#### Notes

Facing RHH, Gallen ses his 4S/KC & mixes in the SL. Curve is in–zone 34% of the time inducing a 44% chase, both KC & SL have over 50% chase—whiffs, BB is the danger pitch. 4S are easier to see w/only a 17% chase & 12% whiff. When he does get a chase on the BB only about 16% actually are put into play. On the SL 25% of chased-SL are hard-hit compared to the overall zone-hard-hit of 50%. More likely to get a better batted ball on the 4S/CH regardless of where it is thrown. Most success in terms of batted ball is the KC w/ .242 xwOBA & .147 BABIP. W/in the zone KC BABIP is only .114. Typically starts the PA off w/ a 4S has done so w/ a SL/KC on occasion. Put away pitch is often the KC-outside the zone ~80% of the time both on 0–2 & 1–2. 2–K KC is where he tries to get a chase & gets a 2–K KC chase ~45% of the time, w/ an overall KC 2–K whiff ~45%. Top 2-Pitch seq. is 4S-KC w/ chase of 45% on the KC & whiff of 33%. When he throws back-back KC 2nd KC only in-zone 30% of the time. Ramos has a .210 wOBA when he is behind & is more likely to chase a BB. 4S hangs over the middle of the plate, especially when his is behind. KC is dropped over the middle of the plate but low & out of the zone. Dangerous to throw there b/c a miss will be exploited. Overall would stay away from the 4S over the middle as Ramos crushes those. Throwing a SL for a strike 1st pitch then coming back w/ a KC to induce a swing can work very well. Also, if you do throw the 4S throw it high so he cannot get good contact w/ it. CH could be difference maker in the PA.

Facing RHP, Ramos is overall to chase a pitch 30% of the time, w/ a majority of those coming from KC/SL. He does not miss too often w/in the zone having a 17% Z-Whiff. Chasing is where he struggles, KC/SL both have a chase-whiff +60%. Expect Gallen to exploit this-throw outside BB. Smahes the ball w/ an overall hard-hit of 50%, but most of those come from in-zone. His chase hard-hit is 16% w/ a 0% hard-hit on both CH/KC. Might see the rare CH from Gallen in this matchup. Ramos mashes 4S w/ .354 xwOBA & a .162 ISO. Struggles w/ the CH .251 xwOBA & .000 ISO. Does not do well vs the o-zone SL, .096 wOBA & a .000 ISO, .176 xwOBA. Ramos will swing 1st pitch especially in-zone, tends to lay off SL in the middle of the count especially if he is ahead he will take a zone-SL to wait for the 4S. 1st Pitch swing goes down the more Ramos faces a starter, does not swing at 1st CH could be a time to throw one. Back to Back BB does get ramos to chase on the 2nd BB 45% of the time. Key will be to get Gallen behind b/c his wOBA when ahead is .203 vs a behind wOBA of .448. Ramos excels when pitcher is behind w/ a .412 wOBA. Really likes the 4S over the middle, whiffing on higher fastballs. SL/KC left over the middle will be a hard-hit. Overall would stay clear of the SL & be discinplined w/ the drop KC coming right over the plate. 4S are hittable & tend to be left over the middle of the plate.

	Zac Gallen vs RHH										
Pitch	Usage	Zone %	Z–Swing %	Heart %	H-Swing %	O-Zone %	Chase %	Whiff %	Z–Whiff %	H–Whiff %	O-Whiff %
4-Seam	50%	53%	65%	27%	74%	47%	17%	12%	9%	7%	22%
Changeup	5%	28%	81%	12%	100%	72%	33%	30%	15%	14%	43%
Kn.Curve	28%	34%	70%	15%	71%	66%	44%	34%	11%	11%	52%
Slider	16%	41%	71%	18%	70%	59%	21%	34%	22%	12%	60%
ALL	52%	44%	67%	21%	74%	56%	28%	23%	12%	9%	45%

	Heliot Ramos vs RHP											
Pitch	Usage	Zone %	Z–Swing %	Heart %	H-Swing %	O-Zone %	Chase %	Whiff %	Z–Whiff %	H–Whiff %	O-Whiff %	
4-Seam	33%	53%	70%	34%	82%	47%	28%	30%	21%	20%	54%	
Changeup	3%	46%	86%	26%	100%	54%	24%	29%	17%	17%	67%	
Kn.Curve	7%	53%	80%	29%	89%	47%	37%	26%	10%	4%	65%	
Slider	20%	36%	75%	23%	77%	64%	30%	34%	16%	12%	60%	
ALL	73%	48%	70%	28%	78%	52%	30%	28%	17%	13%	51%	

	Zac Gallen vs RHH											
Pitch	Strike %	Ball %	O-Strike %	BIP %	Z-BIP %	O-BIP %	Hard-Hit %	Z-H-Hit %	O-H-Hit %	Heart-H-Hit %		
4-Seam	62%	38%	62%	42%	44%	33%	49%	52%	31%	63%		
Changeup	53%	47%	53%	30%	54%	7%	50%	57%	0%	80%		
Kn.Curve	65%	35%	65%	31%	48%	17%	38%	38%	35%	32%		
Slider	55%	45%	55%	39%	48%	16%	41%	43%	25%	47%		
ALL	61%	39%	61%	37%	46%	20%	45%	48%	32%	55%		

