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ABOUT THE COVER: This spectacular photograph of the August 30, 2006 eruption of the basaltic volcano Piton de la Fournaise, Réunion Island (France), illustrates the intense activity of volcanoes. Magma viscosity is a major parameter for modeling volcanic eruptions, and may be explained by melt structure and dynamics and ultimately by the atomic motion of melt components. Like several other volcanoes around the world, the Piton de la Fournaise is monitored by a volcanological observatory, built in 1979. PHOTO COURTESY THOMAS STAUDACHER AND INSTITUT DE PHYSIQUE DU GLOBE DE PARIS/OVPF

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