



Thermoluminescence Dating of Hawaiian Basalt: Usgs Professional Paper 1095 (Paperback)

By Rodd James May

Bibliogov, United States, 2013. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.The thermoluminescence (TL) properties of plagioclase separates from 11 independently dated alkalic basalts 4,500 years to 3.3 million years old and 17 tholeiitic basalts 16 years to 450,000 years old from the Hawaiian Islands were investigated for the purpose of developing a TL dating method for young volcanic rocks. Ratios of natural to artificial TL intensity, when normalized for natural radiation dose rates, were used to quantify the thermoluminescence response of individual samples for age-determination purposes. The TL ratios for the alkalic basalt plagioclase were found to increase with age at a predictable exponential rate that permits the use of the equation for the best-fit line through a plot of the TL ratios relative to known age as a TL age equation. The equation is applicable to rocks ranging in composition from basaltic andesite to trachyte over the age range from about 2,000 to at least 250,000 years before present (B.P.). The TL ages for samples older than 50,000 years have a calculated precision of less than: ± 10 percent and a potential estimated accuracy relative to potassium-argon...



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