Thermal inertia of small bodies from thermal observations during eclipses

Michael (Migo) Mueller[1]

[1] *Steward Observatory, University of Arizona (USA) (Germany)*

Thermal inertia and surface roughness both affect the apparent color temperature of atmosphere–less bodies and are therefore hard to disentangle observationally. Thermal inertia is usually determined from thermal spectrophotometry obtained over a large range of solar phase angle and therefore generally at different epochs and rotational phases. A more direct method to measure thermal inertia is from time-resolved thermal observations around eclipse events, enabling one to observe cooling and heating processes in real time. Modeling aspects are discussed for satellites eclipsed by their planets as well as for components of a binary asteroid system eclipsing one another. Results from recent Spitzer and Gemini observations are presented.