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**THE COVER shows the Carreg-y-Big at Cregennan Lakes, Wales (picture by Ingrid O'Donnell)**

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The Master's programme at the Sophia Centre offers the opportunity to study many avenues related to the core discipline of cultural astronomy and astrology, and nothing epitomises that more than the standing stones around western Europe, and the history of astrology.

In this edition, the first in our fifth year of publication, both of these disciplines are represented by fascinating explorations of some of their deepest mysteries.

Some are of the past: Ingrid O'Donnell performed a deep survey of standing stones in Wales to ascertain their celestial alignments while Jessica Heim and Keisha Knight look at early reforms in the history of astrology.

Others look at how the past relates to the present, with Alina Apostol examining how modern astrology retains a clear Greek influence and George Richards compares early Christian polemics against astrology with some contemporary Islamic ones.

Not only is this edition a collection of high quality studies, it is a good introduction to the discipline of cultural astronomy and astrology itself.

*Rod Suskin*

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# Is it possible to demonstrate that some of the standing stones of south-west Meirionnydd are positioned on long distance intentional alignments of celestial significance?

by *Ingrid O'Donnell*

Prehistoric stone rows of western Europe remain unexplained, commonly assigned funerary or ceremonial functions, but with little further explanation being provided. Previous research has focussed on short stone rows, since long distance associations between standing stones are considered very difficult to prove. This paper presents evidence for the existence of two separate, high precision, long distance alignments of standing stones within a topographically-distinct study area in Snowdonia (Wales, UK). The possible celestial significance of both alignments is examined and reviewed in the context of the rich ethnographic folklore heritage of the study area, additionally revealing interesting potential cross-cultural skylore parallels

## Introduction

The primary aim of this paper is to argue for the existence of intentional, long distance, linear arrangements of standing stones, which, in length, far exceed not only the 10–25m long ‘short’ stone rows studied by Clive Ruggles<sup>1</sup>, but also the ‘long’ rows (c. 1 km) mentioned by Aubrey Burl.<sup>2</sup> A secondary aim is to suggest possible reasons of celestial significance for such alignments, which may therefore be indicative of prehistoric astronomical activities within the study area, possibly relating to the study area’s folklore heritage.

The study area comprises a topographically-distinct region of south western Meirionnydd (Gwynedd, Wales, UK) which is part of the Snowdonia National Park and is defined by the River Dyfi to the south, the River Mawddach to the north, Cardigan Bay to the West and an arbitrary eastern

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<sup>1</sup> Clive Ruggles, *Astronomy in Prehistoric Britain and Ireland* (New Haven and London: Yale University Press, 1999), p.102.

<sup>2</sup> Aubrey Burl, *From Carnac to Callanish: The Prehistoric Stone Rows and Avenues of Britain, Ireland and Brittany*, New Haven: Yale University Press, (1993), pp. 91–93.

boundary producing a manageably-sized study area of c.24 km x 20 km (see Figs 1a & 1b). The centre of the study area is dominated by the highest mountain of the region, Cadair Idris (893m) and, also includes the scenically dramatic upland plateaux of Cregennan and Allt Lwyd. Due to the density of prehistoric archaeological remains found on these plateaux, they have been described<sup>3</sup> as foci of ritual and funerary significance. George Smith<sup>4</sup>, who recently carried out a survey of the prehistoric funerary and ritual sites of Meirionnydd for Gwynedd Archaeological Trust, has suggested that the Cregennan area is likely to have been a prehistoric ceremonial centre.

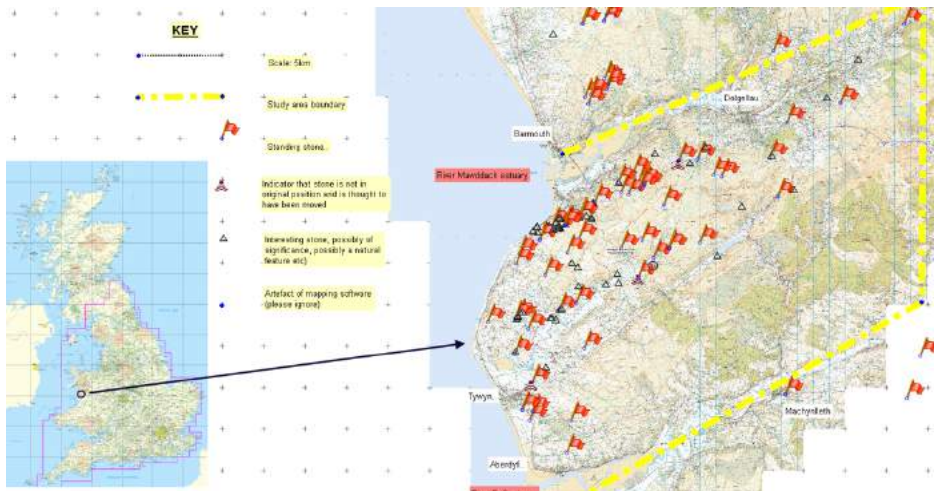


Figure 1a: Map depicting distribution of standing stones within south-west Meirionnydd study area. (Grid North is at the top of the map. Standing stone coordinates either from literature review or GPS site visit.)

<sup>3</sup> Gwynedd Archaeological Trust 'Heneb: Mawddach Character'

<http://www.heneb.co.uk/mawddach/mawddachcharintro/mawddachintro.html>  
[accessed 22/10/16].

<sup>4</sup> George Smith, 'A Survey of Prehistoric Funerary and Ritual Sites in Meirionnydd, 2000–2001', *Journal of the Merioneth Historical and Record Society*. Vol XIV (II) (2003), p. 115.

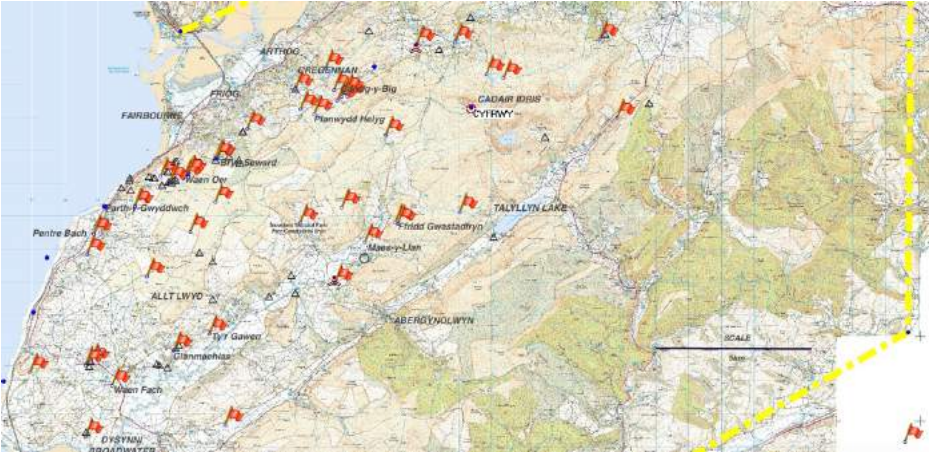


Figure 1b: Close up of standing stones within centre of study area. (Grid North is at the top of the map. Standing stone coordinates either from literature review or GPS site visit.)

Local folklore reveals a rich ethnographic heritage associated with the study area. The name of the central mountain, Cadair Idris, translates into English as ‘seat’ or ‘stronghold’ of Idris. In Welsh legend, Idris was a giant, credited as being the ‘father of astronomical science’.<sup>5</sup> It is said that he would sit on his mountain-top seat to study the stars.<sup>6</sup> Perhaps the most well-known legend of the area is that anyone who spends a night on the mountain will awake in the morning either a poet or a fool.<sup>7</sup> Other legends of the mountain are that it is the home of Gwyn ap Nudd (also known as Arawn<sup>8</sup>), the black-faced King of the Otherworld and, that his white, red-eared hunting dogs — the

<sup>5</sup> Saint George Armstrong Williams, *The English Works of the late Rev. E. Williams, with a Memoir of his Life*, (London, Craddock & Co, 1840) [https://books.google.co.uk/books?id=jQxXAAAAcAAJ&printsec=frontcover&source=gs\\_b\\_s\\_summary\\_r&cad=0#v=onepage&q&f=false](https://books.google.co.uk/books?id=jQxXAAAAcAAJ&printsec=frontcover&source=gs_b_s_summary_r&cad=0#v=onepage&q&f=false) [accessed 21/10/16].

<sup>6</sup> John Koch, *Celtic Culture: A Historical Encyclopaedia*, Vol. 1. ABC-Clio (2006), p. 312.

<sup>7</sup> Sion Dafydd Rhys, ‘The Giants of Wales and their Dwellings’ in [www.maryjones.us/ctexts/giants\\_wales.html](http://www.maryjones.us/ctexts/giants_wales.html) [accessed 22/7/2016].

<sup>8</sup> Jones’s *Celtic Encyclopaedia*, ‘Arawn’, <http://www.maryjones.us/jce/arawn1.html> [accessed 21/10/16].

‘Cwn Annwn’, chase departed souls to the ancient Welsh Otherworld<sup>9, 10</sup> – a place of bliss, abundance and eternal youth.

### Literature review

Definitive dating of the study area’s archaeological remains is difficult, with few radiocarbon dating results reported. Whilst a variety of monuments (including standing stones, stone circle, cairns, ring cairns and cists) in the Bryn Seward / Cyfannedd forest area are said to have been “firmly” dated to the Neolithic / Bronze Age period<sup>11</sup>, archaeological reports typically date the remains as ‘Prehistoric’, ‘Bronze Age’ or, at the most precise ‘Early Bronze Age’. This dating is based primarily on the opinion and expertise of the archaeologist(s) making the assessment, but also on the proximity of other monuments (such as cairns) where dating results are available for similar sites in other parts of Wales. For example, with regard to standing stones, George Williams<sup>12</sup> has observed that in Wales as a whole, standing stones are frequently found close to burials dating from the Early Bronze Age. The Bronze Age period for the current study area is frequently referenced by entries in the Gwynedd Archaeological Trust Historic Environment Record online database ‘Archwilio’ to date between 2,300 BCE to 800 BCE.<sup>13</sup>

Despite Smith’s<sup>14</sup> assessment of the importance of the area, and although a number of other detailed archaeological surveys<sup>15</sup> of the wider region have

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<sup>9</sup> Geraint Roberts, *The Lakes of Eryri*, Gwasg Carreg Gwalch, Iard yr Orsaf, Llanrwst, Gwynedd, Wales (1995), p. 136.

<sup>10</sup> Oxford Reference,

<http://www.oxfordreference.com/view/10.1093/oi/authority.20110803095655441> [accessed 27/7/16].

<sup>11</sup> Richard Kelly, ‘A Pre-Afforestation Survey at Cyfannedd, Arthog, Gwynedd’, *The Bulletin of the Board of Celtic Studies*, XXX (III–IV) (1983), p. 451.

<sup>12</sup> George Williams, *The Standing Stones of Wales and South West England*, Bar Brit. Ser. 197 Oxford (1988).

<sup>13</sup> *Gwynedd Archaeological Trust Historic Environment Record Database*, Archwilio’:

[http://www.cofiadurcahcymru.org.uk/arch/gat/english/gat\\_interface.html](http://www.cofiadurcahcymru.org.uk/arch/gat/english/gat_interface.html) [accessed 21/10/16].

<sup>14</sup> Smith’s *A Survey of Prehistoric Funerary and Ritual Sites Survey in Meirionnydd, 2000–2001*, p. 115

<sup>15</sup> ‘Gwynedd Upland Survey 1995–1996. *Cadair Idris SSSI. Report and Gazetteer*, Report no 198A. Gwynedd Archaeological Trust; Richard Hayman and Wendy Horton, ‘Llanuwchllyn—Llanymawddwy: An Archaeological Survey’, *The Uplands Initiative for*

been carried out relatively recently, still little archaeological excavation work seems to have been undertaken since the antiquarian period. However, chance finds have led to the occasional discovery of significant portable artefacts deriving from a wide date range, referenced by separate Primary Record Numbers (PRNs) within the 'Archwilio' Historic Environment Record online database<sup>16</sup>, for example: Neolithic stone axes PRN 4879 at Bwlch Gwyn, Fairbourne and PRN 4883 Fegla Fawr, Friog; bronze axes (of Middle to Late Bronze Age type) have been found on the hills between Fairbourne and Arthog (eg PRNs 3286, 4881, 4882, 4877) and a prehistoric gold torc PRN 4104 was found near the prehistoric ancient trackway / drovers' road, known as the Ffordd Ddu (trans. Black Road). These finds confirm the significance of the study area to communities sophisticated for their Neolithic and Bronze Age times.

Previous researchers<sup>17,18</sup> have noted that the "distribution of standing stones in Meirionnydd is dominated by two linear groups", one outside the scope of, and to the north of, the present study area (above the town of Harlech) and, the other within the present study area, above the village of Arthog." Emrys Gresham<sup>19</sup> uses this observation to argue that these groups of standing stones each constitute an extensive line of stones marking ancient routeways e.g. the Fonllech Hir trackway to the north and the previously mentioned Ffordd Ddu track above Arthog which connects with the Broadwater (mouth of the River Dysynni, see Fig. 1b). Smith<sup>17</sup> goes on to argue that the primary function of the stones appears to have been as route markers since they are generally oriented to face tracks.

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*the Royal Commission for Ancient and Historic Monuments Wales, (2012); Richard Hayman and Wendy Horton 'Dinas Mawddwy – Brithdir: An Archaeological Survey', The Uplands Initiative for the Royal Commission for Ancient an Historic Monuments Wales, (2013).*

<sup>16</sup> 'Archwilio':

[http://www.cofiadurcahcymru.org.uk/arch/gat/english/gat\\_interface.html](http://www.cofiadurcahcymru.org.uk/arch/gat/english/gat_interface.html) [accessed 24/7/16]

<sup>17</sup> George Smith, 'Prehistoric Funerary and Ritual Sites Survey: Meirionnydd', *Gwynedd Archaeological Trust Project No. G1629. Report No. 415. Section 6.9.*

<sup>18</sup> Smith's *A Survey of Prehistoric Funerary and Ritual Sites Survey in Meirionnydd, 2000-2001*, p. 112.

<sup>19</sup> Emrys George Bowen and C. A. Gresham, *History of Merioneth. Vol 1.*, Merioneth Historical and Record Society, Dolgellau (1967), pp. 56–63.



These arguments are relevant to the present study because they refer to “lines” of standing stones. However, whilst the Ffordd Ddu could be argued to constitute a line, it is not a particularly straight one, since it frequently curves and changes course to follow the easiest approach for walking the mountainous and boggy terrain of the route. To consider alternative possible interpretations of the motivations of the monument-builders of the study area, the siting of the monuments themselves was investigated. The stones are generally sited in locations with dramatic views, often across Cardigan Bay. This setting conforms with Chris Fowler and Vicki Cummings<sup>20</sup> hypothesis of metaphorical associations between water and stone and transformation between life and death in the Neolithic. Therefore, the setting is therefore potentially indicative of carefully considered design.

The fact that the standing stones of the study area do on occasion appear to be oriented on straight lines is exemplified at the most basic level by the straight line formed by the c. 80m long Waen Oer Standing Stone Row (‘Archwilio’ reference PRN 4884<sup>21</sup>) (see Fig 1b), the stones of which appear to be oriented along a straight line with an azimuth of approximately 64° NE / 244° SW from True North).<sup>22</sup>

However, closer inspection of the Waen Oer locality reveals another observation that a straight line with azimuth from True North of 58° NE / 238° SW appears to connect the Waen Oer Stone Row with many of the other significant standing stones of the area over a range of around 27 km. This observation can be confirmed with a ruler and visual inspection of the Outdoor Leisure 23 Cadair Idris & Bala Lake / Llyn Tegid Ordnance Survey 1:25,000 map (see Appendix Table A for relevant standing stone National Grid References).

In a wider context, Ruggles states that a considerable number of short standing stone rows were erected across north-west Europe during the Bronze Age. These short stone rows vary in length, typically between 10–25 m with very large stones weighing more than 3–4 tonnes being used only relatively

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<sup>20</sup> Chris Fowler and Vicki Cummings, ‘Places of Transformation: Building Monuments from Water and Stone in the Neolithic of the Irish Sea’, *Journal of the Royal Anthropological Institute*, Vol. 9 No. 1 (Mar 2003), p. 1–20.

<sup>21</sup> Gwynedd Archaeological Trust Historic Environment Record Database ‘Archwilio’: [http://www.cofiadurcahcymru.org.uk/arch/gat/english/gat\\_interface.html](http://www.cofiadurcahcymru.org.uk/arch/gat/english/gat_interface.html) [accessed 21/10/16].

<sup>22</sup> Laurence Main, *Llynnau Cregennan Stone Row*, <http://www.leyhunters.co.uk/llynnau.html>, The Society of Ley Hunters [accessed 19/01/17]

rarely. Although such monuments therefore appear fairly simple to construct, Ruggles states that their purpose remains “completely unclear”.<sup>23</sup> He continues that whilst it is generally accepted that short stone rows were not domestic or defensive sites and often appear to have funerary associations, the exact nature of their function remains elusive. He goes on to suggest that the fact that “the rows are ‘pointing at’ something is an obvious suggestion”<sup>24</sup>, but towards the end of his chapter on stone rows he also suggests that perhaps the views perpendicular to the orientation of the row could have been important.<sup>25</sup>

Also relevant to the present study is Burl’s<sup>26</sup> suggestion that many short stone rows may originally have evolved from longer linear monuments; however, Burl has previously also commented that long rows are only known to be found in association with short rows in the north of Ireland.<sup>27</sup> Burl comments that on Dartmoor, where exceptionally long rows are found, the average length is around 183m and that these rows are associated with the Early–Mid Bronze Age 1,600 BCE–2,100 BCE.<sup>28</sup> Burl also mentions here that the stone row at Stall Moor is a “startlingly long line” (859m long with 119 stones).<sup>29</sup> Whilst this may be the best–preserved row, the longest stone row in Britain is the Upper Erme (3,320m, 922 stones).<sup>30</sup> It is noteworthy that photographs of these long stone rows, reveal that the rows are rarely strictly linear.<sup>30</sup> Where

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<sup>23</sup> Clive Ruggles, *Astronomy in Prehistoric Britain and Ireland*, Yale University Press (1999), p. 102.

<sup>24</sup> Ruggles, *Astronomy in Prehistoric Britain and Ireland*, p.103.

<sup>25</sup> Ruggles, *Astronomy in Prehistoric Britain and Ireland*, p. 111.

<sup>26</sup> Aubrey Burl, *From Carnac to Callanish: The Prehistoric Stone Rows and Avenues of Britain, Ireland and Brittany*, (New Haven: Yale University Press, 1993), p. 151.

<sup>27</sup> Burl, *From Carnac to Callanish: The Prehistoric Stone Rows and Avenues of Britain, Ireland and Brittany*, p. 91.

<sup>28</sup> Burl, *From Carnac to Callanish: The Prehistoric Stone Rows and Avenues of Britain, Ireland and Brittany*, pp. 91–93.

<sup>29</sup> *The Stone Rows of Great Britain*,

<https://stonerows.wordpress.com/gazetteer/region/dartmoor/stalldown/> [accessed 27/7/16].

<sup>30</sup> *The Stone Rows of Great Britain*

<https://stonerows.wordpress.com/gazetteer/region/dartmoor/upper-erme/> [accessed 27/7/16].

standing stones may be more widely separated, Ruggles maintains that “long distance relationships are very difficult to prove.”<sup>31</sup>

## Method

Local knowledge and the results of a literature review of online archaeological data<sup>32,33</sup> and archaeological reports<sup>34,35,36,37,38,39,40</sup> were used to attempt to plot every standing stone in the region of south-west Meirionnydd falling between the River Mawddach and the River Dyfi on proprietary mapping software (Memory-Map, Version 5, OS Explorer 1:25,000 (2012), EVO-Distribution Ltd, Aldermaston, UK. PC, GPS, iPhone, iPad, compatible Android devices) over a study area of approximate dimensions 24 km x 20 km. During the course of the study, other standing stones discovered outside of the study area were also recorded (for potential local relevancy to the study area). Basic information about the stones, such as dimensions, age and interesting features were also noted. The initial mapping results (see Figs 1a and 1b) indicate that the standing stones appear not to have a completely random

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<sup>31</sup> Clive Ruggles, *Records in Stone*, (Cambridge University Press, 2003), p. 322.

<sup>32</sup> *The National Monuments Record of Wales (NMRW)*, ‘Coflein’, [www.coflein.gov.uk](http://www.coflein.gov.uk) [accessed 21/10/16]. Derived from information compiled by RCAHMW and/or Crown copyright.

<sup>33</sup> *Gwynedd Archaeological Trust (GAT) Historic Environment Record (HER) Database*, ‘Archwilio’, [http://www.cofiadurcahcymru.org.uk/arch/gat/english/gat\\_interface.html](http://www.cofiadurcahcymru.org.uk/arch/gat/english/gat_interface.html) [accessed 21/10/16].

<sup>34</sup> ‘An Inventory of the Ancient Monuments in Wales and Monmouthshire. VI County of Merioneth’, *Royal Commission on Ancient and Historic Monuments in Wales* (1921).

<sup>35</sup> Bowen and Gresham, ‘History of Merioneth...’.

<sup>36</sup> Cullen E., Flook R., Burnett A. 2011: ‘Better Woodlands for Wales Management Plan.’ *Heritage Management Information (WHE1) Tyd Farch Farm BWW Reference No 22127*. Gwynedd Archaeological Trust.

<sup>37</sup> ‘Gwynedd Upland Survey 1995-96. *Cadair Idris SSSI (Part) G1322 Report and Gazetteer*. Report No 198A. Gwynedd Archaeological Trust.

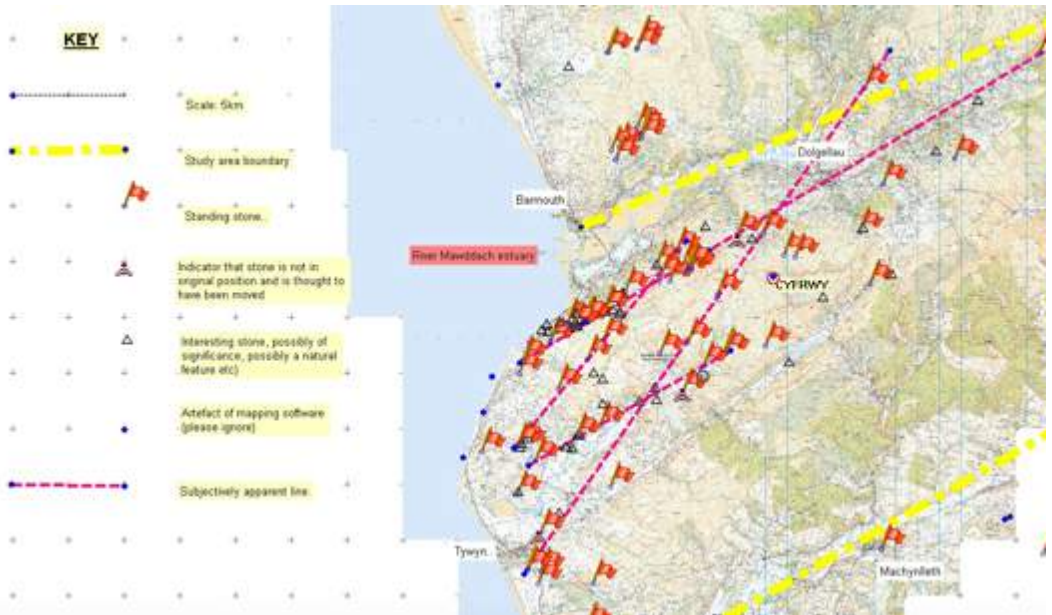
<sup>38</sup> Kelly, Richard Kelly, ‘A Pre-Afforestation Survey at Cyfannedd, Arthog, Gwynedd’, *The Bulletin of the Board of Celtic Studies*, XXX (III-IV) (1983).

