

The Monster of Loch Ness

by Richard Keatch



When it comes to the Loch Ness Monster or the Holy Grail anyone looking for either is consumed by the belief that they are mythological yet physical objects that are to be found lurking in the peaty unfathomable depths of an enormous loch or buried in the sand or some secret cavern in a far-off land, waiting to be discovered and finally revealed to the expectant world confirming that they are indeed real and have at last been found. A few die-hards including the Knights Templar have, over the past centuries, spent many years of their lives obsessed by the desire to discover these mythological or sacred objects but all have ultimately failed in their quest. Perhaps in some cases they discovered the true origins behind the mythology and realised the impossibility of finding the tangible objects they thought they were looking for and gave up. Although the Loch Ness monster is logically unlikely to exist as a surviving dinosaur from a lost age trapped in a Scottish loch, there are many people, perhaps most people in the world who want Nessie to exist, their hearts ruling their heads despite the unlikelihood of a group of dinosaurs surviving in the loch for such a long time. But there is the example of a thought-to-be-extinct, for 66 million years, prehistoric fish, the Coelacanth being discovered by fishermen in the deep waters off South Africa in 1938 to help keep the hope alive of yet more prehistoric creatures surviving in the watery depths of the oceans and deep lakes



Image 3 The living fossil, the Coelacanth

It seems likely that in the past, as today, Loch Ness produced sightings of what look like large dark humps moving through or across the water on a regular basis. These humps may be caused by the presence of unidentified large aquatic animals or be the result of unusual waves produced on the loch by the particular prevailing conditions, but in any event these sightings have been and continue to be associated with a monster. Perhaps our ancestors spent more time fishing the loch for salmon and arctic char, a species of fish that was actually trapped in the Loch during the Ice Age, and caught or experienced something that could be described as a monster creature, an eel perhaps of very large proportions. Perhaps this is currently the most likely possibility due to the fact that recent DNA analysis of loch water has shown that there is a lot of eel DNA whereas the DNA of other suggested large species is absent in the analyses. Perhaps though another alternative or additional embodiment of the Loch Ness Monster exists that can be easily observed if you know when and where to look.



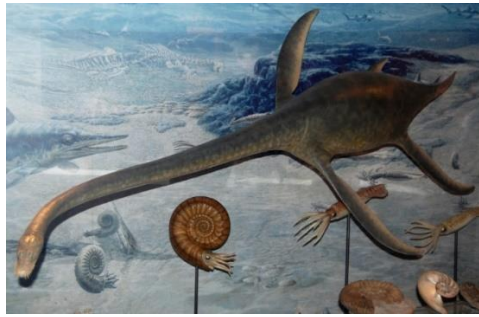


Image 4 The Plesiosaur

The Loch Ness Monster or “Nessie” as she is popularly known throughout the world is deserving of her own chapter on our journey through the prehistoric maze. The Loch Ness monster has been reported from time immemorial as a monster, perhaps a survivor from the age of the dinosaurs, a Plesiosaur, inhabiting the peaty amber depths of Loch Ness. The loch is twenty- two and a half miles long, between a mile and a mile and a half wide and seven hundred and fifty four feet deep and even today using modern sonar tracking to try and find her there has been sufficient “anomalous” sonar data to keep the myth alive suggesting there is at least the possibility of a large unknown creature inhabiting the waters. Biologists however have calculated that there is insufficient food to support a monster of the size proposed or indeed a family of monsters if Nessie is not to be the last of her kind. Nessie thus serves to divide the world into the hopeful believers and the realistic sceptics. Of course, most of us have the duality of head and heart that always hopes that the heart is right and the head is wrong. I remember in the summer of 1970 as a schoolboy camping with my family at Drumnadrochit Farm on the shores of Loch Ness and being excited and a little worried by the thought of a prehistoric monster inhabiting the depths just a stone’s throw away from our midgie-ridden tent. This excitement was taken to breaking point that summer as tantalising images from underwater cameras were released from a group led by Robert H. Rines · exploring the loch. One photo was a vague image, but had the suggestion of a rhomboid shaped large flipper.

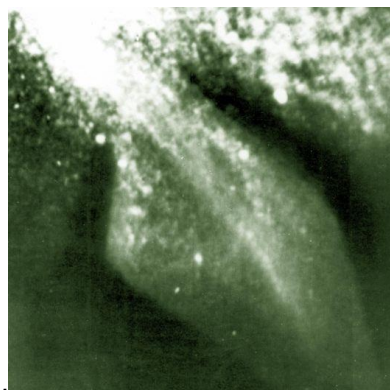


Image 5 Underwater image of what appears to be a large flipper released by the Rines team in 1970

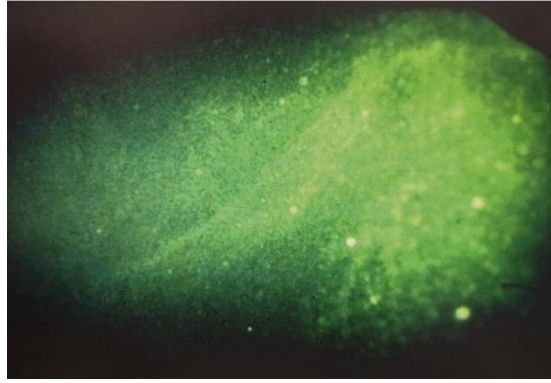


Image 6 The Rines Image before being enhanced

On the basis of the Rines photograph, British naturalist Peter Scott later announced in 1975 that the scientific name of the monster would henceforth be *Nessiteras rhombopteryx* (meaning "The Ness monster with diamond-shaped fin"). Sometime later however Scottish politician Nicholas Fairbairn pointed out that this supposedly Latin scientific name could in fact be interpreted as an anagram for "Monster hoax by Sir Peter S". So as with all stories associated with Nessie there is controversy, hoaxes and playing of mind games and yet we shall show that the monster at least in one sense is a very real phenomenon and has been since the beginning of time and is there for all to see.



Image 7 Operation Deep Scan in 1987 was a comprehensive sonar study of the loch involving twenty boats strung along the width of the loch scanning the depths with a curtain of sonar. Three unidentified large targets were identified but none identifiable as a monster.

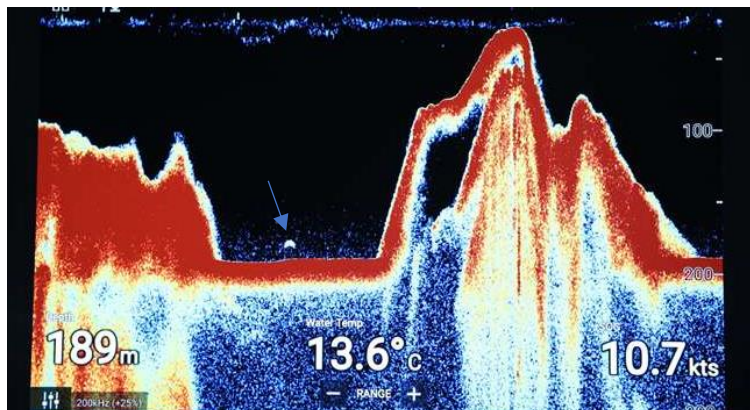


Image 8 Sonar image taken at Loch Ness by tour boat skipper Ronald Mackenzie in 2020. The arrow marks a long object estimated to be about 32 feet long at a depth of 500 feet beneath the surface.

Various possible explanations for the sightings in Loch Ness of surface water disturbances include the presence of giant sturgeon, catfish, or fresh water sharks that can reach several metres in length have been examined through recent studies of 500 million DNA sequences of hundreds of water samples from the loch. The analysis by Otago University did not find any evidence for the presence of sturgeon, catfish or sharks, nor seals nor otters but has found significant quantities of eel DNA. What is not known is whether the eel DNA comes from small eels or very large eels! Again, it should also be added that the source of about 24% of the DNA found was not identifiable, though it is not thought by the scientists involved in the study that this DNA is possibly from a prehistoric creature such as a Plesiosaur, though of course there are those that will ask how anyone could be certain what Plesiosaur DNA looks like though those looking for it say they would expect it's sequencing to lie somewhere between a crocodile and a chicken and apparently none of the DNA found lies within that range.

The possibility remains that Nessie is a very large eel and this is worth serious consideration because it is a known fact that eels can grow to a very significant size. Eels in general are known to spawn in the Sargasso Sea and then swim across the Atlantic Ocean to swim up rivers to freshwater lochs where they remain for years to mature before returning to the sea and making the long journey back to the spawning grounds to reproduce and die. Some eels however do not sexually mature or swim back out to sea to breed. Instead, they remain in fresh water and keep growing. It is not known how long these so-called "Eunuch eels" live or how large they become. There are accounts, from fishermen, of exceptionally large eels that have snapped their lines, but we don't need to rely on fishermen's tales "of the one that got away" for there is photographic evidence of very large and monstrously large eels that have been caught.



Image 9 Large eel 48lbs 14 oz caught by Alan Cargill in 2005 in near-by Loch Etive, Scotland

The European conger eel is known to reach lengths of over 3 metres, how large might these monster eels grow in the deep waters of Loch Ness?



Image 10 Fishermen landed a giant conger eel measuring a whopping 21ft off the coast of Devon in 2015. The eel was unintentionally caught in the nets of surprised fishermen aboard the inshore trawler Hope. The eel was unfortunately dead when landed and couldn't be put back alive. It is interesting to consider that the largest Great White shark ever caught was just over 20 feet in length.

Lets hope that if Nessie is ever found that she doesn't suffer the same fate.

Historical Sightings of Nessie

The sighting of Nessie has, unlike other monsters around the world, taken on an air of seriousness and respectability due perhaps to its ancient origins and the first reported sighting in 565AD by a Gaelic missionary monk, Columba who is credited with the introduction of Christianity to the Picts and later was made a saint. The association of Nessie with the Picts is our first clue as to her mythological origins. Columba's life was reported by the abbot Adomnan some considerable time after Columba's death, during the Seventh Century about a hundred years after Columba had first visited Scotland.



Image 11 Class II Pictish Stone known as Rodney's Stone at Brodie Castle, Forres in Moray carved with the image of two "Eels" above a Kelpie symbol above a Double Disc and Z-Rod symbol

Our Pictish ancestors carved symbols of mythological creatures on stones that appear to be associated with water such as Kelpies or water-horses and a few symbols that have the appearance of eels. The large Pictish stone at Brodie Castle is only 30 miles from Loch Ness. Perhaps there was more than one reason for the association of Loch Ness with a giant water creature. The presence of a water beast in the loch is cemented by the story of the Christian monk Columba in the sixth century and his reported encounter and victory over a monster in the loch, or rather in the river Ness exiting the loch, that served as proof of the power of the new religion of Christianity over the monstrous creature and pagan beliefs of the Picts. Hardly a year passes without a sighting of the Loch Ness monster by a member of the public and Nessie attracts an army of people from around the world keen to catch a fleeting glimpse of her as she or something breaks the surface of the loch before descending back to her lair in the depths.

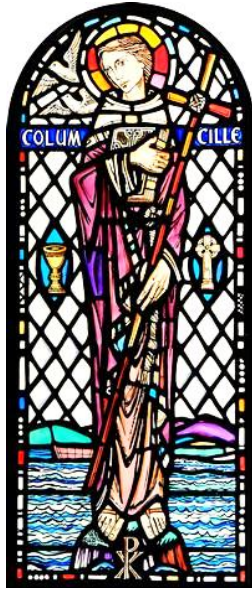


Image 12 Stain glass window of St Columba in Iona Abbey. It is interesting that a chalice is represented alongside the saint (see later section regarding the Holy Grail).

The earliest known report describes how on August 22nd 565 AD Columba saved the life of a Pict, who was being supposedly attacked by the monster as he swam across the River Ness to retrieve a boat on the other bank. Adomnan's work *Vita Sancti Columbae* is translated by Jacqueline Borsje from the department of Theology at the University of Amsterdam in 1994 where the encounter with the water-monster is described. *"It takes place during a stay in the land of the Picts, where Columba has to cross the river Ness. When Columba arrives, he sees a Pict being buried by other Picts on the bank. Columba is told that not long before this man, who had been swimming in the river, was grabbed and savagely bitten by a water-beast (aquatilis bestia). Some of the people present had tried to rescue him, but they were too late. In spite of this danger Columba wants one of the brothers to swim across in order to fetch a boat. At once, Lugne mocu Min volunteers and plunges into the water, dressed in his tunic.*

But the monster, whose appetite had earlier been not so much sated as whetted for prey, lurked in the depth of the river. Feeling the water above disturbed by Lugne's swimming, it suddenly swam up to the surface, and with gaping mouth and with great roaring rushed towards the man swimming in the middle of the stream. While all that were there, barbarians and even the brothers, were struck down with extreme terror, the blessed man, who was watching, raised his holy hand and drew the saving sign of the cross in the empty air; and then, invoking the name of God, he commanded the savage beast, and said: 'You will go no further. Do not touch the man; turn backward speedily'. Then, hearing this command of the saint, the beast, as if pulled back with ropes, fled terrified in swift retreat; although it had before approached so close to Lugne as he swam that there was no more than the length of one short pole between man and beast. The brothers glorify God in Columba and the 'pagan barbarians' (gentiles barbari) magnify the God of the Christians."

It is perhaps surprising that this account has been labelled as the first literary source for 'Nessie' because according to popular tales, the Loch Ness monster is a huge creature associated with the very deep waters of Loch Ness whilst the monster *in Vita Sancti Columbae* surfaces in the river Ness which is not anything like as deep as the Loch, and the beast is not described as large. Nonetheless, these two monsters have been identified as one and the same.



Image 13 The Loch Ness Monster, as recovered from the faint image on the manuscript using Re Zoomed Spectroscopy. Walter of Bingham is depicted on the right, with the poor boy in his coracle about to be tossed into the water.

Recently another mediaeval manuscript *Itinerarium Scotiae* (The Journey Through Scotland) was found at the British Library that recounts the visit of the cleric Walter of Bingham to Loch Ness in the 12th century and the story is accompanied by a drawing believed to be a self portrait of the cleric himself together with the monster he says he encountered. As with Columba's encounter it seems to have occurred on the banks of the river Ness rather than the loch. Walter asked some fishermen mending their nets for safe passage across the river, but they rejected his request apparently with terror in their eyes. Further downstream he met a young boy dragging his coracle along the shore and he persuaded the boy to ferry him across the river in exchange for a silver coin. The journey across the river passed without incident but on the boy's return journey to the other bank, he was dragged, along with his coracle beneath the water by a great beast with fire sparking from its eyes. The drawing's significance is that the depiction of Nessie which is the earliest known depiction of the creature known as the Loch Ness Monster actually depicts a bear. Whilst it is known from Roman accounts that bears existed in Caledonia and were even exported to Rome to entertain the crowds in the Coliseum (by either being killed by gladiators or devouring slaves). However, it is not known if isolated pockets of wild bears still existed in 12th century Scotland that could account for the description or whether Walter having failed in his attempt to join the third crusade and instead gone on a pilgrimage to Scotland's holy places, wanted his peers to believe he too had had a similar experience to the great Saint Columba centuries before.

