



Marine-continental tephra correlations (Pantelleria, Italy, and Ionian Basin): the potential for Mediterranean marker horizons

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Palaeo-environmental records from marine and terrestrial archives in the Mediterranean show broad-scale and millennial-scale climatic changes. Synchronising these records requires robust chronological control which may be achieved using isochronous tephra marker horizons. These need to be widespread and sufficiently unique in chemistry to be distinguished from each other. Pantelleria volcano, Italy, satisfies these criteria, with eruptions blanketing the Mediterranean Sea and being distinct from every other volcano in the region. This peralkaline volcano is already well-known for its 46 ka marker horizon (Y-6) but there is potential for extending correlations further back in time. Until recently, correlations were limited by scarce onshore glass data and few sediment cores covering sufficiently long time periods to compare with Pantelleria's >200 ka explosive volcanic history. Building on recent work that has established a detailed onshore stratigraphy, glass data are presented from Pantelleria and site 964 of ODP leg 160 which is situated ~400 km downwind from the volcano. New correlations can be established and previous suggestions are discussed in the light of this new data, representing a significant step forward in confident marine-continental tephra correlations.