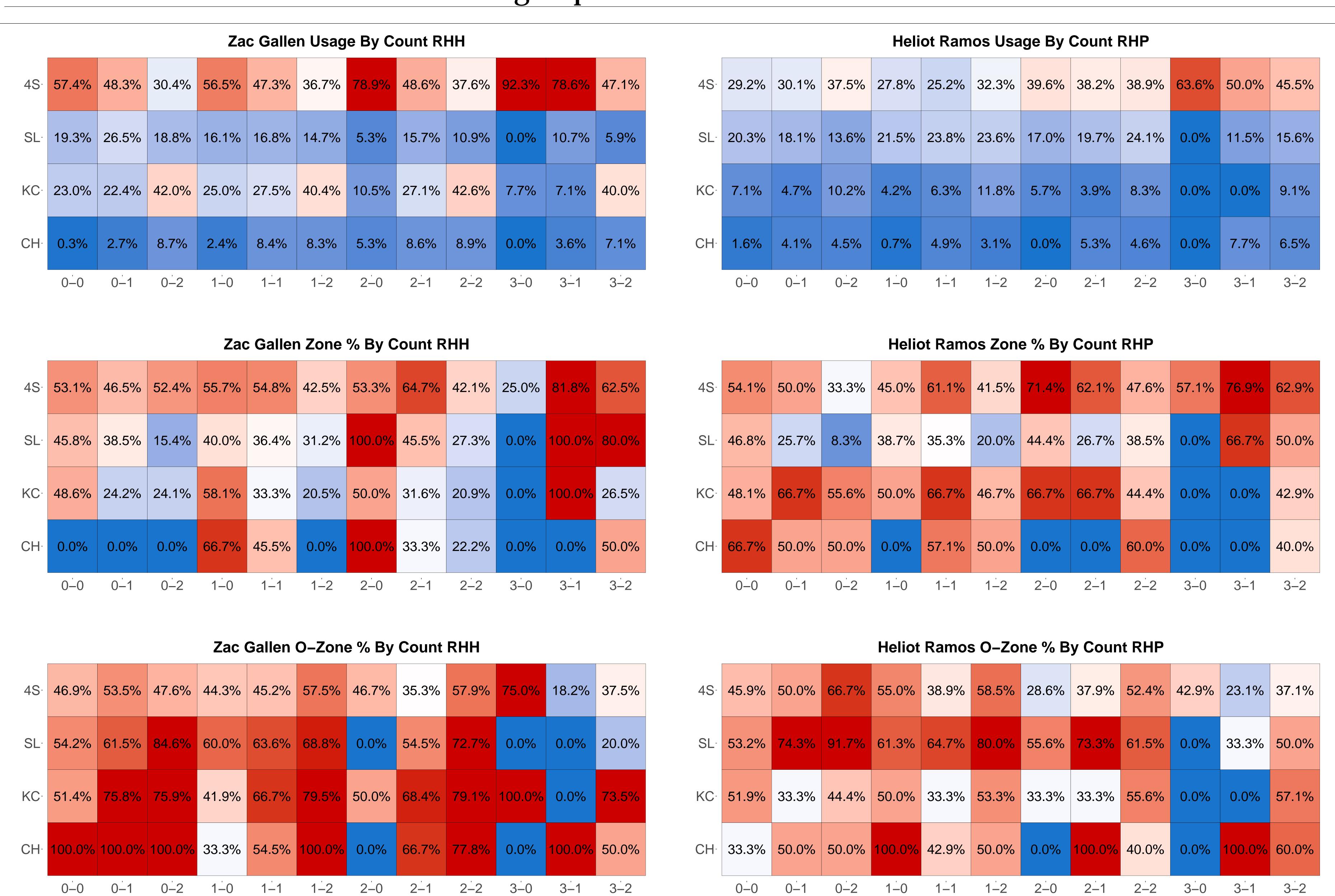
	Heliot Ramos RHP										
	Pitch	Strike %	Ball %	O-Strike %	BIP %	Z-BIP %	O-BIP %	Hard-Hit %	Z-H-Hit %	O-H-Hit %	Heart-H-Hit %
4-	-Seam	67%	33%	67%	26%	31%	11%	68%	72%	43%	72%
Ch	nangeup	59%	41%	59%	33%	39%	17%	62%	71%	0%	80%
Kr	n.Curve	68%	32%	68%	50%	59%	29%	55%	67%	0%	75%
	Slider	58%	42%	58%	36%	51%	16%	48%	54%	22%	60%
	ALL	65%	35%	65%	36%	44%	20%	47%	54%	16%	59%

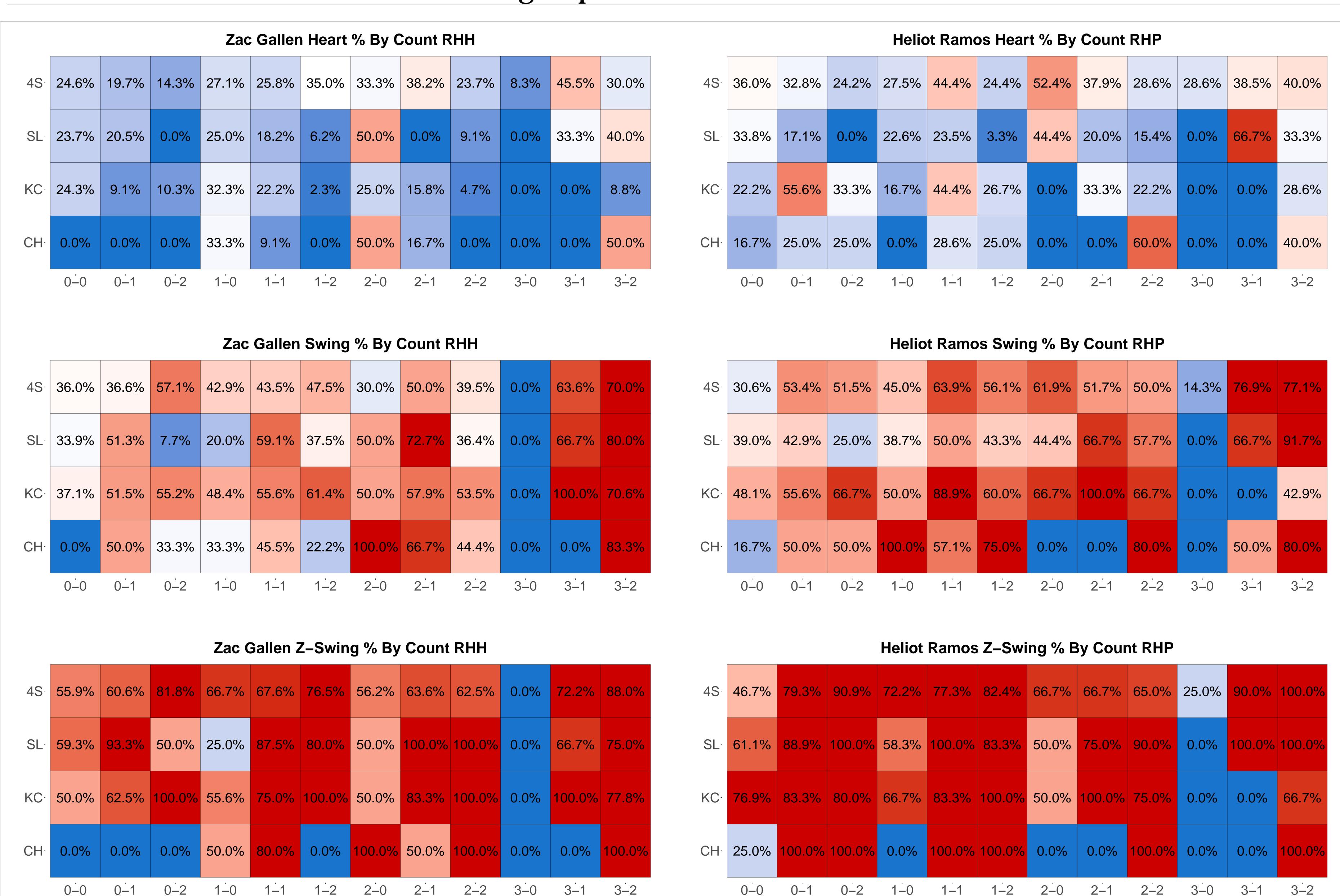
	Zac Gallen vs RHH											
Pitch	wOBA	xwOBA	xBA	BABIP	ISO	Z-wOBA	Z-xwOBA	Z-xBA	Z-BABIP	Z-ISO		
4-Seam	.347	.365	.360	.238	.099	.313	.342	.374	.268	.116		
Changeup	.303	.358	.392	.176	.059	.436	.567	.445	.429	.143		
Kn.Curve	.258	.242	.329	.147	.098	.217	.284	.293	.114	.205		
Slider	.360	.334	.335	.256	.179	.383	.368	.335	.250	.219		

