A Study on Links Between Pluto and Cancer Risk and the Case of the Lurking Variable

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Abstract

*There has long been a debate over whether and to what extent stress may contribute to the development of cancer. Even though the National Cancer Institute reports research results that are mixed, a recent meta-analysis suggests that chronic stress is indeed linked to at least some cancers. In astrology, the celestial body Pluto is generally associated with death and transformation, and as such it is often seen as associated with stress. Furthermore, some astrologers even associate Pluto directly with cancer. In this study, squares in the birth chart between Pluto and other planets were examined with respect to associations with cancer, and two squares were found to be extremely significant when it comes to the likelihood of having cancer, namely Pluto square Uranus ($p = 1.2 \times 10^{-27}$) and Pluto square Chiron ($p = 4.2 \times 10^{-2}$). Furthermore, when these two conditions (Pluto square Uranus or Chiron) were combined, the likelihood of the observed results or something more extreme being due to chance was minimal at 1.2×10^{-44}, and those with this astrological signature were more than twice as likely to experience cancer (risk ratio = 2.07). However, with results this extreme, there is always the concern that they might be statistical artefacts or due to some other variables that haven't been considered. Additionally, even though some statistically significant results for Pluto square several of the faster moving planets were initially observed, these results were eventually shown to be statistical artefacts, and so this paper is also a cautionary tale for those engaged in research. One result involving cancer, Pluto, and a faster moving planet that was not shown to be an artefact, though, was the link between cancer and Pluto square the Moon (*p = .0269*). This result has added significance as some previous research (Minatel, 2015) has indicated a connection between the Moon and breast cancer.*

Introduction

Perhaps one of the oldest recognitions of a link between mental and physical well-being is found in Proverbs 17:22,

> *"A merry heart is good medicine, but a broken spirit dries the bones."*

Furthermore, Plato's quote (Woolf, 2023), "*The cure of many diseases is unknown to physicians because they are ignorant of the whole... For the part can never be well unless the whole is well*," is also taken to be a statement about the relationship between the mind and the body when it comes to health and treating disease.

Along these lines, researchers have long looked with mixed results (National Cancer Institute, 2025a) for a connection between psychological stress and cancer. Nonetheless, several analyses, meta-analyses, and reviews of recent studies (Kruk et al., 2019; Oh et al., 2021; Yang et al., 2019; Cooper et al., 2023) on the relationship between stress and cancer have found that chronic psychological stress over the course of several years has the strongest association with certain types of cancers. Some of these meta-analyses go on to describe possible mechanisms through which psychological stress can contribute to cancer, and even

if stress is not a primary cause, it can be a contributing factor. As Lorenzo Cohen, professor of General Oncology and Behavioral Science and director of the Integrative Medicine Program at MD Anderson, has said (MD Anderson, 2025), "Stress makes your body more hospitable to cancer."

Merriam-Webster defines stress as "a physical, chemical, or emotional factor that causes bodily or mental tension and may be a factor in disease causation[1]." When it comes to stressors in astrology, in the 1970 edition of Llewellyn's *A to Z Horoscope Maker and Delineator* (Llewellyn, 1970), Pluto is described by keywords such as *betraying, corrupt, calamity, filth, holocaust, metamorphosis, perdition, rotting, severe, terrible*, and *tense*, Meanwhile, a little closer to the present, astrologer Steven Forrest in *The Book of Pluto* (Forrest, 2012) wrote, "*Thus, life's catastrophic experiences and the evil aspects of human nature weave together to produce a complex Plutonian whole. Where Pluto lies in the birth chart, we will be confronted with those difficult truths*." Furthermore, the following online quote (Tarot.com Staff, 2025) typifies quite well what I have heard many other astrologers say about Pluto over the years, "*Pluto is the planet of major transformation, representing the cycle of death and rebirth. It is responsible for breaking down the old to make room for the new. Pluto can also represent power and control, and reigns over our relationship to authority figures and leadership*. Additionally, there are also medical astrology resources online (Eland, 2025; Partridge, 2025) that speculate on a link between Pluto and a diagnosis of cancer. Hence, no matter which source you look at, encounters with Pluto seem to be characterized by stress, disease, and dis-ease, and, thus, the purpose of this paper is to pursue and establish possible relationships between Pluto-related stresses and a diagnosis of cancer

Methodology

All the statistical tests employed in this study are aimed at answering a single question: "Given a group of people born with Pluto square _____, does cancer occur in this group significantly more often than it does in a control group?" Furthermore, this study uses at least a couple of slightly different control groups with the rationale for any changes always provided. Also, at the bottom of each table the control group is defined and the null and alternative hypotheses are given.