<sup>39</sup> Smith’s *A Survey of Prehistoric Funerary and Ritual Sites Survey in Meirionnydd, 2000-2001*.

<sup>40</sup> George Smith, *Fairbourne Waste Water Treatment Scheme Archaeological Assessment 2. The Treatment Works Site*, Prepared for the Symonds Group Ltd. Gwynedd Archaeological Trust (2002).

distribution, with several different linear relationships seeming subjectively apparent over distances of around 10 km–30 km (see Fig. 2).

Figure 2: Map depicting subjectively 'obvious' potential linear relationships between standing stones of south-west Meirionnydd (Grid North is at the top of the map. Standing stone coordinates either from literature review or GPS site visit).



In order to counter any criticisms of selection bias that could be raised if only alignments that seem subjectively apparent (as portrayed in Fig. 2) were investigated, a more objective methodology was attempted which involved drawing out every straight line appearing (on visual inspection) to link three or more standing stones (ignoring those which were reported to have been moved from their original positions and those associated with stone circles). The 49 linear relationships identified by this approach are depicted in Figs 3a and 3b.

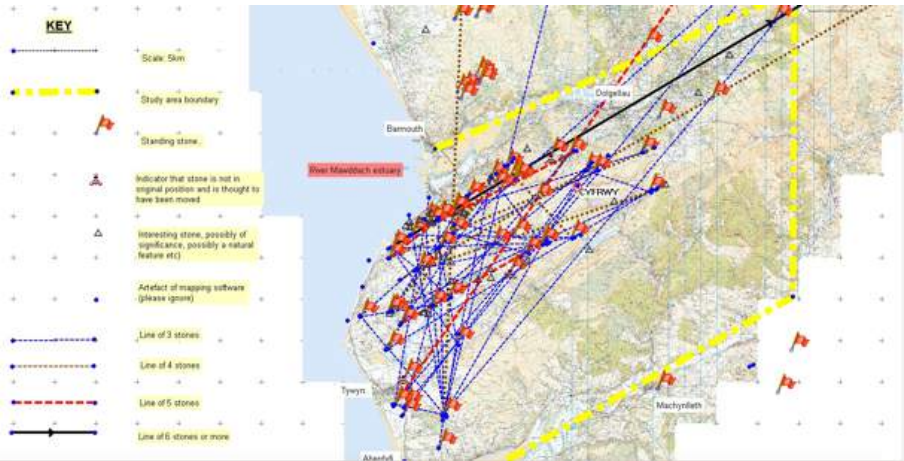
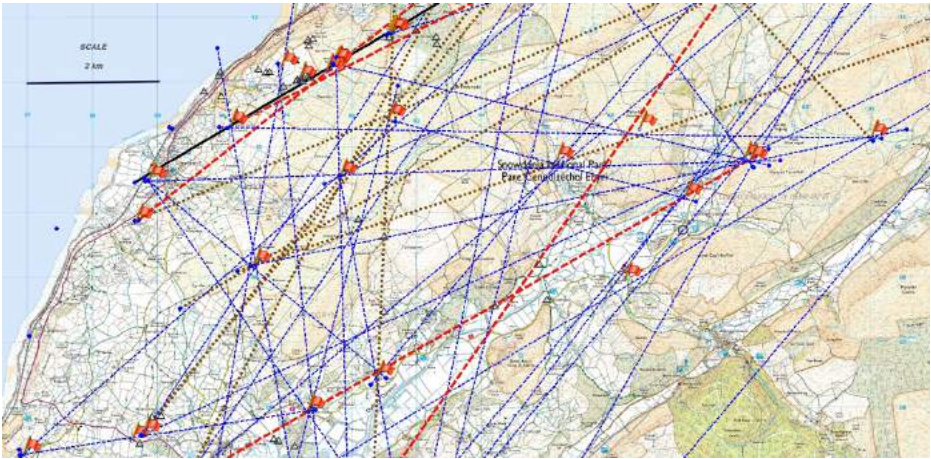


Figure 3a: Map depicting linear relationships between three or more standing stones within the study area (and also those lines which appear to align with standing stones beyond the study area boundaries). (Grid North is at the top of the map. Standing Stone coordinates either from literature review or GPS site visit).



*Figure 3b: Close up of linear relationships between three or more standing stones in the centre of the study area (Grid North is at the top of the map. Standing stone coordinates either from literature review or GPS site visit).*

It should be noted that since it is possible for any of the linear relationships indicated in Fig. 3 to extend beyond the study area, lines not appearing particularly significant in Fig. 3, say with only three standing stones, may appear more significant if a larger, or different-shaped study area is considered.

The results obtained for the given study area indicate that, it is fairly easy to find linear relationships of three stones (thirty six in total); lines of four stones are less frequent (eight in total); lines of five stones rarer still (four in total); and only one line of six stones or more could be identified (that extending in both directions from the Waen Oer Stone Row).

As this method is dependent on visual inspection alone, its accuracy is not as high as might be achieved using a computer programme, and consequently there is a possibility that some lines may have been overlooked (although this is thought to be more likely for lines of fewer stones). However, since the results produce such a large number of lines and there is such a dramatic differentiation between the number of lines with the minimum number of points (three) and those with the maximum number of points (more than six), then this method appears to offer a good approach to the objective assignment of standing stones to certain alignments and also an objective exclusion of

standing stones from other potential alignments. Overall, therefore, this approach can be argued to provide an objective and accurate determination of the most probable long distance alignments within the study area, with lines consisting of the greatest number of standing stones being most worthy of further, more detailed investigation.

Since intensive investigation of all 49 objectively-determined alignments was outwith the scope of this study, just two of the most probable long distance alignments, (i.e. those consisting of the greatest number of standing stones) were selected for more detailed investigation:

Line 1: The single identified line consisting of six or more standing stones (solid black line, c.27 km long) which includes a line extending in both directions from stones forming the Waen Oer Stone Row;

Line 2: The line consisting of five standing stones that appears to run south of, and approximately parallel to, Line 1 above (red-dashed line, 10 km long) was selected from the set of alignments consisting of five stones, as it was unique in its set as being independent from, and not crossing, Line 1 above.

Standing stones along these two potential long distance alignments were then subject to the following more intensive investigations. Firstly, linear regression analyses were performed for both lines using the literature review standing stone coordinates which were inputted into the statistics function of Microsoft Excel for Mac Version 15.25.1. to determine (a) line azimuths; (b) coefficients of determination ( $R^2$ ) as an indication of the precision with which the standing stones conform to a straight line; and (c)  $F$ -values to assess the probability that the variation explained by the regression is due to chance.

Then, each standing stone on both lines was visited. The Ordnance Survey National Grid Reference (OS NGR) and elevation for each stone were checked to within a precision of <10 m using a Garmin eTrex 12 Channel GPS, by placing the GPS on the ground by the base of the stone and waiting for the specified level of precision to be attained.

During the site visits, an Iris 50 Plastimo hand-bearing sighting compass (with precision to 1°) and 2 no. wooden ranging poles were used to mark out the previously calculated line azimuths in both directions (to check for the presence of magnetic anomalies). The azimuth measurements were taken from a standing position directly in front of the standing stone (with heels making contact at the basal midpoint of the stone) facing the azimuth direction. A Suunto PM5 clinometer was then used to measure the horizon altitudes that were associated with both directions of the identified azimuths.

All horizon altitude results obtained were double-checked with the [www.heywhatsthat.com](http://www.heywhatsthat.com) website [accessed 27/07/16]. The website [www.nearby.org](http://www.nearby.org) [accessed 27/07/16] was used to convert OS NGRs to latitude and longitude where necessary. Where it was not possible to obtain actual horizon altitudes in the field due to difficulties accessing the stones or sightlines being obscured by buildings or trees, etc, then the 'Heywhatsthat' methodology was employed. Horizon altitude points associated with the azimuths in question were identified by name or description, to determine whether the use of the same horizon point is ever repeated for different stones along the alignment. Additionally, individual stones were photographed in both azimuth directions.

Results were tabulated and the original linear regression analyses double-checked using the newly GPS-acquired OS NGR data for the standing stone positions. The declinations associated with the identified horizon azimuths and altitudes were calculated using Microsoft Excel for Mac, Version 15.25.1 to calculate required trigonometric functions.

Open source Stellarium planetarium software (Fabien Chereau, Stellarium, available at [www.stellarium.org](http://www.stellarium.org) [downloaded 15/06/15], for PC) was used to compare values of the calculated declinations with the declinations of events of celestial significance at three sample dates spanning the Bronze Age period, which the literature review had indicated as a likely time of erection of the standing stones.

## Results

See Appendix for Tables A–H detailing basic data and photographs of identified standing stones.



**Statistical analysis: confirmation of preliminary determination of line azimuths by linear regression analysis (using GPS confirmed OS NGR coordinates for standing stones, rather than literature review coordinates)**

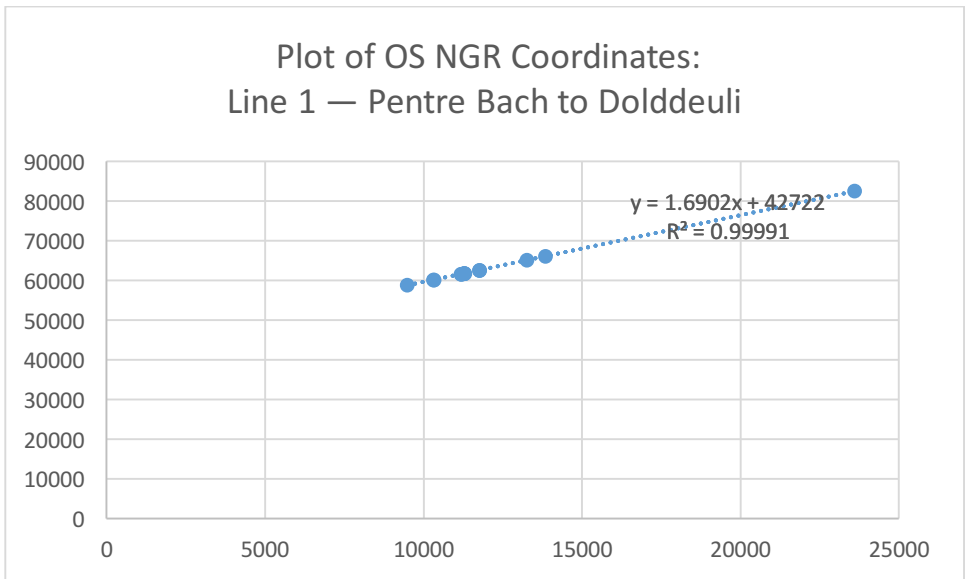


Figure 4: Results of Linear Regression Analysis for Line 1 using GPS coordinates for standing stone positions (OS grid ref.  $x,y$ ).

## Plot of OS NGR Coordinates: Line 2 — Waen Fach to Ffridd Gwastad

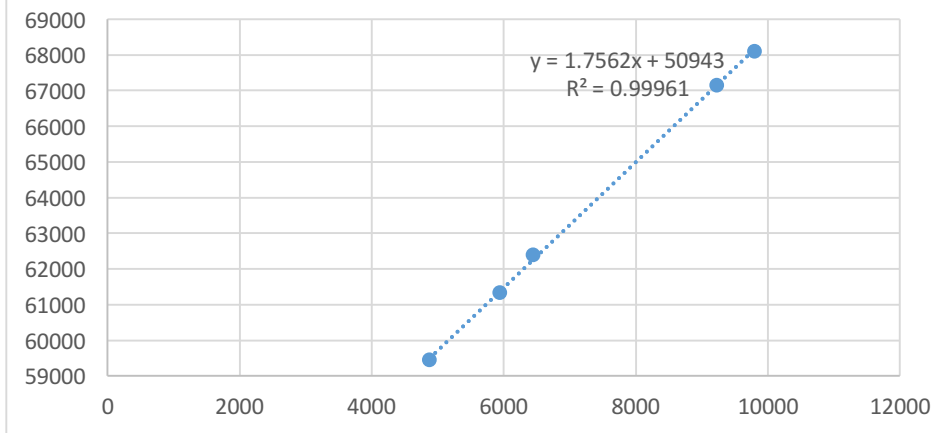


Figure 5: Results of Linear Regression Analysis for Line 2 using GPS coordinates for standing stone positions (OS grid ref. x,y).

**Table 1: Summary of results from linear regression analyses**

No.	Variable	Line 1	Line 2
1	R <sup>2</sup>	0.99991	0.99961
2	m	1.6902	1.7562
3	Azimuth (°)	59.38949041	60.34232789
4	OS Grid True North <sup>41</sup>	1° 34' E of Grid 1.56667°	1° 34' E of Grid 1.56667°
5	Azimuth after correction from OS Grid North to True North	57.82282041 => 58°(N) / 238°(S)	58.77565789 => 59°(N) / 239°(S)
6	F value	128055.885	7655.43757
7	Degrees of Freedom	(1,12)	(1,3)
8	p <sub>(0.05)</sub>	4.75	10.13

<sup>41</sup> Outdoor Leisure 23, Cadair Idris & Bala Lake / Llyn Tegid Ordnance Survey 1:25,000 map

9	$p_{(0.01)}$	9.33	34.12
10	$p_{(0.001)}$	18.64	167.03

The  $R^2$  values approaching 1, for both Lines 1 and 2, are a good indication that the standing stones are sited on straight lines with an extremely high degree of precision.

Additionally, the calculated  $F$  values being very much higher than tabulated  $F$  values (for  $p_{(0.05)}$ ,  $p_{(0.01)}$  and  $p_{(0.001)}$ ) are an excellent indicator (i.e. greater than 99.9% probability at  $p_{(0.001)}$ ) that the variance between the  $x$  and  $y$  coordinates is not due to random chance and therefore the result of intentional siting of standing stones.

### Ethnographic information obtained during site visits.

Potentially relevant ethnographic information was obtained from conversations with the site owners. Generally, not much is known about the standing stones. However, the owner of the farm where the large Dolddeuli standing stone is located, mentioned that that old people of the area think that this standing stone is part of a line of stones running from the area of Llanegryn on the coast to either Llanderfel or Llandrillo near the Berwyn Mountains to the east. They think that this line represents some sort of ancient religious or pilgrimage route. The owner also mentioned that he has seen another small stone (c.1m high, but leaning) to the east in a boundary wall on the hill, Foel Fach, and says that it is his understanding that this stone is in line with the one at Dolfeili Farm. He also reported that the archaeology expert from CADW who recently visited the site thought that the stone could be as old as 2,500 BCE. During the site visit, the owner also recognised that the broad sides of the Dolddeuli stone face the midwinter sunrise ( $130^\circ$ ) / midsummer sunset ( $313^\circ$ ), whilst the narrow sides appear to be aligned with the midwinter sunset ( $230^\circ$ ) / midsummer sunrise ( $47^\circ$ ) and a quick check with the compass seemed to verify this.

Similarly, the owner of the farm where the Waen Fach stone is located reported that the standing stone on their family's land was thought to either mark the route to a settlement on the mountain or, be the burial place of an ancient chieftain with his horse, metal weapons and other valuables.

## Interpretation of celestial information

The literature review results reflect a consensus opinion that the standing stones in the study area were erected in the Bronze Age, i.e. between 2,300 BCE–800 BCE. Ignoring anomalous outliers, the relevant eastern azimuth horizon points of both Lines generally fall within a declination range of 15° to 25°, whilst the relevant western azimuth horizon points fall within a declination range of –15° to –25°. Rising and setting of celestial bodies over these declination ranges during the Bronze Age were investigated for potential celestial associations with the siting of the standing stones.

As the Bronze Age timespan is so wide, three representative time periods within the range were selected for investigation: 1,000 BCE, 1,600 BCE and 2,200 BCE. 1,600 BCE was selected as a median point within the timespan since this approximates to the catastrophic eruption of Thera / Santorini in the eastern Mediterranean, which was a pivotal time in the Bronze Age causing major environmental and social upheaval in Europe and further afield<sup>42</sup>; 1,000 BCE and 2,200 BCE were selected as respective relatively early and late dates within the identified Bronze Age timespan, both separated from the median date by 600 years, but not lying exactly on the Iron Age and Neolithic extremes of the range.

### The Sun

The specific azimuths and declination range recorded for both lines fall well within the range of the Sun's movements. However, they do not appear to mark any obviously significant points in the solar year (see Table 2a and 2b).

### The Moon

The azimuths and declinations recorded for both lines therefore also fall well within the range of the Moon's movements. According to the ArchaeoLines plug-in (v. 0.1.0, author: Georg Zotti) available for use with open source Stellarium planetarium software ([www.stellarium.org](http://www.stellarium.org)), the 58°/59° and 238°/239° azimuths for Lines 1 and 2, match the azimuths of the minor lunar extremes during the Bronze Age (allowing an error of (±1°)).

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<sup>42</sup> P. E. LaMoreaux, 'Worldwide environmental impacts from the eruption of Thera', *Environmental Geology*, 26 (3) (1995), pp. 172–181.

A more tenuous potential association between the lines of stones in the study area and the extreme positions of the Moon is suggested by the observation that another two lines observed in Figs. 3a and 3b (one brown line consisting of four stones and one blue line consisting of three stones) conform with  $58^{\circ}/238^{\circ}$  ( $\pm 1^{\circ}$ ) azimuths associated with Bronze Age minor lunar extremes in the study area. Whilst another four lines in Figs 3a and 3b (three blue lines each consisting of three stones and one brown line consisting of four stones) conform with the  $37^{\circ}/216^{\circ}$  ( $\pm 1^{\circ}$ ) azimuths of the Bronze Age major lunar extremes in the study area (according to the Stellarium ArchaeoLines plug-in). Further investigation would be required to determine whether it is possible to attribute any significance to these observations.

## The Stars and Planets

Stellarium planetarium software was consulted and all planets and stars of brighter magnitude than 3.0 which fell within the required declination and timespan ranges were recorded (see Tables 2a and 2b).

**Table 2a. Stars with magnitude brighter than 3, setting within the  $-15.0^{\circ}$  to  $-25.0^{\circ}$  declination range of the western horizon points of Lines 1 & 2**

No	Time Period	Name of Celestial Body	Magnitude	Declination ( $^{\circ}$ )
1	1,000 BCE	Rigel	0.15	$-16.2128$
2		Saiph	2.05	$-15.4837$
3	Sun within	Mirzam	1.95	$-21.0454$
4	declination	Sirius	$-1.45$	$-17.1130$
5	range	$\rho$ -Pup	2.80	$-19.8584$
6	December –	I-Cen	2.75	$-20.3686$
7	February	Menkent	2.05	$-20.0008$
8		E-Scorpius	2.25	$-23.4340$
9	Sun sets at	Alniyat	2.80	$-17.0801$
10	c. $238^{\circ}$ around	Alnasl	2.95	$-24.1141$
11	1 <sup>st</sup> February	Kaus Borealis	2.80	$-20.8005$

12	&	Nunki	2.05	-23.5764
13	26 <sup>th</sup> November	Albaldah	2.85	-19.5722
14	1,600 BCE	Rigel	0.15	-18.7816
15		Saiph	2.05	-17.7037
16	Sun within	Mirzam	1.95	-22.7389
17	declination	Sirius	-1.45	-18.30
18	range	$\rho$ -Pup	2.80	-20.0689
19	December –	I-Cen	2.75	-17.2795
20	February	Menkent	2.05	-16.6737
21		$\eta$ -Cen	2.30	-23.2418
22		E-Scorpius	2.25	-20.3342
23		Nunki	2.05	-21.5685
24		B-Lup	2.65	-24.6934
25		Y-Lup	2.95	-23.8546
26		Alnasl	2.95	-21.5907
27		Kaus Media	2.70	-22.2678
28		Kaus Borealis	2.80	-18.5157
29		Albaldah	2.85	-17.8195
30	Sun sets at	Cursa	2.75	-16.1675
31	c. 238 <sup>o</sup> around	Hatsya	2.75	-15.0587
32	6 <sup>th</sup> February &	Saturn	variable	variable
33	26 <sup>th</sup> November	Venus	variable	variable
35		Mars	variable	variable
36	2,200 BCE	Menkar	2.50	-17.1263
37		Cursa	2.75	-19.0422

38	Sun within	Rigel	0.15	-21.5903
39	declination	Hatsya	2.75	-17.7245
40	range	Saiph	2.05	-20.2075
41	December –	Mirzam	1.95	-24.7474
42	February	Sirius	-1.45	-19.8340
43		$\rho$ -Pup	2.80	-20.6511
44		$\eta$ -Cen	2.30	-20.0121
45		B-Lup	2.65	-20.4065
46		Y-Lup	2.95	-20.5133
47		$\mu$ 1-Sco	3.00	-21.0364
48		E-Sco	2.25	-17.0833
49		Shaula	1.60	-22.7729
50		Kaus Australis	1.75	-24.0018
51		Kaus Media	2.70	-19.5509
52		$\zeta$ -Cen	2.55	-24.7892
53		$\eta$ -Cen	2.30	-20.0134
54	Sun sets at	Nunki	2.05	-19.1832
55	around 238°	Albaldah	2.85	-15.6643
56	10 <sup>th</sup> February	Kaus Borealis	2.80	-15.8971
57	&	Venus	variable	variable
58	1 <sup>st</sup> December	Jupiter	variable	variable
59		Mars	variable	variable
60		Moon	variable	variable

**Table 2b. Stars with a magnitude brighter than 3.00, rising within the 15.0° to 25.0° declination range of the eastern horizon points of Lines 1 & 2**

No	Time Period	Name of Celestial Body	Magnitude	Declination (°)
1	1,000 BCE	Regulus	1.35	22.7007
2		Unukalhai	2.60	19.3507
3	Sun within	Ras Alhague	2.05	19.3193
4	declination	Matar	2.90	17.0538
5	range	Mirach	2.05	19.3933
6	June – August	B-Tri	3.00	19.0063
7		ζ-Per	2.80	18.7670
8		Hassalah	2.65	22.9342
9		Al Nath	1.65	20.2972
10		Tejat Posterior	2.85	17.9122
11		Jupiter	variable	variable
12	Sun rises at	Saturn	variable	variable
13	around 58°	Venus	variable	variable
14	23 <sup>rd</sup> May	Mars	variable	variable
15	& 11 <sup>th</sup> August	Moon	variable	variable
16	1,600 BCE	Regulus	1.35	23.5792
17		Unukalhai	2.60	22.5509
18	Sun within	Ras Alhague	2.05	21.6787
19	declination	Deneb	2.95	15.4564
20	range	Matar	2.90	15.2503
21	June – August	Almaak	2.15	23.0560
22		Mirach	2.05	16.3920
23		Algol	2.05	22.8218
24		E-Per	2.90	23.6220



25		Al Nath	1.65	17.5182
26	Sun rises at	Hassaleh	2.65	19.9078
27	around 58°	Tejat Posterior	2.85	15.6541
28	27 <sup>th</sup> May &	Mars	variable	variable
29	15 <sup>th</sup> August	Moon	variable	variable
30	2,200 BCE	Regulus	1.35	23.9422
31	Sun within	Ras Alhague	2.05	24.3052
32	declination	Deneb el Okab	2.95	17.0605
33	range	Cabalrai	2.75	15.5945
34	June – August	Almaak	2.15	19.9497
35		Algol	2.05	19.5229
36	Sun rises at	E-Per	2.90	20.2975
37	around 58°	Hassaleh	2.65	16.7172
38	1 <sup>st</sup> June	Mars	variable	variable
39	& 21 <sup>st</sup> August	Moon	variable	variable

The results of Table 2a indicate that for the western horizon at an azimuth of 238° to 239°, the brightest star falling within the relevant declination range is Sirius, the “Dogstar”. Sirius is not only the lucida of the constellation Canis Major, but is also the brightest star in all of the night sky. Furthermore, Sirius is apparent throughout all three selected Bronze Age time periods within the identified declination range. Since Sirius is the brightest and most prominent star in the sky, it would therefore seem that this is the most likely setting star to be associated with both Lines 1 and 2 at an azimuth of 238° to 239° and declination range of -15° to -25° during the Bronze Age. This conclusion is further supported by the fact that since the declination of the western-most extent of Line 1 is very low, at sea level, Sirius would be the only star bright enough to be seen at this low altitude, after the effects of stellar extinction are taken into consideration.

