







Pham 202537

r01: Oulis_73 + 1	36	71	96	168	200	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901		
r02: Kabiuna_75 + 1	36	71	96	141	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901		
r03: GrootJr_74 + 1	36	71	96	141	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901		
r04: Puggabog_74 + 1	36	71	96	141	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901		
r05: Phomeo_72	60	101	141	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901			
r06: Lommangana_72	36	71	96	141	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901		
r07: NatB6_72	36	71	96	141	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901		
r08: Wheezy_72	18	36	71	96	141	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	901		
r09: GTE6_60	71	96	141	168	200	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901		
r10: MerCougar_75	36	71	96	141	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901		
r11: Nosiavi_63	36	71	96	154	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901		
r12: RedRaider_79_0	36	71	96	154	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901		
r13: Float294_74	10	36	71	96	154	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	901		
r14: Ennea_73	10	36	71	96	154	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	901		
r15: Lollipop137_76	10	36	71	96	154	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	901		
r16: Patio_74	10	36	71	96	154	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	901		
r17: Skysand_75	10	36	71	96	154	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	901		
r18: NadineRae_71	18	36	71	96	108	111	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	901
r19: Yndexa_71 + 1	18	36	71	96	108	111	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	901
r20: WhoseManz_90 + 1	18	36	71	96	108	111	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	901
r21: iDyn_69	92	111	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901			
r22: HubbaBubba_66	88	111	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901			
r23: Scuba_63	88	111	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901			
r24: Fury_82 + 1	36	71	96	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901		
r25: GMA7_51 + 3	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r26: GTE7_50	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r27: Dakiti_60 + 1	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r28: RemRem_60 + 4	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r29: RoyalG_59 + 1	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r30: Linetti_59	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r31: Barbochs_59 + 2	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r32: Beaver_62	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r33: Diabla_63	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r34: Butterball_62 + 2	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r35: Breezic_59	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r36: GourdThymes_59	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r37: Misay19_64 + 1	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r38: Hotorobo_59 + 2	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r39: Squibbles_58	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r40: Jellybones_61	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r41: Eggsie_58	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r42: CinnamonToast_65	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r43: Sombrero_60	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r44: Crete_60	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r45: Worcestershire_59	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r46: PokyPuppy_58	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r47: PierreThree_58	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r48: BigShaq_58	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r49: John316_62	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					
r50: FelixAlejandro_64	148	168	225	268	301	335	402	475	522	555	588	640	654	685	708	729	768	816	837	854	874	901					







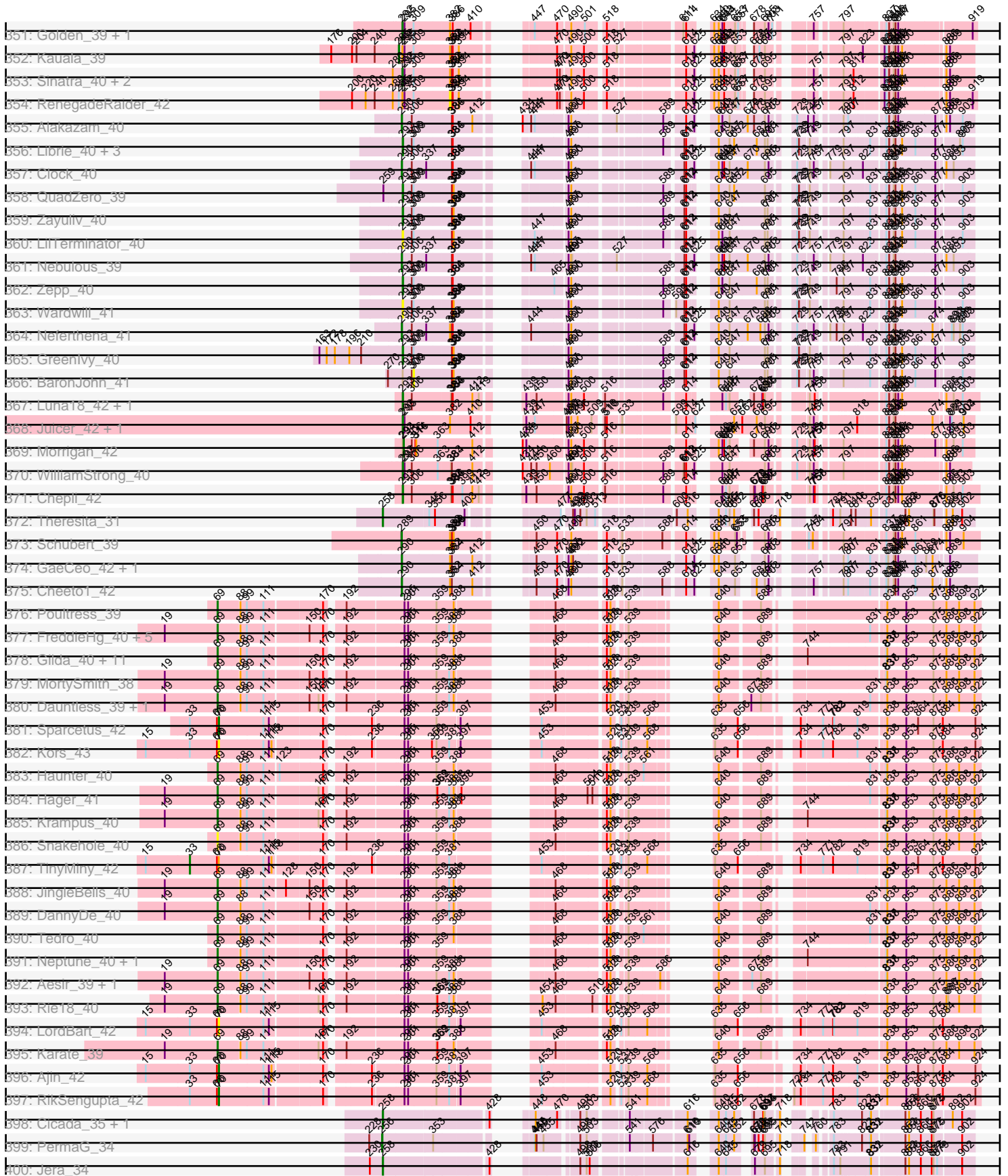
Pham 202537

251: OtterstedtS21_6U	88	86	113	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	760	791	831	848	884	894				
252: Lambo_58	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	724	760	791	831	848	884	894			
253: Wojtek_56	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	760	791	831	848	884	894				
254: BirthdayBoy_62	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	760	791	831	848	884	894				
255: DoobyDoo_59	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	760	791	831	848	884	894				
256: Yikes_62	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	760	791	831	848	884	894				
257: Alephlan_61	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	760	791	831	848	884	894				
258: Fulcrum_60 + 1	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	724	760	791	831	848	884	894			
259: Tillicus_57	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	760	791	831	848	884	894				
260: Gibbin_62	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	760	791	831	848	884	894				
261: Ranch_60	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	760	791	831	848	884	894				
262: Erutan_60	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	760	791	831	848	884	894				
263: NorManre_63 + 1	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	760	791	831	848	884	894				
264: Genamy16_63	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	760	791	831	848	884	894				
265: Lila22_61	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	760	791	831	848	884	894				
266: MoiGyank_63	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	724	760	791	831	848	884	894			
267: Apeppi_55	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	760	791	831	848	884	894				
268: GreteLyn_60	88	86	112	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	625	635	685	719	760	791	831	848	884	894	
269: DumpTruck_58	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	760	791	831	848	884	894				
270: Sadoo1_61	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	760	791	831	848	884	894				
271: DaviePasture_60	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	760	791	831	848	884	894				
272: ParvusTarda_59	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	724	760	791	831	848	884	894			
273: LuckyLeo_57	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	648	760	791	831	848	884	894				
274: Xeniaz_54	88	86	110	135	181	225	232	293	352	418	445	453	466	490	518	540	561	590	614	625	635	685	719	760	791	831	848	884	894
275: Mercedes_36	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
276: Greys_41 + 13	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
277: HankSprout_41	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
278: McGaleon_43	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
279: Kale_40	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
280: Thorongil_41	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
281: Redfield_40 + 1	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
282: TatarkaPM_41 + 13	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
283: Winzigespinne_40	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
284: Ioannes_41	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
285: Benjalaren_41 + 10	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
286: Klimt_41 + 3	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
287: Espinosa_40 + 6	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
288: Bonino_40 + 11	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
289: Raccoon_40 + 1	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
290: CarisSwetik_44	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
291: Endor_41	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
292: AlexAdier_41 + 4	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
293: Agente005_41	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
294: GardenB_40	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
295: Pnriends_41 + 3	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
296: TeddyBear_40 + 4	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
297: BeautPeep30_41 + 1	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
298: BigRedCliford_41 + 1	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
299: Thompsone_41	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	
300: Balsa_40 + 1	46	148	175	210	218	293	300	371	410	412	445	453	466	490	518	533	598	614	625	635	685	728	751	791	831	848	884	894	



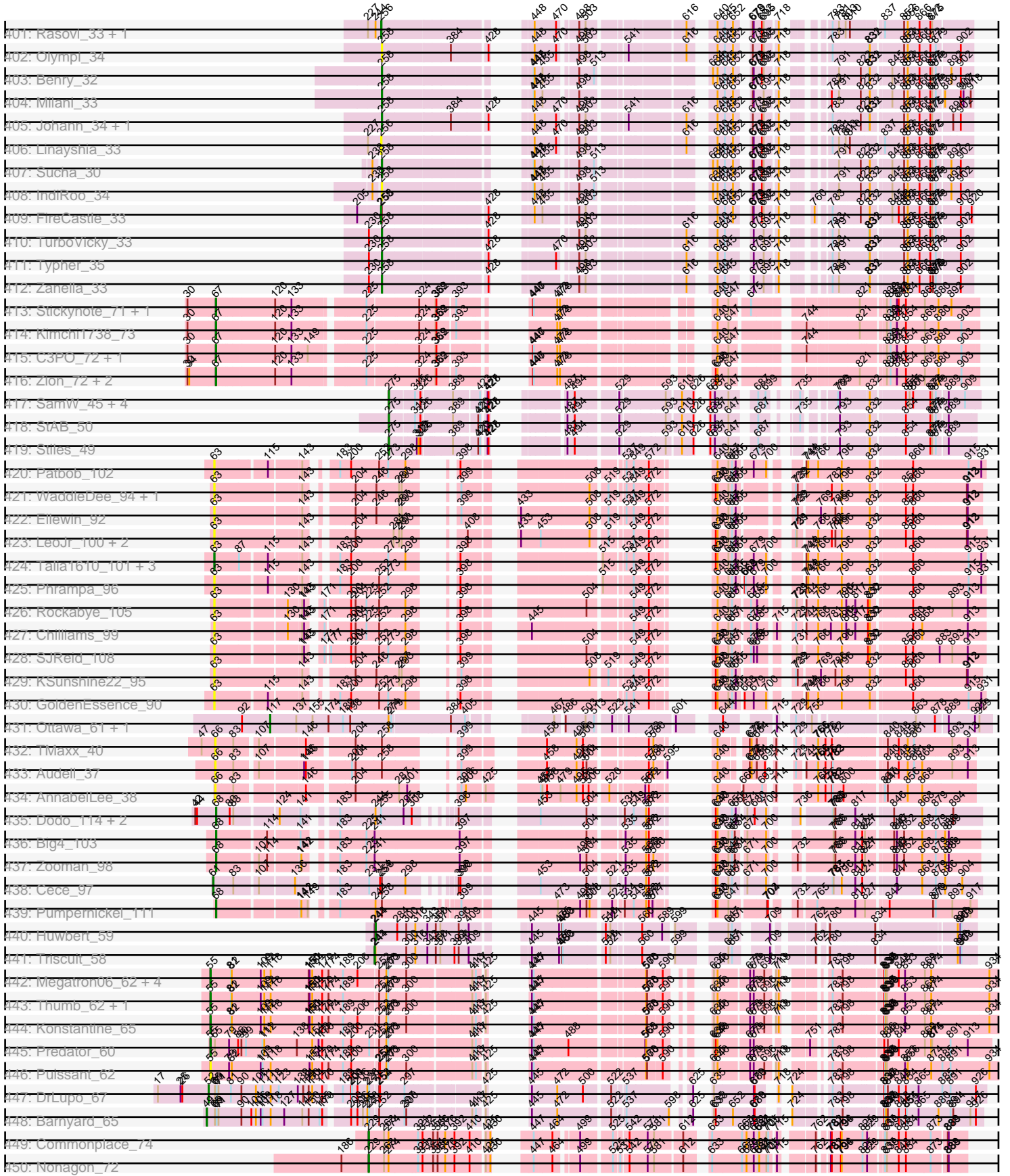


Pham 202537

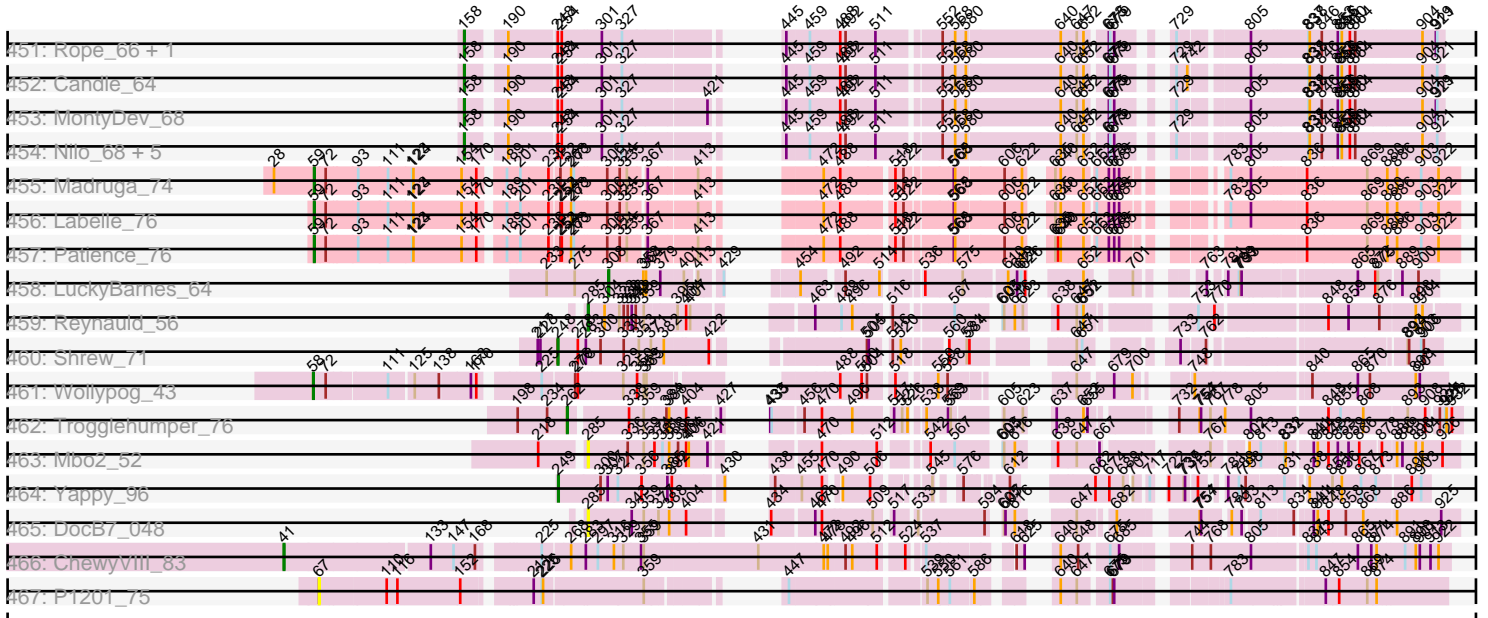




Pham 202537



Pham 202537





Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. If this default region is judged to be packed too tightly with annotated starts, the track will be further scaled to only show that region of the ORF with annotated starts. This action will be indicated by adding "Zoomed" to the title. For starts, yellow indicates the location of called starts comprised solely of Glimmer/GeneMark auto-annotations, green indicates the location of called starts with at least 1 manual gene annotation.

## Pham 202537 Report

This analysis was run 01/18/25 on database version 583.

Pham number 202537 has 767 members, 108 are drafts.

Phages represented in each track:

- Track 1 : 8UZL\_50, FF47\_48
- Track 2 : NoShow\_58
- Track 3 : JacoRen57\_46
- Track 4 : Maco6\_48, Muddy\_50
- Track 5 : Fowlmouth\_74
- Track 6 : Cuke\_73
- Track 7 : Indlulamithi\_65
- Track 8 : MrMiyagi\_73
- Track 9 : Onyinye\_65, Aikoy\_65
- Track 10 : Leopard\_64
- Track 11 : Aledel\_26, Riovina\_26, Eunoia\_26, OMalley\_26
- Track 12 : Lucy\_25
- Track 13 : DreamTeam\_25, Gisselle\_25, Kittykat\_25
- Track 14 : Christian\_25
- Track 15 : WonderBoy\_25
- Track 16 : Nubia\_29, Oxynfrius\_29
- Track 17 : HunterDalle\_26, Vulture\_26
- Track 18 : Beethoven\_29, Vallejo\_29, Glenn\_29, TattModd\_29, Rozby\_29, Fluke\_29, Riverdale\_29, Carpal\_29
- Track 19 : EstebanJulior\_26, MamaPearl\_26
- Track 20 : Misaeng\_29
- Track 21 : Huntingdon\_29, RcigaStruga\_29
- Track 22 : BrotherBLo\_29
- Track 23 : Sergei\_26, Maria1952\_26, Daiboju\_26, KingBob\_26, Temper16\_26, Herb\_26
- Track 24 : Chridison\_26
- Track 25 : RAP15\_29, Cholula\_29, MeganNoll\_29, Potatoes\_29, Jumboset\_29, Savage2526\_29
- Track 26 : PitaDog\_25, CristinaYang\_25, ChewChew\_25, Nancia\_25, DrRobert\_25, Bodacious\_25
- Track 27 : AppleCider\_29
- Track 28 : Wawa\_29
- Track 29 : Moki\_25
- Track 30 : Pumancara\_25
- Track 31 : Kalizoi\_29
- Track 32 : Albanese\_29
- Track 33 : PartyCup\_29

- Track 34 : Urla\_26
- Track 35 : Suppi\_29, Canowicakte\_29, Wayne\_29
- Track 36 : Greenhouse\_29
- Track 37 : Joann\_29
- Track 38 : Preamble\_25
- Track 39 : GreenHearts\_29
- Track 40 : Zorro\_29
- Track 41 : PinkFriday\_25
- Track 42 : Lakshmi\_29
- Track 43 : Litotes\_29
- Track 44 : AustinPowers\_26
- Track 45 : Korra\_30
- Track 46 : Bennie\_25
- Track 47 : Scuttle\_29
- Track 48 : BigMack\_25
- Track 49 : LilStuart\_25
- Track 50 : Makoto\_25
- Track 51 : Wheelbite\_90
- Track 52 : Shrooms\_93
- Track 53 : LiSara\_92, Salgado\_95
- Track 54 : Kovu\_95
- Track 55 : Laroye\_95
- Track 56 : Waltz\_91
- Track 57 : Edmundo\_94
- Track 58 : SorJuana\_70, Anansi\_70, Rings\_71, Gorgeous\_70
- Track 59 : Amigo\_71, Jaek\_70, Ichor\_70, Boersma\_73, Yeezus\_70
- Track 60 : Molivia\_74
- Track 61 : Thunderclap\_70
- Track 62 : Heylee\_73, Amavida\_72
- Track 63 : Crosby\_42
- Track 64 : LazerLemon\_42
- Track 65 : UNTPL\_44
- Track 66 : Intolerant\_41, Bogota\_43
- Track 67 : Marky\_44
- Track 68 : JackieB\_42
- Track 69 : Araceli\_42
- Track 70 : Henoccus\_42
- Track 71 : Stuff\_42
- Track 72 : Microdon\_41
- Track 73 : Yara\_66
- Track 74 : Wentworth\_70
- Track 75 : Wilkos\_72
- Track 76 : Rooney\_70
- Track 77 : Greenbelt\_105
- Track 78 : Dryad\_74
- Track 79 : PHTown\_70, ShakeNBake\_70
- Track 80 : Gibson\_70
- Track 81 : Lizz\_70
- Track 82 : KimJongPhill\_74
- Track 83 : Zuko\_72
- Track 84 : BRock\_117
- Track 85 : Garnacho\_121
- Track 86 : GiJojo\_116



- Track 87 : Alone3\_128
- Track 88 : Talos\_126
- Track 89 : LuckySocke\_124
- Track 90 : Beleetus\_123
- Track 91 : Apiary\_72, Polyuyuki\_72
- Track 92 : Braxoaddie\_72, Maselop\_72, CoffeeBean\_72
- Track 93 : GuyFagieri\_70
- Track 94 : MacGully\_81
- Track 95 : Flapper\_75
- Track 96 : GTE5\_60
- Track 97 : Dalilpop\_75
- Track 98 : Turuncu\_75
- Track 99 : GRU1\_61
- Track 100 : Kurt\_72, Jifall16\_71, KidneyBean\_72, Emianna\_72
- Track 101 : Outis\_73, StarStruck\_73
- Track 102 : Kabluna\_75, Bonum\_76
- Track 103 : GrootJr\_74, Tracker\_72, Arti\_71, NovumRegina\_72, Foxboro\_72
- Track 104 : Buggaboo\_74, SuperSulley\_74
- Track 105 : Phomeo\_72
- Track 106 : Commandaria\_72
- Track 107 : NatB6\_72
- Track 108 : Wheezy\_72
- Track 109 : GTE8\_60
- Track 110 : MerCougar\_75
- Track 111 : NosilaM\_73
- Track 112 : RedRaider\_79
- Track 113 : Float294\_74
- Track 114 : Ennea\_79
- Track 115 : Lollipop1437\_76
- Track 116 : Patio\_74
- Track 117 : Skysand\_75
- Track 118 : NadineRae\_71
- Track 119 : Yndexa\_71, Sukkupi\_71, BiPauneto\_74
- Track 120 : WhoseManz\_71, Marietta\_72
- Track 121 : IDyn\_69
- Track 122 : HubbaBubba\_68
- Track 123 : Scuba\_83
- Track 124 : Fury\_82, Pleakley\_82
- Track 125 : GMA7\_51, Amore2\_62, Austin\_61, HayZem\_62
- Track 126 : GTE7\_50
- Track 127 : Dakiti\_60, Chelms\_59
- Track 128 : RemRem\_60, Ekhein\_59, Exiguo\_58, Flakey\_58, Sam12\_58
- Track 129 : RoyalG\_59, SteveFrench\_58
- Track 130 : Linetti\_59
- Track 131 : Barbochs\_59, CathyBurgh\_58, Lizzo\_59
- Track 132 : Beaver\_62
- Track 133 : Diabla\_63
- Track 134 : Butterball\_62, Boneham\_63, BirksAndSocks\_64
- Track 135 : Breezic\_59
- Track 136 : GourdThymes\_59
- Track 137 : Msay19\_64, Poland\_64
- Track 138 : Hotorobo\_59, Monty\_58, Gorko\_58
- Track 139 : Squibbles\_58

- Track 140 : Jellybones\_61
- Track 141 : Eggsie\_58
- Track 142 : CinnamonToast\_65
- Track 143 : Sombrero\_60
- Track 144 : Crete\_60
- Track 145 : Worcestershire\_59
- Track 146 : PokyPuppy\_58
- Track 147 : PierreThree\_58
- Track 148 : BigShaq\_58
- Track 149 : John316\_62
- Track 150 : FelixAlejandro\_64
- Track 151 : Adgers\_62
- Track 152 : BenoitCattle\_59
- Track 153 : Bianmat\_57, Lidong\_57, Shelley\_57, Jams\_57
- Track 154 : Jormungandr\_57, Guillaume\_57, MrWormie\_57, Lahirium\_57, Berries\_57, Nimi13\_57
- Track 155 : Luker\_58, Kaseim\_57
- Track 156 : Sticker17\_57, Neoevie\_57, Damp\_57, GalacticEye\_57, Teal\_57, Minos\_58, Newt\_58, Anamika\_57, Hail2Pitt\_56, Hello\_57, Harambe\_57
- Track 157 : Charianelly\_57
- Track 158 : Woes\_57
- Track 159 : Teatealatte\_58, Tredge\_57
- Track 160 : Philon9\_55
- Track 161 : Teech\_56
- Track 162 : Niagara\_57
- Track 163 : Katyusha\_57, Benczkowski14\_57
- Track 164 : Demosthenes\_55
- Track 165 : Hollow\_57
- Track 166 : Vitaenoi\_55
- Track 167 : ASerpRocky\_55
- Track 168 : Kvothe\_56
- Track 169 : Starburst\_53, Typhonomachy\_53
- Track 170 : MunkgeeRoachy\_51
- Track 171 : GoldHunter\_54, Elliott\_53, PsychoKiller\_52, Burnsey\_53, Sopespian\_50, Axym\_52
- Track 172 : Nibbles\_48
- Track 173 : CanesSauce\_52, AndPeggy\_50, ChocoMunchkin\_52, Yarn\_50, SteamedHams\_54
- Track 174 : Orla\_60
- Track 175 : Gibbous\_48, Dre3\_48
- Track 176 : Agatha\_53, Quasar\_53
- Track 177 : Cozz\_51
- Track 178 : Amok\_54
- Track 179 : Nina\_53, SweatNTears\_55
- Track 180 : Zareef\_51
- Track 181 : HippoPololi\_50
- Track 182 : Fribs8\_48
- Track 183 : Mayweather\_61
- Track 184 : ChickenTender\_56
- Track 185 : SketchMex\_53, Biskit\_55
- Track 186 : GTE2\_44
- Track 187 : RedBaron\_56
- Track 188 : Emalyn\_52

- Track 189 : AikoCarson\_54
- Track 190 : MaVan\_49, Azira\_49
- Track 191 : Hexbug\_60
- Track 192 : MScarn\_57
- Track 193 : MAnor\_58
- Track 194 : Button\_57
- Track 195 : Jamzy\_58
- Track 196 : PotPie\_56, Vine\_59, Yucky\_60
- Track 197 : KayGee\_58, Elinal\_60
- Track 198 : GiKK\_57
- Track 199 : Troje\_55, Buttrmlkdreams\_55
- Track 200 : Margaret\_58
- Track 201 : Horseradish\_55, Yummy\_55
- Track 202 : Lauer\_52
- Track 203 : SummitAcademy\_56
- Track 204 : CherryonLim\_57
- Track 205 : Nodigi\_60
- Track 206 : Cleo\_47
- Track 207 : Pons\_58
- Track 208 : RanchParmCat\_57
- Track 209 : Survivors\_49
- Track 210 : Carsonalex\_56
- Track 211 : BigChungus\_56, Feastonyeet\_56
- Track 212 : BillDoor\_53
- Track 213 : Blondies\_55
- Track 214 : Yakult\_55
- Track 215 : Bavilard\_56
- Track 216 : SheckWes\_60
- Track 217 : Tolls\_54
- Track 218 : PatrickStar\_58, Kampe\_58, RobinSparkles\_61, Orchid\_57
- Track 219 : Gibbles\_56
- Track 220 : Prager\_53, Giuseppe\_53, Adjutor\_52, Chill\_55, PBI1\_50, WaldoWhy\_55, Butterscotch\_52, Visconti\_54, Troll4\_53, BigMama\_51, Thoth\_53, Mopey\_54
- Track 221 : PLOT\_53, SirHarley\_54, Erk16\_52, Gumball\_52
- Track 222 : KandZ\_52
- Track 223 : Delton\_54
- Track 224 : Penelope2018\_53, Helpful\_56
- Track 225 : Nova\_52
- Track 226 : Hawkeye\_56
- Track 227 : Frizzle\_36
- Track 228 : Sapo\_34
- Track 229 : Ghobes\_35
- Track 230 : Archimedes\_37
- Track 231 : Camerico\_63
- Track 232 : GordTnk2\_60
- Track 233 : Gmala1\_55
- Track 234 : GordDuk1\_59
- Track 235 : GMA3\_58
- Track 236 : Jumbo\_57
- Track 237 : Suzy\_49
- Track 238 : BiteSize\_50, Terapin\_51, Madi\_50, Sienna\_50, Beyoncage\_50, Djokovic\_50



- Track 239 : LilyPad\_52
- Track 240 : LittleFella\_57
- Track 241 : Phendrix\_173
- Track 242 : GodonK\_184
- Track 243 : Mareelih\_167, BlueNGold\_166, Forza\_170, Boopy\_169
- Track 244 : Sixama\_168
- Track 245 : GMA2\_64
- Track 246 : Mima20\_62
- Track 247 : Jalebi\_59, Sampudon\_60
- Track 248 : Zany\_58
- Track 249 : RazorC\_60, Astralis\_61, Rumi\_61
- Track 250 : NovaSharks\_62, Alyssamiracle\_63, Avian\_60, Jamemuya19\_61
- Track 251 : OtterstedtS21\_60
- Track 252 : Lambo\_58
- Track 253 : Wojtek\_56
- Track 254 : BirthdayBoy\_62
- Track 255 : DoobyDoo\_59
- Track 256 : Yikes\_62
- Track 257 : Alephilan\_61
- Track 258 : Fulcrum\_60, GOATification\_60
- Track 259 : Tillicus\_57
- Track 260 : Gibbin\_62
- Track 261 : Ranch\_60
- Track 262 : Erutan\_60
- Track 263 : NorManre\_63, Patos\_63
- Track 264 : Genamy16\_63
- Track 265 : Lila22\_61
- Track 266 : MoiGyank\_63
- Track 267 : Apeppi\_55
- Track 268 : GretelLyn\_60
- Track 269 : DumpTruck\_58
- Track 270 : Sadboi\_61
- Track 271 : DaviePasture\_60
- Track 272 : ParvusTarda\_59
- Track 273 : LuckyLeo\_57
- Track 274 : Xenia2\_54
- Track 275 : Mercedes\_36
- Track 276 : Greys\_41, AxiPup\_41, Vispistious\_41, Oxtober96\_42, Lovelyunicorn\_41, Knox\_41, Convict\_41, Velene\_41, Strathdee\_41, PuppyEggo\_41, WildNOut\_41, Teagan\_41, Den3\_41, BonesMcCoy\_41
- Track 277 : HankSprout\_41
- Track 278 : McGalleon\_43
- Track 279 : Kale\_40
- Track 280 : Thorongil\_41
- Track 281 : Redfield\_40, Schnapsidee\_40
- Track 282 : TatarkaPM\_41, MrWorldwide\_41, Pherferi\_41, Inventa\_41, ParleG\_41, PhredFlintston\_41, NickSell\_41, Martin\_42, Kurt1\_41, Rapheph\_41, MillyPhilly\_41, TinSulphur\_42, Phiderman\_41, Shee\_41
- Track 283 : Winzigespinne\_40
- Track 284 : Ioannes\_41
- Track 285 : Benjalauen\_41, KannH\_40, HungryHenry\_40, Chako\_40, Rog141\_40, Clancy\_40, Gargoyle\_41, StirfryIV\_40, Ilzat\_40, Jerbirus\_42, Gubbabump\_40
- Track 286 : Klimt\_41, Pocket\_40, Chamuel\_40, SonOfLevi\_41

