Investigating Aspects

Nicholas Kollerstrom

It was the final opinion of the late Michel Gauquelin that there existed no valid evidence for celestial aspects, either in his own data or anyone else's[1]. I wish to argue otherwise, and suggest that real evidence for the effect of traditionally effective angles between the planets is only now beginning to take shape. A modern approach to this subject can take advantage of the computer's ability to generate expected aspect-frequencies. Before the advent of the home computer, this could be a tedious and almost impossible task.

The astronomical side to the problem is as follows. For a group of charts, and a defined set of planets, aspects & orbs, there will be an expected frequency of aspects linked to astronomical factors[2]. Only after finding this can we hope to discern whether the data is significant. The planet Mars, for example, is liable to generate quite unusual frequencies in relation to the Sun or Jupiter.

I A Faulty Control

In 1986, a book entitled *The Stars of Dance* was published by Ian Ferguson[3]. A huge excess of oppositions between Mars and Jupiter was claimed for a group of one thousand dancers:

> 'The statistical wonder of angular separation has to go to the Mars-Jupiter relationship... it seems so large as to be beyond belief. The graph shows a score of 116 at 180° which is almost exactly double the average expected. It is awe-inspiring and without an obvious explanation.'[3]

The previous year, Michel Gauquelin had demonstrated a tendency for Mars-Jupiter oppositions to occur more frequently than other angular positions, due to the orbit periods of the two planets[4].

It seemed to Mike O'Neill and the present writer that this effect could have produced the 'awe-inspiring' excess reported by Ferguson. Accordingly, a control group of twenty thousand randomly selected dates was generated, which was modeled so as to have the same proportion per decade as the group of dancers collected by Ferguson.

Forty percent of the group of dancers were born in the 1950s, and so the control group was divided into those born in this decade and all the others. The results showed a huge excess in the 180° separation (i.e., Mars-Jupiter oppositions) during the 1950s, this being a resonance effect between orbit periods, peaking every forty years or so. Evidently, there were far more in the 1950s than in other decades. The excess reported was by comparison not significant[5].

In the same year, psychology professor Arno Müller, in 'Comments on Astronomical and Statistical Problems with Astrological Aspects'[6], discussed such astronomical resonances and concluded:

> 'There can not exist expectancy values of general validity to be applied to all samples in a simple manner.'

He recommended that, for aspect frequency studies, a control group was needed taking the same proportion of births per decade as the original sample, as O'Neill and the present writer expressed it in *The Eureka Effect* of 1988[7]. This was rather difficult prior to the era of home computers, whereas it is now quite feasible.

II Early Studies

In 1990, Professor Peter Roberts expressed the view that some of the earlier surveys, principally by J. Dieschbourg, remained of interest, and we quote from his summary:

> 'Dieschbourg... found that aspects between the Sun and Jupiter appeared 20 per cent more often for military leaders than for the controls. Although the sample was only 170, this is significant (500 to 1 against). He also found 17% more Sun/Neptune aspects for a sample of 915 philosophers/historians, which is highly significant (more than 2,000 to 1 against).
>
> 'Mercury/Uranus aspects in the charts of nearly 2,000 writers are above expected levels to an extent which would occur by chance only once in 10,000 times. Similarly, Venus/Saturn for 500 painters and sculptors, and Mars/Jupiter for 1,000 scientists are both at levels approaching 1,000 to 1 against their arising by chance. Although Dieschbourg looked at many interplanetary aspects and could therefore have expected to find a few unusual results, the ones quoted above are at such high significance levels that they stand in their own right. It is a pity he did not attempt replication because successful replication adds substantially to the quality of the evidence.'[8,9]

The last sentence is the crux of the matter, as levels of significance can only be cited if the prediction has been formulated in advance[10]. Roberts added: 'What is interesting about these findings is that, in large measure, they accord with the accepted meanings that are associated with the planets.'

III Jung on Marriage Synastry

Dr. Carl Gustav Jung published 'An Astrological Experiment', as a chapter in his influential essay on *Synchronicity, an Acausal Connecting Principle* (1952). This experiment scored Sun-Moon aspects between the charts of married couples. It derived from Jung's interest in the alchemical concept of 'conjunctio', whereby the two luminaries symbolize the male and female principles. It therefore seemed reasonable to him that:

> 'Since antiquity, the main traditional astrological and alchemical correspondence to marriage has been the *coniunctio Solis* (☌) *et Lunae* (☽), the *coniunctio Lunae et Lunae*, and the conjunction of the moon with the Ascendant'.[11]

Jung devised an experiment to test this traditional view, using the charts of 180 pairs of marriage partners.[*] He looked at the synastry between them using an orb of eight degrees,

[*] *Comment from Garry Phillipson 2015*: in his analysis of Jung's experiment, Nick here focusses on the statistical import of the first two out of three groups that Jung looked at, shorn of Jung's interpretation of the

which seems rather wide. He found 18 cases of Moon conjunct Sun, which amounted to 10% of all cases, whereas on a chance basis one would expect 16/360 = 4.4% (we take 16° as double the 8° orb). Jung stated that he had worked out a chance-expectancy level using 32,000 unmarried pairs, generated by reshuffling his marriage pairs—someone did a lot of work! I am not, however, clear that it was necessary—see below. This gave a mean of 4.7%. Likewise for Moon opposite Sun he found a considerable excess, and an expected mean of 4.4%.

The excess was for the Moon in the wife's chart to the Sun of the husband, not vice versa, which was as Jung observed quite traditional. He found the largest excess to be for Moon-conjunct-Moon. If we accept that Jung had predicted this effect in advance, as his presentation implied, then we can compute the significance of this result. Jung obtained another 220 marriage pairs, making four hundred in all, and then listed for the total group the pairs of synastry aspects in order of frequency. Within eight hundred charts, the top three most frequent links were:

Top Synastry Aspects in Jung's Group of 400 Marriage Partners (8° orb)

Chart of:	Wife		Husband	Frequency
	Moon	conj.	Moon	9.2%
	Moon	oppn.	Sun	7.0%
	Moon	conj.	Sun	7.0%
Chance expected:				4.4%

For Moon conjunct Moon alone, this means that he found 37 pairs, as compared with 18 expected by chance, a result corresponding to a chi-square of 19, which is significant at a high level. On the face of it, this is a remarkable confirmation of what Jung had predicted in advance. One is reminded of the back pages of Indian newspapers, which feature arranged marriage chart-pairs using a very lunar astrology!

