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Thermally induced stresses in boulders on airless body surfaces, and implications for rock breakdown

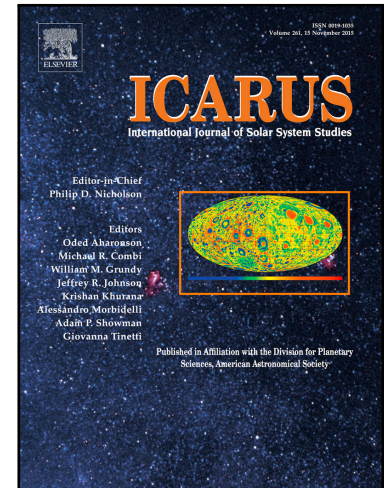
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Highlights

- Stresses of ~10 MPa are induced in 1 m boulders, and increase with boulder diameter.
- Boulders of any size buried by regolith do not experience thermally induced stress.
- Stresses associated with thermal gradients occur at boulder interiors during sunrise.
- Stresses occur at boulder surfaces after sunset as a result of cooling and contraction.
- Boulders of several times the diurnal skin depth may be most susceptible to breakdown.

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