- Track 287 : Espinosa\_40, Exploradora\_42, Christoph\_40, ManRay\_40, JeriBeth\_42, Tenda\_40, Aubergine\_40
- Track 288 : Bonino\_40, Baines\_40, Dave\_41, Calix\_40, Etta\_40, Erla\_40, Renzie\_41, Superfresh\_41, Raptor\_41, Antoinette\_41, Gelo\_40, Ludgate\_41
- Track 289 : Raccoon\_40, Hamlet\_40
- Track 290 : CarisSwetlik\_44
- Track 291 : Endor\_41
- Track 292 : AlexAdler\_41, Janus167\_40, Robinson\_41, Figueroism\_41, Riyhil\_41
- Track 293 : Agente005\_41
- Track 294 : GardenB\_40
- Track 295 : Phriends\_41, SoilGremlin\_42, Delphidian\_41, OldNelly\_42
- Track 296 : TeddyBear\_40, Gershwin\_40, Asta\_40, Nattles\_40, Oats\_40
- Track 297 : BeautPeep30\_41, Phireproof\_41
- Track 298 : BigRedClifford\_41, Blage\_41
- Track 299 : Thompsone\_41
- Track 300 : Balsa\_40, Peppino\_40
- Track 301 : HanSolo\_40
- Track 302 : Sedgewig\_40
- Track 303 : Nagem\_41, SJay\_41
- Track 304 : Byron23\_42, Bandik\_41, Stanktossa\_41
- Track 305 : Jenos\_44
- Track 306 : StingRay\_40
- Track 307 : Dothraki\_41
- Track 308 : Duocatuli\_40
- Track 309 : JasonD\_45
- Track 310 : KingJulien\_40
- Track 311 : Acosta\_42
- Track 312 : BeeBee8\_41
- Track 313 : FarmerDoug\_40
- Track 314 : AranulaLuti\_40
- Track 315 : Etna\_40
- Track 316 : Symere\_42
- Track 317 : Stormbreaker8\_40
- Track 318 : Zada\_42
- Track 319 : Garey24\_41
- Track 320 : Papafritta\_40
- Track 321 : Peep\_41
- Track 322 : JasperRussell\_40
- Track 323 : Alyxandracam\_41
- Track 324 : ShaiHulud\_42
- Track 325 : MonChoix\_39
- Track 326 : Leafus\_40
- Track 327 : MaeLinda\_41
- Track 328 : Mandalorian\_39
- Track 329 : Carostasia\_39, Quartz\_40, Nucci\_39
- Track 330 : YuuY\_40
- Track 331 : Juanyo\_39
- Track 332 : Tinyman4\_39, HerculesXL\_40
- Track 333 : Scissor2024\_40
- Track 334 : WestPM\_37
- Track 335 : Schimmels22\_39
- Track 336 : Ixel\_41
- Track 337 : ChikPic\_40

- Track 338 : Phanita\_39, Finny\_41
- Track 339 : Andromedas\_40, ColaCorta\_40, Glamour\_40
- Track 340 : Saratos\_40
- Track 341 : Zenitsu\_40, MCubed\_40
- Track 342 : Eleri\_40
- Track 343 : Sansa\_39
- Track 344 : Shamu\_41
- Track 345 : Pajaza\_37, Casey\_37, Pikmin\_37
- Track 346 : BouleyBill\_39
- Track 347 : Koji\_39
- Track 348 : Jingles\_39
- Track 349 : Guetzie\_40, SirVictor\_40
- Track 350 : PrincePhergus\_39
- Track 351 : Golden\_39, Lucky3\_39
- Track 352 : Kauala\_39
- Track 353 : Sinatra\_40, Bustleton\_39, Pherbot\_39
- Track 354 : RenegadeRaider\_42
- Track 355 : Alakazam\_40
- Track 356 : Librie\_40, CaptainRex\_40, Hasitha\_40, Fulton\_40
- Track 357 : Clock\_40
- Track 358 : QuadZero\_39
- Track 359 : Zayuliv\_40
- Track 360 : LilTerminator\_40
- Track 361 : Nebulous\_39
- Track 362 : Zepp\_40
- Track 363 : Wardwill\_41
- Track 364 : Neferthena\_41
- Track 365 : GreenIvy\_40
- Track 366 : BaronJohn\_41
- Track 367 : Luna18\_42, KatChan\_42
- Track 368 : Juicer\_42, Jemerald\_42
- Track 369 : Morrigan\_42
- Track 370 : WilliamStrong\_40
- Track 371 : Chepli\_42
- Track 372 : Theresita\_31
- Track 373 : Schubert\_39
- Track 374 : GaeCeo\_42, ChickenKing\_40
- Track 375 : Cheeto1\_42
- Track 376 : Poultruss\_39
- Track 377 : FreddieHg\_40, Crestdrop\_40, Hiddenleaf\_40, Chivey\_40, Annapurna\_41, SilentWarrior\_40
- Track 378 : Gilda\_40, Rachella\_40, OverHedge\_40, Anakin\_40, AnnaSerena\_40, Pharpay\_40, CoolCookie\_40, Potty\_40, Artiphact\_40, PhunaPhoke\_40, NarutoRun\_40, Kate\_41
- Track 379 : MortySmith\_38
- Track 380 : Dauntless\_39, Erudite\_39
- Track 381 : Sparcetus\_42
- Track 382 : Kors\_43
- Track 383 : Haunter\_40
- Track 384 : Hager\_41
- Track 385 : Krampus\_40
- Track 386 : Snakehole\_40
- Track 387 : TinyMiny\_42



- Track 388 : JingleBells\_40
- Track 389 : DannyDe\_40
- Track 390 : Tedro\_40
- Track 391 : Neptune\_40, Cybele\_40
- Track 392 : Aesir\_39, JDawG\_39
- Track 393 : Rie18\_40
- Track 394 : LordBart\_42
- Track 395 : Karate\_39
- Track 396 : Ajin\_42
- Track 397 : RikSengupta\_42
- Track 398 : Cicada\_35, SBlackberry\_33
- Track 399 : PermaG\_34
- Track 400 : Jera\_34
- Track 401 : Rasovi\_33, Htur\_33
- Track 402 : Olympi\_34
- Track 403 : Benry\_32
- Track 404 : Milani\_33
- Track 405 : Johann\_34, Goodman\_34
- Track 406 : Linayshia\_33
- Track 407 : Sucha\_30
- Track 408 : IndiRoo\_34
- Track 409 : FireCastle\_33
- Track 410 : TurboVicky\_33
- Track 411 : Typher\_35
- Track 412 : Zanella\_33
- Track 413 : Stickynote\_71, Darwin\_73
- Track 414 : Kimchi1738\_73
- Track 415 : C3PO\_72, Cruella\_72
- Track 416 : Zion\_72, PeteyPab\_71, PotatoChip\_72
- Track 417 : SamW\_45, Troy\_45, Dina\_47, Lederberg\_45, Adelaide\_46
- Track 418 : StAB\_50
- Track 419 : Stiles\_49
- Track 420 : Patbob\_102
- Track 421 : WaddleDee\_94, DunneganBoMo\_94
- Track 422 : Ellewin\_92
- Track 423 : LeoJr\_100, Atuin\_98, ReginaGlobina\_100
- Track 424 : Talia1610\_101, Bloom\_105, Racecar\_102, Mimi\_107
- Track 425 : Phrampa\_96
- Track 426 : Rockabye\_105
- Track 427 : Chilliams\_99
- Track 428 : SJReid\_108
- Track 429 : KSunshine22\_95
- Track 430 : GoldenEssence\_90
- Track 431 : Ottawa\_61, Kharcho\_61
- Track 432 : TMaxx\_40
- Track 433 : Audell\_37
- Track 434 : AnnabelLee\_38
- Track 435 : Dodo\_114, A3Wally\_114, PauloDiaboli\_114
- Track 436 : Big4\_103
- Track 437 : Zooman\_98
- Track 438 : Cece\_97
- Track 439 : Pumpernickel\_111
- Track 440 : Huwbart\_59

- Track 441 : Triscuit\_58
- Track 442 : Megatron06\_62, Damien\_61, Beckerton\_60, Cborch11\_63, Oaker\_60
- Track 443 : Thumb\_62, Phreeze\_60
- Track 444 : Konstantine\_65
- Track 445 : Predator\_60
- Track 446 : Puissant\_62
- Track 447 : DrLupo\_67
- Track 448 : Barnyard\_65
- Track 449 : Commonplace\_74
- Track 450 : Nonagon\_72
- Track 451 : Rope\_66, Papyrus\_66
- Track 452 : Candle\_64
- Track 453 : MontyDev\_68
- Track 454 : Nilo\_68, Riparian\_68, Zenon\_68, Send513\_66, Yelo\_65, Weiss13\_66
- Track 455 : Madruga\_74
- Track 456 : Labelle\_76
- Track 457 : Patience\_76
- Track 458 : LuckyBarnes\_64
- Track 459 : Reynauld\_56
- Track 460 : Shrew\_71
- Track 461 : Wolypog\_43
- Track 462 : Trogglehumper\_76
- Track 463 : Mbo2\_52
- Track 464 : Yappy\_96
- Track 465 : DocB7\_048
- Track 466 : ChewyVIII\_83
- Track 467 : P1201\_75

***Summary of Final Annotations (See graph section above for start numbers):***

The start number called the most often in the published annotations is 290, it was called in 124 of the 659 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• Agente005\_41, Alakazam\_40, AlexAdler\_41, Alyxandracam\_41, Antoinette\_41, AranulaLuti\_40, Asta\_40, Aubergine\_40, AxiPup\_41, Baines\_40, Balsa\_40, Bandik\_41, BeautPeep30\_41, BeeBee8\_41, Benjalauren\_41, BigRedClifford\_41, Blage\_41, BonesMcCoy\_41, Bonino\_40, Byron23\_42, Calix\_40, Chako\_40, Chamuel\_40, Cheeto1\_42, ChickenKing\_40, Christoph\_40, Clancy\_40, Clock\_40, Convict\_41, Dave\_41, Delphidian\_41, Den3\_41, Dothraki\_41, Duocatuli\_40, Endor\_41, Erla\_40, Espinosa\_40, Etna\_40, Etta\_40, Exploradora\_42, FarmerDoug\_40, Figueroism\_41, GaeCeo\_42, GardenB\_40, Garey24\_41, Gargoyle\_41, Gelo\_40, Gershwin\_40, Greys\_41, Gubbabump\_40, Hamlet\_40, HanSolo\_40, HankSprout\_41, HungryHenry\_40, Ilzat\_40, Inventa\_41, Ioannes\_41, Janus167\_40, JasperRussell\_40, Jenos\_44, Jerbirus\_42, JeriBeth\_42, Kale\_40, KannH\_40, Klimt\_41, Knox\_41, Kurt1\_41, Leafus\_40, Lovelyunicorn\_41, Ludgate\_41, MaeLinda\_41, ManRay\_40, Martin\_42, McGalleon\_43, MillyPhilly\_41, MonChoix\_39, MrWorldwide\_41, Nagem\_41, Nattles\_40, Nebulous\_39, Neferthena\_41, NickSell\_41, Oats\_40, OldNelly\_42, Oxtober96\_42, Papafritta\_40, ParleG\_41, Peep\_41, Peppino\_40, Pherferi\_41, Phiderman\_41, Phireproof\_41, PhredFlintston\_41,

Phriends\_41, Pocket\_40, PuppyEggo\_41, Raccoon\_40, Rapheph\_41, Raptor\_41, Redfield\_40, Renzie\_41, Riyhil\_41, Robinson\_41, Rog141\_40, SJay\_41, Schnapsidee\_40, Sedgewig\_40, ShaiHulud\_42, Shee\_41, SoilGremlin\_42, SonOfLevi\_41, Stanktossa\_41, StingRay\_40, StirfryIV\_40, Stormbreaker8\_40, Strathdee\_41, Superfresh\_41, Symere\_42, TatarkaPM\_41, Teagan\_41, TeddyBear\_40, Tenda\_40, Thompsone\_41, Thorongil\_41, TinSulphur\_42, Velene\_41, Vispistious\_41, WildNOut\_41, Winzigespinne\_40, Zada\_42,

Genes that have the "Most Annotated" start but do not call it:

- CarisSwetlik\_44, KingJulien\_40, Molivia\_74,

Genes that do not have the "Most Annotated" start:

- 8UZL\_50, A3Wally\_114, ASerpRocky\_55, Acosta\_42, Adelaide\_46, Adgers\_62, Adjutor\_52, Aesir\_39, Agatha\_53, AikoCarson\_54, Aikoy\_65, Ajin\_42, Albanese\_29, Aledel\_26, Alephilan\_61, Alone3\_128, Alyssamiracle\_63, Amavida\_72, Amigo\_71, Amok\_54, Amore2\_62, Anakin\_40, Anamika\_57, Anansi\_70, AndPeggy\_50, Andromedas\_40, AnnaSerena\_40, AnnabelLee\_38, Annapurna\_41, Apeppi\_55, Apiary\_72, AppleCider\_29, Araceli\_42, Archimedes\_37, Arti\_71, Artiphact\_40, Astralis\_61, Atuin\_98, Audell\_37, AustinPowers\_26, Austin\_61, Avian\_60, Axym\_52, Azira\_49, BRock\_117, Barbochs\_59, Barnyard\_65, BaronJohn\_41, Bavidard\_56, Beaver\_62, Beckerton\_60, Beethoven\_29, Beleetus\_123, Benczkowski14\_57, Bennie\_25, BenoitCattle\_59, Benry\_32, Berries\_57, Beyoncage\_50, BiPauneto\_74, Bianmat\_57, Big4\_103, BigChungus\_56, BigMack\_25, BigMama\_51, BigShaq\_58, BillDoor\_53, BirksAndSocks\_64, BirthdayBoy\_62, Biskit\_55, BiteSize\_50, Blondies\_55, Bloom\_105, BlueNGold\_166, Bodacious\_25, Boersma\_73, Bogota\_43, Boneham\_63, Bonum\_76, Boopy\_169, BouleyBill\_39, Braxoaddie\_72, Breezic\_59, BrotherBLo\_29, Buggaboo\_74, Burnsey\_53, Bustleton\_39, Butterball\_62, Butterscotch\_52, Button\_57, Buttrmlkdreams\_55, C3PO\_72, Camerico\_63, Candle\_64, CanesSauce\_52, Canowicakte\_29, CaptainRex\_40, Carostasia\_39, Carpal\_29, Carsonalex\_56, Casey\_37, CathyBurgh\_58, Cborch11\_63, Cece\_97, Charianelly\_57, Chelms\_59, Chepli\_42, CherryonLim\_57, ChewChew\_25, ChewyVIII\_83, ChickenTender\_56, ChikPic\_40, Chill\_55, Chilliams\_99, Chivey\_40, ChocoMunchkin\_52, Cholula\_29, Chridison\_26, Christian\_25, Cicada\_35, CinnamonToast\_65, Cleo\_47, CoffeeBean\_72, ColaCorta\_40, Commandaria\_72, Commonplace\_74, CoolCookie\_40, Cozz\_51, Crestdrop\_40, Crete\_60, CristinaYang\_25, Crosby\_42, Cruella\_72, Cuke\_73, Cybele\_40, Daiboju\_26, Dakiti\_60, Dalilpop\_75, Damien\_61, Damp\_57, DannyDe\_40, Darwin\_73, Dauntless\_39, DaviePasture\_60, Delton\_54, Demosthenes\_55, Diabla\_63, Dina\_47, Djokovic\_50, DocB7\_048, Dodo\_114, DoobyDoo\_59, DrLupo\_67, DrRobert\_25, Dre3\_48, DreamTeam\_25, Dryad\_74, DumpTruck\_58, DunneganBoMo\_94, Edmundo\_94, Eggsie\_58, Ekhein\_59, Eleri\_40, Elinal\_60, Elliott\_53, Ellewin\_92, Emalyn\_52, Emianna\_72, Ennea\_79, Erk16\_52, Erudite\_39, Erutan\_60, EstebanJulior\_26, Eunoia\_26, Exiguo\_58, FF47\_48, Feastonyeet\_56, FelixAlejandro\_64, Finny\_41, FireCastle\_33, Flakey\_58, Flapper\_75, Float294\_74, Fluke\_29, Forza\_170, Fowlmouth\_74, Foxboro\_72, FreddieHg\_40, Fribs8\_48, Frizzle\_36, Fulcrum\_60, Fulton\_40, Fury\_82, GMA2\_64, GMA3\_58, GMA7\_51, GOATification\_60, GRU1\_61, GTE2\_44, GTE5\_60, GTE7\_50, GTE8\_60, GalacticEye\_57, Garnacho\_121, Genamy16\_63, Ghobes\_35, GiJojo\_116, GiKK\_57, Gibbin\_62, Gibbles\_56, Gibbous\_48, Gibson\_70, Gilda\_40, Gisselle\_25, Giuseppe\_53, Glamour\_40, Glenn\_29, Gmala1\_55, GodonK\_184, GoldHunter\_54, GoldenEssence\_90, Golden\_39, Goodman\_34, GordDuk1\_59, GordTnk2\_60, Gorgeous\_70, Gorko\_58, GourdThymes\_59, GreenHearts\_29, GreenIvy\_40, Greenbelt\_105, Greenhouse\_29, GretelLyn\_60, GrootJr\_74, Guetzie\_40,



Guillaume\_57, Gumball\_52, GuyFagieri\_70, Hager\_41, Hail2Pitt\_56, Harambe\_57, Hasitha\_40, Haunter\_40, Hawkeye\_56, HayZem\_62, Hello\_57, Helpful\_56, Henoccus\_42, Herb\_26, HerculesXL\_40, Hexbug\_60, Heylee\_73, Hiddenleaf\_40, HippoPololi\_50, Hollow\_57, Horseradish\_55, Hotorobo\_59, Htur\_33, HubbaBubba\_68, HunterDalle\_26, Huntingdon\_29, Huwburt\_59, IDyn\_69, Ichor\_70, IndiRoo\_34, Indlulamithi\_65, Intolerant\_41, Ixel\_41, JDawG\_39, JackieB\_42, JacoRen57\_46, Jaek\_70, Jalebi\_59, Jamemuya19\_61, Jams\_57, Jamzy\_58, JasonD\_45, Jellybones\_61, Jemerald\_42, Jera\_34, Jifall16\_71, JingleBells\_40, Jingles\_39, Joann\_29, Johann\_34, John316\_62, Jormungandr\_57, Juanyo\_39, Juicer\_42, Jumbo\_57, Jumboset\_29, KSunshine22\_95, Kabluna\_75, Kalizoi\_29, Kampe\_58, KandZ\_52, Karate\_39, Kaseim\_57, KatChan\_42, Kate\_41, Katyusha\_57, Kauala\_39, KayGee\_58, Kharcho\_61, KidneyBean\_72, KimJongPhill\_74, Kimchi1738\_73, KingBob\_26, Kittykat\_25, Koji\_39, Konstantine\_65, Korra\_30, Kors\_43, Kovu\_95, Krampus\_40, Kurt\_72, Kvothe\_56, Labelle\_76, Lahirium\_57, Lakshmi\_29, Lambo\_58, Laroye\_95, Lauer\_52, LazerLemon\_42, Lederberg\_45, LeoJr\_100, Leopard\_64, LiSara\_92, Librie\_40, Lidong\_57, LilStuart\_25, LilTerminator\_40, Lila22\_61, LilyPad\_52, Linayshia\_33, Linetti\_59, Litotes\_29, LittleFella\_57, Lizz\_70, Lizzo\_59, Lollipop1437\_76, LordBart\_42, Lucky3\_39, LuckyBarnes\_64, LuckyLeo\_57, LuckySocke\_124, Lucy\_25, Luker\_58, Luna18\_42, MAnor\_58, MCubed\_40, MScarn\_57, MaVan\_49, MacGully\_81, Maco6\_48, Madi\_50, Madruga\_74, Makoto\_25, MamaPearl\_26, Mandalorian\_39, Mareelih\_167, Margaret\_58, Maria1952\_26, Marietta\_72, Marky\_44, Maselop\_72, Mayweather\_61, Mbo2\_52, MeganNoll\_29, Megatron06\_62, MerCougar\_75, Mercedes\_36, Microdon\_41, Milani\_33, Mima20\_62, Mimi\_107, Minos\_58, Misaeng\_29, MoiGyank\_63, Moki\_25, MontyDev\_68, Monty\_58, Mopey\_54, Morrigan\_42, MortySmith\_38, MrMiyagi\_73, MrWormie\_57, Msay19\_64, Muddy\_50, MunkgeeRoachy\_51, NadineRae\_71, Nancia\_25, NarutoRun\_40, NatB6\_72, Neevie\_57, Neptune\_40, Newt\_58, Niagara\_57, Nibbles\_48, Nilo\_68, Nimi13\_57, Nina\_53, NoShow\_58, Nodigi\_60, Nonagon\_72, NorManre\_63, NosilaM\_73, NovaSharks\_62, Nova\_52, NovumRegina\_72, Nubia\_29, Nucci\_39, OMalley\_26, Oaker\_60, Olympi\_34, Onyinye\_65, Orchid\_57, Orla\_60, Ottawa\_61, OtterstedtS21\_60, Outis\_73, OverHedge\_40, Oxynfrius\_29, P1201\_75, PBI1\_50, PHTown\_70, PLOT\_53, Pajaza\_37, Papyrus\_66, PartyCup\_29, ParvusTarda\_59, Patbob\_102, Patience\_76, Patio\_74, Patos\_63, PatrickStar\_58, PauloDiaboli\_114, Penelope2018\_53, PermaG\_34, PeteyPab\_71, Phanita\_39, Pharpay\_40, Phendrix\_173, Pherbot\_39, Philon9\_55, Phomeo\_72, Phrampa\_96, Phreeze\_60, PhunaPhoke\_40, PierreThree\_58, Pikmin\_37, PinkFriday\_25, PitaDog\_25, Pleakley\_82, PokyPuppy\_58, Poland\_64, Polyyuki\_72, Pons\_58, PotPie\_56, PotatoChip\_72, Potatoes\_29, Potty\_40, Poultruss\_39, Prager\_53, Preamble\_25, Predator\_60, PrincePhergus\_39, PsychoKiller\_52, Puissant\_62, Pumancara\_25, Pumpnickel\_111, QuadZero\_39, Quartz\_40, Quasar\_53, RAP15\_29, Racecar\_102, Rachella\_40, RanchParmCat\_57, Ranch\_60, Rasovi\_33, RazorC\_60, RcigaStruga\_29, RedBaron\_56, RedRaider\_79, ReginaGlobina\_100, RemRem\_60, RenegadeRaider\_42, Reynauld\_56, Rie18\_40, RikSengupta\_42, Rings\_71, Rivovina\_26, Riparian\_68, Riverdale\_29, RobinSparkles\_61, Rockabye\_105, Rooney\_70, Rope\_66, RoyalG\_59, Rozby\_29, Rumi\_61, SBlackberry\_33, SJReid\_108, Sadboi\_61, Salgado\_95, Sam12\_58, SamW\_45, Sampudon\_60, Sansa\_39, Sapo\_34, Saratos\_40, Savage2526\_29, Schimmels22\_39, Schubert\_39, Scissor2024\_40, Scuba\_83, Scuttle\_29, Send513\_66, Sergei\_26, ShakeNBake\_70, Shamu\_41, SheckWes\_60, Shelley\_57, Shrew\_71, Shrooms\_93, Sienna\_50, SilentWarrior\_40, Sinatra\_40, SirHarley\_54, SirVictor\_40, Sixama\_168, SketchMex\_53, Skysand\_75, Snakehole\_40, Sombrero\_60, Sopespian\_50, SorJuana\_70, Sparcetus\_42, Squibbles\_58, StAB\_50, StarStruck\_73, Starburst\_53,

SteamedHams\_54, SteveFrench\_58, Sticker17\_57, StickyNote\_71, Stiles\_49, Stuff\_42, Sucha\_30, Sukkupi\_71, SummitAcademy\_56, SuperSulley\_74, Suppi\_29, Survivors\_49, Suzy\_49, SweatNTears\_55, TMaxx\_40, Talia1610\_101, Talos\_126, TattModd\_29, Teal\_57, Teatealatte\_58, Tedro\_40, Teech\_56, Temper16\_26, Terapin\_51, Theresita\_31, Thoth\_53, Thumb\_62, Thunderclap\_70, Tillicus\_57, TinyMiny\_42, Tinyman4\_39, Tolls\_54, Tracker\_72, Tredge\_57, Triscuit\_58, Trogglehumper\_76, Troje\_55, Troll4\_53, Troy\_45, TurboVicky\_33, Turuncu\_75, Typher\_35, Typhonmarchy\_53, UNTPL\_44, Urla\_26, Vallejo\_29, Vine\_59, Visconti\_54, Vitaenoi\_55, Vulture\_26, WaddleDee\_94, WaldoWhy\_55, Waltz\_91, Wardwill\_41, Wawa\_29, Wayne\_29, Weiss13\_66, Wentworth\_70, WestPM\_37, Wheelbite\_90, Wheezy\_72, WhoseManz\_71, Wilkos\_72, WilliamStrong\_40, Woes\_57, Wojtek\_56, Wollypog\_43, WonderBoy\_25, Worcestershire\_59, Xenia2\_54, Yakult\_55, Yappy\_96, Yara\_66, Yarn\_50, Yeezus\_70, Yelo\_65, Yikes\_62, Yndexa\_71, Yucky\_60, Yummy\_55, YuuY\_40, Zanella\_33, Zany\_58, Zareef\_51, Zayuliv\_40, Zenitsu\_40, Zenon\_68, Zepp\_40, Zion\_72, Zooman\_98, Zorro\_29, Zuko\_72,

### Summary by start number:

#### Start 33:

- Found in 6 of 767 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 16.7% of time when present
- Phage (with cluster) where this start called: TinyMiny\_42 (EF),

#### Start 36:

- Found in 44 of 767 ( 5.7% ) of genes in pham
- Manual Annotations of this start: 31 of 659
- Called 77.3% of time when present
- Phage (with cluster) where this start called: Arti\_71 (CR2), Bonum\_76 (CR2), Buggaboo\_74 (CR2), Commandaria\_72 (CR2), Dalilpop\_75 (CR1), Emianna\_72 (CR2), Ennea\_79 (CR3), Flapper\_75 (CR1), Float294\_74 (CR3), Foxboro\_72 (CR2), Fury\_82 (CR5), GRU1\_61 (CR1), GrootJr\_74 (CR2), IDyn\_69 (CR4), Jifall16\_71 (CR2), Kabluna\_75 (CR2), KidneyBean\_72 (CR2), Kurt\_72 (CR2), Lollipop1437\_76 (CR3), Marietta\_72 (CR4), MerCougar\_75 (CR2), NadineRae\_71 (CR4), NovumRegina\_72 (CR2), Outis\_73 (CR2), Patio\_74 (CR3), Pleakley\_82 (CR5), RedRaider\_79 (CR3), Scuba\_83 (CR5), Skysand\_75 (CR3), StarStruck\_73 (CR2), SuperSulley\_74 (CR2), Tracker\_72 (CR2), Turuncu\_75 (CR1), WhoseManz\_71 (CR4),

#### Start 38:

- Found in 6 of 767 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 6 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Apiary\_72 (CR), Braxoaddie\_72 (CR), CoffeeBean\_72 (CR), GuyFagieri\_70 (CR), Maselop\_72 (CR), Polyuyuki\_72 (CR),

#### Start 40:

- Found in 3 of 767 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 33.3% of time when present
- Phage (with cluster) where this start called: MacGully\_81 (CR),

Start 41:

- Found in 1 of 767 ( 0.1% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ChewyVIII\_83 (singleton),

Start 48:

- Found in 9 of 767 ( 1.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 11.1% of time when present
- Phage (with cluster) where this start called: Greenbelt\_105 (BN),

Start 49:

- Found in 1 of 767 ( 0.1% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Barnyard\_65 (H2),

Start 52:

- Found in 1 of 767 ( 0.1% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DrLupo\_67 (H2),

Start 53:

- Found in 9 of 767 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 8 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dryad\_74 (BN), Gibson\_70 (BN), Lizz\_70 (BN), PHTown\_70 (BN), Rooney\_70 (BN), ShakeNBake\_70 (BN), Wentworth\_70 (BN), Wilkos\_72 (BN), Yara\_66 (BN),

Start 54:

- Found in 37 of 767 ( 4.8% ) of genes in pham
- Manual Annotations of this start: 11 of 659
- Called 35.1% of time when present
- Phage (with cluster) where this start called: Alyssamiracle\_63 (DV), Avian\_60 (DV), Genamy16\_63 (DV), Gibbin\_62 (DV), GretelLyn\_60 (DV), Jalebi\_59 (DV), Jamemuya19\_61 (DV), LuckyLeo\_57 (DV), NovaSharks\_62 (DV), ParvusTarda\_59 (DV), Sampudon\_60 (DV), Wojtek\_56 (DV), Zany\_58 (DV),

Start 55:

- Found in 70 of 767 ( 9.1% ) of genes in pham
- Manual Annotations of this start: 51 of 659
- Called 81.4% of time when present
- Phage (with cluster) where this start called: Adjutor\_52 (D1), Aikoy\_65 (AE), Alephilan\_61 (DV), Apeppi\_55 (DV), Astralis\_61 (DV), Beckerton\_60 (H1), BigMama\_51 (D1), BirthdayBoy\_62 (DV), Butterscotch\_52 (D1), Cborch11\_63 (H1), Chill\_55 (D1), Damien\_61 (H1), DaviePasture\_60 (DV), Delton\_54 (D1), DoobyDoo\_59 (DV), Erk16\_52 (D1), Erutan\_60 (DV), Fulcrum\_60 (DV), GOATification\_60 (DV), Giuseppe\_53 (D1), Gumball\_52 (D1), Hawkeye\_56 (D2), Helpful\_56 (D1), KandZ\_52 (D1), Konstantine\_65 (H1), Lambo\_58 (DV), Leopard\_64 (AE), Lila22\_61 (DV), Megatron06\_62 (H1), Mima20\_62 (DV), MoiGyank\_63 (DV),



Mopey\_54 (D1), NorManre\_63 (DV), Nova\_52 (D1), Oaker\_60 (H1), Onyinye\_65 (AE), OtterstedtS21\_60 (DV), PBI1\_50 (D1), PLOT\_53 (D1), Patos\_63 (DV), Penelope2018\_53 (D1), Phreeze\_60 (H1), Prager\_53 (D1), Predator\_60 (H1), Puissant\_62 (H1), Ranch\_60 (DV), RazorC\_60 (DV), Rumi\_61 (DV), Sadboi\_61 (DV), SirHarley\_54 (D1), Thoth\_53 (D1), Thumb\_62 (H1), Troll4\_53 (D1), Visconti\_54 (D1), WaldoWhy\_55 (D1), Xenia2\_54 (DV), Yikes\_62 (DV),

Start 56:

- Found in 2 of 767 ( 0.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Tillicus\_57 (DV),

Start 58:

- Found in 6 of 767 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Wollypog\_43 (singleton),

Start 59:

- Found in 3 of 767 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 3 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Labelle\_76 (U), Madruga\_74 (U), Patience\_76 (U),

Start 61:

- Found in 1 of 767 ( 0.1% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cece\_97 (GD3),

Start 62:

- Found in 5 of 767 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 5 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BlueNGold\_166 (DS), Boopy\_169 (DS), Forza\_170 (DS), Mareelih\_167 (DS), Sixama\_168 (DS),

Start 63:

