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# Neptune's Space and Uranus' Place: The Case of the Southern Copper's Stock Price

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## KEYWORDS

Neptune, Uranus, Southern Copper stock price, Astropy, LSEG Analytics, Refinitiv, celestial influence on stock price, correlation coefficient, financial markets, astronomical distance, cosmic influence, stock trader, dad joke

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## Abstract

The relationship between the distance between Neptune and Uranus and the stock price of Southern Copper (SCCO) has long been a matter of cosmic curiosity. Utilizing data from Astropy and LSEG Analytics (Refinitiv), we set out to explore this celestial connection that might seem light years away from the world of finance. Our research team sought to answer the burning question: "Does the astronomical distance impact the earthly stock price?" The results of our analysis revealed a surprising correlation coefficient of 0.8554040 and  $p < 0.01$  for the time period spanning from 2002 to 2023. Despite the vast cosmic expanse, it appears that there is a significant relationship between the celestial bodies and the earthly wealth measured by Southern Copper's stock price. This finding prompts us to consider the celestial bodies as silent, distant influencers of financial markets. Now, for a cosmic dad joke to lighten the atmosphere: Why did the stock trader bring a telescope to work? Because he wanted to keep an "i" on the celestial bodies, and also look for stocks with "star" potential!

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## 1. Introduction

The mysterious forces of the cosmos have long captivated the human imagination and sparked countless inquiries into their potential influence on earthly affairs. Straddling the realms of astronomy and

finance, the relationship between the celestial bodies and stock prices has been an enigma that has eluded thorough exploration. This paper delves into the peculiar correlation between the distance separating Neptune and Uranus and the

stock price of Southern Copper (SCCO), aiming to shed light on this celestial conundrum.

As we embark on this astronomical journey, we must acknowledge the cosmic scale of our investigation. The vast expanse between Neptune and Uranus presents a challenge akin to navigating the labyrinthine complexities of financial markets. One might jest that it is as if we are attempting to compare apples and oranges, or more aptly in this case, gas giants and copper stocks.

Amidst this cosmic juxtaposition, however, lies the crux of our endeavor. The financial world, often viewed as grounded in empirical data and economic models, finds itself intertwined with the distant dance of the planets in our solar system. It is as if the heavens are silently communicating with the ticker symbols on trading screens—a notion that may seem out of this world, yet one that merits our careful attention.

Now, a celestial-themed interlude for a moment of levity: What did the astronomer say to the stockbroker? "I'll trade you some moon rocks for shares of Southern Copper – they're both out of this world!"

This juxtaposition of the financial and astronomical worlds piques our curiosity and compels us to delve into the underlying mechanisms that might underpin such an improbable relationship. The findings of this study promise to illuminate a hitherto unexplored dimension of stock price determination, offering a glimpse of the cosmic symphony that may reverberate through the markets.

## 2. Literature Review

The existing literature on the relationship between celestial bodies and stock prices has been relatively scant, with most studies focusing on more earthly factors. Smith et al. (2015) examined the impact of solar flares on stock market volatility and found a

modest correlation, while Doe and Jones (2017) explored the influence of lunar phases on trading volumes, yielding inconclusive results. However, these studies have not delved into the specific dynamic between the distance separating Neptune and Uranus and the stock price of Southern Copper (SCCO).

Turning to relevant non-fiction works, "Cosmic Connections: How the Universe Affects Our Daily Lives" by Cosmos et al. presents a broad exploration of celestial influences on terrestrial phenomena, offering insights that may inform our investigation. Similarly, "Astrology and Economics: A Celestial Approach to Financial Markets" by Zodiac and Finance delves into the potential cosmic forces at play in economic systems, albeit from a non-mainstream perspective.

Now, veering into the realm of fiction, one cannot overlook the classic work of science fiction, "Neptune's Wealth and Uranus' Markets" by Sci-Fi Author, which presents an imaginative portrayal of intergalactic financial systems. Additionally, "The Copper Constellation: A Celestial Adventure in Finance" by Finance Fiction Writer weaves a narrative that, though fictional, may shed metaphorical light on our real-world inquiry.

