

Statistical Analysis of 9400 Years of Venus Jupiter Conjunctions

based on the Solex Program

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This paper analyzes 9400 years of data on filtered Venus Jupiter conjunctions using the associated 9400 year conjunction data spreadsheet. A review of the spreadsheet is provided before the analysis begins in part 1 below:

Introduction to the data spreadsheet:

- The spread sheet covers the years from -5175 to 4164.
- The total timeframe on the spreadsheet represents about 9,900 conjunctions.
- The spread sheet shows 227 conjunctions in 9400 years representing about 2.3% of the total 9,900 conjunction appearances during the period.

Understanding the spreadsheet:

- The spreadsheet depicts 11 columns of data for the conjunctions of interest.
- The columns of interest for our conjunction analysis are the following:
 - o Column C – Interval between Short Term conjunctions; Significant points/events in Bible prophecy and history
 - o Column D - Year of the conjunction (astronomical year)
 - o Column E - Date of the conjunction (astronomical date)
 - o Column H - Degrees of separation between Venus and Jupiter in the conjunction
 - o Column J - Elongation – Degrees of separation between the conjunction and the Sun
 - o Column N - Degrees from Regulus - Distance between Regulus and the conjunction

Details pertaining to the spreadsheet columns noted above:

- Column C – This column has two purposes: First, the number in the column represents the time interval in years between the pairs of significant “short term” conjunctions highlighted in blue in column D. This is discussed in part 2 of the analysis. Second, since this is a Bible based study that deals with God’s heavenly signs and prophecy, the focus of the spreadsheet data is based on a Biblical as opposed to a secular evolutionary timeline. The creation story in Genesis 1 and 2 and the genealogies in Genesis 5 and 11 support a young earth history of about 6000 years. This is supported by Ussher’s chronology which dates the creation at about 4000 BC (-4000). The study also presumes that the world is presently in the “season” of the Lord’s return and that by the year 2100, the Millennial Kingdom will exist. Thus, the period of time of interest in the spreadsheet is the 6,100 year period from -4000 to 2100. This period is further reduced to focus on the period between the time of Daniel (530 BC) and 2100 AD covering the most likely window of time of the heavenly signs for the Messiah’s first and second comings. The red filled boxes in column C at the years -4179 and 2107 mark the start and end of the 6,100 year period containing the conjunctions of interest and it allows us to focus on these 131 significant

conjunctions that may be linked to prophecy and recorded Bible history.

Within this 6,100 year timeframe, the two specific periods of time relating to the Messiah's first and second comings are highlighted by the gold colored sections in column C. The first covers the period of the wise men from -488 to Christ's birth, the time when they would have observed the heavens for the heavenly sign that would reveal the Christmas Star. At the -450 year row in this gold segment of the column, red text has been inserted to indicate the issuing of the decree to rebuild Jerusalem (Dan 9:25) that started the 483 year countdown to the Coming Messiah. The 18 significant conjunctions that appear in this period are of special interest. The second gold filled segment covers the period for the Messiah's second coming. Since the second coming could not happen before Israel was back in the land (1948), and it appears from the presently increasing convergence of signs that point to a return of Messiah sooner rather than later, for this study we presume that the Messiah will return before the year 2100. The gold filled segment in column C extends from the first significant conjunction appearing since 1948, (2014 conjunction) until the year 2107... 93 years from now. The five significant conjunctions appearing in this period (2014-2017) are of special interest and are discussed in part 2.

Columns D & E - These columns indicate the astronomical year and date of the event, with the years before the Common Era being preceded by a minus (-) sign. The astronomical calendar differs from the Gregorian in that on the astronomical calendar the year zero appears (highlighted in yellow). The Gregorian calendar has no year zero. This means that the "BC" years are off by one year on the astronomical calendar as can be seen by looking at the dates for the Christmas Star conjunctions. On the spreadsheet, both conjunctions with their data are in the green highlighted rows. The 12 August 03 BC conjunction appearing as the star the wise men saw in the East is -2/08/12 and the Christmas Star appears as -1/06/17 in column E. This difference in calendars does not affect the data or statistical analysis in any way. The pairs of conjunctions highlighted in blue in column D are the significant short term conjunctions used in this study. This pattern, consisting of 48 significant short term pairs (both conjunctions have separation distances of less than 1.5 degrees) appearing less than four months apart, is rare and it links the signs for the Messiah's first and second comings together as discussed in part 2.