- Found in 18 of 767 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 2 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Atuin\_98 (FC), Bloom\_105 (FC), Chilliams\_99 (FC), DunneganBoMo\_94 (FC), Ellewin\_92 (FC), GMA2\_64 (DS), GoldenEssence\_90 (FC), KSunshine22\_95 (FC), LeoJr\_100 (FC), Mimi\_107 (FC), Patbob\_102 (FC), Phrampa\_96 (FC), Racecar\_102 (FC), ReginaGlobina\_100 (FC), Rockabye\_105 (FC), SJReid\_108 (FC), Talia1610\_101 (FC), WaddleDee\_94 (FC),

Start 66:

- Found in 4 of 767 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 100.0% of time when present

- Phage (with cluster) where this start called: AnnabelLee\_38 (FR), Audell\_37 (FR), LittleFella\_57 (DG2), TMaxx\_40 (FR),

#### Start 67:

- Found in 9 of 767 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 8 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: C3PO\_72 (EN), Cruella\_72 (EN), Darwin\_73 (EN), Kimchi1738\_73 (EN), P1201\_75 (singleton), PeteyPab\_71 (EN), PotatoChip\_72 (EN), StickyNote\_71 (EN), Zion\_72 (EN),

#### Start 68:

- Found in 14 of 767 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 7 of 659
- Called 57.1% of time when present
- Phage (with cluster) where this start called: A3Wally\_114 (GD1), Big4\_103 (GD2), Dodo\_114 (GD1), GodonK\_184 (DK), PauloDiaboli\_114 (GD1), Phendrix\_173 (DK), Pumpnickel\_111 (GD4), Zooman\_98 (GD2),

#### Start 69:

- Found in 90 of 767 ( 11.7% ) of genes in pham
- Manual Annotations of this start: 40 of 659
- Called 48.9% of time when present
- Phage (with cluster) where this start called: Aesir\_39 (EF), Anakin\_40 (EF), AnnaSerena\_40 (EF), Annapurna\_41 (EF), Artiphact\_40 (EF), Beyoncage\_50 (DG1), BiteSize\_50 (DG1), Chivey\_40 (EF), CoolCookie\_40 (EF), Crestdrop\_40 (EF), Cybele\_40 (EF), DannyDe\_40 (EF), Dauntless\_39 (EF), Djokovic\_50 (DG1), DumpTruck\_58 (DV), Erudite\_39 (EF), FreddieHg\_40 (EF), Gilda\_40 (EF), Hager\_41 (EF), Haunter\_40 (EF), Hiddenleaf\_40 (EF), JDawG\_39 (EF), JingleBells\_40 (EF), Karate\_39 (EF), Kate\_41 (EF), Krampus\_40 (EF), LilyPad\_52 (DG1), Madi\_50 (DG1), MortySmith\_38 (EF), NarutoRun\_40 (EF), Neptune\_40 (EF), OverHedge\_40 (EF), Pharpay\_40 (EF), PhunaPhoke\_40 (EF), Potty\_40 (EF), Poultruss\_39 (EF), Rachella\_40 (EF), Rie18\_40 (EF), Sienna\_50 (DG1), SilentWarrior\_40 (EF), Snakehole\_40 (EF), Suzy\_49 (DG1), Tedro\_40 (EF), Terapin\_51 (DG1),

#### Start 70:

- Found in 6 of 767 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 3 of 659
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Ajin\_42 (EF), Kors\_43 (EF), LordBart\_42 (EF), RikSengupta\_42 (EF), Sparcetus\_42 (EF),

#### Start 84:

- Found in 13 of 767 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 2 of 659
- Called 30.8% of time when present
- Phage (with cluster) where this start called: GTE8\_60 (CR2), NatB6\_72 (CR2), Phomeo\_72 (CR2), Wheezy\_72 (CR2),

#### Start 91:

- Found in 3 of 767 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 3 of 659
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Cuke\_73 (AC), Fowlmouth\_74 (AC), MrMiyagi\_73 (AC),

Start 94:

- Found in 9 of 767 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 11.1% of time when present
- Phage (with cluster) where this start called: NosilaM\_73 (CR2),

Start 97:

- Found in 22 of 767 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 4.5% of time when present
- Phage (with cluster) where this start called: Indlulamithi\_65 (AC),

Start 109:

- Found in 22 of 767 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 3 of 659
- Called 13.6% of time when present
- Phage (with cluster) where this start called: BiPauneto\_74 (CR4), Sukkupi\_71 (CR4), Yndexa\_71 (CR4),

Start 111:

- Found in 58 of 767 ( 7.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 1.7% of time when present
- Phage (with cluster) where this start called: HubbaBubba\_68 (CR4),

Start 117:

- Found in 2 of 767 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 2 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kharcho\_61 (FM), Ottawa\_61 (FM),

Start 158:

- Found in 10 of 767 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 9 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Candle\_64 (R), MontyDev\_68 (R), Nilo\_68 (R), Papyrus\_66 (R), Riparian\_68 (R), Rope\_66 (R), Send513\_66 (R), Weiss13\_66 (R), Yelo\_65 (R), Zenon\_68 (R),

Start 171:

- Found in 15 of 767 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 6 of 659
- Called 40.0% of time when present
- Phage (with cluster) where this start called: Benczkowski14\_57 (CS4), Hollow\_57 (CS4), Katyusha\_57 (CS4), Niagara\_57 (CS4), Teatealatte\_58 (CS4), Tredge\_57 (CS4),

Start 173:

- Found in 12 of 767 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 2 of 659

- Called 25.0% of time when present
- Phage (with cluster) where this start called: Demosthenes\_55 (CS4), Kvothe\_56 (CS4), Teech\_56 (CS4),

Start 180:

- Found in 5 of 767 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 3 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amore2\_62 (CS1), Austin\_61 (CS1), GMA7\_51 (CS1), GTE7\_50 (CS1), HayZem\_62 (CS1),

Start 182:

- Found in 8 of 767 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 8 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Edmundo\_94 (AL), Kovu\_95 (AL), Laroye\_95 (AL), LiSara\_92 (AL), Salgado\_95 (AL), Shrooms\_93 (AL), Waltz\_91 (AL), Wheelbite\_90 (AL),

Start 217:

- Found in 10 of 767 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 2 of 659
- Called 40.0% of time when present
- Phage (with cluster) where this start called: 8UZL\_50 (AB), FF47\_48 (AB), Maco6\_48 (AB), Muddy\_50 (AB),

Start 221:

- Found in 15 of 767 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 20.0% of time when present
- Phage (with cluster) where this start called: ASerpRocky\_55 (CS4), Philon9\_55 (CS4), Vitaenoi\_55 (CS4),

Start 222:

- Found in 6 of 767 ( 0.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 16.7% of time when present
- Phage (with cluster) where this start called: CarisSwetlik\_44 (EA1),

Start 228:

- Found in 4 of 767 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 2 of 659
- Called 50.0% of time when present
- Phage (with cluster) where this start called: KimJongPhill\_74 (BR), Zuko\_72 (BR),

Start 229:

- Found in 2 of 767 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 2 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Commonplace\_74 (JD), Nonagon\_72 (JD),

Start 237:

- Found in 64 of 767 ( 8.3% ) of genes in pham
- Manual Annotations of this start: 2 of 659
- Called 6.2% of time when present
- Phage (with cluster) where this start called: Charianelly\_57 (CS3), CinnamonToast\_65 (CS2), Eggsie\_58 (CS2), Woes\_57 (CS3),

#### Start 239:

- Found in 3 of 767 ( 0.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: RedBaron\_56 (CT),

#### Start 241:

- Found in 4 of 767 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Triscuit\_58 (GG),

#### Start 242:

- Found in 56 of 767 ( 7.3% ) of genes in pham
- Manual Annotations of this start: 41 of 659
- Called 96.4% of time when present
- Phage (with cluster) where this start called: Agatha\_53 (CT), AikoCarson\_54 (CT), Amok\_54 (CT), AndPeggy\_50 (CT), Axym\_52 (CT), Azira\_49 (CT), Bavidard\_56 (CT), BigChungus\_56 (CT), BillDoor\_53 (CT), Biskit\_55 (CT), Blondies\_55 (CT), Burnsey\_53 (CT), Buttrmlkdreams\_55 (CT), CanesSauce\_52 (CT), CherryonLim\_57 (CT), ChickenTender\_56 (CT), ChocoMunchkin\_52 (CT), Cleo\_47 (CT), Cozz\_51 (CT), Elinal\_60 (CT), Elliott\_53 (CT), Emalyn\_52 (CT), Feastonyeet\_56 (CT), GoldHunter\_54 (CT), HippoPololi\_50 (CT), Horseradish\_55 (CT), KayGee\_58 (CT), Lauer\_52 (CT), MAnor\_58 (CT), MScarn\_57 (CT), MaVan\_49 (CT), MunkgeeRoachy\_51 (CT), Nibbles\_48 (CT), Nina\_53 (CT), Pons\_58 (CT), PotPie\_56 (CT), PsychoKiller\_52 (CT), Quasar\_53 (CT), SheckWes\_60 (CT), SketchMex\_53 (CT), Sopespian\_50 (CT), Starburst\_53 (CT), SteamedHams\_54 (CT), SummitAcademy\_56 (CT), Survivors\_49 (CT), SweatNTears\_55 (CT), Tolls\_54 (CT), Troje\_55 (CT), Typhonmarchy\_53 (CT), Vine\_59 (CT), Yarn\_50 (CT), Yucky\_60 (CT), Yummy\_55 (CT), Zareef\_51 (CT),

#### Start 243:

- Found in 3 of 767 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 3 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dre3\_48 (CT), Fribs8\_48 (CT), Gibbous\_48 (CT),

#### Start 244:

- Found in 47 of 767 ( 6.1% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 2.1% of time when present
- Phage (with cluster) where this start called: Huwbert\_59 (GG),

#### Start 246:

- Found in 15 of 767 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 9 of 659



- Called 60.0% of time when present
- Phage (with cluster) where this start called: Button\_57 (CT), GiKK\_57 (CT), Hexbug\_60 (CT), Jamzy\_58 (CT), Margaret\_58 (CT), Nodigi\_60 (CT), Orla\_60 (CT), RanchParmCat\_57 (CT), Yakult\_55 (CT),

#### Start 248:

- Found in 17 of 767 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 3 of 659
- Called 17.6% of time when present
- Phage (with cluster) where this start called: JacoRen57\_46 (AB), NoShow\_58 (AB), Shrew\_71 (singleton),

#### Start 249:

- Found in 1 of 767 ( 0.1% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Yappy\_96 (singleton),

#### Start 253:

- Found in 73 of 767 ( 9.5% ) of genes in pham
- Manual Annotations of this start: 72 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Albanese\_29 (AK), Aledel\_26 (AK), AppleCider\_29 (AK), AustinPowers\_26 (AK), Beethoven\_29 (AK), Bennie\_25 (AK), BigMack\_25 (AK), Bodacious\_25 (AK), BrotherBlo\_29 (AK), Canowicakte\_29 (AK), Carpal\_29 (AK), ChewChew\_25 (AK), Cholula\_29 (AK), Chridison\_26 (AK), Christian\_25 (AK), CristinaYang\_25 (AK), Daiboju\_26 (AK), DrRobert\_25 (AK), DreamTeam\_25 (AK), EstebanJulior\_26 (AK), Eunoia\_26 (AK), Fluke\_29 (AK), Gisselle\_25 (AK), Glenn\_29 (AK), GreenHearts\_29 (AK), Greenhouse\_29 (AK), Herb\_26 (AK), HunterDalle\_26 (AK), Huntingdon\_29 (AK), Joann\_29 (AK), Jumboset\_29 (AK), Kalizoi\_29 (AK), KingBob\_26 (AK), Kittykat\_25 (AK), Korra\_30 (AK), Lakshmi\_29 (AK), LilStuart\_25 (AK), Litotes\_29 (AK), Lucy\_25 (AK), Makoto\_25 (AK), MamaPearl\_26 (AK), Maria1952\_26 (AK), MeganNoll\_29 (AK), Misaeng\_29 (AK), Moki\_25 (AK), Nancia\_25 (AK), Nubia\_29 (AK), OMalley\_26 (AK), Oxyfnrius\_29 (AK), PartyCup\_29 (AK), PinkFriday\_25 (AK), PitaDog\_25 (AK), Potatoes\_29 (AK), Preamble\_25 (AK), Pumancara\_25 (AK), RAP15\_29 (AK), RcigaStruga\_29 (AK), Rivovina\_26 (AK), Riverdale\_29 (AK), Rozby\_29 (AK), Savage2526\_29 (AK), Scuttle\_29 (AK), Sergei\_26 (AK), Suppi\_29 (AK), TattModd\_29 (AK), Temper16\_26 (AK), Urla\_26 (AK), Vallejo\_29 (AK), Vulture\_26 (AK), Wawa\_29 (AK), Wayne\_29 (AK), WonderBoy\_25 (AK), Zorro\_29 (AK),

#### Start 255:

- Found in 9 of 767 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 4 of 659
- Called 55.6% of time when present
- Phage (with cluster) where this start called: Alone3\_128 (BS), BRock\_117 (BS), Beleetus\_123 (BS), FireCastle\_33 (EJ), LuckySocke\_124 (BS),

#### Start 256:

- Found in 4 of 767 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 3 of 659
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Htur\_33 (EJ), Linayshia\_33 (EJ), PermaG\_34 (EJ), Rasovi\_33 (EJ),

#### Start 258:

- Found in 22 of 767 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 13 of 659
- Called 68.2% of time when present
- Phage (with cluster) where this start called: Benry\_32 (EJ), Cicada\_35 (EJ), GiJojo\_116 (BS), Goodman\_34 (EJ), IndiRoo\_34 (EJ), Jera\_34 (EJ), Johann\_34 (EJ), Milani\_33 (EJ), Olympi\_34 (EJ), SBlackberry\_33 (EJ), Sucha\_30 (EJ), Theresita\_31 (EA7), TurboVicky\_33 (EJ), Typher\_35 (EJ), Zanella\_33 (EJ),

#### Start 260:

- Found in 2 of 767 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kaseim\_57 (CS3), Luker\_58 (CS3),

#### Start 261:

- Found in 12 of 767 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 12 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Araceli\_42 (BH), Archimedes\_37 (DA), Bogota\_43 (BH), Crosby\_42 (BH), Henoccus\_42 (BH), Intolerant\_41 (BH), JackieB\_42 (BH), LazerLemon\_42 (BH), Microdon\_41 (BH), Sapo\_34 (DA), Stuff\_42 (BH), UNTPL\_44 (BH),

#### Start 262:

- Found in 41 of 767 ( 5.3% ) of genes in pham
- Manual Annotations of this start: 25 of 659
- Called 70.7% of time when present
- Phage (with cluster) where this start called: Adgers\_62 (CS2), Barbochs\_59 (CS2), Beaver\_62 (CS2), BirksAndSocks\_64 (CS2), Boneham\_63 (CS2), Breezic\_59 (CS2), Butterball\_62 (CS2), CathyBurgh\_58 (CS2), Ekhein\_59 (CS2), Exiguo\_58 (CS2), FelixAlejandro\_64 (CS2), Flakey\_58 (CS2), Gorko\_58 (CS2), GourdThymes\_59 (CS2), Hotorobo\_59 (CS2), Jellybones\_61 (CS2), John316\_62 (CS2), Lizzo\_59 (CS2), Monty\_58 (CS2), Msay19\_64 (CS2), Poland\_64 (CS2), RemRem\_60 (CS2), RoyalG\_59 (CS2), Sam12\_58 (CS2), Sombrero\_60 (CS2), Squibbles\_58 (CS2), SteveFrench\_58 (CS2), Trogglehumper\_76 (singleton), Worcestershire\_59 (CS2),

#### Start 264:

- Found in 12 of 767 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 2 of 659
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Frizzle\_36 (DA), Ghobes\_35 (DA), Marky\_44 (BH),

#### Start 265:

- Found in 13 of 767 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 13 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amavida\_72 (AQ), Amigo\_71 (AQ), Anansi\_70 (AQ), Boersma\_73 (AQ), Gorgeous\_70 (AQ), Heylee\_73 (AQ), Ichor\_70

(AQ), Jaek\_70 (AQ), Molivia\_74 (AQ), Rings\_71 (AQ), SorJuana\_70 (AQ), Thunderclap\_70 (AQ), Yeezus\_70 (AQ),

Start 271:

- Found in 3 of 767 ( 0.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gmala1\_55 (DF1), GordDuk1\_59 (DF1), GordTnk2\_60 (DF1),

Start 275:

- Found in 9 of 767 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 7 of 659
- Called 77.8% of time when present
- Phage (with cluster) where this start called: Adelaide\_46 (EP), Dina\_47 (EP), Lederberg\_45 (EP), SamW\_45 (EP), StAB\_50 (EP), Stiles\_49 (EP), Troy\_45 (EP),

Start 278:

- Found in 15 of 767 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 6.7% of time when present
- Phage (with cluster) where this start called: PokyPuppy\_58 (CS2),

Start 282:

- Found in 6 of 767 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 5 of 659
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Gibbles\_56 (CX), Kampe\_58 (CX), Orchid\_57 (CX), PatrickStar\_58 (CX), RobinSparkles\_61 (CX),

Start 285:

- Found in 11 of 767 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 5 of 659
- Called 81.8% of time when present
- Phage (with cluster) where this start called: BouleyBill\_39 (EA4), Camerico\_63 (DF), DocB7\_048 (singleton), GMA3\_58 (DF2), Jingles\_39 (EA4), Jumbo\_57 (DF3), Kauala\_39 (EA4), Mbo2\_52 (singleton), Reynauld\_56 (singleton),

Start 288:

- Found in 65 of 767 ( 8.5% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 3.1% of time when present
- Phage (with cluster) where this start called: Acosta\_42 (EA1), JasonD\_45 (EA1),

Start 289:

- Found in 1 of 767 ( 0.1% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Schubert\_39 (EA8),

Start 290:

- Found in 133 of 767 ( 17.3% ) of genes in pham
- Manual Annotations of this start: 124 of 659

- Called 97.7% of time when present
- Phage (with cluster) where this start called: Agente005\_41 (EA1), Alakazam\_40 (EA5), AlexAdler\_41 (EA1), Alyxandracam\_41 (EA1), Antoinette\_41 (EA1), AranulaLuti\_40 (EA1), Asta\_40 (EA1), Aubergine\_40 (EA1), AxiPup\_41 (EA1), Baines\_40 (EA1), Balsa\_40 (EA1), Bandik\_41 (EA1), BeautPeep30\_41 (EA1), BeeBee8\_41 (EA1), Benjalauen\_41 (EA1), BigRedClifford\_41 (EA1), Blage\_41 (EA1), BonesMcCoy\_41 (EA1), Bonino\_40 (EA1), Byron23\_42 (EA1), Calix\_40 (EA1), Chako\_40 (EA1), Chamuel\_40 (EA1), Cheeto1\_42 (EA9), ChickenKing\_40 (EA9), Christoph\_40 (EA1), Clancy\_40 (EA1), Clock\_40 (EA5), Convict\_41 (EA1), Dave\_41 (EA1), Delphidian\_41 (EA1), Den3\_41 (EA1), Dothraki\_41 (EA1), Duocatuli\_40 (EA1), Endor\_41 (EA1), Erla\_40 (EA1), Espinosa\_40 (EA1), Etna\_40 (EA1), Etta\_40 (EA1), Exploradora\_42 (UNK), FarmerDoug\_40 (EA1), Figueroism\_41 (EA1), GaeCeo\_42 (EA9), GardenB\_40 (EA1), Garey24\_41 (EA1), Gargoyle\_41 (EA1), Gelo\_40 (EA1), Gershwin\_40 (EA1), Greys\_41 (EA1), Gubbabump\_40 (EA1), Hamlet\_40 (EA1), HanSolo\_40 (EA1), HankSprout\_41 (EA1), HungryHenry\_40 (EA1), Ilzat\_40 (EA1), Inventa\_41 (EA1), Ioannes\_41 (EA1), Janus167\_40 (EA1), JasperRussell\_40 (EA1), Jenos\_44 (EA1), Jerbirus\_42 (EA1), JeriBeth\_42 (EA1), Kale\_40 (EA1), KannH\_40 (EA1), Klimt\_41 (EA1), Knox\_41 (EA1), Kurt1\_41 (EA1), Leafus\_40 (EA1), Lovelyunicorn\_41 (EA1), Ludgate\_41 (EA1), MaeLinda\_41 (EA1), ManRay\_40 (EA1), Martin\_42 (EA1), McGalleon\_43 (EA1), MillyPhilly\_41 (EA1), MonChoix\_39 (EA1), MrWorldwide\_41 (EA1), Nagem\_41 (EA1), Nattles\_40 (EA1), Nebulous\_39 (EA5), Neferthena\_41 (EA5), NickSell\_41 (EA1), Oats\_40 (EA1), OldNelly\_42 (EA1), Oxtober96\_42 (EA1), Papafritta\_40 (EA1), ParleG\_41 (EA1), Peep\_41 (EA1), Peppino\_40 (EA1), Pherferi\_41 (EA1), Phiderman\_41 (EA1), Phireproof\_41 (EA1), PhredFlintston\_41 (EA1), Phriends\_41 (EA1), Pocket\_40 (EA1), PuppyEggo\_41 (EA1), Raccoon\_40 (EA1), Rapheph\_41 (EA1), Raptor\_41 (EA1), Redfield\_40 (EA1), Renzie\_41 (EA1), Rihhil\_41 (EA1), Robinson\_41 (EA1), Rog141\_40 (EA1), SJay\_41 (EA1), Schnapsidee\_40 (EA1), Sedgewig\_40 (EA1), ShaiHulud\_42 (EA1), Shee\_41 (EA1), SoilGremlin\_42 (EA1), SonOfLevi\_41 (EA1), Stanktossa\_41 (EA1), StingRay\_40 (EA1), StirfryIV\_40 (EA1), Stormbreaker8\_40 (EA1), Strathdee\_41 (EA1), Superfresh\_41 (EA1), Symere\_42 (EA1), TatarkaPM\_41 (EA1), Teagan\_41 (EA1), TeddyBear\_40 (EA1), Tenda\_40 (EA1), Thompsone\_41 (EA1), Thorongil\_41 (EA1), TinSulphur\_42 (EA1), Velene\_41 (EA1), Vispistious\_41 (EA1), WildNOut\_41 (EA1), Winzigespinne\_40 (EA1), Zada\_42 (EA1),

#### Start 291:

- Found in 1 of 767 ( 0.1% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 100.0% of time when present
- Phage (with cluster) where this start called: WestPM\_37 (EA11),

#### Start 292:

- Found in 25 of 767 ( 3.3% ) of genes in pham
- Manual Annotations of this start: 7 of 659
- Called 28.0% of time when present
- Phage (with cluster) where this start called: Bustleton\_39 (EA4), Golden\_39 (EA4), Koji\_39 (EA4), Lucky3\_39 (EA4), Pherbot\_39 (EA4), PrincePhergus\_39 (EA4), Sinatra\_40 (EA4),

#### Start 293:

- Found in 67 of 767 ( 8.7% ) of genes in pham
- Manual Annotations of this start: 18 of 659
- Called 31.3% of time when present

- Phage (with cluster) where this start called: CaptainRex\_40 (EA5), Chepli\_42 (EA6), Fulton\_40 (EA5), Greenlvy\_40 (EA5), Hasitha\_40 (EA5), HerculesXL\_40 (EA11), Jemerald\_42 (EA6), Juicer\_42 (EA6), KatChan\_42 (EA6), Librie\_40 (EA5), LilTerminator\_40 (EA5), Luna18\_42 (EA6), Mercedes\_36 (EA), QuadZero\_39 (EA5), Schimmels22\_39 (EA11), Scissor2024\_40 (EA11), Tinyman4\_39 (EA11), Wardwill\_41 (EA5), WilliamStrong\_40 (EA6), Zayuliv\_40 (EA5), Zepp\_40 (EA5),

#### Start 294:

- Found in 6 of 767 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Morrigan\_42 (EA6),

#### Start 295:

- Found in 98 of 767 ( 12.8% ) of genes in pham
- Manual Annotations of this start: 21 of 659
- Called 21.4% of time when present
- Phage (with cluster) where this start called: Andromedas\_40 (EA2), Carostasia\_39 (EA10), Casey\_37 (EA3), ChikPic\_40 (EA2), ColaCorta\_40 (EA2), Eleri\_40 (EA2), Glamour\_40 (EA2), Guetzie\_40 (EA4), Juanyo\_39 (EA10), MCubed\_40 (EA2), Mandalorian\_39 (EA10), Nucci\_39 (EA10), Pajaza\_37 (EA3), Pikmin\_37 (EA3), Quartz\_40 (EA10), Sansa\_39 (EA2), Saratos\_40 (EA2), Shamu\_41 (EA2), SirVictor\_40 (EA4), YuuY\_40 (EA10), Zenitsu\_40 (EA2),

#### Start 296:

- Found in 2 of 767 ( 0.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Talos\_126 (BS),

#### Start 300:

- Found in 136 of 767 ( 17.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 1.5% of time when present
- Phage (with cluster) where this start called: Carsonalex\_56 (CT), GTE2\_44 (CT),

#### Start 301:

- Found in 111 of 767 ( 14.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 0.9% of time when present
- Phage (with cluster) where this start called: GTE5\_60 (CR1),

#### Start 308:

- Found in 4 of 767 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 25.0% of time when present
- Phage (with cluster) where this start called: LuckyBarnes\_64 (singleton),

#### Start 309:

- Found in 41 of 767 ( 5.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 2.4% of time when present
- Phage (with cluster) where this start called: BaronJohn\_41 (EA5),

Start 310:

- Found in 5 of 767 ( 0.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Garnacho\_121 (BS),

Start 314:

- Found in 60 of 767 ( 7.8% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 3.3% of time when present
- Phage (with cluster) where this start called: Finny\_41 (EA2), Phanita\_39 (EA2),

Start 330:

- Found in 58 of 767 ( 7.6% ) of genes in pham
- Manual Annotations of this start: 27 of 659
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Anamika\_57 (CS3), BenoitCattle\_59 (CS2), Berries\_57 (CS3), Bianmat\_57 (CS3), BigShaq\_58 (CS2), Chelms\_59 (CS2), Crete\_60 (CS2), Dakiti\_60 (CS2), Damp\_57 (CS3), Diabla\_63 (CS2), GalacticEye\_57 (CS3), Guillaume\_57 (CS3), Hail2Pitt\_56 (CS3), Harambe\_57 (CS3), Hello\_57 (CS3), Jams\_57 (CS3), Jormungandr\_57 (CS3), Lahirium\_57 (CS3), Lidong\_57 (CS3), Linetti\_59 (CS2), Minos\_58 (CS3), MrWormie\_57 (CS3), Neevie\_57 (CS3), Newt\_58 (CS3), Nimi13\_57 (CS3), PierreThree\_58 (CS2), Shelley\_57 (CS3), Sticker17\_57 (CS3), Teal\_57 (CS3),

Start 363:

- Found in 4 of 767 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Ixel\_41 (EA11),

Start 382:

- Found in 149 of 767 ( 19.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 0.7% of time when present
- Phage (with cluster) where this start called: RenegadeRaider\_42 (EA4),

Start 384:

- Found in 194 of 767 ( 25.3% ) of genes in pham
- Manual Annotations of this start: 1 of 659
- Called 0.5% of time when present
- Phage (with cluster) where this start called: Mayweather\_61 (CT),

Start 412:

- Found in 98 of 767 ( 12.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 1.0% of time when present
- Phage (with cluster) where this start called: KingJulien\_40 (EA1),

**Summary by clusters:**



There are 65 clusters represented in this pham: GG, GD2, GD3, GD4, DK, EA9, GD1, DF, BN, BH, singleton, DA, JD, FC, BR, BS, DV, DG1, DS, UNK, AQ, FR, EP, DF1, DF3, DF2, FM, CS4, EA6, CS1, CS3, CS2, AC, AB, AE, EJ, AK, EF, EA, AL, DG2, EA8, R, U, EA1, CR, EA3, EA2, EA5, EA4, EA7, CT, CR2, CR3, CR1, EA11, EA10, CR4, CR5, H2, H1, CX, EN, D2, D1,

Info for manual annotations of cluster AB:

- Start number 217 was manually annotated 2 times for cluster AB.
- Start number 248 was manually annotated 2 times for cluster AB.

Info for manual annotations of cluster AC:

- Start number 91 was manually annotated 3 times for cluster AC.
- Start number 97 was manually annotated 1 time for cluster AC.

Info for manual annotations of cluster AE:

- Start number 55 was manually annotated 3 times for cluster AE.

Info for manual annotations of cluster AK:

- Start number 253 was manually annotated 72 times for cluster AK.

Info for manual annotations of cluster AL:

- Start number 182 was manually annotated 8 times for cluster AL.

Info for manual annotations of cluster AQ:

- Start number 265 was manually annotated 13 times for cluster AQ.

Info for manual annotations of cluster BH:

- Start number 261 was manually annotated 10 times for cluster BH.
- Start number 264 was manually annotated 1 time for cluster BH.

Info for manual annotations of cluster BN:

- Start number 53 was manually annotated 8 times for cluster BN.

Info for manual annotations of cluster BR:

- Start number 228 was manually annotated 2 times for cluster BR.

Info for manual annotations of cluster BS:

- Start number 255 was manually annotated 3 times for cluster BS.
- Start number 258 was manually annotated 1 time for cluster BS.

Info for manual annotations of cluster CR:

- Start number 38 was manually annotated 6 times for cluster CR.
- Start number 40 was manually annotated 1 time for cluster CR.

Info for manual annotations of cluster CR1:

- Start number 36 was manually annotated 3 times for cluster CR1.

Info for manual annotations of cluster CR2:

- Start number 36 was manually annotated 17 times for cluster CR2.
- Start number 84 was manually annotated 2 times for cluster CR2.
- Start number 94 was manually annotated 1 time for cluster CR2.

Info for manual annotations of cluster CR3:

- Start number 36 was manually annotated 5 times for cluster CR3.

Info for manual annotations of cluster CR4:

- Start number 36 was manually annotated 4 times for cluster CR4.
- Start number 109 was manually annotated 3 times for cluster CR4.

Info for manual annotations of cluster CR5:

- Start number 36 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster CS1:

- Start number 180 was manually annotated 3 times for cluster CS1.

Info for manual annotations of cluster CS2:

- Start number 262 was manually annotated 24 times for cluster CS2.
- Start number 278 was manually annotated 1 time for cluster CS2.
- Start number 330 was manually annotated 6 times for cluster CS2.

Info for manual annotations of cluster CS3:

- Start number 237 was manually annotated 2 times for cluster CS3.
- Start number 260 was manually annotated 1 time for cluster CS3.
- Start number 330 was manually annotated 21 times for cluster CS3.

Info for manual annotations of cluster CS4:

- Start number 171 was manually annotated 6 times for cluster CS4.
- Start number 173 was manually annotated 2 times for cluster CS4.
- Start number 221 was manually annotated 1 time for cluster CS4.

Info for manual annotations of cluster CT:

- Start number 242 was manually annotated 41 times for cluster CT.
- Start number 243 was manually annotated 3 times for cluster CT.
- Start number 246 was manually annotated 9 times for cluster CT.
- Start number 384 was manually annotated 1 time for cluster CT.

Info for manual annotations of cluster CX:

- Start number 282 was manually annotated 5 times for cluster CX.

