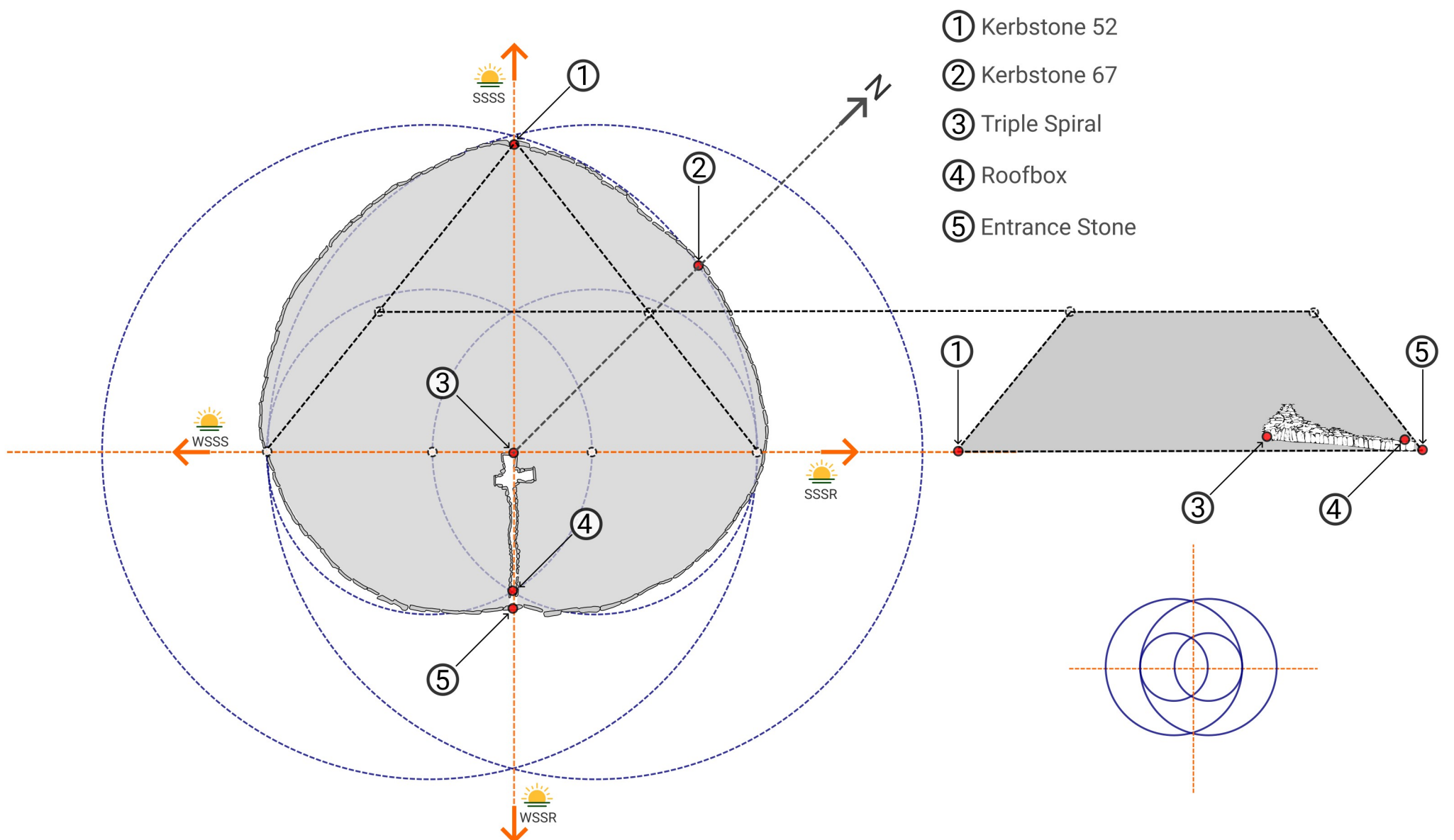


## Symmetry

A deliberate observance of symmetry is evident in the design of the Newgrange monument. Deep vertical grooves mark both the Entrance Stone and it's opposing counterpart - Kerbstone 52. A line drawn between these points passes through the roofbox, passage and Triple Spiral motif in the chamber. This line forms a line of symmetry through the monument may be said to represent the opposing horizon postions of the rising winter solstice sun and setting summer solstice sun. Even where not delineated, lines of symmetry can be described in both the Triple Spiral and Kerbstone 67 (Due North) which reflect the key solar orientation of the monument.



## Design

The outer shape of the Newgrange monument is variously described as 'Kidney shaped', 'Heart shaped' or even 'Circular'. How the builders of Newgrange might derive such a shape, and describe it in the landscape seems to have warranted little study. The outer shape of Newgrange may geometrically be derived in several ways, most notably by using opposing spirals. The simplest solution, however, and the one I propose has been used, is to describe the arcs of 4 circles. A line of symmetry is first established (WSSR - SSSS). A second line is described at 90° to the first (SSSR - WSSS). A rope is placed on this second line and an arc is described outwards from the desired point (i.e. Light entry - the Roofbox). The opposing arc is described in the same way. This fashions the front of the monument. A second pair of arcs, this time twice the size of the first are then described to form the rear of the monument. This solution respects the placement of all the key features of the monument. Some differences can be observed between the geometry and a top down profile of the mound, however, it must be remembered that the monument is located on a slope NOT a level surface.

The geometry of Newgrange therefore is simply derived and simple to effect in the landscape. The only requirements are some rope, sticks or stones, the only unit of measure based on the desired distance between the point of light entry and the rear of the chamber.

To most critical observers, the Newgrange monument in it's current guise might be better described as a re-imagining rather than a re-construction. All the earliest accounts and representations of the mound describe a higher truncated flat topped cone or 'frustrum'. It is established and certain that some portion of the mound has been removed. Using the same geometry evidenced above we might make a reasonable suggestion as to the size and shape of the original mound. In this proposal, the angles of the mound are derived from internal angles of the outer shape and the height of the mound equals the unit of measure. The resulting mound shape replicates the angles and relative dimensions of Maeve's Cairn, Ireland's largest unopened passage tomb. Crucially a mound fashioned in this manner respects the natural angle of repose of the materials used to create the structure. Such a mound is inherently stable and does not require a revetment.

