

# Predicting Aaron Judge's HR's for 2025

Parker Jackson



# 2024 Season

- 58 Home Runs (HR)
  - MLB Leader
- 704 Plate Appearances (PA)
  - 7th most in MLB
- HR/PA rate of 8.24%
  - MLB Leader, led next highest by almost 1%

	
<u>Aaron Judge</u>	
Overall Stats	
10.8	WAR
158	G
704	PA
180	H
58	HR
144	RBI
10	SB
.322	BA
.458	OBP
.701	SLG
1.159	OPS
223	OPS+

# General Methodology



- Monte Carlo Simulation
- Uniform distribution for PA's
  - 600-700 per season
- Binomial distribution:
  - HR/PA rate (probability)
  - Number of PA's (trials)
- Analytic Solver to run 2500 trials

<i>Simple Totals</i>	
Mean HR's	53
Prob > 50 HR's	65.72%
Prob > 40 HR's	96.88%

# Breakdown - Home vs. Away



- Home Stats
  - 31 HR
  - 341 PA
  - 9.09% HR/PA
- Away Stats
  - 27 HR
  - 363 PA
  - 7.44% HR/PA

<i>Home/Away Totals</i>	
Mean HR's	53
Prob > 50 HR's	66.24%
Prob > 40 HR's	96.80%

# Breakdown - LHP vs. RHP



- About 75% of PA's are against RHP
  - Uniform Distribution between 70% and 80% for RHP
- vs LHP
  - 16 HR
  - 184 PA
  - 8.70% HR/PA
- vs RHP
  - 42 HR
  - 520 PA
  - 8.08% HR/PA

<i>LHP/RHP Totals</i>	
Mean HR	53
Prob > 50 HR's	64.88%
Prob > 40 HR's	96.28%

# Breakdown - Ballpark



- Uses Baseball Savant's Ballpark Factors to manipulate HR/PA rate
- Park Factors are determined using a 3 year rolling period
  - Tampa Bay and the Athletics are playing at Minor League parks that have limited data
- Uses Yankees' 2025 Schedule
- Expecting 4.45 PA/G

<i>Ballpark Factor Totals</i>	
Mean HR's	59
Prob of >50	88.00%
Prob of >40	99.72%

# Breakdown - Ballpark



Rk.	Team	Venue	Year	Park Factor
1	 Rockies	<u>Coors Field</u>	2023-2025	112
2	 Red Sox	<u>Fenway Park</u>	2023-2025	105
3	 Royals	<u>Kauffman Stadium</u>	2023-2025	103
4	 Reds	<u>Great American Ball Park</u>	2023-2025	103
5	 D-backs	<u>Chase Field</u>	2023-2025	103
6	 Twins	<u>Target Field</u>	2023-2025	103
7	 Marlins	<u>loanDepot park</u>	2023-2025	102
8	 Braves	<u>Truist Park</u>	2023-2025	101
9	 Yankees	<u>Yankee Stadium</u>	2023-2025	101
10	 Nationals	<u>Nationals Park</u>	2023-2025	101

# 2025

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<i>Simple Totals</i>		<i>LHP/RHP Totals</i>	
Mean HR's	38	Mean HR	40
Prob > 50 HR's	3.10%	Prob > 50 HR's	7.00%
Prob > 40 HR's	36.50%	Prob > 40 HR's	49.60%
<i>Home/Away Totals</i>		<i>Ballpark Factor Totals</i>	
Mean HR's	39	Mean HR's	42
Prob > 50 HR's	4.70%	Prob of >50	9.80%
Prob > 40 HR's	42.90%	Prob of >40	60.00%



# Analysis

- '24 Judge expected to hit ~53 HR's
- '25 Judge is off to a slower start
  - 7 HR
  - 118 PA
  - 5.93% HR/PA
  - 26 G
- Judge is still a top hitter in baseball, just doing damage in other areas than HR's
- I expect Judge to be able to pick up the pace thru the season



Aaron Judge

## Overall Stats

<b>WAR</b>	<b>2.3</b>
<b>G</b>	<b>26</b>
<b>PA</b>	<b>118</b>
<b>H</b>	<b>40</b>
<b>HR</b>	<b>7</b>
<b>RBI</b>	<b>26</b>
<b>SB</b>	<b>3</b>
<b>BA</b>	<b>.408</b>
<b>OBP</b>	<b>.508</b>
<b>SLG</b>	<b>.714</b>
<b>OPS</b>	<b>1.223</b>
<b>OPS+</b>	<b>251</b>

# Betting

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- PrizePicks line: 49.5 HR's
- FanGraphs predictions:
  - 49 HR's (preseason)
  - 38 HR's (current)

A screenshot of a betting interface on a dark background. At the top is a headshot of Aaron Judge in a New York Yankees uniform. Below the photo, the text reads 'NYY - RF' and 'Aaron Judge'. Underneath that is 'vs YANKEES (2025 SZN) Sun 4:05pm'. The central focus is the number '49.5 SZN Home Runs' in a large, light-colored font. At the bottom, there are two buttons: '↓ Less' on the left and '↑ More' on the right.

NYY - RF  
Aaron Judge  
vs YANKEES (2025 SZN) Sun 4:05pm  
**49.5** SZN Home Runs  
↓ Less    ↑ More

[How Many Home Runs Will Aaron Judge Have in 2025?](#)



## Resources

- [Baseball-Reference.com](http://Baseball-Reference.com)
- [Baseball Savant](http://Baseball Savant)
- [FanGraphs](http://FanGraphs)