The kingdom of Tonga devastated by a megatsunami in the mid-15th century

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The pre-colonial history of Tonga and West Polynesia still suffers from major gaps because its reconstruction is essentially based on legends left by oral tradition, and by archaeological evidence somehow difficult to interpret. By the fourteenth century, the powerful Tu’i Tonga kingdom united the islands of the Tongan archipelago under a centralised authority and, according to tradition, extended its influence to neighbouring island groups in the Central Pacific. However, some periods of deep crisis were identified, e.g. in the mid-15\textsuperscript{th} century, marked by an abrupt cessation of inter-archipelago migration on the deep seas in the Pacific, significant cultural changes, and a decrease in accessible natural resources. The origins of these disturbances are still debated, and are usually assigned to internal political problems or loss of external influence vis-à-vis neighboring states. However, the hypothesis of a major natural disaster was never suggested up to now.

Drawing on a body of new evidence from sedimentary signatures and radiocarbon dating of charcoal and marine bioclasts, geomorphology, and sedimentology, in support of previously published archaeological data, we argue that the Tu’i Tonga kingdom was severely impacted by a megatsunami in the mid-15th century. We also discuss the likely sources of this event, which happened in an isolated region of the world before the European maritime “great discoveries”. This tsunami could be the source of vivid local myths that strongly suggest that a giant wave covered almost the entire island of Tongatapu at one time.