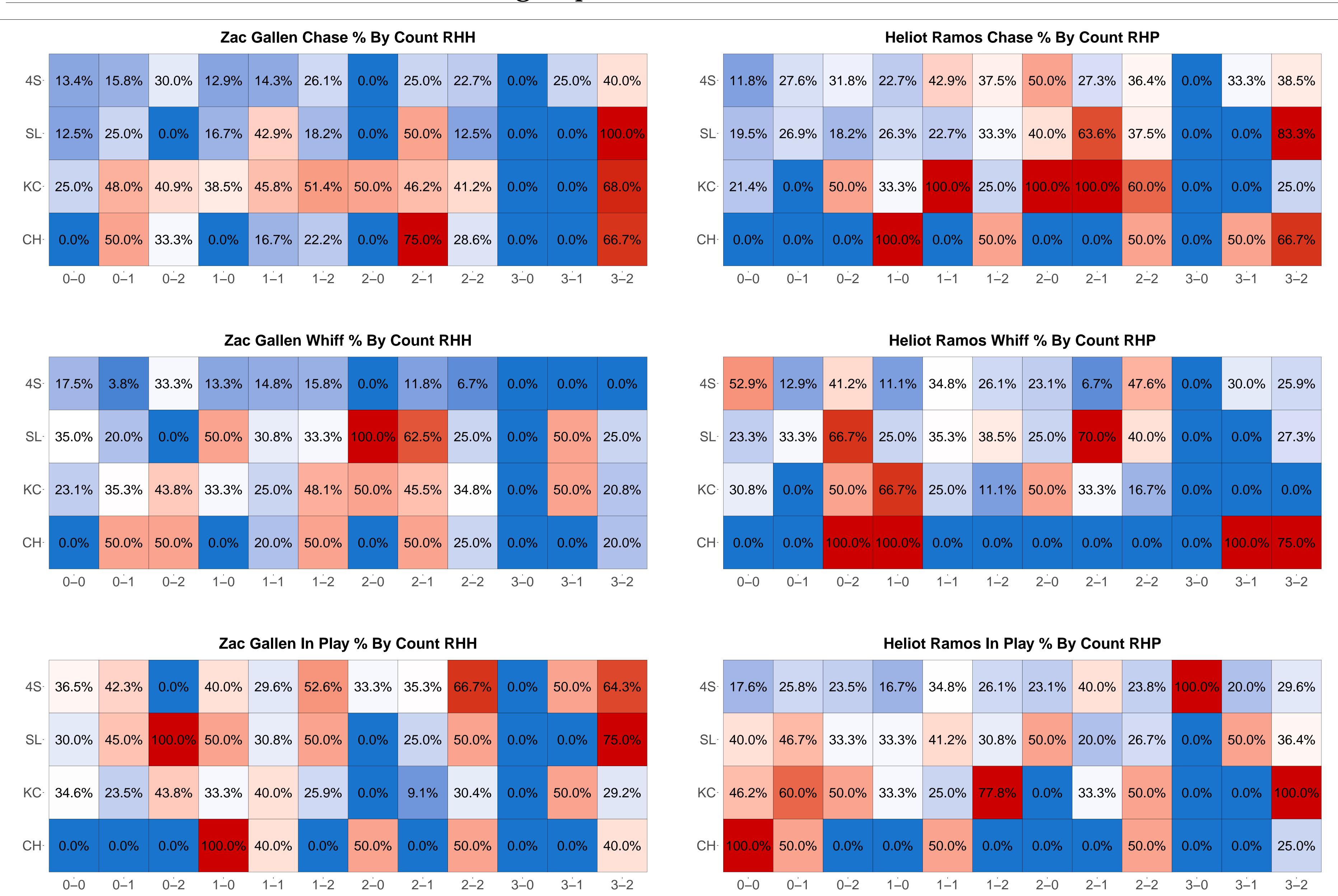
	Heliot Ramos vs RHP											
Pitch	wOBA	xwOBA	xBA	BABIP	ISO	Z-woba	Z-xwOBA	Z-xBA	Z-BABIP	Z-ISO		
4-Seam	.313	.354	.388	.153	.162	.331	.379	.400	.205	.233		
Changeup	.273	.251	.318	.200	.000	.180	.157	.234	.200	.000		
Kn.Curve	.331	.346	.328	.179	.128	.321	.339	.311	.179	.179		
Slider	.333	.334	.351	.203	.217	.460	.419	.374	.289	.333		

