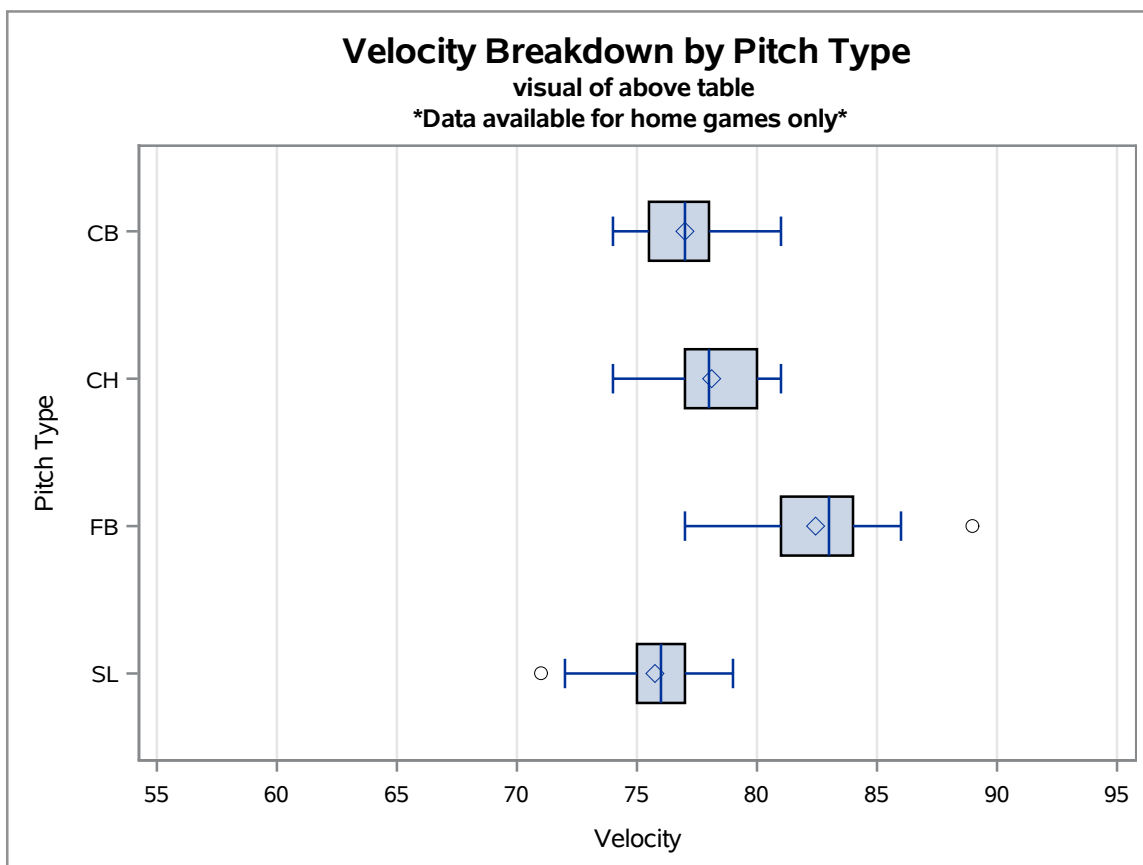


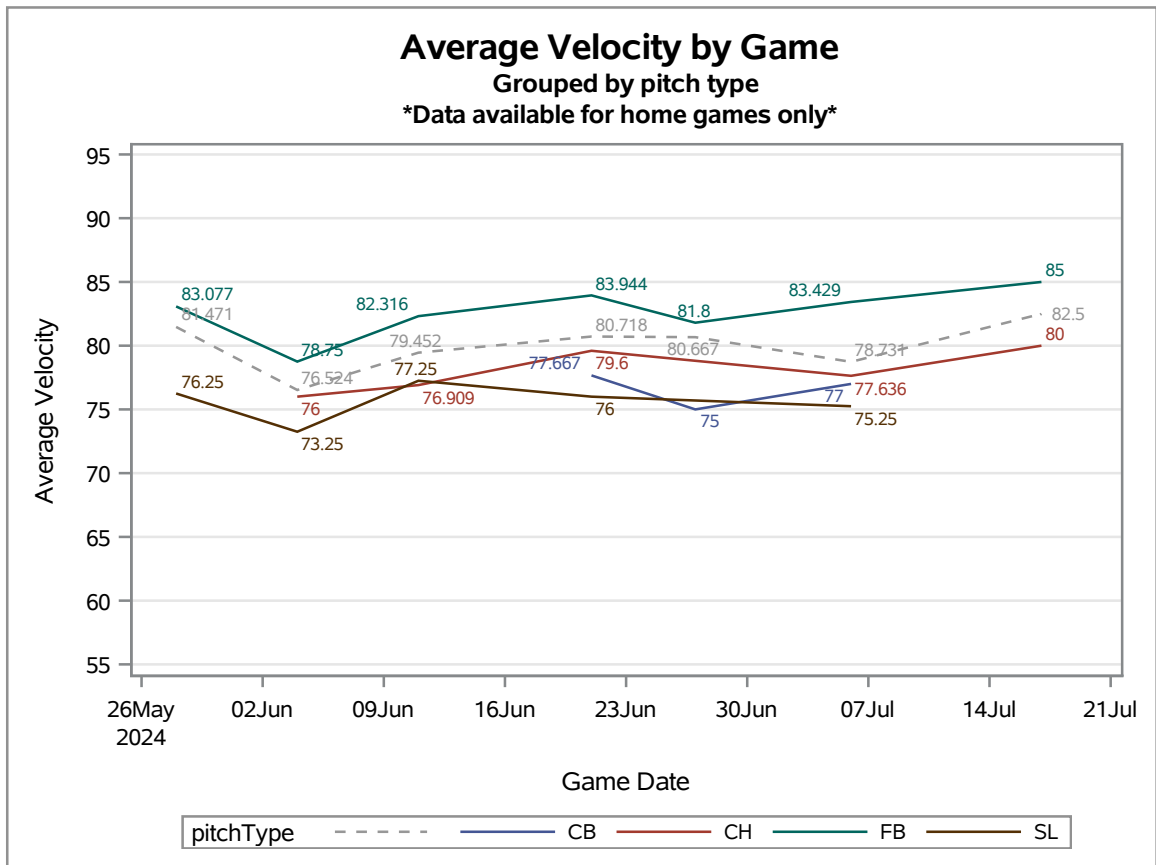
# Velocity Breakdown by Pitch Type

\*Data available for home games only\*

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Analysis Variable : velocity					
pitchType	N Obs	N	Minimum	Mean	Maximum
CB	8	8	74.0	77.0	81.0
CH	36	36	74.0	78.1	81.0
FB	77	77	77.0	82.4	89.0
SL	36	36	71.0	75.8	79.0





