

POLARIZATION OF LENSED QUASARS

Đorđe Savić^{1,2}, Luka Č. Popović^{1,3}, Elena Shablovinskaya⁴,
Saša Simić⁵

¹*Astronomical Observatory, Volgina 7, 11060 Belgrade, Serbia*

²*Université de Liège, Belgique*

³*Department of Astronomy, University of Belgrade, Studentski trg 16,
11000 Belgrade, Serbia*

⁴*Special Astrophysical Observatory of the Russian Academy of Sciences, 369167, Russia*

⁵*Faculty of Science, University of Kragujevac, Radoja Domanovića 12,
34000 Kragujevac, Serbia*

E-mail: djsavic@aob.rs

Gravitationally lensed quasars are important phenomena in modern astrophysics. The light from these objects is amplified, and we can detect objects at large redshift; therefore, the investigation of lensed quasars and their geometry is crucial for cosmology. Gravitational lenses can be used to constrain the innermost structure of lensed quasars e.g. probing the accretion disk structure and its temperature profile, as well as the structure and kinematics of the broad line region. Consequently, spectropolarimetric observations can provide information about the structure of lensed quasars, however, the nature of polarization in lensed quasars is not yet clearly understood. We observed two objects: SDSS J1004+4112 and Q0957+561 with the 6m SAO RAS and Robopol telescopes. We modeled the geometry of the emitting regions using the radiative transfer codes STOKES and SKIRT in polarimetry modes taking into account the dominant

polarization mechanisms. For computing the lensing effects, we used the LENSTRONOMY package. Finally, we discuss the influence of gravitational macro- and microlensing on the optical polarization of lensed quasars.