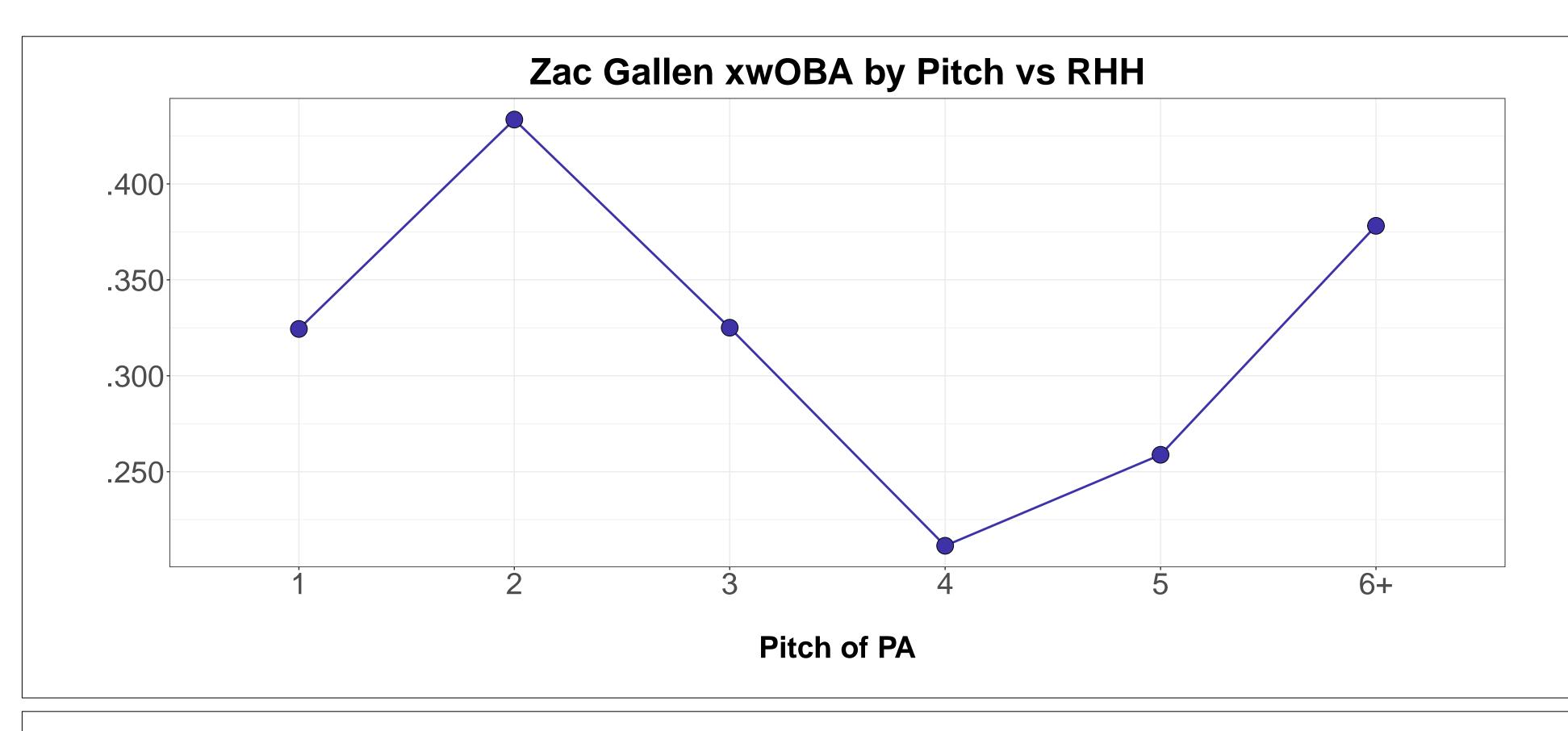
	Zac Gallen vs RHH										
Pitch	O-wOBA	O-xwOBA	O-xBA	O-BABIP	O-ISO	H-wOBA	H-xwOBA	H-xBA	H-BABIP	H-ISO	
4-Seam	.444	.432	.281	.154	.051	.305	.391	.390	.242	.167	
Changeup	.210	.211	.017	.000	.000	.610	.757	.586	.600	.200	
Kn.Curve	.289	.210	.410	.172	.017	.047	.245	.256	.053	.000	
Slider	.257	.177	.334	.286	.000	.507	.489	.379	.267	.400	

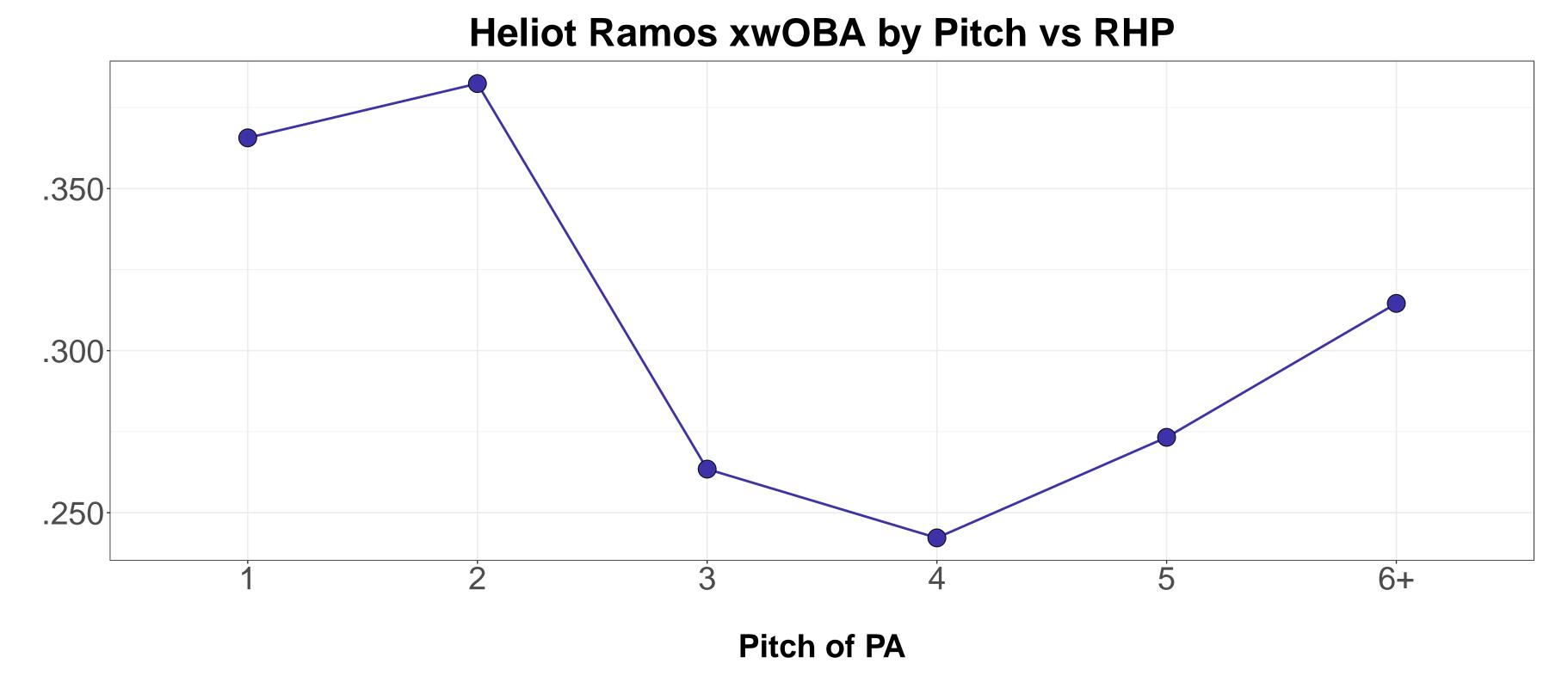
	Heliot Ramos vs RHP										
Pitch	O-wOBA	O-xwOBA	O-xBA	O-BABIP	O-ISO	H-wOBA	H-xwOBA	H-xBA	H-BABIP	H-ISO	
4-Seam	.278	.306	.296	.053	.026	.422	.440	.400	.245	.321	
Changeup	.460	.440	.900	.200	.000	.257	.140	.200	.286	.000	
Kn.Curve	.355	.365	.410	.182	.000	.400	.421	.345	.167	.278	
Slider	.096	.176	.254	.042	.000	.498	.398	.332	.387	.258	