An additional consideration is the ethnographic history associated with Sirius, known since at least the 3<sup>rd</sup> millennium BCE for its dog symbolism. Geoffrey Cornelius<sup>43</sup> emphasises that this association is particularly relevant in ancient Egypt, where the star Sirius is associated with the psychopomp jackal-headed god Anubis and his role of guiding the dead. Cornelius goes on to refer to the fact that the heliacal rising of Sirius near midsummer was important in the ancient Egyptian calendar and was thought to herald the flooding of the Nile. He also mentions that, perhaps because of the fact that Sirius rose in the hottest time of the year, “classical authors often identified the power of Sirius with that of the Sun”, giving rise to the phrase ‘dog days of summer’.

To the ancient Greeks, both Canis Major and Canis Minor were viewed as the hunting dogs of Orion and there are also reflections of this story in Mesopotamian myth as well. In Egypt during the period 2,700–2,600 BCE (the time of the construction of the great pyramids, which have been proposed to align with Orion’s belt), Orion was thought to represent the Egyptian god of the dead, Osiris.<sup>44</sup> The association of the star Sirius with a hunting dog has cross-cultural parallels not only between cultures that could be considered relatively geographically close, such as Egypt and Mesopotamia, but this association is also reflected in cultures further afield, even as far as China, where Sirius is known as T’ien-lang, the celestial jackal<sup>45</sup>

The constellation Canis Major consists of Sirius, a white star, which forms the head of the dog, whilst the star that falls in the region of the hound’s ears is the red giant Theta-Canis Major, which today appears a yellowish colour. A similar astral colour scheme exists, for the other of Orion’s hunting dogs, Canis Minor, which has whitish stars forming its body (Procyon and Gomeisa) and a yellow-coloured star epsilon-Canis Minoris occupying the approximate position of the ears.

These astral hunting dogs of Orion or Osiris (ancient Egyptian Lord of the Netherworld) therefore present an unexpected resonance with the ancient Welsh folklore white, red-eared, hunting hounds (the ‘Cwn Annwn’) of the ancient Welsh Lord of the Otherworld, black-faced, Gwyn ap Nudd. As previously mentioned, Gwyn ap Nudd is also known as ‘Arawn’ which may be pronounced phonetically in Welsh as ‘ah-RA-oon’, exhibiting some similarity with the pronunciation of ‘Orion’. Similarly, the Welsh ‘Annwn’ (from Cwn

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<sup>43</sup> Geoffrey Cornelius, *The Starlore Handbook*, (Duncan Baird, London 1997), 52–53

<sup>44</sup> Cornelius, *The Starlore Handbook*, p.93.

<sup>45</sup> Cornelius, *The Starlore Handbook*, p. 54.

Annwn / Hounds of the Otherworld) is pronounced 'Ann-oon', exhibiting an initial similarity with 'Anubis'.

A similar analytical approach for the eastern azimuths of Table 2b indicates that Regulus (the lucida of the constellation Leo, the lion) is the brightest star rising over both Line 1 and Line 2 within the range of relevant declinations throughout the Bronze Age period. According to Cornelius, "The lion has been identified with the Sun since the early civilisation of Mesopotamia. The Egyptians connected Leo with the heliacal rising of Sirius...[as this] coincided with the Sun's passage through Leo".<sup>46</sup> Since the constellation of Leo is associated with the time of midsummer, it is possible that the solstitial observations regarding the orientation of the Dolddeuli stone may be significant. Cornelius also mentions that Regulus has been known since Mesopotamian times, where it was listed as the leader of the Royal Stars and one of the 'Four Guardians of Heaven' (or "Watchers"), reflecting the belief that it ruled the affairs of the heavens. Its name means 'Little King'.

Regulus is an interesting star from the perspective of the study of astronomy, because its path is the closest to the ecliptic, the apparent path of the sun in the sky. According to Clive Ruggles, "the ecliptic coordinate system is very convenient for defining the relative position of the sun, moon and planets and was of particular importance in the historical development of mathematical astronomy.."<sup>47</sup> If there ever was a great Idris, ancient astronomer, the study of the ecliptic is likely to have been of the utmost importance to him, and therefore the finding that both Lines of the study area may possibly mark the rising of Regulus, and thereby a means to follow the path of the ecliptic in the night sky, is highly significant and supportive of the secondary aim of this paper to find prehistoric astronomical associations within the study area.

## Discussion

It can be seen that the linear regression analyses confirm the presence of two high-precision, separate long distance alignments (of 10 km and 27 km) over the study area and this observation is further supported by local ethnographic evidence. The linear regression statistical analyses indicate that

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<sup>46</sup> Cornelius, *The Starlore Handbook*, pp. 86–87.

<sup>47</sup> Clive Ruggles, 'Basic Concepts of Positional Astronomy', *Handbook of Archaeoastronomy and Ethnoastronomy* (Springer Science & Business Media, New York (2015), pp. 459–463.

the positioning of the standing stones on both Line 1 and Line 2 is so extremely precise that such an arrangement must have been intentional, as there is less than a 0.1% chance that the arrangement could be due to chance. This conclusion validates the initial subjective identification of these lines, but raises the further question of how such astonishing precision in siting the stones could have been achieved in prehistoric times. It is therefore possible that the class of long alignments identified in this study should be considered entirely different in form and function to the types of traditional stone rows previously identified in the literature.

The linear regression analyses performed above support the methodology of employing mapping software, such as Memory Map TM (Evo Distribution), as an initial assessment tool in the identification of potential long distance alignments. The mapping approach reported in this study has indicated the presence of other potentially significant alignments across the study area (as depicted in Fig. 3) and has also raised the possibility that these lines may be interconnected, potentially representing some sort of grid system – for example, the Bryn Seward gate stone of Line 1 is linked via another standing stone at Pen-y-Garn (Coflein,<sup>48</sup> NPRN 500999) to the stone at Ty'r Gawen on Line 2 by a brown line (of four stones) with an azimuth of 0° (Figs. 3a and 3b). This north-south line extends c. 7 km south to another standing stone at Nantycynnog and possibly also northwards to include further standing stones outside the study area.

There is evidence for both lines having celestial significance with respect to the Sun, the Moon and the Stars. However, the evidence linking both lines of standing stones to the setting of Sirius in the Bronze Age ties in particularly well with ethnography concerning Sirius and local folklore relating to 'Hounds of the Otherworld' chasing / guiding souls of the dead to their resting place. Similarly, the rising of Regulus over both lines of standing stones is highly significant, since Regulus has been a star of great importance to the study of astronomy since ancient times, as its path in the night sky is closest to that of the ecliptic.

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<sup>48</sup> *The National Monuments Record of Wales (NMRW), 'Coflein'*,

[http://map.coflein.gov.uk/index.php?action=do\\_details&cache\\_name=cG5wcm4sNTAwOTk5X3NIYXJjaHR5cGU5YWR2YW5jZWRFb3Jh&numlink=500999#tabs-4](http://map.coflein.gov.uk/index.php?action=do_details&cache_name=cG5wcm4sNTAwOTk5X3NIYXJjaHR5cGU5YWR2YW5jZWRFb3Jh&numlink=500999#tabs-4) [accessed 21/10/16]. Derived from information compiled by RCAHMW and/or Crown copyright.

Determination of the definitive purpose of the extremely precise long distance alignments remains difficult. Since an efficient walking route will avoid high mountains, bogs, etc, the standing stone lines are not likely to have been erected as route markers (although they may subsequently have found use as such, particularly for relatively shorter stretches eg along the Ffordd Ddu). Conversely, it could be argued that pilgrimage routes may not necessarily be chosen for an easy journey. However, the requirement for an extremely precise straight line pilgrimage route would require an explanation – and furthermore, the evidence that the Ffordd Ddu track is not a precise straight line would seem to discount any ‘arduous pilgrimage route’ hypothesis.

Other potential purposes for the lines include that the lines perhaps do not mark routes for the living, but instead delineate routes for the dead to the afterlife. This is in keeping with the designation of the local area as an area of ritual and funerary significance and the work of Fowler and Cummings.<sup>49</sup> This hypothesis also has synergy with the ethnographic funerary and psychopomp associations of Sirius in Canis Major along with Orion / Osiris and the local Welsh folklore of the Cwm Annwn (hunting hounds of the Otherworld) and Arawn (Lord of the Otherworld).

More tenuously, it could be argued that the alignments could have been set out as some ancient mapping activity. It is known that Ptolemy produced a relatively accurate map of the British Isles in 2<sup>nd</sup> C AD.<sup>50</sup> However, whilst this suggestion might offer an explanation for the need for high precision siting of the stones, it is not immediately obvious why certain alignment bearings should be selected or why these particular celestial associations would be required.

It may be that the alignments reflect some sort of geomorphological aspects of the landscape. It is a strange coincidence that the azimuth of the southern boundary of the study area is also 58° / 238°. This was selected on topographical grounds alone. It is also interesting that the most major of the geological fault lines over the study area (eg the Tallyllyn fault line) also follow this bearing.<sup>51</sup> Such observations may concur with the mapping hypothesis, or

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<sup>49</sup> Chris Fowler and Vicki Cummings, ‘Places of Transformation: Building Monuments from Water and Stone in the Neolithic of the Irish Sea’, *Journal of the Royal Anthropological Institute*, Vol. 9 No. 1 (Mar 2003)

<sup>50</sup> Henry Bradley, *Remarks on Ptolemy’s Geography of the British Isles*, (Nichols and Sons, London, 1884)

<sup>51</sup> Geological Survey of England and Wales 1:63,360/1:50,000 Geological Map Series. Sheet number 119 ‘Snowdon’ (British Geological Survey 1997)

perhaps could even be argued to support Earth Mystery-type theories concerning ley lines, or may simply indicate an importance to prehistoric man of emphasising natural landscape features — in a similar manner to Mike Parker-Pearson’s suggestion that the site for the Avenue at Stonehenge was selected to highlight the natural peri-glacial fissures in the chalky landscape, formed thousands of years previously, but coincidentally following a solstitial axis.<sup>52</sup>

## Conclusion

The astonishing degree of precision with which the standing stones conform to linearity, the fact that the distances covered by the lines can be measured in kilometres, the fact that it is possible to determine some significant celestial alignments in association with the lines (with interesting potential cross-cultural parallels) and the fact that both lines flank the mountain Cadair Idris, the folklore stronghold of the giant Idris, an ancient astronomer of Welsh legend, suggest that the primary purpose of the alignments is perhaps most likely to have been for astronomical reasons, with perhaps a combined religious and scientific purpose.

Further research is required to investigate the 47 lines not subject to detailed examination in this study, as well as the different types of monuments which should also perhaps be considered within studies of long distance alignments in addition to standing stones (e.g. rock art, hillforts, cairns, cairn circles, *etc*). Additionally, whilst the standing stones studied all generally appear to be shaped in an individual manner, the observation that the orientation of the faces of the Dolddeuli standing stone appear to exhibit solstitial alignments is potentially indicative that some undeciphered celestial meaning / coding may underlie the shapes. Such a view would be in keeping with the studies of Lynne Kelly<sup>53</sup> and also warrants further study.

This investigation appears to corroborate the ethnographic claims of the Dolddeuli locals as it supports the claim that the Dolddeuli standing stone is part of an alignment running eastwards from the coast. Therefore, an intriguing question remains for further research: does the Dolddeuli Line 1 extend further eastward to Llanderfel and Llandrillo as is maintained by Dolddeuli folklore?

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<sup>52</sup> Mike Parker Pearson, ‘Researching Stonehenge: Theories Past and Present’ *Archaeology International*, 16 pp. 72–83, <http://www.ajournal.com/articles/10.5334/ai.1601/> [accessed 23/10/16].

<sup>53</sup> Lynne Kelly, *The Memory Code*, (Allen and Unwin, 2016).

An examination of the standing stones discovered by chance during the study (but outside the study area) indicates that Line 1 does in fact pass through another standing stone around 25km further east at Cefn Pen Llety (Coflein,<sup>54</sup> NPRN 283030, SJ 04210 36070) in the region of Llanderfel and Llandrillo as stated by the owner of Dolddeuli Farm (see Fig 6). Linear regression to include this point gives an  $R^2$  value of 0.99997 and maintains the 58° azimuth, so indications are that Line 1 could very well extend this far. A short further extension of less than 2 km to the east takes Line 1 through the Bronze Age cairn / stone circle of Moel-ty-Uchaf (Coflein,<sup>56</sup> NPRN 306555) which has been described by Critchlow as “perhaps the most geometrically sophisticated of all the Neolithic structures”<sup>55</sup>, although it is currently referenced as a Bronze Age monument by Coflein<sup>56</sup>. However, further work would be required to verify these observations and to confirm the exact length of the alignments.

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<sup>54</sup> *The National Monuments Record of Wales (NMRW)*, ‘Coflein’  
[http://map.coflein.gov.uk/index.php?action=do\\_advanced&pnmrname=&pnprn=283030&pclasssub=&pclassgrp=&pfreetext=&pperiod=&pcommunity=&pcouname=&poldcounty=&ngr=&radiansm=&submit=Search](http://map.coflein.gov.uk/index.php?action=do_advanced&pnmrname=&pnprn=283030&pclasssub=&pclassgrp=&pfreetext=&pperiod=&pcommunity=&pcouname=&poldcounty=&ngr=&radiansm=&submit=Search) [accessed 21/10/16]. Derived from information compiled by RCAHMW and/or Crown copyright.

<sup>55</sup> Julian Cope, *The Modern Antiquarian*, (Thorsons, 1998), p. 326.

<sup>56</sup> *Royal Commission of the Ancient and Historical Monuments of Wales online Historical Environmental Record Database*, ‘Coflein’,  
[http://map.coflein.gov.uk/index.php?action=do\\_details&cache\\_name=cG5tcnNuYW11LE1vZWwgdHkgdWNoYWZfc2VhcmNodHlwZSxhZHhbmNlZF9vcmlE=&numlink=306555#tabs-4](http://map.coflein.gov.uk/index.php?action=do_details&cache_name=cG5tcnNuYW11LE1vZWwgdHkgdWNoYWZfc2VhcmNodHlwZSxhZHhbmNlZF9vcmlE=&numlink=306555#tabs-4) [accessed 25/10/16]. Derived from information compiled by RCAHMW and/or Crown copyright.

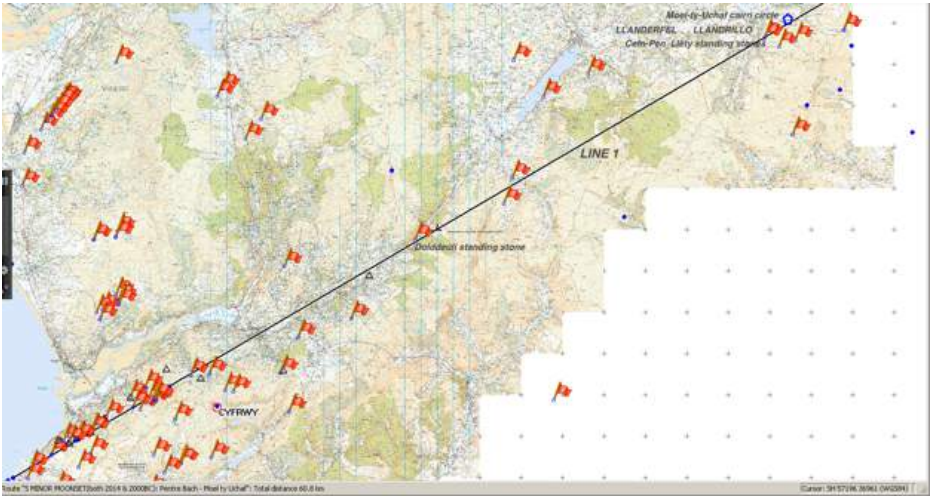


Figure 6: Extrapolation of Line 1 to Moel-ty-Uchaf cairn circle



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## Appendix




**Tables of basic data for selected standing stones with photos to indicate presence and impact of stones within surrounding landscape**




**Table A. LINE 1: Descriptive information**

No.	Name	OS NGR	Validation of standing stone status (ie Coflein NPRN, Archwilio PRN, Scheduled Ancient Monument (SAM) or direct observation)	Description (taken from validation source)	Photo
1	Pentre Bach	SH 58877 09485	Direct observation	1.2m tall, 0.5m deep, 0.5m wide.	


2	Parth-y-Gwydd wch (big)	SH 60120 10310	PRN 4867 SAM Probably dated to Bronze Age	One of a pair with (3) below. 1.6m tall; 3 sided: 1.3m, 0.9m & 0.7m (at ground level). 2300BC–800BC.	
3	Parth-y-Gwydd wch (small)	SH 60136 10328	PRN 4867 SAM	One of a pair with (2) above. 1.0m tall; 1.0m wide, 0.5m deep	
4	Waen Oer road stone (1)	SH 61599 11178	Direct observation	1.45m tall, 1.2m wide at widest point. Set within wall running alongside straight section of Ffordd Ddu	

5	Waen Oer road stone (2)	SH 61690 11201	Direct observation	1.28m tall, 1m wide at widest point. Set within wall running alongside straight section of Ffordd Ddu	
6	Waen Oer Row (groove)	SH 61721 11273	PRN 4884 75. SAM	A massive boulder 5' high, 3' wide and 2'6" thick (in foreground, with recumbent stone and gate stone beyond to NE)	
7	Waen Oer Row (recumbent)	SH 61728 11277	PRN 4884 76. SAM	A fallen thin slab 6' long, 3'3" wide and 1'6" thick. (Also in centre of photo below)	



8	Waen Oer Row (gate)	SH 61739 11284	PRN 4884 77. SAM	A pointed slab 6' high, 2' wide and 3'6" thick	
9	Waen Oer Row (north)	SH 61760 11295	PRN 4884 78. SAM	A small pointed stone 3' high, 2'6" wide and 1' thick	
10	Bryn Seward (gate)	SH 62602 11761	PRN 4873 SAM prehistoric alignment (other stones mentioned as part of alignment, but unable to definitively discriminate from stones associated with adjacent wall)	A standing stone 2.1m tall and triangular in section with sides of 0.8m, 0.9m and 0.5m. Oriented parallel to significant ancient routeway, Ffordd Ddu.	



