

Stat 340 Group Progress Report

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Description of Data

We will use data sets from baseball-reference.com which contain team and individual statistics. This database also offers data ‘splits’, which show comparisons between home and away games. For our primary analysis, we will be focusing on the Houston Astros 2017 Team Batting Splits and the 2017 Individual Player Batting Splits. These data sets outline various different statistics of the Houston Astros 2017 season in which it was confirmed that they had cheated in home games. We will use the ‘splits’ data sets to determine a difference of statistics between home and away games. This database also contains data on the Astros for different seasons and different teams. Depending on the results of our initial analysis, we will compare the players on the roster of the 2017 Astros to previous seasons to determine a difference in performance before and after cheating.

Data for different teams and seasons are also present in the database if needed for further analysis.

Statistical Questions

- Is there a noticeable difference between the batting splits for home and away games of the Houston Astros team during the 2017 season?
- How does this difference, if any, compare to other teams’ performance in the MLB during the 2017 season?
- Is there sufficient statistical evidence to suggest the Houston Astros benefited from cheating in the 2017 season?
 - If there is, how much may the cheating have affected their season? And what would their season have looked like if they didn’t cheat?

Why We Chose This Dataset

- This has been a controversy within the baseball community regarded to be one of the biggest cheating scandals in the sport’s history.

- In 2017 the Houston Astros won the world series. However, it came out in November of 2019 that they were using technology to steal signs during home games.
- To us, this data set is interesting because it contains (in detail) records of each game, each player, and almost all variables that could take place in this event. So, this dataset is very in depth and useful for testing hypotheses thoroughly regarding the incident. Like they said “Numbers don’t lie”!

Variables

Below is a list of some important variables in our dataset:

Name	Abbr.	Description
On base and slugging percentage	OPS	Measures a players On base Percentage (percentage of At bats a player has gotten on base) and a players slugging percentage (a weighted batting average)
On base and slugging percentage (Player)	tOPS	This is adjusted so that 100 is the team average, so if tOPS is less than 100, the batters did worse, and if it is higher than 100, the batters did better.
On base and slugging percentage (Team and Player)	sOPS	This is adjusted so that 100 is the league average, so if sOPS is less than 100, the batters did worse than the league average and if it is higher than 100, the batters did better.
Runs Batted In	RBI	The number of runs a player has created by hitting a player home. Weights a players higher
Hits	H	When a batter reaches base without doing so via error or fielder’s choice.
Homeruns	HR	Scored when the ball is hit in such a way that the batter is able to circle the bases and reach home safely.
Walks	W	Occurs when a pitcher throws four pitches outside of the strike zone, none of which are swung at by the batter.
Batting Average	BA	Percentage of At Bats a player gets a hit.

Loading Data

```
# will store the data for all teams in the 2017 season
season_2017 <- NA
data_empty <- TRUE

# Getting initial path data
data_path <- "./data"
data_dirs <- list.files(data_path)
data_dirs <- data_dirs[!str_detect(data_dirs, ".csv")]

# iteratively get all csv file paths and store them
for(path in data_dirs){
  # gets the directory for a spefic teams csv files
  team_dir <- paste(data_path, path, sep="/")
  csv_list <- list.files(team_dir)

  # steps through csv files, loads and edits them as dataframes
  for(csv in csv_list){
    # get full path, and other information from csv name
    full_path <- paste(team_dir, csv, sep="/")
    split <- ifelse(str_detect(csv, "home"), "HOME", "AWAY")
    team_name <- str_split_fixed(csv, pattern="_", 2)[1]
```

```

# Read in data
df <- read.csv(full_path)%>%
  mutate(Name = str_split_fixed(Name, "\\\\", 2)[,1]) %>%
  mutate(split = split, team = team_name)
df <- df[ -length(df[,1]), ]

# binds all teams data together
if(data_empty){
  season_2017 <- df
  data_empty <- FALSE
}else {
  season_2017 <- rbind(season_2017, df, make.row.names=TRUE)
}
}
season_2017

```

##	Rk	Name	G	GS	PA	AB	R	H	X2B	X3B	HR	RBI	SB	CS	BB	SO
## 1	1	Colin Moran	7	2	12	11	3	4	0	1	1	3	0	0	1	1
## 2	2	Jose Altuve	75	73	333	294	65	112	23	3	15	46	13	3	34	32
## 3	3	Marwin Gonzalez	64	58	256	221	32	72	18	0	8	43	4	2	29	38
## 4	4	Carlos Correa	58	58	269	236	51	71	12	1	13	44	1	1	30	61
## 5	5	George Springer	69	66	313	277	61	81	13	0	18	43	3	2	29	60
## 6	6	Max Stassi	9	3	19	14	4	3	1	0	1	3	0	0	4	3
## 7	7	Alex Bregman	79	75	328	290	46	84	26	3	10	41	7	3	28	53
## 8	8	Brian McCann	52	51	215	188	28	50	10	1	11	43	1	0	21	34
## 9	9	Yuli Gurriel	70	70	294	276	39	86	20	1	10	42	2	2	12	36
## 10	10	Cameron Maybin	13	8	38	34	5	7	1	1	3	8	1	2	3	9
## 11	11	Brad Peacock	4	3	8	7	1	2	1	0	0	2	0	0	1	3
## 12	12	Nori Aoki	38	29	126	112	20	34	7	1	2	12	4	1	10	16
## 13	13	Josh Reddick	65	60	283	250	44	72	16	1	7	46	3	0	25	38
## 14	14	Evan Gattis	41	37	165	154	25	39	9	0	8	36	0	1	5	24
## 15	15	J.D. Davis	13	7	36	31	5	5	2	0	2	4	0	0	4	12
## 16	16	Derek Fisher	27	17	74	63	10	13	0	1	2	6	0	1	9	24
## 17	17	Jake Marisnick	58	32	139	123	26	23	5	0	6	18	3	2	12	55
## 18	18	Carlos Beltran	62	57	254	234	28	53	14	0	6	26	0	0	17	54
## 19	19	Tyler White	12	5	34	31	2	7	3	0	0	2	0	0	3	10
## 20	20	Tony Kemp	11	6	25	23	4	5	0	0	0	3	1	0	1	5
## 21	21	Juan Centeno	11	5	20	20	1	4	0	0	0	1	0	0	0	8
## 22	22	Lance McCullers Jr.	1	1	3	3	0	0	0	0	0	0	0	0	0	0
## 23	23	Collin McHugh	1	1	2	2	0	0	0	0	0	0	0	0	0	2
## 24	24	Charlie Morton	1	1	3	3	0	0	0	0	0	0	0	0	0	0
## 25	25	Chris Devenski	3	0	1	1	0	0	0	0	0	0	0	0	0	1
## 26	26	Tony Sipp	5	0	1	1	0	0	0	0	0	0	0	0	0	0
## 27	27	Dallas Keuchel	1	1	3	3	0	0	0	0	0	0	0	0	0	2
## 28	28	Michael Feliz	3	0	1	1	0	0	0	0	0	0	0	0	0	1
## 29	29	Joe Musgrove	4	2	5	5	0	0	0	0	0	0	0	0	0	1
## 30	30	James Hoyt	3	0	1	1	0	0	0	0	0	0	0	0	0	1
## 31	31	Mike Fiers	2	1	1	1	1	0	0	0	0	0	0	0	0	1
## 32	32	Will Harris	2	0	0	0	0	0	0	0	0	0	0	0	0	0
## 33	33	Ashur Tolliver	1	0	0	0	0	0	0	0	0	0	0	0	0	0
## 34	34	Francis Martes	2	0	0	0	0	0	0	0	0	0	0	0	0	0
## 35	35	Teoscar Hernandez	1	0	0	0	0	0	0	0	0	0	0	0	0	0

## 36	36	Tyler Clippard	1	0	0	0	0	0	0	0	0	0	0	0	0	0
## 37	37	Ken Giles	3	0	0	0	0	0	0	0	0	0	0	0	0	0
## 38	38	Francisco Liriano	1	0	0	0	0	0	0	0	0	0	0	0	0	0
## 39	39	Luke Gregerson	5	0	0	0	0	0	0	0	0	0	0	0	0	0
## 40	1	Tyler White	10	8	33	30	5	10	3	0	3	8	0	1	1	6
## 41	2	Jake Marisnick	48	33	120	107	24	33	5	0	10	17	6	2	8	35
## 42	3	Carlos Correa	51	51	212	186	31	62	13	0	11	40	1	0	23	31
## 43	4	Josh Reddick	69	61	257	227	33	78	18	3	6	36	4	3	18	34
## 44	5	Marwin Gonzalez	70	62	259	234	35	66	16	0	15	47	4	1	20	61
## 45	6	George Springer	71	71	316	271	51	74	16	0	16	42	2	5	35	51
## 46	7	Jose Altuve	78	78	329	296	47	92	16	1	9	35	19	3	24	52
## 47	8	J.D. Davis	11	7	32	31	3	9	2	0	2	3	1	1	0	8
## 48	9	Yuli Gurriel	69	67	270	253	30	72	23	0	8	33	1	0	10	26
## 49	10	Alex Bregman	76	73	298	266	42	74	13	2	9	30	10	2	27	44
## 50	11	Evan Gattis	43	39	160	146	16	40	13	0	4	19	0	0	13	26
## 51	12	Juan Centeno	11	10	37	32	4	8	0	0	2	3	0	0	4	4
## 52	13	Carlos Beltran	67	61	255	233	32	55	15	0	8	25	0	0	16	48
## 53	14	Derek Fisher	26	22	92	83	11	18	4	0	3	11	3	2	8	30
## 54	15	Brian McCann	45	45	184	161	19	34	2	0	7	19	0	0	17	24
## 55	16	Max Stassi	5	3	12	10	1	1	0	0	1	1	0	0	2	1
## 56	17	Nori Aoki	32	27	98	90	8	21	5	0	0	7	1	1	5	13
## 57	18	Tony Kemp	6	4	14	14	2	3	1	0	0	1	0	0	0	0
## 58	19	Cameron Maybin	8	6	25	25	1	4	0	0	1	5	3	1	0	7
## 59	20	AJ Reed	2	1	6	6	0	0	0	0	0	0	0	0	0	1
## 60	21	Ken Giles	1	0	0	0	0	0	0	0	0	0	0	0	0	0
## 61	1	Aaron Blair	1	1	2	1	0	1	0	0	0	0	0	0	1	0
## 62	2	Freddie Freeman	63	62	285	247	52	74	21	2	17	40	7	2	33	54
## 63	3	Lane Adams	31	8	53	49	12	16	1	1	3	8	4	0	4	17
## 64	4	Kurt Suzuki	40	35	154	138	19	38	6	0	11	28	0	0	9	18
## 65	5	Matt Adams	45	30	143	132	21	38	12	0	7	30	0	0	8	33
## 66	6	Ozzie Albies	25	25	111	102	18	32	1	1	5	16	7	1	7	13
## 67	7	Tyler Flowers	53	45	199	167	20	48	8	0	6	26	0	0	19	42
## 68	8	Matt Kemp	60	58	258	245	27	70	15	1	12	43	0	1	12	52
## 69	9	Nick Markakis	80	78	345	293	40	89	19	1	4	35	0	2	46	47
## 70	10	Johan Camargo	32	25	108	102	15	28	13	0	2	8	0	0	6	20
## 71	11	Sean Rodriguez	9	5	29	23	5	4	0	0	2	3	0	0	5	10
## 72	12	Ender Inciarte	77	75	357	325	47	91	18	2	5	31	16	4	29	57
## 73	13	Brandon Phillips	57	55	240	223	29	58	13	1	3	22	6	3	8	32
## 74	14	Adonis Garcia	29	25	114	106	12	26	3	0	3	12	3	0	6	15
## 75	15	Dansby Swanson	74	71	296	269	30	61	14	1	4	26	1	2	26	71
## 76	16	Rio Ruiz	22	18	77	67	9	13	4	0	2	9	1	0	8	19
## 77	17	Jace Peterson	45	21	115	101	8	20	6	2	0	8	1	0	12	24
## 78	18	Micah Johnson	9	1	8	7	0	2	0	0	0	0	0	0	0	3
## 79	19	Danny Santana	37	17	91	84	10	15	5	2	1	9	4	0	5	18
## 80	20	Jaime Garcia	7	7	18	15	1	2	0	0	1	5	0	0	1	4
## 81	21	Chase d'Arnaud	6	0	4	4	2	1	0	0	0	0	0	0	0	2
## 82	22	David Freitas	3	2	7	7	1	1	1	0	0	1	0	0	0	2
## 83	23	Julio Teheran	15	13	37	28	3	5	0	0	0	6	0	0	1	10
## 84	24	R.A. Dickey	12	12	31	26	0	5	0	0	0	3	0	0	0	4
## 85	25	Emilio Bonifacio	19	2	21	16	1	2	0	0	0	0	0	0	1	4
## 86	26	Lucas Sims	7	6	12	10	1	1	0	0	0	0	0	0	0	3
## 87	27	Mike Foltyniewicz	16	15	27	23	1	2	0	0	0	0	0	0	0	14
## 88	28	Max Fried	6	3	8	7	1	0	0	0	0	0	0	0	1	3
## 89	29	Sean Newcomb	7	7	14	10	0	0	0	0	0	0	0	0	1	7

## 90	30	Luiz Gohara	2	2	5	5	0	0	0	0	0	0	0	0	4
## 91	31	Matt Wisler	9	0	1	1	0	0	0	0	0	0	0	0	0
## 92	32	Tony Sanchez	1	0	1	1	0	0	0	0	0	0	0	0	1
## 93	33	Anthony Recker	3	0	1	1	0	0	0	0	0	0	0	0	1
## 94	34	Bartolo Colon	5	5	8	8	1	0	0	0	0	0	0	0	4
## 95	35	Luke Jackson	15	0	2	2	0	0	0	0	0	0	0	0	0
## 96	36	Rex Brothers	14	0	0	0	0	0	0	0	0	0	0	0	0
## 97	37	Ian Krol	24	0	0	0	0	0	0	0	0	0	0	0	0
## 98	38	A.J. Minter	7	0	0	0	0	0	0	0	0	0	0	0	0
## 99	39	Dan Winkler	7	0	0	0	0	0	0	0	0	0	0	0	0
## 100	40	Eric O'Flaherty	11	0	0	0	0	0	0	0	0	0	0	0	0
## 101	41	Jose Ramirez	28	0	0	0	0	0	0	0	0	0	0	0	0
## 102	42	Chaz Roe	3	0	0	0	0	0	0	0	0	0	0	0	0
## 103	43	Akeel Morris	6	0	0	0	0	0	0	0	0	0	0	0	0
## 104	44	Jason Hursh	4	0	0	0	0	0	0	0	0	0	0	0	0
## 105	45	Jim Johnson	27	0	0	0	0	0	0	0	0	0	0	0	0
## 106	46	Sam Freeman	24	0	0	0	0	0	0	0	0	0	0	0	0
## 107	47	Jason Motte	14	0	0	0	0	0	0	0	0	0	0	0	0
## 108	48	Arodys Vizcaino	20	0	0	0	0	0	0	0	0	0	0	0	0
## 109	49	Josh Collmenter	3	0	0	0	0	0	0	0	0	0	0	0	0
## 110	1	Chase d'Arnaud	5	1	6	4	3	2	0	0	0	0	0	2	1
## 111	2	Freddie Freeman	54	54	229	193	32	61	14	0	11	31	1	3	41
## 112	3	Kurt Suzuki	41	36	155	138	19	40	7	0	8	22	0	0	21
## 113	4	Matt Adams	55	39	171	159	21	41	8	1	12	28	0	0	38
## 114	5	Brandon Phillips	63	58	259	247	39	79	14	0	8	30	4	5	25
## 115	6	Tyler Flowers	46	41	171	150	21	41	8	0	6	23	0	1	40
## 116	7	Johan Camargo	50	35	148	139	15	44	8	2	2	19	0	0	31
## 117	8	Ender Inciarte	80	79	361	337	46	110	9	3	6	26	6	5	37
## 118	9	Ozzie Albies	32	32	133	115	16	30	8	4	1	12	1	0	23
## 119	10	Matt Kemp	55	49	209	193	20	51	8	0	7	21	0	1	47
## 120	11	David Freitas	3	3	10	10	1	3	1	0	0	1	0	0	2
## 121	12	Lane Adams	54	5	69	60	7	14	3	0	2	12	6	0	20
## 122	13	Jace Peterson	44	23	100	85	7	20	3	0	2	9	2	0	24
## 123	14	Danny Santana	32	9	61	59	6	14	4	0	2	13	2	0	15
## 124	15	Nick Markakis	80	77	325	300	36	74	20	0	4	41	0	0	63
## 125	16	Dansby Swanson	70	64	255	219	29	52	9	1	2	25	2	1	49
## 126	17	Rio Ruiz	31	23	96	83	13	16	1	0	2	10	0	0	22
## 127	18	Adonis Garcia	23	15	69	67	7	15	1	0	2	7	1	0	8
## 128	19	Sean Rodriguez	6	4	18	14	1	2	1	0	0	0	1	0	9
## 129	20	Jaime Garcia	8	8	17	16	1	3	1	0	0	2	0	0	3
## 130	21	Emilio Bonifacio	19	0	23	22	1	3	1	1	0	3	0	0	5
## 131	22	Anthony Recker	3	1	6	6	1	1	0	0	0	0	0	0	0
## 132	23	R.A. Dickey	18	18	37	35	0	4	0	0	0	2	0	0	8
## 133	24	Julio Teheran	20	17	35	29	1	3	0	0	0	0	0	0	7
## 134	25	Sean Newcomb	12	12	21	17	1	1	0	0	0	0	0	0	10
## 135	26	Micah Johnson	9	0	3	3	2	0	0	0	0	0	1	0	1
## 136	27	Lucas Sims	7	4	6	5	0	0	0	0	0	0	0	0	5
## 137	28	Luiz Gohara	3	3	5	4	0	0	0	0	0	0	0	0	3
## 138	29	Sam Freeman	30	0	2	2	0	0	0	0	0	0	0	0	1
## 139	30	Matt Wisler	11	1	2	1	0	0	0	0	0	0	0	0	0
## 140	31	Mike Foltyniewicz	12	12	22	19	0	0	0	0	0	0	0	0	13
## 141	32	Ian Krol	24	0	1	1	0	0	0	0	0	0	0	0	0
## 142	33	Bartolo Colon	5	5	7	7	0	0	0	0	0	0	0	0	4
## 143	34	Jim Johnson	29	0	0	0	0	0	0	0	0	0	0	0	0