It can be seen what a muddle of evidence there is both for the existence and for the non-existence of the Loch Ness Monster. There is however another approach to understanding the monster using the available evidence to consider what the monster might be, why it was important and where it might have been seen. In Adomnan's account of Columba's visit to Loch Ness he is described as having to cross the river Nesa (the Ness) rather than the loch itself and when he reached the bank of the river, he saw some of the local inhabitants burying a man who had been previously bitten most severely by a monster that lived in the water. The significance of this is perhaps that the river Ness is not very deep, though deep enough to swim across in parts so whilst a giant eel could comfortably lurk in its shallow pools, a creature the size of a plesiosaur is unlikely to be completely submerged under the river water. The account goes on to say that the monster was lying at the bottom of the "stream" and was roused by the man swimming across and suddenly rushed out with its mouth open, before the blessed Columba commanded the ferocious monster to go back with all speed. So, the story begins to sound more like an episode of the television series "River Monsters" where the story of someone being attacked by an unknown fish somewhere in the world is explored by the fisherman presenter who goes on to discover the likely identity of the predator as a super-sized version of an otherwise harmless to humans, fish by catching one.



Image 14 It is good to look at mediaeval manuscripts to get an insight into what sort of mysterious creatures, people may have imagined lived in the depths of lakes and the sea.

In the drawing above the two top monsters are particularly interesting because the top creature is long and thin and has a dog-like head. Although it has been drawn with a fish's tail and five sets of fins, it has the appearance of a large eel. The creature beneath it is

clearly half-horse and half-fish and resembles the mythological creature known as the Water-Horse or Kelpie. Both these creatures appear to have been carved on the Pictish stone already shown as Rodney's stone at Brodie Castle.

The story that Columba, a Christian monk, took on the monster and thereby demonstrated the power of the new religion to the Picts in conquering a monster could alternatively be viewed as merely religious propaganda in trying to promote the conversion of the pagan Picts to the new religion of Christianity. Moreover, it may be worth considering that the story related by Adomnan of the encounter between Columba and a monster known to be associated with Loch Ness and the pagan Picts, may have been told to help convert the people to the new religion because the Picts even at the time of Adomnan remained largely unconvinced by Christianity. The creature associated with Loch Ness may also have been as much a mythological creature, as one that actually inhabited the loch, in the same way as the Kelpie or Water Horse, depicted as a Pictish symbol named "the beast", carved on numerous megaliths. In which case, the monster may have been, like the Kelpie, an interpretation of a star pattern or constellation so that, just as the Kelpie was associated with the constellation of Monoceros, Nessie may have been associated with another constellation.

The Stellar Identity of the Loch Ness Monster

Identifying a possible constellation that could have been identified as the Loch Ness Monster has three approaches. Firstly, the pattern of stars in the constellations might be interpreted as a water monster. Secondly, the brightest stars in important constellations were aligned due South at Civil Twilight either at dusk or dawn, on important festival days so we might expect that any constellation whose pattern of stars might be interpreted as a monster would have a bright star aligned due South either at dawn or dusk on one of the known Pictish festival days. Thirdly we might ask the question, if the Loch Ness Monster appears as a celestial water monster, then why should Loch Ness in particular, be associated with the mythological creature that could be seen in the night sky at any location in the land of the Picts? Finally, although the exploits of St Columba in successfully vanquishing the monster are described over one hundred years after the event, it seems strange that Adomnan was able to describe the exact dates when this had happened. Perhaps the dates used by Adomnan have a significance in terms of the alignment of stars associated with Nessie and St Columba himself on those days.

It can be seen how suddenly from having no way of discovering what the monster of Loch Ness is we have four strands of investigation into the possible reality or otherwise of a celestial water monster.

The Evidence for a Celestial Monster of Loch Ness

i) The Constellation of Nessie

The most obvious constellation that might be considered as the stellar embodiment of the Loch Ness Monster is the Constellation of Hydra, otherwise known as “the Sea Serpent”. In fact, the constellation consists of a small head situated on a long neck that rises from a body with two humps formed by five stars, followed by a long tail. An image that almost perfectly fits our general idea of what Nessie might look like from descriptions of sightings.

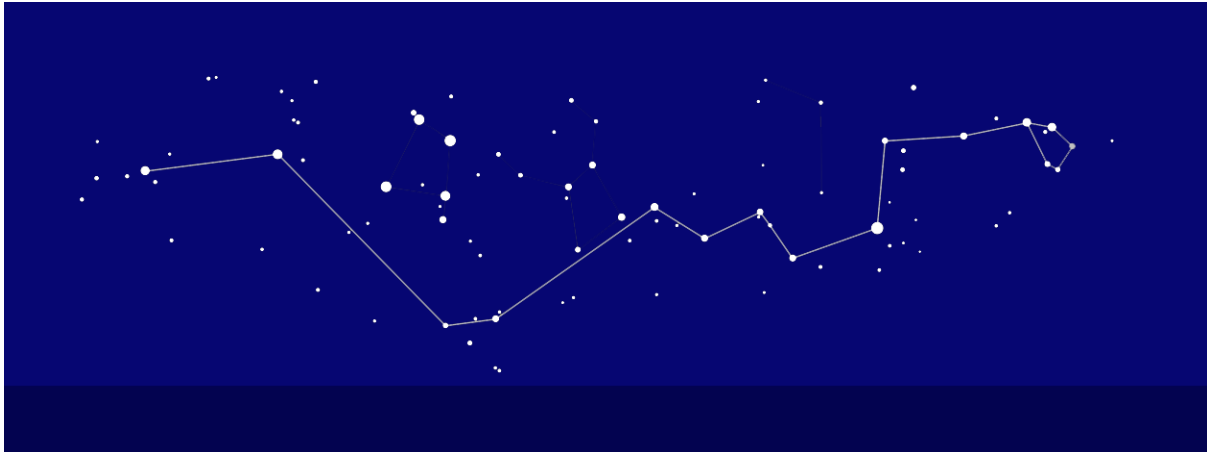


Image 15 Constellation of Hydra, the Great Serpent or Sea Snake above the South-West horizon (in dark blue). The stars of the small constellations of Corvus, Crater and Sextant are shown from left to right above Hydra.

ii) The Festival of Nessie

The brightest star in Hydra is called Alphard. At the end of Civil Twilight on the day of the Spring Equinox (April 1st 1200BC) Alphard is aligned precisely due South in the sky.

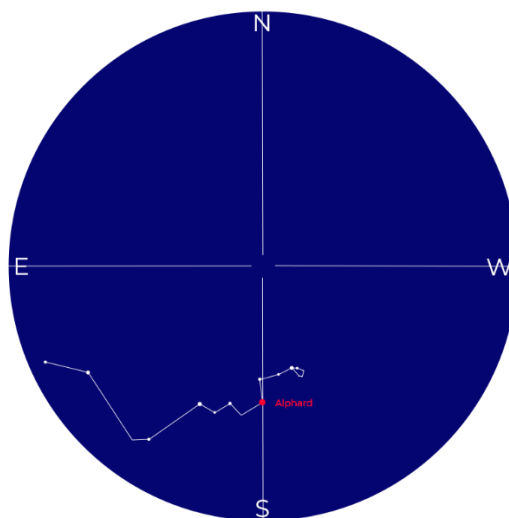


Image 16 Alphard, the brightest star in Hydra is a red giant star and is a marker for the Spring Equinox

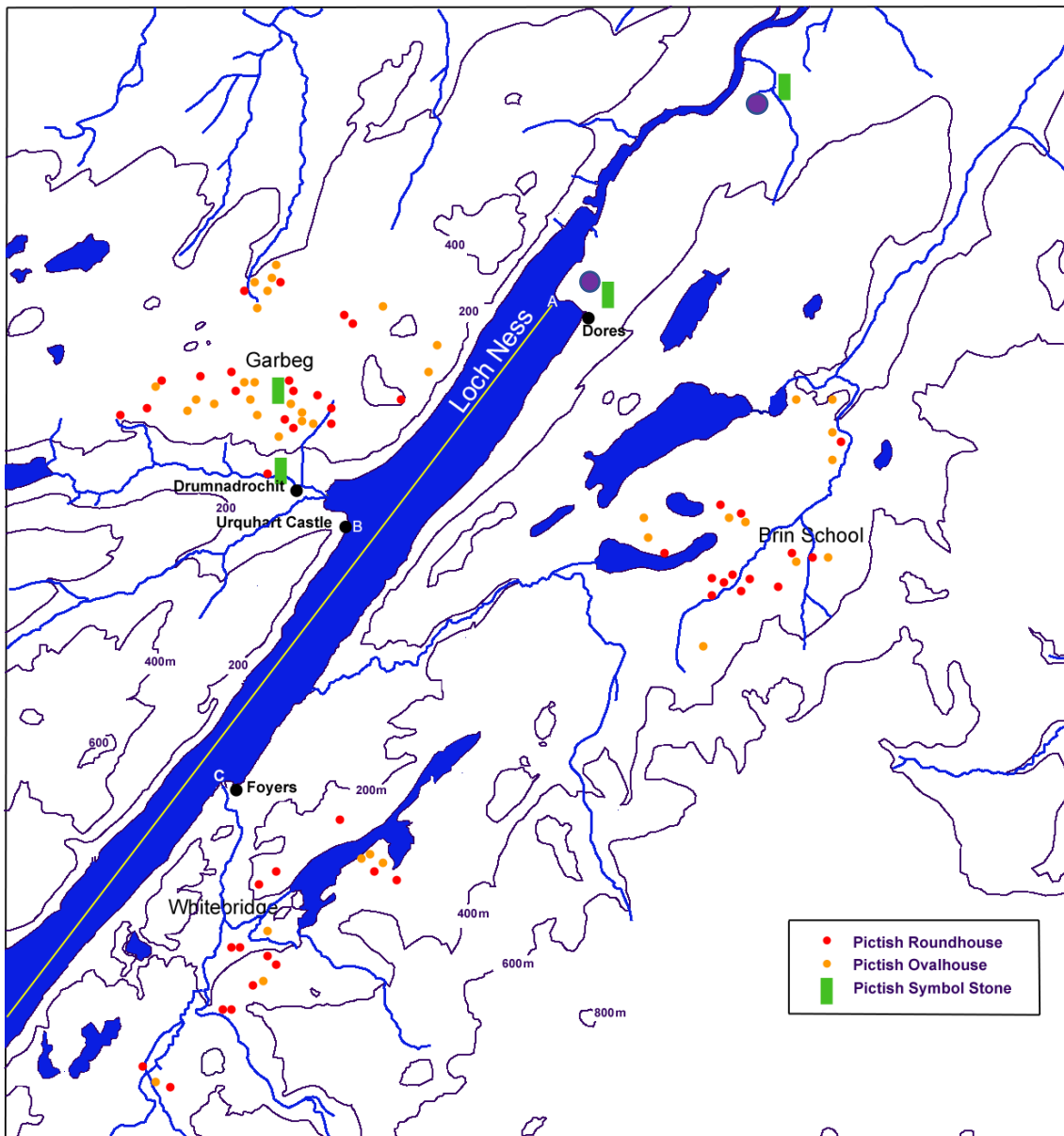
iii) Loch Ness

Loch Ness is a very long and straight Loch that occupies the Great Glen, a valley aligned north-east to south-west formed by a geological fault extending from Loch Ness further southwest through Loch Linnhe and the Firth of Lorne. The alignment of the loch, its mountainous slopes and its great width and length may have played an important part in its association with the Loch Ness Monster because viewed down the loch from the north-east the constellation of Hydra, lying low in the sky might appear from the eastern slope of the loch, travel low across the sky just above the loch's surface and disappear into the western slope bordering the loch. The Loch Ness Monster in her celestial form might therefore be seen to appear on special days to glide across the water and disappear again into the underworld.



Image 17 Looking down Loch Ness

The Archaeology of the Loch Ness area in Pictish Times



Map 1 Drawing based on the paper by Mitchell and Noble (2017)

Loch Ness showing Ruins of Pictish Houses at Garbeg, Whitebridge and Brin School and the location of Pictish Symbol Stones. The alignment down the loch from "A" near Dores has a bearing of 217.5° . Viewing positions from the promontories of Urquhart Castle (B) and Foyers (C) have bearings down the loch of around 2133° and 225° respectively. Positions of Pictish round houses (red dots), oval houses (orange dots) and Pictish symbol stones are marked as green rectangles. Two Neolithic Stone Circles at Torbreck and Kinchyle of Dores (indicated as purple circles) have also been indicated. The archaeology of the Loch Ness environs shows that Loch Ness has been populated by significant settlements from Neolithic times and the Loch has been central to the community providing a source of food and a water highway connecting the communities along the length of the loch.

Pictish Class I Stones from Loch Ness



Image 18 Drumbuie Farm 1 Class I Pictish Stone, Drumnadrochit



Image 19 Drumbuie Farm 2 Class I Pictish Stone, Drumnadrochit

The two Class I Pictish stones from Drumnadrochit are described on the Canmore website as being found during ploughing in the 1860s around the site of an old grain kiln. Both were covering a cist-like structure built of upright stones, which may have been an earlier corn-drying kiln. They were taken to Balmacaan House until they were acquired by NMAS in 1955 and taken to Edinburgh.

The first stone has a Serpent and Z-Rod symbol carved above the Double Disc symbol. Some have interpreted the serpent as a representation of the Loch Ness monster however this symbol is carved on many stones throughout Scotland and is usually thought to be a snake, most likely identified as a native adder and having its celestial representation in the pattern of stars in the constellation of Draco. The "Z-Rod" symbol carved in association with the

“Snake” has been interpreted as representing a compound pendulum included to indicate the importance of stars in the constellation of Draco in calibrating pendulums due to the precise angular separation of star pairs in the constellation of Draco. Though perhaps there is no reason why the serpent may have not been identified as an eel.

Drumbuie 2 stone has four identifiable symbols carved on its surface. The Salmon, the Mirrorcase, the Mirror and the Comb. These symbols represent the constellations of Pisces, Cetus, Virgo and Coma Berenices respectively.



Image 20 Pictish Class I Stone found at Knochnagael Farm, Dores largely restored.

This fragment of a Class I Pictish stone shows the remains of a Wild Boar symbol that has been restored by replacing the lost stone and completing the missing parts of the boar.

The Pictish Wild Boar symbol is not a very commonly represented symbol. We have proposed based on its similarity to the pattern, most especially with respect to the tusk-like arrangement of stars at the head of the constellation, that the Boar was identified by the Picts with the constellation of Leo.

The Garbeg Class I Pictish stone is described in Canmore as being “found in 1974 just beneath the turf in the centre of a ditched circular cairn in a cemetery of round and rectangular platform cairns at Garbeg. The fragment appears to be the top left corner of a symbol stone, with two intact edges. It is finely incised with part of an ornamented crescent and V-rod symbol, and there was clearly a second symbol below, represented by a curving design which could be the ‘lappit’ of a Pictish beast symbol or a spout of

water emanating from the water horse's blowhole in the manner of a dolphin or whale. The rest of the slab was not found when the cairn was excavated".