11	Bryn Seward (forest)	SH 62650 11768	PRN 4873 SAM prehistoric alignment. (as above)	A standing stone measuring 1.5m tall. Rectangular in section measuring 0.6m wide, 0.5m thick and pointed at top. Oriented parallel to significant ancient routeway, Ffordd Ddu.	
12	Planwydd Helyg	SH 65180 13256	PRN 4214 NPRN 302890 SAM Prehistoric	Erect monolith / tapering pillar on low knoll in middle of wide valley 1.9m high x 0.5m x 0.5m. [Close to intersection of two branches of the Ffordd Ddu].	
13	Carreg y Big	SH 66192 13849	PRN 4215 SAM prehistoric	Tapering pillar on level ground at foot of hillock 1.9m tall x 1m wide x 0.5m thick. [Close to Cregennan Lakes]	



14	Dolddeuli	SH 82610 23606	PRN 4845 SAM Early Bronze Age standing stone	Earthfast stone of granophyre adjacent to boundary (railway embankment) on valley floor 1.5m x 1.2m x 0.7m	
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**Table B. LINE 2: Descriptive information**

No.	Name	OS NGR	Validation of standing stone status (ie Coflein NPRN, Archwilio PRN, Scheduled Ancient Monument (SAM) or direct observation)	Description from validation source	Photo
1	Waen Fach	SH 59448 04874	PRN 4796  SAM. Early Bronze Age (c 2000–1500 BC)	Situated in a valley bottom position on a locally prominent knoll, it is 1.8m tall, 0.8m wide and 0.6m deep.	
2	Glanm achlas	SH 61329 05937	Direct observation	0.5m tall, 0.5m wide, 0.5m deep	

3	Ty'r Gawen	SH 62388 06445	Direct observation	1m tall, 0,5m wide, 0.5m deep	
4	Maes y Llan	SH 67150 09223	PRN 4933 / 4932. Prehistoric. The stone appears to be firmly placed in the ground, but amongst a small pile of other large stones, possibly indicative that they have all been moved.	References including OS NGRs are confused. This stone at this location (with possible remains of cairns nearby) was the only potential stone that appeared to match the reference's descriptions.	
5	Ffridd Gwastad	SH 68104 09794	Mentioned in 'An Inventory of the Ancient Monument of Wales & Monmouthshire' <sup>57</sup> (see last column).  PRN 4935 Prehistoric	(Unlocated and unknown to farmer)	"On a slope of Ffridd Gwastadfryn is a standing stone in shape like an equal armed cross, but showing now signs of man's handiwork. It is 5'6" high, 5'4" broad across the arms, 3'4" broad at the base, 3' at the top and about 3' thick. It is difficult to discover among the huge masses of natural rock around. Visited 27/7/1914"

<sup>57</sup> '...Inventory ... ancient Monuments of Wales ...' 111




**Table C: Line 1 Base Data**



ID	OS NGR	Accuracy (m)	Latitude (converted from OS by nearby.org)	Longitude (converted from OS by nearby.org)	Site Elevation (m)	Magnetic Declination ( <sup>o</sup> )	+/- Error ( <sup>o</sup> )	Required Azimuth ( <sup>o</sup> )	Magnetic Azimuth ( <sup>o</sup> )
Pentre Bach	SH 58877 09485	8	52.665647	4.088213	30	2.28	0.37	58	56
Parth-y- Gwyddwch (big)	SH 60120 10310	6	52.672511	4.070069	199	2.26	0.37	58	56
Parth-y- Gwyddwch (small)	SH 60136 10328	5	52.672592	4.070029	200	2.26	0.37	58	56
Waen Oer Wall Stone (1)	SH 61599 11178	5	52.680569	4.048704	260	2.25	0.37	58	56
Waen Oer Wall Stone (2)	SH 61690 11201	6	52.680799	4.047368	268	2.25	0.37	58	56
Waen Oer Row (groove)	SH 61721 11273	5	52.681454	4.04694	270	2.25	0.37	58	56
Waen Oer Row (recumbent)	SH 61728 11277	5	52.681492	4.046838	269	2.25	0.37	58	56
Waen Oer Row (gate)	SH 61739 11284	6	52.681492	4.046838	272	2.25	0.37	58	56
Waen Oer Row (north)	SH 61760 11295	5	52.681662	4.046373	272	2.25	0.37	58	56
Bryn Seward (gate)	SH 62602 11761	5	52.686063	4.034121	265	2.25	0.37	58	56


Bryn Seward (forest)	SH 62650 11768	5	52.686138	4.033414	266	2.25	0.37	58	56
Planwydd Helyg	SH 65180 13256	8	52.700142	3.99662	257	2.24	0.37	58	56
Carreg-y-Big	SH 66192 13849	6	52.705721	3.981895	264	2.23	0.37	58	56
Dolddeuli	SH 82610 23606	6	52.79690	3.74132	160	2.19	0.38	58	56

**Table D: Line 1 Measurements for Azimuth 58° (True North)**



ID & date visited	Measured Azimuth (°)	Magnetic Anomaly Check Reading (°)O	Azimuth horizon ID	Measured Altitude (°)	Calculated Declination (°)	Heywhatsthat Altitude (°)	Calculated Declination (°)	Horizon point interest
Pentre Bach (22/6/16) (56° is directly behind stone)	56	236	Obscured by trees	—	—	7.08	24.64	

Parth-y-Gwydd wch (big) (23/7/16)	56	236	Slope in foreground	6	23.75	5.25	23.13	
Parth-y-Gwydd wch (small) (23/7/16)	56	236	Slope in foreground	6	23.75	5.53	23.36	
Waen Oer Wall Stone (1) 56° is approximately direction of wall (23/7/16)	56	*	Slope of hill in foreground	**	—	3.98	22.07	

Waen Oer Wall Stone (2) (56° is approximately direction of wall) (23/7/16)	56	236	Slope of hill in foreground	-3	16.21	5.14	23.03	
Waen Oer Row (groove) (23/7/16)	56	236	Slope of hill in foreground	-2	17.06	3.92	22.02	
Waen Oer Row (recumbent) (23/7/16)	56	236	Slope of hill in foreground	-2	17.06	3.83	21.94	
Waen Oer Row (gate) (23/7/16)	56	236	Slope of hill in foreground	-2	17.06	3.83	21.94	
Waen Oer Row (north) (23/7/16)	56	236	Slope of hill in foreground	-2	17.06	4.2	22.25	

Bryn Seward (gate) (13/7/16)	56	236	Forestry obscures horizon point	—	—	0.98	19.56	
Bryn Seward (forest) (13/7/16)	56	236	Forestry obscures horizon point	—	—	1.17	19.72	
Planwyd d Helyg (13/7/16)	56	236	Craig-y-Castell Hillfort PRN 810. Prehistoric SAM	-1	17.89	0.29	18.97	



Carreg-y-Big (13/7/16)	56	236	Craig-y-Castell Hillfort PRN 810. Prehistoric SAM	-1	17.89	0.53	19.17	
Doldeuli (8/5/16)	56	236	Summit of slopes of Foel Fach (in background of photo)	7	24.53	8.6	25.84	

*\*Unable to measure due to interference from barbed wire fence along top of wall*




*\*\* Unable to measure as stone wall obstructs measuring position*


**Table E: Line 1 Measurements for Azimuth 238° (True North)**

ID & date visited	Measured Azimuth (°)	Magnetic Anomaly Check Reading (°)O	Azimuth horizon ID	Measured Altitude (°)	Calculated Declination (°)	Heywhatsthat Altitude (°)	Calculated Declination (°)	Horizon point of interest
Pentre Bach (22/6/16)	236	56	Obscured by trees (but altitude of sea horizon at 240° used)	0	-18.75	-0.21	-18.92	
Parth-y-Gwyddwch (big) (23/7/16)	236	57	Sea	0	-18.74	-0.55	-19.20	

Parth-y-Gwyddwch (small) (23/7/16)	236	56	Sea	0	-18.74	-0.62	-19.26	
Waen Oer Wall Stone (1) (23/7/16)	240*	56	Slope of hill above Parth-y-Gwyddwch	1	-17.90	-0.41	-19.08	
Waen Oer Wall Stone (2) Direction of 236 <sup>a</sup> is behind car (23/7/16)	236	56	Slope of hill above Parth-y-Gwyddwch	1	-17.90	-0.59	-19.23	

Waen Oer Row (groove) (23/7/16)	236	56	Slope of hill above Parth-y-Gwyddwch	1	-17.90	-0.63	-19.27	
Waen Oer Row (recumbent) (23/7/16)	236	56	Slope of hill above Parth-y-Gwyddwch	1	-17.90	-0.65	-19.28	
Waen Oer Row (gate) (23/7/16)	236	56	Slope of hill above Parth-y-Gwyddwch	1	-17.90	-0.65	-19.28	
Waen Oer Row (north) (23/7/16)	236	56	Slope of hill above Parth-y-Gwyddwch	1	-17.90	-0.62	-19.26	
Bryn Seward (gate) (13/7/16)	236	56	Slope of hill in direction of Waen Oer	-8	-25.391	5.29	-14.27	

Bryn Seward (forest) (13/7/16)	236	56	Slope of hill in direction of Waen Oer. Horizon obscured by tree, but altitude assumed to be the same as that for nearby stone above.	-8	-25.391	5.26	-14.30	
Planwyd d Helyg (13/7/16)	236	56	Saddle to N. of Cwm Pen-y-Llydan domed hill (left of photo)	-7	-24.562	6.96	-12.85	
Carreg-y-Big (13/7/16)	236	56	Cwm Pen-y-Llydan domed hill (central apparaent "hillock" in photo)	-3	-24.240	1.91	-17.12	



Dolddeuli (8/5/16)	236	56	Obscured by railway embankment	—	—	3.1	-16.07	
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*\* Unable to measure azimuth of 236° because measuring position obstructed by wall. Long flat hill on horizon at approximately 236°, therefore altitude measured at 240° azimuth should give good approximation.*



**Table F: Line 2 Base Data**

ID	OS NGR	Accuracy (m)	Latitude (converted from OS by nearby.org)	Longitude (converted from OS by nearby.org)	Site Elevation (m)	Magnetic Declination (°)	+/- Error (°)	Required Azimuth (°)	Magnetic Azimuth (°)
Waen Fach	SH 59448 04874	5	52.622704	-4.078488	51	2.27	0.37	59	57
Glanmachlas	SH 61329 05937	5	52.633426	-4.050482	16	2.27	0.37	59	57
Ty'r Gawen	SH 62388 06445	5	52.638282	-4.034999	32	2.26	0.37	59	57
Maes-y-Llan	SH 67150 09223	5	52.664314	-3.966415	26	2.24	0.37	59	57
Ffridd Gwastad	SH 68104 09794	-	52.669438	-3.951987	-	-	-	59	-




**Table G: Line 2 Measurements for Azimuth 59° (True North)**


ID & date visited	Measured Azimuth (°)	Magnetic Anomaly Check Reading (°)O	Azimuth horizon ID	Measured Altitude (°)	Calculated Declination (°)	Heywhatsthat Altitude (°)	Calculated Declination (°)	Horizon point of interest
Waen Fach (16/5/16)	57	237	Tip of stone indicates relevant horizon position	-3	15.7	2.38	20.21	
Glanmachlas (16/5/16)	57	237	Obscured by trees. Tip of stone indicates relevant horizon position	-	-	2.88	20.62	



Ty'r Gawen (16/5/16)	57	237	Obscured by trees. Tip of stone indicates relevant horizon position.	–	–	3.78	21.36	
Maes-y-Llan (26/5/16)	57	237	Relevant horizon position is slope of hill in central background of photo.	– 10	9.76	11.18	27.43	
Ffridd Gwastad	57	237	Stone not located	–	–	6.89	23.92	–

**Table H: Line 2 Measurements for Azimuth 239° (True North)**

ID & date visited	Measured Azimuth (°)	Magnetic Anomaly Check Reading (°)O	Azimuth horizon ID	Measured Altitude (°)	Calculated Declination (°)	Heywatssthat Altitude (°)	Calculated Declination (°)	Horizon point of interest
Waen Fach (16/5/16)	237	57	Tip of stone indicates relevant horizon position	-5	-20.72	4.63	-16.22	
Glanmachlas (16/5/16)	237	57	Obscured by trees. Tip of stone indicates relevant horizon position.	-	-	2.78	-15.88	
Ty'r Gawen (16/5/16)	237	57	Obscured by trees. Tip of stone indicates relevant horizon position.	-	-	1.25	-17.17	

Maes-y-Llan (26/5/16)	237	57	Tip of stone indicates relevant horizon position	-1	- 19.04	0.47	- 17.81	
Ffridd Gwastad	237	57	Stone not located	-	-	-0.71	-12.4	-

# The astrological reforms of Marsilio Ficino and Johannes Kepler

*by Jessica Heim*

This paper examines the astrological reform attempts of Marsilio Ficino and Johannes Kepler. It discusses the methods by which they sought to reform astrology as well as how these devout Christian men reconciled their ideas of astrological influences with that of free will. Though they strove to accomplish their goals through fundamentally different means, both desired to reform astrology in order to increase understanding of cosmological influences, improve the lives of humans, and obtain better insight into the mind of the Creator. This paper also considers historiographical issues relating to the study of Ficino and Kepler's astrological ideas, and it questions the common practice of minimizing the significance of astrological beliefs of figures important in the history of science. Instead, it argues that, as astrology formed a central part of their worldviews, there is much to be gained from an investigation into Ficino and Kepler's thoughts on this matter.

This paper compares and contrasts astrological reform attempts by Marsilio Ficino (1433-1499) and Johannes Kepler (1571-1630). Though a devout Christian and Catholic priest, Ficino was excited by ideas found in the works of Plato and Neo-Platonists, and he strove to bring the best of Greek ideas into Florentine society. His translation of the works of Plato and of many Neo-Platonic and Hermetic texts were of pivotal importance for subsequent Renaissance thought. Kepler, trained as a mathematician and greatly influenced by his teacher Michael Maestlin's belief in Copernicus' heliocentric cosmos, sought to bring about significant astrological reforms in an effort to improve the accuracy of astrology. This essay will examine the primary goals these men had in their astrological reforms, the means by which they sought to achieve them, and how they reconciled their belief in astrological influences with that of God and free will.

Before proceeding into an analysis of Ficino and Kepler's astrological reforms, it is worth briefly noting prevalent attitudes among scholars regarding the study of astrological ideas. Though much scholarly attention is given to discussion of certain aspects of these men's lives, such Kepler's three laws of

planetary motion and Ficino's importance in translating Platonic and Neo-Platonic texts into Latin, the astrological ideas of these men have not generally been a favored subject of extensive analysis. As Patrick Curry observes, 'within the academy, astrology has too often been examined as purely a failed version of something else: an ersatz religion, or pseudo-science, or vulgar rather than educated belief.'<sup>1</sup> This practice of downplaying the significance of astrological ideas has made gaining insight into the astrological beliefs and practices of historical figures challenging, since aspects of their ideas which differ markedly from those acceptable in the modern understanding of science are often minimized, ignored, or briefly explained away as an example of the 'superstitious' ideas of the times periodically surfacing in an otherwise great mind. For example, in his recent book on Kepler's contribution to astronomy, David Love mentions the 'unfortunate fact' that Kepler 'had a deep and enduring belief in astrology, and that this was an integral part of his worldview.'<sup>2</sup> Another example of scholarly distaste for astrology can be seen in a recent edition of a popular introductory level college astronomy textbook, which states, 'Astrology is not at all connected with astronomy, except in a historical context (they had similar origins, and hence the same root), so it does not really deserve a place in a text on astronomy.'<sup>3</sup> Accordingly, in this book's discussion of the ideas of men like Copernicus, Kepler, and Newton, only those consistent with contemporary understanding of science are mentioned; any ideas differing from the current scientific framework are conveniently omitted, thereby remaking these men in the image of modern scientists. However, some scholars question the merit of such an approach to the history of astronomy. Along such lines, Anthony Aveni argues for the study of all aspects of astrological and astronomical beliefs, not just those favored in modern science. As he notes, 'If we disregard the metaphysical side of our ancestors' outlook, and focus only on those aspects of their astronomy that closely resemble our

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<sup>1</sup> Patrick Curry, foreword to *Astrology and the Academy: Papers from the Inaugural Conference of the Sophia Centre*, Bath Spa University College 13-14 June 2003, ed. by Nicholas Campion, Patrick Curry and Michael York (Wiltshire, Cromwell Press, 2004), p. xii.

<sup>2</sup> David K. Love, *Kepler and the Universe: How One Man Revolutionized Astronomy* (New York: Prometheus Books, 2015), p. 118.

<sup>3</sup> Jay M. Pasachoff and Alex Filippenko, *The Cosmos: Astronomy in the New Millennium*, 4th ed. (New York: Cambridge University Press, 2014), p.16.

own - at the same time discarding astrology and mythology on the trash-heap of mysticism, then I think we may be missing an important part of humanity's outlook on the universe.<sup>4</sup> In this spirit, this essay will examine astrological reform attempts of Ficino and Kepler in order to better understand the astrological context underpinning much of their work.

Though Ficino and Kepler both were avid reformers of astrology, they had somewhat different goals for their reforms. Ficino, also trained as a physician, was quite concerned with the healing of individuals. In his studies of the works of Plato and Neo-Platonists, he sought to find ways he could utilize the ideas of these thinkers in his attempt to create better strategies for the healing of disease and for general well-being. Astrology was a major aid to this endeavor. In *On Obtaining Life from the Heavens*, Ficino notes that the celestial influences should be taken into account when making medicines. As he observes, 'For I have found by long and repeated experience that medicines of this kind are as different from other medicines made without astrological election as wine is from water.'<sup>5</sup> In other words, in order to maximize the healing potential of a remedy, it should be made under the appropriate astrological influence. Thus to Ficino, astrology could, when combined with the proper actions at the proper times and with the appropriate musical additions, be used for the healing of the soul and body, which can be seen as a form of sympathetic magic. Regarding Ficino's approach, Angela Voss observes, 'Through appropriate ritual, the human spirit becomes aligned with the planetary spirit and will then automatically and naturally receive the gift of that planet as it vibrates in sympathy, like two strings of a lute.'<sup>6</sup> Via sympathetic resonance with the cosmic influences, healing can take place. Thus in his work, Ficino strove to create an improved system of astrology which could be used to improve the lives of people on earth.

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<sup>4</sup> Anthony F. Aveni, *Ancient Astronomers* (Washington D.C., Smithsonian Books, 1993), p. 164.

<sup>5</sup> Marsilio Ficino, *On Obtaining Life from the Heavens*, trans by Angela Voss, in Marsilio Ficino, *Western Esoteric Masters Series* (Berkeley, CA: North Atlantic Books, 2006), p. 109.

<sup>6</sup> Angela Voss, 'The Astrology of Marsilio Ficino: Divination or Science?', *Culture and Cosmos*, 4(2), Sophia Centre Press,( 2000), 29-45, (pp. 38-39).

Kepler, in contrast to Ficino, did not seek to employ the power of the planets via ritual or magic. One of his chief concerns was the management of the state; as Campion observes, Kepler's 'goal was to establish an astrology which could help the government effectively avoid conflict.'<sup>7</sup> Kepler lived during the Thirty Years War; thus it is understandable that the welfare of states and the maintenance of civil calm would be a major focus for him. He felt that current astrological practices were in great need of reform, and he desired to create changes in astrology so that better predictions could be made. The extent of his reforms were quite extreme: he sought to create an entirely new format for understanding celestial influences. He advocated the elimination of the zodiac and houses and envisioned a new system centered around aspects. In *On The More Certain Fundamentals of Astrology*, Kepler set out to illustrate those things in astrology he believed had sound reasoning behind them and offer proposals for the improvement of astrological calculations. By understanding the influences of the heavens upon human affairs, rulers could be better prepared to act in times of potential political instability or civil unrest and be proactive in the preservation of the state. As Kepler remarks, 'I would think that it is not entirely useless for leaders and rulers of people to be taken up with such considerations; for in order to rule the multitude one must have great skill and an awareness of those forces that affect human dispositions in a group.'<sup>8</sup> Thus while Ficino seems to have been focused on how to harness the planets for use in the healing for the individual, Kepler appears to have been more concerned about utilizing their influence in order to maintain political stability.

Both Ficino and Kepler believed that by understanding astrological influences, one could choose a different course of action and thereby alter one's fate. Both men shared the idea that fate was not entirely inevitable, and by working with planetary influences, one could change the outcome of a situation for the better. However, the exact means by which one could alter the future differed between the two. For Ficino, astrology was very participatory in nature. To obtain the maximum benefit from astrological influences, one needed to participate in actions with the cosmos. For example, Ficino recounted

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<sup>7</sup> Nicholas Campion, *History of Western Astrology, Volume 2: The Medieval and Modern Worlds* (London: Continuum Books, 2009), p. 141.

<sup>8</sup> Johannes Kepler, *On the More Certain Fundamentals of Astrology*, (Prague: 1601), trans. by Mary Ann Rossi with notes by J. Bruce Brackenridge, *Proceedings of the American Philosophical Society* 123(2) (1979), Thesis71, p. 104.

how the Pythagoreans brought balance to their perhaps excessively Saturnine natures by singing Jovial songs and by wearing white clothing.<sup>9</sup> Additionally, he notes that the celestial properties one is desiring to attract can be infused into the material world by the use of 'lures.'<sup>10</sup> By enacting the proper rituals, the heavenly influences can be brought in for human use. Such participatory astrology, Voss argues, 'opened a new dimension for astrology in the light of the autonomy and divinity of the human soul' and allowed the individual to gain insight from the celestial influences and thereby improve themselves.<sup>11</sup> Such self-improvement is a key feature of Ficino's astrological ideas. For him, the point of working with planetary influences is to work in concert with the heavenly realm in order to make one's life run more smoothly.

In his emphasis of appropriate action in response to astrological conditions, Ficino espoused a somewhat different perception of planetary influences commonly considered to be detrimental. In his understanding, a particular planet's influence could be beneficial or harmful to a given person, based upon that person's choices in life. If a person were to make lifestyle and career choices which harmonized with the planetary influences they were born with, a planet's influence upon that person may be benign, yet if that person attempted to live in a manner incongruent with his or her blueprint, the planet may make its more negative side known. For example, Ficino notes that Saturn is beneficial to those who are leading a scholarly life, but that it is 'most hostile of all, however, to people professing the contemplative life and not practicing it.'<sup>12</sup> Simply, Saturn does not look favorably upon hypocrites. However, if one born under the influence of Saturn truly embraces the 'life sequestered and divine,' Saturn will actually be a pleasant, supportive influence.<sup>13</sup> Voss notes this shift in interpretation of typically malevolent influences and observes that to Ficino, 'the experience of Saturn would depend upon the corresponding level

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<sup>9</sup> Marsilio Ficino, *On Obtaining Life from the Heavens*, trans by Angela Voss, in Marsilio Ficino, Western Esoteric Masters Series (Berkeley, CA: North Atlantic Books, 2006), Chapter 2, p. 119.

<sup>10</sup> Ficino, *On Obtaining Life from the Heavens*, Chapter 26, p.174.

<sup>11</sup> Angela Voss, *Introduction to Marsilio Ficino*, edited by Angela Voss, Western Esoteric Masters Series (Berkeley, CA: North Atlantic Books, 2006), p. 29.

<sup>12</sup> Ficino, *On Obtaining Life from the Heavens*, Chapter 22, p. 160.

<sup>13</sup> Ficino, *On Obtaining Life from the Heavens*, Chapter 22, p. 159.



of the individual's identification with matter.'<sup>14</sup> So if one leads a more contemplative and less mundane sort of life, one will no longer be encountering the unpleasant effects of Saturn. Thus to Ficino, the secret to living a good life is to live in a manner compatible with one's predominant planetary influences.

Like Ficino, Kepler advocated a thorough understanding of celestial influences affecting humanity, as this could be useful in altering the course of events. Though Kepler did not share Ficino's enthusiasm for engaging in rituals to bring down the proper planetary influences, he was just as convinced that action in response to knowledge of astrological factors was essential to create the best possible outcome. He asserts, 'Astrology clearly has some say in political and military matters,' since there is 'agreement of human dispositions with celestial configurations.'<sup>15</sup> In other words, there is a correlation between what is going on up in the heavens and how people are behaving on earth, so it would be wise for governments to be aware so they can respond accordingly. Regarding the management of the state in the event of astrological influences which could aggravate civil unrest, Kepler advises, 'let the causes exasperating people's dispositions be taken quickly away, or by the introduction of some new deterrent, let their minds be changed.'<sup>16</sup> So for Kepler, a most useful way to respond to planetary influences was to consider ways in which they might endanger the stability of the government, and then create social policies which could keep such instability in check. As Campion summarizes, 'Kepler advocated a mixture of social reform and tough government to ward off revolution, and strong generalship to win wars.'<sup>17</sup> Though the planets may predispose particular earthly consequences, their influence was not inevitable, as action could be taken to counteract potential problems.

Unlike Ficino, Kepler did not appear to be as concerned with revising astrological meanings of the heavenly bodies, and his analysis of the astrological properties of planets did not show significant change from those of earlier astrologers, such as Claudius Ptolemy, whose *Tetrabiblos*, dating from the second century CE, remained the definitive influence upon astrologers.<sup>18</sup>

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<sup>14</sup> Voss, *The Astrology of Marsilio Ficino: Divination or Science*, p. 40.

<sup>15</sup> Kepler, *On the More Certain Fundamentals of Astrology*, Thesis 68, p. 103.

<sup>16</sup> Kepler, *Thesis 71*, p. 104.

<sup>17</sup> Campion, *History of Western Astrology*, Volume 2, p. 141.