Based on the hypothesis that squares from transiting Pluto are related to an increased risk of cancer, the bulk of the data was drawn on 10th October 2024 data from Astrodatabank[2] to test this hypothesis. Initially, only charts with Rodden Ratings[3] of AA, A or B were used so that the birth data would be valid, and the time period was limited to the years 1900 through 2001 since no cases of cancer[4] were found in the database after 2001. Also, a 10° orb[5] was used for the square aspect. Furthermore, under the assumption that charts with some other Rodden Ratings will have correct birthdates if not correct birthtimes, additional data to be used as a validation cohort was drawn on 10th May 2025. These additional charts have Rodden Ratings of C or X, and they were used as a validation cohort to confirm significant results found in the derivation cohort for squares between Pluto and Uranus or Chiron. Further data for analysis was also drawn on 5th July 2025.

A one-tailed z-test for two proportions was used to test the likelihood, at the *alpha* = .05 level of significance[6], of a square from Pluto to a planet resulting in a significant increase in the rate of cancer, and the set of charts with no squares from Pluto to any planet was used as the initial control group. This was done due to an initial assumption that a square between Pluto and any other planet might be associated with an increased risk of cancer. Thus, the attempt was made to remove from the control group any suspected astrological condition that might lead to a cancer diagnosis. For testing purposes, the alternative hypothesis was generally that the proportion of people with the aspect who are diagnosed with cancer would be greater than the proportion of people in the control group who are diagnosed with cancer. However, in the case of

Pluto square Mars, it was found that the observed proportion of people with cancer was significantly less than what was expected.

In addition to computing *p*-values to determine the probability of the results being due to chance, calculations were made of risk ratios[7], a post hoc analysis of statistical power[8] using G*Power 3.1 software (Faul et al., 2009), and effect sizes (ES) were computed using the risk ratios which in this paper are the ratio of the proportion of cancer diagnoses in the data sample divided by the proportion of cancer diagnoses in the control group. Also, while there are no universally agreed upon cutoff points for small, medium, and large effect sizes for risk ratios, for the purposes of this paper a risk ratio from 1 to 1.5 will be considered small, greater than 1.5 but less than 2 will be deemed medium, and 2 or larger will be called large. Similarly, if the sample group proportion is less than the corresponding population proportion, then the risk ratio will be less than 1, and 0.6666… = 1/1.5 and 0.5 = 1/2 will be used as the cutoff points between small and medium and between medium and large effect sizes, respectively. Furthermore, all combinations of conditions that were examined in this study were formed using an inclusive "or[9]."

Results

The initial results, shown below in Table 1, indicate that a square from Pluto to almost any planet usually results in a significantly increased likelihood of being diagnosed with cancer. This was the case for 8 out of the 9 planets examined. Only a square from Pluto to Mars failed to demonstrate a significant effect, and Neptune was omitted from the table since no square from Pluto to Neptune was present during the time period that was examined. Of the various significant *p*-values observed, the probability of the extent that the sample group had diagnoses of cancer exceeding the control group was $p = .000046$ for Pluto square Moon, $p = 7.3 \times 10^{-6}$ for Pluto square Venus, $p = .00026$ for Pluto square Jupiter, and $p = .00019$ for Pluto square Saturn. When examining Pluto square Uranus or Pluto square Chiron, the difference was even more dramatic with *p*-values of 1.2×10^{-2} and 4.2×10^{-21}, respectively.

Table 1

Cancer incidence rates associated with Pluto qquares from 1900-2001. (One-Tailed Z-Test for Two Proportions and risk ratio as a measure of effect size, ES). The data for this table was extracted on 10/10/2024, and results that indicate a significant increase in cancer rates are shown in blue in bold type.

