The Avellino event: did a major volcanic eruption lead to mass migration in the Pontine Plain and Fondi basin during the Bronze Age?

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During the Early Bronze Age, a giant eruption of Mount Vesuvius (Italy) buried a flourishing landscape of villages and fields in the plains to the north and east of the volcano under more than a meter of Tephra. Inhabitants of the closest sites such as Nola ('The Bronze Age Pompeii') could barely escape with their lives. Italian archaeological research since the 1980s has conclusively shown that the population of the Campanian plain did not fully recover for several centuries after this so-called 'Avellino Event'. Given the topography of central-southern Italy, the most likely refuge area will have been to the north, in the wetland coastal plains of Latium Vetus: the Fondi basin and the Pontine Plain. In these areas, long-standing Dutch research programs have recently been able to find the Avellino volcanic tephra layer, that can be used as a chronological marker. This means that archaeological and palaeoecological observations of the necessary high chronological resolution and quality can be made to identify changes occurring immediately after the eruption. A joint research program between Groningen and Leiden universities, in collaboration with Italian geologists and archaeologists, aims to demonstrate and document any significant impacts that would result from the presence of the postulated Early Bronze Age refugee population in South Lazio. Because we feel that only the combination of different data can provide reliable answers, a careful design strategy has been built. This includes a detailed landscape and environmental reconstruction, by means of physical geographical and palaeoecological cores, an archaeological investigation of the differences and similarities in ceramic typology between Latium Vetus and Campania, petrographic and isotopic analysis of the Tephra left behind, and detailed palaeobotanical analysis of the tephra-layers. Other sites, both in the Fondi Basin and the Agro Pontino, will be investigated. This generates the opportunity for further detailed palaeo-environmental reconstructions, using tephra layers as stratigraphic markers. Apart from these double tephra layers, tephra mineralogy shows a high similarity throughout the basin. However its occurrence in different areas, the AV-tephra in di different sedimentary settings: a, MiJav a 44.5; b, Campi Ferrini; c, Mezzaluna di Rosi; d, Testa del Cavo; e, Borgo Hermada. Arrows indicate location of Tephra layer

Physical geography
Different Holocene depositional units in the Agro pontino contain the AV tephra, indicating the diversity of the environment during tephra deposition. The tephra has been encountered in peats, anaerobic clays, calcareous muds and levee clays. Our most recent studies revealed that both in the Agro Pontino and in the Fondi basin, a double tephra layer may be encountered. This generates the opportunity for future detailed palaeo-environmental reconstructions, using tephra layers as stratigraphic markers. Apart from these double tephra layers, tephra mineralogy shows a high similarity throughout the basin. However its occurrence in different areas, the AV-tephra in di different sedimentary settings: a, MiJav a 44.5; b, Campi Ferrini; c, Mezzaluna di Rosi; d, Testa del Cavo; e, Borgo Hermada. Arrows indicate location of Tephra layer...