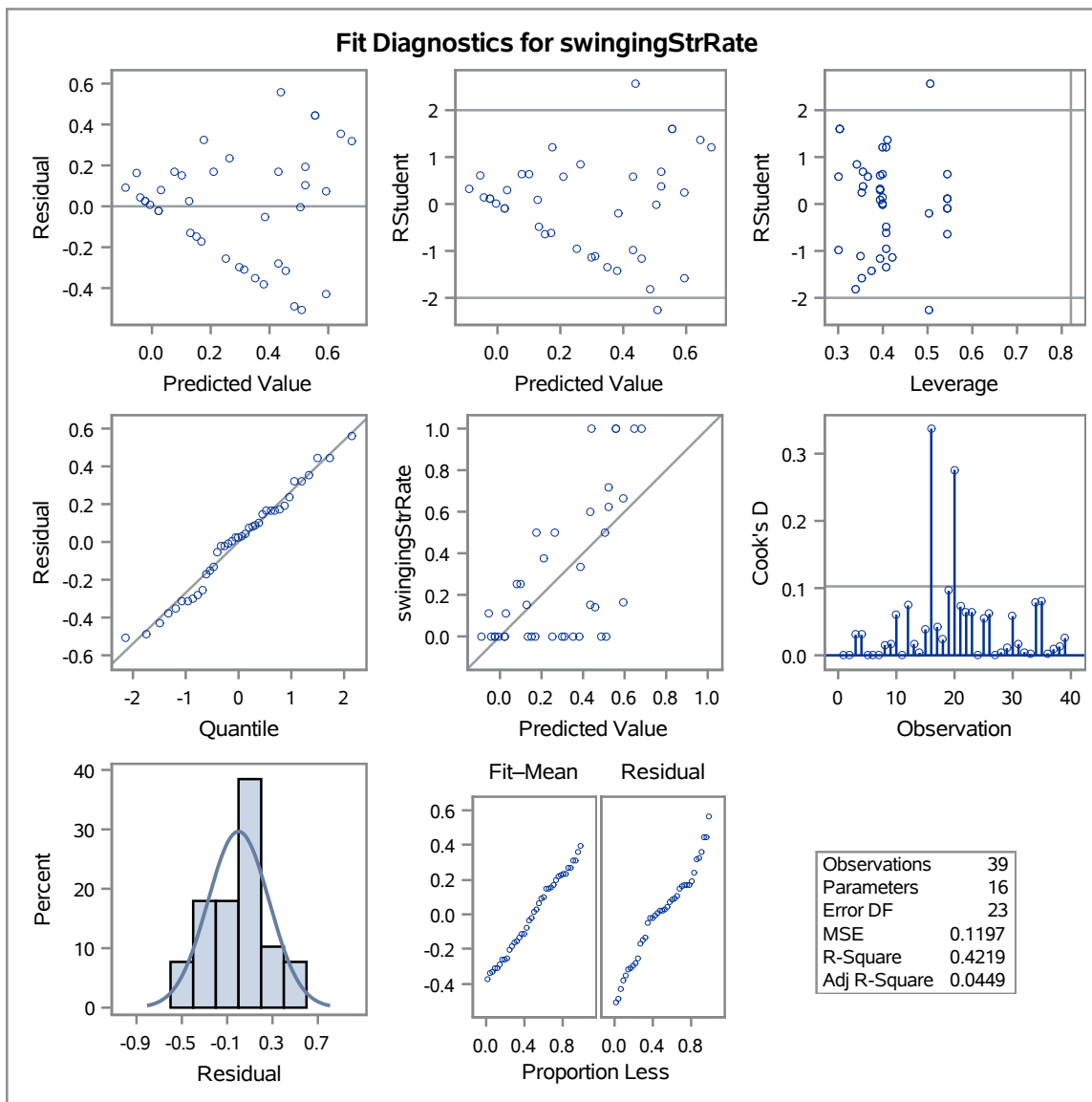
Dependent Variable: swingingStrRate

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
<b>Model</b>	15	2.00980810	0.13398721	1.12	0.3933