Pluto square …	Sun	Moon	Mercury	Venus	Mars	Jupiter	Saturn	Uranus	Chiron
Cancer & Aspect	159	184	156	186	128	172	180	245	303
Aspect Present	5,576	5,609	5,561	5,475	5,467	5,406	5,643	4,562	6,570
Cancer & No Aspect	427	427	427	427	427	427	427	427	427
No Aspect Present	18,263	18,263	18,263	18,263	18,263	18,263	18,263	18,263	18,263
Aspect Cancer %	2.9%	3.3%	2.8%	3.4%	2.3%	3.2%	3.2%	5.4%	4.6%
No Aspect Cancer %	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
P-value	0.015	0.000046	0.024	0.0000073	0.49	0.00026	0.00019	1.2 E -27	4.2 E -21
Risk Ratio (ES)	1.22	1.40	1.20	1.45	1.00	1.36	1.36	2.30	1.97
Power	69%	98%	62%	99%	5%	95%	96%	100%	100%
Control group is Pluto squaring none of the above planets									
H $_0$: There is no significant difference between the percentages									
H $_1$: One percentage is significantly larger than the other									

The results from Table 1 suggest that Pluto square any planet other than Mars is linked to an increase in cancer risk. Unfortunately, further examination revealed the presence of a lurking variable. This is a variable

not addressed in the initial study which, nonetheless, may be responsible for the observed results. Specifically, the effect of Pluto square Uranus or Chiron is so strong that, for example, if Pluto is squaring the Sun and also squaring Uranus or Chiron at the same time, then a significant result might follow as a consequence of Pluto squaring one of the those two outer planets rather than Pluto square Sun. Thus, the tests in Table 1 were repeated for Pluto square Sun through Saturn, but this time any charts with Pluto square Uranus or Chiron were first filtered out of the data. Additionally, there was no need to repeat the tests for Pluto square Uranus or Chiron since in the time period used, Pluto was never square to these two planets at the same time. The results of the retest are shown in Table 2.

Table 2

Cancer incidence rates associated with Pluto Square Sun through Saturn from 1900-2001 with charts with Pluto square Uranus or Chiron removed from the data. Sample proportions that are significantly larger than the control groups are shown in bold and coloured blue while those that are significantly less than the the control group proportion are in bold and coloured red. (One-Tailed Z-Test for Two Proportions and risk ratio as a measure of effect size, ES). The data for this table was extracted on 5/10/2025, and results that indicate a significant increase in cancer rates are shown in blue in bold type while those that indicate a significant decrease are shown in red in bold type.

Pluto square ...	Sun	Moon	Mercury	Venus	Mars	Jupiter	Saturn
Cancer & Aspect	106	129	101	126	75	77	117
Aspect Present	4,479	4,484	4,396	4,600	4,134	3,762	4,358
Cancer & No Aspect	447	447	447	447	447	447	447
No Aspect Present	18,791	18,791	18,791	18,791	18,791	18,791	18,791
Aspect Cancer %	2.4%	2.9%	2.3%	2.7%	1.8%	2.0%	2.7%
No Aspect Cancer %	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
P-value	0.481	**0.0269**	0.375	0.0782	**0.0138**	0.109	0.119
Risk Ratio (ES)	0.99	1.21	0.97	1.15	0.76	0.86	1.13
Power	5%	61%	9%	41%	73%	33%	33%
Control group is Pluto squaring none of the above planets.							
Charts with Pluto square Uranus or Chiron were removed before analysis.							
H_0: *There is no significant difference between the percentages*							
H_1: *One percentage is significantly larger than the other*							

From Table 2 it can be seen that the test subjects were slightly but significantly more likely to be diagnosed with cancer if their natal charts had Pluto square Moon (p = .0269), and a square from Pluto to Mars seems to protect one from cancer since those with this square were less likely to have a cancer diagnosis (p = .0138). Most of the significant results seen in Table 1, however, have now disappeared, and this confirms that many of the results in that table were due to Pluto simultaneously squaring either Uranus or Chiron. Additionally, all effect sizes in Table 2 are small. Nonetheless, with a risk ratio of 1.21, People with Pluto square the Moon but not Uranus or Chiron appear to be 21% more likely to be diagnosed with cancer, and with a risk ratio of 0.76, people with Pluto square Mars but not Uranus or Chiron appear to be 24% less likely to be diagnosed with cancer. Hence, as noted previously, a square to Mars from Pluto seems to provide some sort of protection against the development of cancer.