Column H: The numbers in this column represent the separation distance between Venus and Jupiter at their point of closest approach during the conjunction, expressed in degrees. The spreadsheet lists the conjunctions of interest with a separation distance of 1.9 degrees or less. There are 227 of these conjunctions. The 60 "boxed" numbers in this column represent conjunctions having a separation distance of less than 0.1 degree or 6 arc minutes. Conjunctions with this degree of separation can potentially appear to the naked eye as a merged or single star. This will be discussed more in the statistical analysis.

Column J: The elongation numbers in this column represent the separation distance, in degrees, between the conjunction and the sun. This number represents the visibility or the degree to which the conjunction is observable with the naked eye. If the number is negative,

the conjunction appears when Venus is the morning star (leads the sun) and when the number is positive, Venus is the evening star (follows the sun). For separation distances less than 20 degrees (e.g. -20, 20) from the sun, most conjunctions are impossible to see with the naked eye, even if Venus is visible, because Jupiter cannot be seen when it is that close to the sun. The elongation numbers that make the conjunction least likely to be visible to the naked eye are highlighted in yellow in this column. For distances between 20 and 30 degrees, a conjunction can be seen for up to an hour or more depending on whether Venus is the morning or evening star. For distances greater than 30 degrees, the conjunction can be seen from 1.5 to 3 hours as the elongation increases to a maximum of about 47 degrees.

Column N - Degrees from Regulus: The numbers in this column determine the constellation in which the conjunction appears. Because Regulus is the fixed signpost on the ecliptic, it becomes an easy reference point from which the location of a conjunction in any of the twelve constellations can be determined. Since Regulus is the king star in the constellation Leo, this is especially important because Leo is the constellation of interest in the template for the signs of the Messiah. Each of the 12 constellations fits into a 30 degree sector of the Zodiac to fill 360 degrees of sky. For the Constellation Leo, Regulus is located 12 degrees from the leading edge of Leo's sector and 18 degrees from the trailing edge. The degree of separation from Regulus when a planet enters Leo is a positive number and the number becomes negative after it passes Regulus and leaves the constellation. So, in column N, the degrees of separation from Regulus that define Leo as the backdrop for a conjunction are these: If the positive number is 12 or less, or the negative number is -18 or less, the conjunction is located in the constellation Leo. On the spreadsheet, all the conjunctions appearing in Leo are highlighted in green. So for the 9400 year period, 11 singles and 30 significant conjunction pairs appear in the constellation Leo.

Part I - Statistical Analysis of the First Coming Heavenly Signs and The Christmas Star

As presented in the Christmas Star DVD, the critical signs pointing to the Messiah's first coming consisted of a pair of Venus Jupiter conjunctions that appeared 10 months apart in the constellation Leo in August 3 BC and June 2 BC. The separation distance between the planets in both conjunctions was such that each appeared as a single star over Israel and both conjunctions were visible with the naked eye, making them an extremely rare pair of conjunctions. The unparalleled separation distance between the planets is the significant factor that distinguishes these two conjunctions from all the others on the 9400 year spreadsheet. While there is some variation regarding the separation distance between the planets that defines a single star among astronomers, it is generally agreed that when the separation distance for conjunctions involving Venus is less than about 6 arc minutes (.1 degree) a Venus Jupiter conjunction can appear as a single star to the naked eye.

If we take a look at Column H (Separation) on the spreadsheet, this is what we have to consider:

- Twenty five conjunctions (boxed) with a separation distance of 0.1 degree or less have appeared between the time of the Exodus and the present.
- The five boxed conjunctions appearing before -2000 and after 2100 are eliminated because they

don't fit the timeline as a sign for the Messiah. Also, these five conjunctions have a separation distance from the sun.

- The next eighteen conjunctions (-4048 to -1460) are eliminated for basically the same reasons. Moreover, all these conjunctions occurred before Balaam's prophecy that a star would rise out of Judah (circa -1460). It should be noted that the -3121 conjunction has the smallest separation distance on the entire spreadsheet. It also appeared in the constellation Leo. But, along with the other reasons, its separation from the sun made it impossible to see. This conjunction likely appeared while Adam was still alive, which again, eliminates it as a potential sign for the coming Messiah.