<sup>18</sup> Ptolemy, Claudius, *Tetrabiblos*, trans. F.E. Robbins (Cambridge MA: Harvard University Press, 1940).

What had changed though, was the model of the universe he was using. By breaking with the geocentric model of the universe and advocating a heliocentric one, Kepler was in need of new explanations of planetary influences. As Bruce Brackenridge recounts, 'Previously the powers arose from the juxtaposition of the planet to the sun and the moon; now, with Kepler's adoption of the Copernican system, these juxtapositions have changed . . . The powers are derived instead from a consideration of the optical properties of each planet.'<sup>19</sup> In addition to the mechanism of celestial influence transmitted from the heavenly bodies to the earth via light, which Kepler terms 'physical causes,' Kepler states that there are also 'geometric causes' of astrological influences, which have to do with the geometry created between planets as they move. The geometric cause which Kepler devotes most attention to in *On the More Certain Fundamentals* is aspects. As Kepler explains, this cause, 'takes into account the rays of pairs of stars as they meet on earth and form a geometric angle.'<sup>20</sup> Though some of these geometric angles were already in use in astrology, Kepler added three additional aspects (the quintile of 72°, the biquintile of 36°, and the sesquiquadrature of 135°) and considered aspects to be of central importance in his astrological revisions.<sup>21</sup> In large part, Kepler's reforms were focused upon creating an astrology focused upon geometry and measurements that would make sense in light of the new heliocentric perspective.

Ficino and Kepler alike dealt with the issue of the relationship between God, free will, and planetary influences. In *The Book of the Sun*, Ficino comments upon the likeness between the heavenly bodies and the divine. He proclaims, 'the invisible things of God, that is to say, the angelic spirits, can be most powerfully seen by the intellect through the stars, and indeed even eternal things - the virtue and divinity of God - can be seen through the Sun.'<sup>22</sup> According to Ficino, by studying God's creation, humans have a window into the mind of God himself. Similarly, Kepler felt that in doing his work, he was

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<sup>19</sup> Bruce Brackenridge, *Foreword* to 'On the More Certain Fundamentals of Astrology', by Johannes Kepler, (Prague: 1601), trans. by Mary Ann Rossi with notes by J. Bruce Brackenridge, *Proceedings of the American Philosophical Society* 123(2) (1979), p. 88.

<sup>20</sup> Kepler, *On the More Certain Fundamentals of Astrology*, Thesis 36, p. 96-97.

<sup>21</sup> Kepler, *Thesis* 38, p. 97.

<sup>22</sup> Marsilio Ficino, *The Book of the Sun*, trans by Angela Voss, in Marsilio Ficino, *Western Esoteric Masters Series* (Berkeley, CA: North Atlantic Books, 2006), Chapter 3, p. 192.

uncovering the secrets of God's creation. Regarding understanding the cosmos, Campion observes Kepler's belief that 'To explain its operation was therefore to understand God's working in the world.'<sup>23</sup> Thus to study astrology was to better understand the creator. Though the planets and their ability to influence humans came about through God's creation, individuals' destinies were not fixed, both Ficino and Kepler agreed, and humans, especially when in possession of astrological knowledge, could alter their future. Throughout *On Obtaining Life from the Heavens*, Ficino describes the manner in which outcomes may be altered via proper action in response to celestial influences. Likewise, Kepler saw a cosmos created by God in such a way that the planets certainly affected humans, yet their power was not complete, everything was not predestined, and through free will, humans could respond to these influences. Thus both Ficino and Kepler maintained an astrology which enabled the coexistence of a monotheistic creator, celestial influences, and free will.

This paper compared and contrasted the astrological reform attempts of Marsilio Ficino and Johannes Kepler. Both sought to enact astrological reforms which would improve human lives. Ficino was focused upon the ways in which astrology could be utilized, as part of appropriate rituals, to effect healing, while Kepler was more concerned about using astrology to help rulers maintain peace and prevent conflict. By practicing an improved form of astrology, the lives of humans could be improved as well. For Ficino, this meant revitalizing and adapting practices derived from ancient sources, such as Pythagoras, Plato, and Neo-Platonists and by adopting lifestyle choices which harmonized with one's chief astrological influences. To Kepler, the surest way to improve astrology was, as he described, to 'throw away the nonsense and keep the hard kernel.'<sup>24</sup> That is, to focus upon aspects and other geometrical facets of astrology, and to cease the study of things such as houses and zodiac signs. Both men shared a deep reverence for the Creator, whose grand plans could be glimpsed at more fully through their astrological reforms. In their ideas, evidence of both continuity with tradition and innovation can be seen. Though their astrological ideas have not garnered as much attention in the modern world as some of their other contributions, their views on the impact of the heavens in everyday life was an essential part of their worldview, and as

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<sup>23</sup> Campion, *History of Western Astrology, Volume 2*, p. 136.

<sup>24</sup> Kepler to Maestlin, 15 March 1598, letter 89, 1. 177, KGW 13, p. 184, cited in J.V. Field, *Kepler's Geometrical Cosmology* (Chicago: University of Chicago Press, 1988), p. 127.

such, need to be examined along with their more mundane ideas. As Curry advocates, 'Astrology too is . . . a way of being in the world. It is not a flawed or failed version of something else, but fully itself to the same extent . . . as being a historian, or scientist, or anything else: fully, in a word, human.'<sup>25</sup> By studying Ficino and Kepler's thoughts on astrology, deeper insight can be obtained into their thinking on a subject which permeates all aspects of their work.

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<sup>25</sup> Patrick Curry, 'The History of Astrology: a Diagnosis and a Prescription', in *Horoscopes and History*, ed. by K.von Stuckrad, G. Oestmann, and D. Rutkin (Berlin and New York: Walter de Gruyter, 2005) 261-274.

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# The Greek contribution to astrology in the twentieth and twenty-first centuries

by Alina Apostol

By contrasting three modern astrological primary sources, this paper explores the ways in which Greek classical cosmologies or practices have contributed to contemporary astrology. The three researched sources are Alan Oken's 'Esoteric Astrology and the Houses of the Natal Chart', *The Twelve Houses: An Introduction to the Houses in Astrological Interpretation* by Howard Sasportas and *Temples of the Sky*, by Deborah Houlding. This research is anchored in the astrological reform of the last century and the choice of the modern texts reflects on the main themes of this reform – the esoteric approach, the psychological and the traditional revival. Further, the paper explores the Greek astrological worldview and the fundamentals of Platonic, Aristotelian and Stoic cosmology with the purpose of contextualising the three modern texts in relation to philosophical sources. It has been found that common themes, such as the interconnected cosmos, negotiating fate through self-awareness and Aristotelian teleology are evidence of the Greek contribution to the contemporary psychological and esoteric astrology. Although the traditional pathway shows remarkable differences in form and approach, the paper offers evidence of transmission of the Aristotelian sympathetic cosmology and Stoic's views on fate.

It is general agreed amongst scholars that a revival and transformation characterised astrology in the twentieth century.<sup>1</sup> Nicholas Campion quotes Geoffrey Dean and Arthur Mather, who, in their critical review of twentieth-century astrology, argued for 'a renaissance of interest in astrology'.<sup>2</sup> Further,

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<sup>1</sup> James R. Lewis, 'Approaches to the Study of the New Age Movement' in *Perspective on the New Age* (New York: State University of New York Press, 1992), ed. by James R. Lewis and J. Gordon Melton, p.4; 'Objections to Astrology: A Statement by 186 Leading Scientists' in *Philosophy of Science and the Occult*, 2<sup>nd</sup> edition (New York: State University of New York Press, 1990) ed. by Patrick Grim, p.18; Nicholas Campion, *Astrology and Popular Religion in the Modern West: Prophecy, Cosmology and the New Age Movement* (London/New York: Routledge, 2016), p.82.

<sup>2</sup> Nicholas Campion, *Prophecy, Cosmology And The New Age Movement: The Extent And Nature Of Contemporary Belief In Astrology* (PhD thesis, Bath Spa University, 2004), p.108.

Campion, writing from the historian viewpoint, argues that the rediscovery of astrology in the twentieth-century western world is one of the principal phenomena in popular culture.<sup>3</sup>

Acknowledging the transformations within astrology that occurred in the twentieth century, this paper will explore the ways in which Greek classical cosmologies or practices have contributed to contemporary astrology. The essay will review three primary contemporary astrological texts, examining the attitudes of the astrologers and their techniques. The choice of these primary sources reflects three of the main astrological approaches of the last century, as argued by Patrick Curry: the esoteric, exemplified by Alan Oken's text 'Esoteric Astrology and the Houses of the Natal Chart', published online on the author's website; the psychological approach of Howard Sasportas in *The Twelve Houses: An Introduction to the Houses in Astrological Interpretation*, second edition published by Flare Publications in 2007; and the traditional discourse of Deborah Houlding in *The Houses: Temples of the Sky*, published in 2006 by The Wessex Astrologer Ltd.<sup>4</sup> This paper will first cover themes in twentieth-century Western astrology, move onto the astrological worldview and finally review primary contemporary texts.

### Themes in Twentieth-century Western Astrology

There is a wide range of meanings attributed to astrology, which according to astrologer Dennis Elwell, is 'big enough to accommodate many complementary, and even contradictory opinions'.<sup>5</sup> Campion further supports this view when writing that 'there may, in fact, be no one such single thing as

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<sup>3</sup> Nicholas Campion, 'Astrology in Babylonia', in *Encyclopaedia of the History of Science, Technology, and Medicine in Non-Western Cultures* (Springer Netherlands, 2008), 248-262 (p.248).

<sup>4</sup> Roy Willis and Patrick Curry, *Astrology, Science and Culture: Pulling Down The Moon* (Oxford/New York: Berg, 2004), pp. 65-75; Alan Oken, *Esoteric Astrology and the Houses of the Natal Chart*, <<http://www.alanoken.com/index.php?page=esoteric-astrology-and-the-houses-of-the-natal-chart>> [23<sup>rd</sup> June 2016]; Howard Sasportas, *The Twelve Houses: Exploring the Houses of the Horoscope* (London: Flare Publications, 2007 [1985]), kindle edition; Deborah Houlding, *The Houses – Temples of the Sky* (Bournemouth, UK: The Wessex Astrologer Ltd, 2006).

<sup>5</sup> Dennis Ellwell, 'Astrology: An Alternative Reality', *The Astrological Journal*, XXVIII.4 (1986), 143-149 (p.143).



astrology but rather different astrologies'.<sup>6</sup> This variety is visible in the astrological reform of the last century, which enabled the emergence of three main astrological pathways: the esoteric, the psychological and the traditional revival. The essential understanding of astrology, which has been defined by Patrick Curry as 'the practice of relating the heavenly bodies to life and events on earth and the tradition that has thus been generated', appears not to have been altered by the existence of different themes in astrological theory and practice.<sup>7</sup>

In his extensive exploration of the history of astrology, Campion attributes the twentieth-century revival of astrology to two theosophical astrologers, Alan Leo (1860-1917) and Dane Rudhyar (1895-1985).<sup>8</sup> Through Leo's involvement with the Theosophical Society in England and Rudhyar's engagement with Alice Bailey's Arcane School in America, the transmission of esoteric and New Age ideology was facilitated, leading to reform in astrology. Campion names Leo 'the seminal figure in the incorporation of New Age ideology into astrology', while Rudhyar is called 'the second most important astrologer in the twentieth-century English-speaking world after Leo'.<sup>9</sup>

Leo's aim was to reform the application of astrology, moving the focus from what he called 'exoteric', an astrology that was more fatalistic and concerned with the prediction of outward reality, to 'esoteric astrology' that pointed towards the immortal soul's actions and latent possibilities.<sup>10</sup> For Leo, 'character is destiny', and the horoscope can facilitate personal development and spiritual growth.<sup>11</sup> 'Character' for Leo meant more than personality or psychological dispositions; 'character' was described as 'spirit' or 'will'; character belonged to the soul.<sup>12</sup> In Leo's words, 'Character plays the most prominent and important part in making of Destiny'.<sup>13</sup> One's destiny was to outgrow the innate weak attributes of their inner character and free oneself

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<sup>6</sup> Campion, *Prophecy, Cosmology And The New Age Movement*, p. 21.

<sup>7</sup> Patrick Curry, 'Astrology', in *The Encyclopaedia of Historians and Historical Writing*, Volume I (London: Fitzroy Dearborn, 1999), ed. by Kelly Boyd, p. 55.

<sup>8</sup> Campion, *Prophecy, Cosmology And The New Age Movement*, chapter 6.

<sup>9</sup> Campion, *Prophecy, Cosmology And The New Age Movement*, p.111.

<sup>10</sup> Alan Leo, *Esoteric Astrology: A Study in Human Nature* (London: Modern Astrology, 1925 [1913]), p. xiii.

<sup>11</sup> Alan Leo, *Astrology for All* (New York: Cosimo Classics, 2006 [1910]), p.185.

<sup>12</sup> Leo, *Esoteric Astrology*, p. 109.

<sup>13</sup> Alan Leo, *The Progressed Horoscope* (New York: Cosimo Classics, 2005 [1905]), p.4

from the fated predispositions which were seen in the horoscope.<sup>14</sup> In Leo's view, soul was fated, and one's current life was an expression of the past lives.<sup>15</sup> While 'spirit' is free, the individual soul is imprisoned in the matter, which is fated.<sup>16</sup> He writes: 'The soul brings its various faculties with it when it is born...because character determines fate...the type of body decides what the man's career will be, his good and evil fortune, his success and failures'.<sup>17</sup> Although Leo considered the soul and matter, or body bound together, through the right use of the horoscope, one was able to rise above one's fate and allow the soul to purify itself in its ultimate goal of unifying with the divine.<sup>18</sup>

While Leo's astrology focused on the soul, karma and reincarnation, Rudhyar developed a psychological astrology, integrating the esoteric principles with Jungian depth psychology. Rudhyar's astrological development encompasses his concept of 'Humanistic Astrology', an attempt to transform traditional astrology into 'a living and practical philosophy of psychological fulfilment and integration'.<sup>19</sup> Influenced by Aristotle (384-322 BCE) teleology, or the final cause – 'in the sense of end or "that for the sake of which" a thing is done', Rudhyar believed in innate potentials that are contained in seed form at birth, just as the acorn contains within it the possibility of the fully-grown oak.<sup>20</sup> Thus, he understood the birth chart as a map or blueprint of human potential. In a similar vein to Leo, Rudhyar's astrological focus was on revealing meaning and achieving well-being, rather than predicting events. When discussing the reform of astrology within the cultural and historical context of the twentieth-century, Campion argues that these new forms of astrological theory and practice were shaped by the New Age ideology, as they emphasised the existence of the divine within the individual and the value of personal transformation.<sup>21</sup>

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<sup>14</sup> Leo, *The Progressed Horoscope*, pp.4-7.

<sup>15</sup> Leo, *The Progressed Horoscope*, p.xiv.

<sup>16</sup> Leo, *The Progressed Horoscope*, p.11.

<sup>17</sup> Leo, *Esoteric Astrology*, p. 109.

<sup>18</sup> Leo, *The Progressed Horoscope*, p.350.

<sup>19</sup> Dane Rudhyar, *The Astrology of Personality* (New York: Lucis Publishing Company, 1936), p.6.

<sup>20</sup> Dane Rudhyar, *The Astrology of Transformation* (Illinois: Quest Books, 1980), p.40 and Aristotle, *Physics*, trans. by R. P. Hardie and R. K. Gaye, Book II, Part 3, <<http://classics.mit.edu/Aristotle/physics.2.ii.html>> [accessed 15<sup>th</sup> June 2016].

<sup>21</sup> Campion, *Prophecy, Cosmology And The New Age Movement*, p.130.

Alongside these esoteric and psychological approaches, another reform took place around 1980. Campion states that this reform emerged as a reaction against the dominance of post-New Age psychological astrology.<sup>22</sup> Campion named this the 'traditional revival' to denote the resurrection of medieval and classical astrology.<sup>23</sup> Significant names that influenced this development are Olivia Barclay (1919-2001) in the UK who restored William Lilly's (1602-1681) horary astrology, and Robert Hand, Robert Schmidt, and Robert Zoller in the USA, who initiated Project Hindsight with the aim to translate into English the entire corpus of writings in the western astrological tradition, surviving mainly in Greek, Arabic, and Latin.<sup>24</sup> Thus, as Campion has stated, the western astrology of the twentieth century was enriched with technical accuracy and/or philosophical depth, traits perceived as absent by critics of psychological and esoteric astrology.<sup>25</sup> This return to traditional astrological texts and the study of the primary sources could be seen as a historical project, an endeavour of collecting ancient astrological data; this echoes Richard Evans statement that 'objective historical knowledge is both desirable and attainable'.<sup>26</sup> Thus, during the twentieth-century astrology was characterised by three main strands: esoteric, preoccupied with soul's spiritual journey towards evolution; psychological, oriented towards personality's growth and self-actualisation; and traditional, a practice that draws on medieval and classical methods.

### The Greek Astrological Worldview

The diverse astrological discourses emerge from the cosmology or worldview that, as Campion states, presupposes a significant relationship

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<sup>22</sup> Campion, *Prophecy, Cosmology And The New Age Movement*, p. 129.

<sup>23</sup> Nicholas Campion, 'The Traditional Revival in Modern Astrology: A Preliminary History', <<https://theafi.files.wordpress.com/2011/01/nick-campion-the-traditional-revival1.pdf>> [accessed 19<sup>th</sup> June 2016].

<sup>24</sup> Campion, 'The Traditional Revival in Modern Astrology', p.4 and 'Welcome to Project Hindsight' <<http://www.projecthindsight.com/index1.html>> [accessed 20<sup>th</sup> June 2016].

<sup>25</sup> Campion, 'The Traditional Revival in Modern Astrology', p.5.

<sup>26</sup> Richard J. Evans, *In Defense of History* (New York/London: W.W. Norton & Company, 2000 [1997]), p. 220.

between celestial objects and life on earth.<sup>27</sup> Referring to historical evidence, the foundation of a complex, codified astrology is dated to the last two centuries BCE, during the period of Greek rule in Egypt; it draws on Mesopotamian astral divination, Egyptian religion, and Greek philosophy.<sup>28</sup> This connection between the heavens and earth has been developed into two main doctrines: the naturalistic doctrine based on the Aristotelian physics of celestial influences; and the theory of correspondences, based on the Mesopotamian omens revealed in celestial patterns.<sup>29</sup> Moreover, the underpinning cosmology that favoured the emergence of a systemised astrology in the Greek-speaking world considers a mathematically ordered cosmos, in which all things are interrelated.<sup>30</sup> This worldview has been proposed by the main classical Greek philosophies belonging to Plato (429 - 347 BCE), Aristotle and Zeno of Citium (334-262 BCE), founder of the Stoic school.

These streams of thought posited that the cosmos is alive, meaningful and interconnected.<sup>31</sup> Diogenes Laertius wrote that the cosmos, in Stoics' philosophy 'has no empty space within it; it is one united whole'.<sup>32</sup> Thus, everything is bound together by sympathy and tension. The Stoic theory of sympathy states that all parts of cosmos are interlinked and everything in the universe emits some physical influence on everything else. In Diogenes's words, 'for this is necessitated by the sympathy and common tension of heavenly things in relation to earthly things'.<sup>33</sup> For Plato, the human soul

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<sup>27</sup> Nicholas Campion, *Astrology and Cosmology in the World's Religions* (New York/London: New York University Press, 2012), p.1.

<sup>28</sup> Nicholas Campion, *A History of Western Astrology, Volume I The Ancient World* (London: Bloomsbury Academic, 2013), p.36.

<sup>29</sup> Campion, *A History of Western Astrology, Volume I*, pp. 206 – 219; Willis and Curry, *Astrology, Science and Culture: Pulling Down The Moon*, p. 49.

<sup>30</sup> Nicholas Campion, *A History of Western Astrology, Volume II* (London: Continuum, 2009), pp. xiv – xvi.

<sup>31</sup> Nicholas Campion, 'Astronomy and Psyche in the Classical World: Plato, Aristotle, Zeno, Ptolemy', *Journal of Cosmology*, 2010. 9, 2179-2186 (p.2179).

<sup>32</sup> Diogenes Laertius, *Lives of Eminent Philosophers*, trans.by R.D. Hicks (Cambridge, MA: Harvard University Press, 2005 [1925]), 7.140-143

<<http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.01.0258%3ABook%3D7%3Achapter%3D1>> [accessed 24<sup>th</sup> June 2016].

<sup>33</sup> Diogenes Laertius, *Lives of Eminent Philosophers*, Book II, 140.

originated in the stars and the soul of the universe had priority over matter.<sup>34</sup> Champion argues that the Platonic universe was psychological; it was permeated with psyche and was driven by manners, habits, pleasures, pains and fears.<sup>35</sup> In contrast, in Aristotle's universe soul belongs to matter, it loses its transcendent quality. In *De Anima*, he wrote that 'soul is substance' in the sense of being the form of a natural body.<sup>36</sup> Therefore, the soul animated the body, and it is the 'cause' of life within a body. Similar to Plato, he believed that the stars and planets were alive and determined movement on the sub-lunar world.<sup>37</sup> Aristotle's physics is explained by the motion of the heavens and their effect on humans - the reflection of the qualities of hot, cold, wet and dry. He wrote: 'For a man is disposed in one way or another with reference to these [dispositions], but quickly changes, becoming cold instead of warm, ill instead of well'.<sup>38</sup> Aristotle's formal cause, which shows the essential nature of a thing and the final cause, understood as the 'end' or the purpose of the object are important legacies for astrology.<sup>39</sup> These two causes applied to astrology, signify, as argued by Champion that the specific configuration of planets under which one is born represents both what one is and what one might become.<sup>40</sup>

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<sup>34</sup> Plato, 'Timaeus' in *Plato in Twelve Volumes*, Vol. 9, trans. by W.R.M. Lamb (Cambridge, MA: Harvard University Press; London: William Heinemann Ltd, 1925), 30b/34b/34c and 41d.

<http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.01.0180%3Atext%3DTim.%3Asection%3D41d> [accessed 24<sup>th</sup> June 2016].

<sup>35</sup> Champion, 'Astronomy and Psyche in the Classical World', p.2179 and Plato 'Symposium' in *Plato in Twelve Volumes*, Vol. 9, trans. by W.R.M. Lamb (Cambridge, MA: Harvard University Press; London: William Heinemann Ltd, 1925), 207E, <<http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.01.0174%3Atext%3DSym.%3Asection%3D207e>> [accessed 24<sup>th</sup> June 2016].

<sup>36</sup> Aristotle *On the Soul*, trans. by J. A. Smith, book II, part I, <<http://classics.mit.edu/Aristotle/soul.2.ii.html>> [accessed 24<sup>th</sup> June 2016].

<sup>37</sup> Aristotle, *Meteorology*, trans. by E. W. Webster, book I, part I <<http://classics.mit.edu/Aristotle/meteorology.1.i.html>> [accessed 25<sup>th</sup> June 2016].