<b>Error</b>	23	2.75356088	0.11972004		
<b>Corrected Total</b>	38	4.76336898			

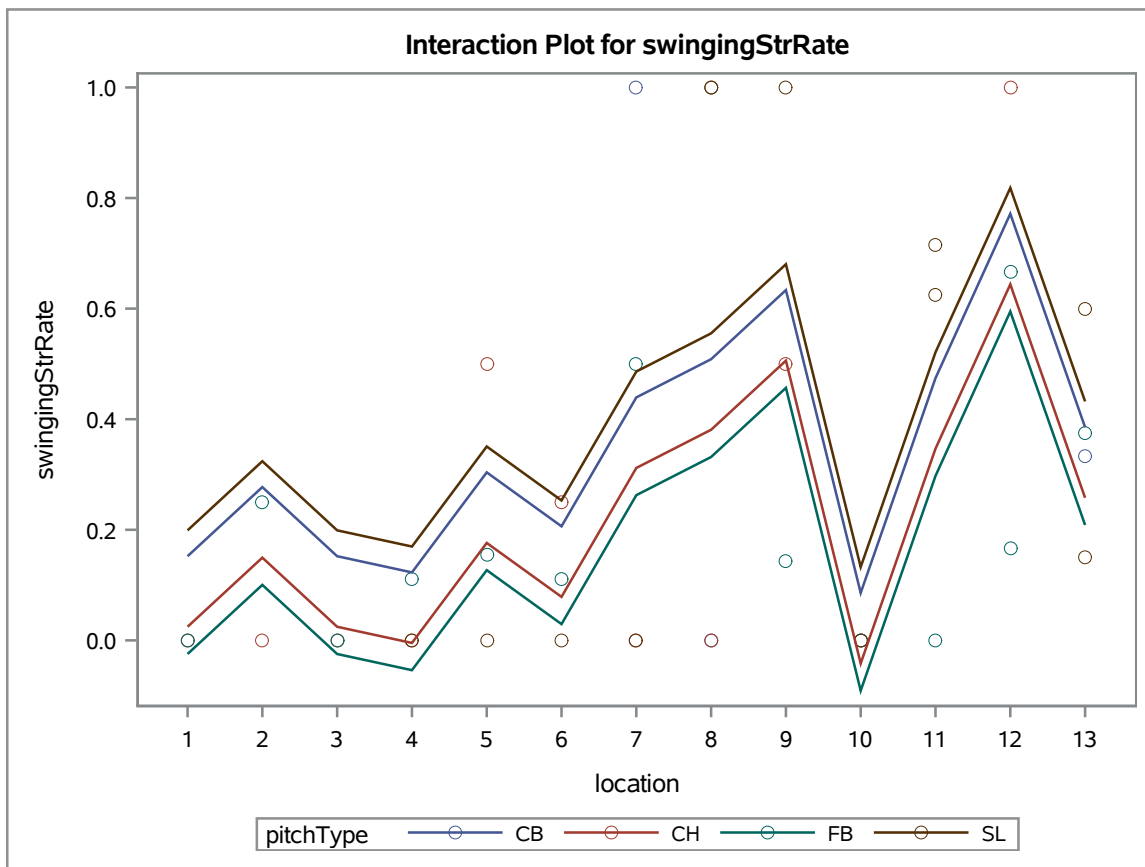
R-Square	Coeff Var	Root MSE	swingingStrRate Mean
0.421930	121.0258	0.346006	0.285894