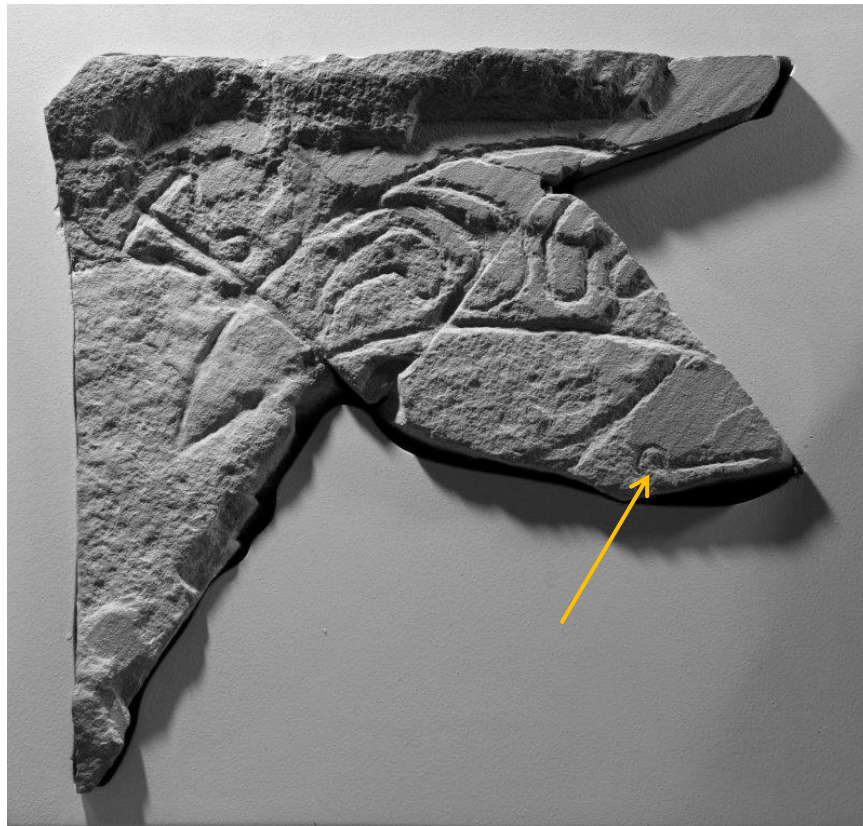


Image 21 Pictish Class I Symbol Stone Fragment from Garbeg Farm Drumnadrochit. The remains of a Crescent and V-Rod symbol is above the lappit (arrowed) of the Kelpie symbol.

This is the last of the Pictish stones found in the Loch Ness locality that might be examined for evidence of the Loch Ness Monster and at first sight it seems like a most unlikely candidate for finding anything that might be considered as evidence for Nessie being just a fragment of a stone with part of a Crescent and V-Rod symbol surviving the three millennia since it was originally carved. However, despite its condition, there is information that is hidden within this symbol due to the fact that the Crescent and V-Rod represented a quadrant and the angle or angles, represent by the "V" were chosen to indicate the declination of deep space objects such as nebulae and galaxies. Despite the fragmentary condition of the stone, it is still possible to make out enough of the carved V-Rod sections to determine three possible angles, by extending the carved lines to intersect each other and measuring the extrapolated angles obtained. There is also a further clue to the missing Pictish symbol that was carved beneath the Crescent and V-Rod symbol as there is the remains of a horizontal carved line with a curl at its end (yellow arrow) that is a characteristic pattern seen associated with the Kelpie or beast symbol that appears like a

spout of water from the top of the kelpie's head (see Image 22). The symbol of the kelpie is associated with the constellation of Monoceros.



Image 22 The Kelpie symbol on the Strathmartine symbol stone



Image 23 Garbeg Farm, Drumnadrochit Pictish Class I stone of a Crescent and V-Rod (quadrant) symbol with possible three angles identified from extending best-fit lines from the remaining carved line sections of the original "V-Rod" of 89° , 96° and 99° .

The angles resulting from the extension of the straight sections of the remaining carved V-Rod can be compared to the declination of deep space objects, in terms of the angle between them and the Celestial Pole at 1200BC, the date proposed for the carving of the

Class I Pictish Symbol Stones. The left-hand side of the “V” appears to have three distinct gradients making up the carved line whilst the right-hand side of the “V” appears to consist of a single straight line.

Two of the angles surviving coincide with a nebula and star cluster in Monoceros, identified by the Picts with the Kelpie or Water Horse symbol, the same symbol that appears to have been carved beneath the Crescent and V-Rod. Perhaps more interestingly a third angle indicated by a section of the V-Rod corresponds to the declination of a galaxy in the constellation of Hydra, the Great Serpent. It is also interesting that the days when these deep space objects are aligned due South at Civil Twilight coincide with Pictish Festival days around 1200BC.

Angle	Deep Space Object	Constellation	Date of Alignment	Festival Day
89	Rosette Nebula (NGC2237)	Monoceros	20 th September (Start Civil Twilight)	Autumn Festival
96	Ghost of Jupiter (NGC3242)	Hydra	12 th April (End Civil Twilight)	Vela Festival
99	NGC2232	Monoceros	20 th September (Start Civil Twilight)	Autumn Festival

Table 1 Festival days indicated by the Crescent and V-Rod angles on the Garbeg Stone

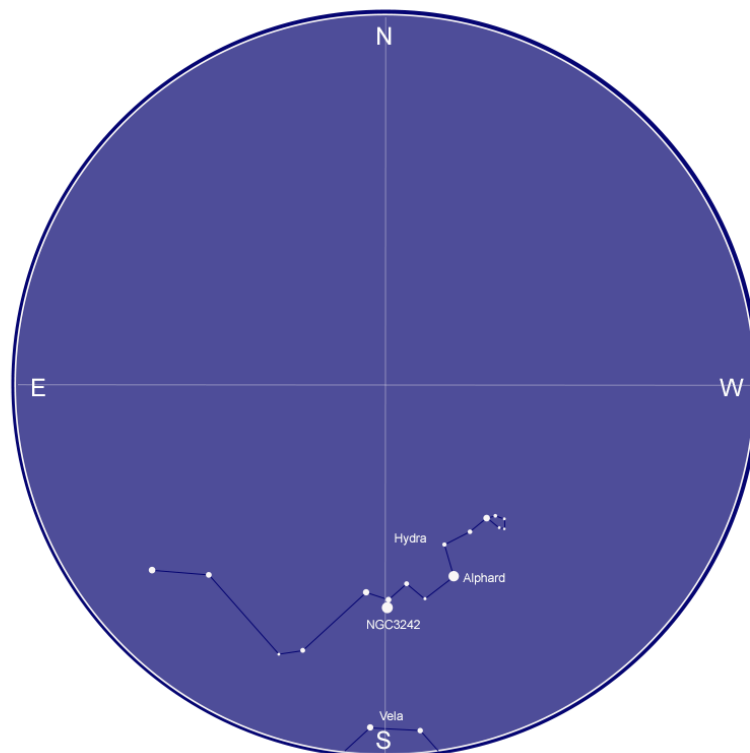


Image 24 April 12th 1200BC Pictish Vela festival day Loch Ness. Alignment of Vela and NGC3242 due South at End of Civil Twilight.



Image 25 NGC3242 The Ghost of Jupiter Nebula in Hydra

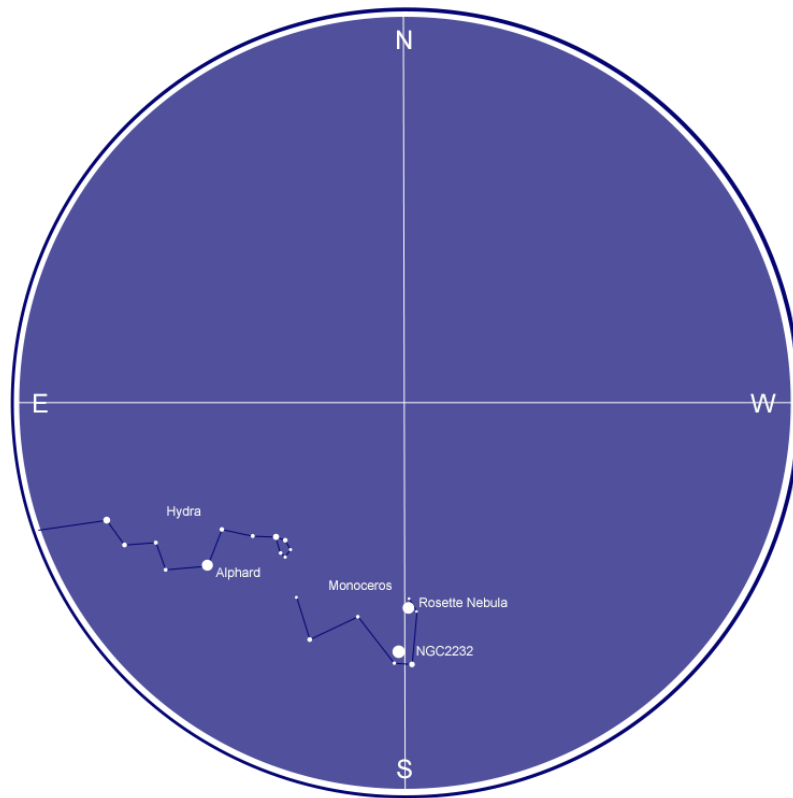


Image 26 Night Sky at the Start of Civil Twilight on the festival day of the 20th September 1200BC

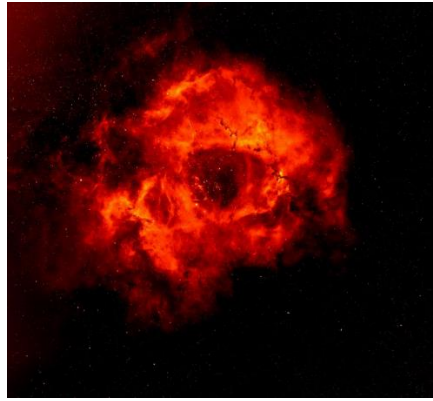


Image 27 NGC2237 Rosette Nebula in Monoceros



Image 28 NGC2232 Cluster in Monoceros

iv) Adomnan's Date for St Columba's encounter

Adomnan reported the history of Columba's visit to the land of the Picts some time in the 7th Century about a hundred years after his visit and yet surprisingly he was able to state the precise date of Columba's visit as the 22nd August. The question is whether this was the actual date of the visit or whether this date represented a day that was known to Adomnan and seemed like an appropriate day for Columba's auspicious encounter with the Loch Ness Monster. Perhaps the pattern of constellations, stars or deep space objects on this day at Civil Twilight had a significance that involved a celestial serpent in some significant way.

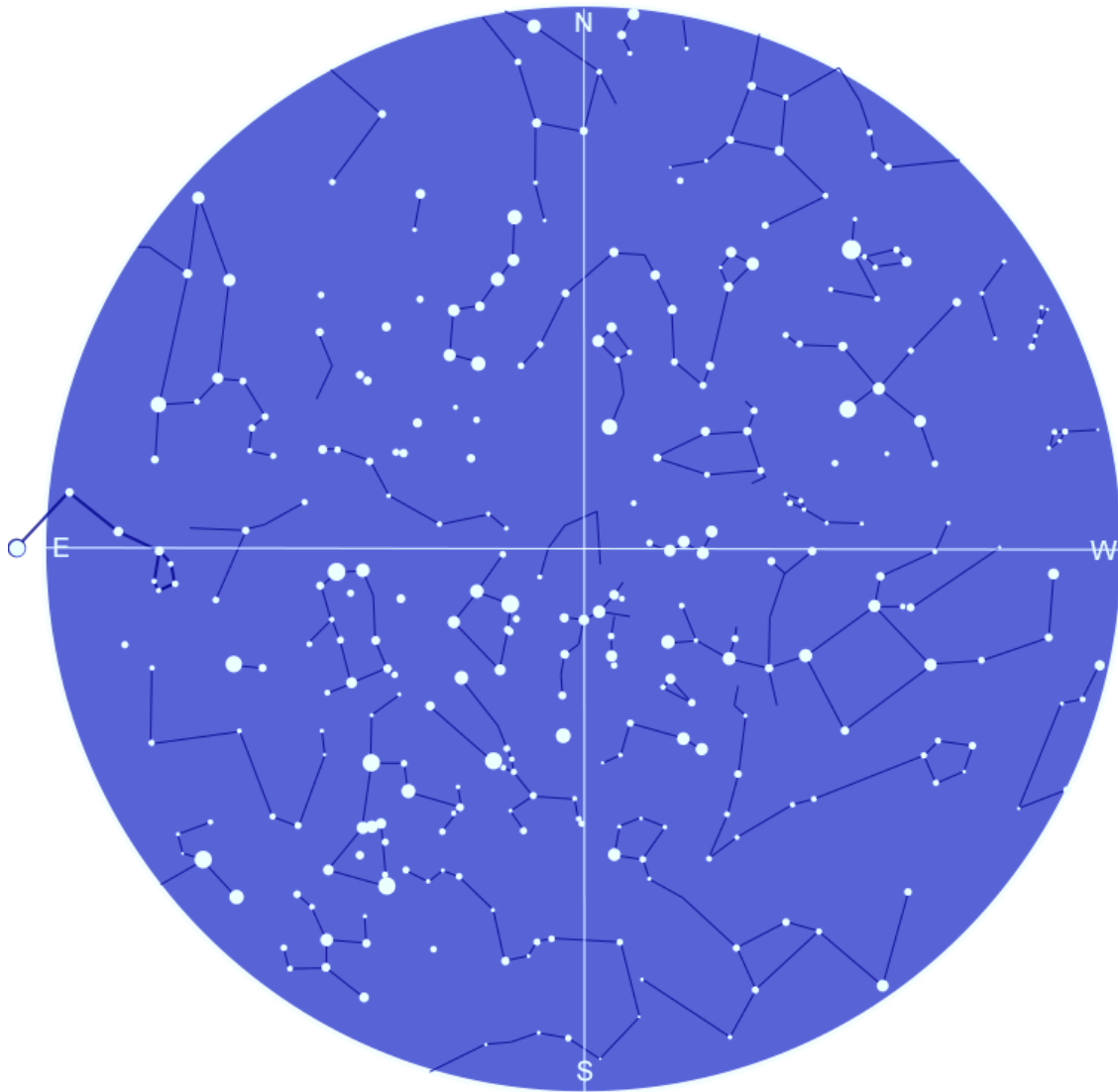


Image 29 Start of Civil Twilight August 22nd 565AD Loch Ness. Alphard, the brightest star in Hydra is aligned due East and the head and neck of Hydra is due East rising from the horizon, just before sunrise

It is interesting that the supposed date that Columba visited Loch Ness and confronted the Loch Ness Monster coincided with the alignment of Alphard and the head and neck of Hydra due East at the start of Civil Twilight (left hand side highlighted in thicker blue line).

