Kit Marlowe Wrote Shakespeare's Sonnets?

Introduction

Despite the fact that Shakespeare occupies a position of undisputed preeminence in the literature of the English speaking world, there can be few people who remain unaware that there exists some debate about his identity. For a significant number of people the profile of the man from Stratford just does not fit the bill. Calvin Hoffman was one of these sceptics and he generously endowed an annual prize for the purpose of stimulating research into the theory that Christopher Marlowe wrote much or most of Shakespeare's work.

This paper supports Hoffman's stance by presenting evidence that Christopher Marlowe was in fact the author of 'Shakespeare's Sonnets' and that this information lies concealed within them.

Note to the Reader

At the outset it should be noted that the nature of this evidence crosses the boundaries of literature, history, occult philosophy, mathematics and cryptography, and a full consideration of these intertwined components runs the risk of confusing the reader in a mass of disparate details. Whilst this might be regarded as an unavoidable hazard for those studying the more recondite byways of the Elizabethan mind, the essence of the case I present is actually very simple. Thus, in the interests of maintaining clarity and focus, this paper comprises a succinct distillation of a far longer study.

The Thesis

The critical evidence which will be presented rests in a message woven into the Sonnets by acrostic means. The message is short, direct and unequivocal. It simply states, "**Kit Marlowe wrote this**". If the message can be shown authentic, it provides an unanswerable case for Marlowe's authorship of Shakespeare's most personal work. The method by which the message will be authenticated rests upon numbers and geometry.

The Background: Numbers and Geometry

Numbers

It is almost a truism to say that the Renaissance worldview was very different from ours today and that modern preconceptions can be an impediment to understanding cultural artefacts of that time. One critical difference is that numbers and their permutations held a position of vastly greater prestige than they do at present. Alastair Fowler described how number symbolism "was accorded a philosophical and theological status that may now seem fantastic" ⁽¹⁾. Deriving from a fundamental tenet that God had created the universe out of number, weight and measure, 'divine arithmetic' was regarded as "both an arch-synthesiser of all useful knowledge, and also the especially privileged language of the creator" ⁽²⁾. This position is encapsulated in a seminal 'conclusion' of Pico de Mirandola, highlighted in John Dee's 'Mathematical Praeface', that "By Numbers, a way is had, to the searchyng out, and understandyng of every thyng, hable to be knowen." ⁽³⁾.

On account of this numerical axiom, forward thinkers of all kinds strove to incorporate number symbolism into almost every aspect of intellectual life. This ranged from the mathematical magic of Agrippa to the numerological structuring of the Faerie Queene. However, in spite of its universal scope, the practice retained a covert nature and the language of numbers provided a means whereby abstruse science could be communicated secretly ⁽⁴⁾.

Numbers Through Literature

In regard to literature, Fowler emphasises the importance of number symbolism in Shakespeare's day:

"Numerology . . . was widely used by Latin authors, common to the best medieval and renaissance poets and almost universal in the period 1580 to 1680, when it reached its greatest height of sophistication." $^{(5)}$

Ultimately, it was the sonneteering vogue of the late sixteenth century that brought the formal and numerological patterning of poetry to its highest point, and Shakespeare's Sonnets are no exception to this rule. Fowler's analysis of the Sonnets has revealed much that was previously invisible to those who merely read the words. He concluded that:

"Of all Elizabethan (sonnet) sequences, indeed, with the exception of that of Spenser, his rival, Shakespeare's is the most complex formally." ⁽⁶⁾

Thus we can be confident that Shakespeare incorporated sophisticated numerical symbolism into the Sonnets but that most of this remains obscure to the uninitiated reader.

Agrippa and Gematria

One means by which numerical messages have traditionally been woven into both sacred and profane texts is through the technique of gematria, or isopsephia. In the two biblical languages of Hebrew and Greek these are well established and there can be no doubt that many biblical passages, classical texts and names were constructed for numerical purposes by this means ⁽⁷⁾.

The position is far less clear for the English language. There is a traditional code based on the 24 letter alphabet (running from A = 1 to Z = 24) with a long provenance. An early demonstration of this appears in the following medieval poem, spelling out the name IHESUS by means of numbers ⁽⁸⁾:

8 is my trew love; do beffore 9; put therto 5; so well it wil beseme; 18 twyse told, 20 betwen.

This system of straightforward ordinal numeration was also known in Hebrew and Greek, but it has always been of minor importance compared to the classic three-tiered codes of those languages ⁽⁹⁾.

There is actually a three-tiered code for the modern European languages, but this was a well guarded secret and little known except to initiates. The one place where it was set down in print was in Henry Cornelius Agrippa's 'Three Books of Occult Philosophy' (1533)⁽¹⁰⁾. Just as in the codes for Hebrew and Greek, which Agrippa also records, there are nine units, nine tens and nine hundreds:

	B							
1	2	3	4	5	6	7	8	9
K	L	м	N	0	р	0	R	S
	20							
								Hu (W)
100	200	300	400	500	600	700	800	900

Note: The letter 'Hi' is now obsolete and Agrippa explains that 'Hu' equates with 'W'.

The Author and Agrippa

John Mebane avers that Agrippa was, "a central influence on John Dee and Giordano Bruno, both of whom had significant impact upon English society in the late sixteenth century" ⁽¹¹⁾. Both Marlowe and Shakespeare fall into this sphere of influence ⁽¹²⁾ and Mebane specifically cites Agrippa's 'Occult Philosophy' as a "considerable influence" on Marlowe ⁽¹³⁾. Peter French describes John Dee as being "profoundly indebted" to this work and he owned several copies of it ⁽¹⁴⁾. He also describes Dee as being, "especially addicted to gematria" ⁽¹⁵⁾.

In Marlowe's play, Faustus is portrayed as an avid student of Agrippa's ⁽¹⁶⁾, and when the good angel urges him to 'lay that damned book aside' (I, i, 69), many in the audience would associate the reference with the 'Three Books', as it was popularly regarded to be a 'bible' of conjuring and magic. The fact that Faustus also spends a lot of energy trying to liberate (Saxon) Bruno from the Vatican dungeons highlights an affinity Marlowe had for Bruno. Robert Greene reflects this enthusiasm when, in 'Perimedes the Blacksmith', he wrote of him "... daring God out of heauen with that Atheist Tamburlan, or blaspheming with the mad preest of the soone:". As Charles Nicholl has pointed out, that the latter is certainly a reference to Bruno ⁽¹⁷⁾. Considering Bruno's reverence for Agrippa, it is probable that Marlowe would have familiarised himself with the original source, too.

The author of Hamlet was also a reader of Bruno, judging by the familiarity of a passage in his 'Oratorio Valedictoria' (1588). Leaving Wittenberg University, Bruno wrote of:

"the whips and scorns of vile and foolish men who, although they are really beasts in the likeness of men, in the pride of their good fortune, are full of evil arrogance." ⁽¹⁸⁾

Bruno has also been associated with the character of Berowne in Love's Labour Lost ⁽¹⁹⁾. Frank Kermode detected a more direct connection to Agrippa's 'Three Books of Occult Philosophy' in his analysis of Prospero's conjuring feats in the Tempest ⁽²⁰⁾.

Therefore, although there is no direct evidence that Marlowe or Shakespeare read Agrippa's book, their interest in the occult philosophy of that time make it likely. Moreover, as Renaissance writers of subtlety and genius, they would have found the tool of Agrippan gematria to offer intriguing possibilities for the inclusion of unseen levels of meaning in their work, by the agency of numbers.

Geometry

Geometry was an integral part of the numerical philosophy of the Renaissance. Skill in geometry had been highly esteemed since Plato's day and in Elizabethan England John Dee gave it renewed impetus with his Mathematical Preface to Euclid's Elements of Geometry (1570).

For one group of people in particular geometry lay at the heart of their esoteric philosophy. These were the Freemasons. From



Pentangular Geometry of a Man Agrippa 'Occult Philosophy' II, ch. xxvii

their earliest documents, such as the Regius Poem (c. 1400), the Euclidian art of geometry and Masonry were considered to be indistinguishable:

In that time, through good geometry, This honest craft of good masonry Was ordained and made in this manner, Counterfeited of these clerks together; At these lord's prayers they counter-feited geometry, And gave it the name of masonry, For the most honest craft of all.⁽²¹⁾

The Masonic theme needs to be addressed here because the geometry underlying the message in Shakespeare's Sonnets seems to have a Masonic character and is most logically understood from that perspective. For this reason it is necessary to briefly examine the contention that Shakespeare could have been a Freemason.

Was Shakespeare a Mason?

The first problem is to establish that Freemasonry existed in Shakespeare's day. The second is to connect him with it.

Despite a popular myth that Freemasonry started with the formation of the United Grand Lodge of England in 1717, it is easy to prove otherwise. Speculative Masonry is mentioned by name in the Cooke manuscript (c.1450) where we find King Athelstan described, "For of speculatyfe he was a master, and he lovyd well masonry and masons, And he bicome a mason himself" ⁽²²⁾. Even if the author of the Cooke manuscript was misinformed about Athelstan's predilections, it proves that at the time of its composition (which predates the extant document) the writer regarded speculative Masonry as a pursuit worthy of royalty.

Shakespeare's monarch, King James, has long been regarded by Masons as one of their own ⁽²³⁾ and in 1598 he certainly instructed William Schaw to draft regulations ⁽²⁴⁾ for the existing Scottish lodges. This was followed by the Saint Clair Charter of 1602. Scottish Freemasonry was alive and well in Shakespeare's day.