Also in Table 2, one can see that the risk ratios for Pluto square the Moon, Venus, and Saturn are all greater than 1, but at the same time, all of the tests shown in this table have post hoc estimates of power that are less than the recommended value of 80% (Cohen, 1988). This means that it is more difficult to detect a

significant result even when it is true that there are important differences between the proportions. Thus, in order to bring the results of Table 2 into greater focus, the data for Pluto square the Moon, Venus, or Saturn were combined, and the proportions were analysed again for significance. And as before, charts with Pluto square Uranus or Chiron were first removed from the sample data so that they would not unduly influence the outcome. The significant result is shown below in Table 3.

Table 3

Pluto square the Moon, Venus, or Saturn and not square Uranus or Chiron. The data for this table was extracted on 7/5/2025, and significant results are shown in bold and blue.

Pluto square ...	MO/VE/SA
Cancer & Aspect	337
Aspect Only	12,000
Cancer & No Aspect	447
No Aspect Only	18,791
Aspect Cancer %	2.8%
No Aspect Cancer %	2.4%
p-value	**0.00981**
Risk Ratio (ES)	1.18
Power	75%

Control group is Pluto not squaring any of Sun, Moon, Mercury, Venus, Jupiter, Saturn, Uranus, or Chiron.
Sample group is Pluto square the Moon, Venus, or Saturn and not square Uranus or Chiron.
H_0: There is no significant difference between the two percentages (proportions)
H_1: The percentage in the data sample is significantly larger than the percentage in the control group

From Table 3 one can see that combining the data for the Moon, Venus, and Saturn into a single group has resulted in a smaller *p*-value and a larger power estimate that is close to the desired value of 80%.

The strongest results are undoubtedly related to the squares between Pluto and Uranus or Chiron, and so the total number of cases of cancer were divided into approximately half to see if these significant *p*-values replicate over two distinct time periods. The results are give in Table 4 below.

Table 4

The likelihood of someone with Pluto squaring Uranus or Chiron is examined for two distinct time periods, and significant results are shown in bold and blue. Also, the data for this table was extracted on 10/10/2024

1900-1931	(726 with cancer)			1932-2001	(745 with cancer)	
Pluto square ...	**Uranus**	**Chiron**		**Pluto square ...**	**Uranus**	**Chiron**
Cancer & Aspect	113	255		**Cancer & Aspect**	132	48
Aspect Present	1,793	4,651		**Aspect Present**	2,769	1,919
Cancer & No Aspect	171	171		**Cancer & No Aspect**	256	256
No Aspect Present	4,649	4,649		**No Aspect Present**	13,614	13,614
Aspect Cancer %	6.3%	5.5%		**Aspect Cancer %**	4.8%	2.5%
No Aspect Cancer %	3.7%	3.7%		**No Aspect Cancer %**	1.9%	1.9%
p-value	**2.1 E -6**	**1.6 E -5**		*p*-value	**4.3 E -20**	**0.033**
Risk Ratio (ES)	1.71	1.49		**Risk Ratio (ES)**	2.54	1.33
Power	100%	99%		**Power**	100%	57%
Control group is Pluto squaring none of the planets Sun through Chiron						
H$_0$: There is no significant difference between the percentages						
H$_1$: The percentage in the data sample is significantly larger than the percentage in the control group						

Because the results for Pluto square either Uranus or Chiron are so pronounced, it was decided to also test the significance of Pluto square Pluto or Chiron using just Pluto not square Uranus or Chiron as the control group. The charts for Pluto square Uranus and Pluto square Chiron were, thus, combined into a single group, and since no chart at Astrodatabank had Pluto square both Uranus and Chiron simultaneously, no adjustments had to be made to the data.