<sup>38</sup> Aristotle, *Categories*, trans. by E. M. Edghill, section II, part 8, <<http://classics.mit.edu/Aristotle/categories.2.2.html>> [accessed 25<sup>th</sup> June 2016].

<sup>39</sup> Aristotle, *Metaphysics*, trans. by William David Ross, Book X Part 7, <<http://classics.mit.edu/Aristotle/metaphysics.12.xii.html>> [accessed 25 June 2016].

<sup>40</sup> Champion, *Astrology and Cosmology in the World's Religions*, p. 156.

The practical application of these ancient philosophies was put forward by Claudius Ptolemy (90-168 AD) in the *Tetrabiblos*, which Campion refers to as 'one of the core texts of medieval and Renaissance astrology'.<sup>41</sup> Adopting the sympathetic cosmology, Ptolemy wrote, in a naturalistic manner, about the physical and psychological effects of the stars and thus, he facilitated the transmission of the celestial correspondences doctrine, as well as the idea of the interconnected cosmos into the practice of astrology.<sup>42</sup> Further, Ptolemy's work was transmitted to the Islamic World and from there many of the Arabic astrological works were translated into Latin and found their way into Christian Europe, continuing to model the astrological worldview.<sup>43</sup>

### Howard Sasportas - The psychological perspective

In the Foreword to the 2007 edition of *The Twelve Houses*, Liz Greene defines Sasportas' astrology as 'rooted in the sub-soil of a profound understanding of astrological symbolism, conjoined with a penetrating insight into human nature'.<sup>44</sup> In his astrological description of the houses, which the Greeks called 'places' or 'spheres of life', he emphasises that these should not be seen as separate and isolated, but rather as an unfolding process of life itself.<sup>45</sup> 'Wholeness', Sasportas writes, 'is everything'.<sup>46</sup> Thus, it could be argued that Sasportas' philosophy was mainly Platonic, concerned with wholeness and connection. Moreover, in many instances throughout the book, Sasportas mentions Aristotle and his final cause. From his introduction: 'a rosebud opens

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<sup>41</sup> Campion, *A History of Western Astrology, Volume I The Ancient World*, p. 208 and Claudius Ptolemy, *Ptolemy's Tetrabiblos*, trans. by J.M. Ashmand (1822) <<http://www.sacred-texts.com/astro/ptb/>> [accessed 26<sup>th</sup> June 2016]

<sup>42</sup> Ptolemy, *Ptolemy's Tetrabiblos* and Mark Riley, 'Science and Tradition in the "Tetrabiblos"', *Proceedings of the American Philosophical Society*, 132.1 (1988), pp.67-84.

<sup>43</sup> Burnett, Charles and Andrew Mendelsohn, 'Aristotle and Averroes on Method in the Middle Ages and Renaissance: The "Oxford Gloss" to the Physics and Pietro D'afeltro's Expositio Proemii Averrois' in *Method and Order in Renaissance Philosophy of Nature*, ed. by D.A. Di Liscia, E. Kessler and C. Methuen (Aldershot: Aldershot, 1997), pp. 53-111.

<sup>44</sup> Liz Greene, 'Foreword To The 2007 Edition' in Howard Sasportas, *The Twelve Houses*, kindle edition.

<sup>45</sup> Dorian Gieseler Greenbaum, *The Daimon in Hellenistic Astrology: Origins and Influence* (Leiden: Brill, 2015), p.400 and Sasportas, *The Twelve Houses*, kindle edition.

<sup>46</sup> Sasportas, *The Twelve Houses*, kindle edition.

into a rose, an acorn grows into an oak, and a caterpillar emerges as a butterfly from its cocoon'.<sup>47</sup> This appears to be the rationale for Sasportas' view of astrology as the evolution and completion of an innate potential. His ideas are permeated by the Platonic inner divine and are dependent not on outside influences, but on an inward need for self-actualisation. He writes that 'our being is not only given to us, but demanded of us, and it is up to us to make of ourselves what we are meant to become'.<sup>48</sup>

Fate is another main theme in Sasportas' work. Fate can be understood, according to Bernadette Brady as 'a semi-compelling or a compelling force in someone's life which has intent or purpose'.<sup>49</sup> When talking about fate, Sasportas follows another Platonic and Stoic argument - that individual fate can be changed through the use of reason. While the form of language differs from the ancient philosophers to Sasportas, it could be argued that the meaning is similar. Thus, in psychological terms, Sasportas notes that 'awareness brings change', and he illustrates this statement with a chart showing Pluto in the seventh house, writing that once the person becomes 'consciously aware' of the meaning of Pluto in that particular place, alternatives become available.<sup>50</sup> Similarly, Plato argued that by learning the revolutions and harmonies of the heaven, man could adjust and transform the troubles of his soul.<sup>51</sup> When writing about the Ascendant (the degree rising on the eastern horizon at the time of birth), Sasportas uses the Platonic term 'becoming' to describe the process of growth or the journey through life.<sup>52</sup> The Platonic doctrine of Being and Becoming describes the higher realm as unchanging and eternal while the lower realm contains 'that which is always becoming' passing into existence and changing.<sup>53</sup> This doctrine is reflected in Plato's words, 'What is that which is Existent always and has no Becoming? And what is that which is Becoming always and never is Existent?'.<sup>54</sup> Therefore, it can be argued that Sasportas' writing echoes the main Greek classical strands of thought, such as the

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<sup>47</sup> Sasportas, *The Twelve Houses*, kindle edition.

<sup>48</sup> Sasportas, *The Twelve Houses*, kindle edition.

<sup>49</sup> Bernadette Brady, *Theories of Fate among Present-day Astrologers* (unpublished PhD dissertation, University of Wales Trinity Saint David, 2011), p.9.

<sup>50</sup> Sasportas, *The Twelve Houses*, kindle edition.

<sup>51</sup> Plato, *Timaeus*, 90d.

<sup>52</sup> Sasportas, *The Twelve Houses*, kindle edition.

<sup>53</sup> Plato, *Timaeus*, 27-28b.

<sup>54</sup> Plato, *Timaeus*, 27-28b.

interconnected and whole cosmos and the Platonic idea of time, with the particular distinction between Being and Becoming, the Aristotelian teleology and the classical Greek view of negotiating fate through reason.

### Alan Oken and esoteric astrology

Following the main astrological perspectives of the twentieth-century, this essay will continue with the review of Alan Oken's text: 'Esoteric Astrology and the Houses of the Natal Chart'. Oken draws on the esoteric ideology proposed by Helena Blavatsky (1831-1891) and later developed by Alan Leo. While Sasportas rarely mentions the word 'soul' in his writing and instead focuses on terms like 'psyche' and 'psychological', Oken's shorter text on the houses includes the word 'soul' sixty-seventh times.<sup>55</sup> Throughout the narrative, Oken uses esoteric language, visible in words like 'rays', 'consciousness', 'soul-centered', 'aura', 'karma', 'chakras', but there are also themes that allude to the ancient Greek cosmologies.<sup>56</sup> Plato stated that soul was composed of a rational part which manifested through reason but also contained parts of the soul enslaved by desire; similarly, soul in Oken's view is structured on the lower and the higher selves. These selves 'meet, blend, and sometimes conflict in the present incarnation'.<sup>57</sup> Moreover, in opposition to the Aristotelian view that soul is substance, for Oken, who again echoes Plato; the body is an extension of the soul. This view is exemplified in the way he delineates the first house as the body of the soul, in contrast with the traditional definition as the house of the physical body.<sup>58</sup> According to Plato, the soul had a reflective and contemplative quality, and through the gift of reason could fight the vices.<sup>59</sup> Conversely, Oken argues for the development of consciousness as a way to balance the inner reactions with the outward demands.

In a similar vein to Sasportas, when discussing the sixth house, Oken touches upon the topic of wholeness. He further refers to the 'Anima Mundi', the Soul of the World that contains all animate and inanimate parts of the

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<sup>55</sup> Oken, 'Esoteric Astrology and the Houses of the Natal Chart'.

<sup>56</sup> Oken, 'Esoteric Astrology and the Houses of the Natal Chart'.

<sup>57</sup> Plato, *Phaedrus*, trans. by Benjamin Jowett, Project Gutenberg,

<<http://www.gutenberg.org/files/1636/1636-h/1636-h.htm>> [accessed 27 June 2016] and

Oken, 'Esoteric Astrology and the Houses of the Natal Chart'.

<sup>58</sup> Oken, 'Esoteric Astrology and the Houses of the Natal Chart'.

<sup>59</sup> Plato, *Phaedrus*.



world.<sup>60</sup> Oken thus mirrors the Platonic idea of the infusion of the soul throughout the universe, as well as the Stoic interconnectedness. As Campion argued, in the Platonic philosophy, and to a lesser extent in Aristotelian theory, soul was an integral part of the nature and function of the cosmos.<sup>61</sup> Thus, reviewing his text on astrological houses and his esoteric approach towards astrology, it can be argued that Oken echoes classical Platonic themes. As Campion stated, these themes were part of the theosophical ideas that permeated astrology at the beginning of the twentieth century.<sup>62</sup>

### Deborah Houlding, the revival of traditional techniques

Alongside the astrology focused on soul and personality that have dominated astrological theory and practice during the last century, there is an active interest in the revival of 'traditional' astrology. Astrologer Demetra George touches upon the problem of translations and misinterpretations of ancient astrological texts.<sup>63</sup> These discrepancies in translation, a problem Richard Evans pointed to while asking 'how do we know which translation is "correct"?' were being avoided by the twentieth century traditional astrologers through contact with Greek, Hellenistic, and Arabic primary sources.<sup>64</sup> Deborah Houlding, the founder of the School of Traditional Astrology, is one of the astrologers that aimed to bring traditional techniques back to the forefront of contemporary practice, and she wrote a historiography on astrological houses, *The Houses: Temples of the Sky*.<sup>65</sup>

In his foreword to this work, Robert Hand highlights the importance of history and traditional knowledge, stating: 'With this book, I believe that there is no excuse for ignoring the history of the tradition'.<sup>66</sup> In contrast with Sasportas' and Oken's interpretation, Houlding focuses on analysing the

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<sup>60</sup> Oken, 'Esoteric Astrology and the Houses of the Natal Chart'.

<sup>61</sup> Nicholas Campion, 'Was There A Ptolemaic Revolution in Ancient Egyptian Astronomy? Souls, Stars & Cosmology', *Journal of Cosmology*, 13 (2011), 4174-4186 <<http://journalofcosmology.com/AncientAstronomy118.html>> [accessed 27 June 2016].

<sup>62</sup> Campion, *A History of Western Astrology, Volume II*, p. 230.

<sup>63</sup> Demetra George, 'A Golden Thread: The Transmission of Western Astrology Through Cultures' [http://www.demetra-george.com/Transmission\\_Western\\_Astrology.pdf](http://www.demetra-george.com/Transmission_Western_Astrology.pdf) [accessed 28 June 2016].

<sup>64</sup> Evans, *In Defence of History*, p.78.

<sup>65</sup> Houlding, *The Houses – Temples of the Sky*.

<sup>66</sup> Robert Hand, 'Foreword' in Houlding, *The Houses – Temples of the Sky*, p. 2.

techniques and the symbolism of the houses. Her main primary sources are Marcus Manilius with *Astronomica*, written around 10 AD, Firmicus Maternus (4 century AD), Al-Biruni (973-1048) and William Lilly (1602-1681). Her book is a clear synthesis of the traditional and medieval techniques on house interpretation, enriched with explanations on the principles of house division. She presents an in-depth analysis of traditional house rulerships (the planet that 'rules' a sign or a house), referring to classic features, such as planetary joys as the places where the planets 'rejoice' because the house offers a celestial environment that is appropriate to the natural influence of that planet.<sup>67</sup> Her approach to restoring the traditional meaning of houses is revealed by her conviction that 'the key to successful astrology' lies in 'a confident and unambiguous application of its symbolism'.<sup>68</sup>

In the chapters 'House Rulership in Practice', Houlding's writing style is very similar to Lilly's practical and rational list of astrological features, which has been influenced by the naturalistic and Aristotelian qualities of the planets, as well as by the Ptolemaic system of correspondences.<sup>69</sup> Thus, when discussing the fifth house, Houlding's writing style is very pragmatic, devoid of philosophical or mythological details: 'Main rulerships: children, pregnancy, sex of the unborn child. The health and condition of the children. If afflicted trouble and distress from the children'.<sup>70</sup> Lilly's text on the fifth house is similarly descriptive: 'By this house we judge of Children, of the state of a Woman with child [...]'.<sup>71</sup> Although Houlding's text is centred on historical research rather than creative suggestions, from the text that expresses her view on houses it could be argued that she echoes Stoic themes, such as acceptance of one's fate. Thus, Houlding writes: 'The 8th house remains the house of death, loss, and grief, no matter how pleasantly we wrap that up in digestible phrases such as 'personal-transformation'.<sup>72</sup> Moreover, she stresses the role of the astrologer, illustrating another Stoic feature – the idea of developing a proper mental state, or what the Stoic Epictetus (55 – 135 AD) called 'to deal rightly

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<sup>67</sup> Houlding, *The Houses – Temples of the Sky*, p. xxiv.

<sup>68</sup> Houlding, *The Houses – Temples of the Sky*, p. x.

<sup>69</sup> William Lilly, *Christian Astrology: Book One* (New York: Cosimo Classics, 2005 [1647]).

<sup>70</sup> Houlding, *The Houses – Temples of the Sky*, p. 71.

<sup>71</sup> Lilly, *Christian Astrology: Book One*, p.53.

<sup>72</sup> Houlding, *The Houses – Temples of the Sky*, p.21.

with our impressions'.<sup>73</sup> For Houlding, the astrologer's language should reflect both the positive and negative aspects of life in order to present its true nature; therefore she argues for the importance of a negative terminology in astrological symbolism.<sup>74</sup> Consequently, it can be asserted that Houlding's work on the astrological houses facilitates the transmission of classical Hellenistic astrological interpretations and that her cosmology echoes the Stoic determinism, as well as the naturalistic Ptolemaic approach, transmitted to her through the work of Lilly.

## Conclusion

The aim of this paper was to answer the question of whether there is any evidence for Greek contribution to the astrology of the twentieth and twenty-first centuries. The research involved reviewing three primary contemporary astrological texts that each reflects on the main themes visible in the present astrological framework – the esoteric approach, the psychological and the traditional revival. In light of the classical cosmologies of Plato, Aristotle and the Stoics that underpin the astrological worldview, this paper analysed the works of Howard Sasportas, Alan Oken and Deborah Houlding.

The analysis of both Sasportas' and Oken's texts shows a minimal discussion of astrological techniques. However, the evidence presented indicates that their astrological interpretation echoes the Greek classical cosmologies. Common themes presented are evidence of the Greek contribution to the contemporary psychological and esoteric astrology, such as the interconnected cosmos, negotiating fate through self-awareness - the equivalent for 'Reason' in classical language, and Aristotelian teleology with its message of the completion of the seed seen as innate potential.

In contrast, Houlding's book focuses mainly on classical techniques, such as rulerships and the analysis of astrological symbolism. This essay has argued that Houlding's text serves as a channel of transmission for the work of Manilius, Firmicus, and other medieval and Renaissance astrologers. The evidence suggests that Houlding's text is influenced, among the already mentioned classics by the Ptolemaic natural scientific framework and

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<sup>73</sup> Epictetus, *Discourses Books 1 and 2*, trans. by P.E.Matheson (New York: Dover Publications Inc, trans. 2004), p.4.

<sup>74</sup> Houlding, *The Houses – Temples of the Sky*, p.23.

Aristotelian sympathetic cosmology. Moreover, it was suggested based on evidence that Houlding's astrological attitude echoes Stoic views on fate.

Therefore, it can be argued that the findings presented support the idea that there is a prominent Greek contribution to contemporary astrology. This is visible not only in the revival of classical techniques but also in the transmission of cosmological and philosophical themes that underpin the esoteric, psychological and traditional approaches.

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# A comparison of the polemics against astrology of the early Christian apologists and contemporary Salafis

**By George Richards**

Early Christian apologists argued against astrology as part of a strategy to make Christianity more acceptable to Roman society. Contemporary Salafi scholars, in emphasising the principles of early Islam, oppose astrology on strict doctrinal grounds. Despite very different contexts, early Christian apologists and contemporary Salafis have adduced similar lines of arguments against astrology: as incompatible with God's omnipotence; as idolatry; as magic; and as a social ill. The similarity of the arguments raises the possibility that contemporary Salafis are transmitting echoes of the early Christian apologists' arguments.

This paper considers two polemical traditions against astrology: the early Christian apologists, and contemporary Salafi scholars. In the Roman empire, where Christians were persecuted on religious grounds, it was the objective of the early Christian apologists (in the second and third centuries AD) to convince the Roman ruling class that Christianity was amenable to Roman society and that persecution should cease.<sup>75</sup> The apology (*apologia*), originally a legal defence, was far more expansive in the form employed by the early Christians, and the apologists also used other literary genres to make their arguments.<sup>76</sup> By a thorough exposition of the Christian religion, the apologists sought to dispel misunderstandings and false accusations; to demonstrate Christianity's harmonious relationship to core elements of the predominant Hellenist (or

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<sup>75</sup> Massey Hamilton Shepherd, Jr., 'The early Christian apologists and Christian worship', *The Journal of Religion*, 18.1 (1938), 60-79, pp. 60-61.

<sup>76</sup> Robert D. Sider (ed.), *Christian and pagan in the Roman empire: the witness of Tertullian* (Washington, D. C.: The Catholic University of America Press, 2001), p. 6.



pagan) tradition, thereby dismissing any concerns that it threatened Roman social order; and to display Christianity's virtues, in order to win converts.<sup>77</sup>

Astrology was a target of the apologists' ire. Among Roman officials (who were the apologists' chief audience), concerns that astrology could be used against the state, and against the emperor in particular, meant the state had (after initially using astrology as a tool of legitimisation) turned on astrologers, expelling them sporadically from Rome and the empire, and banning the practice of astrology altogether. Such official prohibitions were only partially successful in achieving their goal, and astrology remained popular among all classes of Roman society.<sup>78</sup> The apologists, employing various arguments considered below, were thus able to present Christianity on the side of the Roman state, in joint opposition to astrology.

In Islam, the doctrine of the primacy of God's omnipotence and omniscience – most concisely represented in the Koranic verse, 'Say: "No one on in the heavens or on earth has knowledge of what is hidden except God"' – threatens the legitimacy of astrology.<sup>79</sup> As Nicholas Campion noted: 'The single fact of God's omnipotence leads to similar debates [in Islam] concerning determinism to those we find in Judaism and Christianity'.<sup>80</sup> Such debates did not, however, prevent the emergence of an Islamic tradition of astrology.<sup>81</sup> In the contemporary Islamic world, a strict view against astrology prevails officially, although astrology remains popular with the public. In Egypt, for example, Al-Azhar and Dar Al-Ifthā', two institutions of the Islamic religious

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<sup>77</sup> Leslie William Barnard, 'Introduction', in Leslie William Barnard, *St. Justin Martyr: the first and second apologies* (New York and Mahwah, New Jersey: Paulist Press, 1997), p. 2.

<sup>78</sup> Nicholas Campion, *The history of western astrology* (London: Continuum, 2008), volume 1, pp. 228-243.

<sup>79</sup> The Koran, 27.65, translated by N. J. Dawood, *The Koran* (London: Penguin, 2003 [1956]), p. 269.

<sup>80</sup> Nicholas Campion, *Astrology and cosmology in the world's religions* (New York and London: New York University Press, 2012), p. 175

<sup>81</sup> C. S. F. Burnett, 'Astrology and medicine in the Middle Ages', *Bulletin of the Society for the Social History of Medicine*, 37 (1985), 16-18; C. S. F. Burnett, 'The certitude of astrology: the scientific methodology of Al-Qabīsi and Abū Ma'shar', *Early Science and Medicine*, 7.3 (2002), 198-213; Campion, *Astrology and cosmology*, pp. 178-180.

establishment, formally oppose astrology, even while astrology items are published in most Egyptian newspapers, and books by the popular Egyptian astrologer, Nevine Al-Shala, are available in book-shops.<sup>82</sup>

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<sup>82</sup> Abdul-Nasr Abdul-Moneim, 'Al-Azhar: reading horoscopes is unlawful (*haram*) in Islamic law', *Al-Sharq* (8 September 2015), <http://www.al-sharq.com/news/details/367790> (accessed 29 April 2016); 'Dar Al-Ifta' stuns with shocking surprise regarding "The astrologers have lied even if they have told the truth"', *Yahdoth fe masr* (29 December 2014), <http://www.mbc.net/ar/programs/yahdoth-fe-masr/articles/%D8%AF%D8%A7%D8%B1-%D8%A7%D9%84%D8%A5%D9%81%D8%AA%D8%A7%D8%A1-%D8%AA%D9%81%D8%AC%D8%B1-%D9%85%D9%81%D8%A7%D8%AC%D8%A3%D8%A9-%D8%B5%D8%A7%D8%AF%D9%85%D8%A9-%D8%A8%D8%AE%D8%B5%D9%88%D8%B5--%D9%83%D8%B0%D8%A8-%D8%A7%D9%84%D9%85%D9%86%D8%AC%D9%85%D9%88%D9%86-%D9%88%D9%84%D9%88-%D8%B5%D8%AF%D9%82%D9%88%D8%A7-.html> (accessed 29 April 2016). On the popularity of astrology in Egypt, see, for example, astrology columns in the Egyptian daily newspapers *Youm7* (<http://www.youm7.com/story/2016/4/29/%D8%AD%D8%B8%D9%83-%D8%A7%D9%84%D9%8A%D9%88%D9%85-%D8%AA%D9%88%D9%82%D8%B9%D8%A7%D8%AA-%D8%A7%D9%84%D8%A3%D8%A8%D8%B1%D8%A7%D8%AC-%D8%A7%D9%84%D8%AC%D9%85%D8%B9%D8%A9-29-%D8%A5%D8%A8%D8%B1%D9%8A%D9%84/2696238>, accessed 29 April 2016) and *Al-Masry Al-Youm* (<http://www.almasryalyoum.com/news/details/890483>, accessed 29 April 2016), and Nevine Al-Shala, *Rihlat al-abraaj al-mumta'a ila al-i'maaq*, available at Diwan Bookstore (<https://www.diwanegypt.com/1184-129170/Self-help/%d8%b1%d8%ad%d9%84%d8%a9-%d8%a7%d9%84%d8%a7%d8%a8%d8%b1%d8%a7%d8%ac-%d8%a7%d9%84%d9%85%d9%85%d8%aa%d8%b9%d8%a9-%d8%a7%d9%84%d9%89-%d8%a7%d9%84%d8%a7%d8%b9%d9%85%d8%a7%d9%82.aspx>, accessed 29 April 2016). See also Kamal El Menoufi, 'Occupational status and mass media in rural Egypt', *International journal of Middle East studies*, 13.3 (1981), 257-269, p. 263.