Jung also looked at various planetary aspects and conjunctions to the Ascendant. Here he was in trouble, as well-timed birth data is needed for such: times to the nearest hour are inadequate for such a purpose, as the horizon 'moves' through 15° of the zodiac each hour. The text gave no assurance of such accuracy.

Jung's mathematical advisor applied the Poisson distribution for estimating the probabilities of these between-chart aspects. The Poisson distribution is valid in a case like this, when a large number of events (viz., chart-pairs) have each a small probability of showing the property in question, say less than five percent.

One must agree with Jung's conclusion, that

> '...the great disadvantage of my astrological statistics lies in the fact that the entire experiment was carried out by only one subject, myself.'

---

results in terms of synchronicity. For discussion of the latter, see e.g. Roderick Main, *The Rupture of Time* (Hove: Brunner-Routledge, 2004) pp. 59 – 61; Geoffrey Cornelius, *The Moment of Astrology* (2nd edn.) (Bournemouth: Wessex Astrologer, 2003) pp. 76 – 8.

It is greatly preferable for such experiments that the data collector and the data processor be two different people. Nonetheless, this experiment remains an early, well-designed and positive-result aspect study, showing a little-appreciated mathematical ability of Dr. Jung.

IV O'Neill on Marriage Synastry

Taking the thousands of married couples included in *Who's Who,* where both partners are mentioned, Mike O'Neill discovered the rather inscrutable fact that they tended to have a deficit in synastry conjunctions to each other's nodes, and the South node in particular[12,13]. We may refrain from comment on what this 'means', e.g., that south node contacts could be bad for relationships. He found that the effect replicated through all the different national *Who's Who* volumes around the world, at a significance of something like one in a thousand. At the end of the decade, there will be ample new couples, where both names feature in *Who's Who,* to check this again. Thus, as a proper scientific theory ought to do, it has made a definite prediction, and will stand or fall by whether it is confirmed.

O'Neill was able to replicate the effect on couples where only one featured in *Who's Who,* and obtained a several-fold weaker effect, as would be expected, only just statistically significant: his net deficit in nodal aspects to 5° of orb was merely five percent instead of fifteen as before. He published this in Françoise Gauquelin's journal. Her editorial commented that he had not defined his hypothesis well enough in advance, there being some equivocation as to whether the deficit predicted was for both nodes or only the South, but this seemed a quibble.

He did not comment upon Dr. Jung's earlier study of this subject, which is a pity. Jung took timed birthdata for marriage pairs, whereas O'Neill used noon times. His Moon positions were therefore blurred, as the Moon moves 12° - 15° per day and five-degree orbs were used for his synastry comparisons. A sub-group of timed data would enhance such a study—for example, Jung's data, if it could be found.

V The Gauquelin Data

In 1988, Psychology professor Suitbert Ertel published a sixteen-page article with thirty-two references merely to support what Michel Gauquelin had already argued, that no aspect effect existed in the Gauquelin birth data of eminent professionals[14]. He called this: 'Relating Planetary Aspects to Human birth: Improved Method yields negative results.' I did not regard it as an improved method and told him so. He had looked everywhere except where an effect might be found.

To investigate whether Mars is strongly aspected amongst top sportsmen (or conversely, weak amongst artists of eminence), one should look for such an effect within the Gauquelin sectors, viz. in that fraction of the professional group which has Mars in the 'key sectors'. (For Gauquelin key sectors, see “Gauquelin sectors” elsewhere in this volume.)

That amounts to using merely one-sixth of the total sample, but the numbers are quite large enough for this. One could here apply Ertel's eminence criterion: Prof. Ertel has greatly improved the Gauquelin concept of eminence by his 'Citation count' method, whereby he measures the eminence level of persons in the Gauquelin professional data. I suggested scoring conjunctions, oppositions and trines to Mars at five degrees of orb, and ascertain whether there are more of them per chart in the group of sportsmen than in the artists. It is

puzzling that persons who have spent much time and energy trying to find aspect effects within the Gauquelin data, have not tried this.

VI Data Collection

We may contrast the roles of data collection and the scoring of aspects. One person makes the decision about which events are to be included. As an example, let us consider the hypothesis that times when major wars break out have an excess of major Mars aspects to 5° of orb[15], where 'major' means conjunction, opposition or trine. No one has attempted such an investigation, this is merely a hypothetical example of how such could be conducted.

The criterion for inclusion would use defined textbooks to assess which wars were 'major'. Such major wars would then be classified into those with a clear beginning or 'genesis-moment', and those lacking such a definable beginning, and the former instances would comprise the group. Evidently, a historian would be required to make the decisions.

A second person should add up the aspects within that assembled group of war-outbreak times, and evaluate whether the score differs significantly from chance. This could be tricky, as Mars generates unexpected frequencies in its major aspects.

A small group of war-outbreak times could be first collected, to see what patterns were emerging. The hypothesis is then framed. A later group is collected, on which the hypothesis is tested, where the significance test, comparing observed and expected, does not include the initial group.

Let us next consider a different kind of moment, that could likewise be collected: times of mystical illumination. As before, one would select such events as were celebrated enough to be chronicled. Books about mysticism would (one assumes) contain these dates. A recent article by Dr. Theodor Landscheidt (in German) 'Children of the Light - Creative Functions of Cosmic Consciousness'[16] has some such dates. Landscheidt was considering solar flare activity as related to these experiences, so his work would not duplicate what is here proposed.

Astrologers would not find it difficult to make predictions about what such moments would have in common. Jung is supposed to have said, 'What happens in a moment of time will have the quality of that moment of time.'[17] Presumably, as major Mars aspects are predicted for war-outbreak moments, so Neptune aspects would be for moments of mystical illumination.

A chemist purifies a compound until it can be crystallized, and from the crystal pattern deduces its nature. Likewise, after gathering such collections of distinctive moments, we should perform a harmonic analysis. A harmonic analysis shows aspect frequencies in general, irrespective of which planets are involved. Its procedure is described below. Again, astrologers would not find it difficult to make predictions on this matter: for war-outbreak times we would predict that the cosmos would be in an 'opposition' mode, where duality is strongly emphasized, as the two sides confront, ready for the clash. For moments of mystical illumination, in contrast, one might expect an excess of conjunctions, if the cosmos is then in a 'unitary' mode, or possibly of septiles.

