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Geo-G 250

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Introduction Why/How did the nationals win the world series?

Correlation between each pitcher’s innings pitched and wins.

**The Washington Nationals**

To begin, the Washington Nationals have been a team of interest to me since watching Bryce Harper play in 2012. This project is aimed at explaining the Washington Nationals pitching staff, and how they were able to compete with such a put together and elite team like the Houston Astro’s. We’re going to explore each team’s playoff ERA, Innings pitched, and each pitcher’s amount of games appeared in. My hypothesis is that the pitchers who were able to pitch more innings with a low ERA, is what caused the nationals to win. My premise behind this theory is that it takes tremendous stress, anxiety, and workload off of teammates and therefore allowing the team to pitch better.

If you would have asked anyone besides National’s fan before the playoffs even started who was going to the world series, the answer probably wouldn’t have been the Nationals. The last time the nationals won a series in the playoffs was more than thirty-five years ago. Nobody really thought that this team could pull this off. The nationals got hot at the right time and it paid off big time, thanks to their young stars like Juan Soto who was only 20 entering playoffs, and Anthony Rendon. Many of their games they were facing elimination but still managed to pull out wins when they mattered most. Also, thanks to their star-studded pitching staff comprised of Stephen Strasburg, Max Scherzer, Patrick Corbin, Sean Doolittle.

The National’s opponents were a team that was all too familiar with the World Series. The Houston Astro’s were a team that won the world series two years prior and lost in the ALCS the year prior to the Los Angeles Dodgers. The Astros are loaded team on both sides of the ball with great hitters in Jose Altuve, Carlos Correa, and their young rising slugger Alex Bregman. Their pitching staff is comprised of star pitchers with Zach Greinke, Gerrit Cole, and veteran Justin Verlander. This was a very well put together team that has experience in the playoffs and playing together, so how exactly did they lose to a team that barely made the playoffs anyway?

As you can expect as a pitcher goes deeper into the game the more tired he becomes. The more tired he becomes the more mistakes he makes which means good news for the batters. The pitcher’s arm can tire out and he can lose velocity on the ball or the pitcher can miss his locations and place a ball where he shouldn’t result in putting a ball in the batter’s sweet spot. Regardless there are many mistakes a pitcher can make, but the most talented pitchers are the ones who can go late into games and make little to no mistakes.

The nationals are one of the teams who still somewhat play “old school” baseball, their starters have the grit and talent to go into the late innings and still hold teams to a few runs and sometimes even none. Many teams now are using a new philosophy when it comes to pitching. Called by some the “five and fly” philosophy. This philosophy entails pulling your teams starting pitcher so your team can put in multiple relievers who throw different kinds of balls, speeds, and with different hands. This helps throw the opponents timing off at the plate but also increases the likelihood of some bad pitches being thrown as well.

Baseball heavily incorporates data into their decision-making processes. Baseball is a big proponent of using data analytics in driving their game time decision’s. For example, Billy Beane the Oakland A’s Head of Baseball Operations since 1997. He is a huge recent proponent of this strategy using “Sabermetrics” also known as “the search for objective knowledge about baseball”. Sabermetrics uses statistics to determine a player’s “effectiveness” compared to their salary. Beane applied Sabermetrics to baseball business, scouting, and in game statistics. Statistics like WHIP, walks plus hits per inning pitched is a sabermetric used to determine a pitcher’s effectiveness.



Analyzing the innings pitched and earned run average in the playoffs should allow us to understand what magic led the nationals pitching staff to come away with the victory. With the simple philosophy that not allowing anyone to score will result in a win. Not allowing the opponent to score starts on the mound in baseball with your teams pitching staff. Not allowing your opponent to score should directly correlate with winning the game with this philosophy. We won’t analyze batting statistics because that is the offensive side of the ball and here it is much easier to analyze the pitcher’s job which is to keep the batter from being able to get on base.

Methods

Justify what you did

Data

The data gathered was obtained from a database known as baseball-reference.com. The website has extensive and a variety of data dating back to 1888. The website is a sub website from sports-reference.com, which has data and statistics for a majority of professional sports in America as well as college basketball and football.

Results

What we notice is that the Astros heavily rely on Cole, Greinke, and Verlander. All three pitchers pitched 10+ innings in the playoffs. The Astro’s also heavily relied on Hector Rendon and Jose Urquidy who pitched 5.2 innings allowing 0 runs. Both pitchers made appearances in two games respectively. Astros 34 different pitching appearances, and used 12 different pitchers.

Wander Suero (Player 11) 1.2 innings pitched and Sean Doolittle (Player 2) pitched 3 innings. Both pitchers made appearances in three games each. 1.2 innings is also known as one inning and two outs. This means both of these pitchers were brought in for an inning or in Suero’s case even less to pitch. There are three pitchers who averaged less than a 4 ERA, with more than ten innings pitched.

Nationals 28 different pitching appearances.

Nationals had 11 different pitchers pitch.





ERA is calculated by using the following formula, earned runs allowed divided by innings pitched. ERA is the long-used measurement to determine how “good” a pitcher is at keeping the other team off the scoreboard. Errors that result in runs are unearned and therefore do not account for the pitchers ERA. ERA is solely focused on how well the pitcher is performing which is why I chose to represent it in the figure because it represents exactly what runs the pitcher is responsible for.

https://en.wikipedia.org/wiki/Baseball-Reference.com

<https://www.baseball-reference.com/leagues/MLB/2019.shtml>

<https://www.mathworks.com/help/matlab/creating_plots/types-of-matlab-plots.html>

<https://www.mathworks.com/help/finance/corrcoef.html>

<https://sabr.org/sabermetrics/single-page>

<http://m.mlb.com/glossary/standard-stats/walks-and-hits-per-inning-pitched>