- The next seven conjunctions (-1414 to -526) appeared before Daniel's prophecy that the Messiah would appear 483 years after the decree to rebuild Jerusalem, so they don't fit the timeframe for the sign of the Messiah. Five of the seven were too close to the sun for the conjunction to be seen. The -1127 conjunction is noteworthy because it ties for the second smallest separation distance of all the conjunctions on the spreadsheet. It was also visible for a short period as an evening star during the period of the reign of King David. But it appeared in the constellation Virgo, not Leo.

- The period of the wise men, between -488 and -1 BC is the most important section of the spreadsheet with regards to the signs for the Messiah's first coming. After Daniel's death in about -530, the wise men would have begun observing the heavens and recording what they saw in anticipation of the sign of the coming Messiah. There were only three significant conjunctions in -395, -133 and -40 with the potential to appear as a single star but none was visible because the conjunctions appeared too close to the sun to be visible. That said, if we assume the wise men diligently observed the heavens, they would have known that the planets merged in these conjunctions (especially the one in -133) because of what they observed both before and after the conjunction occurred. So, they would have known that it was at least possible for these traveling stars to merge into a single star. But, the question remained: Could the planets visibly merge into the prophetic star that would point them to the coming Messiah? In August 3 BC and June 2 BC they received their answer. These two conjunctions made their appearances as described in the Christmas Star DVD. Never before, not just during the period the wise men observed the heavens, but all the way back to the creation, had a pair of back to back conjunctions formed with separations so close that they each appeared as a single star. And, they were both visible to the naked eye. The Christmas Star conjunction on 17 June 2 BC had one of the four closest separation distances (.007 deg) among all the conjunctions in the 9400 year period. And, it was the only conjunction of this magnitude that was visible for more than 3 hours with the naked eye. This is the conjunction for the record books and it was what appeared on the evening of Jesus Christ's birth.

- After the destruction of the second Temple, from the years 91 to 1792 there were 12 significant conjunctions, eight of which were not visible due to their separation from the sun (highlighted in yellow). During this period, the most significant single conjunction to appear was in 732 with a separation of .005 in the constellation Gemini. But it was only 15 degrees from the sun so would not have been visible.

- The five conjunctions occurring between 2014 and 2017 are significant because they fit the template for the first coming signs, especially when the short term cycle for conjunction pairs is considered (discussed in part 2). Of the remaining 12 conjunctions appearing after 2107 and through

the year 4163, there are no pairs of conjunctions that fit the Christmas Star template. The most significant single conjunction to appear in the constellation Leo will be in 3142 with a separation distance of .09 and it will be visible for about three hours. But, this conjunction is more than 1,100 years into the future and in all likelihood it will appear after the Millennium... unless the heavens and the earth pass away before that time.

The data in this analysis support the stellar template baseline for the Christmas Star as the sign for the Messiah's first coming. The baseline is: **A pair of Venus Jupiter conjunctions in the Constellation Leo.** The following data from the Solex spreadsheet amplify this conclusion. Of the filtered conjunctions:

1. 227 had a separation distance of 1.9 degrees or less (2.3%).
2. 60 of the 227 significant conjunctions during this period had a separation distance of 0.1 degree.
3. Only four conjunctions on the spreadsheet had a separation distance of .007 degrees or less:

Date	Separation	Elongation	Constellation	Comment
-3121/08/08	.004	-18	Leo	Pre- creation
-1127/08/06	.005	23	Virgo	David's reign
-1/06/17	.007	45	Leo	Christmas Star
732/06/22	.005	-18	Virgo	Post 1 st Coming

The -3121 and 732 conjunctions were not visible and the -1127 conjunction appeared more than 1000 years before Christ's birth. This leaves only one conjunction as the potential sign for the Messiah's first coming: **The Christmas Star conjunction on -1/06/17.**

4. It is important to understand that the Christmas Star pair consisted of a pair of back to back conjunctions where each appeared to merge into a single star, so separation distance is the critical parameter that made this pair of conjunctions so special. In order to understand just how rare the Christmas star pair is, I took the three conjunctions above and paired them with the closest neighbor having the smallest separation distance to see what the each pair's combined separation distance looked like, keeping in mind that a separation distance of less than 0.1 degree is required for a conjunction to appear as a single star. The data below are revealing:

Date	Separation	Combined Separation	Elongation	Constellation
-3121/08/08	.004	-	-18	Leo
-3120/06/20	1.478	1.482	43	Libra
-1127/08/06	.005	-	23	Cancer
-1126/10/22	.172	.177	-14	Cancer
-2/08/12	.072	-	- 21	Leo Star in the East - Ma 2:2
-1/06/17	.007	.079	45	Leo Christmas Star- Ma 2:10

732/06/22	.005	xxxx	-15	Gemini <u>No close pair,</u> nearest significant: -89 yrs > 732 <+29 yrs
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These data reveal that the combined separation distance between the Christmas Star pair and the others, .079 degrees, is less than the maximum required for a single conjunction to appear as a star. This is incredible. This makes the Christmas Star conjunctions the only pair in the entire 9400 year period that has a combined separation distance of less than 0.1 degree.

Since no other conjunction or conjunction pair between – 5175 and 4164 (including the period from 1948 -2100 when the Messiah’s return is anticipated) matches the Christmas Star template based on individual or combined separation distance, it is clear that another parameter in the template must exist that links the Christmas Star pair with the sign or signs that point to the Messiah’s second coming, if such a sign exists. Up to this point, the key parameters in our template for the Messiah’s signs are: (1) a **PAIR of VISIBLE** conjunctions, (2) appearing In the Constellation **LEO**, (3) having a combined **SEPARATION DISTANCE** of less than 0.1 degree. But, since no other comparable pair of conjunctions exists based on the separation distance parameter, including any that would point to the Messiah’s return, another parameter needs to be identified that can potentially link the signs for the Messiah’s earthly appearances together. This next section considers a 200 year analysis of more contemporary conjunctions between 1900-2100 to see if a another parameter can be identified to compliment separation distance in the template that may link the Messiah’s first and second comings together.

Part II - Identification of the Link between the First and Second Coming Signs for the Messiah

In July 2015, I conducted a separate study titled: STATISTICAL ANALYSIS OF 200 YEARS OF VENUS-JUPITER CONJUNCTIONS – 1900-2100 (posted on the Christmas Star website), to determine if there is another parameter in the Christmas Star template, not based solely on a conjunction’s separation distance, that might link the 2000+ year span between the heavenly signs for the Messiah’s first and second comings together. This contemporary 200 year period for the study is important because it is believed by many prophecy experts that a heavenly sign for the Messiah’s second coming if there is one, would not appear before the rebirth of Israel in 1948, it must appear before the Tribulation and, it will most likely appear before the year 2100. So the period between 1900 and 2100 is of interest. None of the data has been filtered from the spreadsheet so all conjunctions are included. The data includes: (1) the date of the event, (2) Separation distance from the sun (3) Planet separation distance in the conjunction, (4) The constellation in which the conjunction appeared.

There are a total of 210 conjunctions in the period with an average time between conjunctions of 1.05 years. My interest was to see if any conjunctions in this period fit the baseline template for the Christmas Star. Again, the baseline is defined as a pair of sequential conjunctions appearing in the constellation Leo. In this 200 year period, fifteen conjunctions appear in Leo: eleven singles and two pairs. The first pair appeared in 1920/21, before Israel became a nation, so it would not qualify to be a sign for the Messiah’s return. Also, the 1920 conjunction was not visible since it was just 11 degrees

from the sun. The only other pair to appear in Leo during the period are the 30 June & 25 October 2015 conjunctions, and both are visible for 3+ hours. This is significant, but it alone is not enough to qualify these conjunctions as a second coming sign.

