Herschel-Planck dust optical-depth and column-density maps

I. Method description and results for Orion
(Corrigendum)

Marco Lombardi[1,4], Hervé Bouy[2], João Alves[3], and Charles J. Lada[4]

[1] University of Milan, Department of Physics, via Celoria 16, 20133 Milan, Italy
    e-mail: marco.lombardi@unimi.it
[2] Centro de Astrobiología, INTA-CSIC, PO Box 78, 28691 Villanueva de la Cañada, Madrid, Spain
[3] University of Vienna, Türkenschanzstrasse 17, 1180 Vienna, Austria
[4] Harvard-Smithsonian Center for Astrophysics, Mail Stop 72, 60 Garden Street, Cambridge, MA 02138, USA

Errors occurred during the production process. Figures 4, 16, 18, and 20 were published twice. The correct Figs. 3, 4, 15, 16, 17, 18, 19, and 20 are published below.
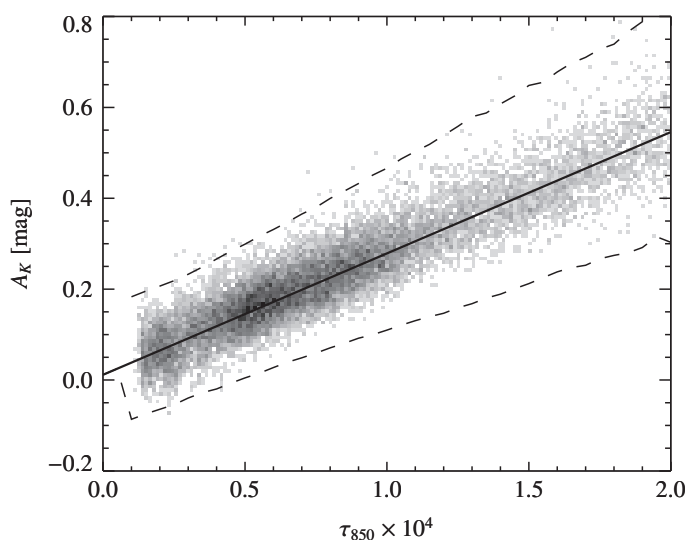

Fig. 3. Relationship between submillimeter optical-depth and NIR extinction in Orion A. The best linear fit, used to calibrate the data, is shown together with the expected 3σ region, as calculated from direct error propagation in the extinction map.
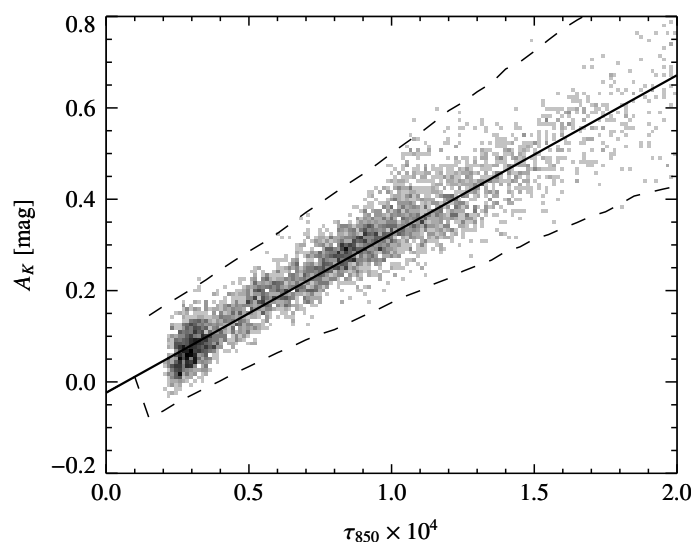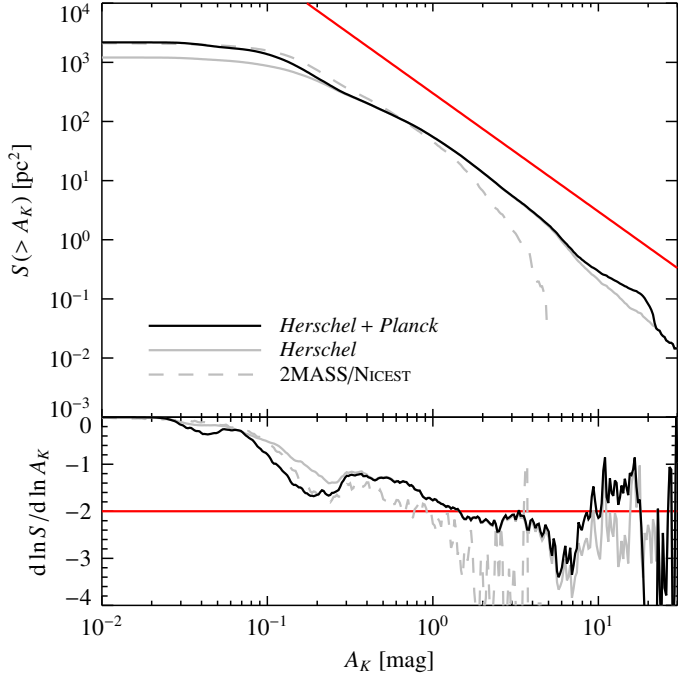
Fig. 4. Same as Fig. 3 for Orion B.

