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Investigation of dust component of hyperbolic comet C/2015 VL62

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The processing and analysis of photometric and spectral data obtained for the long-period comet C / 2015 VL62 (Lemmon-Yeung-PanSTARRS) on the 2nd SAO 6-m telescope in 2015 was processed and analyzed. The comet was observed at a heliocentric distance of 3.8. a.u., where sublimation of water ice is not significant. Several different programs were used for processing (basic reductions) and analysis, including Maxim DL, IDL, Astrometrica and Astroart 7. Analysis of spectral data showed that there are no gaseous emissions in the spectrum, only a dust continuum. Since no gaseous emissions were detected in the spectrum, this allowed the study of the dust component from photometric data obtained in wide sloan g- and r-sdss filters. The analysis of photometric data allowed to analyze the morphological features of the cometary coma and tail, to assess the dust productivity and the color of the dust coma. The magnitude, Afρ parameter, and color index in the g- and r-sdss filters were determined. The errors of these calculations are estimated. Graphs of comet profiles in different directions were constructed using a number of digital filters, and low contrast structures in comet coma were investigated. From the analysis of spectral data, the amount of redness for the studied comet was obtained. The value of the work is that it is one of the few works where comets are studied at large heliocentric distances.

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