Interestingly enough, the evidence of similar activity in England at that time comes from those who were very close to Christopher Marlowe, as Ron Heisler has revealed ⁽²⁵⁾. Thomas Nashe and Robert Greene came to heads with Gabriel Harvey in the spectacular pamphlet war known as the Martin Marprelate controversy. In 1589 these two brought out 'A Countercuffe given to Martin Junior'. One extract from which contains the following:

I can bring you a Free-mason out of Kent, that gave over his occupation twentie yeeres agoe. He wil make a good Deacon for your Purpose, I have taken some tryall of his gifts, hee preacheth very pretilie over a Joynd-stoole. ⁽²⁶⁾

The author(s) seems to have been well informed about Freemasonry and claims to have partaken of its philosophy. Clearly this was Freemasonry of a speculative kind and equally clearly it was not unknown in Marlowe's home county.

Gabriel Harvey also demonstrated a knowledge of Freemasonry. In 1593 he wrote a piece called 'Pierces Supererogation' in which he wrote:

'Martin be wise, though Browne were a foole: and Pappe-hatchet be honest, though Barrow be a knave: it is not your heaving and hoifing coile, that buildeth-upp the walles of the Temple. Alas poore miserable desolate most-woefull Church, had it no other builders, but such architects of their owne fantasies, and such maisons of infinite contradiction.' ⁽²⁷⁾

Harvey seems to have been tarring the four 'Martinists' with the brush of makebelieve 'maisonry'. However his attitude to the 'brotherhood' is by no means negative, because in the same tract he writes:

Compare old and new histories, of farr, & neere countries: and you shall finde the late manner of Sworne Brothers, to be no mere fashion, but an ancient guise, and heroicall order; devised for necessity, continued for security, and mainetayned for proffite, and pleasure.⁽²⁸⁾

There can be no doubt that Christopher Marlowe would have been as familiar with Freemasonry as his literary companions.

Another source claims that patrons of both Marlowe and Shakespeare were the leaders of English Freemasonry. James Anderson's 'Constitutions of the Freemasons' (1738) provides a credible list of noble born Grand Masters throughout the Elizabethan and Jacobean ages. From 1579 to 1588 the incumbent was Charles Howard, the Lord Admiral, for whose theatrical company Christopher Marlowe wrote ⁽²⁹⁾. It also claims that William Herbert, Earl of Pembroke, one of the two "noble brethren" to whom the First Folio of Shakespeare's plays was dedicated, was Grand Warden from 1607 and then Grand Master from 1618.

Many modern Freemasons believe that Shakespeare was one of their own. One informative examination of this possibility appeared in the winter 1998 edition of 'Freemasonry Today' ⁽³⁰⁾. The article by Richard Dawkins cites extraordinary Masonic interest in the bard in July 1929 when there was a ceremony to lay the foundation stone of the Shakespeare Memorial Theatre. This was a spectacular jamboree, presided over by the Grand Master of the United Grand Lodge of England and attended by over 600 Masons in full regalia. It was a very unusual public congregation of the 'apron-men' and indicates that Shakespeare is held in peculiar regard by English Masons.

The possibility that Shakespeare was himself a Freemason is pointed to by the presence of numerous pieces of arcane Masonic knowledge appearing in the plays. Dawkins cites examples in Loves Labour Lost, Henry V, Coriolanus, Measure For

Measure, Julius Caesar, Henry VI, Pt. 2 and The Tempest. There is also a strong thread of Masonic content which I have identified in the subtext to Anthony and Cleopatra⁽³¹⁾.

Currently it cannot be proved that Shakespeare was a Freemason. However there is sufficient circumstantial evidence to believe it possible, and there is little doubt that he would have been as familiar with the fraternity as Thomas Nashe, Robert Greene and Gabriel Harvey were. Ultimately, the evidence which follows does not require a Masonic connection, although such a link would provide an obvious rationale for its geometric form. The latter I conceptualise in terms of a Mason's mark.

A Mason's Mark

The individual marks of operative stonemasons have been found on building blocks dating right back through history. At some time in the past this practice was adopted by speculative Freemasonry. There are indications that the taking of a 'mason mark' was common feature of initiation to the first degree of 'entered apprentice' in the seventeenth century. We know, for example, that in 1641 Sir Robert Moray

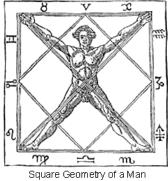


adopted the pentacle, in various forms, as his personal mark ⁽³²⁾, whilst his friend, the mathematically inclined Alexander Hamilton, chose a right-angled triangle.

The Mason mark was more than just a signature. It was often used as a secret sign, like a coded gesture, or handshake. When set down in ink it could be used to draw the reader's attention to some other cryptic matter. For example, Sir Robert Moray, who was not above a little skulduggery himself, used his Mason mark in private correspondence with the Earl of Lauderdale to indicate the point where his overt message ceased and a section written in invisible ink started. According to Stevenson, "Moray thus played the secret agent with evident enjoyment, and in doing so equated the pentacle or star, his mason mark, with invisibility and hidden mysteries."⁽³³⁾.

Summary

Up to this point I have sought to establish three things. Firstly, that the incorporation of covert numerical symbolism is typical in major poetical works of the Elizabethan age and that this has already been demonstrated in Shakespeare's Sonnets. Secondly, that both Marlowe and Shakespeare were sufficiently familiar with the prevailing occult philosophy to make it likely that they would have read Agrippa's 'Three Books of Occult Philosophy'. Furthermore, that the gematria system described therein would have given them a powerful tool by means of which to deploy deeper strands of numerical symbolism. Thirdly, that there are sufficient grounds to assert the possibility that Shakespeare was a Freemason; in which case it would not be unusual for him to affirm his identity by means of a geometric signature, or 'Mason's mark'.



Agrippa 'Occult Philosophy' II, ch. xxvii

Foreground: A Cryptic Message

A Name Concealed in the Dedication

Leslie Hotson, like almost every other reader before him, was intrigued by the dedication to the Sonnets and he noted how it, "... has been termed *enigmatic*, *puzzling*, *cryptic*, recalling the Elizabethan's characteristic fondness for anagram, rebus, acrostic, concealment, cryptogram, 'wherein my name ciphered were'." ⁽³⁴⁾ Hotson made his own stab at decrypting the mystery and detected the name 'Mr W. HATLIV' (William Hatcliffe) immortalised as Shakespeare's dear friend. Unfortunately this solution has never gained widespread acceptance and Hotson's reputation now rests in fields other than cryptography.

In 1997 John Rollett, a retired physicist, came up with a very much more likely candidate when he found the name **Henry Wriothesley** encoded in the 144 letters of the dedication ⁽³⁵⁾. The name Henry emerges when the letters are arranged in a grid with 16 columns and 9 rows.

Т	0	Т	Н	Е	0	Ν	L	Ι	Е	В	Е	G	Е	Т	Т
Е	R	0	F	Т	Η	Е	S	Е	Ι	Ν	S	U	Ι	Ν	G
S	0	Ν	Ν	Ε	Т	S	М	R	W	Н	А	L	L	Н	А
Р	Р	Ι	Ν	Е	S	S	Е	А	Ν	D	Т	Н	А	Т	Е
Т	Е	R	Ν	Ι	Т	Ι	Е	Р	R	0	Μ	Ι	S	Е	D
В	Y	0	U	R	Е	V	Е	R	L	Ι	V	Ι	Ν	G	Р
0	Е	Т	W	Ι	S	Н	Е	Т	Н	Т	Н	Е	W	Е	L
L	W	Ι	S	Н	Ι	Ν	G	А	D	V	Е	Ν	Т	U	R
Е	R	Ι	Ν	S	Е	Т	Т	Ι	Ν	G	F	0	R	Т	Н

And when Rollett inserted the same letters in a grid of eighteen columns and eight rows he found the surname of the patron to whom 'Venus and Adonis' and 'The Rape of Lucrece' were already dedicated:

Т	0	Т	Н	Е	0	Ν	L	Ι	Ε	В	Е	G	Е	Т	Т	Е	R
0	F	Т	Н	Е	S	Е	Ι	Ν	S	U	Ι	Ν	G	S	0	Ν	Ν
E	Т	S	М	R	W	Н	А	L	L	Η	А	Р	Р	Ι	Ν	Е	S
S	Е	А	N	D	Т	Н	А	Т	Ε	Τ	Е	R	Ν	Ι	Т	Ι	Е
Р	R	0	М	Ι	S	Е	D	В	Y	0	U	R	Е	V	Е	R	L
Ι	V	Ι	N	G	Р	0	Е	Т	W	Ι	S	Η	Е	Т	Η	Т	Н
E	W	Е	L	L	W	Ι	S	Η	Ι	N	G	А	D	V	Е	Ν	Т
U	R	Е	R	Ι	Ν	S	Е	Т	Т	Ι	Ν	G	F	0	R	Т	Η

As can be seen, the long and unusual name Wriothesley is found divided up into three blocks WR IOTH ESLEY. Finding any long name by these means is very unlikely, and finding the name of such a prime candidate included in this manner is a huge improbability. Rollett's own calculation of the odds against such a name cropping up in this manner was 320,000,000 to 1 against ⁽³⁶⁾. Rollett's discovery has not been seriously challenged.

Acrostics

In 1957 two well respected cryptographers, William and Elizebeth Friedman, made a detailed analysis of the ciphers which had been claimed to exist in Shakespeare's work ⁽³⁷⁾. They found no evidence of any and were quite disparaging about the attempts which had been made. One thing which emerged from their study was that if an author such as Shakespeare had wished to hide his 'true' name in a poem, an acrostic would make an excellent way of doing so. One benefit of an acrostic message is that it must have been constructed by the author, rather than inserted after the fact by a printer or publisher, and therefore it can be considered concrete evidence:

... in the case of acrostics, any message found must have been inserted by the man who wrote the open text. If, therefore any genuine messages of this kind exist, they must be taken as conclusive. $^{(38)}$

Additionally, the Friedmans highlighted the fact that the strength of an acrostic, as evidence, lies in the 'enormous improbability' that it could ever arise by accident. This is because the method by which the letters are selected is mechanical and inflexible ⁽³⁹⁾.