Info for manual annotations of cluster D1:

- Start number 55 was manually annotated 21 times for cluster D1.

Info for manual annotations of cluster D2:

- Start number 55 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster DA:

- Start number 261 was manually annotated 2 times for cluster DA.
- Start number 264 was manually annotated 1 time for cluster DA.

Info for manual annotations of cluster DF:

- Start number 285 was manually annotated 1 time for cluster DF.

Info for manual annotations of cluster DF3:

- Start number 285 was manually annotated 1 time for cluster DF3.

Info for manual annotations of cluster DG1:

- Start number 69 was manually annotated 8 times for cluster DG1.

Info for manual annotations of cluster DG2:

- Start number 66 was manually annotated 1 time for cluster DG2.

Info for manual annotations of cluster DK:

- Start number 68 was manually annotated 2 times for cluster DK.

Info for manual annotations of cluster DS:

- Start number 62 was manually annotated 5 times for cluster DS.

Info for manual annotations of cluster DV:

- Start number 54 was manually annotated 11 times for cluster DV.
- Start number 55 was manually annotated 17 times for cluster DV.
- Start number 69 was manually annotated 1 time for cluster DV.

Info for manual annotations of cluster EA:

- Start number 293 was manually annotated 1 time for cluster EA.

Info for manual annotations of cluster EA1:

- Start number 288 was manually annotated 1 time for cluster EA1.
- Start number 290 was manually annotated 117 times for cluster EA1.

Info for manual annotations of cluster EA10:

- Start number 295 was manually annotated 6 times for cluster EA10.

Info for manual annotations of cluster EA11:

- Start number 291 was manually annotated 1 time for cluster EA11.
- Start number 293 was manually annotated 3 times for cluster EA11.
- Start number 363 was manually annotated 1 time for cluster EA11.

Info for manual annotations of cluster EA2:

- Start number 295 was manually annotated 10 times for cluster EA2.
- Start number 314 was manually annotated 1 time for cluster EA2.

Info for manual annotations of cluster EA3:

- Start number 295 was manually annotated 3 times for cluster EA3.

Info for manual annotations of cluster EA4:

- Start number 285 was manually annotated 2 times for cluster EA4.
- Start number 292 was manually annotated 7 times for cluster EA4.
- Start number 295 was manually annotated 2 times for cluster EA4.

Info for manual annotations of cluster EA5:

- Start number 290 was manually annotated 4 times for cluster EA5.
- Start number 293 was manually annotated 8 times for cluster EA5.

Info for manual annotations of cluster EA6:

- Start number 293 was manually annotated 6 times for cluster EA6.
- Start number 294 was manually annotated 1 time for cluster EA6.

Info for manual annotations of cluster EA7:

- Start number 258 was manually annotated 1 time for cluster EA7.

Info for manual annotations of cluster EA8:

- Start number 289 was manually annotated 1 time for cluster EA8.

Info for manual annotations of cluster EA9:

- Start number 290 was manually annotated 3 times for cluster EA9.

Info for manual annotations of cluster EF:

- Start number 33 was manually annotated 1 time for cluster EF.
- Start number 69 was manually annotated 31 times for cluster EF.
- Start number 70 was manually annotated 3 times for cluster EF.

Info for manual annotations of cluster EJ:

- Start number 255 was manually annotated 1 time for cluster EJ.
- Start number 256 was manually annotated 3 times for cluster EJ.
- Start number 258 was manually annotated 11 times for cluster EJ.

Info for manual annotations of cluster EN:

- Start number 67 was manually annotated 8 times for cluster EN.

Info for manual annotations of cluster EP:

- Start number 275 was manually annotated 7 times for cluster EP.

Info for manual annotations of cluster FC:

- Start number 63 was manually annotated 2 times for cluster FC.

Info for manual annotations of cluster FM:

- Start number 117 was manually annotated 2 times for cluster FM.

Info for manual annotations of cluster GD1:

- Start number 68 was manually annotated 2 times for cluster GD1.

Info for manual annotations of cluster GD2:

- Start number 68 was manually annotated 2 times for cluster GD2.

Info for manual annotations of cluster GD3:

- Start number 61 was manually annotated 1 time for cluster GD3.

Info for manual annotations of cluster GD4:

- Start number 68 was manually annotated 1 time for cluster GD4.

Info for manual annotations of cluster GG:

- Start number 241 was manually annotated 1 time for cluster GG.
- Start number 244 was manually annotated 1 time for cluster GG.

Info for manual annotations of cluster H1:

- Start number 55 was manually annotated 9 times for cluster H1.

Info for manual annotations of cluster H2:

- Start number 49 was manually annotated 1 time for cluster H2.

- Start number 52 was manually annotated 1 time for cluster H2.

Info for manual annotations of cluster JD:

- Start number 229 was manually annotated 2 times for cluster JD.

Info for manual annotations of cluster R:

- Start number 158 was manually annotated 9 times for cluster R.

Info for manual annotations of cluster U:

- Start number 59 was manually annotated 3 times for cluster U.

### **Gene Information:**

Gene: 8UZL\_50 Start: 38971, Stop: 37460, Start Num: 217

Candidate Starts for 8UZL\_50:

(Start: 217 @38971 has 2 MA's), (245, 38935), (298, 38845), (300, 38842), (328, 38794), (374, 38725), (424, 38611), (491, 38482), (504, 38431), (506, 38425), (509, 38419), (516, 38395), (536, 38341), (602, 38200), (604, 38197), (631, 38140), (651, 38068), (652, 38065), (781, 37870), (803, 37825), (837, 37720), (853, 37660), (904, 37492), (915, 37471),

Gene: A3Wally\_114 Start: 79188, Stop: 77338, Start Num: 68

Candidate Starts for A3Wally\_114:

(42, 79257), (44, 79251), (Start: 68 @79188 has 7 MA's), (80, 79143), (83, 79131), (124, 79005), (141, 78942), (183, 78867), (Start: 244 @78759 has 1 MA's), (Start: 255 @78741 has 4 MA's), (Start: 295 @78672 has 21 MA's), (Start: 308 @78645 has 1 MA's), (396, 78585), (453, 78420), (504, 78276), (534, 78189), (549, 78162), (568, 78126), (572, 78117), (638, 78060), (640, 78054), (651, 78009), (655, 77997), (671, 77976), (680, 77952), (700, 77916), (736, 77871), (783, 77787), (785, 77784), (786, 77778), (817, 77715), (846, 77613), (868, 77526), (879, 77484), (894, 77433),

Gene: ASerpRocky\_55 Start: 52672, Stop: 51098, Start Num: 221

Candidate Starts for ASerpRocky\_55:

(Start: 171 @52804 has 6 MA's), (Start: 173 @52792 has 2 MA's), (207, 52693), (Start: 221 @52672 has 1 MA's), (270, 52606), (336, 52507), (359, 52471), (374, 52447), (377, 52438), (381, 52429), (404, 52381), (412, 52357), (427, 52315), (437, 52300), (462, 52225), (489, 52165), (490, 52162), (509, 52096), (512, 52093), (521, 52057), (522, 52054), (538, 52027), (544, 52015), (564, 51967), (582, 51934), (589, 51910), (605, 51886), (616, 51862), (645, 51796), (682, 51697), (736, 51598), (754, 51565), (757, 51562), (831, 51445), (832, 51442), (845, 51385), (848, 51367), (878, 51250), (879, 51247), (882, 51235), (926, 51136), (932, 51115),

Gene: Acosta\_42 Start: 31547, Stop: 30141, Start Num: 288

Candidate Starts for Acosta\_42:

(167, 31790), (219, 31649), (222, 31646), (224, 31643), (Start: 288 @31547 has 1 MA's), (382, 31400), (Start: 384 @31394 has 1 MA's), (439, 31277), (450, 31250), (470, 31190), (487, 31163), (490, 31160), (491, 31157), (518, 31064), (533, 31022), (611, 30860), (614, 30851), (625, 30830), (632, 30824), (678, 30731), (695, 30695), (711, 30671), (758, 30596), (823, 30482), (839, 30422), (846, 30398), (847, 30392), (850, 30380), (886, 30257), (894, 30230), (903, 30203),

Gene: Adelaide\_46 Start: 37262, Stop: 38638, Start Num: 275

Candidate Starts for Adelaide\_46:

(Start: 275 @37262 has 7 MA's), (315, 37331), (326, 37349), (389, 37442), (423, 37502), (427, 37508), (428, 37511), (487, 37631), (494, 37649), (529, 37766), (593, 37904), (610, 37943), (626, 37976), (632, 37982), (637, 37997), (647, 38036), (687, 38096), (699, 38120), (735, 38156), (789, 38225), (793, 38231), (832, 38312), (854, 38408), (857, 38420), (860, 38432), (872, 38489), (875, 38495), (879, 38507), (889, 38537), (909, 38588),

Gene: Adgers\_62 Start: 52192, Stop: 50660, Start Num: 262

Candidate Starts for Adgers\_62:

(146, 52447), (168, 52396), (202, 52291), (213, 52261), (Start: 237 @52228 has 2 MA's), (Start: 244 @52219 has 1 MA's), (Start: 262 @52192 has 25 MA's), (359, 52024), (381, 51982), (390, 51964), (404, 51934), (408, 51922), (412, 51910), (414, 51904), (422, 51883), (491, 51715), (518, 51628), (521, 51613), (526, 51601), (544, 51571), (605, 51442), (623, 51400), (637, 51382), (638, 51379), (641, 51370), (645, 51352), (682, 51265), (757, 51130), (764, 51115), (773, 51094), (831, 51013), (832, 51010), (845, 50953), (846, 50947), (848, 50935), (862, 50884), (868, 50860), (878, 50821), (880, 50809), (882, 50806), (919, 50713), (926, 50698),

Gene: Adjutor\_52 Start: 39669, Stop: 41612, Start Num: 55

Candidate Starts for Adjutor\_52:

(Start: 55 @39669 has 51 MA's), (72, 39696), (Start: 97 @39768 has 1 MA's), (110, 39822), (125, 39882), (129, 39900), (131, 39909), (146, 39960), (163, 40002), (181, 40038), (225, 40125), (287, 40218), (297, 40233), (306, 40254), (381, 40356), (399, 40389), (410, 40413), (447, 40473), (482, 40560), (504, 40635), (540, 40725), (568, 40776), (570, 40779), (625, 40869), (640, 40887), (647, 40920), (673, 40974), (679, 40986), (689, 41004), (729, 41067), (781, 41151), (831, 41268), (837, 41316), (854, 41379), (874, 41463),

Gene: Aesir\_39 Start: 25591, Stop: 27498, Start Num: 69

Candidate Starts for Aesir\_39:

(19, 25417), (Start: 69 @25591 has 40 MA's), (88, 25654), (99, 25675), (111, 25729), (150, 25864), (170, 25906), (192, 25951), (Start: 295 @26125 has 21 MA's), (301, 26134), (359, 26224), (381, 26266), (388, 26281), (468, 26467), (518, 26602), (520, 26614), (539, 26647), (586, 26740), (640, 26776), (675, 26866), (689, 26893), (837, 27202), (838, 27205), (853, 27265), (875, 27355), (886, 27385), (898, 27427), (922, 27478),

Gene: Agatha\_53 Start: 38842, Stop: 37364, Start Num: 242

Candidate Starts for Agatha\_53:

(Start: 242 @38842 has 41 MA's), (297, 38755), (300, 38749), (366, 38647), (421, 38524), (422, 38521), (504, 38338), (506, 38332), (509, 38326), (536, 38248), (591, 38134), (602, 38107), (614, 38083), (640, 38023), (651, 37978), (659, 37957), (688, 37918), (697, 37900), (780, 37783), (803, 37735), (806, 37732), (811, 37717), (840, 37621), (846, 37600), (853, 37570),

Gene: Agente005\_41 Start: 31381, Stop: 29990, Start Num: 290

Candidate Starts for Agente005\_41:

(Start: 290 @31381 has 124 MA's), (382, 31234), (Start: 384 @31228 has 1 MA's), (386, 31225), (439, 31111), (470, 31024), (487, 30997), (490, 30994), (518, 30898), (533, 30856), (614, 30685), (625, 30664), (640, 30637), (652, 30589), (695, 30529), (823, 30316), (831, 30298), (846, 30232), (847, 30226), (850, 30214), (874, 30118), (894, 30064), (895, 30061), (917, 30007),

Gene: AikoCarson\_54 Start: 39107, Stop: 37629, Start Num: 242

Candidate Starts for AikoCarson\_54:

(Start: 242 @39107 has 41 MA's), (297, 39020), (300, 39014), (366, 38912), (412, 38813), (418, 38795), (421, 38789), (425, 38780), (490, 38657), (504, 38603), (506, 38597), (509, 38591), (536, 38513), (591, 38399), (602, 38372), (614, 38348), (632, 38309), (645, 38267), (651, 38243), (659, 38222), (697, 38165), (780, 38048), (803, 38000), (806, 37997), (811, 37982), (840, 37886), (846,



37865), (853, 37835), (861, 37805), (904, 37667),

Gene: Aikoy\_65 Start: 45786, Stop: 47714, Start Num: 55

Candidate Starts for Aikoy\_65:

(Start: 55 @45786 has 51 MA's), (71, 45807), (80, 45837), (Start: 109 @45936 has 3 MA's), (125, 45999), (145, 46071), (147, 46080), (170, 46128), (297, 46344), (306, 46365), (323, 46386), (325, 46389), (339, 46401), (357, 46428), (418, 46551), (447, 46587), (472, 46659), (478, 46668), (492, 46701), (508, 46758), (512, 46770), (540, 46839), (546, 46848), (552, 46866), (568, 46890), (635, 46986), (640, 46998), (647, 47031), (670, 47073), (700, 47136), (772, 47241), (847, 47457), (853, 47481), (854, 47484), (865, 47526), (871, 47556), (880, 47580), (927, 47697),

Gene: Ajin\_42 Start: 26641, Stop: 28575, Start Num: 70

Candidate Starts for Ajin\_42:

(15, 26401), (Start: 33 @26545 has 1 MA's), (Start: 68 @26635 has 7 MA's), (Start: 70 @26641 has 3 MA's), (111, 26788), (115, 26806), (118, 26815), (170, 26965), (236, 27091), (Start: 295 @27181 has 21 MA's), (301, 27190), (359, 27280), (381, 27322), (397, 27352), (453, 27484), (520, 27670), (531, 27688), (539, 27703), (568, 27760), (635, 27820), (656, 27892), (734, 28030), (771, 28096), (782, 28126), (819, 28204), (838, 28282), (853, 28342), (864, 28381), (875, 28432), (884, 28450), (924, 28558),

Gene: Alakazam\_40 Start: 30804, Stop: 29374, Start Num: 290

Candidate Starts for Alakazam\_40:

(Start: 290 @30804 has 124 MA's), (306, 30771), (Start: 384 @30651 has 1 MA's), (386, 30648), (412, 30588), (434, 30537), (444, 30516), (447, 30504), (487, 30411), (490, 30408), (527, 30276), (589, 30153), (614, 30096), (625, 30075), (640, 30048), (643, 30036), (647, 30015), (670, 29958), (678, 29937), (695, 29901), (703, 29889), (729, 29847), (745, 29820), (757, 29805), (797, 29742), (807, 29730), (837, 29634), (840, 29625), (845, 29610), (846, 29604), (847, 29598), (877, 29481), (886, 29463), (889, 29451), (903, 29409),

Gene: Albanese\_29 Start: 22144, Stop: 23535, Start Num: 253

Candidate Starts for Albanese\_29:

(Start: 253 @22144 has 72 MA's), (305, 22231), (353, 22303), (354, 22306), (388, 22369), (390, 22372), (398, 22390), (400, 22396), (416, 22423), (450, 22480), (465, 22531), (493, 22570), (503, 22606), (512, 22624), (520, 22660), (527, 22681), (538, 22699), (555, 22732), (583, 22771), (596, 22813), (607, 22840), (619, 22864), (637, 22900), (640, 22906), (647, 22939), (652, 22954), (655, 22963), (692, 23008), (713, 23041), (715, 23044), (783, 23128), (791, 23149), (799, 23161), (810, 23179), (837, 23269), (844, 23290), (845, 23293), (850, 23317), (852, 23326), (872, 23413), (907, 23503), (918, 23527),

Gene: Aledel\_26 Start: 21745, Stop: 23139, Start Num: 253

Candidate Starts for Aledel\_26:

(Start: 253 @21745 has 72 MA's), (Start: 288 @21802 has 1 MA's), (341, 21889), (353, 21907), (354, 21910), (398, 21994), (416, 22027), (447, 22078), (450, 22084), (470, 22144), (493, 22174), (503, 22210), (512, 22228), (527, 22285), (538, 22303), (541, 22309), (555, 22336), (596, 22417), (607, 22444), (619, 22468), (626, 22483), (640, 22510), (647, 22543), (652, 22558), (742, 22690), (781, 22726), (791, 22753), (799, 22765), (810, 22783), (837, 22873), (839, 22879), (844, 22894), (845, 22897), (852, 22930), (868, 22990), (872, 23017), (894, 23074), (907, 23107), (918, 23131),

Gene: Alephilan\_61 Start: 40725, Stop: 42638, Start Num: 55

Candidate Starts for Alephilan\_61:

(20, 40599), (22, 40608), (23, 40620), (32, 40653), (Start: 54 @40722 has 11 MA's), (Start: 55 @40725 has 51 MA's), (Start: 69 @40737 has 40 MA's), (83, 40785), (96, 40818), (135, 40977), (145, 41004), (147, 41013), (181, 41085), (251, 41202), (252, 41205), (Start: 293 @41268 has 18 MA's), (306,

41295), (352, 41358), (370, 41385), (445, 41514), (453, 41538), (466, 41580), (490, 41628), (496, 41649), (500, 41670), (518, 41727), (522, 41745), (540, 41781), (561, 41823), (590, 41883), (647, 41979), (648, 41982), (791, 42210), (831, 42300), (837, 42336), (839, 42342), (853, 42396), (864, 42435), (892, 42537), (897, 42552), (904, 42573),

Gene: AlexAdler\_41 Start: 31109, Stop: 29721, Start Num: 290

Candidate Starts for AlexAdler\_41:

(175, 31331), (Start: 290 @31109 has 124 MA's), (382, 30965), (Start: 384 @30959 has 1 MA's), (386, 30956), (439, 30842), (450, 30815), (470, 30755), (487, 30728), (490, 30725), (518, 30629), (533, 30587), (614, 30416), (625, 30395), (634, 30380), (640, 30368), (652, 30320), (695, 30260), (757, 30164), (797, 30101), (823, 30047), (846, 29963), (847, 29957), (850, 29945), (874, 29849), (894, 29795), (895, 29792), (903, 29768),

Gene: Alone3\_128 Start: 69071, Stop: 70642, Start Num: 255

Candidate Starts for Alone3\_128:

(Start: 255 @69071 has 4 MA's), (299, 69152), (310, 69176), (354, 69242), (396, 69323), (421, 69389), (452, 69455), (453, 69464), (491, 69542), (504, 69593), (539, 69695), (549, 69716), (550, 69719), (579, 69770), (584, 69779), (587, 69794), (591, 69806), (617, 69854), (622, 69869), (761, 70139), (774, 70151), (781, 70175), (822, 70262), (849, 70367), (881, 70487), (886, 70499), (904, 70556), (910, 70568), (913, 70574), (932, 70622),

Gene: Alyssamiracle\_63 Start: 39828, Stop: 41744, Start Num: 54

Candidate Starts for Alyssamiracle\_63:

(Start: 54 @39828 has 11 MA's), (Start: 55 @39831 has 51 MA's), (Start: 69 @39843 has 40 MA's), (83, 39891), (96, 39924), (135, 40083), (145, 40110), (147, 40119), (181, 40191), (252, 40311), (Start: 293 @40374 has 18 MA's), (352, 40464), (370, 40491), (445, 40620), (453, 40644), (466, 40686), (472, 40698), (482, 40713), (490, 40734), (496, 40755), (500, 40776), (518, 40833), (522, 40851), (540, 40887), (561, 40929), (590, 40989), (647, 41085), (648, 41088), (760, 41265), (791, 41316), (831, 41406), (837, 41442), (839, 41448), (853, 41502), (864, 41541), (892, 41643), (897, 41658), (904, 41679),

Gene: Alyxandracam\_41 Start: 31119, Stop: 29731, Start Num: 290

Candidate Starts for Alyxandracam\_41:

(46, 31770), (148, 31416), (175, 31341), (Start: 290 @31119 has 124 MA's), (382, 30975), (Start: 384 @30969 has 1 MA's), (386, 30966), (439, 30852), (450, 30825), (470, 30765), (487, 30738), (490, 30735), (518, 30639), (533, 30597), (614, 30426), (634, 30390), (640, 30378), (647, 30345), (652, 30330), (695, 30270), (757, 30174), (797, 30111), (823, 30057), (846, 29973), (847, 29967), (850, 29955), (874, 29859), (894, 29805), (895, 29802), (903, 29778),

Gene: Amavida\_72 Start: 47198, Stop: 45804, Start Num: 265

Candidate Starts for Amavida\_72:

(Start: 265 @47198 has 13 MA's), (300, 47129), (348, 47054), (361, 47036), (376, 47006), (412, 46925), (425, 46895), (437, 46871), (532, 46631), (571, 46592), (633, 46478), (649, 46427), (662, 46406), (674, 46376), (681, 46361), (689, 46349), (746, 46268), (781, 46220), (791, 46193), (804, 46172), (833, 46088), (851, 46022), (905, 45833), (911, 45821),

Gene: Amigo\_71 Start: 47416, Stop: 46022, Start Num: 265

Candidate Starts for Amigo\_71:

(Start: 265 @47416 has 13 MA's), (300, 47347), (348, 47272), (361, 47254), (376, 47224), (412, 47143), (532, 46849), (571, 46810), (633, 46696), (662, 46624), (674, 46594), (681, 46579), (689, 46567), (728, 46516), (759, 46465), (775, 46447), (781, 46438), (804, 46390), (851, 46240), (905, 46051),

Gene: Amok\_54 Start: 39035, Stop: 37557, Start Num: 242

Candidate Starts for Amok\_54:

(Start: 242 @39035 has 41 MA's), (297, 38948), (300, 38942), (366, 38840), (Start: 384 @38798 has 1 MA's), (412, 38741), (418, 38723), (421, 38717), (490, 38585), (504, 38531), (506, 38525), (509, 38519), (536, 38441), (591, 38327), (602, 38300), (614, 38276), (632, 38237), (645, 38195), (651, 38171), (659, 38150), (692, 38102), (697, 38093), (780, 37976), (803, 37928), (811, 37910), (840, 37814), (846, 37793), (853, 37763), (861, 37733), (904, 37595),

Gene: Amore2\_62 Start: 52713, Stop: 51082, Start Num: 180

Candidate Starts for Amore2\_62:

(Start: 180 @52713 has 3 MA's), (187, 52701), (208, 52650), (211, 52644), (254, 52587), (359, 52446), (381, 52404), (386, 52392), (404, 52356), (405, 52353), (414, 52326), (427, 52290), (436, 52278), (442, 52263), (485, 52155), (518, 52050), (521, 52035), (582, 51912), (605, 51864), (616, 51840), (623, 51822), (645, 51774), (661, 51723), (682, 51687), (691, 51669), (757, 51552), (790, 51501), (821, 51459), (837, 51399), (848, 51357), (862, 51306), (868, 51282), (926, 51120), (932, 51099),

Gene: Anakin\_40 Start: 25911, Stop: 27818, Start Num: 69

Candidate Starts for Anakin\_40:

(Start: 69 @25911 has 40 MA's), (88, 25974), (99, 25995), (111, 26049), (170, 26226), (192, 26271), (Start: 295 @26445 has 21 MA's), (301, 26454), (359, 26544), (388, 26601), (468, 26787), (518, 26922), (520, 26934), (539, 26967), (640, 27096), (689, 27213), (744, 27288), (837, 27522), (838, 27525), (853, 27585), (875, 27675), (886, 27705), (898, 27747), (922, 27798),

Gene: Anamika\_57 Start: 52887, Stop: 51475, Start Num: 330

Candidate Starts for Anamika\_57:

(146, 53235), (191, 53106), (236, 53019), (Start: 237 @53016 has 2 MA's), (Start: 330 @52887 has 27 MA's), (359, 52842), (404, 52752), (405, 52749), (407, 52743), (414, 52722), (442, 52659), (485, 52551), (491, 52533), (518, 52446), (521, 52431), (544, 52389), (582, 52308), (605, 52260), (623, 52218), (637, 52200), (638, 52197), (645, 52170), (661, 52119), (682, 52083), (711, 52032), (757, 51948), (767, 51927), (845, 51771), (846, 51765), (848, 51753), (880, 51627), (926, 51513),

Gene: Anansi\_70 Start: 47020, Stop: 45626, Start Num: 265

Candidate Starts for Anansi\_70:

(Start: 265 @47020 has 13 MA's), (300, 46951), (348, 46876), (361, 46858), (376, 46828), (412, 46747), (470, 46597), (532, 46453), (571, 46414), (633, 46300), (649, 46249), (662, 46228), (674, 46198), (681, 46183), (689, 46171), (746, 46090), (781, 46042), (791, 46015), (804, 45994), (833, 45910), (851, 45844), (905, 45655), (911, 45643),

Gene: AndPeggy\_50 Start: 38315, Stop: 36837, Start Num: 242

Candidate Starts for AndPeggy\_50:

(Start: 242 @38315 has 41 MA's), (300, 38222), (Start: 314 @38195 has 1 MA's), (366, 38120), (Start: 384 @38078 has 1 MA's), (421, 37997), (490, 37865), (504, 37811), (509, 37799), (536, 37721), (591, 37607), (602, 37580), (614, 37556), (632, 37517), (651, 37451), (659, 37430), (697, 37373), (780, 37256), (803, 37208), (811, 37190), (840, 37094), (846, 37073), (853, 37043),

Gene: Andromedas\_40 Start: 31099, Stop: 29687, Start Num: 295

Candidate Starts for Andromedas\_40:

(Start: 295 @31099 has 21 MA's), (309, 31069), (Start: 314 @31063 has 1 MA's), (337, 31030), (439, 30838), (450, 30811), (470, 30751), (487, 30724), (490, 30721), (500, 30679), (518, 30625), (533, 30583), (589, 30469), (614, 30412), (625, 30391), (634, 30376), (640, 30364), (643, 30352), (644, 30349), (647, 30331), (678, 30250), (695, 30214), (729, 30160), (754, 30118), (781, 30088), (791, 30064), (795, 30058), (820, 30016), (837, 29947), (845, 29923), (846, 29917), (847, 29911), (850, 29899), (874, 29803), (877, 29794), (886, 29776), (889, 29764), (904, 29719),

Gene: AnnaSerena\_40 Start: 25946, Stop: 27853, Start Num: 69

Candidate Starts for AnnaSerena\_40:

(Start: 69 @25946 has 40 MA's), (88, 26009), (99, 26030), (111, 26084), (170, 26261), (192, 26306), (Start: 295 @26480 has 21 MA's), (301, 26489), (359, 26579), (388, 26636), (468, 26822), (518, 26957), (520, 26969), (539, 27002), (640, 27131), (689, 27248), (744, 27323), (837, 27557), (838, 27560), (853, 27620), (875, 27710), (886, 27740), (898, 27782), (922, 27833),

Gene: AnnabelLee\_38 Start: 26373, Stop: 24541, Start Num: 66

Candidate Starts for AnnabelLee\_38:

(Start: 66 @26373 has 1 MA's), (83, 26316), (146, 26115), (204, 25980), (287, 25845), (301, 25818), (399, 25761), (406, 25746), (425, 25692), (453, 25596), (455, 25590), (458, 25575), (479, 25530), (496, 25482), (500, 25461), (506, 25443), (520, 25392), (565, 25299), (572, 25287), (640, 25224), (666, 25152), (693, 25092), (714, 25071), (766, 25005), (776, 24987), (782, 24969), (783, 24966), (800, 24930), (837, 24822), (840, 24813), (856, 24753), (868, 24705),

Gene: Annapurna\_41 Start: 25220, Stop: 27127, Start Num: 69

Candidate Starts for Annapurna\_41:

(19, 25046), (Start: 69 @25220 has 40 MA's), (88, 25283), (99, 25304), (111, 25358), (150, 25493), (170, 25535), (192, 25580), (Start: 295 @25754 has 21 MA's), (301, 25763), (359, 25853), (381, 25895), (388, 25910), (468, 26096), (518, 26231), (520, 26243), (539, 26276), (640, 26405), (689, 26522), (831, 26795), (838, 26834), (853, 26894), (875, 26984), (886, 27014), (898, 27056), (922, 27107),

Gene: Antoinette\_41 Start: 31109, Stop: 29721, Start Num: 290

Candidate Starts for Antoinette\_41:

(175, 31331), (Start: 290 @31109 has 124 MA's), (382, 30965), (Start: 384 @30959 has 1 MA's), (386, 30956), (439, 30842), (450, 30815), (470, 30755), (487, 30728), (490, 30725), (518, 30629), (533, 30587), (614, 30416), (625, 30395), (634, 30380), (640, 30368), (652, 30320), (695, 30260), (757, 30164), (797, 30101), (823, 30047), (846, 29963), (847, 29957), (850, 29945), (869, 29870), (874, 29849), (894, 29795), (895, 29792), (903, 29768),

Gene: Apeppi\_55 Start: 40047, Stop: 41966, Start Num: 55

Candidate Starts for Apeppi\_55:

(21, 39927), (24, 39948), (29, 39969), (43, 39999), (48, 40032), (Start: 54 @40044 has 11 MA's), (Start: 55 @40047 has 51 MA's), (Start: 69 @40062 has 40 MA's), (74, 40077), (83, 40110), (96, 40143), (98, 40146), (Start: 109 @40194 has 3 MA's), (113, 40212), (135, 40302), (142, 40320), (145, 40329), (147, 40338), (181, 40410), (252, 40530), (254, 40533), (Start: 293 @40593 has 18 MA's), (302, 40611), (352, 40683), (370, 40710), (447, 40845), (453, 40863), (466, 40905), (478, 40926), (482, 40932), (496, 40974), (500, 40995), (508, 41016), (518, 41052), (561, 41151), (565, 41160), (590, 41211), (647, 41307), (648, 41310), (724, 41421), (760, 41487), (781, 41511), (791, 41538), (848, 41706), (853, 41724), (859, 41748), (864, 41763), (865, 41769), (874, 41811), (880, 41826), (892, 41865), (897, 41880), (904, 41901), (930, 41958),

Gene: Apiary\_72 Start: 53146, Stop: 51110, Start Num: 38

Candidate Starts for Apiary\_72:

(13, 53314), (Start: 38 @53146 has 6 MA's), (Start: 58 @53080 has 1 MA's), (77, 53038), (168, 52753), (200, 52696), (225, 52645), (236, 52630), (Start: 295 @52540 has 21 MA's), (301, 52528), (359, 52435), (406, 52363), (447, 52294), (472, 52222), (496, 52165), (568, 51985), (580, 51961), (618, 51898), (640, 51862), (673, 51775), (744, 51643), (766, 51604), (768, 51601), (783, 51556), (837, 51409), (854, 51346), (865, 51304), (874, 51265), (885, 51241),

Gene: AppleCider\_29 Start: 22130, Stop: 23524, Start Num: 253

Candidate Starts for AppleCider\_29:

(Start: 253 @22130 has 72 MA's), (Start: 288 @22187 has 1 MA's), (353, 22292), (398, 22379), (447, 22463), (448, 22466), (450, 22469), (493, 22559), (503, 22595), (506, 22604), (527, 22670), (538, 22688), (555, 22721), (566, 22733), (596, 22802), (607, 22829), (619, 22853), (637, 22889), (640, 22895), (647, 22928), (652, 22943), (655, 22952), (723, 23042), (781, 23111), (791, 23138), (803, 23156), (810, 23168), (837, 23258), (839, 23264), (842, 23273), (844, 23279), (852, 23315), (872, 23402), (892, 23453), (907, 23492), (918, 23516),

Gene: Araceli\_42 Start: 30875, Stop: 32269, Start Num: 261

Candidate Starts for Araceli\_42:

(Start: 261 @30875 has 12 MA's), (Start: 264 @30878 has 2 MA's), (303, 30953), (316, 30977), (343, 31007), (345, 31010), (353, 31022), (374, 31055), (405, 31112), (418, 31136), (447, 31181), (450, 31187), (470, 31247), (491, 31268), (506, 31322), (547, 31421), (556, 31448), (562, 31457), (616, 31583), (640, 31631), (645, 31652), (647, 31664), (652, 31679), (679, 31709), (695, 31742), (701, 31751), (727, 31793), (782, 31859), (783, 31862), (791, 31883), (803, 31901), (811, 31919), (832, 31973), (837, 32003), (852, 32060), (853, 32063), (866, 32111), (879, 32165), (905, 32234), (914, 32252),

Gene: AranulaLuti\_40 Start: 30803, Stop: 29415, Start Num: 290

Candidate Starts for AranulaLuti\_40:

(16, 31619), (46, 31454), (148, 31100), (175, 31025), (Start: 290 @30803 has 124 MA's), (382, 30659), (Start: 384 @30653 has 1 MA's), (386, 30650), (439, 30536), (450, 30509), (470, 30449), (487, 30422), (490, 30419), (518, 30323), (533, 30281), (614, 30110), (625, 30089), (634, 30074), (652, 30014), (695, 29954), (757, 29858), (797, 29795), (823, 29741), (846, 29657), (847, 29651), (850, 29639), (874, 29543), (894, 29489), (895, 29486), (903, 29462),

Gene: Archimedes\_37 Start: 33084, Stop: 31684, Start Num: 261

Candidate Starts for Archimedes\_37:

(Start: 261 @33084 has 12 MA's), (284, 33042), (303, 33006), (311, 32988), (316, 32982), (343, 32952), (353, 32937), (354, 32934), (398, 32850), (505, 32628), (512, 32616), (556, 32502), (616, 32376), (621, 32364), (633, 32343), (634, 32340), (640, 32328), (647, 32295), (652, 32280), (677, 32256), (695, 32220), (701, 32211), (781, 32112), (810, 32055), (816, 32043), (819, 32037), (842, 31950), (847, 31929), (852, 31908), (875, 31815), (920, 31689),

Gene: Arti\_71 Start: 55496, Stop: 53430, Start Num: 36

Candidate Starts for Arti\_71:

(8, 55700), (9, 55688), (12, 55670), (Start: 36 @55496 has 31 MA's), (Start: 84 @55358 has 2 MA's), (89, 55334), (147, 55130), (168, 55085), (225, 54977), (300, 54863), (301, 54860), (359, 54770), (362, 54767), (402, 54707), (466, 54569), (475, 54551), (488, 54527), (522, 54404), (568, 54299), (640, 54173), (654, 54119), (725, 53993), (729, 53984), (742, 53960), (781, 53888), (783, 53882), (796, 53852), (821, 53795), (837, 53735), (854, 53672), (874, 53591),

Gene: Artiphact\_40 Start: 25935, Stop: 27842, Start Num: 69

Candidate Starts for Artiphact\_40:

(Start: 69 @25935 has 40 MA's), (88, 25998), (99, 26019), (111, 26073), (170, 26250), (192, 26295), (Start: 295 @26469 has 21 MA's), (301, 26478), (359, 26568), (388, 26625), (468, 26811), (518, 26946), (520, 26958), (539, 26991), (640, 27120), (689, 27237), (744, 27312), (837, 27546), (838, 27549), (853, 27609), (875, 27699), (886, 27729), (898, 27771), (922, 27822),

Gene: Asta\_40 Start: 30816, Stop: 29428, Start Num: 290

Candidate Starts for Asta\_40:

(175, 31038), (Start: 290 @30816 has 124 MA's), (382, 30672), (Start: 384 @30666 has 1 MA's), (386, 30663), (439, 30549), (450, 30522), (470, 30462), (487, 30435), (490, 30432), (517, 30339), (518,

30336), (533, 30294), (614, 30123), (625, 30102), (634, 30087), (640, 30075), (652, 30027), (695, 29967), (757, 29871), (797, 29808), (823, 29754), (846, 29670), (847, 29664), (850, 29652), (869, 29577), (874, 29556), (894, 29502), (895, 29499), (903, 29475),

Gene: Astralis\_61 Start: 39409, Stop: 41322, Start Num: 55

Candidate Starts for Astralis\_61:

(Start: 54 @39406 has 11 MA's), (Start: 55 @39409 has 51 MA's), (Start: 69 @39421 has 40 MA's), (83, 39469), (96, 39502), (135, 39661), (145, 39688), (147, 39697), (181, 39769), (252, 39889), (Start: 293 @39952 has 18 MA's), (352, 40042), (370, 40069), (445, 40198), (453, 40222), (466, 40264), (472, 40276), (482, 40291), (490, 40312), (496, 40333), (500, 40354), (518, 40411), (522, 40429), (540, 40465), (561, 40507), (590, 40567), (647, 40663), (648, 40666), (760, 40843), (791, 40894), (831, 40984), (837, 41020), (839, 41026), (853, 41080), (864, 41119), (892, 41221), (897, 41236), (904, 41257),

Gene: Atuin\_98 Start: 80621, Stop: 82477, Start Num: 63

Candidate Starts for Atuin\_98:

(Start: 63 @80621 has 2 MA's), (143, 80894), (204, 80999), (281, 81122), (287, 81134), (Start: 293 @81143 has 18 MA's), (408, 81239), (433, 81314), (453, 81374), (508, 81527), (519, 81572), (549, 81632), (572, 81677), (638, 81734), (640, 81740), (647, 81773), (651, 81785), (655, 81797), (729, 81914), (731, 81917), (766, 81974), (782, 82010), (786, 82022), (796, 82043), (832, 82127), (854, 82220), (860, 82244), (912, 82412), (913, 82415),

Gene: Aubergine\_40 Start: 30816, Stop: 29428, Start Num: 290

Candidate Starts for Aubergine\_40:

(175, 31038), (Start: 290 @30816 has 124 MA's), (382, 30672), (Start: 384 @30666 has 1 MA's), (386, 30663), (439, 30549), (450, 30522), (470, 30462), (487, 30435), (490, 30432), (518, 30336), (533, 30294), (614, 30123), (625, 30102), (634, 30087), (652, 30027), (695, 29967), (757, 29871), (797, 29808), (823, 29754), (846, 29670), (847, 29664), (850, 29652), (874, 29556), (894, 29502), (895, 29499), (903, 29475),

Gene: Audell\_37 Start: 28742, Stop: 26934, Start Num: 66

Candidate Starts for Audell\_37:

(Start: 66 @28742 has 1 MA's), (83, 28682), (107, 28619), (145, 28487), (146, 28481), (201, 28364), (204, 28352), (Start: 258 @28268 has 13 MA's), (399, 28130), (458, 27944), (496, 27851), (500, 27830), (504, 27818), (572, 27659), (580, 27644), (595, 27614), (640, 27596), (672, 27527), (676, 27521), (684, 27506), (698, 27479), (714, 27467), (729, 27458), (744, 27440), (765, 27404), (766, 27401), (776, 27383), (782, 27365), (783, 27362), (840, 27209), (848, 27176), (856, 27149), (861, 27128), (868, 27101), (893, 27011), (913, 26960),

Gene: Austin\_61 Start: 52711, Stop: 51080, Start Num: 180

Candidate Starts for Austin\_61:

(Start: 180 @52711 has 3 MA's), (187, 52699), (208, 52648), (211, 52642), (254, 52585), (359, 52444), (381, 52402), (386, 52390), (404, 52354), (405, 52351), (414, 52324), (427, 52288), (436, 52276), (442, 52261), (485, 52153), (518, 52048), (521, 52033), (582, 51910), (605, 51862), (616, 51838), (623, 51820), (645, 51772), (661, 51721), (682, 51685), (691, 51667), (757, 51550), (790, 51499), (821, 51457), (837, 51397), (848, 51355), (862, 51304), (868, 51280), (926, 51118), (932, 51097),

Gene: AustinPowers\_26 Start: 21746, Stop: 23140, Start Num: 253

Candidate Starts for AustinPowers\_26:

(Start: 253 @21746 has 72 MA's), (Start: 288 @21803 has 1 MA's), (341, 21890), (353, 21908), (354, 21911), (398, 21995), (416, 22028), (447, 22079), (450, 22085), (470, 22145), (493, 22175), (503, 22211), (512, 22229), (520, 22265), (527, 22286), (538, 22304), (541, 22310), (555, 22337), (596, 22418), (607, 22445), (619, 22469), (626, 22484), (640, 22511), (647, 22544), (652, 22559), (781,



22727), (791, 22754), (799, 22766), (810, 22784), (837, 22874), (839, 22880), (844, 22895), (845, 22898), (868, 22991), (872, 23018), (894, 23075), (907, 23108), (918, 23132),

Gene: Avian\_60 Start: 39556, Stop: 41472, Start Num: 54

Candidate Starts for Avian\_60:

(Start: 54 @39556 has 11 MA's), (Start: 55 @39559 has 51 MA's), (Start: 69 @39571 has 40 MA's), (83, 39619), (96, 39652), (135, 39811), (145, 39838), (147, 39847), (181, 39919), (252, 40039), (Start: 293 @40102 has 18 MA's), (352, 40192), (370, 40219), (445, 40348), (453, 40372), (466, 40414), (472, 40426), (482, 40441), (490, 40462), (496, 40483), (500, 40504), (518, 40561), (522, 40579), (540, 40615), (561, 40657), (590, 40717), (647, 40813), (648, 40816), (760, 40993), (791, 41044), (831, 41134), (837, 41170), (839, 41176), (853, 41230), (864, 41269), (892, 41371), (897, 41386), (904, 41407),

Gene: AxiPup\_41 Start: 31088, Stop: 29700, Start Num: 290

Candidate Starts for AxiPup\_41:

(46, 31739), (148, 31385), (175, 31310), (Start: 290 @31088 has 124 MA's), (382, 30944), (Start: 384 @30938 has 1 MA's), (386, 30935), (439, 30821), (450, 30794), (470, 30734), (487, 30707), (490, 30704), (518, 30608), (533, 30566), (614, 30395), (625, 30374), (640, 30347), (652, 30299), (695, 30239), (797, 30080), (823, 30026), (846, 29942), (847, 29936), (850, 29924), (874, 29828), (894, 29774), (895, 29771), (903, 29747),

Gene: Axym\_52 Start: 38739, Stop: 37261, Start Num: 242

Candidate Starts for Axym\_52:

(Start: 242 @38739 has 41 MA's), (297, 38652), (300, 38646), (350, 38565), (366, 38544), (421, 38421), (422, 38418), (504, 38235), (506, 38229), (509, 38223), (536, 38145), (591, 38031), (602, 38004), (614, 37980), (640, 37920), (651, 37875), (659, 37854), (688, 37815), (697, 37797), (780, 37680), (803, 37632), (806, 37629), (811, 37614), (840, 37518), (846, 37497), (853, 37467),

Gene: Azira\_49 Start: 37909, Stop: 36419, Start Num: 242

Candidate Starts for Azira\_49:

(Start: 242 @37909 has 41 MA's), (300, 37819), (Start: 314 @37792 has 1 MA's), (343, 37750), (374, 37702), (Start: 384 @37675 has 1 MA's), (421, 37594), (422, 37591), (425, 37585), (436, 37564), (457, 37498), (504, 37408), (509, 37396), (527, 37333), (536, 37318), (544, 37303), (599, 37186), (602, 37177), (637, 37099), (645, 37072), (647, 37060), (651, 37048), (678, 37009), (688, 36988), (690, 36985), (697, 36970), (733, 36898), (781, 36829), (803, 36784), (822, 36739), (828, 36724), (834, 36694), (840, 36670), (853, 36619), (861, 36589), (878, 36523), (888, 36499), (898, 36466), (915, 36430),

Gene: BRock\_117 Start: 63285, Stop: 64868, Start Num: 255

Candidate Starts for BRock\_117:

(Start: 255 @63285 has 4 MA's), (Start: 262 @63294 has 25 MA's), (296, 63360), (299, 63366), (349, 63447), (354, 63456), (387, 63519), (389, 63522), (391, 63525), (396, 63540), (421, 63606), (451, 63669), (452, 63672), (453, 63681), (471, 63735), (491, 63759), (504, 63810), (528, 63891), (543, 63921), (550, 63936), (554, 63948), (579, 63987), (591, 64023), (604, 64044), (617, 64071), (622, 64086), (636, 64107), (646, 64149), (704, 64257), (730, 64305), (756, 64347), (761, 64356), (796, 64428), (817, 64461), (822, 64479), (847, 64572), (849, 64584), (871, 64671), (874, 64683), (881, 64704), (898, 64758), (903, 64770), (928, 64827),

Gene: Baines\_40 Start: 30809, Stop: 29421, Start Num: 290

Candidate Starts for Baines\_40:

(175, 31031), (Start: 290 @30809 has 124 MA's), (382, 30665), (Start: 384 @30659 has 1 MA's), (386, 30656), (439, 30542), (450, 30515), (470, 30455), (487, 30428), (490, 30425), (518, 30329), (533, 30287), (614, 30116), (625, 30095), (634, 30080), (640, 30068), (652, 30020), (695, 29960), (757,

29864), (797, 29801), (823, 29747), (846, 29663), (847, 29657), (850, 29645), (869, 29570), (874, 29549), (894, 29495), (895, 29492), (903, 29468),

Gene: Balsa\_40 Start: 31258, Stop: 29867, Start Num: 290

Candidate Starts for Balsa\_40:

(216, 31372), (277, 31288), (Start: 290 @31258 has 124 MA's), (382, 31111), (Start: 384 @31105 has 1 MA's), (386, 31102), (439, 30988), (450, 30961), (470, 30901), (487, 30874), (490, 30871), (518, 30775), (533, 30733), (614, 30562), (625, 30541), (640, 30514), (695, 30406), (757, 30310), (823, 30193), (831, 30175), (846, 30109), (847, 30103), (874, 29995), (894, 29941), (895, 29938), (903, 29914), (917, 29884),

Gene: Bandik\_41 Start: 31114, Stop: 29726, Start Num: 290

Candidate Starts for Bandik\_41:

(46, 31765), (148, 31411), (175, 31336), (Start: 290 @31114 has 124 MA's), (382, 30970), (Start: 384 @30964 has 1 MA's), (386, 30961), (439, 30847), (450, 30820), (470, 30760), (487, 30733), (490, 30730), (518, 30634), (533, 30592), (588, 30481), (614, 30421), (634, 30385), (640, 30373), (647, 30340), (652, 30325), (695, 30265), (757, 30169), (797, 30106), (823, 30052), (846, 29968), (847, 29962), (850, 29950), (874, 29854), (894, 29800), (895, 29797), (903, 29773),

Gene: Barbochs\_59 Start: 51736, Stop: 50204, Start Num: 262

Candidate Starts for Barbochs\_59:

(146, 51991), (168, 51940), (179, 51889), (202, 51835), (213, 51805), (Start: 237 @51772 has 2 MA's), (Start: 244 @51763 has 1 MA's), (Start: 262 @51736 has 25 MA's), (359, 51568), (381, 51526), (404, 51478), (408, 51466), (412, 51454), (414, 51448), (422, 51427), (436, 51400), (491, 51259), (518, 51172), (521, 51157), (526, 51145), (544, 51115), (567, 51064), (581, 51037), (605, 50986), (616, 50962), (623, 50944), (637, 50926), (638, 50923), (645, 50896), (658, 50854), (682, 50809), (757, 50674), (764, 50659), (773, 50638), (821, 50581), (831, 50557), (845, 50497), (846, 50491), (847, 50485), (848, 50479), (862, 50428), (868, 50404), (878, 50365), (880, 50353), (882, 50350), (919, 50257), (926, 50242), (932, 50221),

Gene: Barnyard\_65 Start: 45144, Stop: 47105, Start Num: 49

Candidate Starts for Barnyard\_65:

(Start: 49 @45144 has 1 MA's), (65, 45171), (Start: 69 @45177 has 40 MA's), (71, 45183), (90, 45249), (104, 45282), (106, 45297), (Start: 109 @45312 has 3 MA's), (111, 45318), (118, 45345), (127, 45387), (143, 45447), (150, 45468), (165, 45504), (170, 45513), (200, 45576), (206, 45597), (215, 45615), (226, 45630), (231, 45636), (252, 45660), (297, 45735), (300, 45741), (413, 45924), (417, 45936), (425, 45954), (445, 45969), (472, 46047), (522, 46200), (537, 46233), (598, 46368), (625, 46395), (635, 46401), (638, 46407), (652, 46461), (679, 46527), (680, 46530), (724, 46572), (783, 46656), (798, 46689), (836, 46800), (837, 46803), (838, 46806), (840, 46812), (848, 46845), (854, 46866), (855, 46869), (865, 46908), (880, 46962), (891, 46998), (894, 47007), (917, 47064), (926, 47082),

Gene: BaronJohn\_41 Start: 29646, Stop: 28255, Start Num: 309

Candidate Starts for BaronJohn\_41:

(270, 29724), (Start: 293 @29682 has 18 MA's), (306, 29652), (309, 29646), (Start: 384 @29532 has 1 MA's), (386, 29529), (388, 29526), (487, 29292), (490, 29289), (589, 29034), (612, 28983), (614, 28977), (640, 28929), (647, 28896), (695, 28782), (701, 28773), (729, 28728), (732, 28722), (749, 28695), (757, 28686), (797, 28623), (831, 28551), (837, 28515), (840, 28506), (845, 28491), (846, 28485), (850, 28467), (861, 28425), (877, 28362), (903, 28290),

Gene: Bavilard\_56 Start: 40156, Stop: 38678, Start Num: 242

Candidate Starts for Bavilard\_56:

(Start: 242 @40156 has 41 MA's), (286, 40093), (297, 40072), (300, 40066), (Start: 314 @40039 has 1 MA's), (350, 39985), (374, 39949), (380, 39934), (421, 39838), (425, 39829), (436, 39808), (457,

39742), (490, 39706), (504, 39652), (506, 39646), (509, 39640), (536, 39562), (544, 39547), (591, 39448), (624, 39373), (634, 39349), (640, 39337), (645, 39316), (648, 39301), (651, 39292), (659, 39271), (688, 39232), (692, 39223), (733, 39157), (782, 39085), (803, 39043), (806, 39040), (811, 39025), (840, 38929), (853, 38878), (861, 38848), (869, 38815), (888, 38758), (893, 38743),

Gene: BeautPeep30\_41 Start: 31120, Stop: 29732, Start Num: 290

Candidate Starts for BeautPeep30\_41:

(175, 31342), (Start: 290 @31120 has 124 MA's), (382, 30976), (Start: 384 @30970 has 1 MA's), (386, 30967), (439, 30853), (450, 30826), (470, 30766), (487, 30739), (490, 30736), (518, 30640), (533, 30598), (611, 30436), (614, 30427), (625, 30406), (634, 30391), (640, 30379), (652, 30331), (695, 30271), (757, 30175), (797, 30112), (823, 30058), (846, 29974), (847, 29968), (850, 29956), (874, 29860), (894, 29806), (895, 29803), (903, 29779),

Gene: Beaver\_62 Start: 53506, Stop: 51974, Start Num: 262

Candidate Starts for Beaver\_62:

(146, 53761), (168, 53710), (179, 53659), (202, 53605), (213, 53575), (Start: 237 @53542 has 2 MA's), (Start: 244 @53533 has 1 MA's), (Start: 262 @53506 has 25 MA's), (359, 53338), (381, 53296), (404, 53248), (408, 53236), (412, 53224), (414, 53218), (422, 53197), (436, 53170), (491, 53029), (518, 52942), (521, 52927), (526, 52915), (544, 52885), (567, 52834), (581, 52807), (605, 52756), (623, 52714), (637, 52696), (638, 52693), (645, 52666), (658, 52624), (682, 52579), (691, 52561), (757, 52444), (764, 52429), (773, 52408), (821, 52351), (831, 52327), (845, 52267), (846, 52261), (847, 52255), (848, 52249), (862, 52198), (868, 52174), (878, 52135), (880, 52123), (919, 52027), (926, 52012), (932, 51991),

Gene: Beckerton\_60 Start: 46572, Stop: 48629, Start Num: 55

Candidate Starts for Beckerton\_60:

(Start: 55 @46572 has 51 MA's), (81, 46632), (82, 46635), (Start: 109 @46728 has 3 MA's), (112, 46740), (118, 46761), (150, 46884), (151, 46887), (154, 46896), (170, 46929), (174, 46950), (189, 46998), (206, 47040), (252, 47103), (268, 47124), (273, 47130), (300, 47184), (413, 47370), (417, 47382), (425, 47400), (445, 47415), (447, 47421), (568, 47739), (570, 47742), (590, 47787), (635, 47838), (640, 47850), (673, 47940), (679, 47952), (696, 47985), (713, 48009), (718, 48018), (783, 48108), (798, 48141), (836, 48252), (837, 48255), (838, 48258), (839, 48261), (848, 48297), (853, 48315), (869, 48381), (874, 48399), (934, 48576),

Gene: BeeBee8\_41 Start: 31426, Stop: 30035, Start Num: 290

Candidate Starts for BeeBee8\_41:

(214, 31528), (216, 31525), (219, 31522), (Start: 290 @31426 has 124 MA's), (382, 31279), (Start: 384 @31273 has 1 MA's), (386, 31270), (439, 31156), (450, 31129), (470, 31069), (487, 31042), (490, 31039), (518, 30943), (533, 30901), (614, 30730), (625, 30709), (640, 30682), (652, 30634), (695, 30574), (757, 30478), (823, 30361), (831, 30343), (846, 30277), (847, 30271), (874, 30163), (894, 30109), (895, 30106), (903, 30082), (917, 30052),

Gene: Beethoven\_29 Start: 22100, Stop: 23500, Start Num: 253

Candidate Starts for Beethoven\_29:

(Start: 253 @22100 has 72 MA's), (Start: 288 @22163 has 1 MA's), (353, 22268), (354, 22271), (398, 22355), (416, 22388), (447, 22439), (450, 22445), (491, 22526), (492, 22529), (493, 22535), (503, 22571), (512, 22589), (513, 22592), (520, 22625), (527, 22646), (538, 22664), (555, 22697), (596, 22778), (607, 22805), (621, 22835), (626, 22844), (640, 22871), (647, 22904), (652, 22919), (692, 22973), (705, 22994), (713, 23006), (723, 23018), (839, 23240), (842, 23249), (844, 23255), (852, 23291), (868, 23351), (872, 23378), (907, 23468),

Gene: Beleetus\_123 Start: 66657, Stop: 68228, Start Num: 255

Candidate Starts for Beleetus\_123:

(Start: 255 @66657 has 4 MA's), (299, 66738), (302, 66744), (310, 66762), (342, 66807), (351, 66822), (354, 66828), (387, 66891), (396, 66909), (421, 66975), (452, 67041), (453, 67050), (491, 67128), (504, 67179), (539, 67281), (549, 67302), (550, 67305), (579, 67356), (584, 67365), (587, 67380), (591, 67392), (617, 67440), (622, 67455), (761, 67725), (774, 67737), (781, 67761), (783, 67767), (798, 67800), (822, 67848), (849, 67953), (886, 68085), (904, 68142), (910, 68154), (913, 68160), (932, 68208),

Gene: Benczkowski14\_57 Start: 53319, Stop: 51616, Start Num: 171

Candidate Starts for Benczkowski14\_57:

(Start: 171 @53319 has 6 MA's), (Start: 173 @53307 has 2 MA's), (270, 53124), (Start: 330 @53034 has 27 MA's), (336, 53025), (359, 52989), (374, 52965), (377, 52956), (381, 52947), (404, 52899), (412, 52875), (442, 52803), (443, 52800), (448, 52782), (462, 52743), (509, 52614), (521, 52575), (522, 52572), (533, 52554), (538, 52545), (544, 52533), (564, 52485), (582, 52452), (605, 52404), (616, 52380), (645, 52314), (682, 52215), (736, 52116), (742, 52107), (754, 52083), (757, 52080), (821, 51987), (831, 51963), (832, 51960), (845, 51903), (848, 51885), (878, 51768), (879, 51765), (882, 51753), (926, 51654), (932, 51633),

Gene: Benjalauren\_41 Start: 30819, Stop: 29431, Start Num: 290

Candidate Starts for Benjalauren\_41:

(46, 31470), (148, 31116), (175, 31041), (Start: 290 @30819 has 124 MA's), (382, 30675), (Start: 384 @30669 has 1 MA's), (386, 30666), (439, 30552), (450, 30525), (470, 30465), (487, 30438), (490, 30435), (518, 30339), (533, 30297), (614, 30126), (625, 30105), (634, 30090), (652, 30030), (695, 29970), (757, 29874), (797, 29811), (823, 29757), (846, 29673), (847, 29667), (850, 29655), (874, 29559), (894, 29505), (895, 29502), (903, 29478),

Gene: Bennie\_25 Start: 20566, Stop: 21960, Start Num: 253

Candidate Starts for Bennie\_25:

(Start: 253 @20566 has 72 MA's), (Start: 288 @20623 has 1 MA's), (353, 20728), (354, 20731), (398, 20815), (416, 20848), (447, 20899), (450, 20905), (493, 20995), (503, 21031), (512, 21049), (513, 21052), (520, 21085), (527, 21106), (596, 21238), (607, 21265), (621, 21295), (626, 21304), (640, 21331), (647, 21364), (652, 21379), (679, 21406), (692, 21433), (715, 21469), (742, 21511), (791, 21574), (803, 21592), (832, 21664), (835, 21688), (837, 21694), (838, 21697), (844, 21715), (845, 21718), (850, 21742), (852, 21751), (872, 21838), (892, 21889), (907, 21928),

Gene: BenoitCattle\_59 Start: 52020, Stop: 50611, Start Num: 330

Candidate Starts for BenoitCattle\_59:

(146, 52398), (168, 52347), (179, 52296), (202, 52242), (213, 52212), (Start: 237 @52179 has 2 MA's), (Start: 244 @52170 has 1 MA's), (Start: 262 @52143 has 25 MA's), (Start: 330 @52020 has 27 MA's), (359, 51975), (381, 51933), (404, 51885), (405, 51882), (407, 51876), (408, 51873), (412, 51861), (414, 51855), (436, 51807), (437, 51804), (485, 51684), (491, 51666), (509, 51603), (518, 51579), (521, 51564), (544, 51522), (567, 51471), (605, 51393), (637, 51333), (638, 51330), (641, 51321), (645, 51303), (658, 51261), (682, 51216), (757, 51081), (764, 51066), (773, 51045), (831, 50964), (832, 50961), (845, 50904), (846, 50898), (848, 50886), (862, 50835), (868, 50811), (878, 50772), (880, 50760), (919, 50664), (926, 50649),

Gene: Benry\_32 Start: 21495, Stop: 22922, Start Num: 258

Candidate Starts for Benry\_32:

(Start: 258 @21495 has 13 MA's), (447, 21849), (448, 21852), (455, 21873), (498, 21960), (513, 22002), (634, 22284), (640, 22296), (645, 22317), (652, 22344), (678, 22371), (679, 22374), (692, 22401), (695, 22407), (718, 22443), (791, 22542), (822, 22605), (831, 22623), (832, 22626), (845, 22680), (852, 22713), (856, 22725), (866, 22764), (872, 22800), (875, 22806), (879, 22818), (892, 22851), (902, 22881),

Gene: Berries\_57 Start: 52859, Stop: 51447, Start Num: 330

Candidate Starts for Berries\_57:

(146, 53207), (191, 53078), (Start: 237 @52988 has 2 MA's), (Start: 330 @52859 has 27 MA's), (359, 52814), (404, 52724), (405, 52721), (407, 52715), (414, 52694), (442, 52631), (485, 52523), (491, 52505), (518, 52418), (521, 52403), (544, 52361), (582, 52280), (605, 52232), (623, 52190), (637, 52172), (638, 52169), (645, 52142), (661, 52091), (682, 52055), (711, 52004), (757, 51920), (767, 51899), (845, 51743), (846, 51737), (848, 51725), (880, 51599), (926, 51485),

Gene: Beyoncage\_50 Start: 36615, Stop: 38669, Start Num: 69

Candidate Starts for Beyoncage\_50:

(Start: 69 @36615 has 40 MA's), (76, 36639), (99, 36702), (119, 36786), (127, 36828), (223, 37050), (252, 37086), (298, 37161), (320, 37200), (355, 37242), (373, 37260), (381, 37281), (388, 37293), (417, 37353), (424, 37368), (445, 37386), (472, 37464), (482, 37479), (484, 37482), (496, 37521), (500, 37542), (539, 37644), (568, 37701), (577, 37722), (580, 37725), (586, 37737), (608, 37785), (611, 37791), (628, 37839), (630, 37872), (635, 37896), (642, 37914), (647, 37944), (700, 38067), (713, 38100), (719, 38112), (729, 38127), (751, 38166), (781, 38211), (791, 38238), (829, 38322), (843, 38385), (853, 38427), (856, 38436), (858, 38445), (869, 38493), (871, 38502), (874, 38514), (880, 38529), (893, 38571),

Gene: BiPauneto\_74 Start: 54628, Stop: 52772, Start Num: 109

Candidate Starts for BiPauneto\_74:

(9, 55045), (12, 55027), (18, 54952), (Start: 36 @54853 has 31 MA's), (Start: 109 @54628 has 3 MA's), (225, 54334), (252, 54301), (268, 54280), (297, 54226), (300, 54220), (301, 54217), (359, 54127), (362, 54124), (402, 54064), (475, 53908), (522, 53761), (568, 53653), (580, 53629), (640, 53527), (654, 53473), (668, 53458), (708, 53377), (729, 53338), (765, 53275), (781, 53236), (783, 53230), (796, 53200), (837, 53083), (854, 53020), (869, 52957), (874, 52939), (901, 52855),

Gene: Bianmat\_57 Start: 52899, Stop: 51487, Start Num: 330

Candidate Starts for Bianmat\_57:

(146, 53247), (191, 53118), (Start: 237 @53028 has 2 MA's), (Start: 330 @52899 has 27 MA's), (359, 52854), (404, 52764), (405, 52761), (407, 52755), (414, 52734), (442, 52671), (470, 52593), (485, 52563), (491, 52545), (518, 52458), (521, 52443), (544, 52401), (582, 52320), (605, 52272), (623, 52230), (637, 52212), (638, 52209), (645, 52182), (661, 52131), (682, 52095), (711, 52044), (757, 51960), (767, 51939), (845, 51783), (846, 51777), (848, 51765), (880, 51639), (926, 51525),