Table 5

Statistical comparison of cancer diagnosis in individuals with Pluto square Chiron or Uranus vs. individuals without either of these aspects. (One-Tailed Z-Test for Two Proportions and the risk ratio for effect size). Significant results are shown in bold and blue, and the data for this table was extracted on 10/10/2024.

Pluto square ...	UR/CH
Cancer & Aspect	548
Aspect Only	11,132
Cancer & No Aspect	923
No Aspect Only	38,758
Aspect Cancer %	4.9%
No Aspect Cancer %	2.4%
p-value	**1.2 E -44**
Risk Ratio (ES)	2.07
Power	100%

Control group is Pluto not squaring either Uranus or Chiron.
H$_0$: There is no significant difference between the two percentages (proportions)
H$_1$: The percentage in the data sample is significantly larger than the percentage in the control group

To show that the results involving squares between Pluto and Uranus or Chiron replicate on a different set of data, a one-tailed z-test for two proportions was repeated for charts at Astrodatabank with a Rodden Rating of C or X. These are charts without a verified source for the birth data (C)) or with unknown birth

times (X). Nonetheless, it is assumed in this analysis that the majority of the birth dates are at least correct, and the replication of significance suggests that this is indeed the case.

Table 6

Statistical comparison, using data with a Rodden Rating of C or X, of Cancer Diagnosis in Individuals with Pluto Square Chiron or Uranus (together or separately) vs. Individuals without either of these Aspects (One-Tailed Z-Test for Two Proportions and risk ratio for effect size). The data for this table was extracted on 10/10/2024, and significant results are shown in bold and blue.

Pluto square ...	UR	CH	CH/UR
Cancer & Aspect	49	58	107
Aspect Only	789	1120	1909
Cancer & No Aspect	222	222	222
No Aspect Only	8517	8517	8517
Aspect Cancer %	6.2%	5.2%	5.6%
No Aspect Cancer %	2.6%	2.6%	2.6%
***p*-value**	**4.2 E -9**	**7.3 E -7**	**6.3 E -12**
Risk Ratio (ES)	2.38	1.99	2.15
Power	100%	99%	100%

*Control group is Pluto not squaring either Chiron or Uranus.*
H_0: There is no significant difference between the two percentages (proportions)
H_1: The percentage in the data sample is significantly larger than the percentage in the control group

The replication of results on a separate set of data increases confidence in the premise that squares from Pluto to Uranus or Chiron are associated with an increase in the frequency of cancer. However, it is still possible that these results are a statistical artefact, and this possibility will be addressed in the discussion at the end of this paper. Also, below in Figure 1 is a bar graph comparing the relative risks, as they appear in Table 6, of being diagnosed with cancer when Pluto is square Uranus or Chiron or either Uranus or Chiron.

Figure 1

The risk ratios for being diagnosed with cancer when Pluto in a natal chart is square Uranus or Chiron or square either Uranus or Chiron. The data for this figure was extracted on 10/10/2024.