Their study drew attention to the fact that acrostic writing was very popular among Elizabethan poets and had, for example, been overtly used in a poem to honour of the head of the Elizabethan secret service, Sir Francis Walsingham (for whom Marlowe may have worked). Another example cited was one that cropped up in an apparently anonymous Latin work printed in 1616. The anonymity of this piece, however, lasted only as long as the reader did not put together the consecutive initial letters of each of the fifty-three sections into which the book was divided. If she did, then the phrase 'Franciscus Godwinvvs Landavensis Episcopus hos conscripsit' was revealed - in English this translates to 'Francis Godwin, Bishop of Llandaff, wrote these' ⁽⁴⁰⁾.

An Acrostic Grid

Bearing in mind Rollett's grid discovery and the Friedmans' view on acrostics, I made an acrostic grid for the Sonnets. I took the initial, capitalised, letter from each of the 2155 lines of poetry and set them in a table with 14 columns and 154 rows - thereby reflecting the number of lines in each sonnet and the number of sonnets ⁽⁴¹⁾.

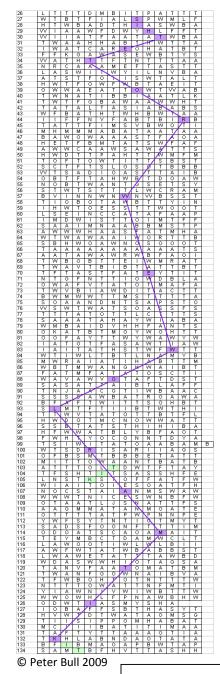
What did this reveal? To begin with I discovered two instances of the name KIT formed from adjacent letters in a straight line. On the grid below these can be traced from the 'K's at squares 105/5 and 132/2. Given the distribution of letters in the grid ⁽⁴²⁾ finding two such KIT acrostics is improbable but only mildly so and not very surprising. However, a closer inspection revealed that something more was happening at both locations.

I found that the K at square 105/5 produced no less than six more KITs written in adjacent squares but in dogleg configurations around it. I also found another straight-line KIT with a letter-spacing interval of three squares down and one to the right ⁽⁴³⁾. Then, when I looked at the K at square 132/2, I found four more straight-line KITs composed with regular letter spacing. That is thirteen instances of the name KIT generated from two of the six K letters in the grid. The anomaly is further compounded by the fact that two of the straight-line KITs at 132/2 were actually KITMs. Naturally, I wondered if the rest of the poet's name could be found.

100	W	Т	S	D	R	Ι	S	А	R	Ι	Ι	А	G	S
101	0	F	В	S	Μ	Т	В	В	В	Е	Т	Α	Т	Т
102	Μ	I	Т	Т	0	W	Α	Α	Ν	Т	В	Α	Т	В
103	Α	Т	Т	Т	0	L	Т	D	W	Т	F	Т	Α	Y
104	Т	F	S	Н	Т	Ι	Т	S	Α	S	S	Н	F	Е
105	L	Ν	S	Т	Κ	S	Т	0	F	F	Α	Т	F	W
106	W	Ι	Α	Ι	Т	0	Ι	Е	S	0	Α	Т	F	Н
107	Ν	0	С	s	Н	А	Ι	Α	Ν	Μ	S	W	Α	W
108	W	W	W	Т	Ν	Ι	С	Е	S	W	Ν	В	F	W
109	0	Т	Α	Α	Т	L	J	S	Ν	Α	Т	Т	F	S
110	Α	Α	G	М	М	Α	Т	Α	Ν	М	0	Α	Т	Е
111	0	Т	Т	Т	Т	Α	Т	Ρ	W	Р	Ν	Ν	Р	Е
112	Y	W	F	S	Y	Т	Ν	Т	Ι	0	Т	М	Y	Т
113	S	Α	D	S	F	0	0	Ν	F	Т	Т	Т	Ι	М
114	0	D	0	Α	Т	S	С	Α	0	Α	Μ	Α	Ι	Т
115	Т	Е	Y	Μ	В	С	Т	D	Α	Μ	W	С	L	Т
116	L	Α	W	0	0	Т	1	W	L	W	L	В	Ι	
117	Α	W	F	W	Т	Α	Т	W	В	Α	В	В	S	Т
118	L	W	Α	W	Е	Т	Α	Т	Т	Т	Α	W	В	D
119	W	D	Α	S	W	W	Н	1	0	Т	Α	G	S	Α
120	Т	Α	Ν	V	F	Α	Α	Т	0	Μ	Α	Т	В	Μ
121	Т	W	Α	Ν	F	G	0	W	Ν	Α	Ι	В	V	Α
122	Т	F	W	В	0	Н	Т	0	Т	Ν	Т	Т	Т	W
123	Ν	Т	Т	Т	0	W	Α	Т	Т	Ν	F	Μ	Т	- 1
124	Y		Α	W	Ν	Ι	V	W	Ι	W	В	Т	Т	W
125	W	W	0	W	Н	L	F	Р	Ν	Α	W	В	Н	W
126	0	D	W	Т	1	Α	S	Μ	Y	S	Н	Α		
127	1	0	В	Α	F	F	S	В	Т	Н	Α	S	Y	Т
128	Н	V	W	Т	D	Т	W	Α	Т	Α	0	Μ	S	G
129	Т		1	S	1	Р	Р	0	Μ	Н	Α	В	Α	Т
130	М	С	1	1	Ι	В	Α	Т	Ι	Т	Ι	Μ	Α	A
131	Т	Α	F	Т	Y	Т	Т	Α	Α	Α	0	Т	Ι	Α
132	Т	K	Н	L	Α	В	Ν	D	Α	0	Т	Α	Т	Α
133	В	F	1	В	Μ	Α	0	Α	Р	В	W	Т	Α	Р
134	S	Α	Μ	Т	В	F	Н	V	Т	Т	Α	S	Н	Н
135	W	Α	Μ	Т	W	Ν	S	Α	Т	Α	S	0	L	Т
136	Ι	S	А	Т	W	Ι	Ι	А	Т	Т	F	Т	Μ	А

A Message

One KITM had a letter-spacing of two letters across and two up, while the other went three across and six up. The latter seemed to me to be particularly significant because it was directly superimposed on a shorter KIT line (with a spacing of one across and two up). However, from this point neither KITM generates a straight or symmetrical continuation with the same letter spacing. This is disappointing and spoils the hope of finding a conventional acrostic. However, it is not the end of the matter.



While our KITM cannot be continued with an interval of three across and six up, it can be continued with an interval of three across and seven up. If we do this, we find another four letter section - MARL - picked out. We now have a minimal spelling of the poet's name, written on two conjoined straight-lines of similarly spaced letters, emerging from a significantly anomalous node of KITs and superimposed on one of them.

The rule that has generated the first two sections is based on a vertically rising zigzag with even letter-spacing on each section and the last letter of one section constituting the first letter of the next section. Following this rule we can discover the letters KIT MARLOWE WROTE THI from an eight-sectioned, ascending zigzag. There is even an S to finish off the message - Kit Marlowe wrote this - by making a vertical rise of one square from the final section. This may be justified on account of the final section being formed in adjacent squares. There are also aesthetic grounds for considering this to show that the message is 'tailing off' at this point.

What to Make of It?

What is this message, and does it have any significance? What we have lacks the regularity required of a genuine acrostic and so the message may not be considered a cipher. The fact of its existence is not sufficient proof of its validity.

Despite this, it is not without a measure of significance. It is significant that a message has been found by acrostic means, naming and correctly spelling one of only a tiny handful of possible alternative authorial candidates. The fact that the text claims this candidate to have been the author of the work makes the message text 'ideal'. It is also significant that the message has a clearly signaled starting point, as well as a distinctive termination. Furthermore, it is important to notice that the two longest sections contain the most distinctive element of the message (the author's name) and come at the beginning, therefore leading the reader on to discover the rest of the message.

Intriguing though it may be, the message doesn't appear at this stage to have that measure of 'enormous improbability' required of a true acrostic. It is possible, for example, to find some alternative versions of the message by similar means ⁽⁴⁴⁾. If the message is valid there will need to be a totally convincing reason for its departure from rigid symmetry. In other words, there will need to be an alternative source of enormous improbability underlying the precise form of its construction.

Before considering what this might be, it is worth presenting one reason why Kit Marlowe may not have wished to announce his authorship by means of a straightforward acrostic. This is because a measure of irregularity keeps the message more secure. It is an argument with some pertinence because, as both Hotson and the Friedmans have pointed out, the reader of Shakespeare's day was far more attuned to wordplay, number puzzles and acrostics than we are today. Predictable forms of encryption are easily broken down, as Mary Queen of Scots and Anthony Babington found out to their dire cost. It is inevitable that the Sonnets, with its enigmatic dedication and teasing text, would attract the attentions of would-be cryptographers. Therefore, double encryption is not a bad idea. However, this argument of security doesn't make the message any more valid.

The validity of the message actually hinges on demonstrating that there is greatly more to it than the crazy zigzag which it appears to the casual observer. In fact we will soon see that, far from being crazy, the form of the zigzag entails a level of

14

organization far above that of simple symmetry and the placement of each letter is critical. The way to prove this requires the services of Agrippa and Euclid.

<u>Analysis</u>

Plotting the Message

The first thing to understand is that our author took advantage of the fact that he could exploit the numerical properties of his grid to convey far more than the bare bones of the text. In particular, he was able to use the fact that each letter (or the gridsquare in which the letter is found) has a numerical value, corresponding to its line number, from 1 to 2155. Thus the message has numerical properties devolving from the location of its constituent letters.

