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“Hidden” Landscape of Prehistoric Burial Monuments: The Use of Remote Sensing in the Detection of Neolithic Long Barrows in Bohemia (Czech Republic)

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ABSTRACT

Neolithic long barrows are among the earliest monumental structures in Europe, yet in many parts of Central Europe their surface expression has been largely erased by long-term agricultural activity. This study evaluates the potential of integrated remote sensing approaches for identifying and contextualizing long barrows and associated archaeological features in the intensively cultivated landscape of north-western Bohemia, Czech Republic. The analysis focuses on two long barrows near Mount Říp (Dušníky 1 and Nížebohy) and combines oblique aerial photography, magnetic survey and airborne laser scanning (ALS). The results demonstrate that even heavily levelled long barrows remain detectable through the complementary use of non-invasive methods. ALS confirms the presence of subdued barrow mantles, while aerial imagery and magnetometry provide key information on monument layout, internal structure and associated burial features. In addition, the remote sensing data reveal further funerary monuments of later prehistoric periods, indicating long-term continuity of burial practices and the development of enduring ritual landscapes. Settlement activities are spatially restricted and clearly separated from funerary zones. This study highlights the value of multi-method remote sensing for reconstructing prehistoric burial landscapes in intensively cultivated regions.

1 | Introduction

Long barrows represent one of the earliest forms of prehistoric monumental architecture in Europe. From the fifth to the third millennium BC, such monuments occur across a wide area encompassing Great Britain, northern France, southern Scandinavia, northern Germany, Poland and the Czech Republic (e.g., Darvill 2016; Chambon 2020; Madsen 2014; Müller et al. 2019; Król 2021; Turek and Křišťuf 2025). Long barrows also represent structures that connect the non-megalithic regions of Central Europe with the megalithic landscapes of Western and Northwestern Europe. In contrast to other regions, Bohemia (west part of the Czech Republic) is an area where long barrows have not been preserved in the present-day terrain relief. In recent years, however, the application of remote sensing

techniques combined with targeted excavation has led to the discovery and investigation of dozens of linear features interpreted as ditches or trenches surrounding Neolithic barrows. In several cases, burial pits were also identified. Evidence for long barrows has thus been documented in central, eastern and north-western Bohemia (Křišťuf et al. 2024; Turek and Křišťuf 2025). One of the most prominent concentrations of long barrows in Bohemia is located in the vicinity of the conspicuous Mount Říp (Turek et al. 2025).

The primary aim of this study is to examine the landscape context of two Neolithic long barrows situated in the surroundings of Mount Říp: the Dušníky 1 long barrow and the Nížebohy long barrow. By combining multiple remote sensing approaches (including geophysical prospection, e.g.,

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