## 144 35	Jose Ramirez	36	0	0	0	0	0	0	0	0	0	0	0	0	0
## 145 36	A.J. Minter	9	0	0	0	0	0	0	0	0	0	0	0	0	0
## 146 37	Dan Winkler	9	0	0	0	0	0	0	0	0	0	0	0	0	0
## 147 38	Arodys Vizcaino	36	0	0	0	0	0	0	0	0	0	0	0	0	0
## 148 39	Max Fried	4	1	1	0	0	0	0	0	0	0	0	0	0	0
## 149 40	Josh Collmenter	7	0	0	0	0	0	0	0	0	0	0	0	0	0
## 150 41	Akeel Morris	2	0	0	0	0	0	0	0	0	0	0	0	0	0
## 151 42	Rex Brothers	13	0	0	0	0	0	0	0	0	0	0	0	0	0
## 152 43	Luke Jackson	26	0	1	0	0	0	0	0	0	0	0	0	0	0
## 153 44	Jason Hursh	5	0	0	0	0	0	0	0	0	0	0	0	0	0
## 154 45	Eric O'Flaherty	11	0	0	0	0	0	0	0	0	0	0	0	0	0
## 155 46	Jason Motte	28	0	0	0	0	0	0	0	0	0	0	0	0	0
## 156 1	Tommy La Stella	37	14	86	71	11	23	4	0	5	16	0	0	11	9
## 157 2	Kris Bryant	72	71	323	266	49	88	23	2	11	32	5	3	46	61
## 158 3	Mike Freeman	7	3	14	12	2	4	2	0	0	0	0	0	2	3
## 159 4	Willson Contreras	58	48	219	189	28	51	15	0	11	37	5	2	26	49
## 160 5	Ian Happ	53	43	198	179	26	49	12	1	9	29	2	3	14	54
## 161 6	Addison Russell	61	50	216	200	33	56	15	1	7	27	0	1	13	49
## 162 7	Alex Avila	14	11	51	40	6	10	1	1	1	6	0	0	10	18
## 163 8	Anthony Rizzo	77	75	347	290	47	66	10	1	17	52	4	4	45	45
## 164 9	Javier Baez	71	63	256	237	30	65	13	0	10	37	2	0	15	80
## 165 10	Jason Heyward	59	54	235	210	28	55	6	2	7	36	1	2	22	33
## 166 11	Jon Jay	75	47	233	216	29	62	8	0	1	15	3	2	12	45
## 167 12	Kyle Schwarber	61	52	239	209	29	35	6	1	12	23	1	1	27	73
## 168 13	Albert Almora	66	41	181	167	19	41	6	0	4	13	1	0	11	33
## 169 14	Ben Zobrist	59	46	225	195	26	37	10	0	7	27	0	0	27	31
## 170 15	Mike Montgomery	16	5	13	11	2	2	0	0	1	1	0	0	0	4
## 171 16	Taylor Davis	2	1	5	5	0	1	1	0	0	1	0	0	0	3
## 172 17	Miguel Montero	22	15	60	54	3	12	1	0	1	1	1	0	6	16
## 173 18	Brett Anderson	2	2	6	5	0	1	0	0	0	1	0	0	1	3
## 174 19	Victor Caratini	15	7	37	35	5	7	0	0	1	1	0	0	1	6
## 175 20	Jon Lester	12	12	31	26	1	4	3	0	0	2	1	0	3	13
## 176 21	Jake Arrieta	18	17	40	38	2	6	0	1	1	4	0	0	1	20
## 177 22	Jeimer Candelario	10	7	32	29	2	3	1	0	1	2	0	0	1	12
## 178 23	Rene Rivera	8	5	21	17	0	2	1	0	0	1	0	0	3	10
## 179 24	John Lackey	15	15	33	28	2	5	0	0	0	1	0	0	2	12
## 180 25	Matt Szczur	7	0	8	7	2	1	0	0	0	0	0	0	1	2
## 181 26	Kyle Hendricks	10	10	24	24	2	4	1	0	0	3	0	0	0	11
## 182 27	Eddie Butler	5	5	10	8	0	1	0	0	0	0	0	0	1	5
## 183 28	Leonys Martin	10	1	10	7	2	0	0	0	0	0	1	0	3	2
## 184 29	Mark Zagunis	7	4	18	14	0	0	0	0	0	1	2	0	4	6
## 185 30	Jose Quintana	5	5	12	11	0	1	0	0	0	0	0	0	0	8
## 186 31	Dylan Floro	1	0	1	1	0	0	0	0	0	0	0	0	0	1
## 187 32	Brian Duensing	31	0	1	1	0	0	0	0	0	0	0	0	0	1
## 188 33	Justin Grimm	23	0	2	2	0	0	0	0	0	0	0	0	0	1
## 189 34	Jen-Ho Tseng	1	0	0	0	0	0	0	0	0	0	0	0	0	0
## 190 35	Dillon Maples	2	0	0	0	0	0	0	0	0	0	0	0	0	0
## 191 36	Rob Zastryzny	1	0	0	0	0	0	0	0	0	0	0	0	0	0
## 192 37	Justin Wilson	10	0	0	0	0	0	0	0	0	0	0	0	0	0
## 193 38	Felix Pena	13	0	0	0	0	0	0	0	0	0	0	0	0	0
## 194 39	Hector Rondon	28	0	0	0	0	0	0	0	0	0	0	0	0	0
## 195 40	Wade Davis	19	0	0	0	0	0	0	0	0	0	0	0	0	0
## 196 41	Koji Uehara	18	0	0	0	0	0	0	0	0	0	0	0	0	0
## 197 42	Pedro Strop	30	0	0	0	0	0	0	0	0	0	0	0	0	0

## 198 43	Carl Edwards Jr.	30	0	0	0	0	0	0	0	0	0	0	0	0	0
## 199 1	Rene Rivera	12	6	29	27	8	13	4	0	2	11	0	0	2	6
## 200 2	Jeimer Candelario	1	1	4	4	0	2	1	0	0	1	0	0	0	0
## 201 3	Miguel Montero	22	13	52	44	9	16	2	0	3	7	0	0	5	8
## 202 4	Anthony Rizzo	80	80	344	282	52	90	22	2	15	57	6	0	46	45
## 203 5	Hector Rondon	31	0	2	2	0	1	0	0	0	0	0	0	0	0
## 204 6	Albert Almora	66	24	142	132	20	48	12	1	4	33	0	0	8	20
## 205 7	Kyle Schwarber	68	57	247	213	38	54	10	0	18	36	0	0	32	77
## 206 8	Victor Caratini	16	3	29	24	1	8	3	0	0	1	0	0	3	7
## 207 9	Kris Bryant	79	78	342	283	62	74	15	2	18	41	2	2	49	67
## 208 10	Ian Happ	62	46	215	185	36	43	5	2	15	39	6	1	25	75
## 209 11	Jon Jay	66	41	200	163	36	50	10	3	1	19	3	0	25	35
## 210 12	Leonys Mart�n	5	0	6	6	0	2	1	0	0	1	0	0	0	2
## 211 13	Javier Baez	74	64	252	232	45	63	11	2	13	38	8	3	15	64
## 212 14	Willson Contreras	59	47	209	188	22	53	6	0	10	37	0	2	19	49
## 213 15	Ben Zobrist	69	59	271	240	32	64	10	3	5	23	2	2	27	40
## 214 16	Alex Avila	21	14	61	52	5	12	1	0	2	11	0	0	9	22
## 215 17	Jason Heyward	67	62	246	222	31	57	9	2	4	23	3	2	19	34
## 216 18	Tommy La Stella	36	8	65	54	7	13	4	0	0	6	0	0	9	9
## 217 19	Rob Zastryzny	3	0	3	3	0	1	0	0	0	0	0	0	0	0
## 218 20	Matt Szczur	8	2	15	12	0	3	1	0	0	3	0	0	1	2
## 219 21	Addison Russell	49	41	169	152	19	28	6	2	5	16	2	0	16	42
## 220 22	Taylor Davis	6	1	8	8	1	2	0	0	0	0	0	0	0	1
## 221 23	Mike Montgomery	24	7	17	16	3	3	1	0	0	2	0	0	0	6
## 222 24	Jon Lester	18	18	34	28	4	4	0	0	1	4	0	0	1	13
## 223 25	Jose Quintana	8	8	17	11	2	1	0	0	0	3	0	0	1	7
## 224 26	Felix Pena	11	0	4	3	0	0	0	0	0	0	0	0	1	1
## 225 27	John Lackey	16	14	28	25	0	2	1	0	0	0	1	1	1	11
## 226 28	Jake Arrieta	11	10	24	23	0	2	0	0	0	1	0	0	0	12
## 227 29	Kyle Hendricks	14	13	27	26	1	1	0	0	0	2	0	0	0	17
## 228 30	Eddie Butler	7	6	9	7	0	0	0	0	0	0	0	0	0	1
## 229 31	Jen-Ho Tseng	1	1	1	1	0	0	0	0	0	1	0	0	0	0
## 230 32	Carl Edwards Jr.	38	0	1	1	1	0	0	0	0	0	0	0	0	1
## 231 33	Mike Freeman	8	1	13	13	1	0	0	0	0	0	0	0	0	5
## 232 34	Justin Grimm	25	0	1	1	0	0	0	0	0	0	0	0	0	0
## 233 35	Pedro Strop	35	0	1	1	0	0	0	0	0	0	0	0	0	0
## 234 36	Brett Anderson	4	4	2	2	0	0	0	0	0	0	0	0	0	0
## 235 37	Dylan Floro	2	0	3	3	0	0	0	0	0	0	0	0	0	1
## 236 38	Brian Duensing	34	0	3	3	0	0	0	0	0	0	0	0	0	2
## 237 39	Jack Leathersich	1	0	0	0	0	0	0	0	0	0	0	0	0	0
## 238 40	Koji Uehara	27	0	0	0	0	0	0	0	0	0	0	0	0	0
## 239 41	Seth Frankoff	1	0	0	0	0	0	0	0	0	0	0	0	0	0
## 240 42	Justin Wilson	12	0	0	0	0	0	0	0	0	0	0	0	0	0
## 241 43	Zac Rosscup	1	0	0	0	0	0	0	0	0	0	0	0	0	0
## 242 44	Dillon Maples	3	0	0	0	0	0	0	0	0	0	0	0	0	0
## 243 45	Pierce Johnson	1	0	0	0	0	0	0	0	0	0	0	0	0	0
## 244 46	Wade Davis	37	0	0	0	0	0	0	0	0	0	0	0	0	0
## 245 1	Ildemaro Vargas	6	0	7	7	4	4	1	0	0	4	0	0	0	1
## 246 2	Jeremy Hazelbaker	16	3	27	23	5	8	0	1	2	7	0	0	4	7
## 247 3	Archie Bradley	27	0	2	2	0	1	0	0	0	1	0	0	0	0
## 248 4	Chris Iannetta	47	37	166	141	21	36	11	0	10	16	0	0	23	45
## 249 5	Christian Walker	4	0	5	4	0	1	1	0	0	0	0	0	0	3
## 250 6	J.D. Martinez	32	32	132	122	18	29	4	1	13	31	0	0	9	41
## 251 7	Paul Goldschmidt	77	76	328	284	45	78	11	1	16	59	9	3	37	73

## 252	8	Jake Lamb	76	73	323	268	41	67	14	3	14	49	4	3	47	81
## 253	9	Nick Ahmed	25	20	85	79	10	22	2	1	3	13	1	0	6	20
## 254	10	David Peralta	69	61	285	259	39	75	11	2	6	24	2	3	20	44
## 255	11	AJ Pollock	56	50	230	205	31	51	14	3	5	16	9	4	22	32
## 256	12	Ketel Marte	36	29	124	107	16	26	3	1	4	8	3	0	16	12
## 257	13	Adam Rosales	17	11	49	47	6	11	4	0	2	7	0	1	1	18
## 258	14	Gregor Blanco	43	28	133	118	22	29	1	1	3	9	6	1	14	33
## 259	15	Brandon Drury	69	57	244	233	15	55	14	0	6	26	0	1	9	56
## 260	16	Daniel Descalso	61	39	188	163	19	31	10	2	3	22	0	0	19	40
## 261	17	Rey Fuentes	33	15	79	74	9	17	1	0	2	6	2	1	4	16
## 262	18	Chris Owings	46	44	187	178	12	39	10	0	4	14	2	1	6	43
## 263	19	Taijuan Walker	13	13	31	30	4	8	1	0	0	4	0	0	0	12
## 264	20	Yasmany Tomás	24	21	90	82	5	15	3	0	2	7	0	0	8	33
## 265	21	Kristopher Negron	8	5	24	20	3	3	1	0	0	1	0	0	3	5
## 266	22	Robbie Ray	14	14	34	28	3	6	1	0	0	2	0	0	1	13
## 267	23	Chris Herrmann	52	27	131	113	17	15	3	0	3	6	4	0	18	41
## 268	24	Jeff Mathis	31	29	102	95	5	17	4	0	0	3	0	0	5	31
## 269	25	Zack Greinke	11	11	28	27	1	5	2	0	0	0	0	0	0	7
## 270	26	T.J. McFarland	20	0	5	5	0	1	0	0	0	0	0	0	0	3
## 271	27	Shelby Miller	2	2	6	4	1	0	0	0	0	0	0	0	2	2
## 272	28	Patrick Corbin	14	14	31	24	2	1	0	0	0	0	0	0	4	16
## 273	29	Zack Godley	12	12	26	21	0	1	0	0	0	1	0	0	0	11
## 274	30	Anthony Banda	2	1	2	2	0	0	0	0	0	0	0	0	0	0
## 275	31	Jack Reinheimer	2	1	5	5	0	0	0	0	0	0	0	0	0	3
## 276	32	Braden Shipley	3	2	5	5	0	0	0	0	0	0	0	0	0	1
## 277	33	Randall Delgado	11	2	5	4	0	0	0	0	0	0	0	0	0	1
## 278	34	Matt Koch	1	0	0	0	0	0	0	0	0	0	0	0	0	0
## 279	35	John Ryan Murphy	2	0	0	0	0	0	0	0	0	0	0	0	0	0
## 280	36	James Sherfy	4	0	0	0	0	0	0	0	0	0	0	0	0	0
## 281	37	J.J. Hoover	21	0	0	0	0	0	0	0	0	0	0	0	0	0
## 282	38	Jake Barrett	12	0	0	0	0	0	0	0	0	0	0	0	0	0
## 283	39	David Hernandez	11	0	0	0	0	0	0	0	0	0	0	0	0	0
## 284	40	Silvino Bracho	4	0	0	0	0	0	0	0	0	0	0	0	0	0
## 285	41	Rubby De La Rosa	3	0	0	0	0	0	0	0	0	0	0	0	0	0
## 286	42	Fernando Rodney	26	0	0	0	0	0	0	0	0	0	0	0	0	0
## 287	43	Jorge De La Rosa	26	0	1	0	1	0	0	0	0	0	0	0	0	0
## 288	44	Andrew Chafin	28	0	0	0	0	0	0	0	0	0	0	0	0	0
## 289	45	Tom Wilhelmsen	10	0	0	0	0	0	0	0	0	0	0	0	0	0
## 290	1	Christian Walker	7	1	10	8	2	2	0	0	2	2	0	0	1	2
## 291	2	J.D. Martinez	30	29	125	110	29	41	9	0	16	34	2	0	15	33
## 292	3	Paul Goldschmidt	78	76	337	274	72	88	23	2	20	61	9	2	57	74
## 293	4	Yasmany Tomás	23	21	90	84	14	25	8	1	6	25	0	0	5	17
## 294	5	Jeremy Hazelbaker	25	4	34	29	5	10	2	1	0	3	1	0	5	13
## 295	6	Brandon Drury	66	56	236	212	26	64	23	2	7	37	1	0	19	47
## 296	7	Chris Owings	51	45	199	184	29	58	15	1	8	37	10	1	11	44
## 297	8	AJ Pollock	56	50	236	220	42	62	19	3	9	33	11	2	13	39
## 298	9	Jake Lamb	73	71	312	268	48	66	16	1	16	56	2	1	40	71
## 299	10	David Peralta	71	63	292	266	43	79	20	1	8	33	6	1	23	50
## 300	11	Daniel Descalso	69	44	210	181	28	49	6	3	7	29	4	0	29	49
## 301	12	Chris Iannetta	42	33	150	131	17	33	8	0	7	27	0	0	14	42
## 302	13	Jeff Mathis	29	27	101	91	8	23	6	2	2	8	1	0	9	30
## 303	14	Chris Herrmann	54	27	125	113	18	26	4	0	7	21	1	0	11	26
## 304	15	Ketel Marte	37	30	131	116	14	32	8	1	1	10	0	1	13	25
## 305	16	Gregor Blanco	47	24	123	106	21	26	9	2	0	4	9	0	17	26