Let's examine this numerical profile:

K	1835
I	1756
T	1675
M	1594
A	1493
R	1392
L	1290
O	1225
W	1160
E	<u>976</u>
W	792
R	615
O	541
T	467
E	442
T	417
H	402
I	387
S	373

A. Beginning, Middle and End

1. Central Point

In Renaissance poetry the central point was regarded as 'sovereign' and in terms of number symbolism it had supreme significance ⁽⁴⁵⁾. With nineteen letters, this message has a central point and it comes at square 976. For Christopher Marlowe this number was indeed significant because it constitutes the Golden Section division of the value of his name:

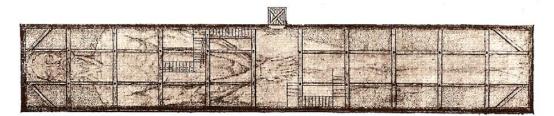
CHRISTOPHER	3 + 8 + 80 + 9 + 90 + 100 + 50 + 60 + 8 + 5 + 80 = 493
MARLOWE	30 + 1 + 80 + 20 + 50 + 900 + 5 = 1086
	493 + 1086 = 1579
1579 / 1.618 = 975.9	

2. The Poet Encapsulated

The second most strategically important part of the message is the first letter, which appears at square 1835. What we notice about the first and central letters is that between them they neatly encompass the name Kit Marlowe. The sum of these two numbers is 2811. This number has relevance because a rectangle with dimensions of 6 x 1 and a perimeter of 2811 has a length of 1205. 1205 is the value of Kit Marlowe:

KIT 10 + 9 + 100 = 119MARLOWE 30 + 1 + 80 + 20 + 50 + 900 + 5 = 1086119 + 1086 = 1205

Why is a 6 x 1 rectangle significant? The reason why it should encompass the poet is because it carries the proportions of Noah's ark. The ark was commonly viewed in the Renaissance as a divinely proportioned container for the microcosmic man. In Agrippa's words, 'God himself taught Noah to build the ark according to the measure of man's body . . . for as the body of man is in length 300 minutes, in breadth 50, in height 30; so the length of the ark was 300 cubits, the breadth 50, and the height 30° (⁴⁶).



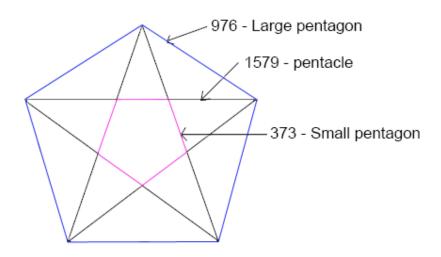
Drawing by Arias Montanus showing Christ's body in the ark, 1593 ⁽⁴⁷⁾

Therefore, the combined numbers of 1835 and 976 tell us where Kit Marlowe was buried. On its own, the number 2811 would have no interpretive validity, but the strategic locations of its two component parts give it the weight of evidence.

3. End Point

The final letter of the message, the S of THIS, appears at square 373. This number is directly related to both 976 and 1579 by means of the Golden Section and the pentagonal geometry which that ratio governs.

A five pointed star, or pentacle, with a total side length of 1579 (each side measuring 315.8) may be drawn within a pentagon whose perimeter is its Golden Section division – 976. The smaller pentagon which it encloses has a perimeter of 373 (actually 372.76) ⁽⁴⁸⁾. So the centre point and the endpoint of the message (at 976 and 373) neatly define a pentacle of 1579 extent – esoteric symbol of Christopher Marlowe.



There may be symbolic importance in the fact that the message starts with a coffin (ark) and leads on to vibrant star (pentacle) at the end. It is a motif of resurrection that is both suitable for the Marlowe the author and for a Freemason. In the climax of the ritual to 'make' a Master Mason, the candidate is raised from the dead and then given the 'five points of fellowship' ⁽⁴⁹⁾.

4. Christopher Marlowe - 1579

Just in case we were in any doubt about 976 and 373 pointing to the value of 'Christopher Marlowe' - 1579 - this number also makes an independent and wholly unambiguous appearance in the message.

The final word - THIS - is distinctive from the other three because the letters of which it is comprised all lie adjacent to one another. The significance is proved because the sum of the position values is precisely 1579.

373 + 387 + 402 + 417 = **1579**

The numbers also have the geometric virtue of breaking down into 1206 and 373, which are the external and internal perimeters of a 1579 pentacle.

<u>5. Χριστοφερ Μαρλω - 2856</u>

If the word THIS was placed so as to indicate the gematria value of the author's name, it is natural to wonder if there could be any significance to the placement of the preceding word, WROTE. The numbers signaled by these five letters sum as 792 + 615 + 541 + 467 + 442 = 2857. This is interesting because at 2856 we have the value of the Marlowe's name when transliterated into Greek: Xριστοφερ Μαρλω.

Χριστοφερ	600 + 100 + 10 + 200 + 300 + 70 + 500 + 5 + 100 = 1885
Μαρλω	40 + 1 + 100 + 30 + 800 = 971
-	1885 + 971 = 2856

By modern standards of mathematics we might be inclined to call a miss as good as a mile, but following the rules of gematria a single digit astray is allowable ⁽⁵⁰⁾. It is also noteworthy that the final two figures combine to make 909, which is the diameter of a 2856 circumference circle.

Thus of the four words in the message, the first two are actually 'Kit Marlowe' and the latter two enumerate the name Christopher Marlowe by English and Greek gematria. Additionally, the positions of the first, central and final letters provide the perimeter of an 'ark' for 'Kit Marlowe' and all the dimensions of a 1579 pentacle. The 'sovereign' central figure of 976, which unites both geometric forms, represents the poet's name divided by the Golden Section.

These numbers are not emerging in a haphazard form, but derive from the most strategically significant components of the message. They are beginning to make the kind of meaningful patterns we would expect from a deliberate plan.

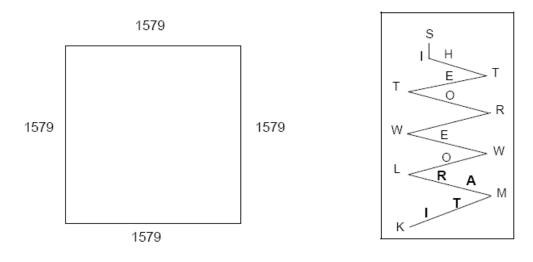
B. Christopher Marlowe's Mark

So far we have examined some individual components of the message, but paid no attention to its most striking feature: the curious zigzag. Could there be something grander afoot? Might we hope for an over-arching design for the whole message?

<u>Part 1</u>

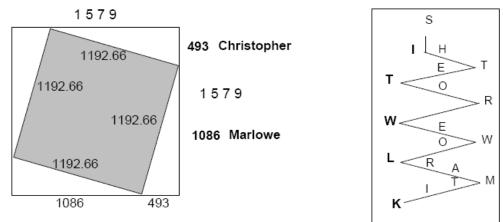
The fact that there are four words in the message is mirrored in the fact that there are just four letters in the centre of sections comprised of four letters. These lie on the initial two lines (as can be seen below). The letters, here in blue - **KIT MARLOWE WROTE THIS** - , are located in squares 1756, 1675, 1493 & 1392. The sum of these four is 6316, which is 1579 multiplied by <u>four</u>. This is another unlikely 'coincidence'.

Considering their almost square arrangement in the grid, we can represent 6316 as a square whose sides each count the name 'Christopher Marlowe'.



<u>Part 2</u>

Counting the letters on the left side of the zigzag - KIT MARLOWE WROTE THIS - we find: 1835 + 1290 + 792 + 467 + 387 = 4771. In context of the square above, this is an extraordinarily propitious number. 4771 measures the perimeter of that square that may be drawn inside a 1579 sided square and rotated such that its vertices intersect the sides and divide them into two components of 493 and 1086. In other words it splits the square we have just drawn according to the values of 'Christopher' and 'Marlowe' respectively.

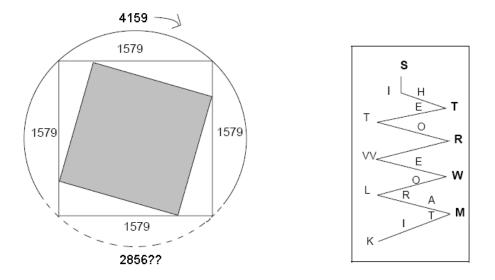


Perimeter of shaded square: 1192.66 x 4 = 4770.64

How could two structural features of an entirely random message sequence do this? Even more, 'How could they do this when the last word has already assayed the value of 1579, and when its centre and end letters divide 1579 perfectly by its Golden Section proportions?' The answer is that it isn't possible; at least, not by any random means.

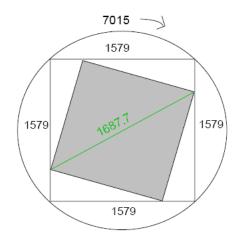
Part 3

We already have quite a decent geometric signature. How might it be elaborated? The most aesthetically compelling way to do this would be to encircle the 1579 sided square. This would require a circle with a circumference of 7015. I wondered if the letters down the right side of the zigzag would achieve this. If we count these and include the terminal letter - KIT MARLOWE WROTE THIS - we have 1594 + 1160 + 615 + 417 + 373 = 4159. Unfortunately this is well short. In fact short by exactly 2856, but as this the value of the Greek form of his name Xριστοφερ Μαρλω, we may be entitled to think there is something fishy afoot.



Perhaps the amount of the shortfall is being drawn to our attention for some reason? Well, if we divide 7015 by 4159 we discover a decimal fraction of 1.6867 ⁽⁵¹⁾ and in this we have a very precise measurement of the diagonal of the 4771 perimeter, 1192.66 sided square sitting in the 1579 sided square and dividing those sides in the proportions of Christopher and Marlowe. The actual dimension is 1686.68

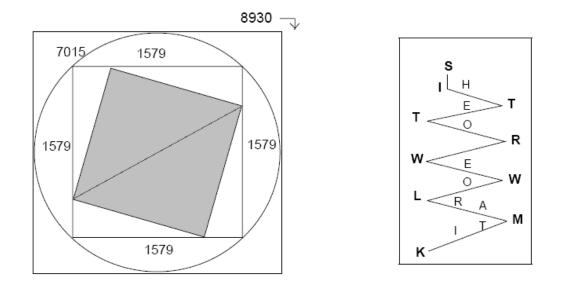
This justifies the completion of the circle and justifies conceptualizing 4771 in terms of the perimeter of a square . . . which is very neat indeed.