Source	DF	Type III SS	Mean Square	F Value	Pr > F
<b>location</b>	12	1.51420999	0.12618417	1.05	0.4379
<b>pitchType</b>	3	0.26404779	0.08801593	0.74	0.5417

Dependent Variable: swingingStrRate



Dependent Variable: swingingStrRate



**Least Squares Means**  
**Adjustment for Multiple Comparisons: Tukey-Kramer**

pitchType	swingingStrRate LSMEAN	LSMEAN Number
CB	0.34716143	1
CH	0.21957068	2
FB	0.17032614	3
SL	0.39393184	4

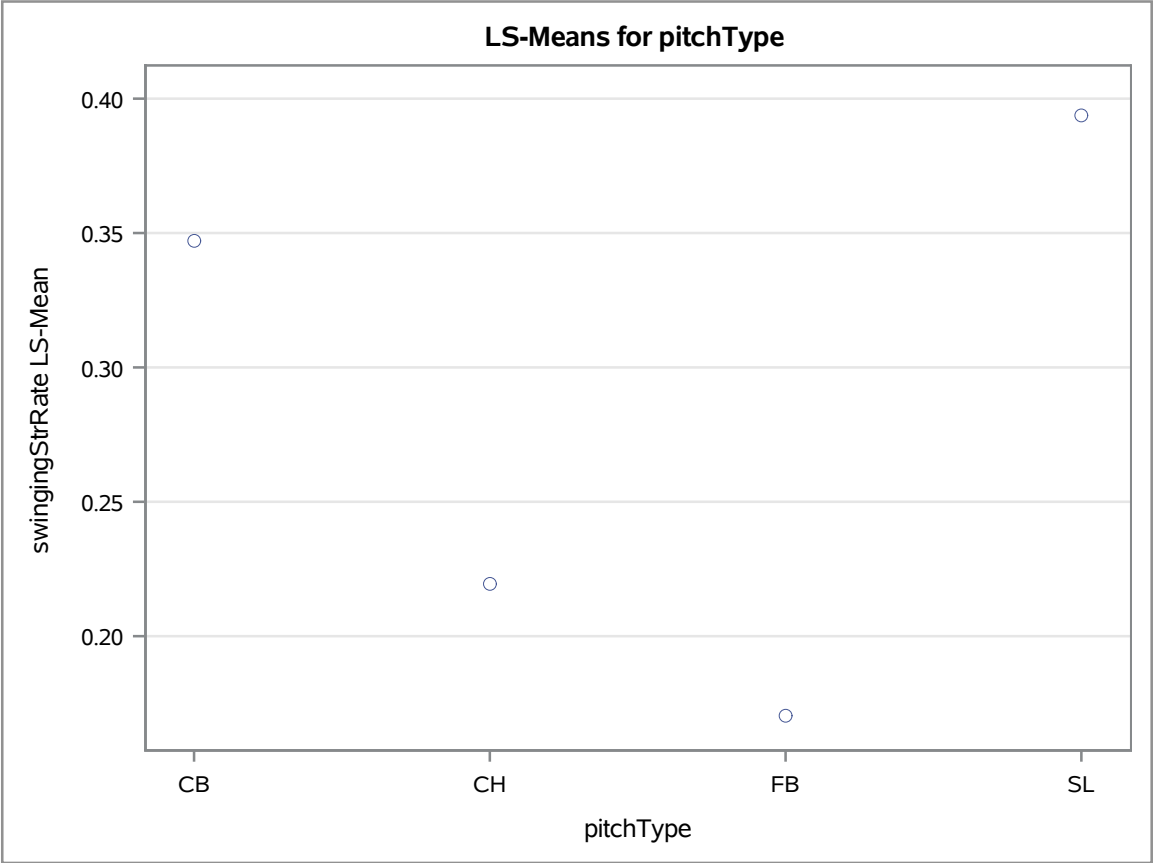
Least Squares Means for effect pitchType Pr >  t  for H0: LSMean(i)=LSMean(j) Dependent Variable: swingingStrRate				
i/j	1	2	3	4
1		0.9584	0.8963	0.9973
2	0.9584		0.9862	0.7071
3	0.8963	0.9862		0.4853
4	0.9973	0.7071	0.4853	

pitchType	swingingStrRate LSMEAN	95% Confidence Limits	
CB	0.347161	-0.123252	0.817575
CH	0.219571	-0.002170	0.441311
FB	0.170326	-0.033393	0.374045
SL	0.393932	0.158951	0.628913