## 306 17	Nick Ahmed	28	21	93	88	14	20	6	0	3	8	2	4	4	19
## 307 18	Robbie Ray	13	13	27	25	2	7	1	0	0	0	0	0	2	10
## 308 19	Rey Fuentes	31	14	66	62	10	15	0	2	1	3	2	0	4	19
## 309 20	Zack Greinke	19	18	42	35	3	8	2	0	0	4	0	0	2	11
## 310 21	Taijuan Walker	12	12	23	22	2	4	0	0	1	1	0	0	1	7
## 311 22	Kristopher Negron	6	1	7	5	0	1	0	0	0	0	0	0	1	2
## 312 23	Patrick Corbin	19	17	39	32	4	6	0	1	0	0	0	0	2	12
## 313 24	Adam Rosales	17	10	40	37	4	6	1	0	1	2	0	0	0	16
## 314 25	John Ryan Murphy	3	1	7	7	0	1	1	0	0	1	0	0	0	1
## 315 26	Shelby Miller	2	2	3	2	1	0	0	0	0	0	0	0	0	1
## 316 27	Zack Godley	13	12	27	21	1	1	0	0	0	1	0	0	2	15
## 317 28	Randall Delgado	14	3	4	4	0	0	0	0	0	0	0	0	0	2
## 318 29	Braden Shipley	6	1	1	1	0	0	0	0	0	0	0	0	0	1
## 319 30	Archie Bradley	33	0	2	2	0	0	0	0	0	0	0	0	0	2
## 320 31	Ildemaro Vargas	6	0	6	6	0	0	0	0	0	0	0	0	0	2
## 321 32	Anthony Banda	5	3	4	3	0	0	0	0	0	0	0	0	0	3
## 322 33	Tom Wilhelmsen	17	0	1	1	0	0	0	0	0	0	0	0	0	1
## 323 34	Andrew Chafin	40	0	0	0	0	0	0	0	0	0	0	0	0	0
## 324 35	Silvino Bracho	13	0	0	0	0	0	0	0	0	0	0	0	0	0
## 325 36	J.J. Hoover	28	0	0	0	0	0	0	0	0	0	0	0	0	0
## 326 37	James Sherfy	6	0	0	0	0	0	0	0	0	0	0	0	0	0
## 327 38	Fernando Rodney	31	0	0	0	0	0	0	0	0	0	0	0	0	0
## 328 39	Jorge De La Rosa	38	0	1	0	0	0	0	0	0	0	0	0	0	0
## 329 40	David Hernandez	11	0	0	0	0	0	0	0	0	0	0	0	0	0
## 330 41	Jake Barrett	16	0	0	0	0	0	0	0	0	0	0	0	0	0
## 331 42	Rubby De La Rosa	6	0	0	0	0	0	0	0	0	0	0	0	0	0
## 332 43	T.J. McFarland	21	0	0	0	0	0	0	0	0	0	0	0	0	0
## 333 1	Francisco Pena	2	1	4	4	2	2	0	0	2	2	0	0	0	0
## 334 2	Chance Sisco	6	3	17	13	2	4	2	0	1	2	0	0	3	5
## 335 3	Trey Mancini	75	70	297	276	32	84	15	2	13	40	1	0	16	75
## 336 4	Tim Beckham	24	24	107	101	20	28	6	1	6	16	0	0	6	27
## 337 5	Jonathan Schoop	81	81	341	315	46	89	15	0	14	42	0	0	15	80
## 338 6	Chris Davis	59	58	236	203	31	44	8	1	11	24	0	0	29	88
## 339 7	Adam Jones	69	69	297	280	29	80	13	0	9	31	0	1	11	57
## 340 8	Craig Gentry	40	11	59	53	10	14	3	1	1	7	3	1	3	11
## 341 9	Caleb Joseph	45	36	142	135	16	33	8	1	5	21	0	0	5	35
## 342 10	Wellington Castillo	46	45	177	170	21	44	4	0	7	26	0	0	7	43
## 343 11	Seth Smith	60	45	193	169	21	40	10	0	4	16	2	0	22	42
## 344 12	J.J. Hardy	36	35	138	132	13	35	7	1	2	12	0	1	6	23
## 345 13	Manny Machado	76	76	336	314	35	72	18	1	11	40	4	1	18	64
## 346 14	Mark Trumbo	75	73	308	287	38	66	15	0	9	26	0	0	20	75
## 347 15	Anthony Santander	7	4	19	18	0	5	2	0	0	2	0	0	0	4
## 348 16	Ryan Flaherty	14	4	23	20	3	5	1	0	0	2	0	0	2	7
## 349 17	Pedro Alvarez	8	4	18	18	1	5	1	0	0	2	0	0	0	4
## 350 18	Joey Rickard	57	31	146	138	16	33	8	0	1	7	5	0	4	39
## 351 19	Ruben Tejada	19	16	57	52	6	11	3	0	0	3	0	0	4	8
## 352 20	Austin Hays	12	9	33	31	1	6	0	0	1	3	0	0	2	9
## 353 21	Wade Miley	3	3	4	4	0	1	0	0	0	0	0	0	0	1
## 354 22	Hyun Soo Kim	27	15	70	62	5	11	2	0	0	4	0	0	7	17
## 355 23	Ubaldo Jimenez	3	2	5	5	0	1	0	0	0	0	0	0	0	3
## 356 24	Johnny Giavotella	4	1	6	6	0	1	0	0	0	0	1	0	0	2
## 357 25	Paul Janish	9	7	23	21	0	2	0	0	0	3	0	0	1	2
## 358 26	Gabriel Ynoa	1	1	1	1	0	0	0	0	0	0	0	0	0	0
## 359 27	Kevin Gausman	2	2	2	2	0	0	0	0	0	0	0	0	0	1

## 360 28	Vidal Nuno III	1	0	1	1	0	0	0	0	0	0	0	0	0	0
## 361 29	Jayson Aquino	1	1	2	2	0	0	0	0	0	0	0	0	0	2
## 362 30	Jimmy Yacabonis	2	0	2	2	0	0	0	0	0	1	0	0	0	1
## 363 31	David Washington	1	1	4	4	0	0	0	0	0	0	0	0	0	3
## 364 32	Alec Asher	2	1	1	1	0	0	0	0	0	0	0	0	0	0
## 365 33	Miguel Castro	2	0	0	0	0	0	0	0	0	0	0	0	0	0
## 366 34	Mike Wright	2	0	0	0	0	0	0	0	0	0	0	0	0	0
## 367 35	Zack Britton	1	0	0	0	0	0	0	0	0	0	0	0	0	0
## 368 36	Brad Brach	5	0	0	0	0	0	0	0	0	0	0	0	0	0
## 369 37	Tyler Wilson	2	0	0	0	0	0	0	0	0	0	0	0	0	0
## 370 38	Richard Bleier	3	0	0	0	0	0	0	0	0	0	0	0	0	0
## 371 39	Mychal Givens	4	0	0	0	0	0	0	0	0	0	0	0	0	0
## 372 40	Donnie Hart	4	0	0	0	0	0	0	0	0	0	0	0	0	0
## 373 41	Darren O'Day	2	0	0	0	0	0	0	0	0	0	0	0	0	0
## 374 1	Chance Sisco	4	1	5	5	1	2	0	0	1	2	0	0	0	2
## 375 2	Pedro Alvarez	6	3	16	14	3	5	0	0	1	2	0	0	2	6
## 376 3	Francisco Pena	3	2	6	6	1	3	0	0	0	0	0	0	0	3
## 377 4	Wellington Castillo	50	47	188	171	23	52	7	0	13	27	0	0	15	54
## 378 5	Manny Machado	80	80	354	316	46	91	15	0	22	55	5	3	32	51
## 379 6	Jonathan Schoop	79	79	334	307	46	93	20	0	18	63	1	0	20	62
## 380 7	Tim Beckham	26	26	123	115	16	38	7	1	4	10	1	1	6	30
## 381 8	Seth Smith	51	44	180	161	29	45	9	0	9	16	0	0	14	37
## 382 9	Adam Jones	78	78	338	317	53	90	15	1	17	42	2	0	16	56
## 383 10	Trey Mancini	72	70	289	267	33	75	11	2	11	38	0	0	17	64
## 384 11	Craig Gentry	37	14	58	48	7	12	2	0	1	4	2	3	8	13
## 385 12	Chris Davis	69	69	288	253	34	54	7	0	15	37	1	1	32	107
## 386 13	Hyun Soo Kim	29	19	72	63	6	18	2	0	1	6	0	0	5	10
## 387 14	Mark Trumbo	71	70	295	272	41	65	7	0	14	39	1	0	22	74
## 388 15	Caleb Joseph	44	33	124	119	15	32	6	0	3	7	0	0	5	37
## 389 16	Joey Rickard	54	26	131	123	13	30	7	0	3	12	3	1	5	24
## 390 17	Ruben Tejada	22	16	67	61	11	15	3	0	0	2	0	0	4	7
## 391 18	Anthony Santander	6	2	12	12	1	3	1	0	0	0	0	0	0	4
## 392 19	Austin Hays	8	7	30	29	3	7	3	0	0	5	0	0	0	7
## 393 20	J.J. Hardy	37	35	130	122	11	20	6	0	2	12	0	0	6	25
## 394 21	Ryan Flaherty	9	5	20	18	2	3	0	0	0	2	0	0	2	3
## 395 22	Paul Janish	5	2	5	5	0	0	0	0	0	0	0	0	0	4
## 396 23	David Washington	2	0	2	2	0	0	0	0	0	0	0	0	0	2
## 397 24	Johnny Giavotella	3	1	4	4	0	0	0	0	0	0	0	0	0	2
## 398 1	David Price	1	0	1	1	0	1	0	0	0	0	0	0	0	0
## 399 2	Chase d'Arnaud	2	0	1	1	2	1	0	0	0	0	0	0	0	0
## 400 3	Chris Sale	1	1	3	3	0	1	1	0	0	0	0	0	0	1
## 401 4	Eduardo Nunez	16	16	76	71	12	21	7	0	4	11	0	1	4	13
## 402 5	Tzu-Wei Lin	13	10	42	33	6	11	0	1	0	2	1	0	8	11
## 403 6	Andrew Benintendi	76	72	339	290	43	82	12	1	13	51	13	5	42	56
## 404 7	Mookie Betts	77	77	363	323	61	81	24	1	16	57	13	2	38	42
## 405 8	Jackie Bradley Jr.	65	64	268	240	32	65	11	1	11	37	3	2	23	54
## 406 9	Hanley Ramirez	65	59	262	240	35	59	12	0	13	30	0	1	20	63
## 407 10	Sam Travis	17	9	41	39	9	12	4	0	0	1	1	0	2	10
## 408 11	Xander Bogaerts	71	68	308	271	43	68	12	4	6	34	8	0	32	57
## 409 12	Mitch Moreland	72	63	287	257	32	58	14	0	12	38	0	0	26	60
## 410 13	Rafael Devers	25	24	106	97	11	24	3	0	4	13	1	1	9	26
## 411 14	Dustin Pedroia	50	49	225	201	17	51	10	0	3	26	3	3	22	29
## 412 15	Marco Hernandez	9	8	28	26	2	8	0	0	0	1	0	1	1	4
## 413 16	Pablo Sandoval	22	19	71	66	5	16	2	0	2	6	0	1	5	15

## 414 17	Blake Swihart	4	0	5	4	1	1	0	0	0	0	0	0	1	2	
## 415 18	Deven Marrero	41	25	113	101	22	23	5	0	3	19	2	0	7	31	
## 416 19	Chris Young	43	31	135	121	13	27	5	0	3	11	2	0	13	23	
## 417 20	Sandy Leon	43	38	151	137	16	28	4	0	4	17	0	0	12	38	
## 418 21	Christian Vazquez	51	44	178	169	15	40	9	0	1	12	3	1	5	37	
## 419 22	Josh Rutledge	25	18	79	71	6	15	2	1	0	3	0	0	6	24	
## 420 23	Brock Holt	28	21	85	71	12	13	3	0	0	5	0	0	12	18	
## 421 24	Steve Selsky	7	1	8	8	0	1	1	0	0	0	0	0	0	4	
## 422 25	Rajai Davis	9	3	16	15	3	2	0	0	0	0	2	0	1	9	
## 423 26	Drew Pomeranz	1	1	1	1	0	0	0	0	0	0	0	0	0	1	
## 424 27	Doug Fister	1	1	2	2	0	0	0	0	0	0	0	0	0	0	
## 425 28	Kyle Kendrick	1	1	2	1	0	0	0	0	0	0	0	0	0	1	
## 426 29	Eduardo Rodriguez	3	3	7	7	0	0	0	0	0	0	0	0	0	2	
## 427 30	Rick Porcello	2	2	4	4	0	0	0	0	0	0	0	0	0	3	
## 428 31	Brian Johnson	1	1	2	2	0	0	0	0	0	0	0	0	0	0	
## 429 32	Hector Velazquez	1	0	1	1	0	0	0	0	0	0	0	0	0	0	
## 430 33	Carson Smith	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
## 431 34	Addison Reed	2	0	0	0	0	0	0	0	0	0	0	0	0	0	
## 432 35	Brandon Workman	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
## 433 36	Robbie Ross	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
## 434 37	Craig Kimbrel	5	0	0	0	0	0	0	0	0	0	0	0	0	0	
## 435 38	Matt Barnes	4	0	0	0	0	0	0	0	0	0	0	0	0	0	
## 436 39	Ben Taylor	2	0	0	0	0	0	0	0	0	0	0	0	0	0	
## 437 40	Robby Scott	6	0	0	0	0	0	0	0	0	0	0	0	0	0	
## 438 41	Joe Kelly	5	0	0	0	0	0	0	0	0	0	0	0	0	0	
## 439 42	Heath Hembree	4	0	0	0	0	0	0	0	0	0	0	0	0	0	
## 440 43	Fernando Abad	4	0	0	0	0	0	0	0	0	0	0	0	0	0	
## 441 1	Christian Vazquez	48	43	167	155	28	54	9	2	4	20	4	1	12	27	
## 442 2	Rafael Devers	33	32	134	125	23	39	11	0	6	17	2	0	9	31	
## 443 3	Eduardo Nunez	22	22	97	94	11	32	5	0	4	16	6	1	2	12	
## 444 4	Dustin Pedroia	55	54	238	205	29	68	9	0	4	36	1	0	27	19	
## 445 5	Mitch Moreland	77	65	289	251	41	67	20	0	10	41	0	1	31	60	
## 446 6	Mookie Betts	76	76	349	305	40	85	22	1	8	45	13	1	39	37	
## 447 7	Rajai Davis	8	5	22	21	4	7	2	0	0	2	1	1	0	4	
## 448 8	Chris Young	47	34	141	122	17	30	7	2	4	14	1	2	17	32	
## 449 9	Xander Bogaerts	77	75	327	300	51	88	20	2	4	28	7	1	24	59	
## 450 10	Hanley Ramirez	68	66	291	256	23	61	12	0	10	32	1	2	31	53	
## 451 11	Andrew Benintendi	75	71	319	283	41	73	14	0	7	39	7	0	28	56	
## 452 12	Sandy Leon	42	39	150	134	16	33	10	0	3	22	0	0	13	36	
## 453 13	Jackie Bradley Jr.	68	67	273	242	26	53	8	2	6	26	5	1	25	70	
## 454 14	Marco Hernandez	12	10	32	32	5	8	3	0	0	1	0	0	0	11	
## 455 15	Sam Travis	16	10	42	37	4	8	2	0	0	0	0	0	4	13	
## 456 16	Brock Holt	36	16	79	69	8	15	3	0	0	2	2	1	7	16	
## 457 17	Josh Rutledge	12	8	39	36	4	9	0	0	0	6	1	0	3	7	
## 458 18	Pablo Sandoval	10	8	37	33	5	5	0	0	2	6	0	0	3	9	
## 459 19	Deven Marrero	30	23	75	70	10	13	4	0	1	8	3	0	5	30	
## 460 20	Blake Swihart	2	0	2	1	0	0	0	0	0	0	0	0	1	1	
## 461 21	Tzu-Wei Lin	12	5	24	23	1	4	0	1	0	0	0	1	1	6	
## 462 22	Steve Selsky	1	0	1	1	0	0	0	0	0	0	0	0	0	1	
## 463 23	Craig Kimbrel	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
##	BA	OBP	SLG	OPS	TB	GDP	HBP	SH	SF	IBB	ROE	BA	bip	tOPS.	sOPS.	split
## 1	0.364	0.417	0.818	1.235	9	0	0	0	0	0	0	0.333	100	228	AWAY	
## 2	0.381	0.449	0.633	1.081	186	6	3	1	1	2	1	0.391	125	194	AWAY	
## 3	0.326	0.416	0.516	0.932	114	7	5	1	0	4	3	0.366	108	155	AWAY	

