# The Scoop on the Poop: A Crappy Connection Between Celestial Bodies and Fertilizer Usage in the US

Colton Harrison, Amelia Terry, Giselle P Tyler

#### Abstract

This paper presents an unconventional investigation into the correlation between the distance between Uranus and Venus and the utilization of dried manure as a fertilizer in the United States. Leveraging data from Astropy for astronomical distances and the USDA for fertilizer usage statistics, our research team embarked on this unique inquiry. Surprisingly, our findings revealed a correlation coefficient of 0.5759683 with a statistically significant pvalue of less than 0.01 for the period spanning 1986 to 2015. This evebrow-raising result prompts a comical play on words, as the linkage between cosmic distances and earthly farming practices unveils a humorously unexpected relationship. The implications of this discovery stretch far beyond the apparent astronomical pun, sparking a renewed interest in exploring interdisciplinary intersections between the celestial and the terrestrial. This, without a doubt, provides a fresh perspective on the phrase "reaching for the stars" when considering agricultural methods on our own little planet.

## 1. Introduction

The study of celestial bodies and their potential influence on earthly phenomena has long captivated the imagination of both astronomers and the more astronomically inclined agriculturists. While traditional agricultural practices rely on the tried and true methods of soil management and crop rotation, our foray into the unlikely correlation between the distance between Uranus and Venus and the utilization of dried manure as fertilizer in the United States has inevitably opened up a Pandora's box of cosmic curiosities.

As our research delved into the vast expanse of data provided by both Astropy and the USDA, we were initially met with skeptical raised eyebrows and more than a few muffled chuckles from our peers in other academic circles. However, armed with statistical rigor and a penchant for thinking outside the agricultural crate, we laid the groundwork for a study that would dig deep into the hidden connections between the celestial and the scatalogical. After all, as Carl Sagan once mused, "we are made of star stuff," so why should we not consider the cosmic implications of our terrestrial doings?

Our investigation, initially met with naysayers who were perhaps a bit too full of hot air, ultimately unearthed a correlation coefficient of 0.5759683, along with a statistically significant p-value of less than 0.01 for the period spanning 1986 to 2015. The "scoop" became evident—a comical play on words that sheds a light-hearted perspective on the rather unexpected relationship between cosmic distances and, well, the stuff of fertilizer.

In unraveling this connection, it is crucial to consider the implications beyond the initial allure of cosmic puns. This eyebrow-raising correlation prompts a revisiting of the fundamental questions we pose about the interconnectedness of the universe and our own terrestrial endeavors. Moreover, our findings could revolutionize the application of agricultural practices, perhaps leading to а renaissance of "astronomically inspired" farming methods. The implications stretch far beyond the apparent astronomical pun, sparking a renewed interest in exploring interdisciplinary intersections between the celestial and the terrestrial. This, without a doubt, provides a fresh perspective on the phrase "reaching for the stars" when considering agricultural methods on our own little planet.

As we prepare to take the academic community on a journey through the stars and the manure piles, we invite the readers to join us in a jovial yet thoughtprovoking exploration of the uncharted territories where the heavens meet the humble soil. Dear academics and fellow pun enthusiasts, hold onto your soil probes and telescopes, for this is a journey that promises not just groundbreaking research, but also a fair share of cosmic chuckles along the way.

## 2. Literature Review

The connection between celestial bodies and agricultural practices has long been a topic of interest and speculation. The works of Smith (2005), Doe (2010), and Jones (2013) have addressed the influence of cosmic phenomena on earthly activities, laying a foundation for our current investigation into the correlation between the distance between Uranus and Venus and the utilization of dried manure as a fertilizer in the United States.

Furthermore, the text "Cosmic Connections in Agriculture" by Green (2017) and "The Cosmic Compost Continuum" by Brown (2019) have provided insights into the potential intersections of celestial events and organic farming methods. These serious and scholarly works have contributed to the understanding of the broader context within which our study is situated.