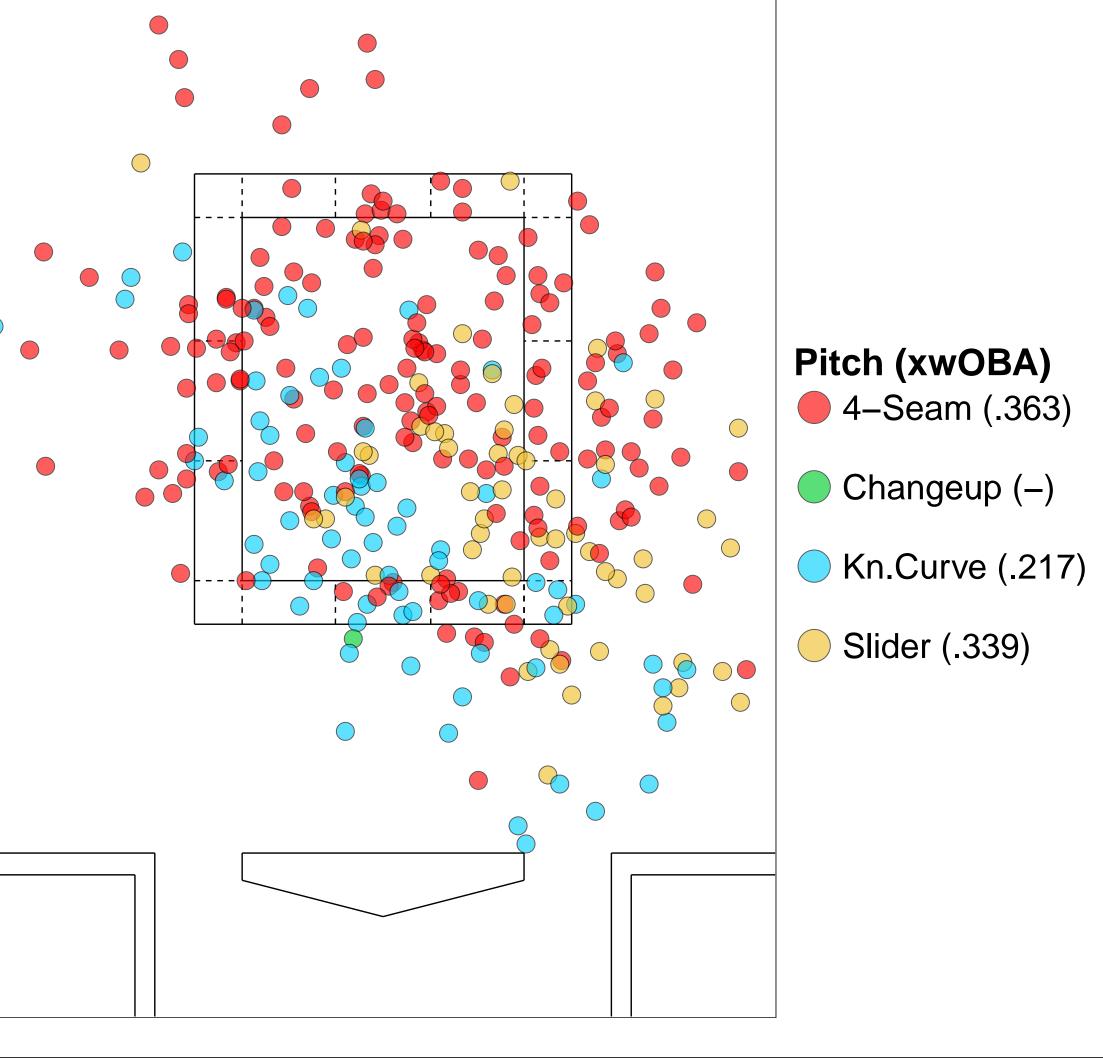




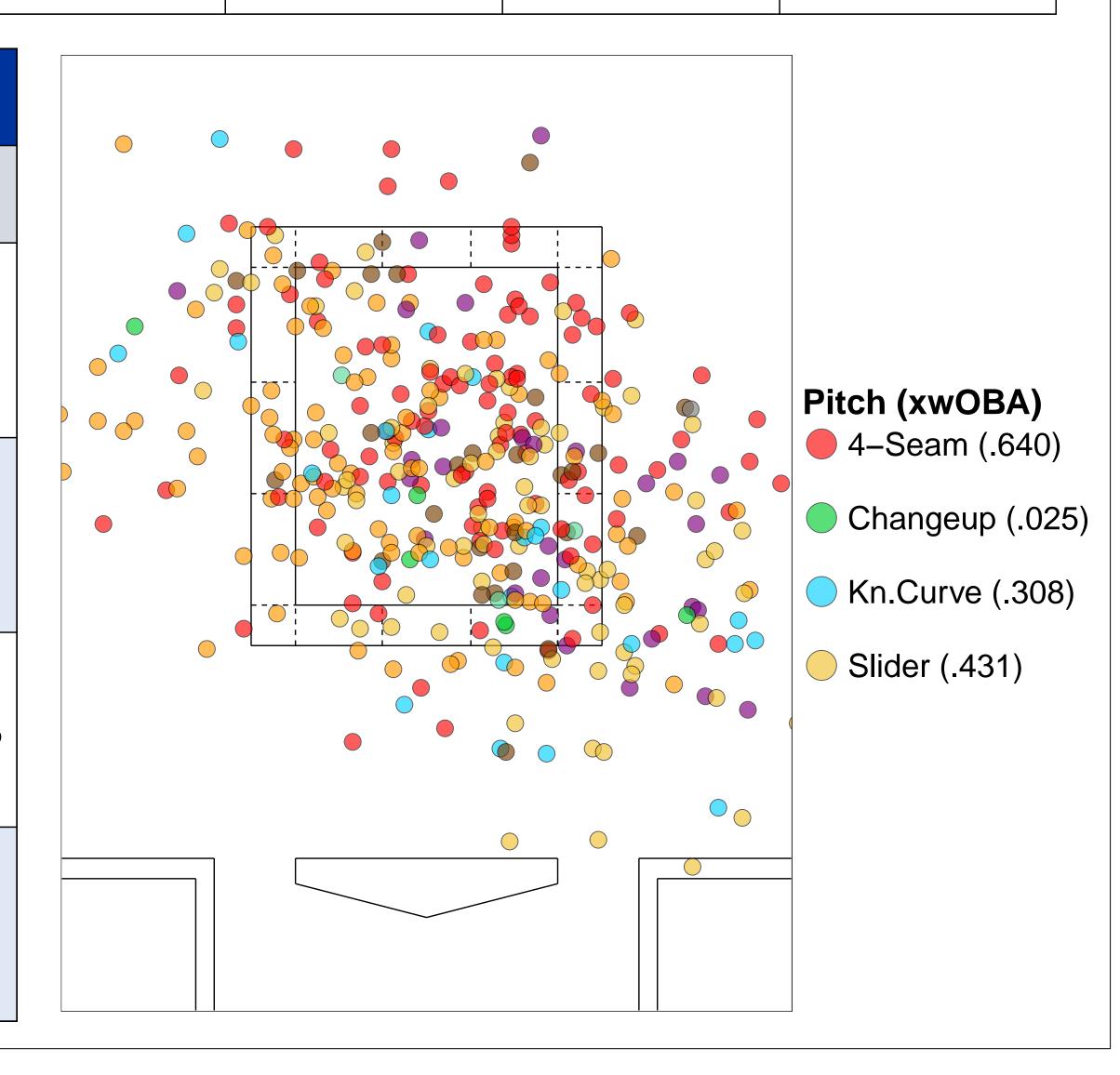
	Zac Gallen 1st–Pitch Usage vs RHH									
Most	After	After	After Field Out	After	Men in					
Frequent	Strikeout	Walk		Hit	Scoring					
4-Seam	4-Seam	4-Seam	4-Seam	4-Seam	4-Seam					
(57.4%)	(59.7%)	(42.9%)	(61.7%)	(52.7%)	(43.2%)					

Heliot Ramos 1st–Pitch Swing % vs RHP										
1st Time2nd Time3rd TimeAfterAfterMen inSeeingSeeingStrikeoutHitScoring										
35%	38%	29%	40%	32%	38%					

Zac Gallen vs RHH										
Pitch	Zone	Heart	Swing	BIP						
4S	53%	25%	36%	37%						
