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Magnetization in the South Pole-Aitken Basin: Implications for the lunar dynamo and true polar wander

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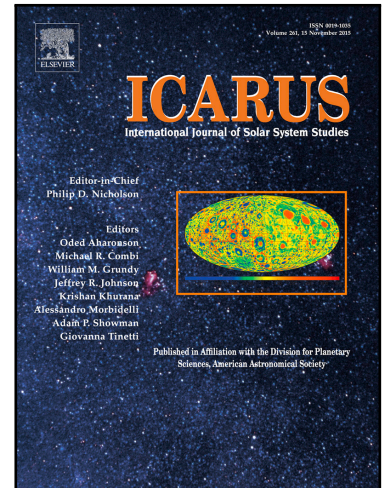
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## Highlights

- A diverse set of magnetization directions exists around the South Pole-Aitken basin (SPA): Variability exceeds lunar magnetic surveys that neglect SPA.
- Source bodies were likely magnetized in a dynamo field.
- Igneous intrusions are a reasonable explanation, but directional variability implies either surprisingly large amounts of true polar wander or non-axially aligned dynamo fields.
- Iron-rich SPA ejecta may have become “sesquinary” ejecta and re-impacted across the Moon on  $10^4$ - $10^6$  year timescales to record true polar wander caused by the SPA impact.

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