Adding a touch of fiction to the mix, novels such as "The Plough and the Planets" by Starry McAuthor (2012) and "Manure in the Stars" by Cosmic Garden (2016) have whimsically explored the cosmic implications of terrestrial farming. These literary diversions, while not grounded in empirical evidence, have sparked the imagination and contributed to the discourse surrounding the integration of celestial knowledge into agriculture.

As part of our exhaustive literature review, we must also acknowledge an unexpected source of inspiration. In conducting our research, we stumbled upon an extensive collection of CVS receipts touting a myriad of unrelated products and rewards. While one might question the relevance of these receipts to our investigation, serendipity led us to an obscure study entitled "Bovine Lunar Manifestations and the Therapeutic Effects of Celestial Alignment" by Dr. Moondust (2020). Although its findings are, to put it politely, eccentric, this work prompted some lighthearted contemplation of the unexpected ways in which celestial bodies may influence earthly matters.

In conclusion, the literature surrounding the intersection of cosmic phenomena and agricultural practices encompasses a range of scholarly studies, imaginative narratives, and, well, some rather unexpected sources. This diversity of perspectives highlights the multidimensional nature of our investigation and underscores the importance of considering both serious discourse and more quirky, offbeat interpretations of the cosmic influence on earthly affairs.

## 3. Methodology

In order to illuminate the interstellar interplay of Uranus and Venus on the agricultural landscape of the United States, our research team embarked on a quest to gather and crunch copious amounts of data. With one foot in the cosmos and the other in the barnyard, we sought to employ a multidimensional approach that would do justice to the complexity of our research topic. Leveraging the astronomical prowess of Astropy, we diligently calculated the distance between Uranus and Venus for the years 1986 to 2015. This involved delving into celestial mechanics, celestial dynamics, and any other celestial fields we could get our hands on. With our figurative heads in the clouds and our hands in the data, we built a robust dataset of cosmic distances that would form the cornerstone of our analysis.

Simultaneously, we turned our attention to the earthly domain, where the scent of freshly fertilized fields wafted through the air. The United States Department of Agriculture (USDA) provided a treasure trove of information on the usage of dried manure as a fertilizer during the same time period. We combed through this agricultural odyssey of data, carefully documenting the application of this humble, yet essential, farming material.

Now, for the part that may raise a few eyebrows among our esteemed colleagues – the connection. Utilizing a fantastical fusion of statistical models and astrological wizardry, we juxtaposed the celestial distances with fertilizer usage to uncover any obscure relationship between the two. Our statistical analyses involved more calculations than there are stars in the sky, as we sought to determine whether the distance between Uranus and Venus exhibited any correlation with the application of dried manure as a fertilizer across the agricultural landscape of the United States.

The statistical significance of our findings was evaluated with the rigor befitting such an out-of-thisworld (and yet so deeply grounded) investigation. We employed a range of inferential methods to tease out the subtle correlations that lay hidden within the vast expanse of our dataset. Our diligent efforts culminated in a correlation coefficient of 0.5759683, accompanied by a statistically significant p-value of less than 0.01, which unequivocally thrust this unexpected linkage into the spotlight.

While our methodology may appear to echo the musings of a cosmic farmer, it was underpinned by the stringent principles of empirical inquiry and statistical scrutiny. This delightfully quirky fusion of celestial mechanics and agricultural analytics set the stage for our revelatory findings, perhaps even prompting a celestial chuckle or two from the

cosmic peanut gallery. Or should we say, the astrological almanac of leguminous laughter?

## 4. Results

The empirical analysis of the relationship between the distance separating Uranus and Venus and the usage of dried manure as fertilizer in the United States from 1986 to 2015 yielded some intriguing insights. The correlation coefficient of 0.5759683 indicates a moderately strong positive relationship these seemingly disparate between factors. Furthermore, the r-squared value of 0.3317395 suggests that approximately 33.17% of the variability in fertilizer usage can be explained by changes in the distance between Uranus and Venus during this time period. With a p-value of less than 0.01, the statistical significance of this correlation is abundantly clear, serving as a delightful surprise that promises a journey through the stars and the manure piles - a road less traveled by traditional agricultural research, to say the least.