KC	49%	24%	37%	35%						
СН	0%	0%	0%							
SL	46%	24%	34%	30%						



Heliot Ramos vs RHP										
Pitch	Zone	Heart	Swing	BIP						
<b>4</b> S	54%	36%	31%	18%						
SL	47%	34%	39%	40%						
СН	67%	17%	17%	100%						
KC	48%	22%	48%	46%						



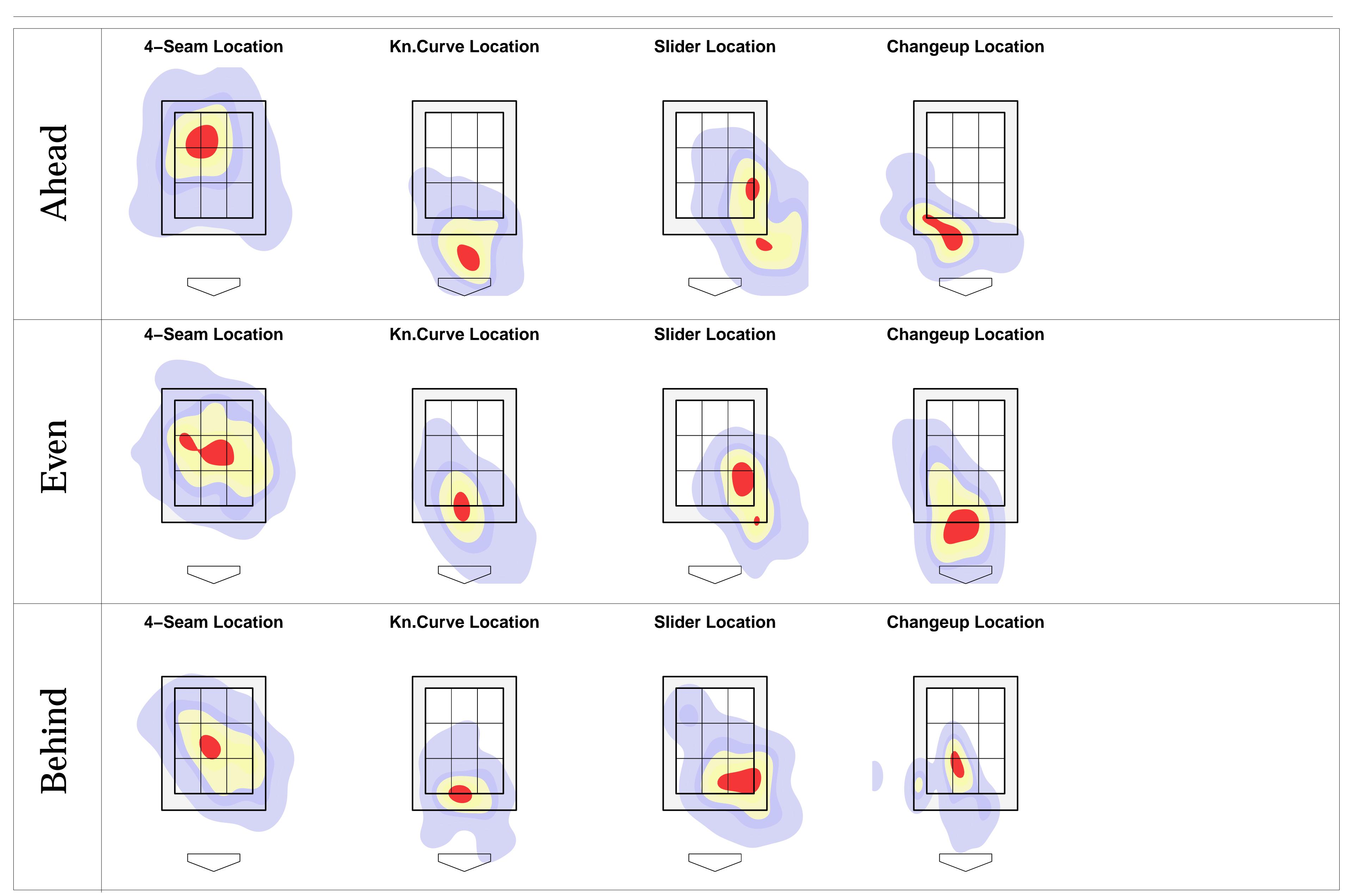
Zac Gallen Two Pitch Sequences vs RHH								
Sequence	Usage	Swing %	Whiff %	Chase %	Zone %			
4S-4S	26.1%	40.1%	10.8%	12.5%	57.2%			
4S-KC	15.3%	53.1%	33.3%	44.6%	36.0%			
KC-4S	13.6%	38.5%	10.0%	17.4%	44.9%			
KC-KC	9.2%	51.4%	37.0%	42.5%	30.5%			
SL-4S	8.6%	51.5%	9.8%	15.0%	59.6%			