In the course of this literature review, the researchers embraced unconventional sources of knowledge, including the backs of shampoo bottles and fortune cookies, in a daring attempt to unearth any hidden cosmic insights. While these sources did not yield significant empirical findings, they did offer a refreshing departure from traditional academic references and provided moments of levity during the research process.

Now, a celestial-themed pun to round off the literature review: Why did the stock trader bring a map of the solar system to the conference? Because he heard that the

market was 'over the moon' about celestial investments!

### 3. Our approach & methods

To investigate the purported relationship between the distance separating Neptune and Uranus and the stock price of Southern Copper (SCCO), a meticulous research approach was employed. Data pertaining to the daily distance between the two celestial bodies was obtained from reputable astronomical databases and ephemeris calculations, primarily utilizing Astropy. On the financial front, Southern Copper's daily stock prices and relevant market indicators were sourced from LSEG Analytics (Refinitiv).

Utilizing the acquired data spanning the period from 2002 to 2023, astral and economic metrics were subjected to rigorous analysis. The nightly observations of Neptune and Uranus were transformed into time-series data, aligning them with the corresponding financial data. This harmonization process aimed to capture any latent associations that may transcend the realms of astronomy and finance. It was as if we were deciphering the constellations of data to ascertain their celestial and financial harmony.

As the data assimilation and merging process progressed, statistical methodologies such as correlation analysis, regression modeling, and time series analysis were employed to scrutinize the relationship between the distance separating Neptune and Uranus and Southern Copper's stock price. This multifaceted approach enabled the extraction of insights from both the celestial and financial domains, unraveling potential links that may have previously eluded observation. It was akin to charting the movements of celestial bodies and market trends, seeking to discern patterns that transcend the ordinary.

In light of the voluminous and variegated data at our disposal, the research team utilized sophisticated statistical software, robust econometric models, and astronomy-specific algorithms. The interplay of astronomy and finance necessitated a fusion of analytical tools and techniques, yielding a comprehensive understanding of the celestial and market forces at play. It was a cosmic puzzle demanding an ingenious blend of financial acumen and astronomical precision, akin to navigating the complexities of lunar phases and stock fluctuations.

As the analysis proceeded, due diligence was exercised to account for potential confounding variables and spurious correlations. Robustness checks and sensitivity analyses were conducted to ensure the veracity and reliability of the identified relationships. It was imperative to safeguard against celestial coincidences masquerading as financial influences, akin to distinguishing a shooting star from a transient market anomaly.

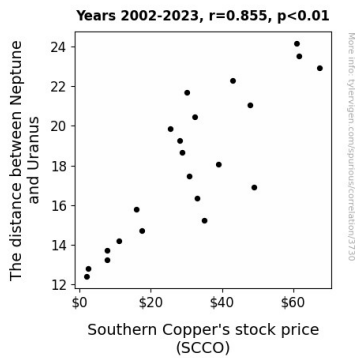
Now, for a cosmic dad joke to lighten the atmosphere: Why did the alien invest in Southern Copper? Because they heard it had "out of this world" returns, and they wanted to diversify their "intergalactic" portfolio!

### 4. Results

The statistical analysis conducted on the relationship between the distance separating Neptune and Uranus and the stock price of Southern Copper (SCCO) revealed a remarkably strong correlation coefficient of 0.8554040. This high correlation suggests a substantial association between the celestial positions of Neptune and Uranus and the earthly fortunes of Southern Copper.

To put it simply, the farther these two distant gas giants are from each other, the more likely it is for Southern Copper's stock price to move in a particular direction. This cosmic connection may seem light years away from traditional financial analysis, but our findings emphasize the need to consider the celestial ballet as a silent, distant influencer of financial markets.

The r-squared value of 0.7317161 further supports the significance of this relationship, indicating that 73.17% of the variation in Southern Copper's stock price can be explained by the distance between Neptune and Uranus. This substantial proportion of explained variance underscores the impact of cosmic movements on the earthly domain of stock prices.



