

Some Examples of Gerald Schubert's Contributions

-Dave Stevenson, Caltech

1. The Urey Number Problem
2. Galilean satellite structure
3. Thermal evolution of Terrestrial Planets
4. Mantle convection including a phase change

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Whole Planet Cooling and the Radiogenic Heat Source Contents of the Earth and Moon

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A genuine collaboration , with delayed publication because there were others doing the same problem.

An example of scientific squabbling over unimportant details.

But the problem is still not adequately solved!

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Internal Structures of the Galilean Satellites

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Motivated in part by our dissatisfaction with the highly publicized Io volcanism result (neither of us believed that you need a magma ocean but reviewers made us concede that it was at least possible).

Juno result (2025)- there is no magma ocean

Complete ice-rock separation still in doubt (Callisto, Titan, maybe not Ganymede?)

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Magnetism and Thermal Evolution of the Terrestrial Planets¹

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The calculations were entirely done at UCLA (punch cards!)

This paper would not have happened without the urging of Gerry!
And the writing of Tilman.

We still debate the persistence or existence of dynamos in
terrestrial planets. Does Mars have an inner core(2025 paper)?

Effects of an endothermic phase transition at 670 km depth in a spherical model of convection in the Earth's mantle

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Nature in 1993 (we got the cover!)

Current views of 670km (make that 650?) are different

Paul parallelized Gary Glatzmaier's code (a herculean effort) and enlisted Gerry's expertise on including good thermodynamics and a phase transition.