VII Harmonic Frequencies

In place of the traditional notion that only certain planetary angles were effective, John Addey proposed that all 'harmonic' aspects worked in some measure, e.g., the eleventh harmonic came from dividing the circle by eleven[18]. In this he differed from Kepler, who argued that only restricted types of ratios could be effective[19]. Addey's 'harmonics' are identical with aspects for prime numbers: the fifth harmonic, e.g., is the sum of quintile and biquintile aspects. The sixth harmonic, however, combines the sextile, opposition and trine all bracketed together.

Addey further proposed that orb should decrease inversely as the harmonic number, and suggested 12/n as a feasible harmonic-orb formula. This gives six degrees for opposition, four for trine and three for square. These are smaller than astrologers habitually use, but there are advantages in using tighter orbs for research. The sixth harmonic would include the trine, but at half the orb, i.e., 2° instead of 4° (using the 12/n formula).

Addey's notion of harmonics has been criticized as leading to too many aspects, so that any ecliptic angle is in aspect[20]. Apart from this dilemma, his proposal for orb size and his notion of a harmonic have strong advantages for a scientific approach. We used them in the Eureka study[21].

In what follows, we will be using the term ‘harmonic’ in a slightly different sense from that advocated by John Addey. Addey advocated including the zero or conjunction position into all harmonics. Thus, for example, what he called the fourth harmonic included 0°, i.e., conjunction, 90° and 270° as the two squares, and 180° as the opposition. There was in his mind an analogy with the notion of a waveform in physics, where the nth harmonic has n peaks.

Addey’s inclusion of the zero position does simplify computations. It gives ‘theoretically’ expected frequencies that remain fairly constant, at just below 3 per chart for all harmonics using the 12/n orb. Empirically computed harmonic frequencies remain more stable over epochs of time because of the greater symmetry involved. In the case of our fourth harmonic example, the planetary angles were separated by 90° intervals, but if the conjunction position is omitted, then one of the intervals will be 180°, creating an asymmetry, generating less constant expected frequency values over periods of time. Generally speaking, the ‘chance-expected’ value will be simpler to locate for any given data sample using Addey’s conception of ‘harmonic’ aspects.

Against Addey’s notion of including the zero position there are two considerations. Firstly, the question of meaning: if one is dealing with, say, the fifth harmonic, then it is clear that quintiles and biquintiles should be included, but what business has the conjunction in such a group? If one is trying to argue that the fifth harmonic signifies something, then it is hard to see how that can include the zero position of conjunction.

Secondly, one may wish to combine two harmonics, to find the expected frequency of say the fifth plus seventh harmonics. This cannot be done if the zero position is included, as it would then score twice. It may be necessary to characterize a data set by two (or more) harmonics of different amplitudes, for which omission of the zero value is required.

Thus, while there are pros and cons each way, we use the expected frequencies of 'no zero' harmonic aspects here. This means that the fifth harmonic, for example, will include four possible angular relationships, the two quintiles and the two biquintiles, and in general the nth harmonic will include (n-1) angular positions between each pair of planets measuring aspects in a full 360° circle. If you only measure aspects from 0° to 180°, you will need to modify the formulae below in several places, and you will need to treat odd and even harmonics differently.

The expected frequencies per chart for a given harmonic are computed as follows. For the nth harmonic, there will be n-1 angular positions formed by one planet pair, and let each have an orb of 12°/n. Taking for example the fourth harmonic (180° opposition plus 90° and 270° squares), with an orb of 3° (12/n) and thus an ecliptic span of 6° (12/n orb x 2 orb directions (applying and separating)) at each aspect, then in all this 'harmonic' covers 18° (12/n x 2 x 3) of the ecliptic per planet pair. The probability of it being formed between one planet-pair is 18/360 = 1/20. Each chart using 10 planets has 42 planet pairs able to form this angle, giving an expected frequency of 42/20 = 2.1.

There are 45 planet pairs between the ten planets (10!=45), but three cannot form the square angle (T/Q, S/Q , T/S), leaving 42. To a first approximation, the expected value for any harmonic is (42 x (n-1)) / (n x 15), for a 12/n orb. (The 15 comes from 12° orb x 2 directions dividing a 360° circle.) That ignores possible aspects between Venus, Mercury and the Sun.

Suppose we want the expected frequency of a septile (51.43°), including bi- and tri-septiles. To start with,

P (monoseptile per planet-pair) = (12/7 x 2)/360 = 1/105.

Venus has a maximum elongation from the Sun of 48° and Mercury 28°. Venus and Mercury can therefore only form a monoseptile between them (which counts as 2 in the formula to get both dexter and sinister versions), while there are 42 planet-pairs able to form all six septiles, so:

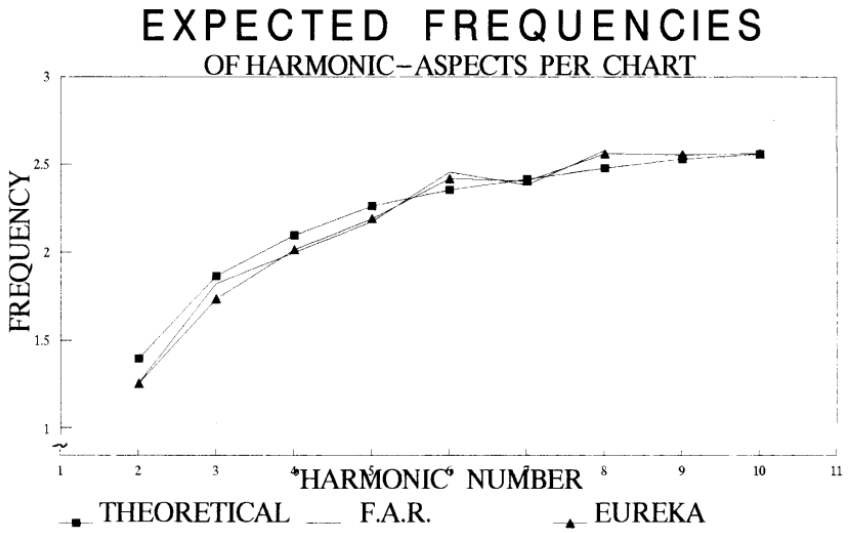
P (all septiles per chart) = (42x6 + 2)/105 = 2.42,

which is the expected frequency for septile aspects per chart at the given orb[22].

We may compare values computed by this procedure with empirically derived frequencies for these aspects. These were obtained by Mike O'Neill with his computer, generating thousands of charts over two centuries 1800-2000 and averaging out the score (His computer sampled noon times at ten day intervals). We were especially concerned with the values for quintiles and septiles, as our eureka study required them.