Part 4

The next stage requires nothing so fancy, just all ten of the numbers forming the outside points of the zigzag: 1835 + 1290 + 792 + 467 + 387 + 1594 + 1160 +

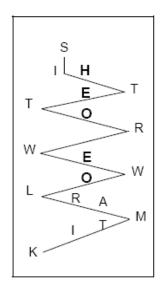
615 + 417 + 373 = 8930. This measures the perimeter of the square which may be drawn around the 7015 circumference circle and whose sides measure 1579 x rt2 ⁽⁵²⁾.



It has to be said that this is a highly impressive artefact to emerge from the values of just three of the main structural components in a 'random' zigzag of letters.

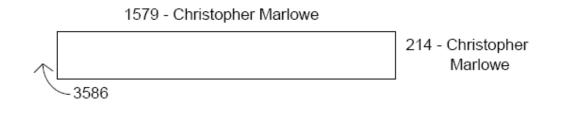
Part 5

So far one component remains unaccounted for. This is the five remaining letters coming up the centre, all of which are located in the middle of three-letter lines. If the message were smoke, Brownian motion would dictate that these should be totally random and devoid of significance; but not so if the message were a master geometrician's art of craft. The letters are KIT MARLOWE WROTE THIS and they have values of 1225 + 976 + 541 + 442 + 402 = 3586.



This number 3586 can be no accident because it measures the perimeter of a rectangle with sides of 214 and

1579. These are the values of 'Christopher Marlowe' counted by the two codes of English gematria. The poet's name is once more 'squared'.

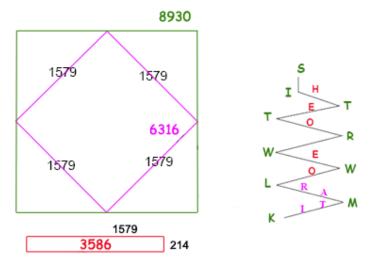


According to the traditional evaluation of the English letters (A=1 to Z=24, see above p.3), his name is counted:

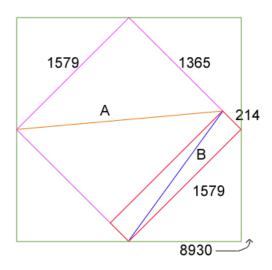
CHRISTOPHER	3 + 8 + 17 + 9 + 18 + 19 + 14 + 15 + 8 + 5 + 17 = 133
MARLOWE	12 + 1 + 17 + 11 + 14 + 21 + 5 = 81
	133 + 81 = 214

Part 6

One way of looking at the zigzag message as a whole is to break it down into three distinct parts: the outside, the paired letters inside sections and the single letters inside sections. This yields three discreet 'squaring' figures for 1579: the square with sides of 1579, the square with sides of 1579 x rt2 and the 1579 by 214 rectangle (6316, 8930 & 3586):



However, as two of the figures are already integrated, it makes sense to integrate the 214 x 1579 rectangle, too. There is a visual hint that as the outside of the zigzag (green square) encloses the interior twinned points (purple square), it should also enclose the interior single points (red rectangle). It seems that the most obvious way of doing this is to place the red rectangle inside the 1579 square:



This placement creates the two diagonals, A (amber) and B (blue). By means of Euclid's 47^{th} Proposition, we can work out that diagonal A measures just over 2087. This number points to a salient expression from the New Testament, 'Ot vekpot εγερθησονται αφθαρτοι' ⁽⁵³⁾ - The dead shall be raised incorruptible (1 Cor. 15, 52). Credence for this interpretation comes from the value of the other diagonal ⁽⁵⁴⁾.

Diagonal B measures 1593.4356 – and if we understand this as a year and a fraction of a year, it takes us to between 26^{th} May and 8^{th} June 1593 (according to how the decimal fraction is rounded). Between the two, lies 30^{th} May 1593, the day that Marlowe is reported to have had a difference of opinion over the reckoning.

We can see that message 'Kit Marlowe Wrote This' serves to resurrect both the man and his good name as a mathematician.

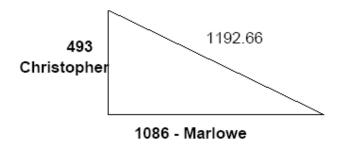
<u>Part 7</u>

The grand total of the letter locations for the whole message also tells of the poet's mathematical virtuosity rather than the cobbling that would be required to beat a completely random figure into service. The sum of these is 18832:

1835 + 1756 + 1675 + 1594 + 1493 + 1392 + 1290 + 1225 + 1160 + 976 + 792 + 615 + 541 + 467 + 442 + 417 + 402 + 387 + 373 = 18832

How, you will wonder, could 18832 have any relevance to Christopher Marlowe? It couldn't possibly be connected to 'squaring' the two components of his name by means of Euclid's 47th Proposition, could it?

The key to dividing a 1579 sided square into the proportions fitting 'Christopher' and 'Marlowe' lies in the right angled triangle with perpendiculars of 493 and 1086, and hypotenuse of 1192.66. It so happens that if we divide 18832 by 1579 the result is 11.9265 - thus the exact digits of the hypotenuse ⁽⁵⁵⁾. No other five digit number comes closer than 18832 to doing this.



Part 8

Taking 1579 away from the total of 18832 can be justified as the trimming of the final word to leave just KIT MARLOWE WROTE. The new value is 17253 and when we divide this by 1579 we experience a feeling of déjà vu. The result is 10.926 – and this supplies the digits measuring the hypotenuse of a 119 by 1086 right angled triangle (1092.5) squaring the two names 'Kit' and 'Marlowe'.



Part 9

Amazingly, the figure of 18832 has a third relevant property. We have seen how THIS is valued at 1579 and the four letters centrally grouped on the four letter sections are valued at 4 x 1579. If the latter denote a square, then the former perhaps points in the direction of a third dimension – a cube. The number remaining is 18832 – $(5 \times 1579) = 10937$. This figure just happens to be the sum of the four diagonals of a cube with sides of 1579 ⁽⁵⁶⁾.

Part 10

Somewhere along the continuum between the amazing and the miraculous, the number 18832 generates yet another extraordinarily relevant property. If, instead of

dividing it by 1579, we divide it by 19 (the number of letters in the message) we find the result is precisely 991.**1579**

The apparently gratuitous appearance of 991 is even mollified by the fact that line 991 of the Sonnets (in sonnet 71) refers directly to the author's concealed name:

- 989 O if (I say) you looke vpon this verse,
- 990 When I (perhaps) compounded am with clay,
- 991 Do not so much as <u>my poore name</u> reherse;
- But let your loue euen with my life decay.

The preceding line also puts us in mind of the fact that **marl** is a compound of clay and chalk, and so the author hints at his own (poor) name ⁽⁵⁷⁾.

How many random 5 digit numbers could achieve one, let alone four of the extraordinary feats we have just seen 18832 perform? How many could achieve any of these feats as effortlessly and without contrivance?

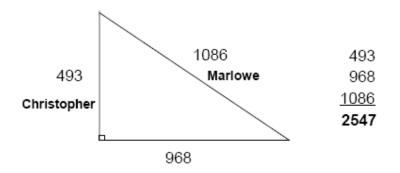
<u>Part 11</u>

At the outset of this quest for an acrostic message we discovered not one but two KITMs at our starting point. The subsidiary KITM actually provides an alternative starting point for the message, albeit a less satisfactory one: the M requires an ungainly vertical hop of 19 squares to join the A in Marlowe. This version of the message has placement values for the first four letters of 1835, 1809, 1783 and 1759 and thus the whole message gains a new total of 19158.

When 19158 is divided by 19 (as above) it yields 1008.31579 - just like the calculation above. And if the last digit is rounded up, it gives 1008.3158 - where 3158 equals 1579×2 . This was probably just included as an afterthought, although there may be something to discover in the pairing of 991 and 1008 ⁽⁵⁸⁾.

C. The Message Itself

So far we have yet to consider the numerical profile of the actual message. Why did the author write **'Kit Marlowe wrote this',** rather than, for example, 'Christopher Marlowe penned these Sonnets'? Aside from being brief and to the point, the message was clearly chosen because its gematria value is 2547. This measures the perimeter of 'the other' right-angle triangle that 'squares' his name in English. This has an upright of 493 and a hypotenuse of 1086.

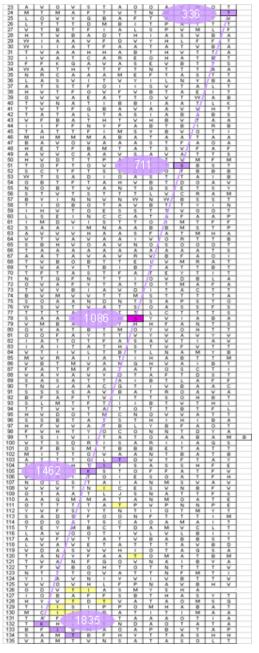


D. The Two Kit Nodes

Up to this point, a critical validating factor for the message has been the way that every feature has been neatly accounted for. There are no extraneous components and no loose ends.

However, at the outset of our quest for a message we observed not one but two possible starting points, two KIT nodes. The second KIT node has not yet been explained. What function does it serve?

The presence of a second node provides a means of triangulation. It generates for us not only a second dimension, a line with a direction, but also, by virtue of the grid structure, a measurement of distance. Thus a third point in the grid has been lined up in the crosshairs. To find this point we must calculate the path from the message node at 1835 (132/2) to the second node at 1462 (105/5). This requires a move of three squares to the right and twenty seven squares up. If we then repeat this move,

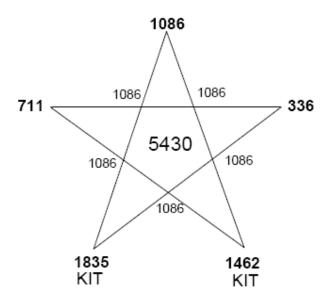


we are vectored in towards square 1086 (78/8). We already know that 1086 is the gematria value of 'Marlowe'.

