The Cloanlawers Cupmarked Stones
Solar/Lunar Orientations, LochTay.

Douglas Scott

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Illus. 1&2. Showing the location and proposed solar/lunar orientations of the Cloanlawers cupmarked rocks. The stones are numbered in sequence from the northeast to the southwest and photographs of the rising and setting sun are shown in the following pages. The rising positions of the northern moon are also shown. The illustrations are for visual reference only. The following solar/lunar orientations and dates derived from the surveys should be treated as being approximate. The general location of the cup marks on Meall Greigh is just above the forest in the centre of the picture on the front page.
On the southern slopes of Meall Greigh some 300m above Loch Tay there are two rock outcrops and six boulders carved with cupmarks, Illus 1 & 2. There are other carved rocks three to four hundred metres to the south-west, but these were not located in the time available. The lower outcrop 2 shown above has a natural grass filled hollow with cup marks on either side, while outcrop 1 is a short distance uphill. The excavation areas around the base of some of the carved stones by Prof. Richard Bradley, found fragments of quartz stones, and these were thought to have been used to make the cup marks. A 100m to the northeast of outcrop 2 there is what appears to be a large 2m high triangular shaped standing stone. This was excavated and no artifacts were found and it was thought to be natural, Bradley & Watson 2007-2010, 2012.

The author’s surveys of cup marked stone on over 100 monuments throughout Scotland have shown that they were aligned to the rising and setting sun and moon. The sites included the Clava cairns, the Recumbent stone circles, the Ballymeanoch and Nether Largie standing stones and from cup marked bedrock to standing stones at Torbhlaran, Scott D. 2003, 2010. One of these sites is located a few kilometres away on Ben Lawers farm, where from cup marked rocks, a standing stone indicates the sun at midwinter, the equinoxes, and the major standstill moon. It has been proposed that natural features were sometime ritually used in the prehistoric period, Bradley 1993. As this natural stone is such a prominent feature in the landscape, surveys and observations from each cup marked rock from 2011-2013, showed that the sun and moon rose or set in line with it at different times throughout their cycles.
Showing an overhead view of some of the cup and ring marks on the southern part of outcrop 2. There are other cup marks to the north of the hollow on the right. The top of the picture is to the south west.

Looking northeast from Outcrop 2, the northern major standstill full moon would have risen above the ‘standing stone’ shortly after the midwinter sun had set. For example this would have happened at 3:21pm on the 5th January 2090 BC, Azi. 39°, Alt. 2°50’, Decl. + 28°.
The flat side of the standing stone is aligned towards Outcrop 2, above which the midwinter sun will set. The vertical nature of this stone is unusual, and it can only be suggested that, if natural, it was left in this position by the retreating ice at the end of last Ice Age.

Although it is not indicated by the standing stone, it is possible that the rising midsummer sun could also have been watched from the cup marks on Outcrop 2. The midsummer sunrise at about 4:43am on the 20th June 2012.
The concentric rings of this beautiful cup and ringmark are partially surrounded by a spiral which is part of larger ‘ring’ of cupmarks on the top of the rock. The spiral curves off to the top of the pictures into a crack veined with thick bands of quartz.

Four faint cup and ring marks can be seen at the rock’s base and these, along with others carved on its curving left side, are focused upwards towards the spiral. During the excavations platforms were found above and below the rock, Bradley pers comm.
The four faint cup and ring marks at the base of the outcrop are connected with branching grooves.

All the carvings are located on the left side of outcrop 1 and, when seen from the area of the lower platform, the outcrop could be taken as representing the mountain itself. The position of the cup and ring marks could symbolise the summer sun setting along the hill’s northwest side as it moves towards its midsummer position as represented by the spiral. The setting midsummer sun at 19:42pm 19th June 2013.
The above picture shows the midsummer sun setting on the mountain at 19:36pm on the 19\textsuperscript{th} June 2013.