At the End of Civil Twilight on the same day the deep space object, NGC 6543 known as the Cat's Eye Nebula was aligned due North, high in the sky. This nebula was identified as the Evil Eye in Ancient Egypt and may have been associated with the god of chaos, Sophet, the Snake god identified with the constellation of Draco. Perhaps Adomnan decided that this date was the symbolic day that fitted Columba's destined confrontation with the evil pagan deities of the Picts and demonstrate the supreme power of the new Christian religion over the pagan gods of the Picts.

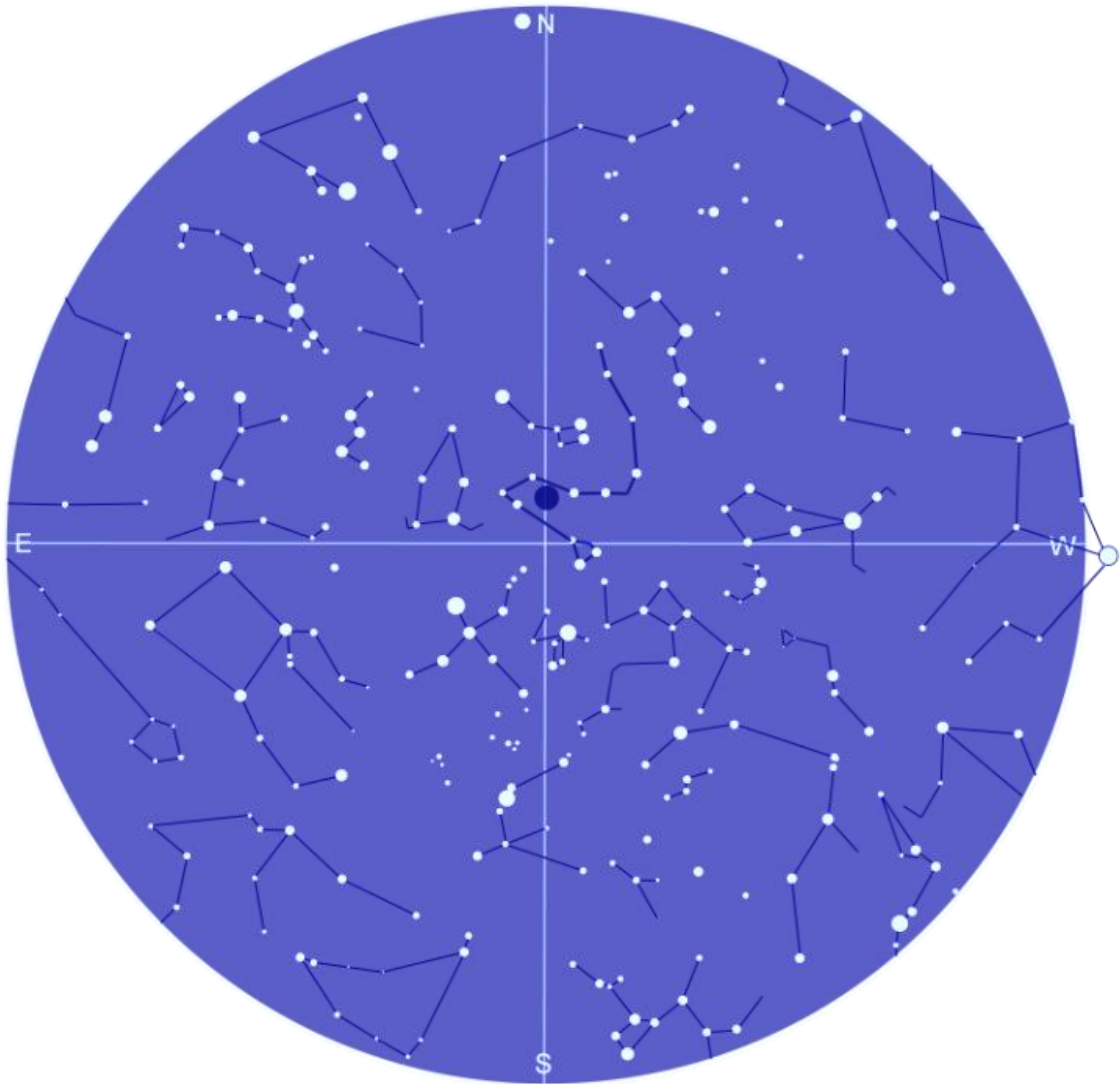


Image 30 End of Civil Twilight August 22nd 565AD Loch Ness

NGC 6543 (shown as a blue circle) in Draco is almost directly overhead aligned due North and was identified as the Evil Eye of the Serpent God of Chaos Apophis in Ancient Egypt. Spica the brightest star in the constellation of Virgo is aligned due West just below the horizon. Spica was identified as the Egyptian goddess Hathor whilst in Pictland it was identified by the Mirror symbol.

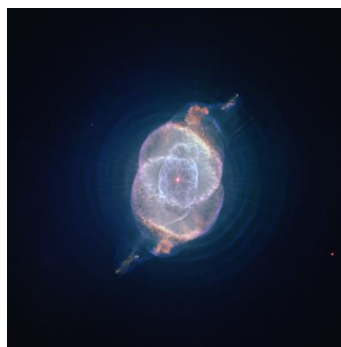


Image 31 NGC 6543 The Cat's Eye Nebula in Draco

In Ancient Egypt NGC6543 or the Cat's Eye Nebula, which has the appearance of an eye, is in the night sky to the North lying in the constellation of Draco. Draco was identified with the god of chaos, Apophis, a snake deity, whose stars form and rotate around the celestial pole. Each night as the solar barque identified as Canopus in the constellation of Carina, made its journey through the underworld carrying the Eye of Ra, Apophis attempted to steal the Eye by using his Evil Eye, presumed to be NGC6543, to overcome those deities on the barque. Seth however was able to withstand the stare of the evil eye by some magical means. It may be that Seth was associated with Alphard in the constellation of Hydra, the Sea Serpent. Perhaps Seth was able to transform himself into the form of a serpent himself, (just as mythology states that Seth was able to transform himself into a bull during his fight with Horus), and so was unaffected by the evil eye of Apophis.

It can be seen that if the Ancient Egyptians knew about the nebula of the Evil Eye and its association with a snake constellation Draco, identified with Apophis, that by the time of Adomnan, these associations were over three millennia old and likely to be known by those with ancient knowledge.

It seems that there is the possibility that there are mythologies associated with some constellations and deep space objects from different times and different cultures that may have borne similarities to each other based on the appearance of these star patterns and their positions relative to each other and also the likelihood that wise men from different cultures travelled and exchanged knowledge about the stars. For instance, in Ancient Egypt Seth was associated with the constellation of Hydra and its brightest star Alphard and its position between the constellation of Draco, representing Apophis to the North and the Eye of Ra represented by NGC3132 and the Solar Barque, Carina to the South may have been reflected in the stories of how Seth stood between the two and fought off Apophis and stopped him from stealing the Eye of Ra.

Clues from the likely Festival Calendar Days celebrated around 565AD at Loch Ness

Whilst the stellar alignments on the solar festivals are fixed by the days of the solstices and equinoxes, the stellar festivals occur on days when important bright stars are aligned at cardinal positions at the start and end of civil twilight, in particular the due South alignment of stars at the end of civil twilight, at dusk. The likely Pictish calendar around the time of Columba's visit to Loch Ness in 565AD can be calculated by considering the alignments possible on the annular and penannular brooches of Hunterston and St Ninian's Isle around 700AD and the Pictish Symbol stones from 1200BC and before that the festival dates indicated by the alignment of the megaliths and Sun on the horizon around 3000BC. Based on the similarity of the calendar over the millennia it seems likely that the calendar used by the Picts at the time of Columba was similar to that indicated by the alignments of the long needle in the channels of the penannular brooches only a century or so after Columba's journey at the time of Adomnan.

The important stellar alignments due South at the End of Civil Twilight appear to be those of the Pleiades, Betelgeuse, Alphard, Spica, Vega and Deneb, together with the summer and winter solstices and the spring and autumn equinoxes. The dates when these stellar alignments occur can be calculated using the Skymap Pro II archaeo-astronomy program, that can then be plotted in the form of a Wheel of the Year calendar with each festival marked as a spoke. There is a consistency in the way that the people who inhabited Scotland from Neolithic times used a calendar based on the alignment of stars identified as stellar deities due South at Civil Twilight that appear to have persisted long after the arrival of the Romans and their date-based calendar until the final acceptance of Christianity sometime after 800AD. The pattern of stars in night skies on the stellar festival days may give us clues as to the beliefs of the Picts and the stellar deities that were important to them and their mythology.

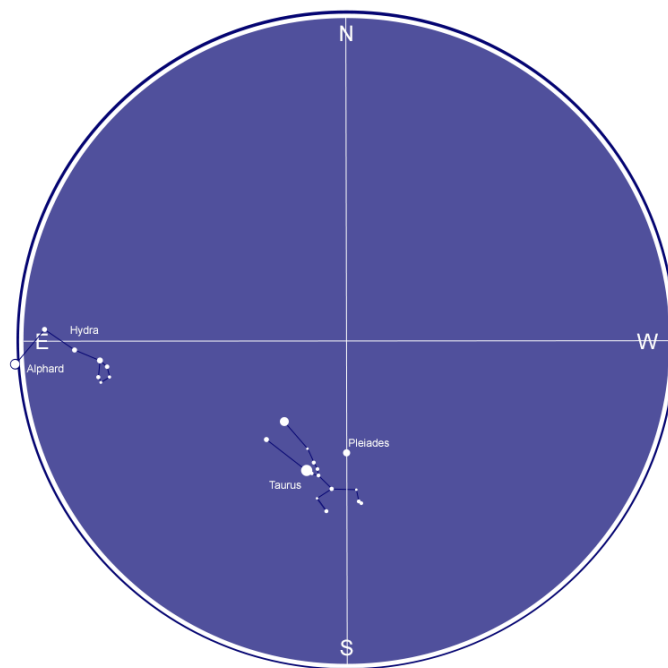


Image 32 February 4th End of Civil Twilight Loch Ness Pleiades Festival

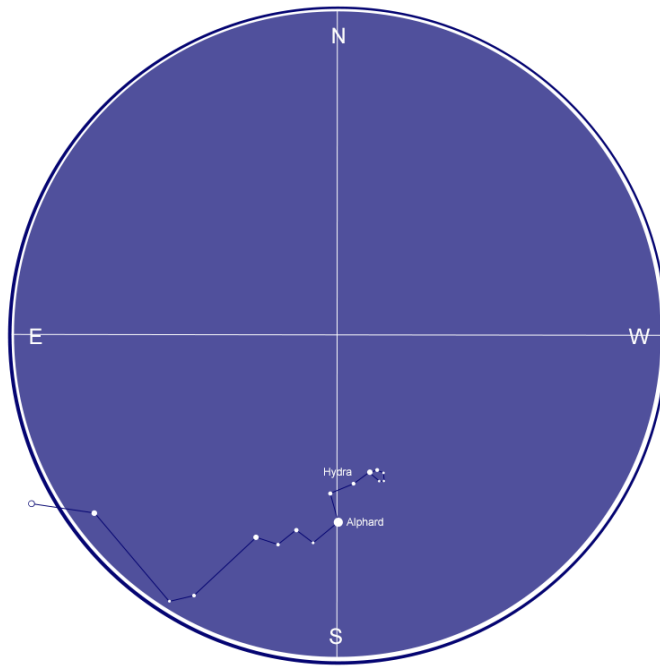


Image 33 April 2nd 565AD End of Civil Twilight Loch Ness

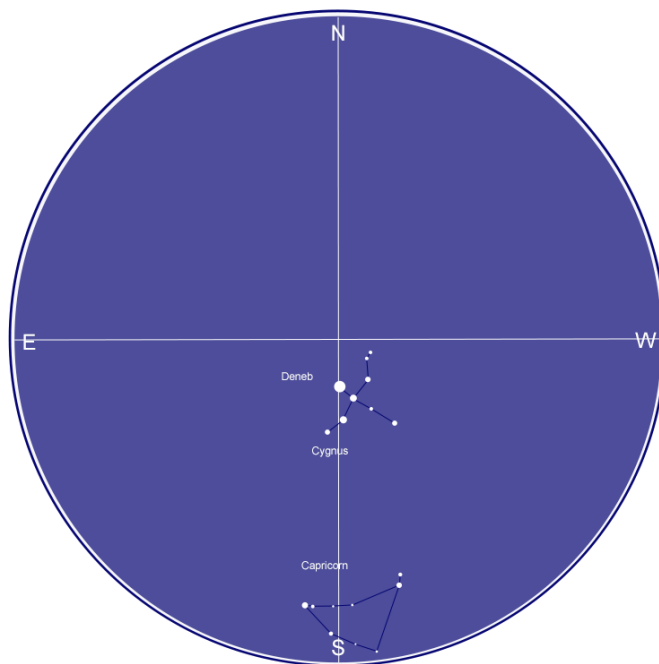


Image 34 November 7th 565AD End of Civil Twilight Loch Ness Deneb and Capricorn Festival and Start of Winter Festival Samhain

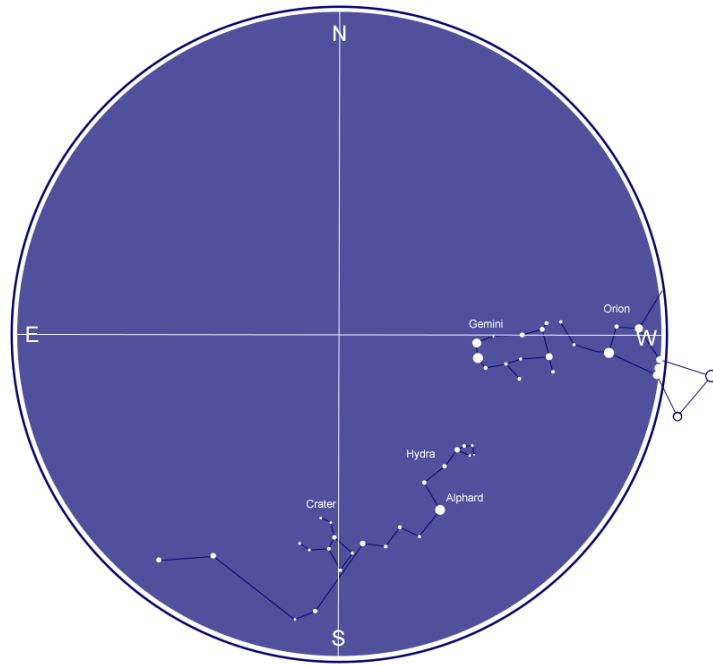


Image 35 November 7th 565AD Start of Civil Twilight Loch Ness Start of Winter Samhain festival

