

Interactive comment on “Paleosols in the transantarctic mountains: indicators of environmental change” by J. G. Bockheim

W. Mahaney (Referee)

arkose@rogers.com

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Comment on Bockheim, SED ms.

This is a well written and documented review paper that should have wide appeal to workers in Antarctica. The illustrations are well done and add to the presentation. Some specific comments are as follows: Reference to key previous work is lacking in a few areas. For one, Campbell, I.B., Claridge, G.G.C., 1987, Antarctica: Soils, Weathering Processes and Environment: Elsevier, Amsterdam., 368 pp. should be mentioned.

For another, Hart, K.M., Szpak, M.T., Mahaney, W.C., Frazer, A.R., Jordan, S.F., Dohm, J.M., Allen, C.C.R., Kelleher, B.P., 2011, Bacterial enrichment study and overview of

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the extractable lipids from Antarctic paleosols, Dry Valleys, Antarctica: *Astrobiology*, v. 11, p. 303-321.

Ref to Mahaney et al., 2001 should be combined with Mahaney et al., 2012 because both papers refer to semi-lithified paleosols.

p. 1011, line 5, sentence incomplete? Varies from...might be better? p. 1012, top. I haven't time to check but I think Bockheim (1990) was developed from Campbell and Claridge (1987) and from an earlier paper by Claridge. If I am right both refs need to be added. This may be a simple oversight. p. 1013, line 12,,,,nitric, not nitic. p. 1016, lines 7 and 8. We? A ref might be better? Or make it singular. p. 1016, line 10, define taffoni. p. 1016, line 18...Needs a ref. Fed is mentioned in 4.1 but then dropped. Mention might be made of its contribution to age determination as discussed in Mahaney, W.C., Dohm, J.M., Kapran, B., Hancock, R.G.V., Milner, M.W., 2009, Secondary Fe and Al in Antarctic paleosols: correlation to Mars with prospect for the presence of life: *Icarus*, v. 203, p. 320-330. If extractable Fe is useful in classifying soils by age is it not important to bring in extractable Al even if data are rare? If so, ref to 'Aluminum extracts in Antarctic paleosols: Proxy data for organic compounds and bacteria and implications for Martian paleosols' should be considered.

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5, C332–C333, 2013

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