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Analyzing the Astro’s cheating scandal for demonstrable increases in offensive production - How and to what degree did the Astros’ players benefit from cheating?

In November of 2019, an article was published in The Atlantic describing a scheme that the Houston Astros of the MLB implemented for the 2017, 2018, and 2019 seasons that allowed the team to steal the opposing team’s signs and relay them to the Astros’ hitters.

The MLB records 144 different offensive metrics for each player over the course of a season. Examples of these metrics are at-bats, runs, RBIs, steals, zone swing rate, barrel percentage, line-drives, etc. More traditional statistics combined with advanced metrics allow baseball nerds to quantify a players offensive prowess.

In our project, we will be looking at Houston Astros players pre 2017, and post 2017 and comparing them with a baseline comprised of the rest of the league to see if the Astros’ hitters demonstrably increased their offensive production as a result of their cheating. Comparing the Astros’ players against their pre 2017 statistics as well as comparing their post 2017 statistics against the rest of the league will allow us to account for factors like player development (as the Astros’ players are typically young, an increase in offensive production could be a result of simple skills and athletic improvement), and league-wide trends (for example, a “juiced ball” will benefit not only the Astros’ hitters, but hitters all over the league).

Seeing what metics, if any, show a statistically significant “jump” during the 2017 season for Astros’ hitters when compared to the rest of the league and previous player trends will give us insight into how players benefitted from the cheating, and to what degree.