So of all the squares in the grid, the two KIT nodes are perfectly aligned with the square carrying the number of Marlowe. It is enormously improbable that this arrangement could have occurred at random.

It is also satisfying to see that the requisite move of 3 x 27 defines a block of 81 squares and 81 is the value of 'Marlowe' by the secondary code of English gematria (see p.3 and p.23 above).

Furthermore, if we continue to project this KIT line, we discover two more contact points. The five points lie at squares 1835, 1462, 1086, 711 & 336. What is striking about these numbers is that not only does 1086 lie at the 'sovereign' central point of the line, but the sum of the numbers is 5430, which is 1086 times 5. This is very neat, for it measures the total length of a 1086 sided pentacle, the symbol of a man - in this case one called Marlowe.



Conclusion

An 'ideal' message asserting Marlowe's authorship of Shakespeare's Sonnets has been found by an acrostic methodology. The asymmetric form of the message has been shown to derive from numerical considerations underlying the author's geometric signature. A credible explanation for the form of this signature is that it constitutes a Mason's mark.

The sophistication, accuracy, integration and relentless consistency of the embodied symbolism rule out any possibility that the message could have appeared as it does by random processes. Therefore 'Kit Marlowe Wrote This' is a valid cryptogram and it must have been constructed by the man who wrote the Sonnets – Christopher Marlowe.

Times glorie is to calme contending Kings, To vnmaske falshood, and bring truth to light, To stampe the seale of time in aged things, To wake the morne, and Centinell the night, To wrong the wronger till he render right, To ruinate proud buildings with thy howres, And smeare with dust their glitring golden towrs

Notes

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2 Butler, C. (1970) Numerological Thought. In *Silent Poetry – Essays in Numerological Analysis*, ed. A. Fowler. London: Routledge & Kegan Paul Ltd, 10.

3 Dee, J. (1570) *Mathematical Praeface To The Elements of Geometry of Euclid of Megara*. With an introduction by Allen Debus. (Primary Sources from the Scientific Revolution.) New York: Science History Publications. 1975.

4 Fowler, (1964) op. cit., 238.

5 Fowler, A. (1970) *Triumphal Forms - Structural Patterns in Elizabethan Poetry*, Cambridge: Cambridge University Press, ix.

6 Fowler (1970) ibid., 183.

7 There is a substantial literature on gematria. A good starting point would be *The Greek Qabalah* by Kieren Barry (1999) York Beach, ME: Samuel Weiser, Inc. The startling gematria properties of the first verses of Genesis, which may well have been known during the Renaissance, are described on Vernon Jenkin's website: http://homepage.virgin.net/vernon.jenkins/ (accessed 17/08/08).

8 Balliol College, Oxford, ms. 354. See R. Robbins, *Secular Lyrics of the XIVth and XVth Centuries*. Oxford: Clarendon Press, (1952), 253.

9 Barry, op. cit., 21-23.

10 Agrippa, H. (1533) *Three Books of Occult Philosophy*. Modern ed. D. Tyson, Llewellyn's Sourcebook Series. St Paul, Mn: Llewellyn Publications. Bk. II, ch.xx.

11 Mebane, J. (1989) *Renaissance Magic & The Return of the Golden Age*. Lincoln & London: University of Nebraska Press (1999 edn.), 53.

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13 Mebane, (1989) op. cit., 53.

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15 French, ibid., 112.

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17 Nicholl, C. (1992) *The Reckoning – The Murder of Christopher Marlowe*. Revised edn., Vintage, (2002). London: Jonathan Cape, 242.

18 See, de Lorenzo, G (1922) *Shakespeare e il Dolore del Mondo*. Bologna: Zanichelli.

19 Yates, F. (1964) *Giordano Bruno and the Hermetic Tradition*. 1991 edn. Chicago & London: University of Chicago Press, 356.

20 Kermode, F. (1954) Introduction, *The Tempest*, The Arden Shakespeare, London: Methuen.

21 *Regius Poem* (c.1400) British Museum - Halliwell ms., No. 17, A I. in the Bibl. Reg. Online version at: <u>http://www.freemasons-freemasonry.com/regius.html</u> Accessed 17/08/08.

22 *Matthew Cooke Manuscript* (c.1450) British Museum: "Additional M.S. 23,198", lines 623-628. Online version at <u>http://freemasonry.bcy.ca/texts/cooke.html</u> Accessed 17/08/08

23 Crawdord Smith, D. (1898) *History of the Masonic Lodge of Scoon and Perth No. 3 (The Lodge of Scone)*. Perth: Cowan & Co., Limited, 45 & 49. 24 Stevenson, D. (1988) *The Origins of Freemasonry – Scotland's Century 1590-1710.* Paperback edn. 1996. Cambridge: Cambridge University Press, Stevenson, 34-51.

25 Heisler, R. (1990) The Impact of Freemasonry on Elizabethan Literature. *The Hermetic Journal*, 1990. Online version at <u>http://www.levity.com/alchemy/h_fre.html</u> Accessed 17/08/08.

26 "Pasquill" (Thomas Nashe or Robert Greene) (1589) *A Countercuffe given to Martin Junior*, London : John Charlewood.

27 Cited in Grosart, A. (1884) *Works of Gabriel Harvey*, 3 vols. London: privately printed, 133.

28 Grosart, ibid., 77.

29 Anderson, J. (1738) *The New Book of Constitutions of the Antient and*

Honourable Fraternity of Free and Accepted Masons. York: Cæsar Ward and Richard Chandler, 81.

30 Dawkins, R. (1998) Shakespeare and Freemasonry. *Freemasonry Today* (winter 1998). Online reference at: <u>http://www.freemasonrytoday.com/03/p13.php</u> Accessed 18/08/08.

31 Bull, P. (2004) *Anthony and Cleopatra – A Masonic Play*. <u>http://www.masoncode.com/Anthony_and_Cleopatra.html</u> Accessed 18/08/08

32 Stevenson, D. (1988) op. cit., 169. The illustration of Sir Robert Moray's mark is from the Kincardine Papers, f.67r, property of the Earl of Elgin.

33 Stevenson, ibid., 170.

34 Hotson, L. (1964) *Mr W.H.*. London: Rupert Hart Davis, 153.

35 Rollett, J. (1997) reported in The Times 31st December 1997 and The Elizabethan Review, Autumn 1997, 93-122.

36 Rollett, 1997, ibid.

37 Friedman, W. and Friedman, E. (1957) *The Shakespearean Ciphers Examined*. Cambridge: Cambridge University Press.

38 Friedmans, ibid., 92.

39 Friedmans, ibid., 100.

40 Friedmans, ibid., 100.

41 This grid actually has two points of departure from regularity. These are caused by the fact that sonnet 99 has 15 lines and sonnet 126 has just 12 lines. The total is thus 2155 lines.

42 The letter K is rare and there are only 6 examples, but there are 130 instances of I and 439 of T.

43 Any name or message constructed from regularly spaced letters in a straight or symmetrical line will count as an authentic acrostic. However the length of the message is also an important validating factor.

44 I am grateful to Terry Ross and Peter Farey for pointing some of these out to me.

45 Fowler, *Triumphal Forms*, ch.4 – especially 62-63.

46 Agrippa, op. cit., II, ch. xxvii.

47 Benedictus Arias Montanus (1593) *Antiquitatum Judaicorum libri IX*, Leiden Plate L.

48 The ratio between the outer pentagon and the inner pentagon (of an inscribed pentacle) is $1 : (1/\Phi)^2$. It follows that an easy way to get from the total side length of a pentacle to the perimeter of its interior pentagon is to divide by 4.236

49 There is no way of knowing if the ritual was the same in Jacobean times, but it may have been. There are numerous online sources for the current ritual, such as:

http://www.phoenixmasonry.org/duncans ritual/master mason.htm

50 The cabalistic rule of 'colel' states that one digit can be added to, or subtracted from, the gematria value of a word without affecting its value. The justification is that cabalists did not understand 'one' as a number because it symbolized the deity and could come and go as 'He' pleased, adding nothing and taking nothing away.

Shakespeare refers to this concept in Sonnet 136, when he writes, "Among a number one is reckon'd none." The rule of colel was described by Moses Cordovero in *Pardes Rimmonim* written in 1549 (later published in Cracow in 1592).

51 Decimal fractions were introduced into mainstream mathematics by Simon Stevin in 1585, with his publication called 'De Thiende'(Leyden, Christopher Plantin). In the French translation of the same year it took the name 'Disme', meaning a tenth. Robert Norton put out an English translation in 1608. Shakespeare was aware of this system because he refers to the Disme in *Troilus and Cressida* 2,2, 19-23:

"Every tithe soul, 'mongst many thousand dismes, Hath been as dear as Helen; I mean, of ours: If we have lost so many tenths of ours, To guard a thing not ours nor worth to us, Had it our name, the value of one ten."

Marlowe would have been well informed about mathematical developments through his friendship with brilliant mathematicians like Walter Warner and Thomas Hariot.

52 Actually a figure of 8932 would be ideal, but 8930 is close enough to surround a rt2 inner square with sides of 1578.97.

53 According to Greek gematria (see Agrippa II, ch. xviii, or Barry, op. cit., 206-207), the phrase is evaluated:

 $\left(\begin{array}{c} 70+10+50+5+20+100+70+10+5+3+5+100+9+8+200+70+50+300+1+10+1+500+9+1+100+300+70+10=2087 \end{array} \right)$

54 The exact length of the diagonal is extremely close to rt3 x 1205 (Kit Marlowe) and it therefore measures the diagonal of a cube with sides of 1205. However this number doesn't appear to be part of any pattern and so there is nothing to justify this interpretation.