A similar study was performed using Mark Pottenger's *FAR* (*Frequencies for Aspect Research*) program, by K. Hawley, UK, sampling over three centuries 1700-2000, and this gave frequencies generally agreeing within our Eureka-study frequencies within 1%. That is reassuring. Figure 1 compares these three different approaches.

Figure 1 *Comparison of chance-expected harmonic-aspect frequencies, using orbs 12/n, from 2nd to 10th harmonic (excluding the 0° position), using: (a) probability formula, (b) the FAR program 1700-2000, (c) the Eureka study values computed over 1800-2000.*



	Empirical	Theoretical
oppositions	1.26	1.40
trines	1.74	1.87
4th h.	2.02	2.10
quintiles	2.19	2.27
6th h.	2.42	2.36
septiles	2.41	2.42
8th h.	2.56	2.48
9th h.	2.56	2.53
10th h.	2.56	2.56
14th h.	2.63	2.65

Table *'Addey orb' frequencies for harmonics 2-10, as for the above graph, comparing empirically derived (published in The Eureka Effect) and computed by probability theory.*

The figure shows the 'solar clustering' effect, whereby planets spend more time near to the Sun in the zodiac, depressing the empirical aspect frequencies below those theoretically computed. This effect shows up below the sixth harmonic. It is unclear what is happening with the sixth and eighth harmonics, where the empirically found values rise above the theoretical curve. (Editor's note: The angle between Pluto and Neptune rarely gets beyond 120° in the entire three-century period under discussion. In fact, Pluto and Neptune spend a substantial portion of the 1700s and 1900s at or very close to angles of 240° and 60° apart,

respectively. This gives a substantial boost to the empirical 6th harmonic, since the 60° sextile and the 240° trine are both 6th harmonic. The 8th harmonic also receives some boost from this. A larger effect on the 8th harmonic comes from the fact that the 45° angle is almost exactly where the peak in angles between the Sun and Venus falls, due to the amount of time spent around greatest elongation.)

The expected values approach a limit for higher number harmonics. For any harmonic above about nine, the theoretically computed value should be indistinguishable from that found using, for example, the Pottenger *FAR* (*Frequencies for Aspect Research*) program.

These values are universal. I suggest that they are relevant to any aspect study. It may be necessary to model one's control group on a specific period sampled in an experiment or survey, which will affect especially the outer-planet aspects, where, e.g., a Pluto-Neptune aspect can remain for decades. Usually, however, frequencies will not differ greatly from the above expected values.

Only the trine-frequencies showed a difference between our eureka study and Hawley's values using the FAR program, of 5%. This was due to his 1700-1800 value being raised. The outer planets do generate such long-period inequalities. Our survey or eureka scientists happened not to have any born in that century so we did not go that far back. His figures were:

Mean trine frequencies per chart at 4° orb from FAR

Eighteenth century:	2.07
Nineteenth century:	1.72
Twentieth century:	1.68

That is a considerable divergence, indicating that a larger timespan would be needed to reach universal values.

Suppose one required the expected frequency of trines over the nineteenth and twentieth centuries, for 5° orb. The above gives, for 4° orb, a value of 1.70 per chart, as compared with our eureka study value of 1.74. Then, a linear scaling gives 2.13 per chart for 5°. (Note that linear scaling is only an approximation and should only be used if the original program is not available to get empirical values measured with the new orb. Due to distribution oddities, changes of orb can have unpredictable effects on empirical values.)

VIII Eureka and Invention Moments

The Eureka Effect[23], co-authored by this writer, made the claim that it was statistically demonstrating the effect of celestial aspects. It proposed a hypothesis of celestial influence, replicating it through several sets of data. In 1988, the writer started to collect celebrated 'Aha!' moments in the history of science, for example, the Saturday morning in 1953 when James Watson discovered the DNA structure. The dates for twenty-one such cases were found, together with a few 'marginal cases' where one was not sure whether they really should score or not.

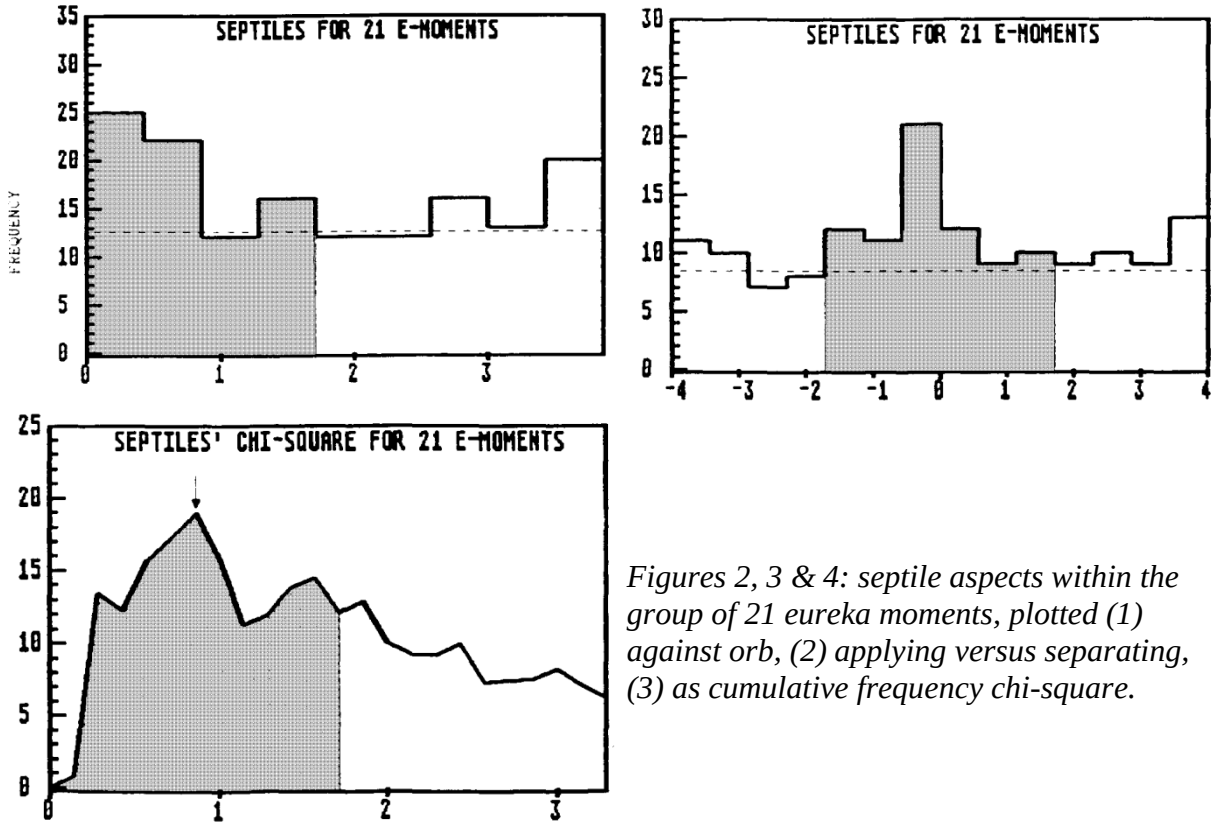
These cases had in common that the scientists concerned featured in Isaac Asimov's *Biographical Encyclopaedia of Science and Technology*. A harmonic analysis, as described