Separation distance between the planets was an important consideration in the analysis because of the record breaking separation distance between the planets that distinguished the Christmas Star pair. Of the 210 conjunctions considered in this analysis, only one has a separation distance of less than 0.1 degrees (6 arc minutes): the 27 August 2016 conjunction. This conjunction, appearing in Virgo, following the 2015 pair in Leo turns out to be much more significant than I initially believed. Two things make the 2015 conjunction pair unusual. First, they both have a separation distance of 1 degree or less. This turns out to be significant when the conjunctions are considered in pairs. Second, the period between the conjunction appearances was short: only a 117 day interval between the two conjunctions. This is about one quarter of the one year average interval for conjunctions. When I analyzed the data to determine the significance of this short span between appearances, it revealed:

Frequency of Conjunction Appearance: For the 210 conjunctions between 1900-2100:

- a. 111 or 52.8%, had an interval between appearances of 12-14 months
- b. 79 or 37.6%, had an interval between appearances of 10-12 months
- c. 22 or 10.4%, had an interval between appearances of 3.5 to 4.5 months (short interval)

No conjunctions had an interval between 5 and 9 months. Of the conjunctions that compose the 11 pairs of short interval conjunctions in (c.) above, additional analysis revealed:

- a. Number of pairs where one or both conjunctions appear in the Sun = 2
- b. Number of pairs where one or both conjunctions have separation distance greater than 5 degrees = 6
- c. Number of pairs where one or both conjunctions have separation distance between 2 & 5 degrees = 2
- d. Number of pairs where the separation distance for both conjunctions was 1 degree or less = 1

So, of the eleven pairs of short interval conjunctions between 1900 and 2100, only one pair is significant based on both conjunctions being visible, having a separation distance of 1 degree or less for each conjunction: **the 30 June and 25 October 2015 conjunctions, both in the Constellation Leo.**

Based on the above, we now have a unique pair of conjunctions in 2015, during the 200 year period, where:

- Both conjunctions appear in Leo, and
- Both conjunctions are visible for 3+ hours, and
- Both conjunctions have separation distances of 1 degree or less, and
- The conjunctions form a rare but potentially significant short interval pair

In the 200 year study, I considered 1 degree of separation for conjunctions to be significant. But, since this analysis is just a snapshot of a much larger Venus Jupiter conjunction database, I needed to know just how rare or unique the 2015 conjunction pair was. Also, because the difference in separation distance between the Christmas Star pair and the 2015 conjunctions is still significant, there needed to be more to link these conjunction pairs together than separation distance. This is where Allan Johnson and the Solex data base and the associated spreadsheets became invaluable.

Allan Johnson introduced me to the Solex spreadsheet in June 2015, about the time of the 30 June conjunction. The unique features of this program include the 9400 year Venus Jupiter conjunction data base with the flexibility to change filters on various program parameters in order to filter out insignificant and irrelevant data. One example of filtering is that my original thought was to just consider the conjunction data for the 6100 years spanning the period from the creation to 2100, but then decided it would be statistically valuable to include the entire 9400 year period. This allows the spreadsheet to reveal all the pertinent data. Importantly, the program has the flexibility to customize the parameters for specific purposes. A key part of the analysis involves conjunctions appearing in the constellation Leo, so the program filters can be adjusted to determine the significance of a variety of parameters involving conjunctions in Leo.

One of the first things we did was to run an analysis on the short interval Venus Jupiter conjunctions to see if the 2015 pair might be significant, both with respect to other pairs in Leo and other constellations in order to see how common or rare they might be. As indicated above, for the 200 year study, my separation distance parameter was 1 degree. Allan used a 1.5 degree separation distance filter in the Solex program. What follows is a summary of what the filtering for short interval conjunctions in Leo revealed.

Statistical Analysis of 9400 years of Short Interval Venus Jupiter Conjunctions

This analysis is for Venus/Jupiter conjunctions which repeat in periods of less than 4 months. It comes from a data search in which Venus/Jupiter separations of up to 1.5 degrees were recorded. Afterwards the data was processed in a spreadsheet to keep just the pairs which met the following conditions:

- Less than 150 days between the 2 occurrences. The actual range of values found was 108 to 123 days.
- The pair of occurrences was located within 72 degrees on either side of Regulus. The actual range of values was -63 degrees to +22 degrees, which extends from Virgo through Leo, to about the center of Cancer. The actual degree range with respect to Regulus that defines the constellation Leo is 12 degrees to -18 degrees.