COMPARITIVE CANCER RISK RATIOS WHEN PLUTO SQUARES URANUS OR CHIRON OR EITHER ONE
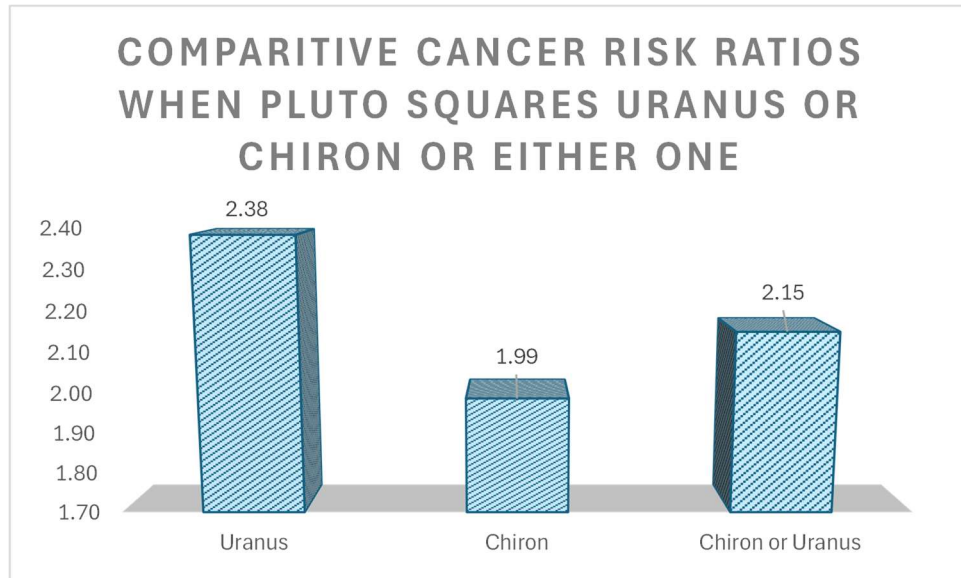
Additional evidence that Pluto is linked with cancer can also be found by studying astrological houses. In modern, Western astrology, Pluto rules Scorpio, and Scorpio has a natural connection to the 8th House. Thus, it is suspected that astrological charts with outer planets in the 8th House might make one more prone to being diagnosed with cancer. Additionally, there is a tenet in medical astrology (Nauman, 1993; Ridder-Patrick, 1990) that stimulation of a particular sign could result in any disease associated with any other sign of the same mode. For example, an astrological activation of Taurus could result in an ailment associated with either Taurus or with any of the other fixed signs. In terms of associated Houses, this suggests the hypothesis that if an outer planet is in any of the succedent Houses (Houses 2, 5, 8, or 11), then there will be an increased frequency of diagnoses of cancer. The results presented in Table 7 suggest that this is indeed the case. However, one potential problem is that there are at least 20 different House systems, and Astrodatabank provides calculations for 7 of those. Hence, Table 7 evaluates the significance of having an outer planet (Saturn through Pluto and Chiron) in either House 8 or in Houses 2, 5, 8, or 11 in each of the seven available House systems. The outer planets used were Saturn through Pluto plus Chiron as these planets were generally observed to lead to higher levels of significance and effect size.

Table 7

The tables below show that there is an increased likelihood of a cancer diagnosis if any of the planets Saturn, Uranus, Neptune, Pluto, or Chiron are in House 8 or if any of these planets is in any of Houses 2, 5, 8, or 11. Significant results are shown in bold and blue, and the data for this table was extracted on 7/5/2025.

SA/UR/NE/PL/CH 8 House	Cancer & House	in House	Cancer & not in House	not in House	prop1	prop2	risk ratio	p-value
Campanus	605	17817	916	33425	0.0340	0.0274	123.9%	1.6 E -5
Porphyrius	633	18905	888	32337	0.0335	0.0275	121.9%	5.3 E -5
Equal	621	18776	900	32466	0.0331	0.0277	119.3%	2.9 E -4
Koch	605	18411	916	32831	0.0329	0.0279	117.8%	7.5 E -4
Placidus	597	18502	824	32740	0.0323	0.0252	128.2%	1.3 E -6
Regiomontanus	586	18410	935	32832	0.0318	0.0285	111.8%	1.6 E -2
Whole Signs	559	18423	962	32819	0.0303	0.0293	103.5%	2.5 E -1

SA/UR/NE/PL/CH 2/5/8/11 House	Cancer & House	House	Cancer & not in House	not in House	prop1	prop2	risk ratio	p-value
Campanus	1387	43974	134	7268	0.0315	0.0184	171.1%	5.4 E -10
Porphyrius	1402	45787	119	5455	0.0306	0.0218	140.4%	1.5 E -4
Equal	1415	45755	106	5487	0.0309	0.0193	160.1%	8.5 E -7
Koch	1357	45207	146	6035	0.0300	0.0242	124.1%	5.9 E -3
Placidus	1399	45318	122	5924	0.0309	0.0206	149.9%	5.9 E -6
Regiomontanus	1384	45050	137	6192	0.0307	0.0221	138.9%	9.3 E -5
Whole Signs	1431	46566	90	4676	0.0307	0.0192	159.7%	5.2 E -6

Control group is none of the specified outer planets in any of the indicated Houses.