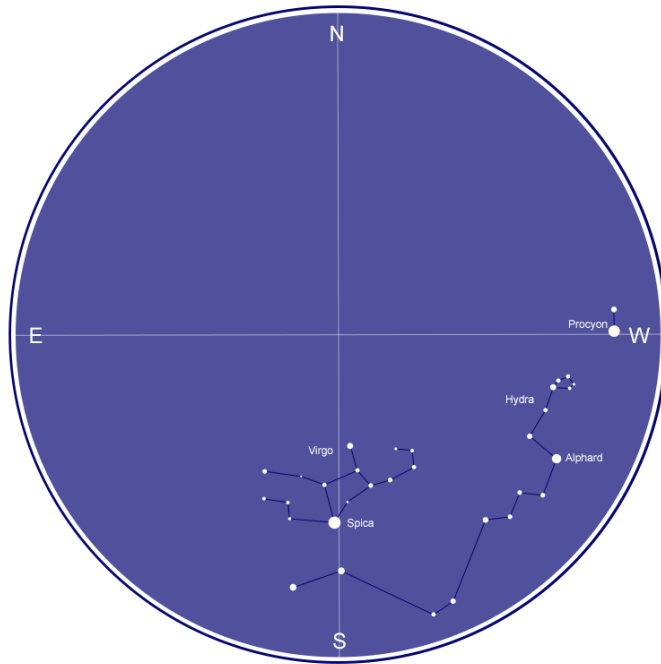


Image 36 May 8th 565AD End of Civil Twilight Loch Ness Spica Festival

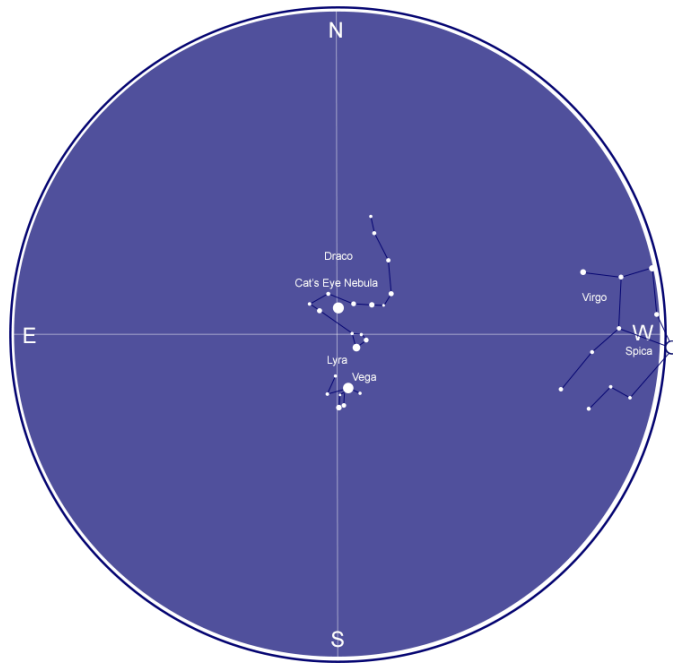


Image 37 May 8th 565AD Start of Civil Twilight Loch Ness

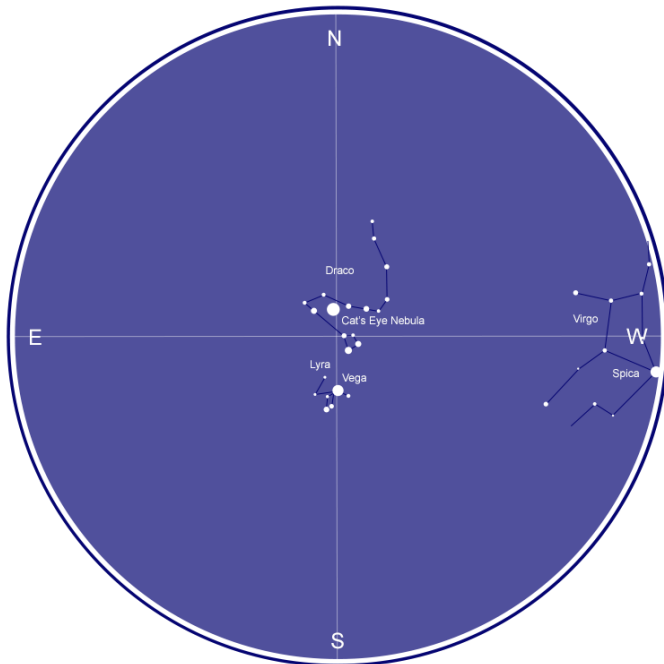


Image 38 July 31st 565AD End of Civil Twilight Loch Ness

Festival	Alignment	Date of Festival	Alignment
1	Winter Solstice Circlet of Pisces	19 th December	Due South End of Civil Twilight
2	The Pleiades Taurus	4 th February	Due South End of Civil Twilight
3	Betelgeuse Orion	25 th February	Due South End of Civil Twilight
4	Spring Equinox Procyon Canis Minor	18 th March	Due South End of Civil Twilight
5	Alphard Hydra	2 nd April	Due South End of Civil Twilight
6	Spica Virgo	8 th May	Due South End of Civil Twilight
7	Summer Solstice Deneb Cygnus	20 th June	Due South Start of Civil Twilight
8	Vega Lyra	31 st July	Due South End of Civil Twilight
9	Autumn Equinox Altair Aquila	21 st September	Due South End of Civil Twilight
10	Deneb Cygnus B-Crateris Crater	7 th November	Due South End of Civil Twilight Due South Start of Civil Twilight

Table 2 Proposed Festival days of the Picts around 565AD

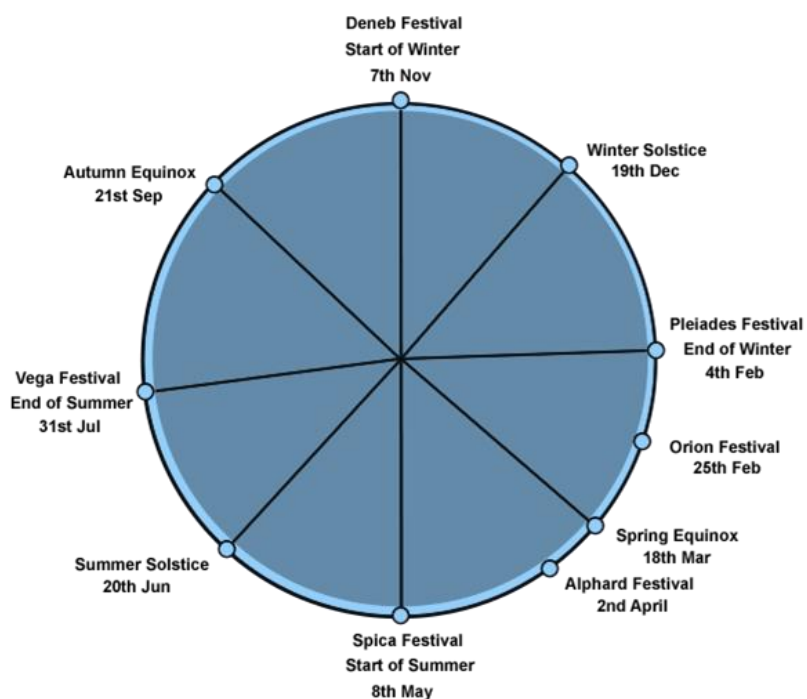


Image 39 Festival Days displayed as a Wheel of the Year Pictish Calendar 565AD

The proposed festival days produce eight equally spaced festivals plus two other festivals either side of the spring equinox that may have celebrated a deity associated with Orion corresponding with alignment of Betelgeuse due South in the sky at the end of Civil Twilight on the 25th February and the alignment of Alphard in Hydra due South at the end of Civil Twilight on the 2nd April.

Apart from the alignment of the brightest star in Hydra on the 2nd April it is also interesting that on the Deneb festival day on the 7th November at the start of Civil Twilight on that day the constellation of Crater sitting just above Hydra is aligned due South.

Year	Date of Spring Equinox	Date of Alignment of Alphard due S at End of Civil Twilight	
3000BC	15 th April	31 st March	
1200BC	1 st April	1 st April	
565AD	18 th March	2 nd April	

The importance of the constellation of Hydra in the ancient calendar comes from the alignment of Hydra in the sky on important festival days. However, the stars in Hydra extend over such a large area of the night sky that any alignment has to be with a significant star in the constellation such as Alphard, the brightest star in the constellation or perhaps with the group of less bright stars forming the head and neck of the serpent constellation. Looking at the alignment of Alphard due South in the sky at the End of Civil Twilight we find that it was the marker of the Spring Equinox around the year 1200BC that coincides with the date when the Pictish Class I symbol stones were carved. However, it is likely that Alphard was an important star in its own right and may have had a festival day dedicated to its worship as a deity associated with a snake or serpent when it was aligned due South both at the End and Start of Civil Twilight and or its alignment due East and due West at Civil Twilight. The star Alphard was likely to have been the celestial embodiment of the great god Seth in Ancient Egypt and at the time of the pyramids of Giza around 2560BC was aligned due South at the end of civil twilight on the day when Capricorn and the Saturn nebula above it were aligned due South at the start of civil twilight.

Timetable to see Nessie at Loch Ness

Having promised that people would be able to see Nessie albeit in her celestial form, it seems only right that the times when she can be viewed looking down the loch from the North, with her head popping out of the eastern bank of the loch followed by her serpentine body and tail gliding from East to West just above the water's surface, when viewed down the Loch should be given.

This following timetable should be accurate for the next hundred years or so but does not of course take into account cloudy nights. You need to find a position either on the loch or along its shores looking down the loch towards the South West, a boat trip on a

calm and dark moonless night is the best and most dramatic option and perhaps this idea may spawn a new industry of nighttime Nessie-spotting boat trips on the Loch.

Timetable for viewing Nessie in the Night Sky looking South West down Loch Ness

Date	Head	Coils	Tail
December 1 st	07.00	Not Visible	Not Visible
January 1 st	05.00	07.00	Not Visible
February 1 st	03.00	05.00	Not Visible
March 1 st	01.00	03.00	06.00
April 1 st	23.00	01.00	04.00
May 1 st	21.00	23.00	02.00
*June 1 st	22.00-23.00	22.00-23.00	22.00-23.00
July 1 st	Not Visible	Not Visible	Not Visible
August 1 st	Not Visible	Not Visible	Not Visible
September 1 st	Not Visible	Not Visible	Not Visible
**October 1 st	Not Visible	Not Visible	Not Visible
***November 1 st	Not Visible	Not Visible	Not Visible

*Hydra is stretched along the horizon with the head due West and her tail due South, by 23.00h she has completely submerged below the horizon except for her tail.

** Hydra's head and neck are visible above the horizon at a bearing of 120° in the South East at 05.00h but disappears as the Sun rises about an hour later

***At the start of civil twilight Alphard is due South in the sky. At 00.30h the head and neck of Hydra is above the eastern horizon.

Conclusions

When we speak of a monster, do we mean that it is monstrous in size or do we mean something that has the appearance of a monster. Perhaps we assume both are true but it is more likely that we have an immensely large constellation of stars called Hydra that replicates a monstrously large but well-known creature; the eel.

It seems plausible that there exists a very large or several very large unidentified creatures in Loch Ness. The available evidence suggests and even the sightings suggest that the creatures may be most plausibly identified as eels that have grown to a very large size. However, the Loch Ness monster has a celestial counterpart identified as the Great Serpent, Hydra that shares a similar general description with the many eye-witness descriptions of their sightings with the constellation having a small head, long neck, two coils along its body or humps and a tail but the star pattern is described most often as a "water snake", a serpentine animal rather than a large bodied Plesiosaur-like creature. The constellation of Hydra and its brightest star Alphard played an important role in the Pictish calendar being aligned with cardinal points on important ancient Pictish festival days. The constellation of Hydra, the Sea Serpent was likely to have been involved in the mythological beliefs of the Picts in the same way it was important in Egyptian beliefs through its identification with the god Seth. Also, since the constellation appeared low in the sky, and the Loch is oriented from North-East to South-West, it is possible when looking from the North-East down the length of the loch to have seen the Great Serpent's head and neck appear from the eastern bank of hills bordering the loch followed by its coils, and tail and appear to glide over the water, low in the night sky, before disappearing into the western bank of hills running down Loch Ness.

The Pictish symbol stones are carved with various aquatic creatures the most common are the salmon and the kelpie but there is also a stone with what appears to be a pair of eels carved on it at nearby Brodie Castle that is unusual in representing what appears to be large eels in the Pictish style. This stone is a Class II Pictish stone that may have been carved around 900-1000AD so the carving of this stone post-dates Columba's visit and even Adomnan and his description of St Columba's encounter with Nessie. Apart from the constellations associated with these sea creatures, the Crescent and V-Rod symbol of the remains of a stone found at Garbeg Farm at Drumnadrochit on Loch Ness, appears to indicate the declination of three deep space objects, two associated with the Water Horse or Kelpie constellation, Monoceros, whilst the third deep space object represented on this Pictish quadrant coincides with the declination of the beautiful Ghost of Jupiter nebula, positioned mid-way down the body and just underneath Hydra, the Great Sea Serpent. It is perfectly possible that the Picts knew there were large serpentine creatures in the Loch and River Ness that bore a resemblance to the Sea Serpent in the heavens otherwise known as Hydra with its brightest star Alphard that was used around 1200BC to mark the Spring Equinox and the deep space object known as the Jupiter Nebula in Hydra aligned on the Pictish festival of Vela when pendulums were calibrated using a pair of stars in that constellation.

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The Quest for the Holy Grail



Given what we have discovered about the likely identification of unknown mythological creatures as star patterns we might guess that the Holy Grail too might have a celestial counterpart in the heavens. We might expect that a constellation may have either a name or share an appearance with a chalice and we would not be disappointed to find that there is a constellation that satisfies both, being named Crateris, Greek for a type of Cup and having the appearance of a cup when its stars are joined by imaginary lines. So that could be the end of it, search over, a Heavenly Chalice and we didn't need to even shift a single grain of sand.