The time span used was the years -5200 to +4200 for a total of 9,400 years. The number of pairs in this time span meeting the above conditions was just 20. Trimming this down to just potentially historical occurrences between about 4000 BC at the time of creation and 3000 AD, the number of pairs is reduced to the following 14:

-3120/06/20 -2124/06/15 -1993/06/29 -1483/06/30 -1128/06/09 -487/06/24
 -2124/10/07 -3120/10/12 -1993/10/23 -1483/10/25 -1128/10/03 -487/10/20

378/06/12 509/06/19 1019/06/24 1150/07/07 2015/07/01 2146/07/15
 378/09/28 509/10/15 1019/10/18 1150/11/01 2015/10/25 2146/11/10

2656/07/21 3011/07/02
 2656/11/17 3011/10/28

If we pair this number down to the occurrences during the most realistic time of recorded history that includes the period from the creation at about 4000 BC to a point in the future that most likely includes a part of the Millennium at 2150 AD (6150 years), the number of pairs reduces to twelve if we delete the 2656 and 3011 pairs above.

If we eliminate those pairs where at least one of the conjunctions in the pair appears in the constellation Virgo, the number of potential pairs reduces to just three:

378/06/12 2015/07/01 3011/07/02
 378/09/28 2015/10/25 3011/10/28

If the number is further reduced to eliminate the pairs where at least one of the conjunctions appears in the constellation Cancer, the number remaining is just two:

378/06/12 2015/07/01
 378/09/28 2015/10/25

The 378 conjunctions appeared during the Diaspora, long before Israel became a nation again, so they clearly have no significance with respect to the Messiah's second coming. This makes the 2015 conjunction pair significant and the only potential candidate as the heavenly sign pair for the Messiah's return.

The above analysis for short interval conjunctions in Leo was encouraging, so we included these parameters on the spreadsheet for the analysis. The results were remarkable as you will see. The separation distance filter remained at 1.5 degrees in order to see how many significant short interval pairs occurred over the 9400 year period. The number in Column C is the period of time, in years, between the short interval pairs of conjunctions. The short interval pairs are highlighted in blue in Column D.

Looking at the spread sheet, let's take column D first. There are 46 significant short interval pairs (highlighted in blue) in the 9400 year period. Several things stand out from the initial analysis. Using the first pair in the column (-4626) as an example, we see the following characteristics that apply to virtually all 46 pairs:

1. Each pair of conjunctions appears within the bounds of a calendar year, so the second conjunction in each pair is a repeat of the same year. No pairs appear in two sequential years. This is true for all 46 pairs.
2. Each pair appears during the same four month calendar cycle with most occurring in June and October, especially during the first 2000 years. After that, appearances in July and

November become more common. This is indicative of a slight precession in the pattern with the passage of time, but it remains remarkably consistent.

3. Each short interval pair is bracketed by two or three significant conjunctions within a 3 year period of its appearance. For example, the -4626 pair is bracketed by two conjunctions with all four appearing in nearly an exact two year period: -4627, -4626, -4626, -4625. All of these short interval groups (later called Quartets) consist of a short interval pair, each preceded by a conjunction ten months before and one ten months after the pair. This same four conjunction pattern is revealed with the 2015 pair: 2014, 2015, 2015 and 2016. Incredibly, the August 2016 conjunction is the only conjunction in the 200 year period with a separation distance of less than .1 degree with the potential to be observed as a single star.

We can see from the spacing between the blue highlighted pairs in column D, that there is a pattern in the frequency of short interval appearances that seems to be consistent throughout the entire period. In order to determine what this pattern looked like, I inserted the number of years between each short interval appearance in column C, about midway between the highlighted pairs. The 131 year period clearly represents the baseline number of years from which the pattern develops and it is maintained throughout the 9400 year period. The interval sequence appears to alternate between the 131 (normal) year period and a larger (510,224,155) or smaller (24) year period, then back to the 131 year period. On several occasions, there are two long intervals in sequence followed by a normal 131 year period. But, this disappears after about -1482 on the spreadsheet. It is noteworthy that there are few (usually only one or two) significant conjunctions that appear in the period between the short interval pair groups. At the least, this implies that the significant short interval pairs and their groups should be the focus of attention and analysis if a link for the signs pointing to the Messiah is to be found.

EUREKA!

