

METALLICITY AND SMALL-SCALE KINEMATICS IN LOCAL STARFORMING GALAXY

A. Yarovova¹, I. Gerasimov¹, O. Egorov¹, A. Moiseev^{1,2},
K. Vasiliev¹ and T. Lozinskaya¹

¹*Lomonosov Moscow State University, Sternberg Astronomical Institute,
Universitetsky pr. 13, Moscow 119234, Russia*

²*Special Astrophysical Observatory, Russian Academy of Sciences,
Nizhny Arkhyz 369167, Russia*

E-mail: yaan.ph@gmail.com

We present a comprehensive study of the nearby dwarf irregular galaxy NGC 2366 - a local analog of Green Pea galaxies. We focus on the spectral analysis to investigate the local gas kinematics, excitation, and metallicity of star-forming regions both in the most bright region Mrk 71 and the regions beyond.

Observations were conducted using the SCORPIO-2 multimode focal reducer on the 6-m BTA Russian telescope, employing both Fabry-Perot Interferometer (FPI) data and long-slit spectroscopy. The FPI data allowed us to map gas kinematics in the H α emission line, revealing complex velocity structures across the galaxy and regions with significant non-thermal broadening, indicative of outflows and potential supernova remnants.

Long-slit spectroscopy provided detailed information on the ionization state and chemical abundances of galactic HII regions. We derived electron temperatures and oxygen abundances using the direct T_e method, revealing variations across the galaxy. In particular, we examined the prominent star-forming region Mrk 71 and its associated outflow, characterizing their complex spectral features and report the discovery of a new Wolf-Rayet star candidate.