



Gradiometry survey and magnetic anomaly testing of Castros de Neixón, Galicia, Spain



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ABSTRACT

During the summer of 2011, a geophysical survey with subsequent magnetic anomaly testing was conducted in Northwest Iberia, in the province of Galicia, Spain, the most extensive evaluation of its kind to be performed on a Castro Culture hill fort with distinct Bronze and Iron Age occupations. The investigation focused on determining the spatial extent, occupation, and use of the multicomponent Bronze and Iron Age hill fort site(s) of Castros de Neixón.

A Geoscan Research FM36 Fluxgate Gradiometer was used successfully to measure and identify magnetic anomalies interpreted as potential archaeological features within the occupation areas.

Over 400 monopole and dipole magnetic anomalies were detected, many of which have been interpreted as representing pits, ditches, palisades, hearths and a possible corral. A parallel defensive ditch with zig-zag entrance was located north of the occupation at Castro de Neixón Grande. Subsurface testing of a promising monopole anomaly revealed a large storage pit with artifacts dating to the Castro period. New research since the 1990s has opened up traditional discussions linking the characteristic architecture of defensive walls and round structures (after which the Castro Culture was named) to a warrior-elite society, to more complex interpretations related to the intensification of agriculture and corresponding increase in sedentism. These new interpretations integrate domestic and agricultural features into Castro subsistence practices, including storage pits. Our results support these interpretations, revealing the extent to which storage pits are a dominant feature type at Castros de Neixón. Future research and subsurface excavations directed at understanding under-investigated features located via geophysical survey techniques at sites like Castros de Neixón may clarify questions surrounding Castro Culture social organization.

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1. Introduction

In summer 2011, researchers from Arizona State University, the University of Santiago de Compostela, and GEPN (Grupo de Estudios Para a Prehistoria Do NW Iberico) collaborated to obtain a better understanding of the occupation and use of the multicomponent site(s) of Castros de Neixón in Galicia, Spain. Previous investigations at the site have focused on delimiting stone architectural features as well as exposing a large defensive ditch encircling Castro de Neixón Grande (Acuña Castroviejo, 1976; Alvarez and Ayán Vila, 2005; Ayán Vila, 2005; Boado and Ayán Vila, 2005; Boado and Ayán Vila, 2006; Rodríguez and Fábregas Valcarce, 2010), with some investigation of negative features

performed by Ayán Vila (2008). We utilized gradiometry in order to obtain further data regarding the distribution of archaeological features across the landscape and to gain insight into the internal organization of the site.

Gradiometry is a specialized form of magnetometry that employs a magnetometer with multiple sensors. This type of magnetometer has unique advantages, filtering out the noise from the Earth's magnetic field and allowing for collection of information about subtle features of archaeological interest (Kvamme, 2006). To the authors' knowledge, the geophysical survey presented here is the most extensive evaluation of its kind to be performed on a Castro Culture hill fort with distinct Bronze and Iron Age occupations, and the most extensive, published magnetometry survey of any site in Galicia (results from a smaller survey conducted in 2007 on the Monte da Chan Castro near Pontevedra, Spain had mixed results (Otero, 2012). Magnetometry has been called "one of the most productive prospecting methods employed in archaeology"

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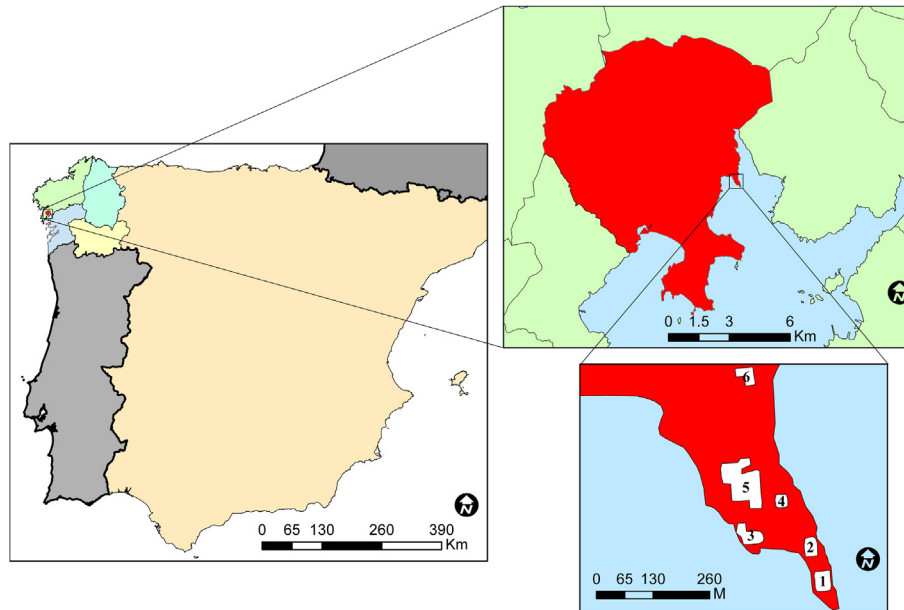


Fig. 1. Location of Castros de Neixón and survey areas within Galicia, Spain.

