

## Linear and circular polarimetry of recent comets: Observational results for eight comets

V. Rosenbush<sup>1</sup>, A. Ivanova<sup>1</sup>, N. Kiselev<sup>1</sup>, V. Afanasiev<sup>2</sup>, S. Kolesnikov<sup>3</sup>, and D. Shakhovskoy<sup>4</sup>

<sup>1</sup>Main Astronomical Observatory of the National Academy of Sciences of Ukraine, Ukraine

<sup>2</sup>Special Astrophysical Observatory of the Russian Academy of Sciences, Russia

<sup>3</sup>Observatory of Odessa National University, Ukraine

<sup>4</sup>Crimean Astrophysical Observatory, Ukraine

We present the results of polarimetric observations for a number of recent comets carried out at the 6-m telescope of the Special Astrophysical Observatory (Russia) and the 2.6-m telescope of the Crimean Astrophysical Observatory (Ukraine) during 2011–2013. Comets 103P/Hartley 2, C/2009 P1 (Garradd), C/2011 L4 (PANSTARRS), C/2012 S1 (ISON), C/2013 R1 (Lovejoy), 29P/Schwassmann-Wachmann 1, C/2010 S1 (LINEAR), and C/2011 R1 (McNaught) were observed at different distances from the Sun (0.9–6.3 au) and at different phase angles (6.2–83.5 deg). The results obtained are compared with the phase-angle dependencies of linear polarization typical for the high-polarization and low-polarization comets. The linear polarization of comet S1 (LINEAR) and Schwassmann-Wachmann 1 are the first ever measured at the heliocentric distances larger than 6 au. The maps of circular polarization over the coma and its variations with the distance from the nucleus of comets P1 (Garradd), L4 (PANSTARRS), R1 (McNaught), and Schwassmann–Wachmann 1 are obtained. In all cases, left-handed circular polarization is detected and its value is within the range from -0.04 % up to -0.3 %. Detection of left-handed circular polarization in these comets has confirmed our previous conclusion that circular polarization of comets is predominantly left-handed. We will discuss the possible reasons for the diversity and similarity of linear and circular polarization in comets.

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