Figure 1 reveals the scatterplot illustrating the pointed relationship between the distance separating Uranus and Venus and the utilization of dried manure as fertilizer in the United States. This graph serves as a visual testament to the unexpected connection between celestial bodies and earthly agricultural practices, succinctly encapsulating the "crappy" correlation that our study has brought to light.

The implications of these findings extend beyond the statistical evidence, prompting renewed interest in exploring the intersection between cosmic influences and terrestrial phenomena. The mirthful play on words aside, this discovery opens the door to a revitalized consideration of the cosmic implications of our terrestrial activities. It also offers the potential to revolutionize agricultural practices, stirring excitement about the prospects of "astronomically inspired" farming methods. We invite our readers to join us in this lighthearted yet thought-provoking exploration of the uncharted territories where the heavens meet the humble soil.



Figure 1. Scatterplot of the variables by year

In conclusion, our research sheds new light, not just on the phrase "reaching for the stars," but also on the unexpected interplay between astronomical distances and down-to-earth agricultural practices. As we navigate this potentially fertile ground between cosmic forces and earthly matters, we embrace the humor in our findings while recognizing the serious opportunities they present for interdisciplinary collaboration and innovative agricultural approaches.

## 5. Discussion

The connection between the distance separating Uranus and Venus and the utilization of dried manure as a fertilizer in the United States has been a subject of mirthful contemplation and scholarly inquiry alike. Our study not only validates the lighthearted ponderings of McAuthor (2012) and Garden (2016) but also provides empirical evidence supporting the more serious claims put forth by Smith (2005), Doe (2010), and Jones (2013). Who would have thought that the celestial dance between Uranus and Venus might have a not-so-subtle influence on the terrestrial dance of farming practices in the US?

The statistically significant correlation coefficient of 0.5759683 that emerged from our analysis aligns with the ponderings of those who have championed the idea of celestial influences on earthly matters. It's almost as if the planets are sending a clear signal to our earthly farmers: "spread that manure, it's cosmic!" The r-squared value of 0.3317395 further cements the relationship, indicating that approximately 33.17% of the variability in fertilizer usage can indeed be attributed to the changes in the

distance between Uranus and Venus during our study period. One could say that a significant portion of the manure-related variability is truly out of this world.

Figure 1 not only serves as a visual testament to this "crappy" correlation but also stands as a symbol of the unexpected and often unexplored intersection between the cosmic and the mundane. Our findings provide an exciting opportunity to explore what might be aptly termed "astro-farming," steering the agricultural industry into new astral territories. Indeed, it's a groundbreaking discovery – or should we say manure-spreading discovery – that promises to fertilize the field of celestial-terrestrial connections.

As we continue to contemplate the implications of this discovery, we are reminded of Dr. Moondust's lighthearted yet thought-provoking thesis on "Bovine Lunar Manifestations." While some may consider our findings eccentric, we see them as a shining beacon guiding us through the uncharted territories where the heavens meet the humble soil. It is in such unexpected, interdisciplinary explorations that we find the potential for both mirth and meaningful advances in our understanding of the world around us.

## 6. Conclusion

In conclusion, our findings have brought to light a correlation between the distance separating Uranus and Venus and the usage of dried manure as fertilizer in the United States that is beyond what we would normally expect to find. The statistical significance of this relationship, with a p-value of less than 0.01, is a delightful surprise that invigorates our understanding of the cosmic and the quotidian. While we tread lightly on this manure-laden path, it is evident that this correlation opens up a Pandora's box of cosmic curiosities and agricultural possibilities. However, it also makes us ponder whether the stars truly have a hand in "fertilizing" our crop yields. As much as we have enjoyed unexpected correlation, unearthing this the humorous play on words aside, we can confidently assert that no further research into this matter is necessary – the connection between Uranus, Venus, and manure may be truly a pun-believable culmination of our research efforts.