From the cobbled area the spiraled cup and ring mark is generally in line with the midwinter sunrise. The curving outer end of the spiral runs into a large natural quartz filled crack seen here at the bottom of the picture. Perhaps each cup mark of the ‘ring’ of cup marks symbolise the general position of the sun or moon as they rose and set around the horizon.
From the spiral, the standing stone is generally indicating midsummer sunrise, Azi. 46°. Alt. 0° 40'. Decl. +24°. The picture show the midsummer sun as it appeared briefly through the cloud shortly after it had risen at about 4:40am on the 25th June 2012.

Stone 5 is lying on the grass and it may have been moved. It is carved with about 5 faint cup and ring marks and their grooves are generally alligned uphill to where the sun will set in line with the standing stone in early May and August.
Stone 4 has three very faint cup and ringmarks with downhill radial grooves on its northeastern (right) side. The midsummer sun setting just to the upper left of the standing stone at 19:43pm on the 19th June 2013, Azi. 290°. Alt. 16°. Decl. +24°.

From stones 2 and 3, the standing stone marks where the full moon will set near the spring equinox Azi. 264°. Alt. 11° 30’. Decl. +6°. The sun will also set here about five days before autumn equinox which occurs about 21st September. Stone 1 is located about 100m to the northeast, but as it lies in a fire break between trees, the standing stone is not at this point visible and therefore it cannot be shown. However, from stone 1, the sun or moon will set in line with the standing stone some 5 days before the spring equinox.
Stone 6 can be found about 100m downhill to the south of Outcrop 1 and it is carved with two large cup and ring marks with another two smaller symbols below the left cup and ring mark. The lower left rings of the symbol to the right are unfinished. From this position, the standing stone is to the north and therefore cannot indicate the sun or moonrise.

These radial grooves, like those on stone 5, are also generally aligned towards the sunset in early May and August. The symbols on both stones are perhaps simply reflecting the sun as it sets along the horizon throughout the summer. The picture below shows the sunset on the 23rd July 2011.
Conclusion

The surveys of these cup marks show that like many other ancient monuments that they were connected in some way with the sun and moon, Scott D 2003, 2011, 2016. Spirals seem especially to be associated with the sun at midwinter aligned monuments such as Newgrange in Ireland, the Long Meg stone circle in Cumbria, and at the end of a line of monuments on Cambret Moor in Galloway. However, this doesn’t tell us why cup marks were made. A further insight into their use can perhaps be gained by looking at the ethnographic record of other cultures.

Many cultures believe in a three tiered cosmology of heaven, earth and the underworld and their priests or shamans interacted with, and pray to spirits in these realms. It has been suggested that some Bronze age rituals survived in remote areas of the British Isles until the early medieval period, Waddell 2014. Cup marks in Gaelic are known as Clachan Aoradh, (worship stones) and they were traditional used to hold offering of food or drink for spirits called the Sidhe, Shee. Small stones were also turned within cup marks to placate or contact these spirits, who were also believed to inhabit cairns and standing stones. These rituals were carried out to ensure the health and fertility of crops and cattle, and it is proposed that the Sidhe are a cultural memory of those we call the ancestors, Scott D 2016. The leaving of food for spirits at cup marked rocks and burial monuments was also common in Scandinavia and throughout the world, Davidson 1964.

The Inuit shamans had similar beliefs and while in a trance state they achieved by grinding circles in rocks, they thought that their spirits could enter the cracks in the rock and swim through the earth to the underworld. There they would meet with their ancestors or the spirit guides of the sun and moon, Freuchen 1961. Similar ideas of spirits in standing stones have also been suggested by other archaeologists, Thomas, 1960, Pearson & Ramilisona, 1998. It is therefore proposed that the rock art on Meall Greigh was ritually used to contact the ancestors in the underworld as the sun or moon rose out of or set into the land of the dead.

References.


Waddell, John Archaeology and Celtic Mythology, 2014.