## 4	0.301	0.379	0.525	0.905	124	6	1	0	2	1	8	0.354	92	146	AWAY
## 5	0.292	0.367	0.534	0.902	148	4	5	0	2	1	3	0.313	102	144	AWAY
## 6	0.214	0.368	0.500	0.868	7	1	0	0	1	0	0	0.182	123	136	AWAY
## 7	0.290	0.360	0.503	0.863	146	7	6	0	4	2	3	0.320	108	134	AWAY
## 8	0.266	0.344	0.505	0.850	95	3	3	0	3	1	1	0.267	122	130	AWAY
## 9	0.312	0.340	0.500	0.840	138	7	2	0	4	0	2	0.325	105	127	AWAY
## 10	0.206	0.270	0.559	0.829	19	1	0	1	0	0	0	0.182	138	120	AWAY
## 11	0.286	0.375	0.429	0.804	3	0	0	0	0	0	0	0.500	100	121	AWAY
## 12	0.304	0.357	0.438	0.795	49	5	1	0	3	1	0	0.330	118	118	AWAY
## 13	0.288	0.346	0.444	0.790	111	4	0	0	5	1	4	0.310	87	116	AWAY
## 14	0.253	0.291	0.468	0.758	72	4	4	0	2	0	1	0.250	96	104	AWAY
## 15	0.161	0.278	0.419	0.697	13	3	1	0	0	0	0	0.176	86	88	AWAY
## 16	0.206	0.324	0.333	0.658	21	0	2	0	0	0	1	0.297	99	82	AWAY
## 17	0.187	0.273	0.374	0.647	46	5	3	0	1	1	1	0.270	61	76	AWAY
## 18	0.226	0.280	0.363	0.643	85	4	1	0	2	1	3	0.267	94	76	AWAY
## 19	0.226	0.294	0.323	0.617	10	0	0	0	0	0	0	0.333	51	70	AWAY
## 20	0.217	0.280	0.217	0.497	5	0	1	0	0	0	0	0.278	99	40	AWAY
## 21	0.200	0.200	0.200	0.400	4	0	0	0	0	0	0	0.333	28	11	AWAY
## 22	0.000	0.000	0.000	0.000	0	0	0	0	0	0	1	0.000	NA	-100	AWAY
## 23	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	AWAY
## 24	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
## 25	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	AWAY
## 26	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
## 27	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
## 28	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	AWAY
## 29	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
## 30	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	AWAY
## 31	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	AWAY
## 32	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 33	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 34	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 35	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 36	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 37	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 38	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 39	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 40	0.333	0.364	0.733	1.097	22	0	1	0	1	0	1	0.318	151	177	HOME
## 41	0.308	0.373	0.636	1.008	68	0	3	2	0	0	0	0.371	145	158	HOME
## 42	0.333	0.406	0.581	0.986	108	6	1	0	2	4	1	0.349	110	155	HOME
## 43	0.344	0.381	0.529	0.910	120	5	0	1	7	0	2	0.371	114	136	HOME
## 44	0.282	0.339	0.543	0.881	127	1	1	2	2	0	0	0.319	92	126	HOME
## 45	0.273	0.366	0.509	0.875	138	7	6	0	2	0	5	0.282	97	127	HOME
## 46	0.311	0.371	0.463	0.834	137	13	6	0	3	1	3	0.349	75	118	HOME
## 47	0.290	0.281	0.548	0.830	17	0	0	0	1	0	1	0.318	114	110	HOME
## 48	0.285	0.322	0.470	0.793	119	5	5	0	2	1	5	0.290	94	104	HOME
## 49	0.278	0.343	0.444	0.787	118	8	1	1	3	0	1	0.301	91	105	HOME
## 50	0.274	0.331	0.445	0.776	65	6	0	0	1	0	0	0.308	104	101	HOME
## 51	0.250	0.333	0.438	0.771	14	2	0	1	0	1	0	0.231	143	100	HOME
## 52	0.236	0.286	0.403	0.690	94	5	2	0	4	2	3	0.260	106	78	HOME
## 53	0.217	0.293	0.373	0.667	31	1	1	0	0	1	1	0.300	100	73	HOME
## 54	0.211	0.299	0.354	0.653	57	6	4	0	2	2	3	0.205	74	71	HOME
## 55	0.100	0.250	0.400	0.650	4	1	0	0	0	0	0	0.000	65	67	HOME
## 56	0.233	0.278	0.289	0.567	26	6	1	1	1	0	2	0.269	57	50	HOME
## 57	0.214	0.214	0.286	0.500	4	0	0	0	0	0	0	0.214	101	30	HOME

## 58	0.160	0.160	0.280	0.440	7	0	0	0	0	0	2	0.176	27	12	HOME
## 59	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	HOME
## 60	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
## 61	1.000	1.000	1.000	2.000	1	0	0	0	0	0	0	1.000	100	455	AWAY
## 62	0.300	0.393	0.607	1.000	150	7	5	0	0	9	2	0.324	101	170	AWAY
## 63	0.327	0.377	0.571	0.949	28	1	0	0	0	0	0	0.448	133	156	AWAY
## 64	0.275	0.344	0.558	0.902	77	2	6	0	1	2	0	0.245	102	143	AWAY
## 65	0.288	0.322	0.538	0.860	71	3	0	0	3	3	0	0.326	104	131	AWAY
## 66	0.314	0.355	0.490	0.845	50	1	0	1	1	0	0	0.318	108	130	AWAY
## 67	0.287	0.397	0.443	0.840	74	4	12	0	1	1	2	0.350	105	132	AWAY
## 68	0.286	0.318	0.502	0.820	123	15	0	0	1	3	1	0.319	108	121	AWAY
## 69	0.304	0.403	0.416	0.819	122	7	4	0	2	6	3	0.348	122	127	AWAY
## 70	0.275	0.315	0.461	0.776	47	3	0	0	0	1	0	0.325	97	110	AWAY
## 71	0.174	0.321	0.435	0.756	10	1	0	1	0	1	0	0.182	164	106	AWAY
## 72	0.280	0.337	0.394	0.731	128	3	0	1	2	2	0	0.325	93	101	AWAY
## 73	0.260	0.305	0.368	0.673	82	11	7	1	1	0	2	0.291	84	85	AWAY
## 74	0.245	0.298	0.358	0.657	38	5	2	0	0	0	5	0.261	112	80	AWAY
## 75	0.227	0.294	0.331	0.625	89	4	0	0	1	5	4	0.292	96	72	AWAY
## 76	0.194	0.273	0.343	0.616	23	2	0	0	2	0	1	0.229	108	69	AWAY
## 77	0.198	0.289	0.297	0.587	30	2	1	1	0	1	1	0.260	85	62	AWAY
## 78	0.286	0.286	0.286	0.571	2	0	0	1	0	0	0	0.500	186	59	AWAY
## 79	0.179	0.233	0.321	0.555	27	2	1	1	0	0	2	0.215	86	51	AWAY
## 80	0.133	0.188	0.333	0.521	5	0	0	2	0	0	1	0.100	129	39	AWAY
## 81	0.250	0.250	0.250	0.500	1	0	0	0	0	0	0	0.500	94	39	AWAY
## 82	0.143	0.143	0.286	0.429	2	1	0	0	0	0	0	0.200	42	14	AWAY
## 83	0.179	0.226	0.179	0.404	5	0	1	6	1	0	0	0.263	163	14	AWAY
## 84	0.192	0.192	0.192	0.385	5	0	0	5	0	0	0	0.227	160	7	AWAY
## 85	0.125	0.176	0.125	0.301	2	0	0	4	0	0	1	0.167	77	-15	AWAY
## 86	0.100	0.100	0.100	0.200	1	0	0	2	0	0	0	0.143	199	-45	AWAY
## 87	0.087	0.087	0.087	0.174	2	0	0	4	0	0	1	0.222	263	-52	AWAY
## 88	0.000	0.125	0.000	0.125	0	0	0	0	0	0	1	0.000	NA	-61	AWAY
## 89	0.000	0.091	0.000	0.091	0	0	0	3	0	0	0	0.000	-12	-71	AWAY
## 90	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
## 91	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
## 92	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	AWAY
## 93	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	-100	-100	AWAY
## 94	0.000	0.000	0.000	0.000	0	1	0	0	0	0	0	0.000	NA	-100	AWAY
## 95	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
## 96	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 97	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 98	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 99	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 100	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 101	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 102	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 103	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 104	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 105	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 106	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 107	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 108	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 109	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 110	0.500	0.667	0.500	1.167	2	0	0	0	0	0	0	0.667	357	215	HOME
## 111	0.316	0.415	0.560	0.974	108	2	2	0	2	5	2	0.350	99	153	HOME

##	112	0.290	0.357	0.514	0.872	71	3	7	1	1	0	0	0.291	98	125	HOME
##	113	0.258	0.310	0.547	0.857	87	2	1	0	0	2	0	0.266	102	118	HOME
##	114	0.320	0.351	0.474	0.825	117	8	1	0	0	1	2	0.332	124	114	HOME
##	115	0.273	0.357	0.447	0.803	67	2	8	0	1	0	4	0.333	95	110	HOME
##	116	0.317	0.342	0.446	0.789	62	2	0	2	1	1	2	0.393	102	105	HOME
##	117	0.326	0.362	0.424	0.786	143	5	0	2	2	1	3	0.351	107	106	HOME
##	118	0.261	0.353	0.426	0.779	49	2	3	0	1	0	0	0.315	93	104	HOME
##	119	0.264	0.317	0.415	0.732	80	10	0	0	0	2	3	0.317	89	90	HOME
##	120	0.300	0.300	0.400	0.700	4	0	0	0	0	0	0	0.375	141	82	HOME
##	121	0.233	0.309	0.383	0.692	23	2	1	1	1	0	1	0.308	73	81	HOME
##	122	0.235	0.350	0.341	0.691	29	2	0	0	0	2	0	0.305	118	83	HOME
##	123	0.237	0.262	0.407	0.669	24	0	0	0	0	1	1	0.286	122	72	HOME
##	124	0.247	0.302	0.353	0.655	106	9	2	0	1	2	3	0.299	77	72	HOME
##	125	0.237	0.333	0.315	0.648	69	3	0	0	3	5	2	0.292	104	72	HOME
##	126	0.193	0.292	0.277	0.569	23	2	1	0	1	1	0	0.233	93	51	HOME
##	127	0.224	0.232	0.328	0.560	22	4	0	0	1	0	0	0.224	80	45	HOME
##	128	0.143	0.333	0.214	0.548	3	0	1	0	0	0	0	0.400	93	49	HOME
##	129	0.188	0.188	0.250	0.438	4	0	0	1	0	0	0	0.231	98	14	HOME
##	130	0.136	0.130	0.273	0.403	6	1	0	0	1	0	0	0.167	116	2	HOME
##	131	0.167	0.167	0.167	0.333	1	1	0	0	0	0	0	0.167	134	-12	HOME
##	132	0.114	0.114	0.114	0.229	4	0	0	2	0	0	1	0.148	54	-40	HOME
##	133	0.103	0.103	0.103	0.207	3	0	0	6	0	0	3	0.136	35	-46	HOME
##	134	0.059	0.111	0.059	0.170	1	1	0	3	0	0	0	0.143	167	-53	HOME
##	135	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	-100	-100	HOME
##	136	0.000	0.000	0.000	0.000	0	0	0	1	0	0	0	NA	-100	-100	HOME
##	137	0.000	0.000	0.000	0.000	0	1	0	1	0	0	0	0.000	NA	-100	HOME
##	138	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	HOME
##	139	0.000	0.000	0.000	0.000	0	0	0	1	0	0	0	0.000	NA	-100	HOME
##	140	0.000	0.000	0.000	0.000	0	0	0	3	0	0	0	0.000	-100	-100	HOME
##	141	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	HOME
##	142	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	HOME
##	143	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	144	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	145	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	146	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	147	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	148	NA	NA	NA	NA	0	0	0	1	0	0	0	NA	NA	NA	HOME
##	149	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	150	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	151	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	152	NA	NA	NA	NA	0	0	0	1	0	0	0	NA	NA	NA	HOME
##	153	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	154	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	155	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	156	0.324	0.417	0.592	1.008	42	2	1	0	1	0	0	0.310	133	174	AWAY
##	157	0.331	0.437	0.556	0.993	148	2	7	0	4	4	3	0.389	110	171	AWAY
##	158	0.333	0.429	0.500	0.929	6	0	0	0	0	0	0	0.444	409	155	AWAY
##	159	0.270	0.367	0.524	0.891	99	6	3	1	0	0	6	0.310	108	142	AWAY
##	160	0.274	0.332	0.503	0.834	90	5	2	2	1	1	2	0.342	99	126	AWAY
##	161	0.280	0.333	0.470	0.803	94	2	3	0	0	2	1	0.340	122	118	AWAY
##	162	0.250	0.400	0.400	0.800	16	1	0	1	0	0	0	0.429	93	122	AWAY
##	163	0.228	0.349	0.445	0.794	129	12	10	0	2	4	1	0.213	77	117	AWAY
##	164	0.274	0.319	0.456	0.775	108	4	1	2	1	7	2	0.372	96	110	AWAY
##	165	0.262	0.335	0.410	0.744	86	4	1	2	0	1	3	0.282	108	104	AWAY