above, showed that the group was mainly characterized by an excess of quintile and septile aspects, the septiles being stronger. The septile excess was about fifty percent.

The same excess turned up in the natal charts of the eureka scientists. John Addey's *Harmonics in Astrology* had stated that the quintile and septile aspects were of prime importance for creative individuals. This, the initial prediction, was validated.

The chi-square significance test requires that the events scored should be quite independent of each other. That did not apply in this case, since, if, e.g., two septiles are present in a chart, that increases the likelihood that a third septile will also be present. We decided to use an empirical 'Monte Carlo' method as described by Tom Shanks[24]. A computer generated a large number of groups of the same size as that to be tested, and found how many such have quintile + septile scores equal to or greater than that actually found. It turned out that this gave a probability indistinguishable from that found by the chi-square method.

The data can be represented graphically, as shown. Two of the graphs are histograms, and one is a cumulative frequency chart. In each of these, a boundary line indicates the 'Addey orb' that we used, of 12°/7.



Figures 2, 3 & 4: septile aspects within the group of 21 eureka moments, plotted (1) against orb, (2) applying versus separating, (3) as cumulative frequency chi-square.

The first graph plots the septile aspects in the group of 21 eureka moments as a function of orb. It shows that the main excess occurs within a mere 1° of orb, less than Addey's 12°/n value. The second graph divides the aspects into approaching (-) versus separating (+), showing the septile aspect formation as a process in time, and revealing that the main excess was for approaching aspects. The third graph uses the chi-square function, for all the aspects

up to the orb specified, comparing with the chance-expected total. Its peak indicates optimum orb.

As a follow-up to the Eureka study, times when great inventions first worked were then collected[25]. These two groups E- and I-moments, may be viewed as related as conception is to birth. The I-moments are more concrete, and in modern times have been predominantly American. From the first use of a barometer in 1648, to the first practical use of a superconductor in 1987, we scored 36 such dates. Being more public, they were easier to locate than E-moments. Harmonic analysis of this group showed:

Aspect Frequencies in a Group of 36 Invention-Moments

Harmonic	Observed	Expected	% Excess
3	89	62	44%
5	58	79	-26%
7	107	87	23%
10	88	92	-4%
14	121	95	27%

The expected frequencies are as given in the previous Table, multiplied by 36. A massive excess of trines showed up, at 4° orb, as well as a septile excess, which 'echoes' rather strongly in the 14th harmonic, while quintiles are in deficit. The quality of these exciting moments of new creation is surely expressed in the third and seventh harmonics[26].

'Addey orbs' are less useful for major aspects, being implausible for the conjunction and opposition: no-one takes 12° orbs for conjunction and 6° for opposition. Instead, we followed the example of Michel Gauquelin of taking a 5° orb[1]. That is to say, for scoring the number of aspects per planet within the group of I-moments, we took the first three aspects (conjunction, opposition, trine) at 5° orb. Top and bottom of the list were:

Aspect Frequencies in a Group of 36 Invention-Moments

Planet	Observed	Expected	% Excess	
Uranus	59	37	61%	(Conj., oppn. & trine 5° orb)
Saturn	30	35	-15%	

Astrologers consulted were unanimous in predicting that Uranus would be the most strongly-aspected planet in this group. The orbs are smaller than astrologers normally use, but one should recall that, the larger the orb used, the greater will be the expected frequency. To see how this works, let's score the excess of Uranus aspects in this group in three different ways: first, using all five Ptolemaic aspects at 5° orb; second, as above, merely the first three, and third the first three again but this time out to only four degrees of orb.

Uranus Aspect Frequencies in a Group of 36 Invention-Moments

	Observed	Expected	% Excess	Chi-Square		
1)	96	74	31	7	Cnj, opp, tri, squ, sxt	5° orb
2)	59	37	61	14	Cnj, opp, tri,	5° orb
3)	51	29	78	20	Cnj, opp, tri,	4° orb

The Table shows a decrease in overall score while the percentage excess [(O-E)x100/E] and the chi-square $[(O-E)^2/E]$ both increase. Had an excess of conjunctions, oppositions and trines to Uranus at 4° orb been predicted for this group, it would have been significant at 1 in 10,000.

In contrast to the way scientists normally evaluate data, the interpretations that here concern us are *qualitative*. Moments of revolutionary innovation are expected to be Uranian, while conversely there should be fewer aspects to Saturn, as these moments signify a letting-go of the past.

The computer graphs present the data in a more visual format, where the numbers themselves are uninteresting. The numbers resemble what is under a car bonnet: one wishes to be confident that it is running properly, but would prefer not to trouble with the details. Astrologers are visual people and prefer not to pore through columns of figures.

If and when more interest develops in these matters, the data sets discussed here may become available on disk, with options for their viewing. For example, the histograms shown here are adjustable by altering either the width of the sampling intervals, or the total orb covered. Any harmonic can be inspected in the eureka data using these graphical techniques, and the same applies for other sets of data. The set of marriage partner data as used by Jung would be of interest, to see, e.g., how his *conjunctio* effect varied with orb. Computer programs remove the tedium of labor, making such investigations fun to perform.

IX 'Aspect Power': The Harmogram

Over a given period of time, we can observe the strength of a given harmonic. What we may call the 'harmogram' liberates the astrologer from the single moment in time, representing the continuous flow of harmonics. It is a new tool. Let us view in this manner a sample eureka moment.