Least Squares Means for Effect pitchType				
i	j	Difference Between Means	Simultaneous 95% Confidence Limits for LSMean(i)-LSMean(j)	
1	2	0.127591	-0.579186	0.834368
1	3	0.176835	-0.522936	0.876606
1	4	-0.046770	-0.708171	0.614631
2	3	0.049245	-0.352151	0.450641

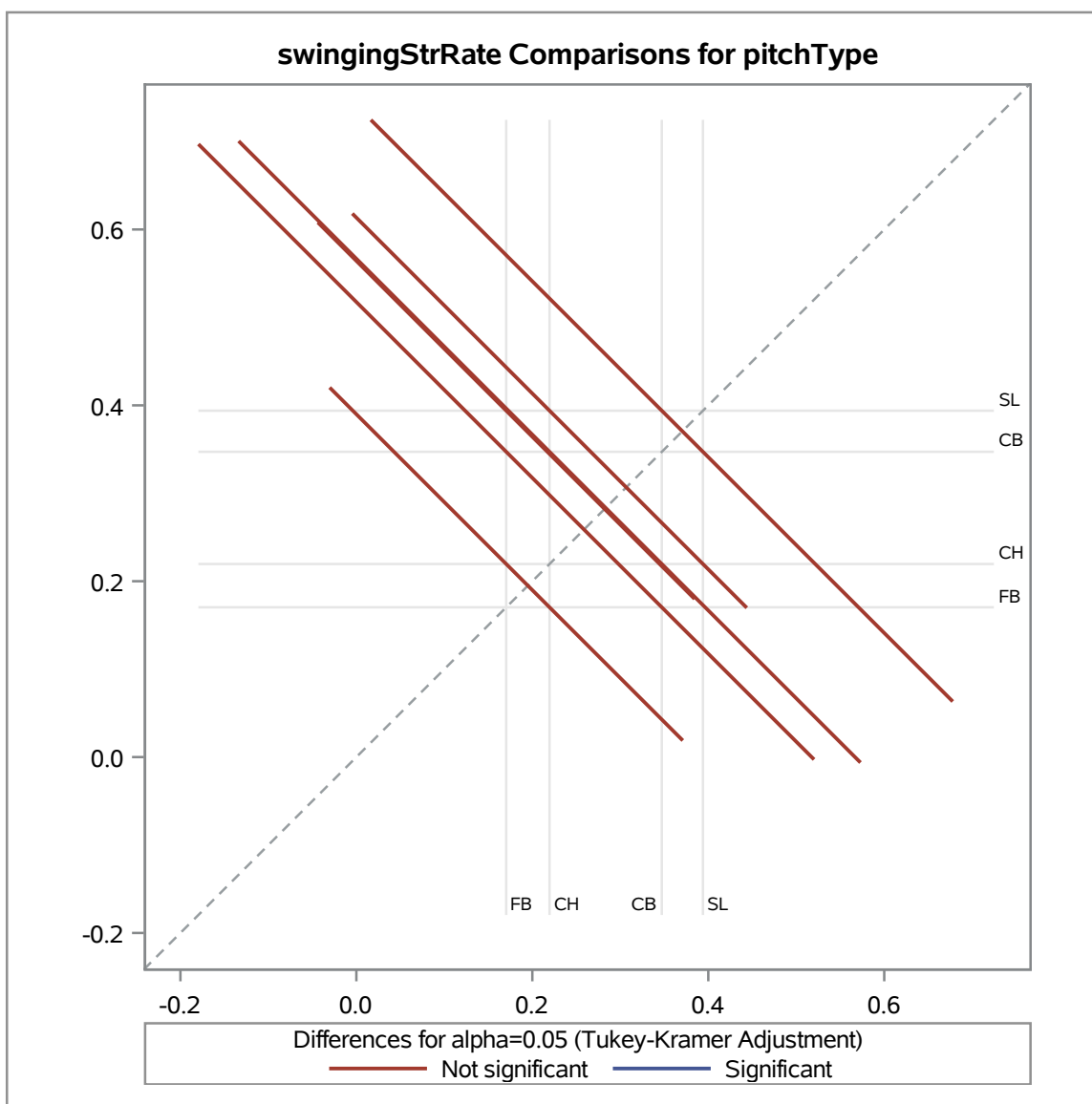
Least Squares Means  
Adjustment for Multiple Comparisons: Tukey-Kramer