##	166	0.287	0.336	0.338	0.674	73	4	4	1	0	0	2	0.359	80	87	AWAY
##	167	0.167	0.272	0.378	0.650	79	4	3	0	0	1	0	0.185	67	77	AWAY
##	168	0.246	0.292	0.353	0.645	59	6	0	3	0	1	2	0.285	66	77	AWAY
##	169	0.190	0.289	0.349	0.638	68	8	1	0	2	1	4	0.189	84	75	AWAY
##	170	0.182	0.182	0.455	0.636	5	0	0	2	0	0	0	0.167	135	67	AWAY
##	171	0.200	0.200	0.400	0.600	2	0	0	0	0	0	0	0.500	117	59	AWAY
##	172	0.222	0.300	0.296	0.596	16	2	0	0	0	1	0	0.297	82	66	AWAY
##	173	0.200	0.333	0.200	0.533	1	0	0	0	0	0	0	0.500	173	53	AWAY
##	174	0.200	0.243	0.286	0.529	10	3	1	0	0	0	0	0.214	53	45	AWAY
##	175	0.154	0.241	0.269	0.511	7	0	0	2	0	0	0	0.308	123	41	AWAY
##	176	0.158	0.179	0.289	0.469	11	0	0	1	0	0	0	0.294	159	26	AWAY
##	177	0.103	0.188	0.241	0.429	7	0	2	0	0	0	1	0.125	9	17	AWAY
##	178	0.118	0.250	0.176	0.426	3	0	0	1	0	0	0	0.286	23	21	AWAY
##	179	0.179	0.233	0.179	0.412	5	0	0	3	0	0	0	0.313	149	16	AWAY
##	180	0.143	0.250	0.143	0.393	1	0	0	0	0	0	0	0.200	12	13	AWAY
##	181	0.167	0.167	0.208	0.375	5	0	0	0	0	0	0	0.308	240	3	AWAY
##	182	0.125	0.222	0.125	0.347	1	0	0	1	0	0	0	0.333	264	0	AWAY
##	183	0.000	0.300	0.000	0.300	0	0	0	0	0	0	0	0.000	29	-6	AWAY
##	184	0.000	0.222	0.000	0.222	0	0	0	0	0	0	1	0.000	NA	-30	AWAY
##	185	0.091	0.091	0.091	0.182	1	0	0	1	0	0	0	0.333	96	-50	AWAY
##	186	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	AWAY
##	187	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	AWAY
##	188	0.000	0.000	0.000	0.000	0	1	0	0	0	0	0	0.000	NA	-100	AWAY
##	189	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	190	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	191	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	192	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	193	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	194	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	195	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	196	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	197	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	198	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	199	0.481	0.517	0.852	1.369	23	1	0	0	0	0	0	0.579	267	250	HOME
##	200	0.500	0.500	0.750	1.250	3	1	0	0	0	0	0	0.500	216	222	HOME
##	201	0.364	0.442	0.614	1.056	27	1	2	0	1	0	1	0.382	220	173	HOME
##	202	0.319	0.436	0.571	1.007	161	9	14	0	2	7	0	0.335	124	162	HOME
##	203	0.500	0.500	0.500	1.000	1	0	0	0	0	0	0	0.500	100	165	HOME
##	204	0.364	0.394	0.561	0.955	74	2	0	0	2	0	2	0.400	143	147	HOME
##	205	0.254	0.356	0.554	0.910	118	2	2	0	0	0	2	0.305	132	134	HOME
##	206	0.333	0.448	0.458	0.907	11	0	2	0	0	1	1	0.471	163	140	HOME
##	207	0.261	0.383	0.519	0.902	147	6	8	0	2	1	2	0.280	90	134	HOME
##	208	0.232	0.326	0.524	0.850	97	7	2	0	3	4	2	0.286	101	118	HOME
##	209	0.307	0.419	0.423	0.843	69	7	8	2	2	3	2	0.380	125	123	HOME
##	210	0.333	0.333	0.500	0.833	3	0	0	0	0	0	0	0.500	222	115	HOME
##	211	0.272	0.315	0.504	0.819	117	6	0	4	1	8	5	0.321	104	110	HOME
##	212	0.282	0.344	0.473	0.818	89	7	0	0	2	2	4	0.328	91	112	HOME
##	213	0.267	0.342	0.396	0.738	95	5	1	2	1	1	4	0.301	113	93	HOME
##	214	0.231	0.344	0.365	0.710	19	3	0	0	0	0	0	0.357	71	87	HOME
##	215	0.257	0.318	0.369	0.688	82	4	2	0	2	0	2	0.285	92	80	HOME
##	216	0.241	0.354	0.315	0.669	17	1	1	0	1	1	1	0.283	58	79	HOME
##	217	0.333	0.333	0.333	0.667	1	0	0	0	0	0	0	0.333	100	76	HOME
##	218	0.250	0.286	0.333	0.619	4	0	0	1	1	0	0	0.273	76	62	HOME
##	219	0.184	0.266	0.349	0.615	53	3	1	0	0	3	2	0.219	71	60	HOME

##	220	0.250	0.250	0.250	0.500	2	0	0	0	0	0	0	0.286	89	32	HOME
##	221	0.188	0.188	0.250	0.438	4	0	0	1	0	0	1	0.300	77	14	HOME
##	222	0.143	0.167	0.250	0.417	7	0	0	4	1	0	0	0.200	79	7	HOME
##	223	0.091	0.167	0.091	0.258	1	0	0	5	0	0	0	0.250	164	-29	HOME
##	224	0.000	0.250	0.000	0.250	0	0	0	0	0	0	0	0.000	NA	-25	HOME
##	225	0.080	0.115	0.120	0.235	3	0	0	2	0	0	0	0.143	44	-38	HOME
##	226	0.087	0.087	0.087	0.174	2	0	0	1	0	0	1	0.182	1	-54	HOME
##	227	0.038	0.038	0.038	0.077	1	0	0	1	0	0	0	0.111	-30	-80	HOME
##	228	0.000	0.000	0.000	0.000	0	0	0	2	0	0	1	0.000	-100	-100	HOME
##	229	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	HOME
##	230	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	HOME
##	231	0.000	0.000	0.000	0.000	0	1	0	0	0	0	0	0.000	-100	-100	HOME
##	232	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	HOME
##	233	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	HOME
##	234	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	-100	-100	HOME
##	235	0.000	0.000	0.000	0.000	0	1	0	0	0	0	0	0.000	NA	-100	HOME
##	236	0.000	0.000	0.000	0.000	0	1	0	0	0	0	0	0.000	NA	-100	HOME
##	237	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	238	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	239	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	240	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	241	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	242	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	243	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	244	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	245	0.571	0.571	0.714	1.286	5	0	0	0	0	0	0	0.667	271	252	AWAY
##	246	0.348	0.444	0.696	1.140	16	0	0	0	0	0	1	0.429	121	207	AWAY
##	247	0.500	0.500	0.500	1.000	1	0	0	0	0	0	0	0.500	300	178	AWAY
##	248	0.255	0.361	0.546	0.908	77	3	1	0	1	0	1	0.299	109	145	AWAY
##	249	0.250	0.400	0.500	0.900	2	0	1	0	0	0	0	1.000	60	146	AWAY
##	250	0.238	0.288	0.607	0.894	74	9	0	0	1	2	0	0.232	65	137	AWAY
##	251	0.275	0.363	0.489	0.852	139	5	4	0	3	5	3	0.313	77	132	AWAY
##	252	0.250	0.368	0.481	0.850	129	7	5	0	3	7	0	0.301	102	132	AWAY
##	253	0.278	0.329	0.443	0.772	35	4	0	0	0	1	1	0.339	116	110	AWAY
##	254	0.290	0.347	0.417	0.764	108	4	4	0	2	0	4	0.327	93	110	AWAY
##	255	0.249	0.330	0.420	0.750	86	2	3	0	0	0	6	0.274	89	105	AWAY
##	256	0.243	0.339	0.402	0.741	43	1	0	0	1	1	1	0.239	100	104	AWAY
##	257	0.234	0.250	0.447	0.697	21	2	0	1	0	1	0	0.333	123	86	AWAY
##	258	0.246	0.326	0.347	0.673	41	1	0	1	0	0	0	0.317	94	86	AWAY
##	259	0.236	0.266	0.373	0.640	87	8	1	0	1	1	3	0.285	67	74	AWAY
##	260	0.190	0.287	0.331	0.619	54	4	4	0	2	0	1	0.230	70	70	AWAY
##	261	0.230	0.269	0.324	0.594	24	0	0	1	0	0	0	0.268	93	63	AWAY
##	262	0.219	0.247	0.343	0.590	61	2	1	1	1	0	2	0.265	60	60	AWAY
##	263	0.267	0.267	0.300	0.567	9	1	0	1	0	0	1	0.444	106	56	AWAY
##	264	0.183	0.256	0.293	0.548	24	1	0	0	0	0	2	0.277	50	51	AWAY
##	265	0.150	0.292	0.200	0.492	4	1	1	0	0	0	0	0.200	97	40	AWAY
##	266	0.214	0.241	0.250	0.491	7	0	0	5	0	0	0	0.400	73	36	AWAY
##	267	0.133	0.252	0.239	0.491	27	1	0	0	0	0	1	0.174	62	37	AWAY
##	268	0.179	0.235	0.221	0.456	21	3	2	0	0	0	0	0.266	53	27	AWAY
##	269	0.185	0.185	0.259	0.444	7	0	0	1	0	0	0	0.250	70	21	AWAY
##	270	0.200	0.200	0.200	0.400	1	0	0	0	0	0	0	0.500	100	11	AWAY
##	271	0.000	0.333	0.000	0.333	0	0	0	0	0	0	0	0.000	NA	5	AWAY
##	272	0.042	0.179	0.042	0.220	1	0	0	3	0	0	1	0.125	11	-34	AWAY
##	273	0.048	0.048	0.048	0.095	1	0	0	5	0	0	0	0.100	53	-73	AWAY

##	274	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
##	275	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
##	276	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
##	277	0.000	0.000	0.000	0.000	0	0	0	1	0	0	0	0.000	NA	-100	AWAY
##	278	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	279	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	280	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	281	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	282	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	283	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	284	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	285	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	286	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	287	NA	NA	NA	NA	0	0	0	1	0	0	0	NA	NA	NA	AWAY
##	288	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	289	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	290	0.250	0.400	1.000	1.400	8	0	1	0	0	0	0	0.000	120	249	HOME
##	291	0.373	0.448	0.891	1.339	98	4	0	0	0	1	1	0.410	148	238	HOME
##	292	0.321	0.443	0.639	1.082	175	9	4	0	1	10	2	0.376	123	179	HOME
##	293	0.298	0.333	0.631	0.964	53	1	0	0	1	0	1	0.306	149	144	HOME
##	294	0.345	0.441	0.483	0.924	14	0	0	0	0	2	0	0.625	83	143	HOME
##	295	0.302	0.369	0.528	0.897	112	1	4	0	1	0	1	0.358	135	132	HOME
##	296	0.315	0.348	0.538	0.887	99	1	0	1	3	0	4	0.370	138	128	HOME
##	297	0.282	0.331	0.518	0.849	114	6	3	0	0	1	1	0.308	110	118	HOME
##	298	0.246	0.346	0.493	0.839	132	8	2	0	2	6	4	0.273	98	117	HOME
##	299	0.297	0.356	0.470	0.826	125	3	2	0	1	1	2	0.340	107	115	HOME
##	300	0.271	0.371	0.453	0.824	82	2	0	0	0	0	0	0.336	126	115	HOME
##	301	0.252	0.347	0.473	0.820	62	0	5	0	0	0	1	0.317	91	113	HOME
##	302	0.253	0.320	0.429	0.749	39	3	0	1	0	1	0	0.356	148	94	HOME
##	303	0.230	0.296	0.451	0.747	51	0	0	0	1	0	0	0.235	139	92	HOME
##	304	0.276	0.351	0.388	0.739	45	2	1	0	1	2	1	0.341	100	94	HOME
##	305	0.245	0.350	0.368	0.718	39	1	0	0	0	0	1	0.325	107	89	HOME
##	306	0.227	0.269	0.398	0.667	35	2	1	0	0	2	0	0.258	85	72	HOME
##	307	0.280	0.333	0.320	0.653	8	0	0	0	0	0	1	0.467	130	73	HOME
##	308	0.242	0.288	0.355	0.643	22	0	0	0	0	0	1	0.333	109	68	HOME
##	309	0.229	0.289	0.286	0.575	10	0	1	4	0	0	0	0.333	122	52	HOME
##	310	0.182	0.217	0.318	0.536	7	0	0	0	0	0	0	0.214	92	38	HOME
##	311	0.200	0.333	0.200	0.533	1	0	0	1	0	0	1	0.333	111	46	HOME
##	312	0.188	0.235	0.250	0.485	8	0	0	5	0	0	0	0.300	167	28	HOME
##	313	0.162	0.200	0.270	0.470	10	2	2	0	1	0	0	0.238	53	22	HOME
##	314	0.143	0.143	0.286	0.429	2	1	0	0	0	0	0	0.167	100	8	HOME
##	315	0.000	0.333	0.000	0.333	0	0	1	0	0	0	0	0.000	NA	0	HOME
##	316	0.048	0.130	0.048	0.178	1	0	0	4	0	0	0	0.167	143	-50	HOME
##	317	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	HOME
##	318	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	HOME
##	319	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	-100	-100	HOME
##	320	0.000	0.000	0.000	0.000	0	1	0	0	0	0	0	0.000	-100	-100	HOME
##	321	0.000	0.000	0.000	0.000	0	0	0	1	0	0	0	NA	NA	-100	HOME
##	322	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	HOME
##	323	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	324	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	325	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	326	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	327	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME

## 328	NA	NA	NA	NA	0	0	0	1	0	0	0	NA	NA	NA	HOME
## 329	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
## 330	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
## 331	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
## 332	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
## 333	0.500	0.500	2.000	2.500	8	0	0	0	0	0	0	0.000	182	539	AWAY
## 334	0.308	0.471	0.692	1.163	9	0	1	0	0	0	0	0.429	93	215	AWAY
## 335	0.304	0.343	0.514	0.858	142	7	2	0	3	0	1	0.372	107	132	AWAY
## 336	0.277	0.318	0.535	0.852	54	1	0	0	0	0	1	0.324	115	129	AWAY
## 337	0.283	0.328	0.463	0.792	146	6	8	0	3	0	4	0.335	89	115	AWAY
## 338	0.217	0.318	0.429	0.746	87	4	2	0	2	1	1	0.311	104	103	AWAY
## 339	0.286	0.314	0.429	0.743	120	11	2	1	3	1	9	0.327	90	102	AWAY
## 340	0.264	0.298	0.415	0.713	22	1	0	2	1	0	0	0.310	97	94	AWAY
## 341	0.244	0.277	0.430	0.706	58	4	1	1	0	0	0	0.295	101	91	AWAY
## 342	0.259	0.288	0.406	0.694	69	6	0	0	0	0	3	0.308	72	88	AWAY
## 343	0.237	0.326	0.367	0.693	62	5	1	0	1	1	0	0.290	81	91	AWAY
## 344	0.265	0.297	0.379	0.676	50	2	0	0	0	0	0	0.308	134	85	AWAY
## 345	0.229	0.268	0.398	0.666	125	11	0	0	4	2	4	0.251	71	80	AWAY
## 346	0.230	0.282	0.376	0.659	108	6	1	0	0	0	4	0.281	92	79	AWAY
## 347	0.278	0.263	0.389	0.652	7	0	0	0	1	0	0	0.333	108	76	AWAY
## 348	0.250	0.348	0.300	0.648	6	0	1	0	0	0	1	0.385	142	82	AWAY
## 349	0.278	0.278	0.333	0.611	6	0	0	0	0	0	0	0.357	55	68	AWAY
## 350	0.239	0.276	0.319	0.595	44	4	3	1	0	0	3	0.327	93	64	AWAY
## 351	0.212	0.268	0.269	0.537	14	2	0	1	0	0	1	0.250	87	49	AWAY
## 352	0.194	0.242	0.290	0.533	9	0	0	0	0	0	0	0.238	93	46	AWAY
## 353	0.250	0.250	0.250	0.500	1	0	0	0	0	0	0	0.333	100	39	AWAY
## 354	0.177	0.257	0.210	0.467	13	1	0	0	1	0	0	0.239	56	31	AWAY
## 355	0.200	0.200	0.200	0.400	1	0	0	0	0	0	0	0.500	100	11	AWAY
## 356	0.167	0.167	0.167	0.333	1	0	0	0	0	0	0	0.250	234	-7	AWAY
## 357	0.095	0.136	0.095	0.232	2	1	0	1	0	0	1	0.105	146	-34	AWAY
## 358	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
## 359	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
## 360	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
## 361	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	AWAY
## 362	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
## 363	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
## 364	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
## 365	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 366	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 367	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 368	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 369	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 370	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 371	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 372	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 373	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 374	0.400	0.400	1.000	1.400	5	0	0	0	0	0	0	0.500	116	249	HOME
## 375	0.357	0.438	0.571	1.009	8	0	0	0	0	0	1	0.571	154	162	HOME
## 376	0.500	0.500	0.500	1.000	3	0	0	0	0	0	0	1.000	46	165	HOME
## 377	0.304	0.356	0.573	0.929	98	4	0	0	2	0	1	0.368	127	138	HOME
## 378	0.288	0.350	0.544	0.895	172	6	1	0	5	1	3	0.278	128	130	HOME
## 379	0.303	0.347	0.544	0.891	167	14	3	0	4	0	2	0.325	111	129	HOME
## 380	0.330	0.374	0.513	0.887	59	1	2	0	0	0	1	0.420	127	130	HOME
## 381	0.280	0.356	0.503	0.859	81	2	5	0	0	2	2	0.313	121	122	HOME