Gene: Big4\_103 Start: 78367, Stop: 76427, Start Num: 68

Candidate Starts for Big4\_103:

(Start: 68 @78367 has 7 MA's), (114, 78214), (141, 78121), (183, 78046), (225, 77965), (Start: 241 @77941 has 1 MA's), (397, 77665), (504, 77359), (535, 77269), (568, 77209), (572, 77200), (638, 77143), (640, 77137), (647, 77104), (651, 77092), (654, 77083), (671, 77059), (700, 76999), (785, 76867), (786, 76861), (817, 76798), (824, 76777), (827, 76771), (846, 76696), (847, 76690), (852, 76669), (868, 76609), (879, 76567), (886, 76543), (889, 76531),

Gene: BigChungus\_56 Start: 40283, Stop: 38805, Start Num: 242

Candidate Starts for BigChungus\_56:

(191, 40361), (218, 40310), (Start: 221 @40307 has 1 MA's), (Start: 242 @40283 has 41 MA's), (286, 40220), (297, 40199), (300, 40193), (Start: 314 @40166 has 1 MA's), (350, 40112), (374, 40076), (380, 40061), (421, 39965), (425, 39956), (436, 39935), (457, 39869), (490, 39833), (504, 39779), (506, 39773), (509, 39767), (536, 39689), (544, 39674), (591, 39575), (624, 39500), (634, 39476), (640, 39464), (645, 39443), (648, 39428), (651, 39419), (659, 39398), (688, 39359), (692, 39350), (701, 39335), (733, 39284), (782, 39212), (803, 39170), (811, 39152), (840, 39056), (853, 39005), (861, 38975), (869, 38942), (888, 38885), (893, 38870),

Gene: BigMack\_25 Start: 20560, Stop: 21960, Start Num: 253

Candidate Starts for BigMack\_25:

(Start: 253 @20560 has 72 MA's), (Start: 288 @20623 has 1 MA's), (353, 20728), (354, 20731), (398, 20815), (416, 20848), (447, 20899), (450, 20905), (491, 20986), (492, 20989), (493, 20995), (503, 21031), (512, 21049), (513, 21052), (520, 21085), (527, 21106), (538, 21124), (596, 21238), (607, 21265), (621, 21295), (626, 21304), (640, 21331), (647, 21364), (652, 21379), (679, 21406), (695, 21439), (742, 21511), (791, 21574), (803, 21592), (820, 21625), (837, 21694), (839, 21700), (844, 21715), (845, 21718), (852, 21751), (868, 21811), (872, 21838), (907, 21928),

Gene: BigMama\_51 Start: 39745, Stop: 41688, Start Num: 55

Candidate Starts for BigMama\_51:

(Start: 55 @39745 has 51 MA's), (72, 39772), (Start: 97 @39844 has 1 MA's), (110, 39898), (125, 39958), (129, 39976), (131, 39985), (146, 40036), (163, 40078), (181, 40114), (225, 40201), (287, 40294), (297, 40309), (306, 40330), (381, 40432), (399, 40465), (410, 40489), (447, 40549), (482, 40636), (504, 40711), (540, 40801), (568, 40852), (570, 40855), (625, 40945), (640, 40963), (647, 40996), (673, 41050), (679, 41062), (689, 41080), (729, 41143), (781, 41227), (831, 41344), (837, 41392), (854, 41455), (874, 41539),

Gene: BigRedClifford\_41 Start: 31118, Stop: 29730, Start Num: 290

Candidate Starts for BigRedClifford\_41:

(Start: 290 @31118 has 124 MA's), (382, 30974), (Start: 384 @30968 has 1 MA's), (386, 30965), (439, 30851), (450, 30824), (470, 30764), (487, 30737), (490, 30734), (518, 30638), (533, 30596), (614, 30425), (625, 30404), (640, 30377), (652, 30329), (695, 30269), (797, 30110), (823, 30056), (846, 29972), (847, 29966), (850, 29954), (874, 29858), (894, 29804), (895, 29801), (903, 29777),

Gene: BigShaq\_58 Start: 52025, Stop: 50616, Start Num: 330

Candidate Starts for BigShaq\_58:

(146, 52403), (168, 52352), (179, 52301), (202, 52247), (213, 52217), (Start: 237 @52184 has 2 MA's), (Start: 244 @52175 has 1 MA's), (Start: 262 @52148 has 25 MA's), (Start: 330 @52025 has 27 MA's), (359, 51980), (381, 51938), (404, 51890), (405, 51887), (407, 51881), (408, 51878), (412, 51866), (414, 51860), (427, 51824), (436, 51812), (437, 51809), (485, 51689), (491, 51671), (518, 51584), (521, 51569), (544, 51527), (567, 51476), (581, 51449), (605, 51398), (637, 51338), (638, 51335), (641, 51326), (645, 51308), (658, 51266), (682, 51221), (757, 51086), (764, 51071), (773, 51050), (831, 50969), (832, 50966), (845, 50909), (846, 50903), (848, 50891), (862, 50840), (866, 50825), (868, 50816), (878, 50777), (880, 50765), (919, 50669), (926, 50654),

Gene: BillDoor\_53 Start: 37991, Stop: 36513, Start Num: 242

Candidate Starts for BillDoor\_53:

(Start: 242 @37991 has 41 MA's), (300, 37898), (Start: 314 @37871 has 1 MA's), (366, 37796), (Start: 384 @37754 has 1 MA's), (421, 37673), (490, 37541), (504, 37487), (509, 37475), (536, 37397), (591, 37283), (599, 37265), (602, 37256), (614, 37232), (632, 37193), (651, 37127), (659, 37106), (688, 37067), (697, 37049), (701, 37043), (780, 36932), (803, 36884), (811, 36866), (840, 36770), (846, 36749), (853, 36719),

Gene: BirksAndSocks\_64 Start: 53856, Stop: 52324, Start Num: 262

Candidate Starts for BirksAndSocks\_64:

(146, 54111), (168, 54060), (202, 53955), (213, 53925), (Start: 237 @53892 has 2 MA's), (Start: 244 @53883 has 1 MA's), (Start: 262 @53856 has 25 MA's), (359, 53688), (381, 53646), (390, 53628), (404, 53598), (408, 53586), (412, 53574), (414, 53568), (422, 53547), (491, 53379), (518, 53292), (521, 53277), (526, 53265), (544, 53235), (605, 53106), (616, 53082), (623, 53064), (637, 53046), (638, 53043), (641, 53034), (645, 53016), (682, 52929), (757, 52794), (764, 52779), (773, 52758), (831, 52677), (832, 52674), (845, 52617), (846, 52611), (848, 52599), (862, 52548), (868, 52524), (878, 52485), (880, 52473), (882, 52470), (919, 52377), (926, 52362),

Gene: BirthdayBoy\_62 Start: 41143, Stop: 43056, Start Num: 55

Candidate Starts for BirthdayBoy\_62:

(20, 41017), (22, 41026), (23, 41038), (32, 41071), (Start: 54 @41140 has 11 MA's), (Start: 55 @41143 has 51 MA's), (Start: 69 @41155 has 40 MA's), (83, 41203), (96, 41236), (113, 41305), (135, 41395), (145, 41422), (147, 41431), (181, 41503), (252, 41623), (Start: 293 @41686 has 18 MA's), (352, 41776), (370, 41803), (445, 41932), (453, 41956), (466, 41998), (490, 42046), (496, 42067), (500, 42088), (518, 42145), (540, 42199), (561, 42241), (590, 42301), (647, 42397), (648, 42400), (760, 42577), (791, 42628), (831, 42718), (837, 42754), (839, 42760), (853, 42814), (864, 42853), (892, 42955), (897, 42970), (904, 42991),

Gene: Biskit\_55 Start: 38648, Stop: 37170, Start Num: 242

Candidate Starts for Biskit\_55:

(Start: 242 @38648 has 41 MA's), (297, 38561), (300, 38555), (Start: 330 @38504 has 27 MA's), (366, 38453), (374, 38438), (412, 38354), (421, 38330), (425, 38321), (490, 38198), (504, 38144), (506, 38138), (509, 38132), (536, 38054), (591, 37940), (602, 37913), (614, 37889), (645, 37808), (651, 37784), (659, 37763), (688, 37724), (697, 37706), (701, 37700), (780, 37589), (782, 37583), (803, 37541), (811, 37523), (837, 37436), (840, 37427), (846, 37406), (853, 37376), (861, 37346), (869, 37313), (898, 37223),

Gene: BiteSize\_50 Start: 36701, Stop: 38755, Start Num: 69

Candidate Starts for BiteSize\_50:

(Start: 69 @36701 has 40 MA's), (76, 36725), (99, 36788), (119, 36872), (127, 36914), (223, 37136), (252, 37172), (298, 37247), (320, 37286), (355, 37328), (373, 37346), (381, 37367), (388, 37379), (417, 37439), (424, 37454), (445, 37472), (472, 37550), (482, 37565), (484, 37568), (496, 37607), (500, 37628), (539, 37730), (568, 37787), (577, 37808), (580, 37811), (586, 37823), (608, 37871), (611, 37877), (628, 37925), (630, 37958), (635, 37982), (642, 38000), (647, 38030), (700, 38153), (713, 38186), (719, 38198), (729, 38213), (751, 38252), (781, 38297), (791, 38324), (829, 38408), (843, 38471), (853, 38513), (856, 38522), (858, 38531), (869, 38579), (871, 38588), (874, 38600), (880, 38615), (893, 38657),

Gene: Blage\_41 Start: 31118, Stop: 29730, Start Num: 290

Candidate Starts for Blage\_41:

(Start: 290 @31118 has 124 MA's), (382, 30974), (Start: 384 @30968 has 1 MA's), (386, 30965), (439, 30851), (450, 30824), (470, 30764), (487, 30737), (490, 30734), (518, 30638), (533, 30596), (614, 30425), (625, 30404), (640, 30377), (652, 30329), (695, 30269), (797, 30110), (823, 30056), (846, 29972), (847, 29966), (850, 29954), (874, 29858), (894, 29804), (895, 29801), (903, 29777),

Gene: Blondies\_55 Start: 38965, Stop: 37487, Start Num: 242

Candidate Starts for Blondies\_55:

(Start: 242 @38965 has 41 MA's), (297, 38878), (300, 38872), (Start: 330 @38821 has 27 MA's), (366, 38770), (374, 38755), (412, 38671), (421, 38647), (425, 38638), (490, 38515), (504, 38461), (506, 38455), (509, 38449), (516, 38425), (536, 38371), (591, 38257), (602, 38230), (614, 38206), (645, 38125), (651, 38101), (659, 38080), (688, 38041), (697, 38023), (701, 38017), (780, 37906), (782, 37900), (803, 37858), (811, 37840), (837, 37753), (840, 37744), (846, 37723), (853, 37693), (861, 37663), (869, 37630), (898, 37540),

Gene: Bloom\_105 Start: 80738, Stop: 82576, Start Num: 63

Candidate Starts for Bloom\_105:

(Start: 63 @80738 has 2 MA's), (87, 80819), (115, 80897), (143, 80993), (183, 81053), (200, 81083), (273, 81203), (298, 81254), (398, 81314), (515, 81653), (537, 81710), (549, 81731), (572, 81776), (638, 81833), (640, 81839), (647, 81872), (651, 81884), (655, 81896), (679, 81941), (700, 81980), (744, 82037), (748, 82043), (766, 82076), (796, 82145), (832, 82229), (860, 82346), (915, 82520),



(931, 82562),

Gene: BlueNGold\_166 Start: 96830, Stop: 94920, Start Num: 62

Candidate Starts for BlueNGold\_166:

(Start: 62 @96830 has 5 MA's), (127, 96626), (141, 96578), (162, 96533), (189, 96452), (195, 96440), (254, 96335), (273, 96308), (396, 96203), (406, 96179), (459, 96014), (568, 95747), (572, 95738), (586, 95711), (647, 95642), (766, 95393), (791, 95327), (805, 95303), (847, 95168), (863, 95108), (883, 95036),

Gene: Bodacious\_25 Start: 20580, Stop: 21974, Start Num: 253

Candidate Starts for Bodacious\_25:

(Start: 253 @20580 has 72 MA's), (Start: 288 @20637 has 1 MA's), (353, 20742), (354, 20745), (398, 20829), (416, 20862), (447, 20913), (450, 20919), (491, 21000), (492, 21003), (493, 21009), (503, 21045), (512, 21063), (513, 21066), (520, 21099), (527, 21120), (596, 21252), (607, 21279), (626, 21318), (637, 21339), (640, 21345), (647, 21378), (652, 21393), (655, 21402), (692, 21447), (715, 21483), (742, 21525), (791, 21588), (803, 21606), (837, 21708), (838, 21711), (844, 21729), (845, 21732), (850, 21756), (852, 21765), (872, 21852), (907, 21942), (918, 21966),

Gene: Boersma\_73 Start: 47416, Stop: 46022, Start Num: 265

Candidate Starts for Boersma\_73:

(Start: 265 @47416 has 13 MA's), (300, 47347), (348, 47272), (361, 47254), (376, 47224), (412, 47143), (532, 46849), (571, 46810), (633, 46696), (662, 46624), (674, 46594), (681, 46579), (689, 46567), (728, 46516), (759, 46465), (775, 46447), (781, 46438), (804, 46390), (851, 46240), (905, 46051),

Gene: Bogota\_43 Start: 31399, Stop: 32793, Start Num: 261

Candidate Starts for Bogota\_43:

(Start: 261 @31399 has 12 MA's), (Start: 264 @31402 has 2 MA's), (303, 31477), (316, 31501), (343, 31531), (353, 31546), (405, 31636), (424, 31672), (470, 31771), (474, 31780), (508, 31849), (556, 31972), (616, 32107), (632, 32134), (640, 32155), (645, 32176), (679, 32233), (695, 32266), (701, 32275), (727, 32317), (782, 32383), (791, 32407), (803, 32425), (811, 32443), (832, 32497), (837, 32527), (852, 32584), (853, 32587), (866, 32635), (874, 32674), (879, 32689), (905, 32758), (914, 32776), (918, 32785),

Gene: Boneham\_63 Start: 53757, Stop: 52225, Start Num: 262

Candidate Starts for Boneham\_63:

(146, 54012), (168, 53961), (202, 53856), (213, 53826), (Start: 237 @53793 has 2 MA's), (Start: 244 @53784 has 1 MA's), (Start: 262 @53757 has 25 MA's), (359, 53589), (381, 53547), (390, 53529), (404, 53499), (408, 53487), (412, 53475), (414, 53469), (422, 53448), (491, 53280), (518, 53193), (521, 53178), (526, 53166), (544, 53136), (605, 53007), (616, 52983), (623, 52965), (637, 52947), (638, 52944), (641, 52935), (645, 52917), (682, 52830), (757, 52695), (764, 52680), (773, 52659), (831, 52578), (832, 52575), (845, 52518), (846, 52512), (848, 52500), (862, 52449), (868, 52425), (878, 52386), (880, 52374), (882, 52371), (919, 52278), (926, 52263),

Gene: BonesMcCoy\_41 Start: 31118, Stop: 29730, Start Num: 290

Candidate Starts for BonesMcCoy\_41:

(46, 31769), (148, 31415), (175, 31340), (Start: 290 @31118 has 124 MA's), (382, 30974), (Start: 384 @30968 has 1 MA's), (386, 30965), (439, 30851), (450, 30824), (470, 30764), (487, 30737), (490, 30734), (518, 30638), (533, 30596), (614, 30425), (625, 30404), (640, 30377), (652, 30329), (695, 30269), (797, 30110), (823, 30056), (846, 29972), (847, 29966), (850, 29954), (874, 29858), (894, 29804), (895, 29801), (903, 29777),

Gene: Bonino\_40 Start: 30795, Stop: 29407, Start Num: 290

Candidate Starts for Bonino\_40:

(175, 31017), (Start: 290 @30795 has 124 MA's), (382, 30651), (Start: 384 @30645 has 1 MA's), (386, 30642), (439, 30528), (450, 30501), (470, 30441), (487, 30414), (490, 30411), (518, 30315), (533, 30273), (614, 30102), (625, 30081), (634, 30066), (640, 30054), (652, 30006), (695, 29946), (757, 29850), (797, 29787), (823, 29733), (846, 29649), (847, 29643), (850, 29631), (869, 29556), (874, 29535), (894, 29481), (895, 29478), (903, 29454),

Gene: Bonum\_76 Start: 56632, Stop: 54545, Start Num: 36

Candidate Starts for Bonum\_76:

(Start: 36 @56632 has 31 MA's), (77, 56512), (Start: 94 @56467 has 1 MA's), (95, 56464), (168, 56209), (225, 56101), (268, 56047), (301, 55984), (359, 55894), (362, 55891), (375, 55867), (402, 55831), (466, 55693), (475, 55675), (482, 55666), (488, 55651), (522, 55528), (551, 55444), (568, 55417), (580, 55393), (640, 55294), (654, 55240), (685, 55186), (708, 55144), (729, 55105), (768, 55036), (781, 55003), (796, 54967), (819, 54922), (821, 54910), (837, 54850), (854, 54787), (901, 54622), (913, 54598),

Gene: Boopy\_169 Start: 96841, Stop: 94931, Start Num: 62

Candidate Starts for Boopy\_169:

(Start: 62 @96841 has 5 MA's), (127, 96637), (141, 96589), (162, 96544), (189, 96463), (195, 96451), (254, 96346), (273, 96319), (396, 96214), (406, 96190), (459, 96025), (568, 95758), (572, 95749), (586, 95722), (647, 95653), (766, 95404), (791, 95338), (805, 95314), (847, 95179), (863, 95119), (883, 95047),

Gene: BouleyBill\_39 Start: 30564, Stop: 29158, Start Num: 285

Candidate Starts for BouleyBill\_39:

(200, 30711), (220, 30666), (240, 30636), (280, 30582), (Start: 285 @30564 has 5 MA's), (Start: 292 @30552 has 7 MA's), (Start: 295 @30546 has 21 MA's), (309, 30516), (382, 30408), (Start: 384 @30402 has 1 MA's), (386, 30399), (394, 30384), (470, 30198), (474, 30189), (490, 30168), (500, 30126), (518, 30072), (614, 29859), (625, 29838), (634, 29823), (640, 29811), (644, 29796), (653, 29760), (657, 29751), (678, 29736), (695, 29700), (757, 29601), (797, 29538), (812, 29511), (835, 29436), (837, 29430), (840, 29421), (845, 29406), (846, 29400), (847, 29394), (850, 29382), (886, 29259), (889, 29247), (919, 29172),

Gene: Braxoaddie\_72 Start: 53132, Stop: 51096, Start Num: 38

Candidate Starts for Braxoaddie\_72:

(13, 53300), (Start: 38 @53132 has 6 MA's), (Start: 58 @53066 has 1 MA's), (77, 53024), (111, 52919), (168, 52739), (200, 52682), (225, 52631), (236, 52616), (Start: 295 @52526 has 21 MA's), (301, 52514), (359, 52421), (406, 52349), (447, 52280), (472, 52208), (496, 52151), (568, 51971), (580, 51947), (618, 51884), (640, 51848), (673, 51761), (744, 51629), (766, 51590), (768, 51587), (783, 51542), (837, 51395), (854, 51332), (865, 51290), (874, 51251), (885, 51227),

Gene: Breezic\_59 Start: 51749, Stop: 50217, Start Num: 262

Candidate Starts for Breezic\_59:

(146, 52004), (168, 51953), (179, 51902), (202, 51848), (213, 51818), (Start: 237 @51785 has 2 MA's), (Start: 244 @51776 has 1 MA's), (Start: 262 @51749 has 25 MA's), (359, 51581), (381, 51539), (404, 51491), (408, 51479), (412, 51467), (414, 51461), (422, 51440), (436, 51413), (491, 51272), (518, 51185), (521, 51170), (526, 51158), (544, 51128), (567, 51077), (581, 51050), (605, 50999), (637, 50939), (638, 50936), (645, 50909), (658, 50867), (682, 50822), (757, 50687), (764, 50672), (773, 50651), (821, 50594), (831, 50570), (832, 50567), (845, 50510), (846, 50504), (847, 50498), (848, 50492), (862, 50441), (868, 50417), (878, 50378), (880, 50366), (882, 50363), (919, 50270), (926, 50255), (932, 50234),

Gene: BrotherBLo\_29 Start: 22106, Stop: 23506, Start Num: 253

Candidate Starts for BrotherBLo\_29:

(Start: 253 @22106 has 72 MA's), (Start: 288 @22169 has 1 MA's), (353, 22274), (398, 22361), (416, 22394), (447, 22445), (450, 22451), (491, 22532), (492, 22535), (493, 22541), (503, 22577), (512, 22595), (513, 22598), (520, 22631), (527, 22652), (538, 22670), (596, 22784), (607, 22811), (621, 22841), (626, 22850), (640, 22877), (647, 22910), (652, 22925), (692, 22979), (705, 23000), (713, 23012), (723, 23024), (837, 23240), (838, 23243), (839, 23246), (842, 23255), (844, 23261), (852, 23297), (868, 23357), (872, 23384), (907, 23474),

Gene: Buggaboo\_74 Start: 57198, Stop: 55111, Start Num: 36

Candidate Starts for Buggaboo\_74:

(Start: 36 @57198 has 31 MA's), (77, 57078), (Start: 94 @57033 has 1 MA's), (95, 57030), (168, 56775), (225, 56667), (268, 56613), (301, 56550), (359, 56460), (362, 56457), (375, 56433), (402, 56397), (466, 56259), (475, 56241), (482, 56232), (488, 56217), (522, 56094), (551, 56010), (568, 55983), (580, 55959), (640, 55860), (654, 55806), (685, 55752), (708, 55710), (729, 55671), (768, 55602), (781, 55569), (796, 55533), (819, 55488), (821, 55476), (837, 55416), (839, 55410), (854, 55353), (901, 55188), (913, 55164),

Gene: Burnsey\_53 Start: 38833, Stop: 37355, Start Num: 242

Candidate Starts for Burnsey\_53:

(Start: 242 @38833 has 41 MA's), (297, 38746), (300, 38740), (350, 38659), (366, 38638), (421, 38515), (422, 38512), (504, 38329), (506, 38323), (509, 38317), (536, 38239), (591, 38125), (602, 38098), (614, 38074), (640, 38014), (651, 37969), (659, 37948), (688, 37909), (697, 37891), (780, 37774), (803, 37726), (806, 37723), (811, 37708), (840, 37612), (846, 37591), (853, 37561),

Gene: Bustleton\_39 Start: 30567, Stop: 29185, Start Num: 292

Candidate Starts for Bustleton\_39:

(280, 30594), (Start: 292 @30567 has 7 MA's), (Start: 295 @30564 has 21 MA's), (309, 30534), (382, 30426), (Start: 384 @30420 has 1 MA's), (386, 30417), (394, 30402), (470, 30216), (474, 30207), (490, 30186), (500, 30144), (518, 30090), (614, 29877), (625, 29856), (634, 29841), (640, 29829), (644, 29814), (653, 29778), (657, 29769), (678, 29754), (695, 29718), (757, 29619), (797, 29556), (812, 29529), (835, 29454), (837, 29448), (840, 29439), (845, 29424), (846, 29418), (847, 29412), (850, 29400), (886, 29277), (889, 29265),

Gene: Butterball\_62 Start: 53762, Stop: 52230, Start Num: 262

Candidate Starts for Butterball\_62:

(146, 54017), (168, 53966), (202, 53861), (213, 53831), (Start: 237 @53798 has 2 MA's), (Start: 244 @53789 has 1 MA's), (Start: 262 @53762 has 25 MA's), (359, 53594), (381, 53552), (390, 53534), (404, 53504), (408, 53492), (412, 53480), (414, 53474), (422, 53453), (491, 53285), (518, 53198), (521, 53183), (526, 53171), (544, 53141), (605, 53012), (616, 52988), (623, 52970), (637, 52952), (638, 52949), (641, 52940), (645, 52922), (682, 52835), (757, 52700), (764, 52685), (773, 52664), (831, 52583), (832, 52580), (845, 52523), (846, 52517), (848, 52505), (862, 52454), (868, 52430), (878, 52391), (880, 52379), (882, 52376), (919, 52283), (926, 52268),

Gene: Butterscotch\_52 Start: 39729, Stop: 41672, Start Num: 55

Candidate Starts for Butterscotch\_52:

(Start: 55 @39729 has 51 MA's), (72, 39756), (Start: 97 @39828 has 1 MA's), (110, 39882), (125, 39942), (129, 39960), (131, 39969), (146, 40020), (163, 40062), (181, 40098), (225, 40185), (287, 40278), (297, 40293), (306, 40314), (381, 40416), (399, 40449), (410, 40473), (447, 40533), (482, 40620), (504, 40695), (540, 40785), (568, 40836), (570, 40839), (625, 40929), (640, 40947), (647, 40980), (673, 41034), (679, 41046), (689, 41064), (729, 41127), (781, 41211), (831, 41328), (837, 41376), (854, 41439), (874, 41523),

Gene: Button\_57 Start: 39117, Stop: 37642, Start Num: 246

Candidate Starts for Button\_57:

(Start: 246 @39117 has 9 MA's), (Start: 278 @39075 has 1 MA's), (300, 39027), (Start: 314 @39000 has 1 MA's), (350, 38946), (366, 38925), (371, 38916), (412, 38826), (415, 38817), (422, 38799), (425, 38793), (490, 38670), (504, 38616), (506, 38610), (509, 38604), (521, 38559), (536, 38526), (634, 38313), (645, 38280), (656, 38241), (688, 38196), (697, 38178), (701, 38172), (731, 38127), (733, 38121), (747, 38100), (781, 38052), (782, 38049), (803, 38007), (806, 38004), (811, 37989), (822, 37962), (840, 37893), (853, 37842), (857, 37827), (886, 37731), (889, 37719), (892, 37710), (913, 37656),

Gene: Buttrmlkdreams\_55 Start: 39095, Stop: 37617, Start Num: 242

Candidate Starts for Buttrmlkdreams\_55:

(Start: 242 @39095 has 41 MA's), (297, 39008), (300, 39002), (Start: 330 @38951 has 27 MA's), (366, 38900), (374, 38885), (412, 38801), (421, 38777), (425, 38768), (490, 38645), (504, 38591), (506, 38585), (509, 38579), (518, 38549), (536, 38501), (591, 38387), (602, 38360), (614, 38336), (645, 38255), (651, 38231), (659, 38210), (688, 38171), (697, 38153), (701, 38147), (780, 38036), (782, 38030), (803, 37988), (811, 37970), (837, 37883), (840, 37874), (846, 37853), (853, 37823), (861, 37793), (869, 37760), (898, 37670),

Gene: Byron23\_42 Start: 31117, Stop: 29729, Start Num: 290

Candidate Starts for Byron23\_42:

(46, 31768), (148, 31414), (175, 31339), (Start: 290 @31117 has 124 MA's), (382, 30973), (Start: 384 @30967 has 1 MA's), (386, 30964), (439, 30850), (450, 30823), (470, 30763), (487, 30736), (490, 30733), (518, 30637), (533, 30595), (588, 30484), (614, 30424), (634, 30388), (640, 30376), (647, 30343), (652, 30328), (695, 30268), (757, 30172), (797, 30109), (823, 30055), (846, 29971), (847, 29965), (850, 29953), (874, 29857), (894, 29803), (895, 29800), (903, 29776),

Gene: C3PO\_72 Start: 52724, Stop: 50799, Start Num: 67

Candidate Starts for C3PO\_72:

(30, 52817), (Start: 67 @52724 has 8 MA's), (120, 52553), (133, 52499), (149, 52445), (225, 52295), (324, 52139), (359, 52088), (362, 52085), (446, 51956), (447, 51953), (472, 51881), (478, 51872), (640, 51515), (647, 51482), (744, 51296), (839, 51077), (843, 51065), (847, 51047), (854, 51020), (869, 50957), (880, 50924), (903, 50852),

Gene: Calix\_40 Start: 30802, Stop: 29414, Start Num: 290

Candidate Starts for Calix\_40:

(175, 31024), (Start: 290 @30802 has 124 MA's), (382, 30658), (Start: 384 @30652 has 1 MA's), (386, 30649), (439, 30535), (450, 30508), (470, 30448), (487, 30421), (490, 30418), (518, 30322), (533, 30280), (614, 30109), (625, 30088), (634, 30073), (640, 30061), (652, 30013), (695, 29953), (757, 29857), (797, 29794), (823, 29740), (846, 29656), (847, 29650), (850, 29638), (869, 29563), (874, 29542), (894, 29488), (895, 29485), (903, 29461),

Gene: Camerico\_63 Start: 54751, Stop: 53234, Start Num: 285

Candidate Starts for Camerico\_63:

(Start: 285 @54751 has 5 MA's), (Start: 330 @54673 has 27 MA's), (343, 54655), (350, 54643), (359, 54628), (392, 54574), (404, 54556), (406, 54550), (425, 54496), (434, 54478), (456, 54418), (463, 54394), (496, 54313), (507, 54274), (517, 54247), (522, 54226), (538, 54199), (542, 54190), (605, 54058), (616, 54034), (623, 54016), (637, 53998), (640, 53989), (743, 53773), (746, 53767), (754, 53752), (777, 53701), (801, 53647), (848, 53506), (866, 53440), (868, 53431), (876, 53398),

Gene: Candle\_64 Start: 47961, Stop: 49721, Start Num: 158

Candidate Starts for Candle\_64:

(Start: 158 @47961 has 9 MA's), (190, 48030), (Start: 248 @48126 has 3 MA's), (254, 48135), (301, 48216), (327, 48261), (445, 48462), (459, 48510), (488, 48570), (492, 48582), (511, 48648), (552,

48771), (568, 48795), (580, 48819), (640, 49023), (647, 49056), (652, 49071), (673, 49110), (675, 49113), (679, 49122), (729, 49191), (742, 49215), (805, 49323), (837, 49446), (838, 49449), (846, 49476), (853, 49506), (855, 49512), (856, 49515), (860, 49533), (864, 49545), (904, 49680), (921, 49710),

Gene: CanesSauce\_52 Start: 38485, Stop: 37007, Start Num: 242

Candidate Starts for CanesSauce\_52:

(Start: 242 @38485 has 41 MA's), (300, 38392), (Start: 314 @38365 has 1 MA's), (366, 38290), (Start: 384 @38248 has 1 MA's), (421, 38167), (490, 38035), (504, 37981), (509, 37969), (536, 37891), (591, 37777), (602, 37750), (614, 37726), (632, 37687), (651, 37621), (659, 37600), (697, 37543), (780, 37426), (803, 37378), (811, 37360), (840, 37264), (846, 37243), (853, 37213),

Gene: Canowicakte\_29 Start: 22165, Stop: 23559, Start Num: 253

Candidate Starts for Canowicakte\_29:

(Start: 253 @22165 has 72 MA's), (Start: 288 @22222 has 1 MA's), (353, 22327), (398, 22414), (447, 22498), (448, 22501), (450, 22504), (493, 22594), (503, 22630), (506, 22639), (512, 22648), (527, 22705), (538, 22723), (555, 22756), (566, 22768), (596, 22837), (607, 22864), (619, 22888), (640, 22930), (647, 22963), (652, 22978), (655, 22987), (723, 23077), (781, 23146), (791, 23173), (803, 23191), (810, 23203), (837, 23293), (839, 23299), (842, 23308), (844, 23314), (852, 23350), (872, 23437), (892, 23488), (907, 23527), (918, 23551),