In 1843, the Irish mathematician Sir William Hamilton discovered 'quaternions' in a flash of inspiration. 'Quaternions' are a mode of vector analysis in four dimensions. The idea dawned on Hamilton while he was crossing Brougham Bridge near Dublin, at noon on October 16. Today a plaque on the bridge marks the spot. It was the great discovery of his life and he spent many years after working out how quaternions behaved.

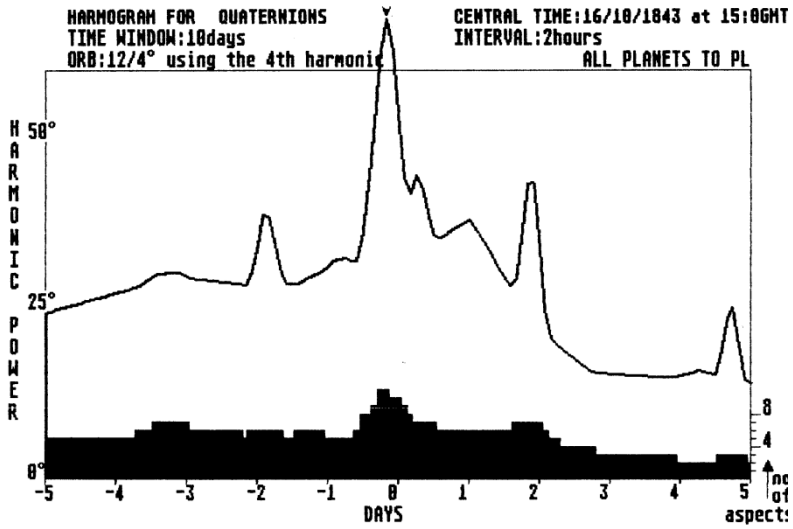


Figure 5 Fourth-harmonic harmogram for Hamilton's discovery of quaternions, centered on Oct. 16, 1843. The score of {oppositions + squares} runs along the base, while 'aspect power' is plotted continuously.

The harmogram shows the fourth harmonic, which has a dramatic peak at this moment[27]. The aspect score is given in a histogram at the base, using the 'Addey orb' of 3°. The continuous line shows 'aspect power', which treats each fourth-harmonic aspect as a triangle, peaking at zero orb. Its score varies inversely as the orb: if zero orb is scored as 12 (an arbitrary value) then a 1.5 degree orb will score 6, a three degree orb zero, etc. Their sum constitutes 'aspect power' as depicted. Choosing a longer 'time window', out to one month either side of the event, did not show any comparable peak.

This event was not included in our eureka moment group, as mathematical E-moments were excluded. Usually the E-moments show peaks optimally using the septile harmogram, but this is an exception.

Kepler was born with five quintile aspects. The fifth-harmonic harmogram shows a peak over his birthtime, and a close-up shows that it reached its maximum value within minutes of his birth. Thus the flow of 'aspect power' gives information beyond what is contained in the birth chart.

We saw how the trines were strong at moments of invention. We now observe the third harmonic for a single such moment. On May 15, 1941, the first jet plane, designed by Whittle, roared into the clouds. The chart shows the strong grand trine present. The harmogram depicts this peak, and a close-up shows how this peak was within half an hour of the maiden flight.

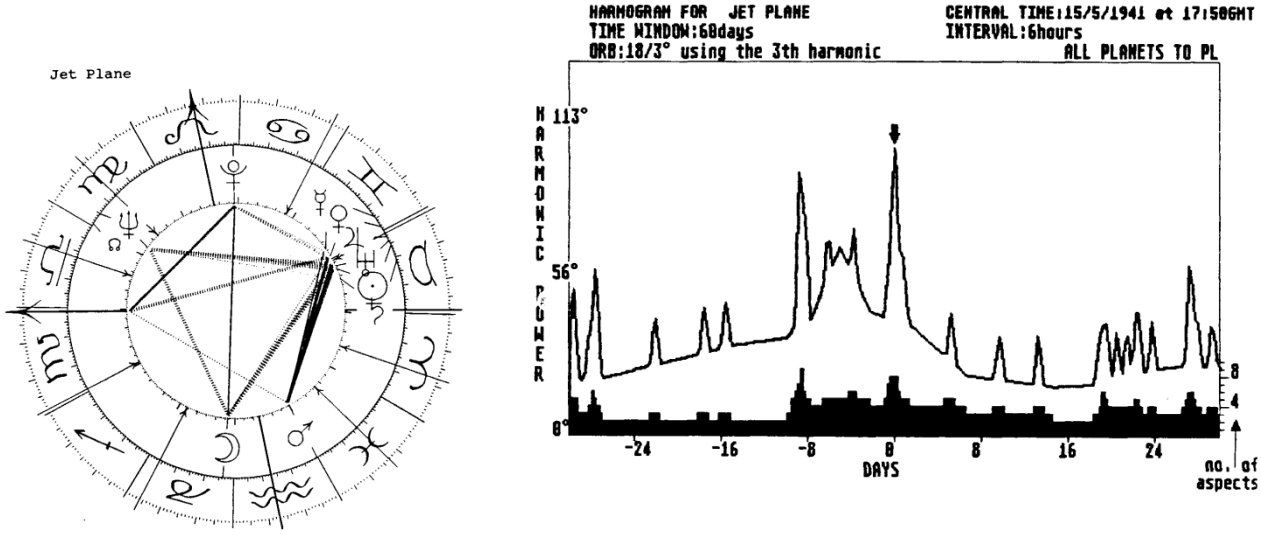


Figure 6 Third harmonic harmogram centered on launch of Whittle's jet plane, on 15 May 1941 at 5 p.m.

X Heliocentric Aspects

An approach to heliocentric aspects comes from the work of American Dr. Buryl Payne[28,29], focusing on daily variations in sunspot number. Payne has formulated general principles, such as that Earth opposing or conjunct Uranus, or conjunct Jupiter, leads to a peak in sunspots, for a day or two before and after the event, while solar activity decreases when Mercury is conjunct Earth. He has made the claim that: 'Reasonably accurate predictions (65-75%) of the gross peaks of sunspot numbers have formally been made by the author in the form of a newsletter for the past several years.'

If perchance he has succeeded, he will have found what many have sought in vain. Optimistically he concluded: 'The moving geometry of the solar system must be considered to accurately predict sunspot number and geomagnetic activity.' Time will tell[30].

