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Alexanderson, Helena; Hoffstein, Ellen; Hoffstein, Iris; Peric, Zoran; Andersson, Nils-Arvid

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Buried by sand – the abandoned medieval town at Falsterbo, S Sweden

Helena Alexanderson[a], Ellen Hoffstein[b], Iris Hoffstein[b], Zoran M. Perić[a] and Nils-Arvid Andersson[c]

[a]Department of Geology, Lund University, Lund, Sweden, helena.alexanderson@geol.lu.se; [b]Spyken Upper Secondary School, Lund, Sweden; [c]Falsterbo Museum, Falsterbo, Sweden

Conclusions and discussion

Several cultural layers underlain by beach sand and interbedded and overlain by aeolian sand were exposed in an archaeological excavation at Falsterbo, S Sweden. The sandy beds have been dated by optically stimulated luminescence (OSL).

The beach sand is c. 2900 years old. A shoreline at the site around that time agrees with relative sea-level reconstructions (SGU 2023).

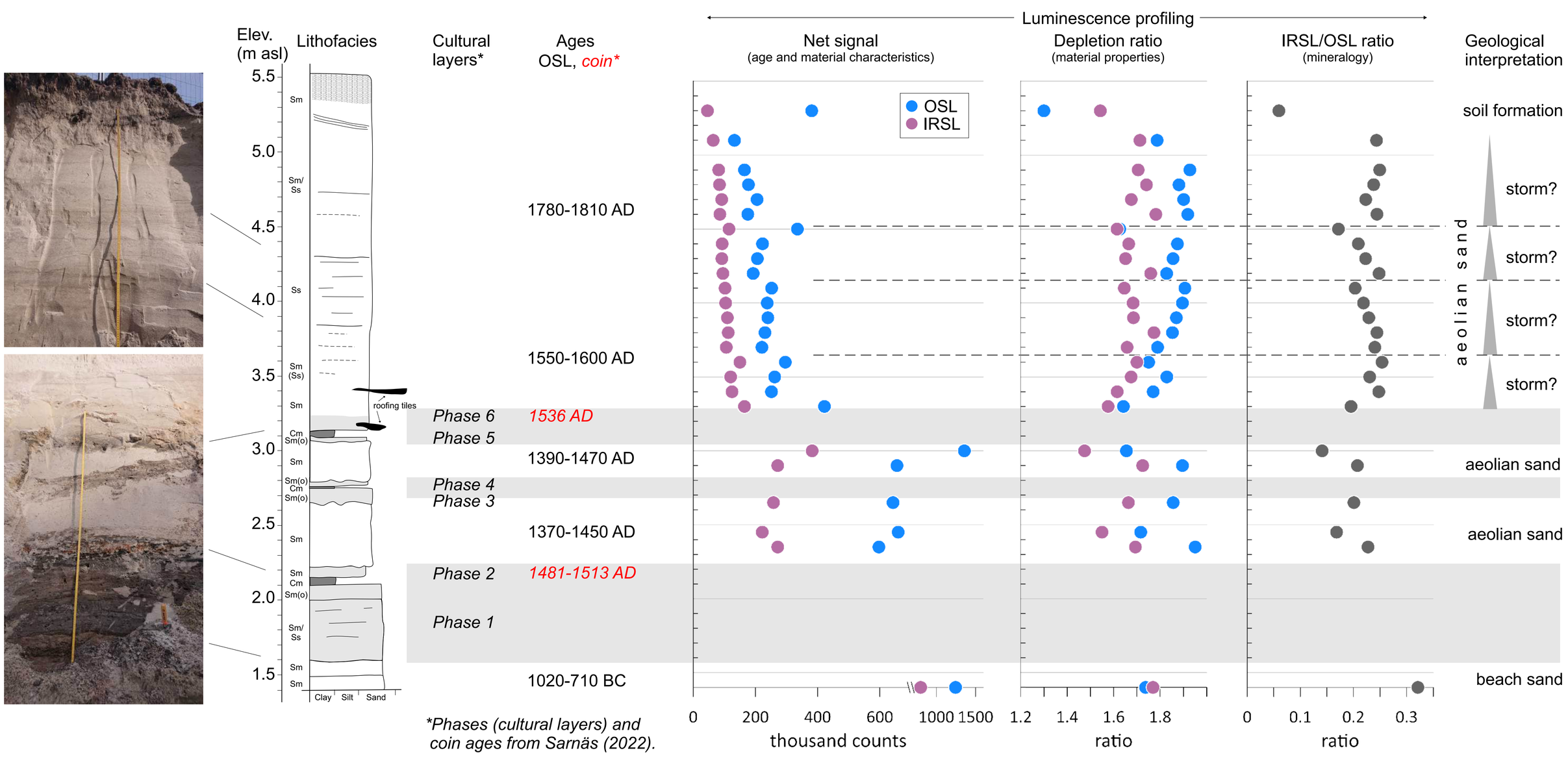
Two thin aeolian units, sandwiched between cultural layers, are dated to 1370-1470 AD, which largely matches ages of the cultural layers inferred from coins and ceramics (Sarnäs 2022).