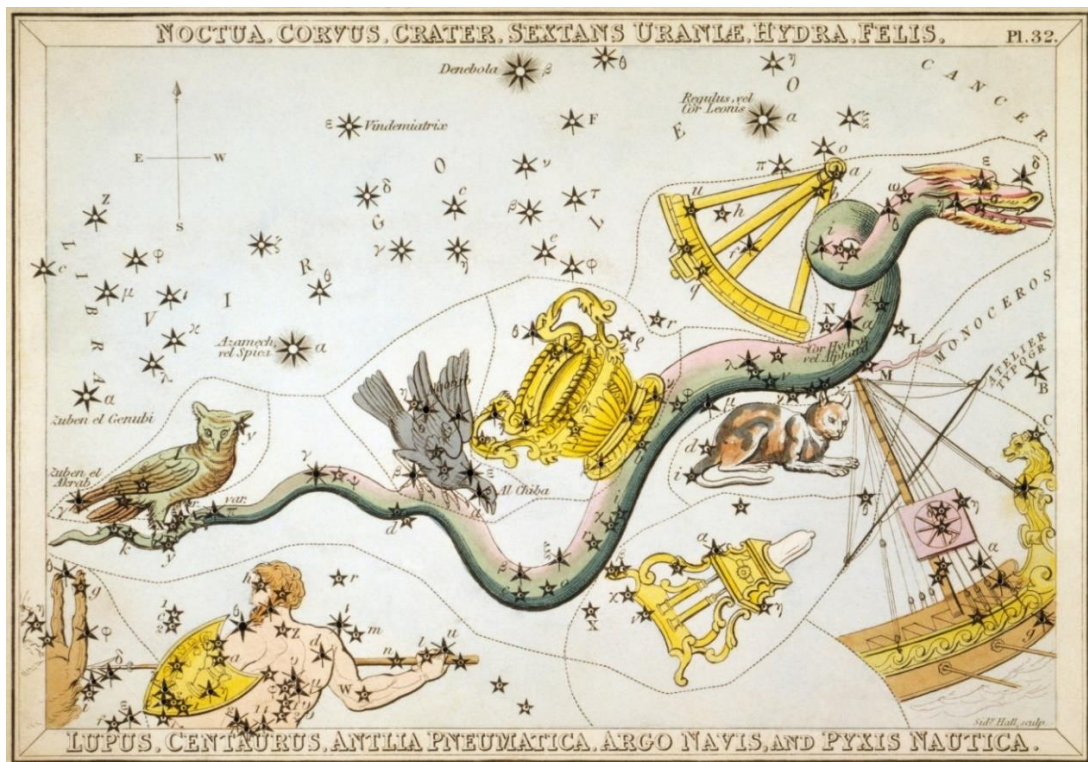


Image 40 The constellation of Crater, the Cup sitting on the back of the Great Serpent Hydra

But of course, it isn't that simple and there are many strands to be unravelled to get to the full story. The idea of the Holy Grail is relatively speaking a fairly "recent" story because of its association with Jesus Christ, however there is the possibility that there were precursors to the Holy Grail as a mythological cup or chalice that existed before the current era. The exploration of the pre-historic associations of Crater is worth investigating further.

The constellation Crater is identified with a story from Greek mythology where a crow is sent by Apollo, to fetch water, but when it finds some figs, is distracted from its job and waits for them to ripen before eating them. Eventually the crow retrieves the water in a cup, and takes back a water snake with it to Apollo, blaming the snake for blocking his way and delaying his return. But Apollo wasn't fooled and seeing through the crow's deception, casts the crow, the cup, and snake, into the sky where they can be seen as the neighbouring constellations of Corvus, Crater and Hydra and the three constellations arranged in such a way that the crow was prevented from ever drinking from the cup. So here is a more ancient association of a chalice with the Greek god Apollo.

Going even further back in time, we can consider that patterns of stars or constellations have been associated with different animals, birds, gods and goddesses throughout the history of mankind stretching back through the mists of time maybe for hundreds of thousands of years. The associations of the star patterns with objects were born perhaps when looking up at the stars and noticing a resemblance of the pattern of bright stars with a particular creature as in the case of the constellation Cygnus, the Swan as the stars in this constellation forms what looks like a long-necked bird in flight with its wings outstretched. The same constellation was associated with the Goose in prehistoric Scotland and the Crane in Southern Europe and North Africa reflecting the different migrating birds in different places that all shared their appearance in flight with the unchanging pattern of stars in the constellation we now call Cygnus, the Swan. The association of star groups with certain animals might also occur through the time of year when a constellation is visible in the sky and when that time of year coincides with the annual migration of a creature such as the arrival of Atlantic Salmon in rivers to spawn coinciding with the alignment of the constellation Pisces and in particular the Circlet of Pisces, the head of the fish due South in the night sky just before winter. Whilst the identification of some constellations appears to remain constant over the millennia others change over time, sometimes reflecting the changing beliefs of the people. It is possible that the constellation of Crater has been associated with different deities over the millennia and we can look at Ancient Egypt and the Picts of Scotland to see whether the constellation played an important role in their mythology several thousand years before the birth of Christ.

The god Bes in Ancient Egypt



Image 41 Carved image of Bes from Ancient Egypt where the god is holding a snake in his left hand. He has a head dress that appears as five feathers or ears of wheat.

Going back in time to Ancient Egypt we see the god Bes was unlike any of the other deities; he was a fun-loving god, a dwarf, strange, pot-bellied ugly god often portrayed with his tongue sticking out and endowed with a tail, and other feline features. Bes is thought to have originated in equatorial Africa (Besa is a Nubian word for cat) and to have been assimilated into the Egyptian and Phoenician pantheon of deities. The cat-like Bes in Egypt was charged with the protection of grain from vermin and was believed to have had special powers over poisonous snakes. Though in Phoenicia he was more of a benevolent spirit than a god, Bes became intimately associated with the Island of Ibiza when the Carthaginians colonised the small island in the Mediterranean Sea around 600BC and realised that unlike most of its colonies was an island devoid of any snakes. Bes became one of its principal deities along with the goddess Tanit, Bes giving his name to the island. The Punic word *ybsm* (Ibosim) translates literally as "Island of Bes" (Sola Sole). The island name appearing on one side of coins from the Ibicenco mint, the figure of Bes appearing on the other and he is seen brandishing a stick in his right hand and a snake in his left.



Image 42 Coin from the Ibizan mint

Indeed, Bes protected the higher gods at night watching over them as they slept and chased away evil, especially crocodiles and snakes over which he had unique powers. As a popular god he was considered the protector god of children and pregnant women who often wore his amulet around their necks.

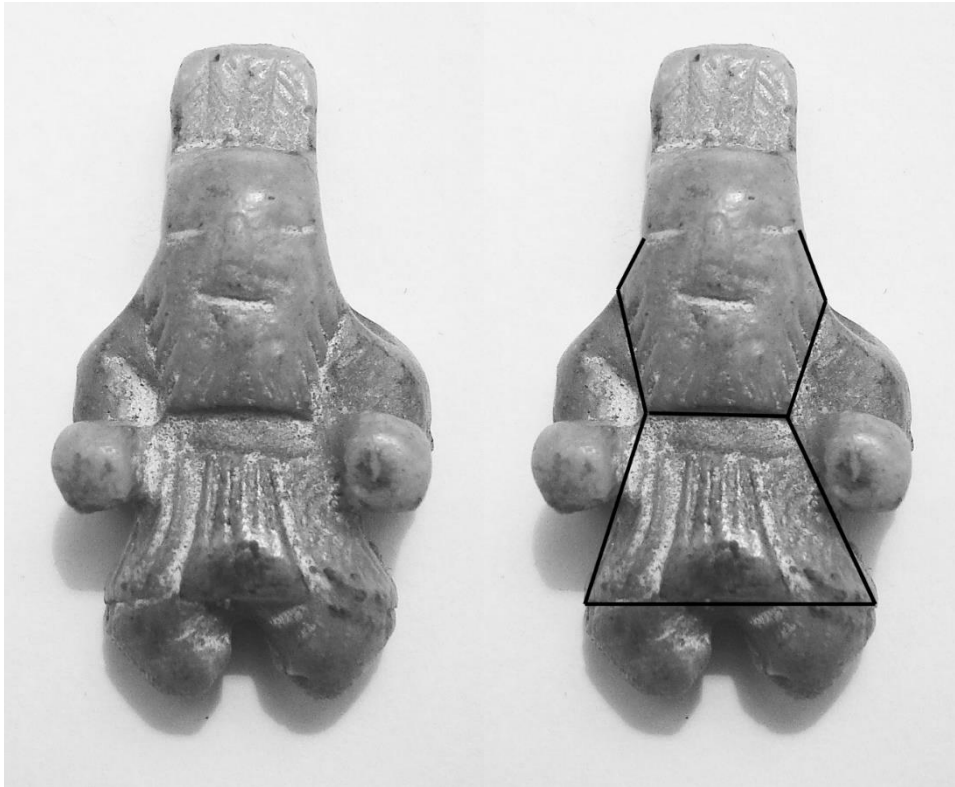


Image 43 Amulet of Bes from Ibiza 600BC with pattern of Crater superimposed on right side image.

The design of this Bes pendent reflects the characteristic shape of the constellation of Crater.

The red soil of the island of Ibiza was thought to be blessed by Bes because of the absence of snakes on the island and was itself carried in amulets and spread on snake-infested lands to ward them off. Ibizan clay was even used to make drinking vessels that were believed to protect their users from anyone trying to poison them. There are interesting similarities and associations between Bes and the constellation of Crater that suggest that the god was identified with this constellation. Firstly, the association of Bes with snakes mirrors the position of Crater standing above the constellation of the Great Serpent Hydra. Secondly, the association of Bes with the protection of grain against vermin may reflect the likeness of the pattern of the brightest stars in the constellation with a stack of wheat.

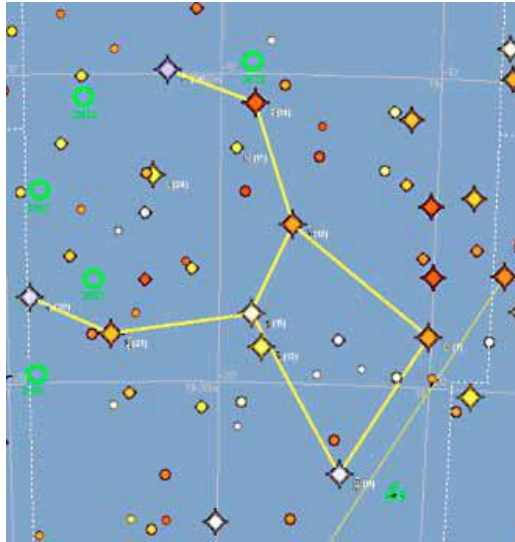


Image 44 Constellation of Crater with Five Galaxies shown as Green Circles



Image 45 Stack of wheat

Bes is usually depicted with what appears to be a feather headdress usually consisting of five feathers but this may also or alternatively represent ears of wheat. Looking at deep space objects in Crater there are five galaxies in what would logically represent the head region of Bes. The representation of elliptical wispy spiral galaxies as feathers seems like a credible interpretation of an astronomical image seen through an ancient telescope and again perhaps lends more support to the idea that prehistoric astronomers had viewed these deep space objects long before we think. It is interesting that later versions of Bes amulets didn't necessarily have a five feathered headdress using more often four or sometimes three or often no feathers at all reflecting either perhaps the loss of knowledge about the significance of the decorating features as galaxies in Crater or their alternative identification as ears of wheat and Bes's popular association with the protection of grain.

The God Bes was an extremely important deity in Egypt and Phoenicia originally credited with protecting people from poisonous snakes. The proximity of Crater to Hydra seems appropriate to Crater being originally being associated with Bes as the constellation stands literally on the back of the Great Serpent with his stellar arms raised aloft. As the paths of the Sun and the constellation of Capricorn, representing the Cat-head deity Bas, parted due to precession of the equinoxes, the popularity of Bes in Ancient Egypt increased with the passing centuries and from his origins as a god protector with powers against snakes, he came to take on the mantles of the god of dance, music, marriage, carnal love and childbirth. In time, this unlikely god's influence expanded to form his own triad with his female counterpart Baset and a child Bes that eventually supplanted the importance of Osiris, Isis and Horus and remained the last bastion of the old stellar-based religion against early Christian evangelism in Egypt. With the spread of Christianity into Northern Europe in the middle of the first century many of the ancient popular pagan gods and goddesses were "rebranded" as Christian figures. This process played an important part in persuading people whose forefathers dating back over thousands of years, had believed in a pantheon of stellar gods that could be seen in the night sky and whose veneration had served the people well, that the new religion was relevant and not too far a jump from their forefather's beliefs.

The Constellation of Crater in the Land of the Picts

Far to the North in Scotland the Picts also appear to have venerated a deity associated with the constellation of Crater because of its alignment due South in the sky at the Start of Civil Twilight on one of the most important festival days celebrated by the Picts in their calendar, Samhain.

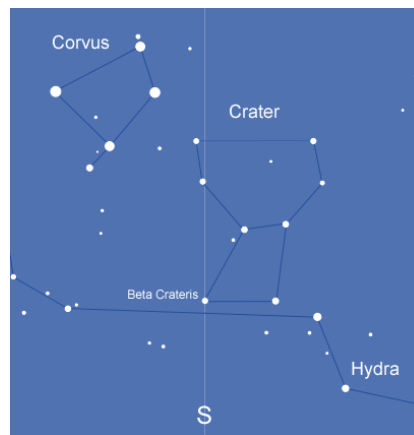


Image 46 Alignment of Beta Crateris in Crater due South at Start of Civil Twilight on the festival of Samhain on November 5th 1200BC Loch Ness.

In the Pictish Calendar proposed for 1200BC, the first festival day of the year can be considered as the Start of Winter Festival, or Samhain which was celebrated on what we would know as November 5th in our calendar. The constellations which are aligned due South at the End of Civil Twilight and the Start of Civil Twilight are Aquarius and Crater respectively with the star Beta Crateris aligned precisely due South at the Start of Civil Twilight marking the day of the festival that was the start of the Pictish year, the start of

winter and later known as the festival of Samhain. The Pictish symbol known as “the Flower” is carved to represent the constellation of Aquarius and as an indicator of the Start of Winter or Festival day of Samhain when the constellation is aligned due South at the End of Civil Twilight. The Pictish Flower symbol has the appearance of seaweed or kelp and this may have been associated with the ancient practice in Scotland of collecting kelp washed up on the seashore following the first winter storms and stacking it into piles above the high-water line, like hay stacks to provide a source of winter fodder for sheep and cattle. The festival of Samhain was considered as the time of harvesting as well as the start of winter and start of the new year in the pagan calendar. Perhaps the appearance of the other constellation marker, Crater due South at dawn on this day could be interpreted as a haystack or stack of kelp due to its pattern of stars in the same way that it was associated with a stack of wheat by other cultures.



Image 47 Stacking Kelp to dry on the shoreline

The Pictish symbols can be interpreted as representing constellations that were in turn associated with their star gods in the Pictish pantheon of deities. There is however, no Pictish symbol that appears to represent the constellation of Crater despite its apparent importance in marking the start of the Pictish Year.

However, there is another consideration, whilst, for instance, the goddess representing Virgo was represented by a Mirror symbol and Bridget by a Bull symbol or a Tuning-fork symbol, the gods represented by the constellations of Capricorn and Crater are not represented by any identifiable known Pictish symbol. We have considered the

importance of Capricorn as the Great God and protector of the winter Sun whose image could not be depicted, so perhaps the god associated with Crater was likewise an important and powerful god whose image was also unable to be carved in stone, at least in an obvious way. The use of a mirror reflection of patterns carved within different Pictish images converted those “hidden” patterns into the Great God in its form as the Cat-head deity of the Capricorn constellation, but how might have the powerful god associated with the Start of Winter festival have been represented? The Pictish flower symbol representing the constellation of Aquarius is aligned due South at the End of Civil Twilight on November 5th, the same day when Crater is aligned due South earlier on that day at the Start of Civil Twilight. Perhaps, a half image of the god of Samhain, Crom Cruach or Crom Dubh may have been portrayed as part of another Pictish symbol whose appearance could only be revealed using a reflection in a mirror. The most likely Pictish symbol decorated in this way, to produce a half-image of the deity associated with Crater, is the Pictish Flower symbol representing Aquarius that is a marker for the same day. Two Class I Pictish symbol stones have well-carved Pictish Flower symbols, the stone from Dunnichen and the stone from Pabbay. Both symbols have a slightly awkward detail carved in their patterns, namely a circular ring and a straight lefthand side vertical edge. If the flower symbols are reflected using the straight left hand-side edge as the axis, the following images are obtained. Heads appear which have horns and eyes that share a similarity of appearance with a carved Celtic deity known as Crom Cruach or Crom Dubh which translate as the “crooked stack” and the “black stack” respectively.