##	382	0.284	0.328	0.498	0.827	158	7	5	0	0	0	2	0.299	109	113	HOME
##	383	0.281	0.332	0.461	0.793	123	5	4	0	1	1	3	0.332	93	105	HOME
##	384	0.250	0.368	0.354	0.723	17	0	1	1	0	0	0	0.324	102	92	HOME
##	385	0.213	0.302	0.419	0.721	106	3	1	0	2	3	0	0.293	97	87	HOME
##	386	0.286	0.352	0.365	0.717	23	1	2	0	1	0	0	0.321	140	89	HOME
##	387	0.239	0.295	0.419	0.714	114	7	0	0	1	0	5	0.276	108	85	HOME
##	388	0.269	0.298	0.395	0.693	47	3	0	0	0	0	2	0.367	100	80	HOME
##	389	0.244	0.277	0.374	0.651	46	2	1	1	1	0	1	0.278	109	69	HOME
##	390	0.246	0.313	0.295	0.609	18	4	2	0	0	0	0	0.278	111	62	HOME
##	391	0.250	0.250	0.333	0.583	4	0	0	0	0	0	0	0.375	88	51	HOME
##	392	0.241	0.233	0.345	0.578	10	2	0	0	1	0	1	0.304	107	49	HOME
##	393	0.164	0.209	0.262	0.472	32	5	1	1	0	0	1	0.189	63	23	HOME
##	394	0.167	0.250	0.167	0.417	3	0	0	0	0	0	0	0.200	53	13	HOME
##	395	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	-100	-100	HOME
##	396	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	HOME
##	397	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	-100	-100	HOME
##	398	1.000	1.000	1.000	2.000	1	0	0	0	0	0	0	1.000	100	455	AWAY
##	399	1.000	1.000	1.000	2.000	1	0	0	0	0	0	0	1.000	676	455	AWAY
##	400	0.333	0.333	0.667	1.000	2	0	0	0	0	0	0	0.500	100	165	AWAY
##	401	0.296	0.342	0.563	0.905	40	1	1	0	0	0	3	0.315	123	143	AWAY
##	402	0.333	0.463	0.394	0.857	13	0	0	1	0	0	1	0.500	142	141	AWAY
##	403	0.283	0.373	0.466	0.838	135	6	2	1	4	2	2	0.307	116	130	AWAY
##	404	0.251	0.331	0.480	0.810	155	2	1	0	1	2	3	0.244	101	120	AWAY
##	405	0.271	0.343	0.463	0.806	111	2	4	0	1	3	3	0.307	121	119	AWAY
##	406	0.246	0.309	0.458	0.767	110	9	2	0	0	3	1	0.280	103	108	AWAY
##	407	0.308	0.341	0.410	0.752	16	1	0	0	0	0	0	0.414	125	106	AWAY
##	408	0.251	0.334	0.391	0.726	106	5	3	0	2	5	3	0.295	94	99	AWAY
##	409	0.226	0.300	0.420	0.720	108	6	2	0	2	2	3	0.246	87	96	AWAY
##	410	0.247	0.311	0.402	0.713	39	2	0	0	0	1	2	0.299	75	95	AWAY
##	411	0.254	0.330	0.348	0.679	70	8	1	1	0	3	3	0.284	78	88	AWAY
##	412	0.308	0.357	0.308	0.665	8	0	1	0	0	0	0	0.364	113	87	AWAY
##	413	0.242	0.296	0.364	0.659	24	2	0	0	0	0	1	0.286	111	81	AWAY
##	414	0.250	0.400	0.250	0.650	1	0	0	0	0	0	0	0.500	118	86	AWAY
##	415	0.228	0.273	0.366	0.639	37	6	0	3	2	0	4	0.290	115	74	AWAY
##	416	0.223	0.296	0.339	0.635	41	0	0	0	1	0	1	0.250	80	75	AWAY
##	417	0.204	0.272	0.321	0.593	44	4	1	0	1	1	1	0.250	85	63	AWAY
##	418	0.237	0.270	0.308	0.577	52	8	3	0	1	0	1	0.295	58	59	AWAY
##	419	0.211	0.291	0.268	0.559	19	0	2	0	0	0	1	0.319	100	56	AWAY
##	420	0.183	0.306	0.225	0.531	16	2	1	0	1	0	2	0.241	93	50	AWAY
##	421	0.125	0.125	0.250	0.375	2	0	0	0	0	0	0	0.250	125	-1	AWAY
##	422	0.133	0.188	0.133	0.321	2	1	0	0	0	0	0	0.333	2	-9	AWAY
##	423	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	AWAY
##	424	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
##	425	0.000	0.000	0.000	0.000	0	0	0	1	0	0	0	NA	NA	-100	AWAY
##	426	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
##	427	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
##	428	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
##	429	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
##	430	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	431	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	432	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	433	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	434	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	435	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY

## 436	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 437	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 438	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 439	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 440	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
## 441	0.348	0.395	0.510	0.905	79	6	0	0	0	0	2	0.403	146	135	HOME
## 442	0.312	0.358	0.544	0.902	68	3	0	0	0	2	1	0.375	119	132	HOME
## 443	0.340	0.361	0.521	0.882	49	2	1	0	0	0	0	0.359	119	128	HOME
## 444	0.332	0.405	0.434	0.839	89	3	1	1	4	1	3	0.344	121	121	HOME
## 445	0.267	0.353	0.466	0.819	117	8	4	0	3	4	2	0.310	114	113	HOME
## 446	0.279	0.358	0.436	0.794	133	7	1	0	4	7	3	0.292	99	107	HOME
## 447	0.333	0.364	0.429	0.792	9	1	1	0	0	0	1	0.412	148	108	HOME
## 448	0.246	0.348	0.434	0.782	53	4	2	0	0	0	1	0.302	120	104	HOME
## 449	0.293	0.352	0.413	0.765	124	12	3	0	0	1	6	0.354	105	100	HOME
## 450	0.238	0.330	0.402	0.732	103	6	4	0	0	5	3	0.264	97	91	HOME
## 451	0.258	0.329	0.382	0.711	108	10	4	0	4	5	0	0.295	84	86	HOME
## 452	0.246	0.309	0.388	0.697	52	1	0	1	2	0	0	0.309	116	82	HOME
## 453	0.219	0.304	0.343	0.647	83	6	5	0	1	1	4	0.281	79	70	HOME
## 454	0.250	0.250	0.344	0.594	11	0	0	0	0	0	0	0.381	88	54	HOME
## 455	0.216	0.310	0.270	0.580	10	1	1	0	0	0	0	0.333	74	55	HOME
## 456	0.217	0.304	0.261	0.565	18	1	2	0	1	0	1	0.278	107	51	HOME
## 457	0.250	0.308	0.250	0.558	9	1	0	0	0	0	0	0.310	99	50	HOME
## 458	0.152	0.216	0.333	0.550	11	2	0	0	1	0	0	0.130	72	41	HOME
## 459	0.186	0.240	0.286	0.526	20	2	0	0	0	0	0	0.308	79	38	HOME
## 460	0.000	0.500	0.000	0.500	0	0	0	0	0	0	0	NA	17	51	HOME
## 461	0.174	0.208	0.261	0.469	6	0	0	0	0	0	0	0.235	33	22	HOME
## 462	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	-100	-100	HOME
## 463	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
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```
astros_2017 <- season_2017 %>%
  filter(team=="astros")
astros_2017
```

##	Rk	Name	G	GS	PA	AB	R	H	X2B	X3B	HR	RBI	SB	CS	BB	SO	BA
## 1	1	Colin Moran	7	2	12	11	3	4	0	1	1	3	0	0	1	1	0.364
## 2	2	Jose Altuve	75	73	333	294	65	112	23	3	15	46	13	3	34	32	0.381
## 3	3	Marwin Gonzalez	64	58	256	221	32	72	18	0	8	43	4	2	29	38	0.326
## 4	4	Carlos Correa	58	58	269	236	51	71	12	1	13	44	1	1	30	61	0.301
## 5	5	George Springer	69	66	313	277	61	81	13	0	18	43	3	2	29	60	0.292
## 6	6	Max Stassi	9	3	19	14	4	3	1	0	1	3	0	0	4	3	0.214
## 7	7	Alex Bregman	79	75	328	290	46	84	26	3	10	41	7	3	28	53	0.290
## 8	8	Brian McCann	52	51	215	188	28	50	10	1	11	43	1	0	21	34	0.266
## 9	9	Yuli Gurriel	70	70	294	276	39	86	20	1	10	42	2	2	12	36	0.312
## 10	10	Cameron Maybin	13	8	38	34	5	7	1	1	3	8	1	2	3	9	0.206
## 11	11	Brad Peacock	4	3	8	7	1	2	1	0	0	2	0	0	1	3	0.286
## 12	12	Nori Aoki	38	29	126	112	20	34	7	1	2	12	4	1	10	16	0.304
## 13	13	Josh Reddick	65	60	283	250	44	72	16	1	7	46	3	0	25	38	0.288
## 14	14	Evan Gattis	41	37	165	154	25	39	9	0	8	36	0	1	5	24	0.253
## 15	15	J.D. Davis	13	7	36	31	5	5	2	0	2	4	0	0	4	12	0.161
## 16	16	Derek Fisher	27	17	74	63	10	13	0	1	2	6	0	1	9	24	0.206
## 17	17	Jake Marisnick	58	32	139	123	26	23	5	0	6	18	3	2	12	55	0.187
## 18	18	Carlos Beltran	62	57	254	234	28	53	14	0	6	26	0	0	17	54	0.226
## 19	19	Tyler White	12	5	34	31	2	7	3	0	0	2	0	0	3	10	0.226
## 20	20	Tony Kemp	11	6	25	23	4	5	0	0	0	3	1	0	1	5	0.217
## 21	21	Juan Centeno	11	5	20	20	1	4	0	0	0	1	0	0	0	8	0.200
## 22	22	Lance McCullers Jr.	1	1	3	3	0	0	0	0	0	0	0	0	0	0	0.000
## 23	23	Collin McHugh	1	1	2	2	0	0	0	0	0	0	0	0	0	2	0.000
## 24	24	Charlie Morton	1	1	3	3	0	0	0	0	0	0	0	0	0	0	0.000
## 25	25	Chris Devenski	3	0	1	1	0	0	0	0	0	0	0	0	0	1	0.000
## 26	26	Tony Sipp	5	0	1	1	0	0	0	0	0	0	0	0	0	0	0.000
## 27	27	Dallas Keuchel	1	1	3	3	0	0	0	0	0	0	0	0	0	2	0.000
## 28	28	Michael Feliz	3	0	1	1	0	0	0	0	0	0	0	0	0	1	0.000
## 29	29	Joe Musgrove	4	2	5	5	0	0	0	0	0	0	0	0	0	1	0.000
## 30	30	James Hoyt	3	0	1	1	0	0	0	0	0	0	0	0	0	1	0.000
## 31	31	Mike Fiers	2	1	1	1	1	0	0	0	0	0	0	0	0	1	0.000
## 32	32	Will Harris	2	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
## 33	33	Ashur Tolliver	1	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
## 34	34	Francis Martes	2	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
## 35	35	Teoscar Hernandez	1	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
## 36	36	Tyler Clippard	1	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
## 37	37	Ken Giles	3	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
## 38	38	Francisco Liriano	1	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
## 39	39	Luke Gregerson	5	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
## 40	1	Tyler White	10	8	33	30	5	10	3	0	3	8	0	1	1	6	0.333
## 41	2	Jake Marisnick	48	33	120	107	24	33	5	0	10	17	6	2	8	35	0.308
## 42	3	Carlos Correa	51	51	212	186	31	62	13	0	11	40	1	0	23	31	0.333

##	43	4	Josh Reddick	69	61	257	227	33	78	18	3	6	36	4	3	18	34	0.344
##	44	5	Marwin Gonzalez	70	62	259	234	35	66	16	0	15	47	4	1	20	61	0.282
##	45	6	George Springer	71	71	316	271	51	74	16	0	16	42	2	5	35	51	0.273
##	46	7	Jose Altuve	78	78	329	296	47	92	16	1	9	35	19	3	24	52	0.311
##	47	8	J.D. Davis	11	7	32	31	3	9	2	0	2	3	1	1	0	8	0.290
##	48	9	Yuli Gurriel	69	67	270	253	30	72	23	0	8	33	1	0	10	26	0.285
##	49	10	Alex Bregman	76	73	298	266	42	74	13	2	9	30	10	2	27	44	0.278
##	50	11	Evan Gattis	43	39	160	146	16	40	13	0	4	19	0	0	13	26	0.274
##	51	12	Juan Centeno	11	10	37	32	4	8	0	0	2	3	0	0	4	4	0.250
##	52	13	Carlos Beltran	67	61	255	233	32	55	15	0	8	25	0	0	16	48	0.236
##	53	14	Derek Fisher	26	22	92	83	11	18	4	0	3	11	3	2	8	30	0.217
##	54	15	Brian McCann	45	45	184	161	19	34	2	0	7	19	0	0	17	24	0.211
##	55	16	Max Stassi	5	3	12	10	1	1	0	0	1	1	0	0	2	1	0.100
##	56	17	Nori Aoki	32	27	98	90	8	21	5	0	0	7	1	1	5	13	0.233
##	57	18	Tony Kemp	6	4	14	14	2	3	1	0	0	1	0	0	0	0	0.214
##	58	19	Cameron Maybin	8	6	25	25	1	4	0	0	1	5	3	1	0	7	0.160
##	59	20	AJ Reed	2	1	6	6	0	0	0	0	0	0	0	0	0	1	0.000
##	60	21	Ken Giles	1	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
##			OBP	SLG	OPS	TB	GDP	HBP	SH	SF	IBB	ROE	BAbip	tOPS.	sOPS.	split	team	
##	1		0.417	0.818	1.235	9	0	0	0	0	0	0	0.333	100	228	AWAY	astros	
##	2		0.449	0.633	1.081	186	6	3	1	1	2	1	0.391	125	194	AWAY	astros	
##	3		0.416	0.516	0.932	114	7	5	1	0	4	3	0.366	108	155	AWAY	astros	
##	4		0.379	0.525	0.905	124	6	1	0	2	1	8	0.354	92	146	AWAY	astros	
##	5		0.367	0.534	0.902	148	4	5	0	2	1	3	0.313	102	144	AWAY	astros	
##	6		0.368	0.500	0.868	7	1	0	0	1	0	0	0.182	123	136	AWAY	astros	
##	7		0.360	0.503	0.863	146	7	6	0	4	2	3	0.320	108	134	AWAY	astros	
##	8		0.344	0.505	0.850	95	3	3	0	3	1	1	0.267	122	130	AWAY	astros	
##	9		0.340	0.500	0.840	138	7	2	0	4	0	2	0.325	105	127	AWAY	astros	
##	10		0.270	0.559	0.829	19	1	0	1	0	0	0	0.182	138	120	AWAY	astros	
##	11		0.375	0.429	0.804	3	0	0	0	0	0	0	0.500	100	121	AWAY	astros	
##	12		0.357	0.438	0.795	49	5	1	0	3	1	0	0.330	118	118	AWAY	astros	
##	13		0.346	0.444	0.790	111	4	0	0	5	1	4	0.310	87	116	AWAY	astros	
##	14		0.291	0.468	0.758	72	4	4	0	2	0	1	0.250	96	104	AWAY	astros	
##	15		0.278	0.419	0.697	13	3	1	0	0	0	0	0.176	86	88	AWAY	astros	
##	16		0.324	0.333	0.658	21	0	2	0	0	0	1	0.297	99	82	AWAY	astros	
##	17		0.273	0.374	0.647	46	5	3	0	1	1	1	0.270	61	76	AWAY	astros	
##	18		0.280	0.363	0.643	85	4	1	0	2	1	3	0.267	94	76	AWAY	astros	
##	19		0.294	0.323	0.617	10	0	0	0	0	0	0	0.333	51	70	AWAY	astros	
##	20		0.280	0.217	0.497	5	0	1	0	0	0	0	0.278	99	40	AWAY	astros	
##	21		0.200	0.200	0.400	4	0	0	0	0	0	0	0.333	28	11	AWAY	astros	
##	22		0.000	0.000	0.000	0	0	0	0	0	0	1	0.000	NA	-100	AWAY	astros	
##	23		0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	AWAY	astros	
##	24		0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY	astros	
##	25		0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	AWAY	astros	
##	26		0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY	astros	
##	27		0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY	astros	
##	28		0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	AWAY	astros	
##	29		0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY	astros	
##	30		0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	AWAY	astros	
##	31		0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	AWAY	astros	
##	32		NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY	astros	
##	33		NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY	astros	
##	34		NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY	astros	
##	35		NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY	astros	

## 36	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY	astros
## 37	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY	astros
## 38	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY	astros
## 39	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY	astros
## 40	0.364	0.733	1.097	22	0	1	0	1	0	1	0.318	151	177	HOME	astros
## 41	0.373	0.636	1.008	68	0	3	2	0	0	0	0.371	145	158	HOME	astros
## 42	0.406	0.581	0.986	108	6	1	0	2	4	1	0.349	110	155	HOME	astros
## 43	0.381	0.529	0.910	120	5	0	1	7	0	2	0.371	114	136	HOME	astros
## 44	0.339	0.543	0.881	127	1	1	2	2	0	0	0.319	92	126	HOME	astros
## 45	0.366	0.509	0.875	138	7	6	0	2	0	5	0.282	97	127	HOME	astros
## 46	0.371	0.463	0.834	137	13	6	0	3	1	3	0.349	75	118	HOME	astros
## 47	0.281	0.548	0.830	17	0	0	0	1	0	1	0.318	114	110	HOME	astros
## 48	0.322	0.470	0.793	119	5	5	0	2	1	5	0.290	94	104	HOME	astros
## 49	0.343	0.444	0.787	118	8	1	1	3	0	1	0.301	91	105	HOME	astros
## 50	0.331	0.445	0.776	65	6	0	0	1	0	0	0.308	104	101	HOME	astros
## 51	0.333	0.438	0.771	14	2	0	1	0	1	0	0.231	143	100	HOME	astros
## 52	0.286	0.403	0.690	94	5	2	0	4	2	3	0.260	106	78	HOME	astros
## 53	0.293	0.373	0.667	31	1	1	0	0	1	1	0.300	100	73	HOME	astros
## 54	0.299	0.354	0.653	57	6	4	0	2	2	3	0.205	74	71	HOME	astros
## 55	0.250	0.400	0.650	4	1	0	0	0	0	0	0.000	65	67	HOME	astros
## 56	0.278	0.289	0.567	26	6	1	1	1	0	2	0.269	57	50	HOME	astros
## 57	0.214	0.286	0.500	4	0	0	0	0	0	0	0.214	101	30	HOME	astros
## 58	0.160	0.280	0.440	7	0	0	0	0	0	2	0.176	27	12	HOME	astros
## 59	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	HOME	astros
## 60	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME	astros

