

## News and Highlights

# There has been Some Water on the Moon Revealed by Discovery of Lakes

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Whether there has been water on the Moon or not is a heated debate. A very detailed examination of satellite photographs of the Tycho Meteorite Crater shows what appears to be a lake (A-Lake). This A-Lake occurs about 380 km from the center of Tycho at latitude 49.64°S and longitude 4.18°E, at the bottom of the Small Meteorite Crater (Figs. 1–2). The Small Meteorite Crater is roughly round, 3 km in diameter, ca. 1 km in depth (Fig. 2). The A-Lake is U-shaped, 0.6 km long from east to west, 0.5 km wide from north to south, with a total area of approximately 0.3 sq. km. This A-Lake has a very flat surface like a mirror, its water is crystal clear therefore gravel and mud can be distinctly seen at its bottom. The albedo of the lake is lower than that of the land (because land absorbs more light than the water surface, it should have a lower albedo) therefore the boundary is quite clear between the lake and the land (Figs. 3–4). The other four



Fig. 1. Locality of the Small Meteorite Crater (box near the bottom of the photograph).

lakes have also been found on the Moon (Fig. 5). All the data are from <http://target.lroc.asu.edu/q3/#>.

This exciting discovery on the lunar surface seems to suggest that there has been some water on the Moon in the recent past. However, further research needs to be carried out before this can be confirmed.

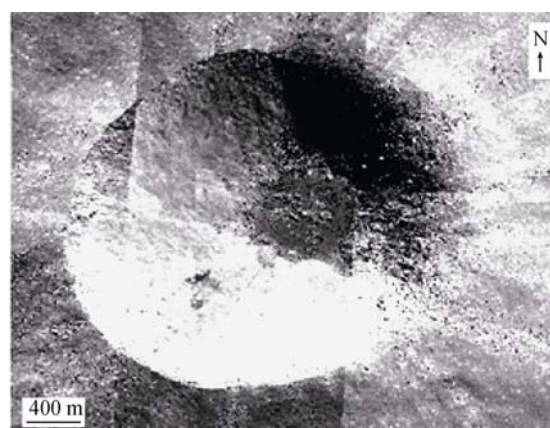


Fig. 2. The A-Lake situated at the bottom of the Small Meteorite Crater.

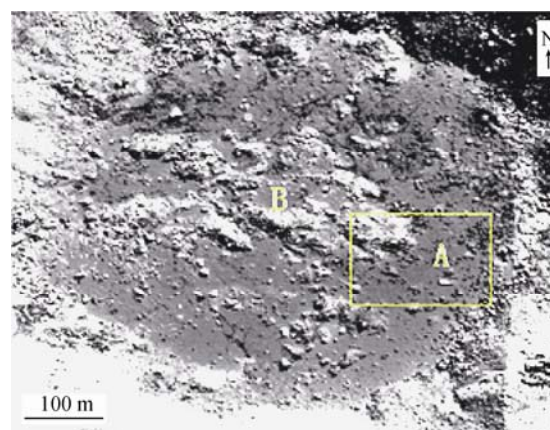


Fig. 3. The A-Lake. The area within the box-A is shown in more detail in Fig. 4.

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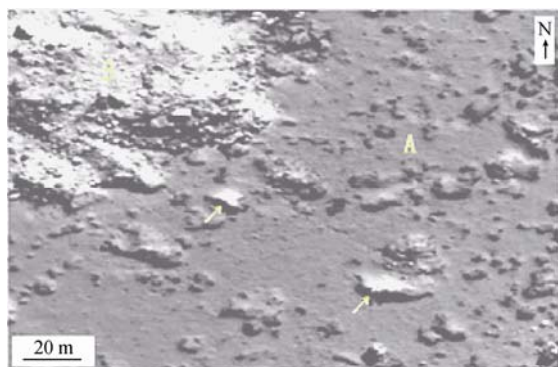


Fig. 4. Detail of the A-Lake (A, water area; B, land area).

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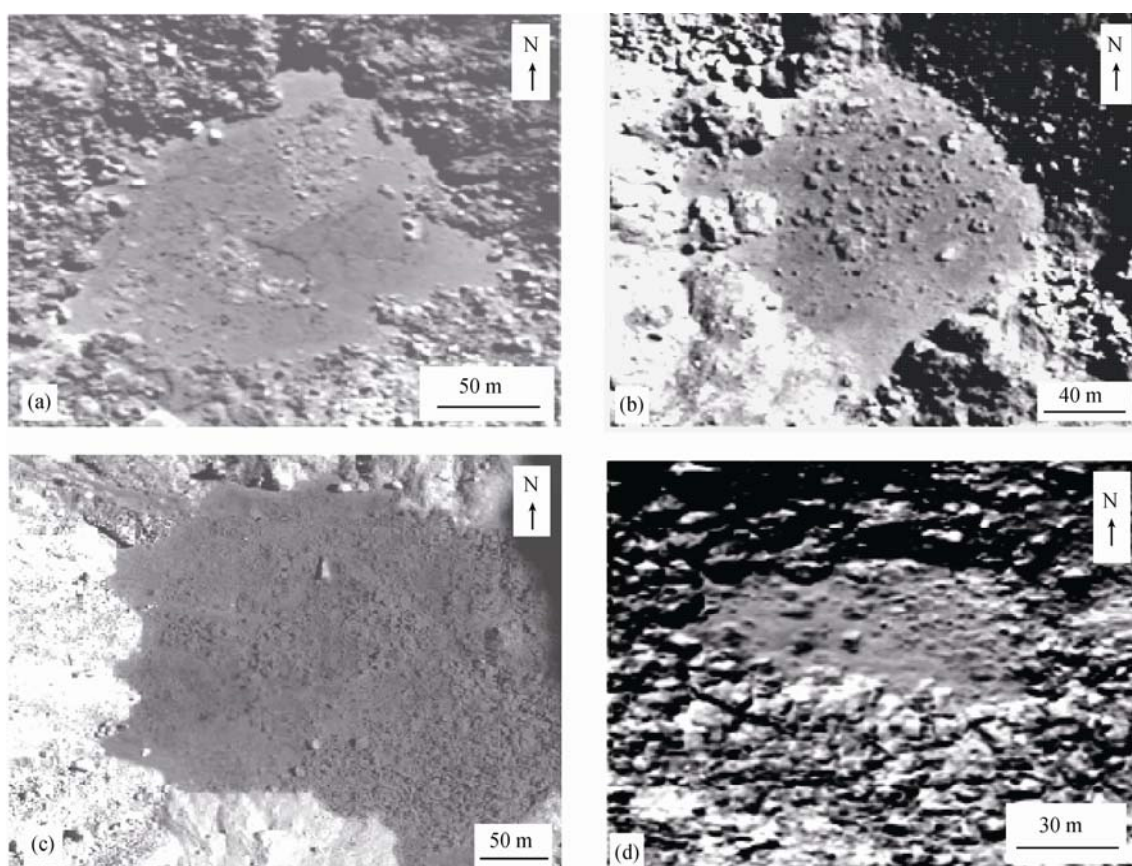


Fig. 5. The B-Lake (a), C-Lake (b), D-Lake (c) and E-Lake (d).