Heliot Ramos Two Pitch Sequences vs RHP								
Sequence	Usage Swing % Whiff %		Chase %	BIP %				
FAST-FAST	37.8%	54.9%	23.4%	22.1%	34.4%			
FAST-BRK	20.0%	50.0%	30.5%	31.3%	43.8%			
BRK-FAST	18.8%	54.3%	21.5%	28.2%	39.3%			
BRK-BRK	13.7%	59.7%	40.7%	45.5%	36.0%			
FAST-OFF	4.0%	57.1%	33.3%	36.0%	41.7%			

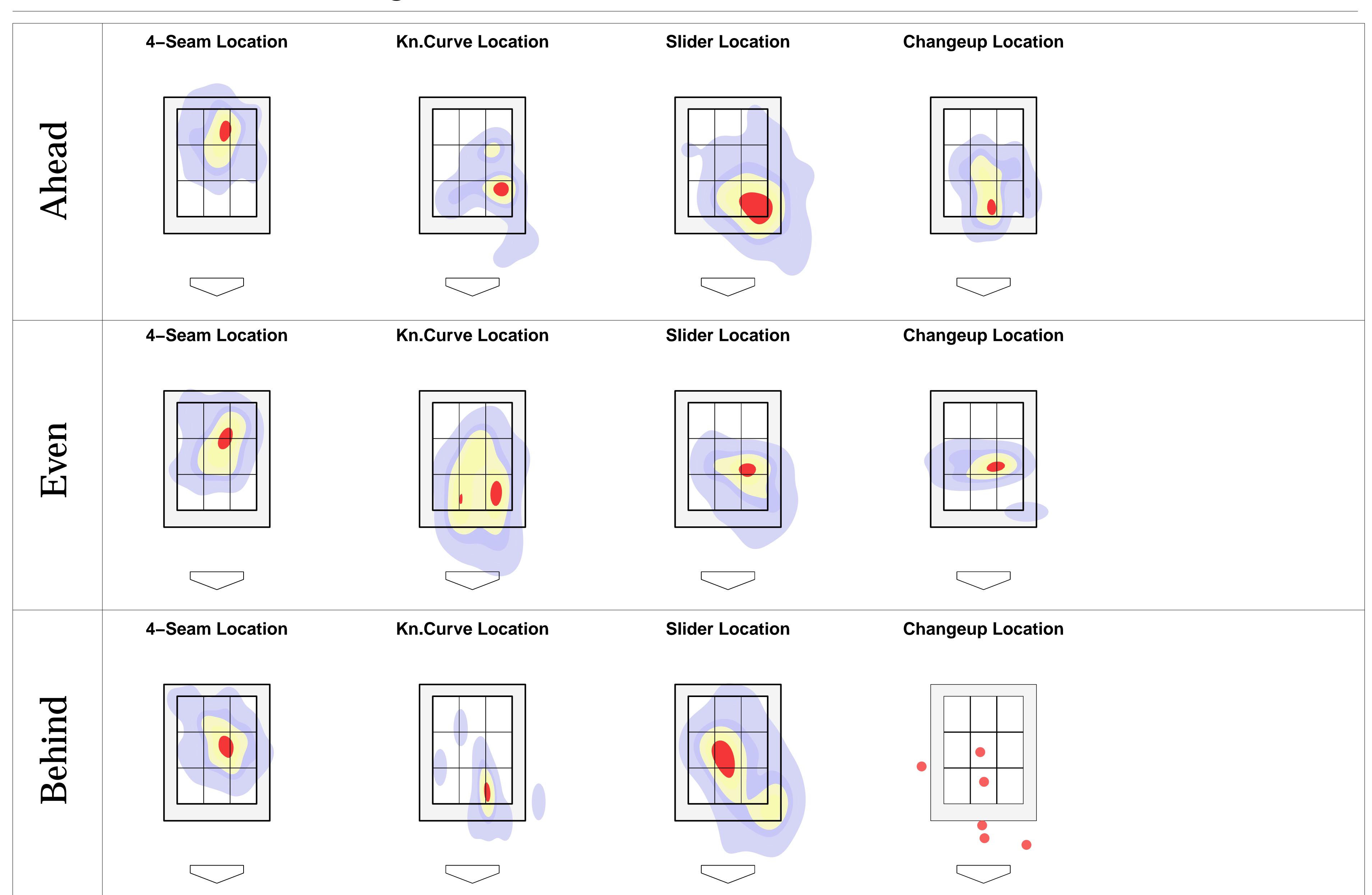
Zac Gallen Situational Results vs RHH								
Pitch	Situation	Usage	Zone %	Heart %	Chase %	Whiff %	BIP %	wOBA
	Ahead	41%	46%	23%	21%	14%	37%	.123
4-Seam	Even	51%	52%	25%	15%	15%	39%	.334
	Behind	58%	59%	31%	16%	6%	47%	.473
	Ahead	33%	23%	7%	48%	43%	30%	.209
Kn.Curve	Even	28%	37%	18%	36%	28%	35%	.212
	Behind	25%	41%	19%	54%	31%	26%	.366
	Ahead	21%	32%	13%	17%	22%	48%	.372
Slider	Even	17%	41%	21%	20%	32%	32%	.277
	Behind	11%	54%	22%	32%	53%	37%	.450
	Ahead	6%	0%	0%	32%	50%	0%	.175
Changeup	Even	4%	33%	5%	21%	22%	44%	.000
	Behind	5%	50%	33%	56%	25%	33%	.556
	Ahead	27%	33%	14%	31%	29%	35%	.203
Total	Even	44%	45%	21%	23%	22%	37%	.270
	Behind	29%	53%	27%	32%	20%	39%	.448