H_0: There is no significant difference between the percentages

H_1: The percentage in the data sample is significantly larger than the percentage in the control group

As can be seen in Table 7, the size of proportion 1 is always larger than the corresponding proportion for the control group, all of the *p*-values are significant except for one, and the effect sizes as measured by risk ratios range from small to medium. Furthermore, the results in Table 7 allow one to compare the efficacy of each of the House systems available at Astrodatabank by ranking the results with respect to both *p*-value and effect size. These rankings are shown below in Table 8.

Table 8

Rankings of House system results by both p-*value and effect size.*

SA/UR/NE/PL/CH 8 House	risk ratio (ES)	p-value	ES ranking	p-value ranking
Campanus	123.9%	1.6 E -5	2	2
Porphyrius	121.9%	5.3 E -5	3	3
Equal	119.3%	2.9 E -4	4	4
Koch	117.8%	7.5 E -4	5	5
Placidus	128.2%	1.3 E -6	1	1
Regiomontanus	111.8%	1.6 E -2	6	6
Whole Signs	103.5%	2.5 E -1	7	7

SA/UR/NE/PL/CH 2/5/8/11 House	risk ratio (ES)	p-value	ES ranking	p-value ranking
Campanus	171.1%	5.4 E -10	1	1
Porphyrius	140.4%	1.5 E -4	5	6
Equal	160.1%	8.5 E -7	2	2
Koch	124.1%	5.9 E -3	7	7
Placidus	149.9%	5.9 E -6	4	4
Regiomontanus	138.9%	9.3 E -5	6	5
Whole Signs	159.7%	5.2 E -6	3	3

The Spearman rank correlation between the two sets of effect size rankings in Table 8 is a modest .32, and the Spearman rank correlation between the two sets of *p*-value ratings is likewise only a modest .21, and in each case these correlations are not significantly different from zero. This is an indication of the need for a more comprehensive study with more astrological conditions, more House systems, and more data.

Discussion

This study above has produced interesting but not necessarily definitive results. The highly significant *p*-values involving squares between Pluto and Uranus or Chiron are certainly impressive, but they are so strong that there is concern that they might be a statistical artefact. In other words, simply a fluke due to chance or the result of some other lurking variable. The specter of the results for Pluto squaring Uranus being an artefact are of particular concern since Pluto squared Uranus within a 10° orb only once during the years 1928-1937. Hence, one might be able to find something historical that happened during that period that accounts for the rise in cancer diagnoses. However, it is also noted that astrologers should, perhaps, be more concerned about association and replication than they are with causation. In other words, the hope is more that Pluto square Uranus is a reliable indicator of cancer risk rather than a direct cause of such a condition. Thus, if cancer cases always tend to rise whenever these periods of Pluto square Uranus occur, then this aspect will be seen as a reliable indicator even if it doesn't directly cause cancer. Unfortunately, the next period of Pluto square Uranus within a 10° orb won't begin until 2070 CE, and when the children born during this next period of Pluto square Uranus mature, then evidence will be available that either supports or weakens this hypothesis.

Regarding Pluto square Chiron, there is more evidence that this aspect produces a reliable effect. During the years from 1900 to 2001, there were three periods during which Pluto was square Chiron. The first was from 1915-1925, the second was from 1946-1948, and the third was from 1992-1994. This last period can be ignored as Astrodatabank does not have any diagnoses of cancer recorded during this period, and that is understandable as a result of (1) current medical privacy laws, and (2) that it will likely take more time for most of the people born during this period to reach an age where cancer diagnoses begin to occur. Nonetheless, significant results were obtained for the first two time periods, and these results add confidence to the notion that there is a meaningful association between a diagnosis of cancer and being born with Pluto square Chiron. However, if one compares the cancer diagnosis rate for each of the first two Pluto square Chiron periods to the corresponding rate from 1900-2001, then the one-tailed *p*-value for the first period (1915-1925) is 3.5 E -30 while the one-tailed *p*-value for the second period is .0192.[10] While both of these *p*-values are below the .05 threshold, clearly one is much smaller than the other. This may possibly be due to the fact that the first period lasted much longer than the second.

