



Dust trail of distant comet C/2003 WT42 (LINEAR)

I. Kulyk, P. Korsun

Main Astronomical Observatory of National Academy of Sciences of Ukraine, Ukraine

leda@mao.kiev.ua

Comet C/2003 WT42 was discovered by the LINEAR team on November 19, 2003. The present orbit of this comet has a perihelion at 5.19AU and an inclination of 31.4°. Notwithstanding considerable heliocentric distances, the comet shows a prominent coma with fanlike morphology. We observed comet C/2003 WT42 with 2-m telescope of the Bulgarian National Observatory on December 4, 2005, four month before the perihelion passing. The Two-Channel Focal Reducer enabled to obtain pairs of images in red and blue continuum windows free from cometary molecular emissions. Based on these images, brightness and color maps were built and used for further analysis of the dust environment. The value of dust production, $Af\rho$, derived from the red images, does not depend on the distance from the nucleus and amounts to 3000cm, which indicates high activity of the comet. The color map shows a positive color excess, that is, the dust is redder than the color of the Sun over the entire image. The nucleus reddening value is about 6%/100nm, which is comparable to that derived for D-like objects. However, it is clearly seen on the map that the reddening is varying over the coma dropping down to 3%/100nm around the nucleus and increasing slightly toward the tail axis.