Image 48 Class I Pictish symbol stone from Pabbay (the cross on the top appears to be a later addition). The small island is in the Outer Hebrides and lies between the islands of Harris and North Uist.



Image 49 Reflected image of the menacing deity associated with the Start of Winter from the Pictish Stone from Pabbay



Image 50 Dunnichen Class I Pictish Stone at the Meffan museum in Forfar showing the Pictish symbols of the Flower above the Double Disc and Z-Rod above the Comb and Mirror symbols.



Image 51 Reflected image made from the Dunnichen Pictish Class I Stone using the Flower symbol believed to represent Aquarius as seaweed or kelp, but when reflected represents the constellation of Crater identified with the God Crom Cruach or more likely the black stack, associated with stacks of black kelp and the pagan festival of Samhain at the start of winter and storms throwing kelp u onto the foreshore to be gathered as winter fodder for cattle.

The reflected symbol, as in the case of Capricorn, assumes the same general shape as its associated constellation, Crater with a triangular wedge base and with kelp heads on top. In both cases the Pabbay and Dunnichen stones appears to have round eyes staring back. If the interpretation is correct, it is incredible that these stones allow us to reveal the face of the deities as imagined and venerated by our Pictish ancestors some three thousand years ago. It is perhaps even more incredible that despite not telling us the original names by which these deities were known to the Picts, these stones allow us to look at the imagined appearance of the god associated with this most important festival of what was the Start of Winter, that later became known as Samhain, images that were no doubt the source of many children's nightmares.

So apart from the similarity of appearance of the stars in Crater to a stack of wheat or kelp and the similarity of appearance of the Pictish Flower symbol with Kelp, there is a further transformation that can be made which brings the two symbols, which both mark the festival day, together. By performing a reflection in a vertical axis through the Pictish Flower symbol, a shape that resembles that of the constellation of Crater is produced thereby morphing the two symbols into one. More than this however, the reflected image has the appearance of more than a stack of kelp or wheat, for now there is the distinct appearance of a face of a man or deity that emerges from the black stack, Crom Dubh.

The dates of the Pictish festivals at the time of the Class I Pictish stones around 1200 BC can be summarised together with the stars aligned on these festival days used as markers for these festivals.

Festival	Day of Festival (1100-1200BC)	Deep Space Object Aligned on Festival Day	Start or End of Civil Twilight
Start of Winter	5 th November	Beta Crateris in Crater	Start
Mid- Winter	22-23 rd December	Gamma Pegasi in Pegasus	End
End of Winter	4 th February	Lambda Tauri in Taurus	End
Spring	20 th March	Sulafat in Lyra	Start
Start of Summer	6-7 th May	Alpha Comae in Coma Berenices	End
Mid-Summer	19 th June	Deneb in Cygnus	Start
End of Summer	6 th August	Gamma Sagittae in Sagitta	End
Autumn	19-20 th September	Gamma Monocerotis in Monoceros	Start
Cetus Festival	23 rd January	Gamma Ceti in Cetus	End
Orion Festival	23 rd February	Betelgeuse in Orion	End
Vela Festival	12 th April	Mu Hydrae in Hydra	End

Table 3 The first eight stellar festivals divide the year into eight equal periods whilst the final three festivals are special one-off festival days, one dedicated to the male god identified with Orion at the end of February and two pendulum calibration days when Cetus and Vela were aligned due South at the end of civil twilight

The days when constellations were aligned due South at Civil Twilight, both at dawn and dusk can be depicted on a Wheel of the Year calendar. In this way the whole of the year and the festival days punctuating it could perhaps be visualised and committed to memory. Although the solar festivals consisting of the winter and summer solstices and the vernal and autumnal equinoxes are based on the position of the Sun on the horizon at sunrise and sunset, the alignment of stars on these festival days has been included for the time around 1100-1200BC when the Class I Pictish symbol stones were carved. The winter solstice coincides with the alignment of the Andromeda Galaxy at the end of civil twilight, the spring equinox coincides with the alignment of Altair the brightest star in Aquila, "the Eagle" due South at the start of civil twilight, the summer solstice does not coincide with a major constellation and star being aligned due South at dawn or dusk but Spica, the brightest star in Virgo, is aligned due West at the end of civil twilight on that

day. The Autumnal equinox coincides with the alignment of Deneb, the brightest star in Cygnus, "The Goose" symbol due South at the end of civil twilight.

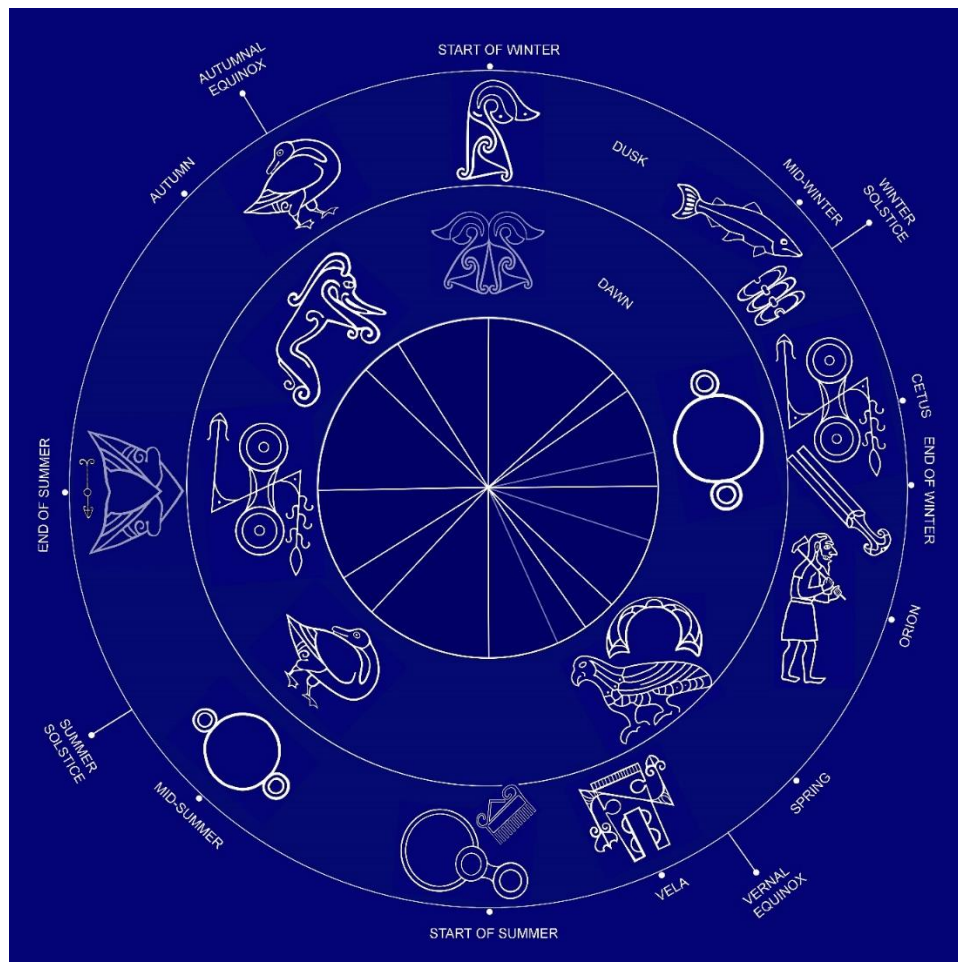


Image 52 Pictish Calendar shown as a Wheel of the Year with the different festival days and the Pictish Constellation symbols representing constellations whose brightest stars were aligned on those days due South in the sky at the Start of Civil Twilight at dawn and End of Civil Twilight at dusk.

It can be seen how the Start of winter festival has the Flower symbol representing Aquarius aligned due South at dusk whilst the reflected flower symbol representing Crater is aligned due South at dawn.

The other major constellation that is missing from the Pictish symbols, namely Capricorn is also obtainable as an image of the constellation as a Cat head when reflections are made using patterns embedded in the design of other Pictish symbols such as the Goose and the Salmon symbols. The reflected image of the Cat head is seen on the left-hand side of the Wheel calendar indicating the alignment due South at Dusk at the End of Summer festival.

There is an ancient Celtic tradition that a god called Crom Cruach or sometimes Crom Dubh, where Cromm means* "bent, stooped, or crooked" or it can be a noun, a bent, stooped, crooked thing. Crúach has a number of possible meanings including (n) a stack

of corn so we have the description of an ancient deity described as a “crooked stack of corn” which seems like a perfect description for the appearance of the constellation of Crater for Crom Cruach was associated with the festival of Samhain, the harvest and the start of the new year that begun at the start of winter. Whilst “Dubh” means black which may have located the crooked stack in the night sky at the start of dark winters or describe the stacks of seaweed gathered on the shore which would have a black appearance being formed from drying kelp. One can imagine how children in the evening seeing stacks of grain in the field or stacks of kelp along the foreshore might be intimidated by the silhouettes of these stacks and their association with Crom Cruach and Crom Dubh looming over them as they hurried passed in their shadows. An early High King of Ireland, Tigernas, along with three-quarters of his army is said to have died whilst worshipping Crom Cruach on Samhain Eve, thereby in current conventional thinking, associating the god with the festival day whereas Samhain already was intimately associated with Crom Cruach because it seems likely that the alignment of the constellation of Crater identified as Crom Cruach was the marker of the festival day. The connection between the pattern of stars in the constellations, the Pictish symbols representing these constellations, the alignment due South at Civil twilight on the festival day at the start of winter on November 5th, the meaning of the name of Crom Cruach and the reflected image of a face that could be that of that strange deity is strong evidence for the identification of Crater and Aquarius with this deity and the festival day celebrating the Start of the Pictish year, the Start of Winter, and the festival of Samhain.

**From the Dictionary of the Irish Language Based on Old and Middle Irish Materials (Dublin 1990).*

Given that Crater sits above Hydra, the great serpent and the association of Bes, as Crater with snakes, we might ask if there is any evidence linking Crom with a snake or serpent? Crom Cruach was originally envisaged as a fertility god associated with offerings of grain and milk but he became demonised with the arrival of Christianity and Saint Patrick and his depiction changed to that of an evil snake or monstrous worm or wyrm (a monstrous dragon). St Patrick is reported in a poem as destroying the cult image of Crom with a sledge-hammer^{xx}. However, perhaps Saint Patrick merely replaced Crom Cruach in the identification of the same constellation as a kind (albeit hammer wielding) Christian saint rather than a powerful pagan god.

^{xx}E.Gwynn (Ed & trans) *The Metrical Dindshenchas* Vol.4 poem 7.

Saint Columba and his Recorded History by Adomnan

The association of Crom with a snake and evil seems to be well reflected in the alignments seen in the night sky of August 22nd 565AD, the date given by Adomnan for the visit of Columba to Loch Ness with the alignment of Hydra due East at dawn and the alignment of the evil eye (NGC6543) and the snake Draco due South at dusk.

In Scotland the alignment of Crater due South at dawn on the 5th November at the festival of Samhain in 565AD is likely to have become associated with another Christian

missionary, Columba and his attempts to convert the Picts to Christianity. The description by Adomnan of Columba's position of arms raised, suggested by the pattern of stars in Crater, standing over the constellation of Hydra, making the sign of the cross and vanquishing the great serpent of Loch Ness with prayers and incantations again appears to coincide closely with the pattern of stars in the constellations and the festival day when the alignment occurs. It might be considered that an important saint in Scotland and the patron saints of Ireland, England and Wales all became identified with the constellation of Crater and a serpent in the form of Hydra. St George, the patron saint of England is also famously associated with fighting and killing a monstrous serpent, this time in the form of a dragon. Meanwhile in Wales the patron Saint, David also had an encounter with a Dragon, the Red Dragon that appears on the Welsh national flag. St David however was an altogether gentler Saint and luckily the Welsh Dragon turned out to be a leek-eating vegetarian so the Dragon and people were able to live in harmony.

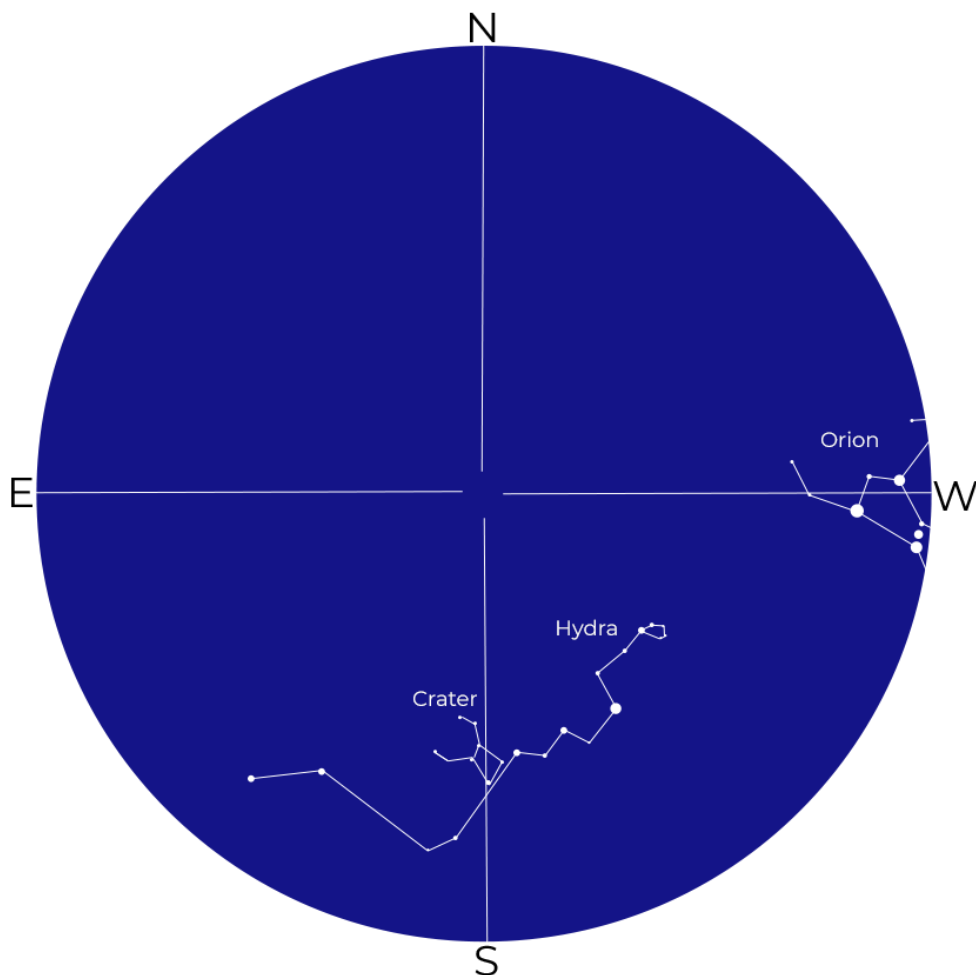


Image 53 Saint Georges Day 23rd April 600AD. Crater perhaps the stellar embodiment of Saint George standing over the Great Serpent Hydra perhaps identified as a dragon.