The belief that the results in this study involving Pluto square Uranus or Chiron are not statistical artefacts is supported by the result in Table 3 that a square from Pluto to the Moon or Venus or Saturn is positively linked to a cancer diagnosis, and the belief is even more strongly supported by the observations that outer planets in houses associated with either Pluto or all four fixed signs are strong indicators of an increased risk of a cancer diagnosis (Table 7). The premise is also supported by the fact that the results for Pluto square Uranus or Chiron replicated over two different time periods and over two sets of data. Hence, while it is still possible that the results of this study are statistical artefacts, there is also evidence to suggest that they are not.

Two other caveats should also be mentioned. The first is that despite the tens of thousands of data entries contained in the Astrodatabank database, the collection is still incomplete and perhaps does not accurately reflect the world at large. The first part of this statement is true, and it can easily be shown that much of the

medical data at Astrodatabank is incomplete. Nonetheless, that does not automatically mean that results found at Astrodatabank do not generalize to the larger population since this incompleteness affects both the sample and control groups, and, hence, it may not result in proportions that are wildly different from the true population proportions. Furthermore, the case has been presented above for the presumption that these results are not statistical artefacts.

The second caveat is that some may be concerned that shuffled control groups have not been used in this study. In a shuffled control group, the values of several input variables are shuffled randomly. For example in a shuffled control group derived from natal charts, one might combine the birthplace of one person with the birth time of another and the birth date of a third person. This shuffling tends to break any relationships that might exist between input and output variables in the original data while at the same time leaving the overall distribution of values in the input variables unchanged. However, aside from the fact that there is no button at Astrodatabank for easily creating a shuffled control group, there is also no way in the context of this study to determine if such a fictitiously derived person in a shuffled control group has been diagnosed with cancer. Hence, for these reasons a shuffled control group was not an option for this study.

The bottom line is that we rarely prove anything beyond a shadow of a doubt through statistical analysis. Instead, we only get results that either give us more or less confidence in our original premise. Nonetheless, this study may be seen as expanding confidence in the premise that some squares from Pluto are linked with an increased risk for cancer. However, at the same time it is still possible that everything observed is simply a statistical artefact, and so, as usual, more studies are always needed to see if additional data increases or decreases one's current confidence in the premise.

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[1] Two researchers of note who should be mentioned for their contributions to mind-body interactions are psychoanalyst Franz Gabriel Alexander (1891-1964) who was one of the founders of psychosomatic medicine and endocrinologist Hans Selye (1907-1982) who conducted important research on the responses of organisms to stress.

[2] Astrodatabank (*https://www.astro.com/adb-search*) is a free online database that contains over 77,000 natal charts that are categorized in multiple ways. This database is updated with new data almost daily.

[3] See https://www.astro.com/astro-databank/Help:RR#:~:text=Lois%20Rodden%20created%20the%20Rodden%20Rating%20system%20to,AA%2C%20A%20and%20B%20data%20are%20fairly%20stable.

[4] A sampling of the cancer cases at Astrodatabank suggests that the majority of those people diagnosed with cancer also died from cancer.

[5] Ideally and according to many astrologers, a smaller orb should correspond to stronger results. However, in research a smaller orb can also result in less data which, in turn, can lead to weaker results that make it harder to detect true effects. Hence, there is often a trade-off in the statistical study of astrology between making an aspect strong enough to produce an effect and having enough data to detect that affect.

[6] In statistics, the value that *alpha* is set to represents not only the cutoff point for determining significance but also the probability of getting a statistically significant result purely by chance.

[7] In this paper, every risk ratio is always a ratio of the percentage of people in the data sample diagnosed with cancer to the corresponding percentage of people in the control group diagnosed with cancer, and these risk ratios show the increased (or decreased) likelihood of being diagnosed with cancer given that certain astrological aspects are present.

[8] The probability of accepting a false null hypothesis is denoted in statistics by β (beta), and the power of a statistical test is defined as $1 - \beta$. The generally accepted standard is that the power of a test should be at least 80%.

[9] To say that "A or B is true" using an "inclusive or" means that either A is true or B is true or both A and B are true. In contrast, an "exclusive or" excludes the case where both are true.

[10] The proportions that were compared for the first period are 259/4,712 and 427/18,263 and those for the second period are 51/1,613 and 427/18,263.