For radiation sources located off-center, the line morphology presents a range of single, double and triple peaked