55 See note 50 above. To achieve a perfect result, the number would need to be 1,883,214.85

56 It is actually 1578.6, but this is 1579 rounded to the nearest whole number.

57 There is additional complexity beneath the surface of this quatrain because 989 is the gematria value of 'William'. Thus at one level he is complaining of having his work mired by the dull clay of William, whose name it officially bears.

58 The two numbers 991 and 1008 may be part of an intentional pattern centred on line 999. However, a discussion of this lies beyond the scope of the present paper.

Appendix – The Complete Acrostic Grid

1	F	Т	в	Н	в	F	M	ΙT	T	A	W	A	P	T	
2	Ŵ	A	T	Ŵ	T	Ŵ	T	Ŵ	н	f	S	P	T	Å	
3	L	N	W	Т	F	D	0	0	T	С	S	D	В	D	
4	\sim	\sim	N	A	Т	T	P	S	F	T	Т	W	T	W	
5	Т	Т	W	Α	F	Т	S	в	Т	A	в	N	в	L	
6	Ť	- i	M	Ŵ	T	Ŵ	T	0	Ť		T	L	B	T	
								-							
7	L	L	D	S	A	R	Y	A	В	L	Т	F	S	V	
8	M	S	W	0		в	Т		M	S	R	W	W	S	
9		Т	A	Т	Т	Т	W	в	L	S	в	A	N	Т	
10	F	Ŵ	G	В	F	T	S	Ŵ	ō	ŝ	в	0	M	T	
						Ŵ						Ŵ			
11	A		A	T	Н		1	A	L	Н	L		S	T	
12	VV	A	W	A	W	W	A	в	Т	Т	S	A	A	S	
13	0	N	A	A	S	F	Y	W	W	W	A	A	0	Y	
14	N	A	в	0	N	Р	0	в	в	A	Α		0	Т	
15	Ŵ	H	T	Ŵ	Ŵ	Ċ	V	A	T	S	Ŵ	T	A	A	
						-									
16	В	M	A	W	N	A	W	M	S	W	N	С	T	A	
17	VV		Т	W		A	Т	S	S	в	A	A	в	Y	
18	S	T	R	A	S	A	A	в	в	N	N	W	S	S	
19	D	A	P	Α	M	A	Т	в	0	N	Н	F	Y	M	
20	A	H	Å	Ŵ	A	G	Å	Ŵ	Ă	T	A	B	B	M	
21	S	S	W	A	M	W	W	T	0	A	A	A	L		
22	M	S	в	Т	F		W	Н	0	A	в	Α	Р	Т	
23	A	W	0	W	S	T	A	0	0	A	W	Μ	0	Т	
24	M	T	M	A	F	Ť	Ŵ	Ť	Ň	M	A	D	Ý	Ť	
			W									-		Ŵ	
25	L	0		V	G	В	A	F	T	A		A	T		
26	L	Т	Т	Т	D	M	в		Т	Р	A	Т	Т	Т	
27	W	Т	В	Т	F		Α	L	S	Р	W	Μ	L	F	
28	Н	T	W	В	A	D	T	H		A	S	W	в	A	
29	Ŵ	l i	A	A	Ŵ	F	Ď	Ŵ	Ý	H	Ľ	F	F	T	
	VV				T		_					Ŵ	B		
30				A		F	A	A	Т	A	Т		_	A	
31	Т	W	A	Α	Н	Н	A	в	T	ł	W	Т	Т	A	
32		W	Α	Т	С	A	R	E	0	н	Α	Т	в	Т	
33	F	F	ĸ	G	A	W	A	S	E	W	В	T	Ŷ	S	
	Ŵ			-											
34		A	T	Н	Т	T	F	T	N	T	T	T	A	A	
35	N	R	С	A	A	A	M	E	F	Т	A	S	Т	Т	
36	L	A	S	W	-	7	W	Y		L	N	\sim	B	A	
37	A	Т	S	Т	F	0			S	W	Т	A	L	Т	
38	H	Ŵ	Ť	F	ò	Ŵ	F	var.	B	T	Å	E		Ť	
39	0	W	W	A	E	A	Т	Т	0	W	Т	VV	A	В	
40	Т	W	N	A	Т		в	B		A	Α	Т	L	К	
41	Т	W	Т	F	G	в	A	W	A	A	W	W	Н	Т	
42	T	A	T	A	L	T	A	S		A	B	A	в	S	
	Ŵ	F	в		T		f	Ŵ		B	Ŵ				
43				A		Н			Н			1	А	A	
44			F	F	N	V	F	A	в	T	в		R	в	
45															
46	Т	Α	Т	Т	F		M	S	1 V	в	W	0	Τ		
									V						
	М	н	М	М	М	Α	в	Α	V T	А	А	T	Α	А	
47	M B	H A	M W	M	M W	A	B A	A	V T S	A T	A F	X	A O	A A	
47 48	M B H	H A E	M W T	M O F	M W B	A A M	B A T	A A A	V T S T	A T S	A F W	T A F	A O A	A A F	
47 48 49	M B H A	H A E W	M W T W	M O F C	M W B A	A A M A	B A T W	A A S	V T S T A	A T S W	A F W	X	A O A T	A A F S	
47 48	M B H	H A E	M W T	M O F	M W B	A A M	B A T	A A A	V T S T	A T S	A F W	T A F	A O A	A A F	
47 48 49 50	M H H H	H A E W	M W T W D	M O F C T	M W B A T	A A M A P	B A T W A	A A S H	V T S T A T	A T S W T	A F V A V	T A F T M	A O A T F	A F S	
47 48 49 50 51	M H A H T	H A E V O	M T W D F	M F C T	M W B A T O	A M A P W	B T W A T	A A S H	V T S T A T	A T S W T	⊲⊩≷∢≷თ	T A F T M B	A O A T F S	A F S M	
47 48 49 50 51 52	M B H A H H S	H A E ♥ ♥ O C	M VV T D F T	M F C T F	M W A T O T	A A M A P W S	B T W A T L	A A S H O	V T S T A T T S	A T W T T	∢⊫≷∢≷∽⊢	T A F T M B B	A O A T F S B	A F S M T B	
47 48 49 50 51 52 53	M H A H T S V	H E W O C T	M W T D F T S	M F C T F A	M B A T O T D	A M A W S	B T W A T L O	A A S H I O A	V T A T T S S	A T W T T Ø T	A F W A W S T T	T F T B B A	A O A T F S B	A F S M T B	
47 48 49 50 51 52 53 54	M B H A H T S ≥ O	H E W O C T B	M W T D F T S T	M C T T F A F	M W A T O T D T	A M A P W S I A	B A T A T L O H	A A S H I O A W	V T S T A T T S S B	A T S W T T T T	A F X A X S F F D	F F M B A O	A O A T F S B I A	A F S M T B B W	
47 48 49 50 51 52 53	M H A H T S V	H E W O C T	M T W D F T S	M F C T F A	M B A T O T D	A M A W S	B T W A T L O	A A S H I O A	V T A T T S S	A T W T T Ø	A F W A W S T T	T F T B B A	A O A T F S B	A F S M T B	
47 48 49 50 51 52 53 54 55	MBHAH⊢S>OZ	H A E W O C T B O	M W D F T S T B	M F C T F A F T	M B A T O T D T W	A A M A V S I A A	B A T A T L O H N	A A S H I O A W T	V T S T A T T S S B G	A T S W T T T S	A F V A V S T T D E	TAFT MBBAOT	A O A T F S B I A S	A F S M T B B W Y	
47 48 49 50 51 52 53 53 54 55 56	™ B H ⊲ H ⊢ S ≥ O Z S	H A E W O C T B O T	M W D F T S T B W	M F C T F A F T T	M B A T O T D T V S	A M A P W S I A A T	B A T W A T L O H N T	A A S H I O A W T T	V T S T A T T S S B G L	A T S W T T T S W	A F ≫ A ≷ S T T D E C	TAFTMBBAOTR	A O A T F S B I A S	A A F S M T B B ∀ Y M	
47 48 49 50 51 52 53 54 55 56 56 57	™ ® H ⊲ H ⊢ S ≥ O Z S ®	H A E W O C T B O T V	M W D F T S T B W	M F C T F A F T N	M W B A T O T D T W S N	A A A P W S I A A T W	B A T A T L O H N T N	A A S H I O A W T T V V	V T S T A T T S S B O L N	A T S W T T T S W VV	⋖₣⅀⋧⋧⋦⋈⊢⊢⋻шсв	T T F T M B B A O T R S	A O A T F S B I A S A S	A F S M T B B W Y M T	
47 48 50 51 52 53 54 55 56 57 58	M B H A H F S ≥ O N S B F	HAEWOCTBOTV-	M W D F T S T B W I O	M F C T F A F T N B	M W B A T O T D T W S N O	A A A P W S I A A T W T	B A T A T L O H N T A	A A S H I O A W T T V V V	V T S T A T T S S B G L N B	A T S W T T S W VV T	A F V A V S T T D E C B T	T T M B B A O T R S Y	A O A T F S B I A S A S I	A F S M T B B V Y M T N	
47 48 49 50 51 52 53 54 55 56 55 56 57 58 59	™ ® H ⊲ H ⊢ S ≥ O Z S ®	HAEVVOCTBOTV-H	M W T V D F T S T B W I O W	M F C T F A F T N	M V B A T O T D T V N N O O	A M A P W S I A A T W T E	B A T A T L O H N T N A S	A A S H I O A W T T V V S	V T S T A T T S S B O L N B T	A T S W T T S W V T T	A F ¥ A ¥ S T T D E C B T ¥	TAFTMBBAOTRSYO	A O A T F S B I A S A S I O	A A F S M T B B V Y M T N T	
47 48 50 51 52 53 54 55 56 57 58	M B H A H F S ≥ O N S B F	HAEWOCTBOTV-	M W D F T S T B W I O	M F C T F A F T N B	M W B A T O T D T W S N O	A A A P W S I A A T W T	B A T A T L O H N T A	A A S H I O A W T T V V V	V T S T A T T S S B G L N B	A T S W T T T S W VV T	A F V A V S T T D E C B T	T F T M B B A O T R S Y	A O A T F S B I A S A S I	A F S M T B B V Y M T N	
47 48 49 50 51 52 53 54 55 55 56 57 58 59 60	M B H A H H S ≥ O N S B H - L	HAEVOCTBOT>-HS	M W T V D F T S T B W I O W	M F C T F A F T N B T	MYBAFOFDFYSZOOZ	A M A P W S I A A T E C	B T W A T L O H N T N A S C	A A S H I O A W T T V V S A	V T S T A T T S S B O L N B T T	A T S W T T S W V T T A	AF ¥ A ¥ S T T D E C B T ¥ F	TAFTMBBAOTRSYOA	A O A T F S B I A S A S I O A	A F S M T B B V V M T N T P	
47 48 50 51 55 53 54 55 56 57 58 59 60 61	MBHAHTSYONSBH-L	HAW¥¥OC⊢BO⊢>−HS	M V T V D F T S T B V - O V E D	M O F C T T F A F T T N B T - W	MYBATOTDTYSZOOZ-	A A M A P V S I A A T V T E C S	B T W A T L O H N T N A S C T	A A S H I O A W T T V V S A T	V T S T A T T S S B G L N B T T O	A T S W T T S W VV T T A I	⋖₣⅀⋖⋛⋈⊢⊢⋻⋿с₿⊢⋛₣ጆ	TAFT MBBAOTRSYOAT	A T F S B I A S A S I O A F	A A F S M T B B V Y M T N T P F	
