A Surprisingly Young Region in Saturn's Rings

Chunks of solid ice in the middle of Saturn's A ring suggest an unexpectedly young ring region.

- Recent results from Cassini's infrared spectrometer found that particles in one section of Saturn's rings are much denser than the normally fluffy particles elsewhere.
- After equinox, when the sun shines edge-on to Saturn's rings, one section of the A ring did not cool down as much as expected, providing a unique window into the interior of the ring particles.
- Perhaps a tiny moon broke apart only 100 million years ago and its solid, icy fragments are slowly spreading through the rings.

Saturn's rings may therefore be a mix of young and old material, providing clues to their formation and evolution.

Above: Model of Saturn's rings showing both small and large particles.
Below: Estimated location in A ring of denser particles.

"Incomplete cooling down of Saturn's A ring at solar equinox: Implication for seasonal thermal inertia and internal structure of ring particles," Morishima, et al., Icarus, 279, 2-19, 2016. doi:j.icarus.2015.06.025