(Milsom, 1989:40), as it responds well to the archaeological record due to various natural and cultural processes, and quickly records large surface areas at a high spatial resolution (Kvamme, 2006). This was born out in our research at Castros de Neixón as well.

Castros de Neixón is a multi-component site consisting of two abutting but distinct occupations. Castro de Neixón Pequeño is situated at the tip of a peninsula jutting out into the Ría de Arousa, one of five large saline estuaries composing the Rías Baixas, part of the Atlantic coast of Galicia. Castro de Neixón Grande is situated on the same peninsula, an estimated 200 m to the northwest of Castro de Neixón Pequeño (Figs. 1 and 2).

Castros are a settlement type that developed indigenously during the Late Bronze Age in the northwestern Iberian peninsula

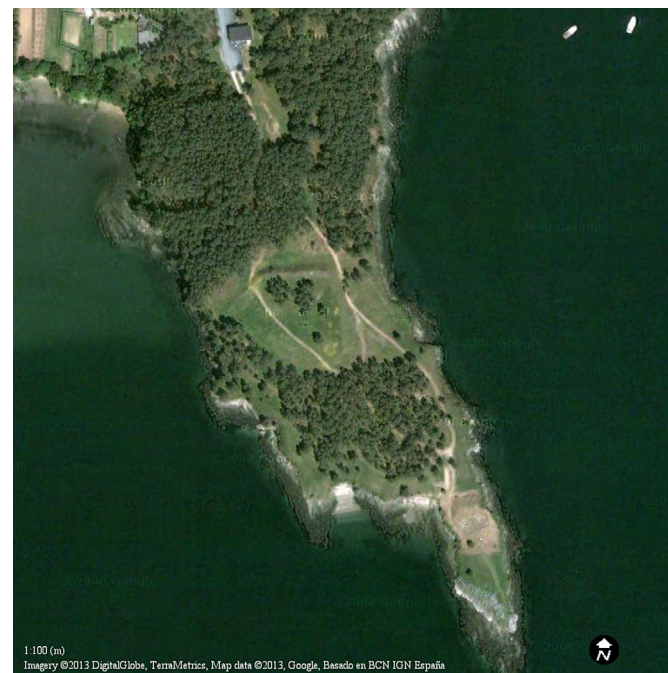


Fig. 2. Satellite imagery of Castros de Neixón.

(Queiroga, 2003; Cobas Fernández and Parcero Oubiña, 2004), often located along old Phoenician and Punic trade routes, which experienced major economic development, population increases and thus major domestic monumentalization (Villa Valdés, 2002; Villa Valdés and Cabo Pérez, 2003:152; Ayán Vila, 2008). They are iconic of the Castro Culture, which for many decades had been associated with the Celts (Almagro-Gorbea and Llorio, 2004). The Castro settlement as an expression of the social organization of the culture has been debated as either a form of hierarchical control over the population or an egalitarian settlement (Thurston, 2009). A typical Castro consists of a settlement located on an elevated landform, fortified by a stone and earth embankment surrounding stone structures, most often interpreted as dwellings. Newer interpretations integrate other domestic and agricultural features into Castro life ways and subsistence such as storage pits (Ayán Vila, 2009; Sastre, 2008; Parcero Oubiña, 2002). Here, magnetometry offers an ideally suited tool for quickly documenting negative features like storage pits typically associated with the sedentary, intensification of agriculture.

While the two sites at Neixón are positioned approximately 200 m apart, radiocarbon dating reveals that they represent different temporal occupations, with evidence suggesting Pequeño's development in the Late Bronze Age and Grande's apex in the Late Iron Age into the Roman period. Further material evidence indicates that occupation on the peninsula extends as far back as the Late Chalcolithic, and as far forward as Romanization, up to and after 19 AD (Rodríguez and Fábregas Valcarce, 2010). Therefore, our survey of this peninsula has captured the development of Castro construction and differential spatial organization over a span of almost 2000 years.

Three goals for our research activities were set forth. The first was to define the extent and nature of activity areas at the site(s) of Castro de Neixón Grande and Castro de Neixón Pequeño. These results assist in understanding the development of spatial organization within Castros, as well as the distribution of potential archaeological features of a variety of types including pits, ditches, and earthen structures, going beyond the architectural focus of previous research. The second was to categorize anomalies based on magnetic amplitude in order to make an interpretation as an archaeological feature. Finally, we wanted to evaluate the

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