47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62	MBHAHTSYONSBH-LL-S	HAEVOCTBOT>-HSMA	M W T W D F T S T B W I O W E D A	M O F C T T F A F T T N B T - W -	MYBATOTDTYSZOOZ-M	A A M A P V S I A A T V T E C S N	B A T L O H N T A S C T A	A A S H I O A W T T V V S A T A	V T S T A T T S S B G L N B T T O B	A T S W T T S W V T T A B	⋖∊⋧⋴⋧∞∊∊⋼⋴∊⋼∊⋧∊≊≊	TAFTMBBAOTRSYOATS	A O A F S B I A S A S I O A F T	A F S M T B B V M T N T P F P	
47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63	M B H A H H S > O N S B H - L - S A	H A E ≫ ≫ O C T B O T > - H S M A ≫	M W D F T S T B W I O W E D A W	M O F C T T F F A F T T N B T I W	×≥ B < F O F D F ≥ S Z O O Z - M T	A M A P W S I A A T E C S N A	B A T W A T L O H N T N A S C T A A	A A S H I O A W T T V V W S A T A S	V T S T A T T S S B G L N B T T O B F	A T S W T T T S W V T T A I B A	A F W A W S T T D E C B T W F M M T		A 0 7 7 8 8 1 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	A A F S M T B B V M T N T P F P A	
47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62	MBHAHTSYONSBH-LL-S	HAEVOCTBOT>-HSMA	M W T W D F T S T B W I O W E D A	M O F C T T F A F T T N B T - W -	MYBATOTDTYSZOOZ-M	A A M A P V S I A A T V T E C S N	B A T W A T L O H N T N A S C T A A A	A A S H I O A W T T V V S A T A	V T S T A T T S S B G L N B T T O B F W	A T S W T T T S W VV T T A I B A O	A F W A S T T D E C B T W F M M T R	TAFTMBBAOTRSYOATS	A O A F S B I A S A S I O A F T	A F S M T B B V M T N T P F P	
47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64	M B H A H H S > O N S B H - L - S A	H A E ≫ ≫ O C T B O T > - H S M A ≫	M W D F T S T B W I O W E D A W	M O F C T T F F A F T T N B T I W	×≥ B < F O F D F ≥ S Z O O Z - M T	A M A P W S I A A T E C S N A	B A T W A T L O H N T N A S C T A A	A A S H I O A W T T V V W S A T A S	V T S T A T T S S B G L N B T T O B F	A T S W T T T S W V T T A I B A	A F W A W S T T D E C B T W F M M T		A 0 7 7 8 8 1 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	A A F S M T B B V M T N T P F P A	
47 48 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65	M B H A H H S ≥ O Z S B H - L - S A ≥ S	H ≪ W ⊗ O C F B O F > - H S M ≪ S F B	M W T F F T S T B W I O W E D A W H	M O F C T T F A F T N B T N W A W W		A A A P W S I A A T E C S N A A A	B A T W A T L O H N T N A S C T A A W	A A S H I O A W T T T A S A T A S I N	V T S T A T T S S B G L N B T T O B F W O	A T S W T T S W V V T T A A O S	A F W A S T T D E C B T W F M M T R O		A 0 A T F S B 1 A S A S 1 0 A F T H T 0	A F S M T B B W Y M T N T P F A B T	
47 48 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66		H A E ¥ V O C F B O F > − H S M A ¥ F B A	M W D F T S T B W I O W E D A W H A	M O F C T T F A F T T N B T W A W A	M B A T O T D T S S Z O O Z T S H S O A	A A A A A A A A A A A A A A A A A A A	B A T U A T L O H N T N A A A W A	A A S H I O A W T T T S A T A S I N A	V T S T A T T S S B G L N B T T O B F W O A	A T S W T T S W V V T T A A O S A	A F W A W S T T D E C B T W F M M T R O A		A 0 7 F S B 1 A S A S A S 1 0 A F T H T 0 T	A A F S M T B B B Y Y M T N T P F P A B T S	
47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 66 67		н < ш ⊗ ⊗ о с т в о т > – н ѕ № < ⊗ т в < <	M W D F T S T B W I O W E D A W H A T	M O F C T T F A F T T N B T I W A A A	M S B A F O F D F S S Z O O Z - M H S O A S	A A P W S I A A T W T E C S N A A A A A	B A T U A T L O H N T N A A A W A W W	A A S H H I O A W T T V V S A T A S I N A R	V T S T A T T S S B C L N B T T O B F W O A W	A T S W T T S W VV T T A I B A O S A B	A F W A W S T T D E C B T W F M M T R O A F		A 0 A F S B 1 A S A S A S A S A F T H T O T O T O	A A F S M T B B W Y M T N T P F P A B T S I	
47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 66 65 68		н < ш ⊗ ⊗ о с т в о т > –	M W T W D F T S T B W I O W E D A W H A T B	M F C T F A F T T N B T - W - W A A O	M S B A F O F D F S O Z O Z O Z F M H S O A S B	A A P W S I A A T E C S N A A A A A A A T T	B A T U A T L O H N T N A S C C T A A A W A W T	A A S H H I O A W W S A T A S I N A R E	V T S T A T T S S B C L N B T T O B F W O A W	A T S W T T S W VV T T A I B A O S A B W	A F W A S T T D E C B T W F M M T R O A F M		A 0 A F S B I A S A S I 0 A F T H T 0 A F T 0 A	A F S M T B B W Y M T N T P F P A B T S I T	
47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 66 67		н < ш ⊗ ⊗ о с т в о т > – н ѕ № < ⊗ т в < <	M W D F T S T B W I O W E D A W H A T	M F C T F A F T T N B T I W A A A	M B A F O F D F S S Z O O Z - M H S O A F S O A S	A A P W S I A A T W T E C S N A A A A A	B A T U A T L O H N T N A A A W A W W	A A S H H O A W T T V S A T A S I N A R	V T S T A T T S S B C L N B T T O B F W O A W	A T S W T T S W VV T T A I B A O S A B	A F W A W S T T D E C B T W F M M T R O A F		A 0 A F S B 1 A S A S A S A S A F T H T O T O T O	A A F S M T B B W Y M T N T P F P A B T S I	
47 48 49 50 51 52 53 55 56 57 58 59 60 61 62 63 64 65 66 66 67 68 68 69		H A E ♥ ♥ O C T B O T > - H S M A ♥ T B A A ♥ ♥	M W F F S T B W I O W E D A W H A T B A	M O F C T T F A F T T N B T I W I W A A O V	M W B A T O T D T W S Z O O Z - M H Y O A Y B T	A A A P W S S I A A T E C S N A A A A A A A F B	B A T L O H N T A A A A W W A T I	A A S H I O A W T T V W S S A T A S S I N A R E B	V T S T A T T S S B C L N B T T O B F W O A W I T	A T S W T T S W V T T A I B A O S S A B W A	A F W & S T T D E C B T W F M M T R O A F M T	TAFTMBBAOTRSYOATSMTOAART	A 0 A T F S B 1 A S A S A S A F T H T O A B B B B B B B B B B B B B	A F S M T B B V M T N T P F P A B T S I T	
47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 63 64 65 66 67 68 69 70	MBHAHOSOZOBH-L-NASAHAH	H A E ♥ ♥ O C T B O T > - H S M A ♥ T B A A ♥ ♥ F	M W F F S T B W I O W E D A W H A T B A T	M O F C T T F A F T T N B T I W A W A A O V A	M S B A F O F D F S S Z O O Z - M H S O A S B F S	A A A P W S S I A A F E C S N A A A A A A A F T E C S N A A A A A A T T T E T	B A T U A T L O H N T A A A W A A W T T F	A A S H I O A W T T V W S A T A S I N A R E B A	V T S T A T T S S B C L N B T T O B F W O A W I T T	A T S W T T S W V T T A B A B W A B	A F V V S T T D E C B T V F M M T R O A F M T Y	TAFTMBBAOTRSYOATSMTOAARTT	A 0 A T F S B 1 A S A S I 0 A F T 0 A F T 0 A F T 0 A F I 0 A S I 0 A A S I 0 A A S I 0 A A S I 0 A A S I 0 A A S I 0 A A S I 0 A A S I I O A A A S I A A A A A A A A A A A A A		
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