Fig. 15. Integral area-extinction relation for Orion A, i.e., the physical cloud area above a given extinction threshold (*top panel*), and the logarithmic derivative of this quantity (*bottom panel*). The solid black line shows the result for the entire field, while the solid gray line shows the region covered by *Herschel* alone. For comparison we also plot as a dashed gray line the same quantity as obtained from the 2MASS/NICEST extinction map and a simple $S(>A_K) \propto A_K^{-2}$ relation as a red line.
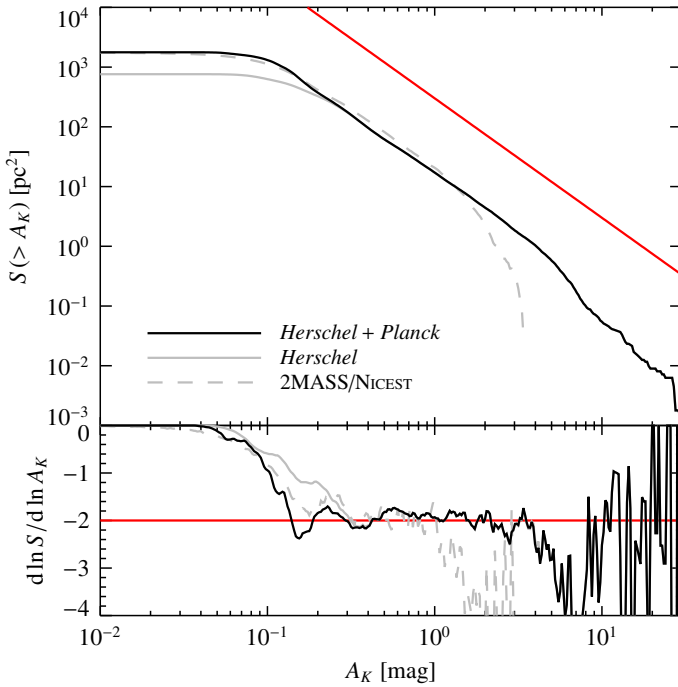

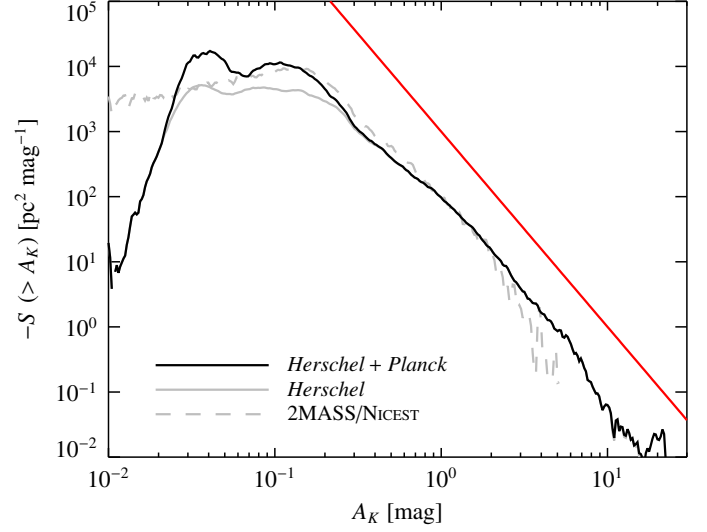**Fig. 16.** Same as Fig. 15 for Orion B.