Gene: CaptainRex\_40 Start: 29071, Stop: 27644, Start Num: 293

Candidate Starts for CaptainRex\_40:

(Start: 293 @29071 has 18 MA's), (306, 29041), (309, 29035), (Start: 384 @28921 has 1 MA's), (386, 28918), (487, 28681), (490, 28678), (589, 28423), (612, 28372), (614, 28366), (640, 28318), (647, 28285), (652, 28270), (682, 28198), (695, 28171), (701, 28162), (729, 28117), (732, 28111), (749, 28084), (797, 28012), (831, 27940), (837, 27904), (840, 27895), (845, 27880), (846, 27874), (850, 27856), (861, 27814), (877, 27751), (899, 27688), (903, 27679),

Gene: CarisSwetlik\_44 Start: 32154, Stop: 30658, Start Num: 222

Candidate Starts for CarisSwetlik\_44:

(163, 32295), (178, 32244), (185, 32223), (209, 32172), (222, 32154), (Start: 290 @32061 has 124 MA's), (382, 31917), (Start: 384 @31911 has 1 MA's), (412, 31848), (439, 31794), (450, 31767), (470, 31707), (487, 31680), (490, 31677), (518, 31581), (533, 31539), (611, 31377), (614, 31368), (625, 31347), (640, 31320), (653, 31269), (695, 31212), (729, 31158), (757, 31116), (786, 31071), (839, 30939), (846, 30915), (847, 30909), (850, 30897), (874, 30801), (886, 30774), (894, 30747), (918, 30690),

Gene: Carostasia\_39 Start: 30625, Stop: 29213, Start Num: 295

Candidate Starts for Carostasia\_39:

(Start: 292 @30628 has 7 MA's), (Start: 295 @30625 has 21 MA's), (309, 30595), (Start: 314 @30589 has 1 MA's), (337, 30556), (Start: 384 @30481 has 1 MA's), (388, 30475), (439, 30364), (450, 30337), (465, 30286), (470, 30277), (487, 30250), (490, 30247), (500, 30205), (518, 30151), (589, 29995), (612, 29944), (614, 29938), (625, 29917), (632, 29911), (634, 29902), (640, 29890), (643, 29878), (669, 29800), (695, 29740), (699, 29734), (729, 29686), (754, 29644), (797, 29581), (807, 29569), (818, 29545), (820, 29542), (837, 29473), (840, 29464), (845, 29449), (846, 29443), (847, 29437), (850, 29425), (877, 29320), (886, 29302), (889, 29290), (904, 29245),

Gene: Carpal\_29 Start: 22107, Stop: 23507, Start Num: 253

Candidate Starts for Carpal\_29:

(Start: 253 @22107 has 72 MA's), (Start: 288 @22170 has 1 MA's), (353, 22275), (354, 22278), (398, 22362), (416, 22395), (447, 22446), (450, 22452), (491, 22533), (492, 22536), (493, 22542), (503, 22578), (512, 22596), (513, 22599), (520, 22632), (527, 22653), (538, 22671), (555, 22704), (596,

22785), (607, 22812), (621, 22842), (626, 22851), (640, 22878), (647, 22911), (652, 22926), (692, 22980), (705, 23001), (713, 23013), (723, 23025), (839, 23247), (842, 23256), (844, 23262), (852, 23298), (868, 23358), (872, 23385), (907, 23475),

Gene: Carsonalex\_56 Start: 38706, Stop: 37321, Start Num: 300

Candidate Starts for Carsonalex\_56:

(239, 38805), (Start: 246 @38796 has 9 MA's), (297, 38712), (300, 38706), (350, 38625), (366, 38604), (422, 38478), (504, 38295), (506, 38289), (509, 38283), (536, 38205), (591, 38091), (602, 38064), (614, 38040), (640, 37980), (651, 37935), (659, 37914), (688, 37875), (697, 37857), (701, 37851), (780, 37740), (803, 37692), (806, 37689), (811, 37674), (840, 37578), (846, 37557), (853, 37527),

Gene: Casey\_37 Start: 29766, Stop: 28396, Start Num: 295

Candidate Starts for Casey\_37:

(Start: 295 @29766 has 21 MA's), (378, 29637), (388, 29616), (439, 29505), (440, 29502), (467, 29418), (470, 29412), (477, 29400), (490, 29382), (496, 29361), (518, 29286), (527, 29253), (611, 29082), (612, 29079), (614, 29073), (615, 29070), (634, 29037), (652, 28977), (695, 28917), (699, 28911), (701, 28908), (703, 28905), (754, 28821), (830, 28689), (837, 28650), (845, 28626), (846, 28620), (850, 28602), (874, 28506), (886, 28479), (889, 28467), (899, 28434), (904, 28422),

Gene: CathyBurgh\_58 Start: 52326, Stop: 50794, Start Num: 262

Candidate Starts for CathyBurgh\_58:

(146, 52581), (168, 52530), (179, 52479), (202, 52425), (213, 52395), (Start: 237 @52362 has 2 MA's), (Start: 244 @52353 has 1 MA's), (Start: 262 @52326 has 25 MA's), (359, 52158), (381, 52116), (404, 52068), (408, 52056), (412, 52044), (414, 52038), (422, 52017), (436, 51990), (491, 51849), (518, 51762), (521, 51747), (526, 51735), (544, 51705), (567, 51654), (581, 51627), (605, 51576), (616, 51552), (623, 51534), (637, 51516), (638, 51513), (645, 51486), (658, 51444), (682, 51399), (757, 51264), (764, 51249), (773, 51228), (821, 51171), (831, 51147), (845, 51087), (846, 51081), (847, 51075), (848, 51069), (862, 51018), (868, 50994), (878, 50955), (880, 50943), (882, 50940), (919, 50847), (926, 50832), (932, 50811),

Gene: Cborch11\_63 Start: 46091, Stop: 48148, Start Num: 55

Candidate Starts for Cborch11\_63:

(Start: 55 @46091 has 51 MA's), (81, 46151), (82, 46154), (Start: 109 @46247 has 3 MA's), (112, 46259), (118, 46280), (150, 46403), (151, 46406), (154, 46415), (170, 46448), (174, 46469), (189, 46517), (206, 46559), (252, 46622), (268, 46643), (273, 46649), (300, 46703), (413, 46889), (417, 46901), (425, 46919), (445, 46934), (447, 46940), (568, 47258), (570, 47261), (590, 47306), (635, 47357), (640, 47369), (673, 47459), (679, 47471), (696, 47504), (713, 47528), (718, 47537), (783, 47627), (798, 47660), (836, 47771), (837, 47774), (838, 47777), (839, 47780), (848, 47816), (853, 47834), (869, 47900), (874, 47918), (934, 48095),

Gene: Cece\_97 Start: 81318, Stop: 79462, Start Num: 61

Candidate Starts for Cece\_97:

(Start: 61 @81318 has 1 MA's), (83, 81255), (107, 81186), (136, 81078), (183, 80991), (231, 80901), (254, 80868), (Start: 258 @80862 has 13 MA's), (298, 80790), (396, 80709), (398, 80703), (453, 80544), (504, 80400), (521, 80340), (535, 80310), (568, 80250), (572, 80241), (638, 80184), (640, 80178), (647, 80145), (651, 80133), (671, 80100), (700, 80040), (783, 79911), (785, 79908), (796, 79881), (817, 79839), (824, 79818), (847, 79731), (868, 79650), (879, 79608), (886, 79584), (904, 79527),

Gene: Chako\_40 Start: 30803, Stop: 29415, Start Num: 290

Candidate Starts for Chako\_40:

(46, 31454), (148, 31100), (175, 31025), (Start: 290 @30803 has 124 MA's), (382, 30659), (Start: 384 @30653 has 1 MA's), (386, 30650), (439, 30536), (450, 30509), (470, 30449), (487, 30422), (490,

30419), (518, 30323), (533, 30281), (614, 30110), (625, 30089), (634, 30074), (652, 30014), (695, 29954), (757, 29858), (797, 29795), (823, 29741), (846, 29657), (847, 29651), (850, 29639), (874, 29543), (894, 29489), (895, 29486), (903, 29462),

Gene: Chamuel\_40 Start: 30828, Stop: 29407, Start Num: 290

Candidate Starts for Chamuel\_40:

(175, 31050), (Start: 290 @30828 has 124 MA's), (382, 30684), (Start: 384 @30678 has 1 MA's), (386, 30675), (439, 30561), (450, 30534), (470, 30474), (487, 30447), (490, 30444), (518, 30348), (533, 30306), (611, 30144), (614, 30135), (625, 30114), (640, 30087), (647, 30054), (652, 30039), (687, 29964), (695, 29946), (757, 29850), (797, 29787), (823, 29733), (846, 29649), (847, 29643), (850, 29631), (869, 29556), (874, 29535), (894, 29481), (895, 29478), (903, 29454),

Gene: Charianelly\_57 Start: 52738, Stop: 51197, Start Num: 237

Candidate Starts for Charianelly\_57:

(146, 52957), (191, 52828), (Start: 237 @52738 has 2 MA's), (Start: 330 @52609 has 27 MA's), (359, 52564), (404, 52474), (405, 52471), (407, 52465), (414, 52444), (442, 52381), (470, 52303), (485, 52273), (491, 52255), (518, 52168), (521, 52153), (544, 52111), (582, 52030), (605, 51982), (623, 51940), (637, 51922), (638, 51919), (645, 51892), (661, 51841), (682, 51805), (711, 51754), (757, 51670), (767, 51649), (845, 51493), (846, 51487), (848, 51475), (880, 51349), (926, 51235),

Gene: Cheeto1\_42 Start: 31179, Stop: 29788, Start Num: 290

Candidate Starts for Cheeto1\_42:

(Start: 290 @31179 has 124 MA's), (382, 31035), (Start: 384 @31029 has 1 MA's), (412, 30966), (450, 30885), (470, 30825), (487, 30798), (490, 30795), (518, 30699), (533, 30657), (588, 30546), (614, 30486), (625, 30465), (640, 30438), (653, 30387), (682, 30357), (695, 30330), (703, 30318), (757, 30231), (797, 30168), (807, 30156), (831, 30096), (837, 30060), (839, 30054), (845, 30036), (846, 30030), (847, 30024), (861, 29970), (874, 29916), (886, 29889), (889, 29877),

Gene: Chelms\_59 Start: 52169, Stop: 50760, Start Num: 330

Candidate Starts for Chelms\_59:

(146, 52547), (168, 52496), (179, 52445), (202, 52391), (213, 52361), (Start: 237 @52328 has 2 MA's), (Start: 244 @52319 has 1 MA's), (Start: 262 @52292 has 25 MA's), (Start: 330 @52169 has 27 MA's), (359, 52124), (381, 52082), (404, 52034), (405, 52031), (407, 52025), (408, 52022), (412, 52010), (414, 52004), (436, 51956), (437, 51953), (485, 51833), (491, 51815), (509, 51752), (518, 51728), (521, 51713), (544, 51671), (567, 51620), (581, 51593), (605, 51542), (637, 51482), (638, 51479), (641, 51470), (645, 51452), (658, 51410), (682, 51365), (683, 51362), (757, 51230), (764, 51215), (773, 51194), (831, 51113), (832, 51110), (845, 51053), (846, 51047), (848, 51035), (862, 50984), (866, 50969), (868, 50960), (878, 50921), (880, 50909), (919, 50813), (926, 50798),

Gene: Chepli\_42 Start: 30524, Stop: 29118, Start Num: 293

Candidate Starts for Chepli\_42:

(Start: 293 @30524 has 18 MA's), (306, 30494), (383, 30377), (Start: 384 @30374 has 1 MA's), (386, 30371), (399, 30344), (412, 30311), (419, 30290), (439, 30248), (450, 30221), (487, 30134), (490, 30131), (500, 30089), (516, 30038), (589, 29876), (614, 29819), (643, 29759), (645, 29750), (647, 29738), (678, 29699), (679, 29696), (691, 29672), (692, 29669), (695, 29663), (749, 29576), (757, 29567), (758, 29564), (837, 29396), (840, 29387), (845, 29372), (846, 29366), (847, 29360), (850, 29348), (886, 29225), (893, 29201), (903, 29171),

Gene: CherryonLim\_57 Start: 41741, Stop: 40263, Start Num: 242

Candidate Starts for CherryonLim\_57:

(191, 41822), (Start: 221 @41768 has 1 MA's), (Start: 242 @41741 has 41 MA's), (286, 41678), (300, 41651), (Start: 314 @41624 has 1 MA's), (350, 41570), (366, 41549), (374, 41534), (380, 41519), (425, 41414), (490, 41291), (504, 41237), (506, 41231), (509, 41225), (536, 41147), (591, 41033), (632,



40943), (634, 40934), (640, 40922), (645, 40901), (648, 40886), (651, 40877), (659, 40856), (688, 40817), (692, 40808), (701, 40793), (747, 40721), (781, 40673), (782, 40670), (803, 40628), (811, 40610), (840, 40514), (853, 40463), (861, 40433), (869, 40400), (888, 40343), (893, 40328),

Gene: ChewChew\_25 Start: 20575, Stop: 21969, Start Num: 253

Candidate Starts for ChewChew\_25:

(Start: 253 @20575 has 72 MA's), (Start: 288 @20632 has 1 MA's), (353, 20737), (354, 20740), (398, 20824), (416, 20857), (447, 20908), (450, 20914), (491, 20995), (492, 20998), (493, 21004), (503, 21040), (512, 21058), (513, 21061), (520, 21094), (527, 21115), (596, 21247), (607, 21274), (626, 21313), (637, 21334), (640, 21340), (647, 21373), (652, 21388), (655, 21397), (692, 21442), (715, 21478), (742, 21520), (791, 21583), (803, 21601), (837, 21703), (838, 21706), (844, 21724), (845, 21727), (850, 21751), (852, 21760), (872, 21847), (907, 21937), (918, 21961),

Gene: ChewyVIII\_83 Start: 61890, Stop: 59662, Start Num: 41

Candidate Starts for ChewyVIII\_83:

(Start: 41 @61890 has 1 MA's), (133, 61581), (147, 61530), (168, 61485), (225, 61377), (268, 61323), (283, 61293), (297, 61269), (316, 61233), (329, 61212), (355, 61173), (359, 61167), (431, 60918), (472, 60777), (478, 60768), (492, 60735), (496, 60720), (512, 60666), (524, 60621), (537, 60597), (618, 60450), (625, 60432), (640, 60414), (648, 60378), (675, 60324), (685, 60306), (744, 60195), (768, 60153), (805, 60063), (837, 59958), (843, 59940), (865, 59853), (871, 59823), (874, 59814), (891, 59763), (898, 59739), (901, 59730), (913, 59706), (922, 59688),

Gene: ChickenKing\_40 Start: 31093, Stop: 29702, Start Num: 290

Candidate Starts for ChickenKing\_40:

(Start: 290 @31093 has 124 MA's), (382, 30949), (Start: 384 @30943 has 1 MA's), (412, 30880), (450, 30799), (470, 30739), (487, 30712), (490, 30709), (492, 30703), (518, 30613), (533, 30571), (614, 30400), (625, 30379), (634, 30364), (640, 30352), (653, 30301), (695, 30244), (703, 30232), (797, 30082), (807, 30070), (831, 30010), (837, 29974), (839, 29968), (845, 29950), (846, 29944), (847, 29938), (861, 29884), (869, 29851), (874, 29830), (889, 29791),

Gene: ChickenTender\_56 Start: 38517, Stop: 37042, Start Num: 242

Candidate Starts for ChickenTender\_56:

(Start: 242 @38517 has 41 MA's), (300, 38427), (350, 38346), (366, 38325), (421, 38202), (422, 38199), (504, 38016), (506, 38010), (509, 38004), (536, 37926), (591, 37812), (602, 37785), (614, 37761), (640, 37701), (651, 37656), (659, 37635), (697, 37578), (780, 37461), (803, 37413), (806, 37410), (840, 37299), (846, 37278), (848, 37266), (853, 37248),

Gene: ChikPic\_40 Start: 30953, Stop: 29541, Start Num: 295

Candidate Starts for ChikPic\_40:

(Start: 292 @30956 has 7 MA's), (Start: 295 @30953 has 21 MA's), (309, 30923), (Start: 314 @30917 has 1 MA's), (337, 30884), (439, 30692), (450, 30665), (470, 30605), (487, 30578), (490, 30575), (500, 30533), (518, 30479), (533, 30437), (589, 30323), (614, 30266), (625, 30245), (634, 30230), (640, 30218), (643, 30206), (644, 30203), (647, 30185), (678, 30104), (695, 30068), (729, 30014), (754, 29972), (781, 29942), (791, 29918), (795, 29912), (820, 29870), (837, 29801), (845, 29777), (846, 29771), (847, 29765), (850, 29753), (874, 29657), (877, 29648), (886, 29630), (889, 29618), (904, 29573),

Gene: Chill\_55 Start: 39836, Stop: 41779, Start Num: 55

Candidate Starts for Chill\_55:

(Start: 55 @39836 has 51 MA's), (72, 39863), (Start: 97 @39935 has 1 MA's), (110, 39989), (125, 40049), (129, 40067), (131, 40076), (146, 40127), (163, 40169), (181, 40205), (225, 40292), (287, 40385), (297, 40400), (306, 40421), (381, 40523), (399, 40556), (410, 40580), (447, 40640), (482, 40727), (504, 40802), (540, 40892), (568, 40943), (570, 40946), (625, 41036), (640, 41054), (647,

41087), (673, 41141), (679, 41153), (689, 41171), (729, 41234), (781, 41318), (831, 41435), (837, 41483), (854, 41546), (874, 41630),

Gene: Chilliams\_99 Start: 73536, Stop: 75392, Start Num: 63

Candidate Starts for Chilliams\_99:

(Start: 63 @73536 has 2 MA's), (130, 73752), (143, 73794), (145, 73800), (Start: 171 @73833 has 6 MA's), (200, 73902), (204, 73917), (225, 73953), (252, 73992), (298, 74073), (398, 74133), (445, 74268), (549, 74550), (572, 74595), (640, 74658), (647, 74691), (651, 74703), (675, 74751), (685, 74769), (715, 74814), (729, 74835), (744, 74856), (766, 74895), (781, 74928), (796, 74964), (805, 74979), (817, 75006), (830, 75042), (832, 75048), (860, 75165), (868, 75195), (913, 75336),

Gene: Chivey\_40 Start: 25169, Stop: 27076, Start Num: 69

Candidate Starts for Chivey\_40:

(19, 24995), (Start: 69 @25169 has 40 MA's), (88, 25232), (99, 25253), (111, 25307), (150, 25442), (170, 25484), (192, 25529), (Start: 295 @25703 has 21 MA's), (301, 25712), (359, 25802), (381, 25844), (388, 25859), (468, 26045), (518, 26180), (520, 26192), (539, 26225), (640, 26354), (689, 26471), (831, 26744), (838, 26783), (853, 26843), (875, 26933), (886, 26963), (898, 27005), (922, 27056),

Gene: ChocoMunchkin\_52 Start: 38485, Stop: 37007, Start Num: 242

Candidate Starts for ChocoMunchkin\_52:

(Start: 242 @38485 has 41 MA's), (300, 38392), (Start: 314 @38365 has 1 MA's), (366, 38290), (Start: 384 @38248 has 1 MA's), (421, 38167), (490, 38035), (504, 37981), (509, 37969), (536, 37891), (591, 37777), (602, 37750), (614, 37726), (632, 37687), (651, 37621), (659, 37600), (697, 37543), (780, 37426), (803, 37378), (811, 37360), (840, 37264), (846, 37243), (853, 37213),

Gene: Cholula\_29 Start: 22153, Stop: 23553, Start Num: 253

Candidate Starts for Cholula\_29:

(Start: 253 @22153 has 72 MA's), (Start: 288 @22216 has 1 MA's), (353, 22321), (354, 22324), (398, 22408), (416, 22441), (447, 22492), (450, 22498), (491, 22579), (492, 22582), (493, 22588), (503, 22624), (512, 22642), (513, 22645), (527, 22699), (555, 22750), (596, 22831), (607, 22858), (621, 22888), (626, 22897), (640, 22924), (647, 22957), (652, 22972), (692, 23026), (705, 23047), (713, 23059), (723, 23071), (839, 23293), (842, 23302), (844, 23308), (852, 23344), (868, 23404), (872, 23431), (907, 23521),

Gene: Chridison\_26 Start: 21746, Stop: 23140, Start Num: 253

Candidate Starts for Chridison\_26:

(Start: 253 @21746 has 72 MA's), (Start: 288 @21803 has 1 MA's), (341, 21890), (353, 21908), (354, 21911), (398, 21995), (416, 22028), (447, 22079), (450, 22085), (470, 22145), (493, 22175), (503, 22211), (512, 22229), (527, 22286), (538, 22304), (541, 22310), (555, 22337), (596, 22418), (607, 22445), (619, 22469), (626, 22484), (640, 22511), (647, 22544), (652, 22559), (679, 22586), (781, 22727), (791, 22754), (799, 22766), (810, 22784), (826, 22826), (837, 22874), (839, 22880), (844, 22895), (845, 22898), (852, 22931), (868, 22991), (872, 23018), (894, 23075), (907, 23108), (918, 23132),

Gene: Christian\_25 Start: 20576, Stop: 21970, Start Num: 253

Candidate Starts for Christian\_25:

(Start: 253 @20576 has 72 MA's), (Start: 288 @20633 has 1 MA's), (353, 20738), (354, 20741), (398, 20825), (416, 20858), (450, 20915), (491, 20996), (492, 20999), (493, 21005), (503, 21041), (512, 21059), (513, 21062), (520, 21095), (527, 21116), (596, 21248), (607, 21275), (626, 21314), (637, 21335), (640, 21341), (647, 21374), (652, 21389), (655, 21398), (692, 21443), (715, 21479), (742, 21521), (791, 21584), (803, 21602), (837, 21704), (838, 21707), (844, 21725), (845, 21728), (850, 21752), (852, 21761), (872, 21848), (907, 21938), (918, 21962),

Gene: Christoph\_40 Start: 30815, Stop: 29427, Start Num: 290

Candidate Starts for Christoph\_40:

(175, 31037), (Start: 290 @30815 has 124 MA's), (382, 30671), (Start: 384 @30665 has 1 MA's), (386, 30662), (439, 30548), (450, 30521), (470, 30461), (487, 30434), (490, 30431), (518, 30335), (533, 30293), (614, 30122), (625, 30101), (634, 30086), (652, 30026), (695, 29966), (757, 29870), (797, 29807), (823, 29753), (846, 29669), (847, 29663), (850, 29651), (874, 29555), (894, 29501), (895, 29498), (903, 29474),

Gene: Cicada\_35 Start: 23458, Stop: 24885, Start Num: 258

Candidate Starts for Cicada\_35:

(Start: 258 @23458 has 13 MA's), (428, 23776), (448, 23815), (470, 23878), (498, 23923), (503, 23944), (541, 24043), (616, 24211), (640, 24259), (645, 24280), (652, 24307), (678, 24334), (692, 24364), (694, 24367), (695, 24370), (718, 24406), (783, 24484), (822, 24568), (831, 24586), (832, 24589), (852, 24676), (856, 24688), (866, 24727), (872, 24763), (875, 24769), (892, 24814), (902, 24844),

Gene: CinnamonToast\_65 Start: 53852, Stop: 52284, Start Num: 237

Candidate Starts for CinnamonToast\_65:

(146, 54071), (168, 54020), (191, 53942), (202, 53915), (213, 53885), (Start: 237 @53852 has 2 MA's), (Start: 244 @53843 has 1 MA's), (Start: 262 @53816 has 25 MA's), (359, 53648), (381, 53606), (390, 53588), (404, 53558), (408, 53546), (414, 53528), (436, 53480), (491, 53339), (518, 53252), (521, 53237), (526, 53225), (544, 53195), (567, 53144), (605, 53066), (616, 53042), (623, 53024), (637, 53006), (638, 53003), (641, 52994), (645, 52976), (682, 52889), (757, 52754), (764, 52739), (773, 52718), (821, 52661), (831, 52637), (832, 52634), (845, 52577), (846, 52571), (848, 52559), (862, 52508), (868, 52484), (878, 52445), (880, 52433), (882, 52430), (919, 52337), (926, 52322), (932, 52301),

Gene: Clancy\_40 Start: 30848, Stop: 29460, Start Num: 290

Candidate Starts for Clancy\_40:

(46, 31499), (148, 31145), (175, 31070), (Start: 290 @30848 has 124 MA's), (382, 30704), (Start: 384 @30698 has 1 MA's), (386, 30695), (439, 30581), (450, 30554), (470, 30494), (487, 30467), (490, 30464), (518, 30368), (533, 30326), (614, 30155), (625, 30134), (634, 30119), (652, 30059), (695, 29999), (757, 29903), (797, 29840), (823, 29786), (846, 29702), (847, 29696), (850, 29684), (874, 29588), (894, 29534), (895, 29531), (903, 29507),

Gene: Cleo\_47 Start: 37658, Stop: 36168, Start Num: 242

Candidate Starts for Cleo\_47:

(Start: 242 @37658 has 41 MA's), (Start: 278 @37616 has 1 MA's), (297, 37574), (300, 37568), (Start: 314 @37541 has 1 MA's), (350, 37487), (354, 37481), (374, 37451), (Start: 384 @37424 has 1 MA's), (421, 37343), (422, 37340), (425, 37334), (436, 37313), (457, 37247), (490, 37211), (497, 37187), (504, 37157), (506, 37151), (509, 37145), (536, 37067), (599, 36935), (602, 36926), (637, 36848), (647, 36809), (651, 36797), (652, 36794), (678, 36758), (687, 36740), (688, 36737), (690, 36734), (697, 36719), (716, 36692), (720, 36680), (733, 36647), (781, 36578), (803, 36533), (806, 36530), (822, 36488), (828, 36473), (838, 36425), (840, 36419), (853, 36368), (878, 36272), (888, 36248), (898, 36215), (913, 36182), (915, 36179),

Gene: Clock\_40 Start: 31950, Stop: 30520, Start Num: 290

Candidate Starts for Clock\_40:

(Start: 290 @31950 has 124 MA's), (306, 31917), (337, 31872), (Start: 384 @31797 has 1 MA's), (386, 31794), (444, 31662), (447, 31650), (487, 31557), (490, 31554), (612, 31248), (614, 31242), (625, 31221), (640, 31194), (643, 31182), (644, 31179), (647, 31161), (670, 31104), (695, 31047), (703, 31035), (729, 30993), (749, 30960), (757, 30951), (779, 30927), (797, 30888), (823, 30834), (837,

30780), (840, 30771), (845, 30756), (846, 30750), (877, 30627), (886, 30609), (893, 30585),

Gene: CoffeeBean\_72 Start: 53090, Stop: 51054, Start Num: 38

Candidate Starts for CoffeeBean\_72:

(13, 53258), (Start: 38 @53090 has 6 MA's), (Start: 58 @53024 has 1 MA's), (77, 52982), (111, 52877), (168, 52697), (200, 52640), (225, 52589), (236, 52574), (Start: 295 @52484 has 21 MA's), (301, 52472), (359, 52379), (406, 52307), (447, 52238), (472, 52166), (496, 52109), (568, 51929), (580, 51905), (618, 51842), (640, 51806), (673, 51719), (744, 51587), (766, 51548), (768, 51545), (783, 51500), (837, 51353), (854, 51290), (865, 51248), (874, 51209), (885, 51185),

Gene: ColaCorta\_40 Start: 31099, Stop: 29687, Start Num: 295

Candidate Starts for ColaCorta\_40:

(Start: 295 @31099 has 21 MA's), (309, 31069), (Start: 314 @31063 has 1 MA's), (337, 31030), (439, 30838), (450, 30811), (470, 30751), (487, 30724), (490, 30721), (500, 30679), (518, 30625), (533, 30583), (589, 30469), (614, 30412), (625, 30391), (634, 30376), (640, 30364), (643, 30352), (644, 30349), (647, 30331), (678, 30250), (695, 30214), (729, 30160), (754, 30118), (781, 30088), (791, 30064), (795, 30058), (820, 30016), (837, 29947), (845, 29923), (846, 29917), (847, 29911), (850, 29899), (874, 29803), (877, 29794), (886, 29776), (889, 29764), (904, 29719),

Gene: Commandaria\_72 Start: 56463, Stop: 54385, Start Num: 36

Candidate Starts for Commandaria\_72:

(Start: 36 @56463 has 31 MA's), (60, 56391), (101, 56277), (163, 56058), (168, 56049), (170, 56046), (225, 55941), (268, 55887), (301, 55824), (359, 55734), (402, 55671), (405, 55665), (466, 55533), (475, 55515), (568, 55260), (580, 55236), (640, 55134), (654, 55080), (668, 55065), (670, 55059), (708, 54984), (729, 54945), (768, 54876), (782, 54840), (783, 54837), (796, 54807), (817, 54765), (837, 54690), (854, 54627), (874, 54546), (901, 54462), (913, 54438),

Gene: Commonplace\_74 Start: 46896, Stop: 45316, Start Num: 229

Candidate Starts for Commonplace\_74:

(Start: 229 @46896 has 2 MA's), (263, 46845), (274, 46830), (321, 46737), (332, 46722), (354, 46692), (366, 46677), (376, 46653), (392, 46626), (410, 46581), (425, 46542), (430, 46527), (447, 46485), (464, 46431), (499, 46368), (525, 46278), (542, 46242), (571, 46185), (581, 46164), (612, 46080), (633, 46029), (663, 45936), (670, 45921), (679, 45897), (687, 45882), (688, 45879), (701, 45855), (705, 45849), (715, 45834), (762, 45750), (781, 45729), (782, 45726), (794, 45696), (796, 45693), (825, 45624), (829, 45612), (837, 45570), (839, 45564), (848, 45525), (854, 45501), (873, 45420), (888, 45378), (889, 45375),

Gene: Convict\_41 Start: 31118, Stop: 29730, Start Num: 290

Candidate Starts for Convict\_41:

(46, 31769), (148, 31415), (175, 31340), (Start: 290 @31118 has 124 MA's), (382, 30974), (Start: 384 @30968 has 1 MA's), (386, 30965), (439, 30851), (450, 30824), (470, 30764), (487, 30737), (490, 30734), (518, 30638), (533, 30596), (614, 30425), (625, 30404), (640, 30377), (652, 30329), (695, 30269), (797, 30110), (823, 30056), (846, 29972), (847, 29966), (850, 29954), (874, 29858), (894, 29804), (895, 29801), (903, 29777),

Gene: CoolCookie\_40 Start: 25941, Stop: 27848, Start Num: 69

Candidate Starts for CoolCookie\_40:

(Start: 69 @25941 has 40 MA's), (88, 26004), (99, 26025), (111, 26079), (170, 26256), (192, 26301), (Start: 295 @26475 has 21 MA's), (301, 26484), (359, 26574), (388, 26631), (468, 26817), (518, 26952), (520, 26964), (539, 26997), (640, 27126), (689, 27243), (744, 27318), (837, 27552), (838, 27555), (853, 27615), (875, 27705), (886, 27735), (898, 27777), (922, 27828),

Gene: Cozz\_51 Start: 38430, Stop: 36952, Start Num: 242

Candidate Starts for Cozz\_51:

