

## Correction to “Electrons and magnetic fields in the lunar plasma wake”

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[1] In the paper “Electrons and magnetic fields in the lunar plasma wake” by J. S. Halekas et al. (*Journal of Geophysical Research*, 110, A07222, doi:10.1029/2004JA010991, 2005), there was an error in equations (9)–(12). The corrected equations are presented here.

[2] This error resulted from the wrong choice of the integration constant corresponding to the location of the edge of the rarefaction wave bounding the lunar wake. The correct equations are presented below (see Manfredi et al. [1993] and Sack and Schamel [1987] for details of the correct derivation of these equations). The corrected equations are valid for  $Z > -C_s \sqrt{(2\kappa - 3)/(2\kappa - 1)}$ , rather than for  $Z > -C_s$  as erroneously stated in the original paper. This correction only slightly changes the functional form and does not substantively affect any results of the paper.

$$N_e = N_0 \left[ 1 + \frac{1}{(2\kappa - 2)} \sqrt{\frac{2\kappa - 1}{2\kappa - 3}} \left( Z/C_s + \sqrt{\frac{2\kappa - 3}{2\kappa - 1}} \right) \right]^{(1-2\kappa)} \quad (9)$$

$$T_e = T_0 \left[ 1 + \frac{1}{(2\kappa - 2)} \sqrt{\frac{2\kappa - 1}{2\kappa - 3}} \left( Z/C_s + \sqrt{\frac{2\kappa - 3}{2\kappa - 1}} \right) \right]^2 \quad (10)$$

$$\phi = -(T_0/e)(\kappa - 3/2) \\ \cdot \left\{ \left[ 1 + \frac{1}{(2\kappa - 2)} \sqrt{\frac{2\kappa - 1}{2\kappa - 3}} \left( Z/C_s + \sqrt{\frac{2\kappa - 3}{2\kappa - 1}} \right) \right]^2 - 1 \right\} \quad (11)$$

$$V_i = \frac{(2\kappa - 1)}{(2\kappa - 2)} \left( Z + C_s \sqrt{\frac{2\kappa - 3}{2\kappa - 1}} \right) \quad (12)$$

[3] We thank Ian Hutchinson for pointing out the error in our calculations.

## References

- Manfredi, G., S. Mola, and M. R. Feix (1993), Rescaling methods and plasma expansions into vacuum, *Phys. Fluids B*, 5, 388–401, doi:10.1063/1.860524.  
 Sack, C., and H. Schamel (1987), Plasma expansion into vacuum—A hydrodynamic approach, *Phys. Rep.*, 156, 311–395, doi:10.1016/0370-1573(87)90039-1.