The UK astronomy journal *Vistas in Astronomy* recently published an article by astronomer Dr. Percy Seymour, accepting evidence that heliocentric conjunctions and squares affected solar weather[31]. If astronomers come to accept that celestial aspects affect the Sun, this will indeed be progress.

XI Stressful Solar Returns

A California doctoral thesis by Sara Klein analyzed a thousand dates for which industrial injuries occurred, where at least three months leave had to be taken as a result. Klein obtained birthdates without time or place of each worker who was so injured[32,33]. She found an excess of these accidents on days related by square angles to the natal Sun. That is to say, the accidents tended to be on the birthday, half a year later, or a quarter of a year before or after. The 'fourth harmonic' effect here involved, i.e., the sum of squares, oppositions and conjunctions, is clearly appropriate in traditional terms for such conditions of affliction. The excess reported by Klein was credulity-straining, with a statistical significance cited in

millions to one. However, significance values depend upon a hypothesis having been cited in advance before the data has been collected.

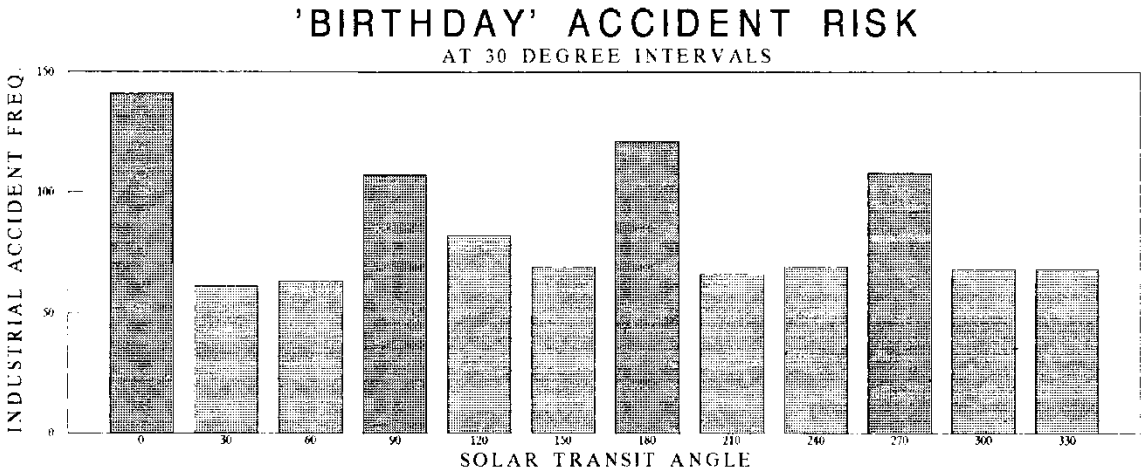


Figure 7 Industrial accidents amongst a thousand California workers, plotted as solar angle from the natal sun and grouped in 30° intervals, centered on the square angles.

Klein presented her data in terms of the number of days from 0 to 365 away from the birthday (solar return). She kindly permitted my access to her data, and Mark Pottenger kindly sent this to me as noon solar longitudes for each of the 1023 birthdates and accident dates, enabling the following analysis to be performed. Subtracting these two sets of data from each other gave the *solar transit angle* for each accident. Plotting these by 30° divisions centered on the solar returns gave the distribution shown in Figure 7. Its four peaks are approximately equivalent to four months of each industrial worker's year, centered on their birthdays. The score in these four divisions averaged 40% above the mean.

The Klein data supports Addey's notion of a harmonic as including the conjunction position. To further investigate the 'fourth harmonic' effect present in this data, solar longitudes were converted to a 90° dial and centered on the zero position, so that solar transit conjunctions, oppositions and squares all scored the same value of 45°. Such a transform means viewing transiting conjunctions, squares and oppositions as identical, since they all acquire the same scores of 45°, at the center of the 90° scan. The procedure is equivalent to taking the 360° of a person's solar year, starting from their birthday, cutting it into four equal sections, and laying them on top of each other. Using a spreadsheet (e.g., Lotus 1-2-3), it is straightforward to manipulate columns of a thousand figures in this manner.[*]

Next, the data was grouped in 5° intervals, giving 18 groups. This gave the frequencies as in Figure 8, where each point represents an approximately 5-day period. Putting a best-fit sine wave through the data did not give a very good fit, until another was added of twice the frequency, i.e., an eighth harmonic. Their sum is shown in the figure. With an expected frequency of industrial accidents per 5° solar transit angle of 57, the optimal waveform became:

[*] The 'modulo' command 'mod{(S-S_1+45),90}' performs this transform.

$57 + 20 \cos 4(S-S_1) + 11.5 \cos 8(S-S_1)$

where S and S_1 are noon solar longitudes for accident date and the victim's birthdate respectively. The eighth harmonic is present at just over half the amplitude of the fourth, so we could say that it appears as an 'overtone'.

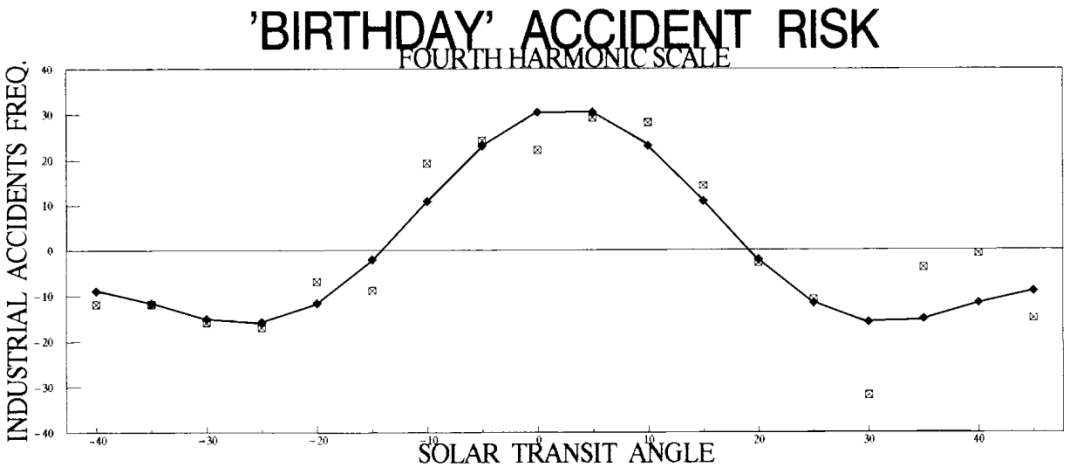


Figure 8 Klein industrial accident data plotted on a 90° dial of solar transit angles with best-fit waveform running through it. The graph is centered on 90°-multiple transit angles.