The Salafi movement of contemporary Islam – described by Jonathan Brown as ‘a trend in Islamic thought that places particular emphasis on a return to the piety and principles of the Salaf [the first generations of Muslims] as the only correct understanding of Islam’, and defined broadly for the purposes of this paper as encompassing Wahhabism, a related movement inspired by the teachings of Mohammed ibn Abd al-Wahhab (1703-1792) – condemns astrology by reference to scriptural interdictions against divination, including the Koranic verse above.<sup>83</sup>

There is, however, no universally accepted definition of Salafism, and the three prominent scholars whose *fatwas* (or religious decrees) and other writings are considered in this paper – Abdul Aziz bin Abdullah bin Baz (called Ibn Baz, died 1999), grand mufti of Saudi Arabia from 1993 until his death; Muhammed Salih Al-Munajjid (born 1960), a Syrian scholar; and Yusuf Al-Qaradawi (born 1926), an Egyptian scholar living in Qatar, described by Roxanne Euben and Muhammad Qasim Zaman as ‘by far the most prominent scholar and preacher in Sunni Islam at the beginning of the twenty-first century’ – do not fall neatly into a particular category.<sup>84</sup> Thus, while Al-Munajjid’s *fatwas* are considered by Richard Gauvain to be in the ‘normative Saudi-Arabian Salafi’ tradition; Al-Qaradawi is variously described as a Salafi and a non-Salafi, ‘a scholar from a “Salafi reformist background”’, and ‘as a Salafi from his views on a particular issue’; and Ibn Baz is described by Gilles Kepel as ‘a figurehead for institutional Wahhabism’.<sup>85</sup> This paper will show that all three are in consensus on the issue of astrology, as indicative of a general Salafi position on astrology.

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<sup>83</sup> Johnathan A. C. Brown, *Salafism* (Oxford: Oxford University Press, 2010), p. 3; Kecia Ali, *The lives of Mohammed* (Cambridge, Massachusetts: Harvard University Press, 2014), p. 81; Roxanne L. Euben and Muhammad Qasim Zaman, *Princeton readings in Islamist thought: texts and contexts from Al-Banna to bin Laden* (Princeton and Oxford: Princeton University Press, 2009), p. 21; Mohamed Bin Ali, *The roots of religious extremism: understanding the Salafi doctrine of Al-Wala’ wal Bara’* (London: Imperial College Press, 2016), pp. 57-58.

<sup>84</sup> Euben and Zaman, *Princeton readings*, p. 224.

<sup>85</sup> Richard Gauvain, *Salafi ritual purity: in the presence of God* (London and New York: Routledge, 2013), p. 335; Jonas Otterbeck, ‘The Sunni discourse on music’, in *Islam and popular culture*, edited by Karin van Nieuwkerk, Mark LeVine and Martin Stokes (Austin, Texas: University of Texas Press, 2016), p. 163; Euben and Zaman, *Princeton*

Within these contexts, this paper compares the arguments levelled by both polemical traditions – the early Christian and the Salafi – against astrology. In particular, it considers the arguments against astrology as incompatible with divine omnipotence; as idolatry; as magic; and as a social ill. By pointing to the similarities between the polemical traditions, a hypothesis for the transmission of the early Christian position on astrology to the Islamic tradition can be proposed.

### Astrology as incompatible with divine omnipotence

Both the early Christian apologists and the Salafists argued that only God has the power to know, and to determine, the future; astrology, insofar as it constitutes divination of a predestined future, not determined by God, must therefore be rejected.

Tatian (c. AD 120-180), an Assyrian and one of the first Christian apologists, attacked astrology as incompatible with divine omnipotence in *Oratio ad Graecos* (Oration to the Greeks), his major work, generally dated to within the second half of the second century: ‘the power of the Logos [God], having in itself a faculty to foresee future events, not as fated, but as taking place by the choice of free agents, foretold from time to time the issues of things to come’.<sup>86</sup> For Tatian, only God, not fate, determines the future. Later, reiterating the argument, Tatian rebuked those who follow astrology as divination: ‘having shown them a plan of the position of the stars, like dice-players, they introduced Fate, a flagrant injustice’ – for Tatian, the very concept of fate as a human construct is unconscionable.<sup>87</sup>

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*readings*, p. 19; Bin Ali, *The roots of religious extremism*, p. 201; Gilles Kepel, *The war for Muslim minds: Islam and the west* (Harvard: Belknap Press, 2006), p. 186.

<sup>86</sup> Gerald F. Hawthorne, ‘Tatian and his *Discourse to the Greeks*’, *The Harvard Theological Review*, 57.3 (1964), 161-188, p. 161-162; Antonia Tripolitis, review of *Tatian: Oratio ad Graecos and fragments*, ed. Molly Whittaker, *The Classical World*, 77.2 (1983), 133-134, p. 133; Robert Grant, ‘The date of Tatian’s *Oration*’, *The Harvard Theological Review*, 46.2 (1953), 99-101, p. 99; G. W. Clarke, ‘The date of the *Oration* of Tatian’, *The Harvard Theological Review*, 60.1 (1967), 123-126, p. 126; Campion, *A history of western astrology*, volume 1, p. 268; Tatian, *Oratio ad Graecos*, 7, trans. J. E. Ryland, in Alexander Roberts, James Donaldson, and Arthur Cleveland Coxe (eds.), *The Anti-Nicene Fathers* (New York: Cosimo, 2007 [1885]), volume 2, 65-83.

<sup>87</sup> Tatian, *Oratio*, 8.

Justin Martyr (AD 100-165), Tatian's teacher, a convert to Christianity who was ultimately beheaded, is generally considered the first major apologist: Leslie Barnard called him a 'pioneer type of Greek Apologist', and Campion considered him the 'earliest major Christian polemicist to declare astrology incompatible with Christianity'.<sup>88</sup> Justin's *Dialogue with Trypho* (its date and place of origin are uncertain), although not an 'apology', as such, was written, on its face, as a rhetorical discourse with one Trypho, a Jew, addressing Christian and Jewish relations – although its scope is much broader, and includes Justin's attack on astrology.<sup>89</sup> Like Tatian, Justin considered that the concept of astrology as a means of divination undermined the power of foresight granted by God to the prophets:

There existed, long before this time, certain men [...] who spoke by the Divine Spirit, and foretold events which would take place, and which are now taking place. They are called prophets. These alone both saw and announced the truth to men.<sup>90</sup>

For Justin, the prophets' power of foresight was unique and granted by God; astrology, *qua* divination, was incompatible with the Christian belief in the omnipotence of God.

The Salafi prohibition of astrology is similarly premised on the belief that only God has the power to know, and to determine, the future. The Koranic verse, 'Say: "No one in the heavens or on earth has knowledge of what is hidden except God"', is cited by each of Ibn Baz, Al-Munajjid and Al-Qaradawi as the scriptural basis for their opposition to astrology.<sup>91</sup>

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<sup>88</sup> Campion, *The history of western astrology*, volume 1, p. 267; Barnard, 'Introduction', p. 3.

<sup>89</sup> Thomas P. Halton, 'Introduction', in Michael Slusser (ed.), *St. Justin Martyr: Dialogue with Trypho* (Washington, D.C.: The Catholic University of America Press, 2003), xi-xiv, pp. xi-xii.

<sup>90</sup> Justin Martyr, *Dialogue with Trypho*, 7, trans. in Roberts *et al.*, *The Anti-Nicene Fathers*, volume 1, 194-270.

<sup>91</sup> The Koran, 27.65, translated by N. J. Dawood, *The Koran* (London: Penguin, 2003 [1956]), p. 269; T. Fahd, 'Kihana', in P. Bearman, T. Bianquis, C. E. Bosworth, E. van Donzel, and W. P. Heinrichs (eds.), *Encyclopaedia of Islam*, second edition, [http://dx.doi.org.ezproxy.uwtsd.ac.uk/10.1163/1573-3912\\_islam\\_COM\\_0515](http://dx.doi.org.ezproxy.uwtsd.ac.uk/10.1163/1573-3912_islam_COM_0515); 'Believing in horoscopes, astrology and fortune telling', *Majmu'a fatawa Shaykh Ibn Baz*, volume 2,

Al-Munajjid has a *fatwa* (or ruling) on the issue of ‘Astrology vs. astronomy’, that is built on the Koranic verse above. Al-Munajjid’s *fatwa* is published on the website ‘Islam: question and answer’ (*islamqa.info*), which he founded and runs. The website is, according to Richard Gauvain, a ‘well-known’ website and, for Egyptians at least, ‘the most common source of reference’; it was blocked in Saudi Arabia in 2010 on the basis that it was issuing *fatwas* without the authority of the state.<sup>92</sup> Al-Munajjid’s *fatwa* explains that a person ‘taking knowledge of the stars as a means to claim that he has knowledge of the unseen, and claiming to have knowledge of the unseen is *kufur* (disbelief) which puts one beyond the pale of Islam’.<sup>93</sup> For Al-Munajjid, believing that astrology is a tool of divination renders the believer un-Muslim. Al-Qaradawi similarly condemns astrology (and belief in astrology) as *kufur*: ‘anyone who claims to know what pertains to the Unseen utters a falsehood against Allah and the truth’.<sup>94</sup> From the evidence above, the Salafis argue that it is simply inconceivable that a person could divine the future yet to be determined by God.

The similarity of the arguments is striking – Tatian’s ‘flagrant injustice’ echoes in the Salafists’ *kufur* – but these arguments are predicated on the belief in the omnipotence of God, and the belief that omnipotence is exclusively divine and unassailable by mankind. This is a belief in God’s nature that, at least for

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123-125,

<http://www.alifta.net/Fatawa/FatawaChapters.aspx?language=en&View=Page&PageID=103&PageNo=1&BookID=14> (accessed 29 July 2016), p. 123; Mohammed

Al-Munajjid, ‘Astrology vs. astronomy’, 22445, <https://islamqa.info/en/22445> (accessed 30 July 2016); Yusuf Al-Qaradawi, *The lawful and prohibited in Islam*, trans. Kamal El-Helbawy, M. Moinuddin Siddiqui and Syed Shukry (Plainfield, Indiana: American Trust Publications, 1999 [1994]), p. 239.

<sup>92</sup> Richard Gauvain, *Salafi ritual purity: in the presence of God* (London and New York: Routledge, 2013), p. 335; Jonas Otterbeck, ‘The Sunni discourse on music’, in *Islam and popular culture*, edited by Karin van Nieuwkerk, Mark LeVine and Martin Stokes (Austin, Texas: University of Texas Press, 2016), p. 163; Abdullah Al-Ayadh, ‘Saudi Arabia blocks Sheikh Al-Munajjid’s “Islam: question and answer” site’, *Al-Arabiya* (3 September 2010), <http://www.alarabiya.net/articles/2010/09/03/118350.html> (accessed 29 July 2016).

<sup>93</sup> Al-Munajjid, ‘Astrology vs. astronomy’.

<sup>94</sup> Al-Qaradawi, *The lawful and prohibited*, p. 239.

the Christian apologists addressing pagan Romans, could not assume in their audiences – indeed, an argument based on such an assumption could be dismissed out of hand. Both the Christian polemicists and the Salafis therefore adduce further lines of argument to support their case.

### Astrology as idolatry

Both the Christian apologists and the Salafis conflate astrology with star-worship, and in so doing to set up an easy target; in modern parlance, a straw-man argument. Tertullian (c. AD 155-225 or later), was a Carthaginian who lived slightly later than Justin and Tatian but can be considered a successor to both, and particularly Justin: in Champion's words, he continued 'the Pauline project – to move Christianity away from Judaism, appealing to Hellenistic culture by reconciling faith with reason and presenting the new religion as an acceptable part of the Roman world'.<sup>95</sup> Kocku von Stuckrad considered him to be one of 'centrist Christianity's most famous apologetics'.<sup>96</sup> In *On idolatry*, an expansive work of uncertain date described by J. H. Waszink and J. C. M. van Winden as 'a dialogue in disguise' and 'a treatise on the practice of Christian life in relation to the (often hidden) religious elements in the heathen world', including astrology, Tertullian stated (with apophasis):

I allege not that he [an astrologer] honours idols, whose names he has inscribed on the heaven, to whom he has attributed all God's power; because men, presuming that we are disposed of by the immutable arbitrament of the stars, think on that account that God is not to be sought after.<sup>97</sup>

Similarly, Clement of Alexandria (c. AD 150-215), a towering figure of the early church, argued the same point in his *Exhortation to the Heathen*, described by John Ferguson as Clement's "great sermon":

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<sup>95</sup> Champion, *A history of western astrology*, volume 1, pp. 267-268.

<sup>96</sup> Champion, *A history of western astrology*, volume 1, p. 268; Kocku von Stuckrad, 'Jewish and Christian astrology in late Antiquity: a new approach', *Numen*, 47.1 (2000), 1-40, p. 7.

<sup>97</sup> J. H. Waszink and J. C. M. van Winden, *Tertullianus: De Idolatoria* (Leiden: E. J. Brill, 1987), pp. 9-10; Tertullian, *On idolatry*, 9, trans. by S. Thelwall, in Roberts *et al.*, *The Anti-Nicene Fathers*, volume 3, 61-78.

Why, I beseech you, fill up life with idolatrous images [...]; and, prating loftily of the heavenly bodies in this much vaunted science of astrology, not astronomy, to those men who have truly wandered, talk of the wandering stars as gods?<sup>98</sup>

Both Tertullian and Clement present astrology as star-worship, a species of idolatry. The Salafis, less rhetorically ornate, make the same point more bluntly, categorising astrology as *shirk* (commonly translated as ‘idolatry’ but, more technically, a polytheistic concept of ‘associating’ things with God, making things divine). Thus, Ibn Baz stated: ‘They [astrology, horoscopes and fortune-telling] fall under *shirk* (associating others in worship with Allah), for they include adhering to other than Allah and believing in the existence of a support of other than Him’.<sup>99</sup> Al-Munajjid is more judicious, distinguishing between the *kufr* of claiming to have knowledge of the unseen (that is, divination), and the *shirk* of believing that events are influenced by the stars, that is, that the stars have the power to determine events: ‘the belief that these stars have a real influence in the sense that they create events and evil’.<sup>100</sup> (A lesser *shirk* arises when someone believes that a past event was caused by the stars.) Thus, Al-Munajjid:

whoever claims that there is another creator alongside Allaah is a mushrik [committer of *shirk*] in the sense of major *shirk*, for he is regarding a created thing that is subjugated as a creator which subjugates.<sup>101</sup>

Again, this is noticeable in its similarity to the early Christians. Thus, Clement juxtaposes the false worship of God’s works – ‘created things’ (in Al-Munajjid’s words), such as the stars, – with the true worship of God:

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<sup>98</sup> Clement of Alexandria, *Exhortation to the Heathen*, 6, trans. in Roberts *et al.*, *The Anti-Nicene Fathers*, volume 2, 171-206, p. 191; John Ferguson, *Clement of Alexandria* (New York: Twayne, 1974), p. 45..

<sup>99</sup> Ibn Baz, ‘Believing in horoscopes’, p. 123.

<sup>100</sup> Al-Munajjid, ‘Astrology vs astronomy’; D. Gimaret, ‘Shirk’, in Bearman *et al.*, *Encyclopaedia of Islam*, [http://dx.doi.org.ezproxy.uwtsd.ac.uk/10.1163/1573-3912\\_islam\\_SIM\\_6965](http://dx.doi.org.ezproxy.uwtsd.ac.uk/10.1163/1573-3912_islam_SIM_6965).

<sup>101</sup> Al-Munajjid, ‘Astrology vs astronomy’.



It is the Lord of the spirits, the Lord of the fire, the Maker of the universe, Him who lighted up the sun, that I long for. I seek after God, not the works of God.<sup>102</sup>

The polemicists – early Christian and Salafi – therefore cast astrology as star-worship, because the scriptural force against idolatry was stronger, and a compelling argument against it could be more easily constructed. According to Gimaret, in Islam, *shirk* is the worst form of disbelief, and by associating astrology with *shirk*, the Salafi argument is strengthened.<sup>103</sup> Likewise, the passages from the Christian apologists above – conflating astrology with star-worship – are examples of what Massey H. Shepherd considered a tactic to knowingly ignore the complexity of Roman paganism and to portray it as idolatry: ‘Christian apologists knew very well that thoughtful pagans did not worship images as gods, but only as representations of gods’.<sup>104</sup> Put simply, in portraying astrology as idolatry, the apologists were acting duplicitously. As von Stuckrad noted, writing about Christianity and Judaism:

Monotheism’s criticism [of astrology] focused either on deterministic worldviews, not compatible with ethical propositions, or on the adoration of astral deities which is not in agreement with Jewish and Christian cult tradition. But to call this astrology means to neglect the refined standard of ancient discourses about the relation between both zodiac, stars, and earth as well as volition, fate and ethics.<sup>105</sup>

As well as more persuasive, it was also more convenient for the Christian apologists to argue against astrology as star-worship; as Champion noted, ‘all the scriptural citations used to back the modern catechism are from Old Testament injunctions against star worship, rather than astrology as an interpretative system’.<sup>106</sup> Star-worship was also significantly less popular in Rome than astrology *qua* divination. Overall, the comparative passages above have shown how both the early Christian apologists and the Salafi clerics have ignored the nuances of astrology to find a convenient target for their attacks.

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<sup>102</sup> Clement, *Exhortation*, 6.

<sup>103</sup> Gimaret, ‘Shirk’.

<sup>104</sup> Shepherd, ‘The early Christian apologists’, p. 61.

<sup>105</sup> Von Stuckrad, ‘Jewish and Christian astrology’, p. 33.

<sup>106</sup> Champion, *The history of western astrology*, volume 1, p. 256.

## Astrology as magic

The argument against astrology as idolatrous star-worship flowed into an argument against astrology as magic (for the Salafis, *sihr*, sorcery). Thus, Al-Qaradawi and Ibn Baz cite a *hadith* that states: ‘Whoever acquires any knowledge of astrology has acquired [knowledge of] a branch of sorcery [*sihr*]’.<sup>107</sup> For the Salafis, this was one of the most damning lines of argument, after attacking astrology as *shirk*. *Sihr* comprises bewitching, the mastery of demons, knot-magic, the use of amulets, talismans, and so on. *Sihr* is a grave sin in Islam, and particularly in Salafism, but the strength of this argument lies in the threat of punishment for sorcerers – not in the afterlife, but in the present.<sup>108</sup> In modern-day Saudi Arabia, *sihr* is a crime punishable by death: the government has established an Anti-Witchcraft Unit for enforcement of the law against *sihr*, has provided practical training to the Unit, and has executed sorcerers in 2011, 2012 and 2014.<sup>109</sup> While, in principle, *shirk* is punishable by

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<sup>107</sup> Ibn Baz, ‘Believing in horoscopes’, p. 123; Uthman Uthman and Yusuf Al-Qaradawi, ‘‘Alam al-ghayb’ (‘The hidden world’), *Al Jazeera* (n.d.),

<http://www.aljazeera.net/programs/religionandlife/2009/4/28/%D8%B9%D8%A7%D9%84%D9%8E%D9%85-%D8%A7%D9%84%D8%BA%D9%8A%D8%A8#L3>

(accessed 31 July 2016).

<sup>108</sup> T. Fahd, ‘Sihr’, in Bearman *et al.*, *Encyclopedia of Islam*,

[http://dx.doi.org.ezproxy.uwtsd.ac.uk/10.1163/1573-3912\\_islam\\_SIM\\_7023](http://dx.doi.org.ezproxy.uwtsd.ac.uk/10.1163/1573-3912_islam_SIM_7023).

<sup>109</sup> David E. Miller, ‘Saudi Arabia’s “anti-witchcraft unit” breaks another spell’, *The Jerusalem Post* (20 July 2011), <http://www.jpost.com/Middle-East/Saudi-Arabias-Anti-Witchcraft-Unit-breaks-another-spell> (accessed 25 July 2016); ‘Saudi Arabia begins

defence against the dark arts classes’, *The Daily Telegraph* (18 February 2016),

<http://www.telegraph.co.uk/news/worldnews/middleeast/saudi-arabia/12163519/Saudi-Arabia-begins-defence-against-the-dark-arts-classes.html> (accessed 29 July 2016);

‘Saudi Arabia execution of “sorcery” woman condemned’, *The Daily Telegraph* (13 December 2011),

<http://www.telegraph.co.uk/news/worldnews/middleeast/saudi-arabia/8952641/Saudi-Arabia-execution-of-sorcery-woman-condemned.html> (accessed 25 July 2016); ‘Saudi

man executed for “witchcraft and sorcery”’, *BBC News* (19 June 2012),

<http://www.bbc.com/news/world-middle-east-18503550> (accessed 25 July 2016);

Natasha Culzac, ‘Saudi Arabia executes 19 in one half of August in “disturbing surge of beheadings”’, *The Independent* (22 August 2014),

death, it is a more spiritual crime, a crime of belief; by contrast, and as demonstrated by Saudi Arabia's prosecution of the crime, *sihr* is more practical.<sup>110</sup> The great medieval philosopher Ibn Khaldun's wrote of *sihr*: 'It is definite that sorcery is true, although it is forbidden' – Islam considers *sihr* a phenomenon of the temporal world, not just a transgression in the spiritual realm.<sup>111</sup>

Tertullian took a similar approach to the Salafis in portraying astrology as a criminal act of magic. Having noted the grisly executions of Simon Magus and another magician ('mulcted with loss of eyes'), Tertullian noted: 'The same fate, I believe, would astrologers, too, have met, if any had fallen in the way of the apostles. But yet, when magic is punished, of which astrology is a species, of course the species is condemned by the genus'.<sup>112</sup> While Tertullian was explicit about the risks of astrology, the Salafis leave that the threat implicit. The effect is the same: it is a warning to the curious.

### Astrology as a social ill

For even the most sceptical audience, unmoved by the denial of God's omnipotence, the heinous sin of idolatry, or the criminal practice of magic, the polemicists – early Christian and Salafi – have introduced arguments against astrology as a social ill. One important argument concerns the seditious nature of astrology. Thus, Tertullian, in *Apology for the Christians*:

They likewise pay the same observances who are so officious in consulting astrologers, and soothsayers, and augurs, and magicians about the life of the emperors [...]. For what business has a man to be

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<http://www.independent.co.uk/news/world/middle-east/saudi-arabia-executes-19-during-half-of-august-in-disturbing-surge-of-beheadings-9686063.html> (accessed 25 July 2016).

<sup>110</sup> Fahd, 'Shirk'.

<sup>111</sup> Ibn Khaldun, *Muqaddimah*, 6.28, trans. Franz Rosenthal, in Ibn Khaldun, *The Muqaddimah: an introduction to history* (Princeton, New Jersey: Princeton University Press, 1980 [1958]), volume 3, p. 179.

