Project Abstract
Cavan Burren is a unique site in the Marble Arch Caves UNESCO Global Geopark, located along the border of Northern Ireland (County Fermanagh) and Cavan (Republic of Ireland). The area is characterized by its karst landscape, containing a variety of geological formations and archaelogical sites. This project aims to investigate the significance of boulder monuments in the Cavan Burren area through the use of photogrammetry and 3D modeling technologies. The research seeks to understand the function and cultural significance of these monuments, compare them to similar structures found in other regions, and analyze their potential as a resource for archaeological research.

Introduction
In the Marble Arch Caves UNESCO Global Geopark in Cavan, Ireland, there are several stone monuments of unknown origin that are approximately 6 to 7 meters in diameter. These structures have been interpreted as the remains of stone monuments, possibly tombs, that were moved and repositioned during the last glaciation. The monuments are situated in a karst landscape along the border of Northern Ireland’s County Fermanagh and the Republic of Ireland (Cavan), forming the Cavan Burren Research Area.

These stone monuments are frequently referred to as Boulder Monuments, and they have been attributed to a variety of origins, including burial tombs, religious centers, and natural features. One of the more intriguing theories is that these structures could be remnants of ancient rock art or sculpture. However, the complete function and significance of these monuments remain largely unknown.

Some of the theories include:
1. These structures are remnants of ancient rock art or sculpture.
2. They are unlike any known contemporary stone art forms, resembling more a modern art form (Photo by Abelardo Rivas ©).
3. The stones are part of an ancient drainage system.
4. The stones were moved from their original position and repositioned to form these structures.
5. The stones were transported as part of a large-scale migration.
6. The stones were intentionally placed in their current locations.
7. These structures are remnants of ancient domestic or religious structures.
8. These structures are remnants of ancient geometric shapes.
9. The stones were placed for construction or other purposes.
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Our research suggests that these structures are not a part of any larger site, but rather stand alone as a singular structure of unknown purpose. The stone monuments are situated in a karst landscape, which is characterized by the presence of underground water systems and cave entrances. These water systems could have played a role in the placement of the stones at these locations.

Using Photogrammetry to Document Human Activity on Neolithic Boulder Monuments

The research project involves using photogrammetry to explore the potential significance of these structures and to assess their potential use in archaeological research. Photogrammetry is a technique that uses images to create accurate 3D models of real-world objects or scenes. This method has been used in various fields, including archaeology, to create detailed models of sites and artifacts. In this project, photogrammetry is used to create 3D models of the boulder monuments in the Cavan Burren Research Area.

Method of Analysis and Manipulation of Components

The process involves taking digital photographs of the monument, both from the exterior and the interior, using at least 6-8 images as a base. The images are then processed using software to create a 3D model of the monument. This process involves aligning the photographs, removing perspective distortion, and creating a point cloud that represents the monument. The point cloud is then converted into a 3D model that can be manipulated and studied.

Comparative Analysis of Nearfield/Early Bronze Age Tombs Structures in Cavan Burren and Transepted Tombs

Megalithic Tombs in Cavan Burren and Transepted Tombs

The Cavan Burren area contains a number of tombs, such as dolmens, wedge tombs, and multiple chamber tombs. These tombs are characterized by the use of large boulders as structural elements. Our research suggests that these structures are not unique to the Cavan Burren area but are also found in other regions of Ireland and Europe.

Artistic Renderings

The artistic renderings of the boulder monuments in the Cavan Burren area help to visualize the potential significance of these structures. The renderings are created using 3D modeling software and are used to explore the potential use of these structures in archaeological research.

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References