We could give this **risk equation** a more general significance by expressing it in percentages:

$\text{Accident Expectancy} = 100 + 35 \cos 4(S-S_1) + 20 \cos 8(S-S_1)$

That has a peak amplitude of 55%! Should this effect turn up in any further set of data at even one-quarter of this amplitude it would still be worthwhile for industry to take notice. If California workers are 55% more likely to have accidents involving three months or more leave off work over their birthdays, then this has some fairly hefty implications, for industrial relations as well as for astrology. Let us hope some replications will be attempted.

The term 'harmonic' has been used here in its normal sense as meaning a waveform, of a defined phase, frequency and amplitude. Klein's transit data fits rather well a sum of two such waveforms. These vary with the 360° of each person's solar-transit year, and maximize at the four square positions (a cosine function maximizes at zero angle). I did try shifting the phase of the fourth harmonic waveform, and the best-fit position* turned out to be exactly centered on the angles within 1°, which is strong evidence for the reality of this effect, that it is not some kind of artifact.

John Addey would have been glad to see this data, as vindicating his approach advocated in *Harmonics in Astrology*. However, his legacy does involve an ambiguity in the use of the

* The best-fit position of a waveform through a set of data is that giving a minimum value for the sum of squares of y-values of the data points from the waveform. Solar transit angles 0-90° and accident frequencies grouped per 5° interval from which the mean value has been subtracted, as shown in Figure 8, were used.

word ‘harmonic’ which may be unavoidable. Here it has meant a simple waveform, but earlier, when referring to families of aspect patterns, it referred to a discrete effect of a limited orb. We should be clear as to which of these senses is being used. Klein’s data does not fit the customary notion of transits as extending over three to five degrees of orb, but we should wait to see whether this effect is replicable before further discussion of its implications.

References

1) Michel Gauquelin, 'Astrological Aspects at the birth of eminent people', *Correlation* May 1985, pp. 25-35.

2) Arno Müller, 'Comments on Astronomical and Statistical Problems with Astrological Aspects', *Astro-Psychological Problems*, Ed. Schneider-Gauquelin, Paris, May 1986, pp. 14-16.

3) Ian Ferguson, *The Stars of Dance*, 1986, p.143.

4) Op. cit. (1), p.27.

5) Kollerstrom & O'Neill, Letter to the Editor, *Correlation* Dec. 1986 pp. 53-4.

6) Op. cit. (2) p.15.

7) N. Kollerstrom and M. O’Neill, *The Eureka Effect* 1988, reprinted 1995 (Urania Press, UK) p.23.

8) Peter Roberts, *The Message of Astrology* 1990 p.37.

9) Geoffrey Dean and A. Mather, *Recent Advances in Natal Astrology* 1977, p.313-4: 'The most extensive statistical study of astrological aspects is due to Dieschbourg of Luxembourg.'

10) Hans Eysenck and David Nias, *Astrology: Science or Superstition?* 1982, p.15.

11) Carl Jung, *Synchronicity, an Acausal Connecting Principle* pp. 54-90, 55; Chapter Two, 'An Astrological Experiment', Table p.74..

12) M. O’Neill, 'The Moon's Nodes in Synastry' *Astro-Psychological Problems*, Sept. 1986, pp. 24-30.

13) N. Kollerstrom, 'Darling, Where's your South Node? A computer study of lunar node synastry' *The Astrological Journal* 1987, 5, pp. 241-3.

14) S. Ertel, 'Relating Planetary Aspects to Human Birth' *Correlation* June 1988, pp. 5-21.

15) This idea came from science historian B.C.

16) T. Landscheidt, 'Wir sind Kinder Lichts - Kosmisches Bewusstein als Quelle' *der Lebensbejahung*, Freiburg, Herder 1987.

17) C. G. Jung, ‘Richard Wilhelm: In Memoriam’ in *The Collected Works of C. G. Jung Volume 15,* PUP, 1966, pp. 56 – 7.

18) John Addey, *Harmonics in Astrology*, 1976.

19) N. Kollerstrom, 'Kepler's Belief in Astrology' in *Astrology and History* Ed. Kitson, Unwin 1989.

20) Op. cit. (9) p.296.

21) Op. cit. (7) p.28.

22) Help came from Kevin Hawley, Manchester, for computing these frequencies.

23) Op. cit. (7)

24) Tom Shanks, 'The Monte Carlo Method' *Astro-Psychological Problems* 1985.

25) Kollerstrom & O'Neill, 'Invention Moments and Aspects to Uranus' *Correlation*, Dec. 1992, 11-23 (also in *The Eureka Effect* 1995, ref. 7).

26) 'The number three is related to the idea of life, vitality and enjoyment, and hence to what motivates us and moves us to action' M. Baigent, N. Campion, C. Harvey, *Mundane Astrology* 1984 p.149.

27) This eureka moment, and the proposal that one should use the fourth harmonic harmogram to inspect it, were suggested by B.C.

28) Buryl Payne, 'Planetary Positions and Sunspots, *Journal of Borderland Research*, CA, March 1992, pp. 15-20.

29) Payne, 'Prediction of Storms based on Planetary Positions and Geomagnetic Field Disturbances', *Geocosmic News*, 1983, 9, 12-16.

30) Op. cit. (27) p.20.

31) P. Seymour, Willmot & A. Turner, 'Sunspots, Planetary Alignments and Solar Magnetism: A Progress Review', *Vistas in Astronomy*, 1992, 35, 39-71,46: 'Planetary positions, notably conjunctions, are associated with increased solar activity' (from the researches of Ms Blizzard).

32) Sara Klein, *Astrologically Predictable Patterns in Work Related Injuries*, Ph.D. thesis on industrial accidents for The University for Humanistic Studies, San Diego CA, 1992. For an earlier account of a fourth-harmonic solar-transit effect somewhat comparable to that found by Klein, from a couple of hundred data-points, also showing a rather large orb, see Addey op. cit. 18, p. 163.

33) Sara Klein, ‘Astrologically Predictable Patterns in Work Related Injuries’ *Kosmos*, Summer 1993, 21-30. This is a summary of Klein’s results.

Published in *Astrological Research Methods*, ISAR, Ed. Mark Pottenger, 1995, pp. 287-302).