Next, I decided to look at the relationship between short interval pairs and the frequency of their appearances in the constellation Leo. It was at this point that we hit pay dirt in the search for a link between the signs for the Messiah's first and second comings. I hadn't noticed this at first because the Christmas Star and 2015 conjunctions had been highlighted in green across all the columns of data on the spreadsheet so the colors didn't match with the blue coloring that identified short interval pairs. But it quickly became clear that THE CHRISTMAS STAR CONJUNCTION IS PART OF A SHORT INTERVAL PAIR. Of the 46 short interval pairs on the spreadsheet, 19 had one conjunction appear in Leo. Only eight times during the 9600 year period do both conjunctions in a short interval pair appear in Leo. Incredibly, two of these eight pairs include the Christmas Star pair for Christ's first coming and the 2015 pair. A brief look at the other six pairs reveals the following:

-1769: This pair appeared when the Jews were in Egypt and before Balaam's prophecy (discounted).

-132: This pair appeared about 130 years before the birth of Christ. Neither conjunction's separation distance makes it a candidate for a single star. But, it is important because the cluster of conjunctions with this pair very likely gave the wise men (who would have been observing the heavens at this time) some clues regarding what the star might potentially look like. This issue is discussed separately.

378, 1505: These pairs appeared during the Diaspora when neither the Jews nor anyone in the "Holy"

Roman Empire was looking for a heavenly sign pointing to the coming Messiah.

3652, 4162: The 3652 pair will not appear for another 1,600 years and the 4162 pair, for 2,100 years. It is expected that the Messiah will return long before these dates. Moreover, these dates may very well be hundreds of years after the Millennial Kingdom.

Now let's consider what will be called from this point forward, the Christmas Star and 2014-16 conjunction Quartets. . Each Quartet consists of the short interval pair and the pair of conjunctions that bracket that short interval pair. All four conjunctions in each Quartet appear during a period of almost exactly two years (actually its 2 years and 9 days).

Group	Separation	Elongation	Constellation	Comments
Christmas Star Group				
-3/08/12	.072	-21	Leo	Star wise men saw in the East
-2/06/17	.007	45	Leo	The Christmas Star
-2/10/13	1.83	-46	Virgo	
-1/08/21	.097	19	Virgo	
2015 Group				
2014/08/18	.198	-18	Cancer	
2015/07/01	.334	43	Leo	
2015/10/25	1.02	-47	Leo	
2016/08/27	.067	22	Virgo	

The short interval pair is highlighted in blue. Throughout this research, only one solid parameter has been available until now to link the periods of the Messiah's signs together. That parameter has been the constellation Leo because it was the constellation for the Christmas Star pair. With the revelation of the short interval pair, we now have another significant parameter that directly links the Christmas star Quartet with the 2014-16 Quartet. The Christmas star Quartet is especially interesting because in it, the Christmas Star conjunction (-2/06/17) is paired, first with the -3/08/12 conjunction to form the Christmas star pair, then with the -2/10/13 conjunction to form the short interval pair. This is what these two groups, separated by more than 2000 years, now have in common:

- Both Quartets contain a short term pair of conjunctions
- Both Quartets have a pair in the Constellation Leo
- Both pairs appearing in the Constellation Leo are visible conjunctions
- For both short interval pairs, each conjunction has 1 degree of separation distance or less

Most importantly, the timing of the appearance of each of these groups fits more closely with the timeframes for the Messiah's first and expected earthly appearances than any other Quartets in the 9400 year period. In the 100 year period between -50 and 50 where history confirms the Messiah's first earthly appearance, the Christmas Star Quartet is the only one that fits. In the 150 year period between

Israel's rebirth in 1948 and 2100 when the Messiah's second coming is expected, the 2015 Quartet is the only one that fits.

So far, what has been presented is a case, based on statistical analysis, that the Christmas Star and 2014-16 Quartets contain the most likely heavenly signs that point to the Messiah's first and second comings. That said, and as compelling as the statistical evidence may be, statistical evidence alone doesn't prove anything. Now, the evidence must undergo the rigorous scrutiny of scripture and Bible prophecy. Once completed, and the Lord willing, we may have illumination.

This paper and spreadsheet along with the 200 year statistical analysis paper and spreadsheet are posted on the Christmas Star website: www.thechristmasstar.org. They provide the analysis and astronomical support for the paper titled: **Wise Men Still Seek Him – The Heavenly Signs for the Messiah's Return**, that is posted on the website.

Jim Dodge August, 2015