Least Squares Means for Effect pitchType				
i	j	Difference Between Means	Simultaneous 95% Confidence Limits for LSMean(i)-LSMean(j)	
2	4	-0.174361	-0.622724	0.274001
3	4	-0.223606	-0.651731	0.204519





Least Squares Means  
Adjustment for Multiple Comparisons: Tukey-Kramer



**Swinging Strike Rate by Zone**  
Zones 1-9 are inside strikezone, 10-13 are outside of zone

Pitch Location	Total Pitches	Total Swings	Total Misses	Swinging Strike Rate
1	5	4	0	0.00%
2	6	6	1	16.67%
3	7	2	0	0.00%
4	13	8	1	7.69%
5	18	15	4	22.22%
6	15	7	2	13.33%
7	9	6	3	33.33%
8	11	6	1	9.09%
9	10	6	3	30.00%
10	12	0	0	0.00%
11	16	7	5	31.25%
12	17	4	2	11.76%
13	36	5	4	11.11%

## Swing and Miss Data by Pitch Type

Pitch Type	Total Pitches	Total Swings	Total Misses	Swinging Strike Rate
CB	10	4	2	20.00%
CH	39	17	4	10.26%
FB	86	39	10	11.63%
SL	40	16	10	25.00%

\*Data available for home games only\*

Dependent Variable: velocity

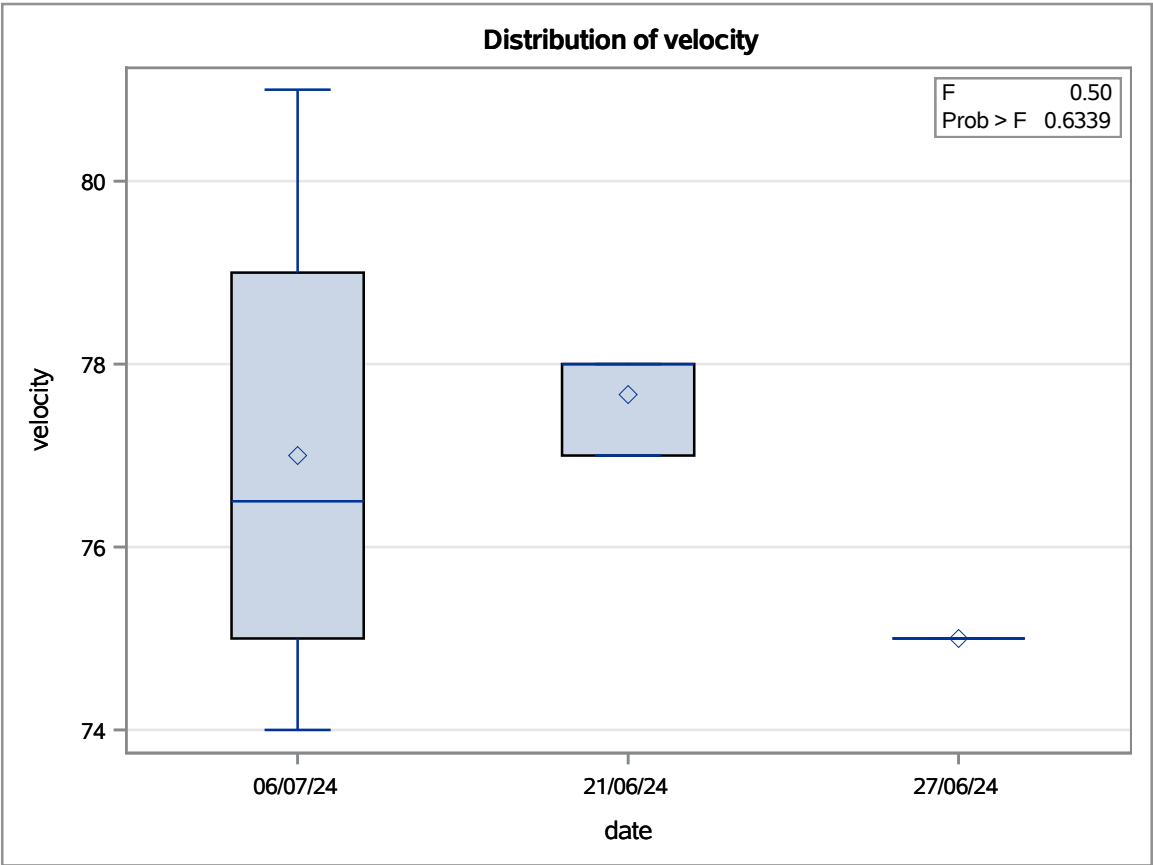
pitchType=CB

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	5.33333333	2.66666667	0.50	0.6339
Error	5	26.66666667	5.33333333		
Corrected Total	7	32.00000000			