<sup>112</sup> Tertullian, *On idolatry*, 9.

so curious about Caesar's life, who has no design against it, or expectations from it?<sup>113</sup>

From the perspective of the early Christian apologists, such an argument was carefully constructed to convince the audience – the Roman governing class – of Christianity's virtue as a weapon against astrology, perfectly allied to the empire's interests of protecting the emperor (whose legitimacy could be threatened by astrology). Such views were common also among medieval Islamic writers. Thus, Ibn Khaldun, in the fourteenth century AD, argued against astrology on the grounds that it:

often produces the expectation that signs of crisis will appear in a dynasty. This encourages the enemies and rivals of the dynasty to attack it. [...] It is, therefore, necessary that astrology be forbidden to all civilized people, because it may cause harm to religion and dynasty.<sup>114</sup>

The Salafis do not make similar arguments. This may reflect the occasionally precarious relationship between the prominent Salafi clerics and the states of the Arab world (Ibn Baz is an exception, and was closely affiliated to the Saudi government). They do, however, echo another of Ibn Khaldun's arguments, namely, that astrology is a social ill insofar as it misleads people. Thus, Ibn Khaldun:

astrology does harm to human civilization. [...] Ignorant people are taken in by that and suppose that all the other (astrological) judgments must be true, which is not the case.<sup>115</sup>

By the same token, Ibn Baz condemned the way in which astrologers 'manipulate the minds of inexperienced and naive people to embezzle their money'.<sup>116</sup> Al-Munajjid (following Ibn Baz as precedent) similarly held that diviners (including astrologers) 'falsely claim to have knowledge of the unseen in order to cheat people of their money'; and presumably for this reason states

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<sup>113</sup> Tertullian, *Apology for the Christians*, 35, trans. W. Reeve, in *The apology of Tertullian and the meditations of the emperor Marcus Aurelius Antoninus* (London and Sydney: Griffith, Farran, Okeden and Welsh), p. 102.

<sup>114</sup> Ibn Khaldun, *Muqaddimah*, 6.31.

<sup>115</sup> Ibn Khaldun, *Muqaddimah*, 6.31.

<sup>116</sup> Ibn Baz, 'Believing in horoscopes', p. 123.

(following the thirteenth-century scholar, Imam Nawawi): ‘it is haram [unlawful] to pay them [astrologers] money’.<sup>117</sup> Put simply, the Salafis argue that money spent on astrologers is money wasted. In this, Tertullian made a similar argument, listing those undesirable segments of society whose lives were adversely affected by Christians:

first they are your panders, and pimps, and filthy pliers about your baths; next, your cut-throats, poisoners, and magicians; lastly, your soothsayers, wizards, and astrologers.<sup>118</sup>

Tertullian’s point – that Christians should shun astrologers (among others), and in doing so benefit society as a whole – echoes the Salafis’ arguments against giving money to astrologers. Whether as a threat to the state, or a waste of money, the early Christian and Salafi polemicists argue against astrology as a social ill.

### Conclusion

This paper has shown that there are a number of lines of argument against astrology in common to the early Christian apologists and contemporary Salafi clerics. Making use of the scriptural arsenal available, both sets of writers attack astrology: as incompatible with God’s omnipotence; as idolatry; as magic; and as a social ill. In doing so, they are trying to convince their audiences in different ways: by shock, by disgust, by concern for their wellbeing. These points in common raise the question of whether the strict Islamic position against astrology was influenced by the arguments of the early Christian apologists; further study may be able to reveal any connections.

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<sup>117</sup> Mohammed Al-Munajjid, ‘Ruling on horoscopes’, 2538, <https://islamqa.info/en/2538> (accessed 29 July 2016); Mohammed Al-Munajjid, ‘Ruling on going to astrologers and believing them’, 8291, <https://islamqa.info/en/8291> (accessed 29 July 2016).

<sup>118</sup> Tertullian, *Apology for the Christians*, 43.

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# A consideration of two attempts to reform astrology: Marsilio Ficino and Alan Leo

*by Keisha Knight*

This paper takes a historiographical look at two attempts to reform astrology. The paper explores the contexts and competing priorities for late 15th century reformer Marsilio Ficino (1433-1499) and turn of the 20th century reformer Alan Leo (1860-1917). The paper situates both men in time, describing the complexity of the forces that shaped each of them, and shows how both Ficino and Leo grappled and integrated competing forces and philosophies into their works. By examining the historical milieus surrounding each figure, the competing theoretical frameworks that informed their writing, and the resonance both Ficino and Leo have on contemporary culture, this paper demonstrates the adaptability and continuity of astrological thought; while also highlighting fundamental differences between the early-modern and the turn of the 20th century worldviews.

## Introduction

Jim Tester has called Marsilio Ficino the first early-modern Platonist.<sup>119</sup> During the latter half of the 15<sup>th</sup> century Ficino wrote extensively on astrology as part of his endeavour to reconcile Platonism and Christianity.<sup>120</sup> In a later attempt at astrological reform at the turn of the 20<sup>th</sup> century, Alan Leo popularized esoteric sun sign astrology as a means to prepare the world for a new age.<sup>121</sup> This paper will examine Marsilio Ficino's and Alan Leo's attempts to reform astrology and the competing priorities involved in each. As Richard Evans states, 'Most historical narratives consist of a mixture of revealed, reworked, constructed, and deconstructed narratives from the historical past

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<sup>119</sup> Jim Tester, *A History of Western Astrology* (Suffolk: Boydell & Brewer, 1990) p. 205.

<sup>120</sup> Mark Jurdjevic, 'Prophets and Politicians: Marsilio Ficino, Savonarola and the Valori Family', *Past & Present*, No. 183 (May, 2004), p 42.

<sup>121</sup> Nicholas Campion, *Astrology and Popular Religion in the Modern West: Prophecy Cosmology and the New Age Movement* (London: Routledge, 2012) p.71.

and from the historian's own mind.'<sup>122</sup> In other words, historical narratives are inevitably written from the present.<sup>123</sup> It is important to remember this when engaging in a comparative consideration of the past so the myriad voices are free to speak as clearly as possible.

### Contexts and cultures

In 1439, just 14 years before the fall of Constantinople, Georgius Gemisthus, commonly known as Pletho (a well known classical scholar of the Byzantine empire), accompanied the emperor John VII Palaeologus on a visit to Florence.<sup>124</sup> Cosimo de Medici, who 'presided over Florentine political life for three decades' was inspired by Pletho's classical knowledge.<sup>125</sup> Nicholas Campion writes that, 'the notion of a universal harmony in which matter and reason were ultimately united in the Mind of the Creator matched the aspirations of a man such as Cosimo, a patron of learning and the arts.'<sup>126</sup> Marsilio Ficino (1433-1499) met Cosimo de Medici in 1452 and over time a collaborative relationship, with Cosimo (and later his grandson Lorenzo) as patron/dreamer and Marsilio as philosopher monk/ reformer, was born.<sup>127</sup> In fact, it was Cosimo de Medici who, in 1463, presented Ficino with a manuscript, the Corpus Hermeticum of Hermes Trismegistus, 'and requested its immediate translation into Latin.'<sup>128</sup> Keith Thomas notes that Ficino's Latin translation of the Corpus Hermeticum 'helped to create an intellectual environment sympathetic to every kind of mystical and magical activity.'<sup>129</sup> The intellectual legacy of this 'mystical and magical' environment that Ficino helped to create inspired men and women centuries removed.

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<sup>122</sup> Richard Evans, *In Defense of History* (New York: W.W.Norton & Company, 2000) p.126.

<sup>123</sup> Evans, *In Defense of History*, p.26.

<sup>124</sup> Nicholas Campion, *History of Western Astrology Volume 2* (London: Continuum, 2006) p.87.

<sup>125</sup> Campion, *History of Western Astrology Volume 2*, p. 87

<sup>126</sup> Campion, *History of Western Astrology Volume 2*, p. 87

<sup>127</sup> Campion, *History of Western Astrology Volume 2*, p. 88-89

<sup>128</sup> Angela Voss, 'The Astrology of Marsilio Ficino: Divination or Science', *Culture and Cosmos*, 4 (2000) p. 34.

<sup>129</sup> Thomas, Keth, *Religion and the Decline of Magic* (Oxford: Oxford University Press, 1971) p.235.

Writing about the Victorian occult revival in the 19<sup>th</sup> century Alison Butler notes, ‘The cabalistic magic and the brilliant synthesis of existent philosophies and religious systems of the Renaissance that were carried out by Marsilio Ficino and Pico della Mirandola had not disappeared. Many such philosophical tenets were preserved and assimilated into Rosicrucianism in the seventeenth century.’<sup>130</sup> Having consistently inspired esoteric practices and occult societies throughout the 17<sup>th</sup> and 18<sup>th</sup> centuries, Ficino’s intellectual legacy was re-ignited with fervour toward the end of the 19<sup>th</sup> century in the person of Helena Petrovna Blavatsky, a founding member of the Theosophical society. Campion writes, ‘Blavatsky’s historical purpose was in the tradition of Marsilio Ficino, and so many thinkers since – to demonstrate that all religions had a single origin and contained the same core of truth.’<sup>131</sup> Blavatsky drew on Eastern, largely Hindu, concepts such as reincarnation and karma to develop a ‘New Age astrology.’<sup>132</sup> Campion writes, ‘The chief engineer of Blavatsky’s new astrology was the English Eastern Theosophist Alan Leo (1860-1917).’<sup>133</sup> Leo mass produced individual horoscopes in order to broaden the network of individuals preparing for the Age of Aquarius and share New Age astrology with as many people as possible.<sup>134</sup> Campion also notes that ‘Alan Leo’s solar astrology, the foundation of all modern sun-sign psychology, was derived directly from Blavatsky’s reformulation of Hermetic cosmology.’<sup>135</sup> Similar to role that Cosimo de Medici played for Ficino, Helena Blavatsky was a crucial mentor for Leo and through his work her ideas were shared as well.

Despite the shared intellectual legacies between Ficino and Leo the late fifteenth century and the turn of the twentieth century were, according to Roy Willis and Patrick Curry, drastically different places with regards to rationalism

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<sup>130</sup> Butler, Alison, ‘Magical Beginnings: The Intellectual Origins of the Victorian Occult Revival’, *Limina*, (9) 2003, p 83.

<sup>131</sup> Campion, *History of Western Astrology Volume 2*, p. 229

<sup>132</sup> Campion, *History of Western Astrology Volume 2*, p. 230-231

<sup>133</sup> Nicholas Campion, *Astrology and Cosmology in the World’s Religions* (New York: NewYork

University Press, 2012), p 197.

<sup>134</sup> Campion, *History of Western Astrology Volume 2*, p. 232

<sup>135</sup> Nicholas Campion, *Astrology and Popular Religion in the Modern West: Prophecy Cosmology and the New Age Movement* (London: Routledge, 2012) p. 74

and enchantment.<sup>136</sup> Tester writes that in the fifteenth century ‘magic and astrology and religion and various occult sciences were inextricably mixed in the minds and practices of men.’<sup>137</sup> The early modern period was a time when disenchantment may have been happening slowly but nothing like the disenchantment that takes place as a result of capitalism in the 20<sup>th</sup> century.<sup>138</sup> According to this logic, Ficino’s astrological reform was born in a more enchanted world than Leo’s. Curry writes that popular sun-sign astrology ‘arose chiefly in response to a widespread public desire for re-enchantment: an attempt, however inchoate and crude, to re-enchant the world.’<sup>139</sup> Looking at the energy that both Ficino and Leo put into reforming the astrology around them it seems living in an ‘enchanted’ or ‘disenchanted’ world doesn’t significantly effect the effort a reformer puts into promoting reform.

### Competing systems

In Ficino’s *Three Books on Life* he repeatedly makes statements reaffirming the authority of the Church. He writes ‘In all things which I discuss here or elsewhere, I intend to assert only so much as is approved by the Church.’<sup>140</sup> Ficino implores his reader:

Let us by no means ever attempt anything forbidden by holy religion. Moreover, in performing any work let us hope for and seek the fruit of the work principally from Him who made both the celestials and those things which are contained in the heavens, who gave them their power, and who always moves and preserves them.<sup>141</sup>

Ficino is careful to continually define the parameters of his thought so that the Church is never threatened. In Chapter XII of *De Sole*, the *Book of the Sun*,

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<sup>136</sup> Roy Willis and Patrick Curry, *Astrology Science and Culture: Pulling Down the Moon* (Oxford: Berg, 2004), pp. 77-92.

<sup>137</sup> Jim Tester, *A History of Western Astrology* (Suffolk: Boydell & Brewer, 1990) p 214.

<sup>138</sup> Roy Willis and Patrick Curry, *Astrology Science and Culture*, pp. 78-79.

<sup>139</sup> Roy Willis and Patrick Curry, *Astrology Science and Culture*, p. 88.

<sup>140</sup> Marsilio Ficino, *Three Books on Life*, ed. Kaske, Carole C. and Clark, John R., *Ficino, Three Books on Life*, Center for Medieval and Early Renaissance Studies, Binghamton: State University of New York at Binghamton, 1989.

<http://people.bu.edu/dklepper/RN242/marsilio.html> [Accessed August 1, 2016] (a)

<sup>141</sup> Marsilio Ficino, *Three Books on Life* <http://people.bu.edu/dklepper/RN242/marsilio.html> [Accessed August 1, 2016] (f)

Ficino begins his comparison of the Sun and planets to the muses and spirits with the words, 'There is nothing in the world more like the divine Trinity than the Sun.'<sup>142</sup> Similarly he entitles Chapter XIII of *De Sole*, 'That the Sun is not to be worshipped as the Author of all Things,' and goes on to explain why. However, he concludes the chapter by stating,

Moreover although the Sun is exceedingly far removed from the Creator of the world, nevertheless all celestial things appear by divine law to lead back to the one Sun, the Lord and regulator of the heavens. And we are made fully aware from this that things which are in heaven, and under heaven, and above heaven, are similarly referred back to the one beginning of all things. And finally considering that, let us worship this one first principle with that same ritual observance that all celestial things give to the Sun.<sup>143</sup>

Ficino seems to assert that though the Sun is not the author of all things we may worship it as a type of metaphor for the author of all things. At the very least, we may use the relationships between heavenly bodies as guides for how to worship God. Ficino's attempt to harmonize his magically inclined paganism with Christian orthodoxy leads to what some scholars see as 'inconsistencies' in his work.<sup>144</sup> Other scholars, like Melissa Meriam Bullard highlight Ficino's consistent themes. Bullard writes:

Throughout his work, Ficino maintains a belief in the fundamental unity of the cosmos, which is composed of distinct hierarchically arranged realms ascending from body toward soul and intellect. In Ficino's cosmos, both human volition and astral influences can coexist because the planets, which belong to the material world affect bodies but not intellects, which belong to a separate higher realm.<sup>145</sup>

Bullard goes on to note that Ficino's aim was not to deny the influence of the planets but to defend free will against the determinism put forth by

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<sup>142</sup> Marsilio Ficino, *De Sole* trans. trans. Cornelius Geoffrey, Darby Costello, Graeme Tobyn, Angela Voss & Vernon Wells, *Sphinx: A Journal for Archetypal Psychology and the Arts*, Vol. 6, 1994, pp. 123-148 <http://www.users.globalnet.co.uk/~alfar2/ficino.htm> [Accessed August 1, 2016] Chapter XII.

<sup>143</sup> Marsilio Ficino, *De Sole* <http://www.users.globalnet.co.uk/~alfar2/ficino.htm> [Accessed August 1, 2016] Chapter XIII.

<sup>144</sup> Melissa Meriam Bullard, 'The Inward Zodiac: A Development in Ficino's Thought on Astrology' *Renaissance Quarterly*, Vol. 43, No. 4 (Winter, 1990), p. 699.

<sup>145</sup> Bullard, 'The Inward Zodiac' p.688

professional astrologers who believed that the planets caused actions and the heavens could reveal the future.

Leo was similarly caught between two systems: esoteric and exoteric astrology. According to Champion, Leo's main concern was to prepare people for the new age by 'encouraging people to reflect on their inner character rather than measure the extent to which they conformed to a set of externally imposed criteria.'<sup>146</sup> Leo explains this in his book *Esoteric Astrology* he describes esoteric Astrology as 'the philosophy and inner or more subtle point of view.'<sup>147</sup> He goes on to describe esoteric astrology as 'that side of the subject which views all stellar phenomena from the standpoint of unity.' Leo calls exoteric astrology 'the concrete or outer expression, preferring the more tangible and evident to the speculative and theoretical.'<sup>148</sup> Leo argues that exoteric astrology 'begins its study from the side of diversity and separateness' rather than unity.<sup>149</sup> Leo states at the beginning of his introductions that both esoteric and exoteric astrology are of 'equal value.'<sup>150</sup> However, he goes on to begin his conclusion with the statement that 'the curse of Astrology has been its separateness.'<sup>151</sup> In other words, exoteric astrology is a curse and Leo, like Ficino, could perhaps be accused of inconsistency. As Ficino pulls on Platonic teachings, Leo pulls from the Hindu teachings to support his New Age astrology. He refers to ancient Hindu astrologers, throughout *Esoteric Astrology* and uses Hindu concepts and texts as foundations for his discussion.<sup>152</sup>

Leo's attempt to recreate astrology for a new age, an esoteric astrology, can be seen most clearly in his description of the different signs. Champion argues that the most dramatic aspect of Leo's reformed astrology, in terms of the interpretation of Zodiac signs was 'his discarding of the almost entire list of zodiacal attributed which have been accumulated from the first to the 17<sup>th</sup> century.'<sup>153</sup> Comparing Leo's description of the sign Taurus with the famous 19<sup>th</sup> century astrologer Zadekial's description of the sign Taurus demonstrates

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<sup>146</sup> Champion, *Astrology and Popular Religion in the Modern West*, p. 71

<sup>147</sup> Alan Leo, *Esoteric Astrology* (Rochester, Vermont :Destiny Books ,1989) p. xiii

<sup>148</sup> Alan Leo, *Esoteric Astrology* , p. xiv

<sup>149</sup> Alan Leo, *Esoteric Astrology* , p. xiv

<sup>150</sup> Alan Leo, *Esoteric Astrology* , p. xiv

<sup>151</sup> Alan Leo, *Esoteric Astrology* , p. 289

<sup>152</sup> Alan Leo, *Esoteric Astrology* , p. xvi - xvii

<sup>153</sup> Champion, *Astrology and Popular Religion in the Modern West*, p. 71.



the difference in approach. Steeped in a 19<sup>th</sup> century tradition that was essentially concerned with practice rather than theoretical speculation,<sup>154</sup> Zadkiel's description of Taurus in his book *The Grammar of Astrology* is about six lines long and focuses on the external qualities of the Taurean with only a few words about the internal states. Zadkiel gives his description of the signs the heading *General Rule for Judging the Effect of Each Sign*.<sup>155</sup> He writes:

Taurus – A short, full, well-set person; full face and eyes, thick neck and lips, wide nose and mouth, swarthy shining face; a short, thick, broad hand; large shoulders; dark, harsh, and generally curling hair. Given to eating, unfeeling, melancholy, and slow to anger, but when enraged furious as the Bull.<sup>156</sup>

In contrast Leo's description of Taurus in his work *Astrology for All* is significantly longer and focuses more on the quality of thought and energetic health of the sign, rather than the literal physical characteristics. In fact Leo titles his chapter on Taurus, Chapter V *The Individual and Personal Character of the Sign*. Leo writes:

When they concentrate their thoughts they have immense power, and will then has the ascendancy over desire; but when the latter is most in evidence they become very worldly and incline to take pleasure in the good things of this life, being fond of feasting and comfort. The Taureans make the best psychic mediums, and they may be contrasted with the Aries types by the fact that they are more inclined to live in their feelings than in their minds.<sup>157</sup>

Leo makes a brief mention of the throat as an organ of concern for the Taurean person and that the Taurean generally has a 'splendid physique' but the majority of the description is focused on internal states and personality. Campion writes that 'Leo's formulation of the Zodiac signs' characters were to become the basis of most subsequent 'sun-sign' descriptions and, arguably, with every description in the English speaking world after 1945, with the exception of those associated with the 'traditional revival' of the 1980s

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<sup>154</sup> Campion, *History of Western Astrology Volume 2*, p. 216.

<sup>155</sup> Zadekial, *The Grammar of Astrology* (London: Sherwood, Gilbert and Piper, 1840), p.4

<sup>156</sup> Zadekial, *The Grammar of Astrology* p.4

<sup>157</sup> *Astrology for All* (New York: Cosimo Classics, 2006) p.16

onwards.’<sup>158</sup> Similar to Ficino, Leo’s influence on astrology and esotericism in culture lasted well beyond his lifetime.

### Contemporary mass culture

Both Ficino and Leo have a profound effect on the elements of mass culture that we experience today. Though Ficino was supported by the wealthiest man in Florence and his approach has been described by Mark Jurdjevic as advocating ‘an elitist, gradual, top-down approach to spiritual reform, guided by the study of Plato,’<sup>159</sup> his Platonic ideals spread outside of his small circle, particularly in the world of art. Campion writes, ‘One immediate consequence of Ficino’s work, which was of massive significance for Renaissance art, was a revival of respect for pagan learning.’<sup>160</sup> Examples of Ficino’s influence on art can be seen in Botticelli’s *Birth of Venus* still on display at the Uffizi gallery in Florence.<sup>161</sup> The museum lists the *Birth of Venus* as a ‘must see.’<sup>162</sup> These works of art can also be seen on any number of consumer items such as aprons, cups, plates, and mousepads. Similarly, opening up any women’s magazine, or doing a google search for ‘sun-signs’ will bring up pages upon pages of horoscopes in the tradition of Alan Leo.<sup>163</sup> Clearly strong ideas presented to the world by inspired reformers have reverberations beyond what the individual reformers may have intended.

### Conclusion

This paper has examined Marsilio Ficino’s and Alan Leo’s attempts to reform astrology and the competing priorities involved in each. A consideration of these attempts to reform astrology to suit both personal missions and cultural realities demonstrates the adaptability and continuity of astrological thought; while also highlighting fundamental differences between the early-modern and the turn of the 20th century worldview. Despite

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<sup>158</sup> Campion, *Astrology and Popular Religion in the Modern West*, p. 72

<sup>159</sup> Mark Jurdjevic, ‘Prophets and Politicians’, p 42.

<sup>160</sup> Campion, *History of Western Astrology Volume 2*, p. 95.

<sup>161</sup> Sandro Boticelli *Birth of Venus*

<http://www.uffizi.org/artworks/the-birth-of-venus-by-sandro-botticelli/>  
[Accessed August 1, 2016]

<sup>162</sup> <http://www.uffizi.org/artworks/> [Accessed August 1, 2016]

<sup>163</sup> <https://www.google.com/#q=sun-sign> [Accessed August 1, 2016]

emerging from distinctly different cultural milieus, there are certain similarities in the path of each reformer. Both Ficino and Leo had the help of strong visionaries at the beginnings of their careers to help inspire and guide them. For Ficino this was the patronage of Cosimo de Medici and for Leo this was the spiritual guidance of Madame Blavatsky. In addition, Ficino and Leo were both drawing on sources external to their contemporary cultures to support their visions of reform. Ficino was attempting to integrate Platonism into spirituality in a way that was acceptable to the Catholic church while Leo was attempting to shift popular astrology from an exoteric to an esoteric orientation that he believed would help the people usher in a New Age. Ficino and Leo both created visions that inspired future generations and profoundly influenced Western culture.

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