

# Lunar Galactic Cosmic Ray-Induced Lunar Proton Albedo Map

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**Release:** 1

**Release Date:** 2013-04-17

**Description:** Cosmic ray-produced lunar albedo proton yield mapped over the lunar surface. The pixel colors represent the albedo proton *yield* -- ratio of flux of protons traveling up from the lunar surface to flux of incident GCR protons -- measured by the CRaTER instrument. The color scale covers a range in yield of 0.38 (blue/purple) to 0.42 (red). The uncertainty in the yield value for each pixel is 0.015, or ~38% of the total range of values. Clusters of pixels with yields at the upper end of the scale (e.g., selenographic longitude 15-30°, selenographic latitude 0-30°) are a more statistically significant indication of local yield enhancement than isolated individual bright pixels.

**Data Acquisition Period:** 2009-07-01 to 2011-01-15

**Map Projection:** Cylindrical

**Spatial Resolution:** Data averaged over array of 288 pixels, each pixel 15° selenographic longitude × 15° selenographic latitude.

**Reference:** Wilson, J.K., H.E. Spence, J. Kasper, M. Golightly, J. Bern Blake, J.E. Mazur, L.W. Townsend, A.W. Case, M.D. Looper, C. Zeitlin, and N.A. Schwadron, "The first cosmic ray albedo proton map of the Moon." *Journal of Geophysical Research: Planets*, **117**, (2012) E00H23, doi:10.1029/2011JE003921.