R-Square	Coeff Var	Root MSE	velocity Mean
0.16667	2.999222	2.309401	77.00000

Source	DF	Type I SS	Mean Square	F Value	Pr > F
date	2	5.33333333	2.66666667	0.50	0.6339

Source	DF	Type III SS	Mean Square	F Value	Pr > F
date	2	5.33333333	2.66666667	0.50	0.6339



\*Data available for home games only\*

Dependent Variable: velocity

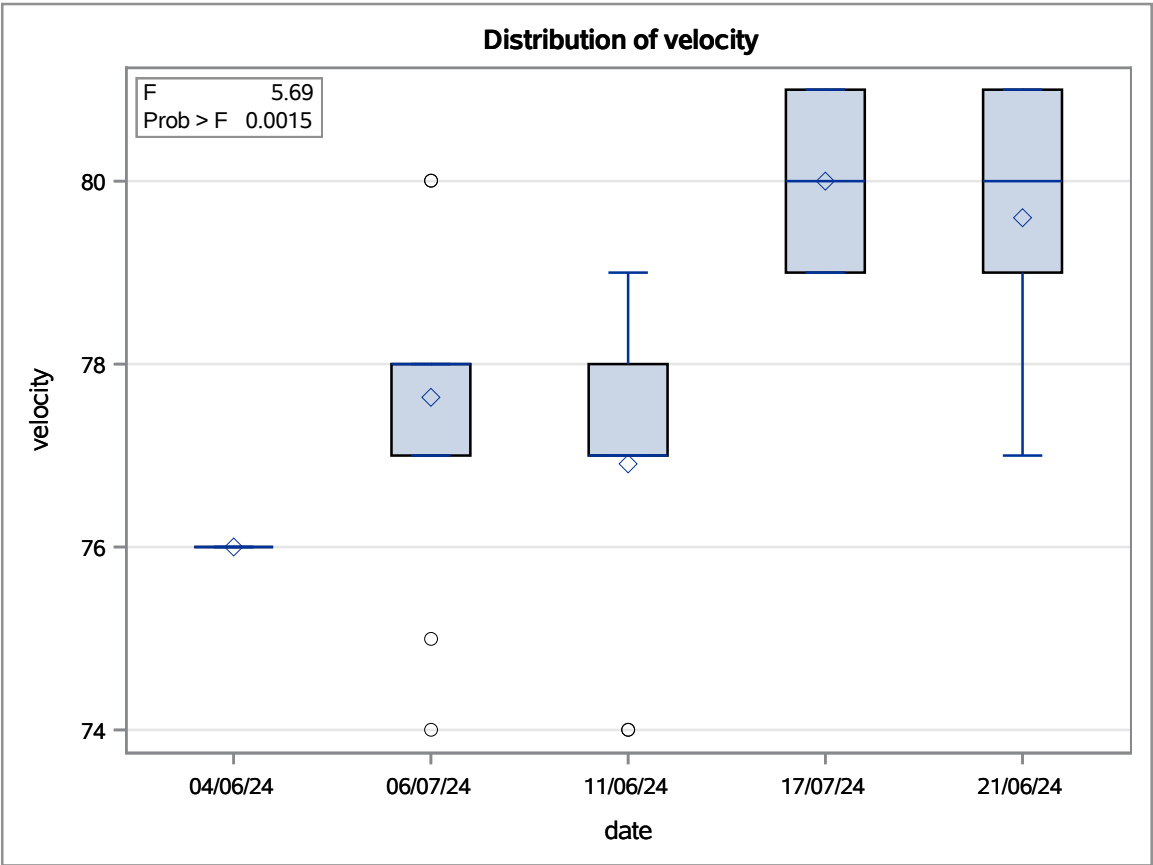
pitchType=CH

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	55.7010101	13.9252525	5.69	0.0015
Error	31	75.8545455	2.4469208		
Corrected Total	35	131.5555556			

R-Square	Coeff Var	Root MSE	velocity Mean
0.423403	2.002614	1.564264	78.11111

Source	DF	Type I SS	Mean Square	F Value	Pr > F
date	4	55.70101010	13.92525253	5.69	0.0015