```

astros_home <- read.csv("../data/astros/astros_2017_player_splits_home.csv") %>%
  mutate(Name = str_split_fixed(Name, "\\\\", 2)[,1]) %>%
  mutate(split = "HOME")

astros_away <- read.csv("../data/astros/astros_2017_player_splits_away.csv") %>%
  mutate(Name = str_split_fixed(Name, "\\\\", 2)[,1]) %>%
  mutate(split = "AWAY")

astros_2017 <- rbind(astros_home[-length(astros_home[,1]),], astros_away[-length(astros_away[,1]),])
astros_2017

```

##	Rk	Name	G	GS	PA	AB	R	H	X2B	X3B	HR	RBI	SB	CS	BB	SO	BA
## 1	1	Tyler White	10	8	33	30	5	10	3	0	3	8	0	1	1	6	0.333
## 2	2	Jake Marisnick	48	33	120	107	24	33	5	0	10	17	6	2	8	35	0.308
## 3	3	Carlos Correa	51	51	212	186	31	62	13	0	11	40	1	0	23	31	0.333
## 4	4	Josh Reddick	69	61	257	227	33	78	18	3	6	36	4	3	18	34	0.344
## 5	5	Marwin Gonzalez	70	62	259	234	35	66	16	0	15	47	4	1	20	61	0.282
## 6	6	George Springer	71	71	316	271	51	74	16	0	16	42	2	5	35	51	0.273
## 7	7	Jose Altuve	78	78	329	296	47	92	16	1	9	35	19	3	24	52	0.311
## 8	8	J.D. Davis	11	7	32	31	3	9	2	0	2	3	1	1	0	8	0.290
## 9	9	Yuli Gurriel	69	67	270	253	30	72	23	0	8	33	1	0	10	26	0.285
## 10	10	Alex Bregman	76	73	298	266	42	74	13	2	9	30	10	2	27	44	0.278
## 11	11	Evan Gattis	43	39	160	146	16	40	13	0	4	19	0	0	13	26	0.274
## 12	12	Juan Centeno	11	10	37	32	4	8	0	0	2	3	0	0	4	4	0.250
## 13	13	Carlos Beltran	67	61	255	233	32	55	15	0	8	25	0	0	16	48	0.236
## 14	14	Derek Fisher	26	22	92	83	11	18	4	0	3	11	3	2	8	30	0.217
## 15	15	Brian McCann	45	45	184	161	19	34	2	0	7	19	0	0	17	24	0.211
## 16	16	Max Stassi	5	3	12	10	1	1	0	0	1	1	0	0	2	1	0.100

## 17 17	Nori Aoki	32	27	98	90	8	21	5	0	0	7	1	1	5	13	0.233
## 18 18	Tony Kemp	6	4	14	14	2	3	1	0	0	1	0	0	0	0	0.214
## 19 19	Cameron Maybin	8	6	25	25	1	4	0	0	1	5	3	1	0	7	0.160
## 20 20	AJ Reed	2	1	6	6	0	0	0	0	0	0	0	0	0	1	0.000
## 21 21	Ken Giles	1	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
## 22 1	Colin Moran	7	2	12	11	3	4	0	1	1	3	0	0	1	1	0.364
## 23 2	Jose Altuve	75	73	333	294	65	112	23	3	15	46	13	3	34	32	0.381
## 24 3	Marwin Gonzalez	64	58	256	221	32	72	18	0	8	43	4	2	29	38	0.326
## 25 4	Carlos Correa	58	58	269	236	51	71	12	1	13	44	1	1	30	61	0.301
## 26 5	George Springer	69	66	313	277	61	81	13	0	18	43	3	2	29	60	0.292
## 27 6	Max Stassi	9	3	19	14	4	3	1	0	1	3	0	0	4	3	0.214
## 28 7	Alex Bregman	79	75	328	290	46	84	26	3	10	41	7	3	28	53	0.290
## 29 8	Brian McCann	52	51	215	188	28	50	10	1	11	43	1	0	21	34	0.266
## 30 9	Yuli Gurriel	70	70	294	276	39	86	20	1	10	42	2	2	12	36	0.312
## 31 10	Cameron Maybin	13	8	38	34	5	7	1	1	3	8	1	2	3	9	0.206
## 32 11	Brad Peacock	4	3	8	7	1	2	1	0	0	2	0	0	1	3	0.286
## 33 12	Nori Aoki	38	29	126	112	20	34	7	1	2	12	4	1	10	16	0.304
## 34 13	Josh Reddick	65	60	283	250	44	72	16	1	7	46	3	0	25	38	0.288
## 35 14	Evan Gattis	41	37	165	154	25	39	9	0	8	36	0	1	5	24	0.253
## 36 15	J.D. Davis	13	7	36	31	5	5	2	0	2	4	0	0	4	12	0.161
## 37 16	Derek Fisher	27	17	74	63	10	13	0	1	2	6	0	1	9	24	0.206
## 38 17	Jake Marisnick	58	32	139	123	26	23	5	0	6	18	3	2	12	55	0.187
## 39 18	Carlos Beltran	62	57	254	234	28	53	14	0	6	26	0	0	17	54	0.226
## 40 19	Tyler White	12	5	34	31	2	7	3	0	0	2	0	0	3	10	0.226
## 41 20	Tony Kemp	11	6	25	23	4	5	0	0	0	3	1	0	1	5	0.217
## 42 21	Juan Centeno	11	5	20	20	1	4	0	0	0	1	0	0	0	8	0.200
## 43 22	Lance McCullers Jr.	1	1	3	3	0	0	0	0	0	0	0	0	0	0	0.000
## 44 23	Collin McHugh	1	1	2	2	0	0	0	0	0	0	0	0	0	2	0.000
## 45 24	Charlie Morton	1	1	3	3	0	0	0	0	0	0	0	0	0	0	0.000
## 46 25	Chris Devenski	3	0	1	1	0	0	0	0	0	0	0	0	0	1	0.000
## 47 26	Tony Sipp	5	0	1	1	0	0	0	0	0	0	0	0	0	0	0.000
## 48 27	Dallas Keuchel	1	1	3	3	0	0	0	0	0	0	0	0	0	2	0.000
## 49 28	Michael Feliz	3	0	1	1	0	0	0	0	0	0	0	0	0	1	0.000
## 50 29	Joe Musgrove	4	2	5	5	0	0	0	0	0	0	0	0	0	1	0.000
## 51 30	James Hoyt	3	0	1	1	0	0	0	0	0	0	0	0	0	1	0.000
## 52 31	Mike Fiers	2	1	1	1	1	0	0	0	0	0	0	0	0	1	0.000
## 53 32	Will Harris	2	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
## 54 33	Ashur Tolliver	1	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
## 55 34	Francis Martes	2	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
## 56 35	Teoscar Hernandez	1	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
## 57 36	Tyler Clippard	1	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
## 58 37	Ken Giles	3	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
## 59 38	Francisco Liriano	1	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
## 60 39	Luke Gregerson	5	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
##	OBP	SLG	OPS	TB	GDP	HBP	SH	SF	IBB	ROE	BA	bip	tOPS.	sOPS.	split	
## 1	0.364	0.733	1.097	22	0	1	0	1	0	1	0.318	151	177	HOME		
## 2	0.373	0.636	1.008	68	0	3	2	0	0	0	0.371	145	158	HOME		
## 3	0.406	0.581	0.986	108	6	1	0	2	4	1	0.349	110	155	HOME		
## 4	0.381	0.529	0.910	120	5	0	1	7	0	2	0.371	114	136	HOME		
## 5	0.339	0.543	0.881	127	1	1	2	2	0	0	0.319	92	126	HOME		
## 6	0.366	0.509	0.875	138	7	6	0	2	0	5	0.282	97	127	HOME		
## 7	0.371	0.463	0.834	137	13	6	0	3	1	3	0.349	75	118	HOME		
## 8	0.281	0.548	0.830	17	0	0	0	1	0	1	0.318	114	110	HOME		
## 9	0.322	0.470	0.793	119	5	5	0	2	1	5	0.290	94	104	HOME		

##	10	0.343	0.444	0.787	118	8	1	1	3	0	1	0.301	91	105	HOME
##	11	0.331	0.445	0.776	65	6	0	0	1	0	0	0.308	104	101	HOME
##	12	0.333	0.438	0.771	14	2	0	1	0	1	0	0.231	143	100	HOME
##	13	0.286	0.403	0.690	94	5	2	0	4	2	3	0.260	106	78	HOME
##	14	0.293	0.373	0.667	31	1	1	0	0	1	1	0.300	100	73	HOME
##	15	0.299	0.354	0.653	57	6	4	0	2	2	3	0.205	74	71	HOME
##	16	0.250	0.400	0.650	4	1	0	0	0	0	0	0.000	65	67	HOME
##	17	0.278	0.289	0.567	26	6	1	1	1	0	2	0.269	57	50	HOME
##	18	0.214	0.286	0.500	4	0	0	0	0	0	0	0.214	101	30	HOME
##	19	0.160	0.280	0.440	7	0	0	0	0	0	2	0.176	27	12	HOME
##	20	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	HOME
##	21	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME
##	22	0.417	0.818	1.235	9	0	0	0	0	0	0	0.333	100	228	AWAY
##	23	0.449	0.633	1.081	186	6	3	1	1	2	1	0.391	125	194	AWAY
##	24	0.416	0.516	0.932	114	7	5	1	0	4	3	0.366	108	155	AWAY
##	25	0.379	0.525	0.905	124	6	1	0	2	1	8	0.354	92	146	AWAY
##	26	0.367	0.534	0.902	148	4	5	0	2	1	3	0.313	102	144	AWAY
##	27	0.368	0.500	0.868	7	1	0	0	1	0	0	0.182	123	136	AWAY
##	28	0.360	0.503	0.863	146	7	6	0	4	2	3	0.320	108	134	AWAY
##	29	0.344	0.505	0.850	95	3	3	0	3	1	1	0.267	122	130	AWAY
##	30	0.340	0.500	0.840	138	7	2	0	4	0	2	0.325	105	127	AWAY
##	31	0.270	0.559	0.829	19	1	0	1	0	0	0	0.182	138	120	AWAY
##	32	0.375	0.429	0.804	3	0	0	0	0	0	0	0.500	100	121	AWAY
##	33	0.357	0.438	0.795	49	5	1	0	3	1	0	0.330	118	118	AWAY
##	34	0.346	0.444	0.790	111	4	0	0	5	1	4	0.310	87	116	AWAY
##	35	0.291	0.468	0.758	72	4	4	0	2	0	1	0.250	96	104	AWAY
##	36	0.278	0.419	0.697	13	3	1	0	0	0	0	0.176	86	88	AWAY
##	37	0.324	0.333	0.658	21	0	2	0	0	0	1	0.297	99	82	AWAY
##	38	0.273	0.374	0.647	46	5	3	0	1	1	1	0.270	61	76	AWAY
##	39	0.280	0.363	0.643	85	4	1	0	2	1	3	0.267	94	76	AWAY
##	40	0.294	0.323	0.617	10	0	0	0	0	0	0	0.333	51	70	AWAY
##	41	0.280	0.217	0.497	5	0	1	0	0	0	0	0.278	99	40	AWAY
##	42	0.200	0.200	0.400	4	0	0	0	0	0	0	0.333	28	11	AWAY
##	43	0.000	0.000	0.000	0	0	0	0	0	0	1	0.000	NA	-100	AWAY
##	44	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	AWAY
##	45	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
##	46	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	AWAY
##	47	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
##	48	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
##	49	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	AWAY
##	50	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	AWAY
##	51	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	AWAY
##	52	0.000	0.000	0.000	0	0	0	0	0	0	0	NA	NA	-100	AWAY
##	53	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	54	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	55	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	56	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	57	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	58	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	59	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY
##	60	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	AWAY

astros_home

##	Rk	Name	G	GS	PA	AB	R	H	X2B	X3B	HR	RBI	SB	CS	BB	SO
## 1	1	Tyler White	10	8	33	30	5	10	3	0	3	8	0	1	1	6
## 2	2	Jake Marisnick	48	33	120	107	24	33	5	0	10	17	6	2	8	35
## 3	3	Carlos Correa	51	51	212	186	31	62	13	0	11	40	1	0	23	31
## 4	4	Josh Reddick	69	61	257	227	33	78	18	3	6	36	4	3	18	34
## 5	5	Marwin Gonzalez	70	62	259	234	35	66	16	0	15	47	4	1	20	61
## 6	6	George Springer	71	71	316	271	51	74	16	0	16	42	2	5	35	51
## 7	7	Jose Altuve	78	78	329	296	47	92	16	1	9	35	19	3	24	52
## 8	8	J.D. Davis	11	7	32	31	3	9	2	0	2	3	1	1	0	8
## 9	9	Yuli Gurriel	69	67	270	253	30	72	23	0	8	33	1	0	10	26
## 10	10	Alex Bregman	76	73	298	266	42	74	13	2	9	30	10	2	27	44
## 11	11	Evan Gattis	43	39	160	146	16	40	13	0	4	19	0	0	13	26
## 12	12	Juan Centeno	11	10	37	32	4	8	0	0	2	3	0	0	4	4
## 13	13	Carlos Beltran	67	61	255	233	32	55	15	0	8	25	0	0	16	48
## 14	14	Derek Fisher	26	22	92	83	11	18	4	0	3	11	3	2	8	30
## 15	15	Brian McCann	45	45	184	161	19	34	2	0	7	19	0	0	17	24
## 16	16	Max Stassi	5	3	12	10	1	1	0	0	1	1	0	0	2	1
## 17	17	Nori Aoki	32	27	98	90	8	21	5	0	0	7	1	1	5	13
## 18	18	Tony Kemp	6	4	14	14	2	3	1	0	0	1	0	0	0	0
## 19	19	Cameron Maybin	8	6	25	25	1	4	0	0	1	5	3	1	0	7
## 20	20	AJ Reed	2	1	6	6	0	0	0	0	0	0	0	0	0	1
## 21	21	Ken Giles	1	0	0	0	0	0	0	0	0	0	0	0	0	0
## 22	NA	Team Total	799	729	3009	2701	395	754	165	6	115	382	55	22	231	502
##	BA	OBP	SLG	OPS	TB	GDP	HBP	SH	SF	IBB	ROE	BABip	tOPS.	sOPS.	split	
## 1	0.333	0.364	0.733	1.097	22	0	1	0	1	0	1	0.318	151	177	HOME	
## 2	0.308	0.373	0.636	1.008	68	0	3	2	0	0	0	0.371	145	158	HOME	
## 3	0.333	0.406	0.581	0.986	108	6	1	0	2	4	1	0.349	110	155	HOME	
## 4	0.344	0.381	0.529	0.910	120	5	0	1	7	0	2	0.371	114	136	HOME	
## 5	0.282	0.339	0.543	0.881	127	1	1	2	2	0	0	0.319	92	126	HOME	
## 6	0.273	0.366	0.509	0.875	138	7	6	0	2	0	5	0.282	97	127	HOME	
## 7	0.311	0.371	0.463	0.834	137	13	6	0	3	1	3	0.349	75	118	HOME	
## 8	0.290	0.281	0.548	0.830	17	0	0	0	1	0	1	0.318	114	110	HOME	
## 9	0.285	0.322	0.470	0.793	119	5	5	0	2	1	5	0.290	94	104	HOME	
## 10	0.278	0.343	0.444	0.787	118	8	1	1	3	0	1	0.301	91	105	HOME	
## 11	0.274	0.331	0.445	0.776	65	6	0	0	1	0	0	0.308	104	101	HOME	
## 12	0.250	0.333	0.438	0.771	14	2	0	1	0	1	0	0.231	143	100	HOME	
## 13	0.236	0.286	0.403	0.690	94	5	2	0	4	2	3	0.260	106	78	HOME	
## 14	0.217	0.293	0.373	0.667	31	1	1	0	0	1	1	0.300	100	73	HOME	
## 15	0.211	0.299	0.354	0.653	57	6	4	0	2	2	3	0.205	74	71	HOME	
## 16	0.100	0.250	0.400	0.650	4	1	0	0	0	0	0	0.000	65	67	HOME	
## 17	0.233	0.278	0.289	0.567	26	6	1	1	1	0	2	0.269	57	50	HOME	
## 18	0.214	0.214	0.286	0.500	4	0	0	0	0	0	0	0.214	101	30	HOME	
## 19	0.160	0.160	0.280	0.440	7	0	0	0	0	0	2	0.176	27	12	HOME	
## 20	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	HOME	
## 21	NA	NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME	
## 22	0.279	0.340	0.472	0.812	1276	72	32	8	31	12	30	0.302	97	110	HOME	