Heliot Ramos Situational Results vs RHP									
Pitch	Situation	Usage	Zone %	Heart %	Chase %	Whiff %	BIP %	wOBA	
4-Seam	Ahead	32%	43%	28%	32%	24%	25%	.196	
	Even	30%	54%	36%	23%	46%	24%	.232	
	Behind	37%	60%	37%	29%	19%	27%	.475	
Kn.Curve	Ahead	8%	55%	36%	27%	20%	65%	.231	
	Even	7%	51%	27%	41%	26%	41%	.329	
	Behind	5%	53%	21%	44%	36%	45%	.533	
Slider	Ahead	19%	21%	9%	28%	39%	39%	.293	
	Even	22%	42%	28%	24%	31%	37%	.365	
	Behind	18%	40%	29%	45%	36%	33%	.328	
Changeup	Ahead	4%	50%	25%	12%	22%	22%	.000	
	Even	3%	61%	33%	14%	0%	56%	.360	
	Behind	3%	17%	17%	40%	83%	17%	.383	
Total	Ahead	29%	38%	21%	33%	30%	34%	.210	
	Even	44%	51%	29%	25%	30%	36%	.298	
	Behind	27%	54%	33%	35%	23%	39%	.412	

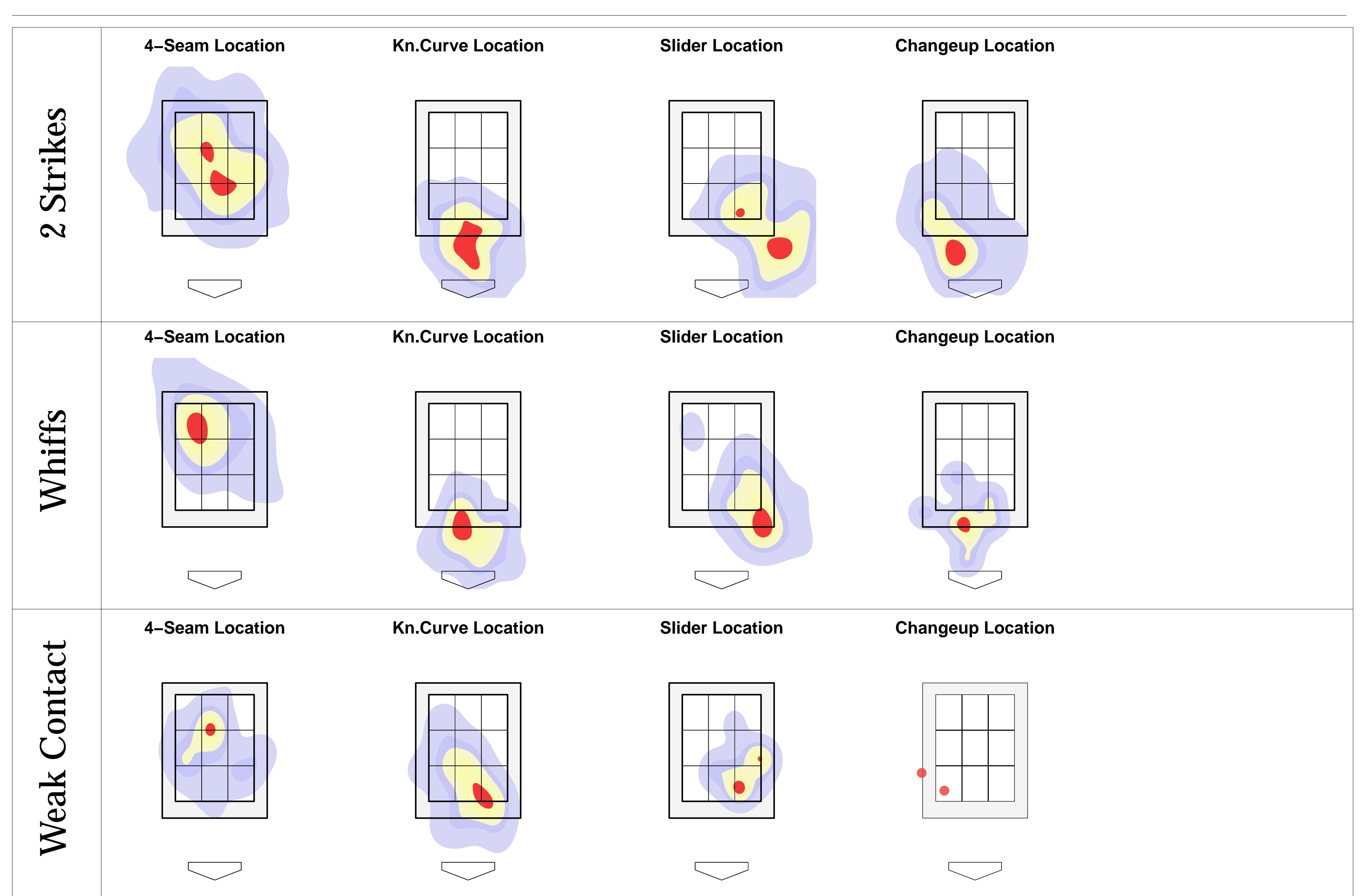
#### Zac Gallen vs RHH Pitch Location



## Heliot Ramos vs RHP Swing Location



#### Zac Gallen vs RHH Pitch Location



## Heliot Ramos vs RHP Swing Location