Source	DF	Type III SS	Mean Square	F Value	Pr > F
date	4	55.70101010	13.92525253	5.69	0.0015



# Regression Analysis of Velocity by Pitch Type

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\*Data available for home games only\*

Dependent Variable: velocity

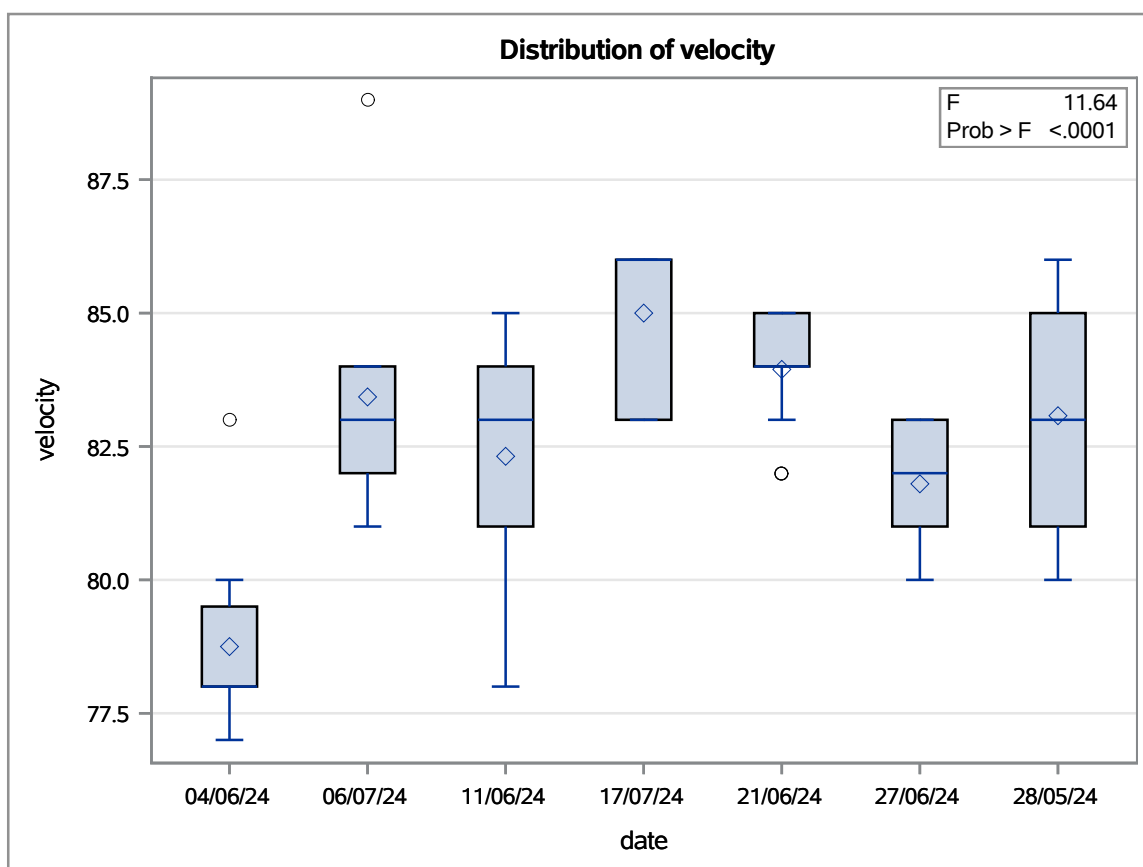
pitchType=FB

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	6	238.2499427	39.7083238	11.64	<.0001
Error	70	238.7370702	3.4105296		
Corrected Total	76	476.9870130			

R-Square	Coeff Var	Root MSE	velocity Mean
0.499489	2.240086	1.846762	82.44156

Source	DF	Type I SS	Mean Square	F Value	Pr > F
date	6	238.2499427	39.7083238	11.64	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
date	6	238.2499427	39.7083238	11.64	<.0001



\*Data available for home games only\*

Dependent Variable: velocity

pitchType=SL

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	79.5000000	19.8750000	6.75	0.0005
Error	31	91.2500000	2.9435484		
Corrected Total	35	170.7500000			

R-Square	Coeff Var	Root MSE	velocity Mean
0.465593	2.264920	1.715677	75.75000

Source	DF	Type I SS	Mean Square	F Value	Pr > F
date	4	79.50000000	19.87500000	6.75	0.0005

Source	DF	Type III SS	Mean Square	F Value	Pr > F
date	4	79.50000000	19.87500000	6.75	0.0005