Fig. 17. Function $-S'(>A_K)$, that is, the probability distribution function (pdf) of the measured column densities for Orion A. In this log–log plot a log-normal distribution would appear as a parabola, and a power law as a straight line. The red line shows the slope of the power law $-S'(A_K) \propto A_K^{-3}$.
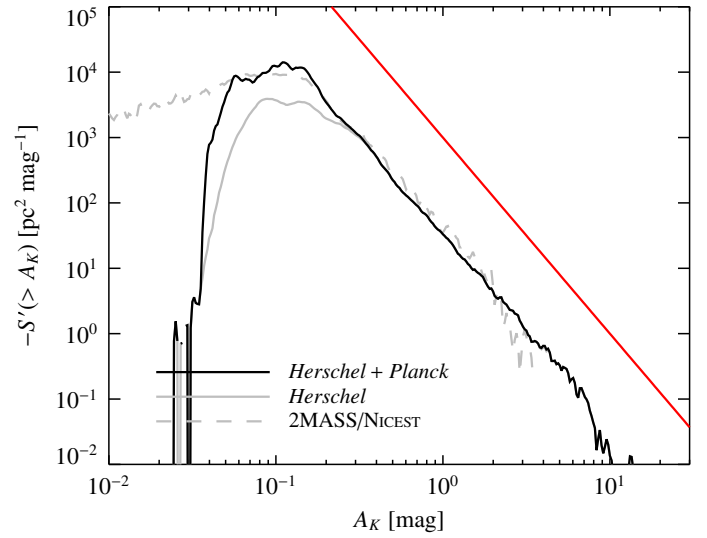

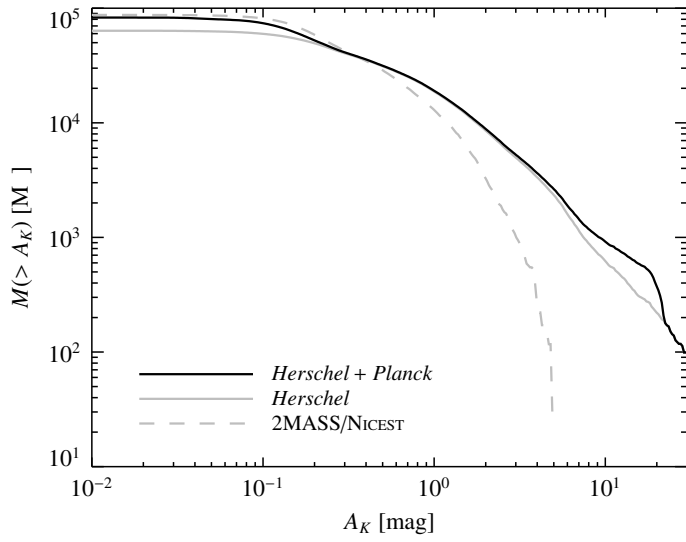**Fig. 18.** Same as Fig. 17 for Orion B.

Fig. 19. Integral mass-extinction relation for Orion A, i.e. the cloud mass above a given extinction threshold. The color codes follow the same convention as in Fig. 15.
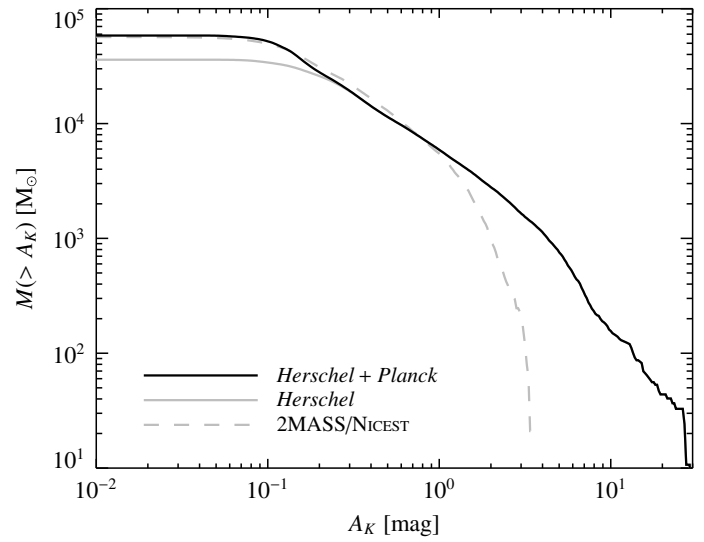
Fig. 20. Same as Fig. 19 for Orion B.