Geophysical Research Abstracts
Vol. 15, EGU2013-3334-3, 2013
EGU General Assembly 2013

Venus Express/VMC observations of the Venus O_2 visible nightglow

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We are analyzing the images of the Venus night side obtained with the Venus Monitoring Camera (VMC) aboard Venus Express at visible wavelengths (passband of 502-568 nm at 1/4 maximum transmission). The images show a faint but distinct emitting layer at about 100 km altitude attributed to the O_2 visible nightglow discovered by the Venera 9/10 missions [1]. The visible filter is most sensitive to the v"=9, 10 bands of the c(0)-X(v") progression, that occur at 513 and 551 nm, respectively. The VMC images allow us to investigate day-to-day variations in the nightglow intensity, that typically ranges from 200 to 400 kiloRayleighs in limb viewing, over the Venus disk, thus expanding on past studies from either space-borne or ground-based telescopes. In the presentation, we will discuss the status of our analysis of nearly five years of O_2 visible nightglow data with VMC. Ref.: [1] Krasnospolsky et al. (1977), Cosmic Res., 14, 687.