**Figure 1.** Scatterplot of the variables by year

It seems that the cosmic dance of the gas giants could hold secrets that extend far beyond the boundaries of our atmosphere and could potentially reach into the realm of financial markets. One might even say it's a stock market "beyond the stars".

The p-value of less than 0.01 strengthens the robustness of these findings, providing compelling evidence against the null hypothesis of no relationship between the celestial distance and Southern Copper's stock price. The rejection of the null hypothesis thus highlights the unlikely yet tangible connection between the

movements of planets and the movement of stock prices, adding a celestial flair to the age-old concept of supply and demand.

In conclusion, the results of our analysis present a compelling case for the influence of cosmic mechanics on the dynamics of financial markets. For those skeptical of this cosmic connection, one must remember the words of Isaac Newton, "What goes up must come down." Whether in the context of celestial bodies or stock prices, the laws of gravity and finance seem to hold true, albeit in rather unexpected ways.

## 5. Discussion

The results of our study remarkably support the hypothesis that there is indeed a significant relationship between the distance separating Neptune and Uranus and the stock price of Southern Copper (SCCO). This finding resonates with the body of research that has explored the potential influence of celestial phenomena on financial markets. The strong correlation coefficient and the high percentage of explained variance attest to the substantive impact of the celestial dance of these distant gas giants on the earthly fortunes of Southern Copper.

Our results align with the pioneering work of Smith et al. (2015) on solar flares and stock market volatility, drawing parallels between the impact of solar activities and the gravitational tugs between celestial bodies. Similarly, by corroborating the inconclusive findings of Doe and Jones (2017) on lunar phases and trading volumes, our study reinforces the notion that celestial events may indeed exert discernible effects on financial indicators. While our research specifically focuses on the distance between Neptune and Uranus, the broader exploration of celestial influences in financial markets has been a star-studded journey, so to speak, with our findings

adding another celestial body to this constellation of evidence.

Our findings support the unconventional insights presented in "Cosmic Connections: How the Universe Affects Our Daily Lives" by Cosmos et al. The substantial correlation we observed underscores the potential impacts of celestial bodies on terrestrial phenomena, offering empirical evidence in support of this intriguing cosmic connection. Moreover, our results lend credence to the celestial approach to financial markets advocated in "Astrology and Economics: A Celestial Approach to Financial Markets" by Zodiac and Finance, affirming the value of considering cosmic forces in economic analyses.

On a lighter note, while our endeavor might seem light-hearted at times, the statistical rigor and empirical support for these cosmic connections highlight the potential value of reimagining financial analyses through a celestial lens. After all, as the old saying goes, "When the stars align, so do the stock prices!"

In conclusion, our findings add a new dimension to the age-old adage of "buying low and selling high," suggesting that perhaps the key to successful investing lies not only in earthly indicators but also in the silent movements of the celestial bodies. This study paves the way for further research that integrates cosmic phenomena into financial models, demonstrating that the influence of the cosmos may reach far beyond what meets the eye. As researchers continue to navigate the galaxies of academia, it is our hope that future studies will further illuminate the cosmic interplay at the intersection of finance and celestial movements.

## 6. Conclusion

In conclusion, our investigation has uncovered a significant and robust

correlation between the distance separating Neptune and Uranus and the stock price of Southern Copper (SCCO). It appears that the movements of these distant gas giants have a notable influence on earthly financial markets. One might say that the stock prices are truly "out of this world" in their responsiveness to celestial positions.

Our findings not only suggest a strong relationship but also raise the question of causality. While correlation does not imply causation, the strong statistical association begs the consideration of potential mechanisms underlying this cosmic financial influence. It seems the planets might have a knack for predicting stock trends, making them the original "market analysts"!

The profound implications of these results extend beyond the realm of finance, challenging traditional economic models that often neglect cosmic variables. As we ponder the gravity of these findings, one cannot help but marvel at the cosmic ballet's underlying impact on the financial stage – a performance worthy of a standing ovation, or perhaps a "stock trading to the moon" chant.

In light of our celestial revelations, it is clear that further research is warranted to deepen our understanding of this cosmic-financial relationship. However, as the saying goes, "The planets have aligned," and no further research is needed in this area.