The >2-m-thick covering aeolian unit accumulated during c. 300 years, from the mid-1500s to the early or mid-1800s.

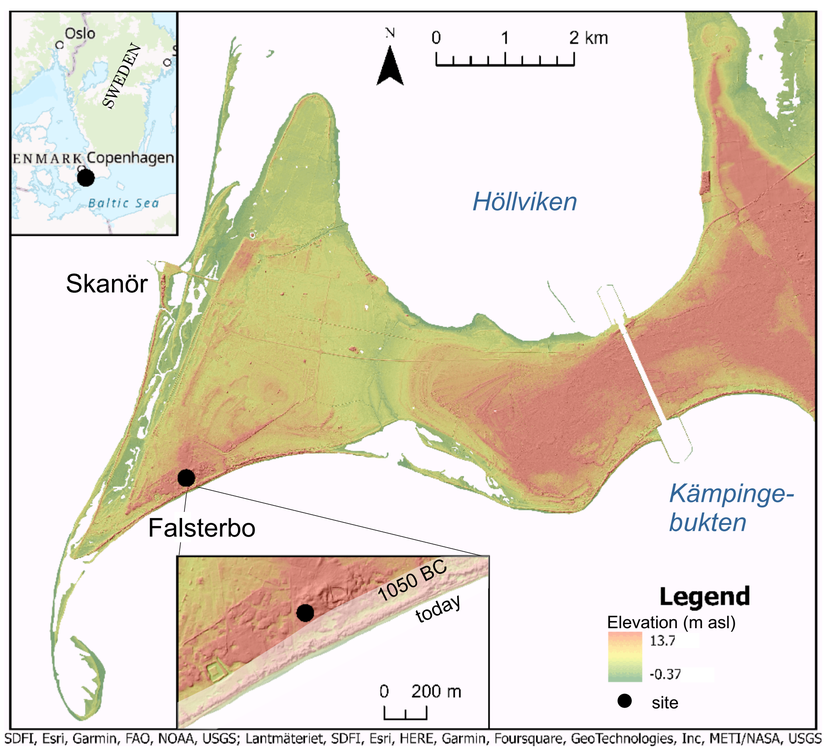
Repeated trends in luminescence profiling data suggest that this unit represents at least four different depositional events.

These events could possibly represent individual storms or changes in dominant wind direction.

The rapid sand accumulation since the 1500s likely contributed to the abandonment of this former central part of Falsterbo town.

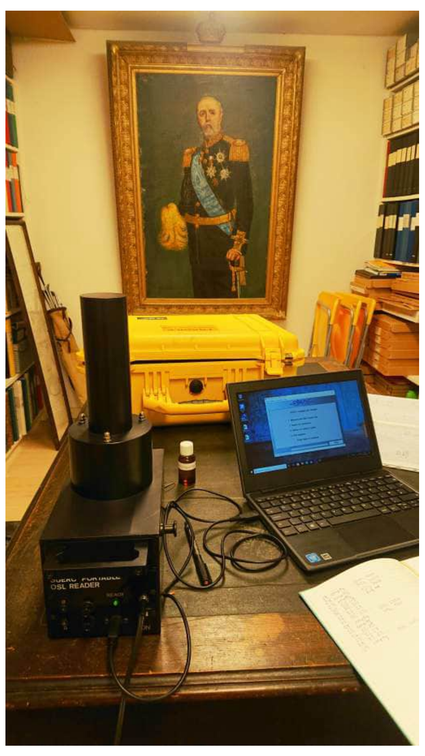


*Phases (cultural layers) and coin ages from Sarnäs (2022).



The Falsterbo Peninsula in southernmost Sweden and the location of the excavation near the Falsterbo Church. The higher shoreline from 1050 BC (3000 cal. a BP) in the inset is from SGU (2023).

The excavation in 2021.



The SUERC reader set up in the Falsterbo Museum.

Methods

Optically stimulated luminescence (OSL) dating was done at the Lund Luminescence Laboratory, Lund University.

The dose (0.2-2.5 Gy) was determined from large aliquots of 180-250 µm quartz grains and using a single-aliquot regeneration (SAR) protocol in Risø TL/OSL readers.

The sediment dose rate was measured using high-resolution gamma spectrometry. An average water content of 15% was assumed and the total environmental dose rate (c. 0.9 Gy/ka) was calculated in DRAC v.1.2 (Durcan et al. 2015).

Samples for luminescence profiling were measured in a SUERC portable OSL reader with the CW proxies protocol (Sanderson & Murphy 2020), which records both the OSL signal from quartz and the infrared stimulated luminescence (IRSL) signal from feldspar.

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