Apart from discovering the likely celestial embodiment of Bes, St Columba, St Patrick, St George and St David, all identified with the constellation Crater and an association with a serpent of some form, we may also have stumbled upon the origins of the holy grail itself. The constellation of Crater was considered a stellar deity in prehistoric times the god Crom Cruach that presided over the festival of Samhain and we can see the similarity of the shape of the constellation with a crooked stack of corn

Crater as a Chalice

Further South, at a latitude of around 40 degrees North, Crater appeared due South in the night sky at dusk at the May festival. The constellation was therefore a marker for important but different festivals at the different latitudes. Interestingly the constellation's name "Crater" is Latin for "Cup" and in Greek mythology it was identified with the stories of the Cup of Apollo and the Goblet of the Olympians. The jump to the Chalice of Christ perhaps therefore isn't such a great leap of the imagination and another example of the rebranding of the old beliefs for the new religion. The constellation was one of forty-eight constellations listed by Ptolemy in the second century. The naming of the constellation as Crater therefore happened before the widespread acceptance of Christianity in Southern Europe and later, we might speculate, when the association of pagan gods with constellations was being changed to objects and characters intimately connected with Christianity, the Cup may have been considered an appropriate symbol by identifying it with the Chalice of Jesus Christ. Later as the use of alignment of stars to determine festival dates fell into disuse, replaced by the Julian calendar, and as the Church tried to distance itself from the old stellar-based religion, the association of holy festivals with star patterns and alignments was forgotten. It is interesting that the Beltane festival at the beginning of May in Pictland and in Northern Europe, originally associated with the Cauldron of Plenty and identified with the constellation of Coma Berenices, was associated with another but different vessel in Southern Europe, this time the Chalice identified with the constellation of Crater.

The pattern of stars in Crater is very similar to the form of a chalice and it is interesting that its close proximity to the great serpent Hydra is mirrored in some of the religious imagery where the chalice contains a snake, which is sometimes associated with St John the Evangelist. The reason for this association may relate to the story of when John's life was spared after drinking from a poisoned chalice, tradition claiming John to be the only disciple to die a natural death at a great age.

One of the earliest references to the Holy Grail as the Cup of the Last Supper comes again from Adomnan in his writing "De Locis Sanctis" where he describes the testimony of Arculf, a Gaulish Bishop who had visited Palestine around 680AD and some years later was shipwrecked on Iona. The latin text describes a silver chalice in a chapel between the basilica of Golgotha and Martirium, considered by the local population to be the Chalice of the Lord which had been blessed with his own hand and given to the apostles when

reclining with them at the last supper. The chalice is described as being made of silver having a measure of a Gaulish pint with two handles fashioned on either side and containing the sponge which was soaked in vinegar and placed on hyssop by those who crucified the Lord and put to his lips.

It is interesting that in Leonardo da Vinci's depiction of the last supper, there is no sign of any chalice on the table. Perhaps he knew that the chalice was a celestial, intangible heavenly object just like the Cat-head god, Capricorn that he had included in his drawings and paintings as a half image that could only be revealed using a mirror as the image of the Ancient Great Cat-head god, the guardian god of the winter Sun.

Perhaps once again the search for the mysterious chalice that occupied the endeavours of the knights and so many other treasure hunters throughout the centuries was doomed to failure because like Nessie the search was never likely to be satisfied by the discovery of a physical object.

Those whose lives were preoccupied with the quest to find the Holy Grail, travelling so far on their impossible mission, searching for clues as to its location and digging in the sand for Christ's chalice used at the last supper were all looking in the wrong place. Maybe a few of the knights spoke with wise elders who still remembered the old beliefs and understood the stars and came to realise that the Holy Grail only existed as a stellar heavenly chalice, allowing them to end their quest quietly, fearing the charge of heresy should they ever speak of their revelation. It is perhaps only right that as others continued their search, all the time the chalice was there as it still is today, above them in the sky looking down on their impossible efforts.

In order to provide further support for the possible identification of Crater as the Chalice or the Holy Grail we should explore the possible association of the chalice with an important Christian festival day in the early days of the church. The first Ecumenical Council meeting of bishops, arranged by the first Christian Roman Emperor Constantine, took place in Nicaea (present day Turkey) in the year 325AD. The meeting was attended mainly by bishops from the East but there were bishops from the western church including Hosius of Cordoba in Spain who presided over the meeting and Constantine himself who had spent much of his life in Britain. One of the purposes of the meeting was to set the date on which Easter should be celebrated.

It was agreed be celebrated on the first Sunday following the first full Moon after the Spring equinox. The basis for calculating the date itself is interesting in that the holy day is a movable feast day and the date of celebration changes from year to year and seems to have echoes of pagan festivals involving the Sun and the Moon in days from an era before the use of the Julian calendar. The way this was calculated by different people however still resulted in a festival that was celebrated on different days in different parts of the Christian world. However most interestingly, perhaps coincidentally, when we calculate what date Easter would have been celebrated in that year, we find that the vernal equinox occurred on the 20th March 325AD and the first full moon after that

occurred on the 15th April which was a Thursday so that the date of Easter would have been celebrated on Sunday the 18th April by using the modern Gregorian calendar. However, this assumes that the full moon was determined astronomically whereas it was the Paschal Full Moon that was intended and this full moon does not correspond directly to the astronomical event, but is instead the 14th day of a lunar month determined from tables. The date of the actual full moon can vary from this date by up to two days but even the date of the vernal equinox was often miscalculated and in Rome and Alexandria, the dates for the spring equinox ranged from the 8th-23rd March. In any event when we examine the night sky at dusk for the latitude of Scotland, we find the constellation of Crater lying due South in the sky on the estimated date of easter suggesting perhaps it may have been the alignment of this constellation that had originally been used as the marker for a special festival day.

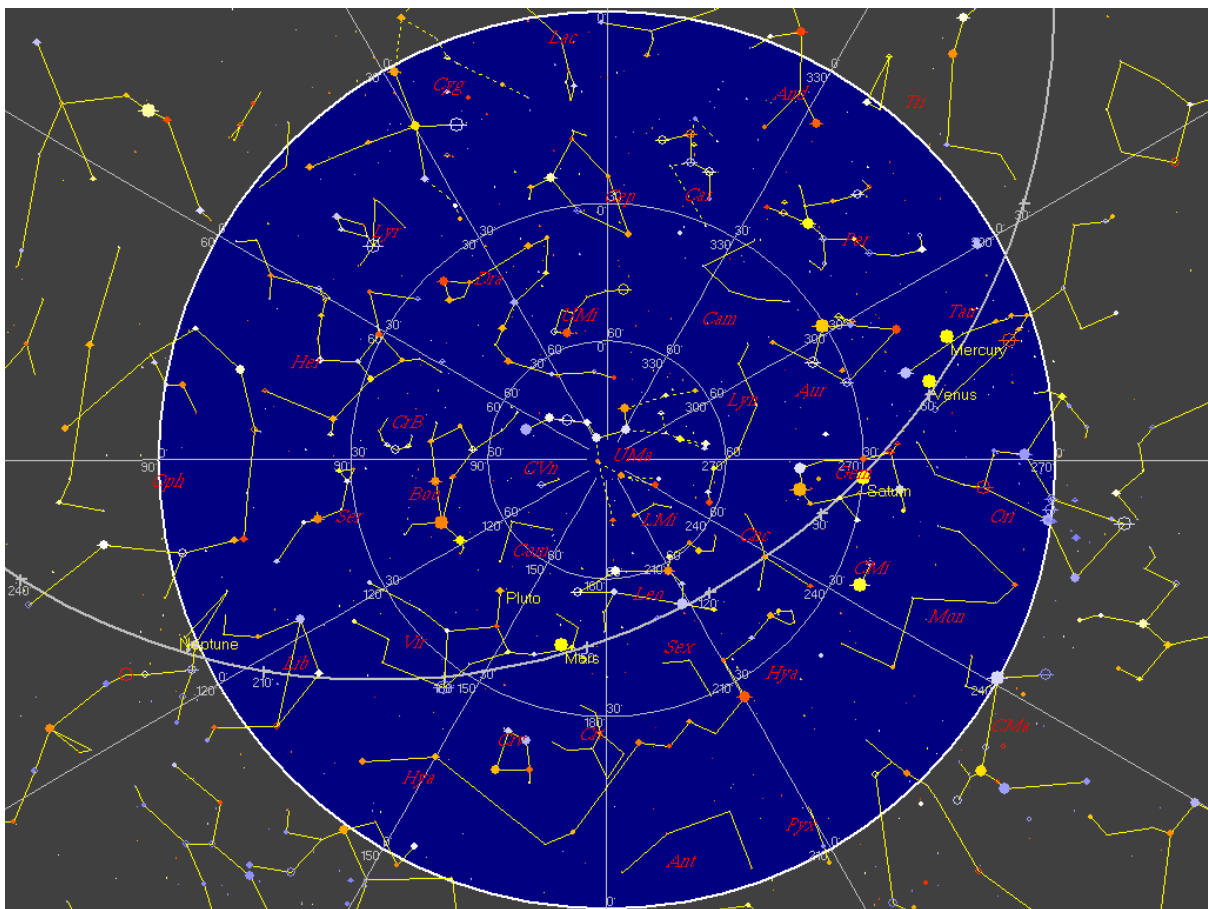


Image 54 Night sky in Aberdeenshire, Scotland on the 19th April 325AD showing the precise alignment of B-Crateris in Crater, identified as the Cup of Christ, due South at the End of Civil Twilight at the day when Easter was officially celebrated.

Constantine had spent much of his life in Britain and as a young man had even spent a year in northern Britain at his father's side, campaigning against the Picts beyond Hadrian's wall travelling far North into Pictland around 305AD. It is likely that Constantine may have come to understand the beliefs and festival days of the Pictish people and even had one of these northern astronomers amongst his many advisors when he became

Augustus in 306AD following the death of his father. Constantine's share of the Empire consisted of Britain, Gaul and Spain and he was the first Christian Roman Emperor.

If the day of easter was at some time and place dictated by the alignment of the Chalice constellation at dusk on that festival day, it might explain why the Roman church had such difficulty in matching a caledrical date for the festival with the pattern of stars in the night skies. Also convincing the Picts that the church's date was correct was always going to be difficult given that the constellation of Crater in their pantheon of gods was identified not with a chalice but with Crom Cruach and a crooked stack that later became identified during Christian times with the missionary monk Columba.

Perhaps we can learn something about the nature of discovery and consider that many of the journeys made by the knights and pilgrims were essentially journeys of self-discovery. It may have seemed at the outset strange to tag the possible discovery of the Holy Grail in the same study as the Loch Ness Monster but we can see that the two appear together in the night sky, and it is impossible to see one without simultaneously seeing the other, the Holy Grail bizarrely riding on the back of Nessie.

It is fascinating how elements of our ancient forefathers' forgotten wisdom have survived into present-day stories and religious mythology as faint echoes of their past importance allowing us a glimpse of the beliefs of our pre-Christian forefathers and an interesting insight into the early days of the church and how it used the existing star-based pagan beliefs and festival calendar to help convert the people to a new religion that was in many respects similar to that which had gone before with the same festival days but without the Great God of the Cat-head that no longer fulfilled its roll of protecting the winter Sun because of precession. The constellation of Capricorn after three thousand years now, no longer rose and set with the Sun during the winter months and so it was necessary or time for a new religion because the old stories as played out with the movement of stars in the night sky no longer fulfilled their roles in the stories that formed the old system of beliefs.

Conclusions

The constellation of Crater has for thousands of years been associated with snakes and serpents sitting as it does on the back of Hydra. The constellation has the shape of a stack of wheat or a stack of seaweed when its brightest stars are joined by lines but also shares its pattern with a chalice or cup. It therefore seems like an obvious stellar candidate for the Chalice both in its name and its appearance. Possibly the first interpretation in Ancient Egypt or Sumaria and Phoenicia of the constellation as the god Bes incorporated the pattern of stars in the constellation as a stack of wheat in the god's association as protector of grain from vermin. However, the most significant roll of Bes came from its position on the back of the Great Serpent Hydra that was interpreted as giving Bes dominion over venomous snakes and the protection of people venerating him. The constellation of Crater is small and its size was reflected in the stature of Bes which was characterised by his squat nature. Amulets of Bes worn for protection also reflect the

constellation, sometimes with the design of the shape of Bes mirroring the shape of the constellation, but more significantly the headdress worn by Bes which appears to consist of feathers (though this may also have represented ears of wheat in some cases) which may have reflected the presence of five galaxies in close proximity directly above the head of the constellation of Crater. The choice of feather to represent a galaxy (assuming it could be seen) is an appropriate one based on the wispy oval appearance of these deep space galaxies when viewed through a telescope. Perhaps around the same time in the northern lands, the same constellation was identified with the powerful god Crom Cruach or Crom Dubh who again was identified with a crooked stack that was either a stack of wheat or in the case of the Picts, a stack of seaweed that was collected on the foreshore after the first storms before winter. The star Beta Crateris in Crater was aligned due South in the sky at dawn on the festival of Samhain marking the start of the Pictish year. The mythology of Crom Cruach was also, like Bes in Egypt, associated with snakes. Moving forward, many centuries later, the arrival of the new religion of Christianity heralded the rebranding of the old pagan gods with the characters of the new religion

Crater and its appearance as a cup or chalice was re-identified as the Cup of Christ purportedly used at the last supper and the alignment of Beta Crater due South at the End of Civil Twilight adopted by some as Easter, though the new church was keen to dissociate the festival days from the alignment of stars used for thousands of years in pagan times and aided by the Julian and Gregorian calendars attempted to fix the dates of the Christian festivals with the effect that gradually the date of the festival parted from any ancient alignment with the constellation due to precession of the equinoxes. The identification of the constellation with an inanimate object in the Christian era, as opposed to a deity personality such as Bes or Crom Cruach as a god with powers over snakes, appears not to have ended the practice of identifying the small constellation with a local champion identified as possessing powers over serpents, for local saints, in the early days of Christianity, appear to have been identified with Crater. In Ireland Saint Patrick, famous for ridding Ireland of snakes, in Scotland Saint Columba who confronted the monster of Loch Ness, in England where Saint George killed a dragon and in Wales where Saint David befriended the red dragon depicted on the Welsh flag. The dates when the national saints are celebrated occur at about the same time of year in Spring (St Patrick March 17th, St David 1st March and St George 23rd April.) Whilst St Columba never made it to being the national saint, St Andrew instead being chosen. It can be seen how Saint George, St David and Saint Patrick are all celebrated at the same time of year in spring within 8 weeks of each other at around the same time that the constellation of Crater is aligned due South in the sky at the end of Civil Twilight, a time of year which also coincided with the chosen date for the celebration of Easter.