```
astros_home[-length(astros_home[,1]),]
```

##	Rk	Name	G	GS	PA	AB	R	H	X2B	X3B	HR	RBI	SB	CS	BB	SO	BA
## 1	1	Tyler White	10	8	33	30	5	10	3	0	3	8	0	1	1	6	0.333
## 2	2	Jake Marisnick	48	33	120	107	24	33	5	0	10	17	6	2	8	35	0.308
## 3	3	Carlos Correa	51	51	212	186	31	62	13	0	11	40	1	0	23	31	0.333
## 4	4	Josh Reddick	69	61	257	227	33	78	18	3	6	36	4	3	18	34	0.344

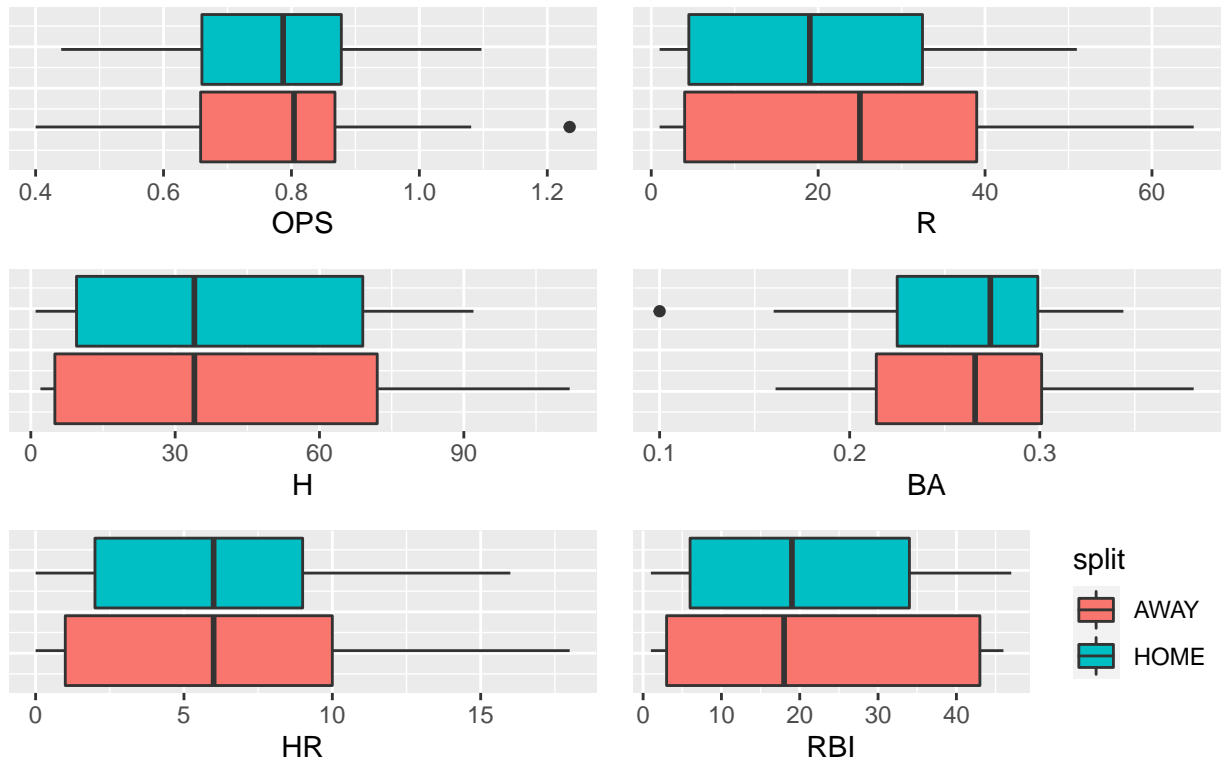
## 5	5	Marwin Gonzalez	70	62	259	234	35	66	16	0	15	47	4	1	20	61	0.282
## 6	6	George Springer	71	71	316	271	51	74	16	0	16	42	2	5	35	51	0.273
## 7	7	Jose Altuve	78	78	329	296	47	92	16	1	9	35	19	3	24	52	0.311
## 8	8	J.D. Davis	11	7	32	31	3	9	2	0	2	3	1	1	0	8	0.290
## 9	9	Yuli Gurriel	69	67	270	253	30	72	23	0	8	33	1	0	10	26	0.285
## 10	10	Alex Bregman	76	73	298	266	42	74	13	2	9	30	10	2	27	44	0.278
## 11	11	Evan Gattis	43	39	160	146	16	40	13	0	4	19	0	0	13	26	0.274
## 12	12	Juan Centeno	11	10	37	32	4	8	0	0	2	3	0	0	4	4	0.250
## 13	13	Carlos Beltran	67	61	255	233	32	55	15	0	8	25	0	0	16	48	0.236
## 14	14	Derek Fisher	26	22	92	83	11	18	4	0	3	11	3	2	8	30	0.217
## 15	15	Brian McCann	45	45	184	161	19	34	2	0	7	19	0	0	17	24	0.211
## 16	16	Max Stassi	5	3	12	10	1	1	0	0	1	1	0	0	2	1	0.100
## 17	17	Nori Aoki	32	27	98	90	8	21	5	0	0	7	1	1	5	13	0.233
## 18	18	Tony Kemp	6	4	14	14	2	3	1	0	0	1	0	0	0	0	0.214
## 19	19	Cameron Maybin	8	6	25	25	1	4	0	0	1	5	3	1	0	7	0.160
## 20	20	AJ Reed	2	1	6	6	0	0	0	0	0	0	0	0	0	1	0.000
## 21	21	Ken Giles	1	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
##		OBP	SLG	OPS	TB	GDP	HBP	SH	SF	IBB	ROE	BAbip	tOPS.	sOPS.	split		
## 1		0.364	0.733	1.097	22	0	1	0	1	0	1	0.318	151	177	HOME		
## 2		0.373	0.636	1.008	68	0	3	2	0	0	0	0.371	145	158	HOME		
## 3		0.406	0.581	0.986	108	6	1	0	2	4	1	0.349	110	155	HOME		
## 4		0.381	0.529	0.910	120	5	0	1	7	0	2	0.371	114	136	HOME		
## 5		0.339	0.543	0.881	127	1	1	2	2	0	0	0.319	92	126	HOME		
## 6		0.366	0.509	0.875	138	7	6	0	2	0	5	0.282	97	127	HOME		
## 7		0.371	0.463	0.834	137	13	6	0	3	1	3	0.349	75	118	HOME		
## 8		0.281	0.548	0.830	17	0	0	0	1	0	1	0.318	114	110	HOME		
## 9		0.322	0.470	0.793	119	5	5	0	2	1	5	0.290	94	104	HOME		
## 10		0.343	0.444	0.787	118	8	1	1	3	0	1	0.301	91	105	HOME		
## 11		0.331	0.445	0.776	65	6	0	0	1	0	0	0.308	104	101	HOME		
## 12		0.333	0.438	0.771	14	2	0	1	0	1	0	0.231	143	100	HOME		
## 13		0.286	0.403	0.690	94	5	2	0	4	2	3	0.260	106	78	HOME		
## 14		0.293	0.373	0.667	31	1	1	0	0	1	1	0.300	100	73	HOME		
## 15		0.299	0.354	0.653	57	6	4	0	2	2	3	0.205	74	71	HOME		
## 16		0.250	0.400	0.650	4	1	0	0	0	0	0	0.000	65	67	HOME		
## 17		0.278	0.289	0.567	26	6	1	1	1	0	2	0.269	57	50	HOME		
## 18		0.214	0.286	0.500	4	0	0	0	0	0	0	0.214	101	30	HOME		
## 19		0.160	0.280	0.440	7	0	0	0	0	0	2	0.176	27	12	HOME		
## 20		0.000	0.000	0.000	0	0	0	0	0	0	0	0.000	NA	-100	HOME		
## 21		NA	NA	NA	0	NA	0	0	NA	NA	0	NA	NA	NA	HOME		

Preliminary Plots

Comparing The Astros 2017 Home and Away Data

to start we will look at some of the variables we take a look some comparisons of specific variables between home and away games.

Astros 2017 data – Home vs Away

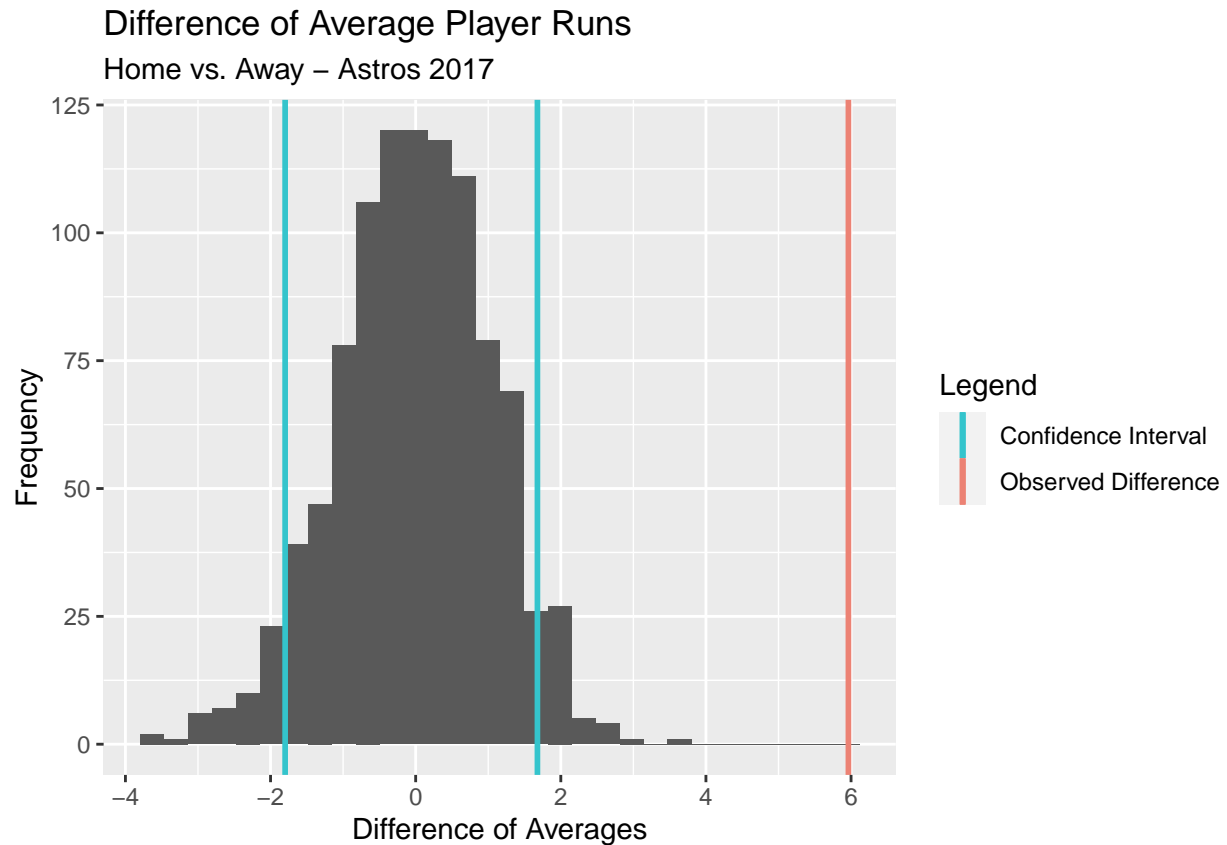


These box plots show that there is not much difference between the home and away games. However there are some patterns that we can explore: large differences between variables, and the variance of the distributions.

The largest difference in means that we can see is the average Runs (R) per season that a player gets between home and away.

Runs analysis - Home vs. Away

To do this analysis, we will be doing a monte carlo simulation on the difference of average runs a player gets per season between home and away games. Runs will be modeled by a poisson random variable. Under the assumption that Runs from home and away games comes from the same distribution, we will set lambda as the mean of runs for home and away games combined.



After performing a 90% confidence interval on our data, we see that our observed difference falls outside of the confidence interval, leading us to reject our initial assumption. Thus, we can say with 90% confidence that there is statistical significance in the difference of Run means between home and away games.

However, because Away game Runs are higher than Home game Runs, this implies that the Astros cheating had a negative effect on their performance.

Discussion on Progress/Challenges

Challenges:

- We have found that the data we found for the 2017 Astros was not as detailed as we had hoped. The available dataset from the database that specifies home vs. away games is in form of each player's total statistics, not game by game data. If we had game by game home and away data, it would be easier for us to do different statistical tests on specific variables and possibly gain more insight during our preliminary analysis.
- Plot 1: *Astros 2017 data - Home vs. Away* - we did a very simple statistical analysis for this plot, and the results seem to suggest that there is no real difference between the home and away statistics, pointing us to believe that the cheating during the 2017 season had no real effect.

- Plot 2: *Difference of Average Player Runs* - when we performed a 95% confidence interval on this monte carlo simulation, the observed difference landed just inside of the confidence interval, which gave us inconclusive results. However, when we ran a 90% confidence interval instead, the observed difference fell outside of the confidence interval, telling us that there was statistical significance. This result supports the opposite of our initial theory. Thus our problem lies with which percent confidence interval to choose.

Progress:

- So far we have been able to identify that of our variables, Runs, seems to be the only one with statistical significance, and that the cheating could actually have had an adverse affect on the Astros, making them perform worse than if they hadn't cheated.

Next Steps

One of our goals for the remainder of the semester is to use prediction models to answer the statistical question on how the supposed cheating affected individuals play separate from the team. We also planned to answer the statistical question, "how might the season have looked if they didn't cheat", but after finding that cheating had a negative effect on the performance, we may have to alter this statistical question a bit.

We also still want to look into the Astros vs. every other team in the league during 2017. Looking at other teams' home and away game difference will help us see if this phenomena is league-wide and help contextualize our findings with the Astros.

We also might want to look into the performance of teams throughout the league at the Astros' home stadium to see if the conditions under which teams play at that location have any affect on performance, indicating a possible reason for the Astros lower performance at home.