(Start: 242 @38430 has 41 MA's), (297, 38343), (300, 38337), (350, 38256), (366, 38235), (422, 38109), (504, 37926), (506, 37920), (509, 37914), (536, 37836), (591, 37722), (602, 37695), (614, 37671), (640, 37611), (651, 37566), (659, 37545), (688, 37506), (697, 37488), (780, 37371), (803, 37323), (806, 37320), (811, 37305), (840, 37209), (846, 37188), (853, 37158), (915, 36969),

Gene: Crestdrop\_40 Start: 25203, Stop: 27110, Start Num: 69

Candidate Starts for Crestdrop\_40:

(19, 25029), (Start: 69 @25203 has 40 MA's), (88, 25266), (99, 25287), (111, 25341), (150, 25476), (170, 25518), (192, 25563), (Start: 295 @25737 has 21 MA's), (301, 25746), (359, 25836), (381, 25878), (388, 25893), (468, 26079), (518, 26214), (520, 26226), (539, 26259), (640, 26388), (689, 26505), (831, 26778), (838, 26817), (853, 26877), (875, 26967), (886, 26997), (898, 27039), (922, 27090),

Gene: Crete\_60 Start: 52291, Stop: 50882, Start Num: 330

Candidate Starts for Crete\_60:

(146, 52669), (168, 52618), (179, 52567), (202, 52513), (213, 52483), (Start: 237 @52450 has 2 MA's), (Start: 244 @52441 has 1 MA's), (Start: 262 @52414 has 25 MA's), (Start: 330 @52291 has 27 MA's), (359, 52246), (381, 52204), (404, 52156), (405, 52153), (407, 52147), (408, 52144), (412, 52132), (414, 52126), (436, 52078), (437, 52075), (485, 51955), (491, 51937), (509, 51874), (518, 51850), (521, 51835), (544, 51793), (567, 51742), (581, 51715), (605, 51664), (637, 51604), (638, 51601), (641, 51592), (645, 51574), (658, 51532), (682, 51487), (691, 51469), (757, 51352), (764, 51337), (773, 51316), (831, 51235), (832, 51232), (845, 51175), (846, 51169), (848, 51157), (862, 51106), (866, 51091), (868, 51082), (878, 51043), (880, 51031), (919, 50935), (926, 50920),

Gene: CristinaYang\_25 Start: 20580, Stop: 21974, Start Num: 253

Candidate Starts for CristinaYang\_25:

(Start: 253 @20580 has 72 MA's), (Start: 288 @20637 has 1 MA's), (353, 20742), (354, 20745), (398, 20829), (416, 20862), (447, 20913), (450, 20919), (491, 21000), (492, 21003), (493, 21009), (503, 21045), (512, 21063), (513, 21066), (520, 21099), (527, 21120), (596, 21252), (607, 21279), (626, 21318), (637, 21339), (640, 21345), (647, 21378), (652, 21393), (655, 21402), (692, 21447), (715, 21483), (742, 21525), (791, 21588), (803, 21606), (837, 21708), (838, 21711), (844, 21729), (845, 21732), (850, 21756), (852, 21765), (872, 21852), (907, 21942), (918, 21966),

Gene: Crosby\_42 Start: 31144, Stop: 32538, Start Num: 261

Candidate Starts for Crosby\_42:

(Start: 261 @31144 has 12 MA's), (Start: 264 @31147 has 2 MA's), (303, 31222), (316, 31246), (320, 31252), (343, 31276), (353, 31291), (354, 31294), (394, 31366), (405, 31381), (424, 31417), (470, 31516), (508, 31594), (556, 31717), (616, 31852), (632, 31879), (640, 31900), (679, 31978), (695, 32011), (701, 32020), (727, 32062), (782, 32128), (783, 32131), (791, 32152), (803, 32170), (811, 32188), (832, 32242), (837, 32272), (852, 32329), (853, 32332), (866, 32380), (874, 32419), (879, 32434), (905, 32503), (914, 32521), (918, 32530),

Gene: Cruella\_72 Start: 52724, Stop: 50799, Start Num: 67

Candidate Starts for Cruella\_72:

(30, 52817), (Start: 67 @52724 has 8 MA's), (120, 52553), (133, 52499), (149, 52445), (225, 52295), (324, 52139), (359, 52088), (362, 52085), (446, 51956), (447, 51953), (472, 51881), (478, 51872), (640, 51515), (647, 51482), (744, 51296), (839, 51077), (843, 51065), (847, 51047), (854, 51020), (869, 50957), (880, 50924), (903, 50852),

Gene: Cuke\_73 Start: 42303, Stop: 44156, Start Num: 91

Candidate Starts for Cuke\_73:

(Start: 91 @42303 has 3 MA's), (126, 42423), (154, 42516), (170, 42549), (211, 42642), (Start: 217 @42651 has 2 MA's), (225, 42660), (251, 42690), (252, 42693), (287, 42750), (305, 42786), (311, 42798), (329, 42825), (346, 42849), (373, 42888), (399, 42942), (411, 42972), (417, 42990), (422, 43002), (492, 43143), (533, 43269), (561, 43326), (568, 43338), (640, 43440), (647, 43473), (652, 43488), (669, 43512), (670, 43515), (679, 43539), (700, 43578), (819, 43773), (837, 43863), (839, 43869), (847, 43899), (871, 43998), (890, 44058), (896, 44076), (899, 44088), (923, 44133), (926, 44139),

Gene: Cybele\_40 Start: 25911, Stop: 27818, Start Num: 69

Candidate Starts for Cybele\_40:

(Start: 69 @25911 has 40 MA's), (88, 25974), (99, 25995), (111, 26049), (170, 26226), (192, 26271), (Start: 295 @26445 has 21 MA's), (301, 26454), (359, 26544), (468, 26787), (518, 26922), (520, 26934), (539, 26967), (640, 27096), (689, 27213), (744, 27288), (837, 27522), (838, 27525), (853, 27585), (875, 27675), (886, 27705), (898, 27747), (922, 27798),

Gene: Daiboju\_26 Start: 21732, Stop: 23129, Start Num: 253

Candidate Starts for Daiboju\_26:

(Start: 253 @21732 has 72 MA's), (Start: 288 @21792 has 1 MA's), (341, 21879), (353, 21897), (354, 21900), (398, 21984), (400, 21990), (416, 22017), (447, 22068), (450, 22074), (465, 22125), (470, 22134), (491, 22155), (493, 22164), (503, 22200), (513, 22221), (520, 22254), (527, 22275), (538, 22293), (541, 22299), (555, 22326), (566, 22338), (576, 22353), (596, 22407), (619, 22458), (621, 22464), (626, 22473), (632, 22479), (640, 22500), (647, 22533), (652, 22548), (655, 22557), (742, 22680), (782, 22719), (791, 22743), (799, 22755), (837, 22863), (839, 22869), (842, 22878), (844, 22884), (852, 22920), (872, 23007), (907, 23097), (918, 23121),

Gene: Dakiti\_60 Start: 53037, Stop: 51628, Start Num: 330

Candidate Starts for Dakiti\_60:

(146, 53415), (168, 53364), (179, 53313), (202, 53259), (213, 53229), (Start: 237 @53196 has 2 MA's), (Start: 244 @53187 has 1 MA's), (Start: 262 @53160 has 25 MA's), (Start: 330 @53037 has 27 MA's), (359, 52992), (381, 52950), (404, 52902), (405, 52899), (407, 52893), (408, 52890), (412, 52878), (414, 52872), (436, 52824), (437, 52821), (485, 52701), (491, 52683), (509, 52620), (518, 52596), (521, 52581), (544, 52539), (567, 52488), (581, 52461), (605, 52410), (637, 52350), (638, 52347), (641, 52338), (645, 52320), (658, 52278), (682, 52233), (683, 52230), (757, 52098), (764, 52083), (773, 52062), (831, 51981), (832, 51978), (845, 51921), (846, 51915), (848, 51903), (862, 51852), (866, 51837), (868, 51828), (878, 51789), (880, 51777), (919, 51681), (926, 51666),

Gene: Dalilpop\_75 Start: 57466, Stop: 55409, Start Num: 36

Candidate Starts for Dalilpop\_75:

(Start: 36 @57466 has 31 MA's), (225, 56953), (268, 56899), (300, 56839), (301, 56836), (359, 56746), (372, 56728), (402, 56683), (405, 56677), (419, 56638), (454, 56584), (475, 56527), (522, 56380), (535, 56347), (550, 56317), (551, 56311), (568, 56284), (570, 56281), (640, 56161), (668, 56092), (673, 56074), (729, 55969), (733, 55960), (768, 55900), (783, 55861), (796, 55831), (821, 55774), (837, 55714), (846, 55684), (854, 55651), (865, 55609), (917, 55453),

Gene: Damien\_61 Start: 46053, Stop: 48110, Start Num: 55

Candidate Starts for Damien\_61:

(Start: 55 @46053 has 51 MA's), (81, 46113), (82, 46116), (Start: 109 @46209 has 3 MA's), (112, 46221), (118, 46242), (150, 46365), (151, 46368), (154, 46377), (170, 46410), (174, 46431), (189, 46479), (206, 46521), (252, 46584), (268, 46605), (273, 46611), (300, 46665), (413, 46851), (417, 46863), (425, 46881), (445, 46896), (447, 46902), (568, 47220), (570, 47223), (590, 47268), (635, 47319), (640, 47331), (673, 47421), (679, 47433), (696, 47466), (713, 47490), (718, 47499), (783, 47589), (798, 47622), (836, 47733), (837, 47736), (838, 47739), (839, 47742), (848, 47778), (853, 47796), (869, 47862), (874, 47880), (934, 48057),

Gene: Damp\_57 Start: 51773, Stop: 50361, Start Num: 330

Candidate Starts for Damp\_57:

(146, 52121), (191, 51992), (236, 51905), (Start: 237 @51902 has 2 MA's), (Start: 330 @51773 has 27 MA's), (359, 51728), (404, 51638), (405, 51635), (407, 51629), (414, 51608), (442, 51545), (485, 51437), (491, 51419), (518, 51332), (521, 51317), (544, 51275), (582, 51194), (605, 51146), (623, 51104), (637, 51086), (638, 51083), (645, 51056), (661, 51005), (682, 50969), (711, 50918), (757, 50834), (767, 50813), (845, 50657), (846, 50651), (848, 50639), (880, 50513), (926, 50399),

Gene: DannyDe\_40 Start: 25175, Stop: 27082, Start Num: 69

Candidate Starts for DannyDe\_40:

(19, 25001), (Start: 69 @25175 has 40 MA's), (88, 25238), (111, 25313), (150, 25448), (170, 25490), (192, 25535), (Start: 295 @25709 has 21 MA's), (301, 25718), (359, 25808), (381, 25850), (388, 25865), (468, 26051), (518, 26186), (520, 26198), (539, 26231), (640, 26360), (689, 26477), (831, 26750), (838, 26789), (853, 26849), (875, 26939), (886, 26969), (898, 27011), (922, 27062),

Gene: Darwin\_73 Start: 51965, Stop: 50040, Start Num: 67

Candidate Starts for Darwin\_73:

(30, 52058), (Start: 67 @51965 has 8 MA's), (120, 51794), (133, 51740), (225, 51536), (324, 51380), (359, 51329), (362, 51326), (393, 51284), (446, 51197), (447, 51194), (472, 51122), (478, 51113), (640, 50756), (647, 50723), (675, 50666), (821, 50384), (839, 50318), (843, 50306), (847, 50288), (848, 50282), (854, 50261), (869, 50198), (880, 50165), (892, 50126),

Gene: Dauntless\_39 Start: 25497, Stop: 27404, Start Num: 69

Candidate Starts for Dauntless\_39:

(19, 25323), (Start: 69 @25497 has 40 MA's), (88, 25560), (99, 25581), (111, 25635), (150, 25770), (161, 25797), (170, 25812), (192, 25857), (Start: 295 @26031 has 21 MA's), (301, 26040), (359, 26130), (381, 26172), (388, 26187), (468, 26373), (518, 26508), (520, 26520), (539, 26553), (640, 26682), (673, 26769), (689, 26799), (831, 27072), (838, 27111), (853, 27171), (875, 27261), (886, 27291), (898, 27333), (922, 27384),

Gene: Dave\_41 Start: 31109, Stop: 29721, Start Num: 290

Candidate Starts for Dave\_41:

(175, 31331), (Start: 290 @31109 has 124 MA's), (382, 30965), (Start: 384 @30959 has 1 MA's), (386, 30956), (439, 30842), (450, 30815), (470, 30755), (487, 30728), (490, 30725), (518, 30629), (533, 30587), (614, 30416), (625, 30395), (634, 30380), (640, 30368), (652, 30320), (695, 30260), (757, 30164), (797, 30101), (823, 30047), (846, 29963), (847, 29957), (850, 29945), (869, 29870), (874, 29849), (894, 29795), (895, 29792), (903, 29768),

Gene: DaviePasture\_60 Start: 40751, Stop: 42664, Start Num: 55

Candidate Starts for DaviePasture\_60:

(48, 40736), (Start: 54 @40748 has 11 MA's), (Start: 55 @40751 has 51 MA's), (Start: 69 @40763 has 40 MA's), (83, 40811), (113, 40913), (135, 41003), (145, 41030), (147, 41039), (181, 41111), (225, 41198), (252, 41231), (Start: 293 @41294 has 18 MA's), (302, 41312), (352, 41384), (370, 41411), (445, 41540), (453, 41564), (466, 41606), (490, 41654), (496, 41675), (500, 41696), (518, 41753), (522, 41771), (540, 41807), (561, 41849), (590, 41909), (647, 42005), (648, 42008), (791, 42236), (831, 42326), (837, 42362), (839, 42368), (853, 42422), (864, 42461), (892, 42563), (897, 42578), (904, 42599),

Gene: Delphidian\_41 Start: 31117, Stop: 29729, Start Num: 290

Candidate Starts for Delphidian\_41:

(175, 31339), (Start: 290 @31117 has 124 MA's), (382, 30973), (Start: 384 @30967 has 1 MA's), (386, 30964), (439, 30850), (450, 30823), (470, 30763), (487, 30736), (490, 30733), (492, 30727), (518,



30637), (533, 30595), (614, 30424), (634, 30388), (640, 30376), (647, 30343), (652, 30328), (695, 30268), (757, 30172), (797, 30109), (823, 30055), (846, 29971), (847, 29965), (850, 29953), (874, 29857), (894, 29803), (895, 29800), (903, 29776),

Gene: Delton\_54 Start: 40127, Stop: 42070, Start Num: 55

Candidate Starts for Delton\_54:

(35, 40058), (Start: 55 @40127 has 51 MA's), (72, 40154), (80, 40178), (Start: 97 @40226 has 1 MA's), (110, 40280), (125, 40340), (131, 40367), (146, 40418), (147, 40421), (163, 40460), (181, 40496), (225, 40583), (287, 40676), (297, 40691), (306, 40712), (381, 40814), (399, 40847), (410, 40871), (447, 40931), (482, 41018), (504, 41093), (540, 41183), (568, 41234), (570, 41237), (625, 41327), (640, 41345), (647, 41378), (673, 41432), (679, 41444), (689, 41462), (729, 41525), (781, 41609), (831, 41726), (837, 41774), (854, 41837), (874, 41921),

Gene: Demosthenes\_55 Start: 52768, Stop: 51074, Start Num: 173

Candidate Starts for Demosthenes\_55:

(Start: 171 @52780 has 6 MA's), (Start: 173 @52768 has 2 MA's), (207, 52669), (Start: 221 @52648 has 1 MA's), (270, 52582), (336, 52483), (359, 52447), (374, 52423), (377, 52414), (381, 52405), (404, 52357), (412, 52333), (427, 52291), (437, 52276), (442, 52261), (461, 52204), (462, 52201), (489, 52141), (490, 52138), (509, 52072), (512, 52069), (521, 52033), (522, 52030), (533, 52012), (538, 52003), (544, 51991), (564, 51943), (582, 51910), (589, 51886), (605, 51862), (616, 51838), (645, 51772), (682, 51673), (754, 51541), (757, 51538), (811, 51472), (831, 51421), (832, 51418), (845, 51361), (848, 51343), (878, 51226), (879, 51223), (882, 51211), (926, 51112), (932, 51091),

Gene: Den3\_41 Start: 31123, Stop: 29735, Start Num: 290

Candidate Starts for Den3\_41:

(46, 31774), (148, 31420), (175, 31345), (Start: 290 @31123 has 124 MA's), (382, 30979), (Start: 384 @30973 has 1 MA's), (386, 30970), (439, 30856), (450, 30829), (470, 30769), (487, 30742), (490, 30739), (518, 30643), (533, 30601), (614, 30430), (625, 30409), (640, 30382), (652, 30334), (695, 30274), (797, 30115), (823, 30061), (846, 29977), (847, 29971), (850, 29959), (874, 29863), (894, 29809), (895, 29806), (903, 29782),

Gene: Diabla\_63 Start: 53692, Stop: 52283, Start Num: 330

Candidate Starts for Diabla\_63:

(146, 54070), (168, 54019), (202, 53914), (213, 53884), (Start: 237 @53851 has 2 MA's), (Start: 244 @53842 has 1 MA's), (Start: 262 @53815 has 25 MA's), (Start: 330 @53692 has 27 MA's), (359, 53647), (381, 53605), (404, 53557), (405, 53554), (407, 53548), (408, 53545), (414, 53527), (422, 53506), (436, 53479), (485, 53356), (491, 53338), (518, 53251), (521, 53236), (567, 53143), (605, 53065), (616, 53041), (637, 53005), (638, 53002), (645, 52975), (658, 52933), (682, 52888), (691, 52870), (729, 52804), (757, 52753), (764, 52738), (773, 52717), (821, 52660), (832, 52633), (845, 52576), (846, 52570), (848, 52558), (862, 52507), (868, 52483), (878, 52444), (880, 52432), (882, 52429), (919, 52336), (926, 52321), (932, 52300),

Gene: Dina\_47 Start: 36338, Stop: 37714, Start Num: 275

Candidate Starts for Dina\_47:

(Start: 275 @36338 has 7 MA's), (315, 36407), (326, 36425), (389, 36518), (423, 36578), (427, 36584), (428, 36587), (487, 36707), (494, 36725), (529, 36842), (593, 36980), (610, 37019), (626, 37052), (632, 37058), (637, 37073), (647, 37112), (687, 37172), (699, 37196), (735, 37232), (789, 37301), (793, 37307), (832, 37388), (854, 37484), (857, 37496), (860, 37508), (872, 37565), (875, 37571), (879, 37583), (889, 37613), (909, 37664),

Gene: Djokovic\_50 Start: 36614, Stop: 38668, Start Num: 69

Candidate Starts for Djokovic\_50:

(Start: 69 @36614 has 40 MA's), (76, 36638), (99, 36701), (119, 36785), (127, 36827), (223, 37049), (252, 37085), (298, 37160), (320, 37199), (355, 37241), (373, 37259), (381, 37280), (388, 37292), (417, 37352), (424, 37367), (445, 37385), (472, 37463), (482, 37478), (484, 37481), (496, 37520), (500, 37541), (539, 37643), (568, 37700), (577, 37721), (580, 37724), (586, 37736), (608, 37784), (611, 37790), (628, 37838), (630, 37871), (635, 37895), (642, 37913), (647, 37943), (700, 38066), (713, 38099), (719, 38111), (729, 38126), (751, 38165), (781, 38210), (791, 38237), (829, 38321), (843, 38384), (853, 38426), (856, 38435), (858, 38444), (869, 38492), (871, 38501), (874, 38513), (880, 38528), (893, 38570),

Gene: DocB7\_048 Start: 43676, Stop: 42174, Start Num: 285

Candidate Starts for DocB7\_048:

(Start: 285 @43676 has 5 MA's), (343, 43580), (359, 43553), (377, 43520), (388, 43496), (404, 43466), (434, 43391), (463, 43310), (470, 43295), (509, 43184), (517, 43163), (533, 43124), (594, 42986), (605, 42974), (607, 42971), (616, 42950), (647, 42872), (682, 42812), (754, 42677), (757, 42674), (784, 42623), (793, 42602), (813, 42575), (834, 42509), (841, 42482), (844, 42473), (848, 42452), (858, 42416), (868, 42377), (886, 42311), (925, 42215),

Gene: Dodo\_114 Start: 79498, Stop: 77648, Start Num: 68

Candidate Starts for Dodo\_114:

(42, 79567), (44, 79561), (Start: 68 @79498 has 7 MA's), (80, 79453), (83, 79441), (124, 79315), (141, 79252), (183, 79177), (Start: 244 @79069 has 1 MA's), (Start: 255 @79051 has 4 MA's), (Start: 295 @78982 has 21 MA's), (Start: 308 @78955 has 1 MA's), (396, 78895), (453, 78730), (504, 78586), (534, 78499), (549, 78472), (568, 78436), (572, 78427), (638, 78370), (640, 78364), (651, 78319), (655, 78307), (671, 78286), (680, 78262), (700, 78226), (736, 78181), (783, 78097), (785, 78094), (786, 78088), (817, 78025), (846, 77923), (868, 77836), (879, 77794), (894, 77743),

Gene: DoobyDoo\_59 Start: 39773, Stop: 41686, Start Num: 55

Candidate Starts for DoobyDoo\_59:

(Start: 54 @39770 has 11 MA's), (Start: 55 @39773 has 51 MA's), (Start: 69 @39785 has 40 MA's), (83, 39833), (96, 39866), (113, 39935), (135, 40025), (145, 40052), (147, 40061), (181, 40133), (225, 40220), (252, 40253), (Start: 293 @40316 has 18 MA's), (352, 40406), (445, 40562), (453, 40586), (466, 40628), (490, 40676), (496, 40697), (500, 40718), (518, 40775), (540, 40829), (561, 40871), (590, 40931), (647, 41027), (648, 41030), (760, 41207), (791, 41258), (831, 41348), (837, 41384), (839, 41390), (848, 41426), (853, 41444), (864, 41483), (892, 41585), (897, 41600), (904, 41621),

Gene: Dothraki\_41 Start: 31114, Stop: 29726, Start Num: 290

Candidate Starts for Dothraki\_41:

(46, 31765), (148, 31411), (175, 31336), (Start: 290 @31114 has 124 MA's), (382, 30970), (Start: 384 @30964 has 1 MA's), (386, 30961), (439, 30847), (450, 30820), (470, 30760), (487, 30733), (490, 30730), (518, 30634), (533, 30592), (588, 30481), (614, 30421), (634, 30385), (640, 30373), (647, 30340), (652, 30325), (695, 30265), (757, 30169), (797, 30106), (823, 30052), (846, 29968), (847, 29962), (850, 29950), (874, 29854), (894, 29800), (895, 29797), (903, 29773),

Gene: DrLupo\_67 Start: 46291, Stop: 48255, Start Num: 52

Candidate Starts for DrLupo\_67:

(17, 46123), (25, 46198), (26, 46204), (Start: 52 @46291 has 1 MA's), (65, 46312), (Start: 69 @46318 has 40 MA's), (71, 46324), (81, 46357), (90, 46390), (106, 46438), (111, 46459), (118, 46486), (123, 46510), (139, 46573), (144, 46591), (150, 46609), (154, 46621), (170, 46654), (189, 46696), (200, 46717), (201, 46720), (206, 46738), (226, 46771), (231, 46777), (252, 46801), (254, 46804), (297, 46876), (425, 47095), (445, 47110), (472, 47188), (500, 47266), (522, 47341), (537, 47374), (625, 47536), (635, 47542), (679, 47668), (680, 47671), (718, 47707), (724, 47713), (783, 47797), (798, 47830), (836, 47941), (837, 47944), (840, 47953), (848, 47986), (854, 48007), (865, 48049), (885, 48112), (891, 48139), (926, 48223),

Gene: DrRobert\_25 Start: 20576, Stop: 21970, Start Num: 253

Candidate Starts for DrRobert\_25:

(Start: 253 @20576 has 72 MA's), (Start: 288 @20633 has 1 MA's), (353, 20738), (354, 20741), (398, 20825), (416, 20858), (447, 20909), (450, 20915), (491, 20996), (492, 20999), (493, 21005), (503, 21041), (512, 21059), (513, 21062), (520, 21095), (527, 21116), (596, 21248), (607, 21275), (626, 21314), (637, 21335), (640, 21341), (647, 21374), (652, 21389), (655, 21398), (692, 21443), (715, 21479), (742, 21521), (791, 21584), (803, 21602), (837, 21704), (838, 21707), (844, 21725), (845, 21728), (850, 21752), (852, 21761), (872, 21848), (907, 21938), (918, 21962),

Gene: Dre3\_48 Start: 37401, Stop: 35911, Start Num: 243

Candidate Starts for Dre3\_48:

(Start: 243 @37401 has 3 MA's), (Start: 278 @37359 has 1 MA's), (297, 37317), (300, 37311), (Start: 314 @37284 has 1 MA's), (350, 37230), (354, 37224), (374, 37194), (Start: 384 @37167 has 1 MA's), (421, 37086), (422, 37083), (425, 37077), (436, 37056), (457, 36990), (490, 36954), (497, 36930), (504, 36900), (506, 36894), (509, 36888), (527, 36825), (536, 36810), (544, 36795), (602, 36669), (637, 36591), (647, 36552), (651, 36540), (652, 36537), (678, 36501), (687, 36483), (688, 36480), (690, 36477), (697, 36462), (716, 36435), (720, 36423), (781, 36321), (803, 36276), (806, 36273), (822, 36231), (828, 36216), (838, 36168), (840, 36162), (853, 36111), (878, 36015), (888, 35991), (898, 35958), (913, 35925), (915, 35922),

Gene: DreamTeam\_25 Start: 20615, Stop: 22009, Start Num: 253

Candidate Starts for DreamTeam\_25:

(Start: 253 @20615 has 72 MA's), (Start: 288 @20672 has 1 MA's), (353, 20777), (354, 20780), (398, 20864), (416, 20897), (448, 20951), (450, 20954), (493, 21044), (503, 21080), (513, 21101), (520, 21134), (527, 21155), (596, 21287), (607, 21314), (626, 21353), (640, 21380), (647, 21413), (652, 21428), (655, 21437), (692, 21482), (715, 21518), (782, 21599), (791, 21623), (803, 21641), (810, 21653), (832, 21713), (835, 21737), (837, 21743), (838, 21746), (844, 21764), (845, 21767), (850, 21791), (852, 21800), (872, 21887), (892, 21938), (907, 21977),

Gene: Dryad\_74 Start: 51068, Stop: 49182, Start Num: 53

Candidate Starts for Dryad\_74:

(31, 51137), (37, 51128), (Start: 40 @51125 has 1 MA's), (Start: 53 @51068 has 8 MA's), (88, 50990), (93, 50981), (Start: 109 @50921 has 3 MA's), (114, 50900), (122, 50876), (138, 50813), (170, 50738), (181, 50714), (Start: 295 @50516 has 21 MA's), (301, 50507), (370, 50399), (447, 50243), (490, 50138), (503, 50087), (520, 50027), (565, 49940), (568, 49937), (595, 49883), (647, 49832), (650, 49823), (654, 49811), (673, 49778), (710, 49712), (742, 49685), (744, 49682), (798, 49583), (811, 49556), (838, 49466), (853, 49406), (856, 49397), (859, 49382), (872, 49322), (880, 49307), (892, 49268),

Gene: DumpTruck\_58 Start: 39261, Stop: 41165, Start Num: 69

Candidate Starts for DumpTruck\_58:

(21, 39126), (24, 39147), (29, 39168), (43, 39198), (Start: 54 @39243 has 11 MA's), (Start: 55 @39246 has 51 MA's), (Start: 69 @39261 has 40 MA's), (83, 39309), (96, 39342), (98, 39345), (123, 39450), (145, 39528), (147, 39537), (181, 39609), (189, 39624), (194, 39633), (251, 39726), (254, 39732), (Start: 293 @39792 has 18 MA's), (417, 40005), (445, 40038), (482, 40131), (488, 40146), (496, 40173), (500, 40194), (540, 40308), (561, 40350), (565, 40359), (586, 40398), (590, 40410), (625, 40455), (635, 40461), (647, 40506), (652, 40521), (719, 40614), (781, 40707), (837, 40860), (848, 40902), (853, 40920), (854, 40923), (892, 41061), (904, 41097), (929, 41151),

Gene: DunneganBoMo\_94 Start: 76558, Stop: 78402, Start Num: 63

Candidate Starts for DunneganBoMo\_94:

(Start: 63 @76558 has 2 MA's), (143, 76831), (204, 76939), (Start: 246 @77005 has 9 MA's), (287, 77074), (Start: 293 @77083 has 18 MA's), (399, 77158), (508, 77467), (519, 77512), (537, 77551), (549, 77572), (572, 77617), (638, 77674), (640, 77680), (647, 77713), (651, 77725), (655, 77737), (729, 77854), (732, 77860), (782, 77950), (796, 77983), (832, 78067), (854, 78160), (860, 78184), (912, 78352), (913, 78355),

Gene: Duocatuli\_40 Start: 30803, Stop: 29415, Start Num: 290

Candidate Starts for Duocatuli\_40:

(148, 31100), (175, 31025), (Start: 290 @30803 has 124 MA's), (382, 30659), (Start: 384 @30653 has 1 MA's), (386, 30650), (439, 30536), (450, 30509), (470, 30449), (487, 30422), (490, 30419), (518, 30323), (533, 30281), (614, 30110), (625, 30089), (634, 30074), (652, 30014), (695, 29954), (757, 29858), (797, 29795), (823, 29741), (846, 29657), (847, 29651), (850, 29639), (869, 29564), (874, 29543), (894, 29489), (895, 29486), (903, 29462),

Gene: Edmundo\_94 Start: 55295, Stop: 56959, Start Num: 182

Candidate Starts for Edmundo\_94:

(Start: 182 @55295 has 8 MA's), (208, 55358), (213, 55367), (274, 55454), (Start: 294 @55499 has 1 MA's), (369, 55619), (416, 55712), (426, 55736), (436, 55748), (455, 55802), (473, 55853), (495, 55889), (502, 55916), (510, 55937), (513, 55943), (523, 55985), (585, 56102), (615, 56180), (622, 56198), (644, 56249), (652, 56282), (680, 56315), (713, 56372), (729, 56399), (755, 56441), (803, 56522), (817, 56552), (822, 56570), (832, 56597), (836, 56624), (856, 56699), (863, 56726), (866, 56738), (886, 56807), (888, 56816), (889, 56819), (900, 56852), (919, 56888), (926, 56903), (930, 56918), (933, 56939),

Gene: Eggsie\_58 Start: 51628, Stop: 50060, Start Num: 237

Candidate Starts for Eggsie\_58:

(146, 51847), (179, 51745), (191, 51718), (202, 51691), (208, 51670), (213, 51661), (Start: 237 @51628 has 2 MA's), (Start: 244 @51619 has 1 MA's), (Start: 262 @51592 has 25 MA's), (Start: 330 @51469 has 27 MA's), (359, 51424), (381, 51382), (404, 51334), (405, 51331), (407, 51325), (408, 51322), (414, 51304), (422, 51283), (436, 51256), (485, 51133), (491, 51115), (518, 51028), (521, 51013), (567, 50920), (605, 50842), (616, 50818), (637, 50782), (638, 50779), (645, 50752), (658, 50710), (682, 50665), (691, 50647), (729, 50581), (757, 50530), (764, 50515), (773, 50494), (821, 50437), (832, 50410), (845, 50353), (846, 50347), (848, 50335), (862, 50284), (868, 50260), (878, 50221), (880, 50209), (882, 50206), (919, 50113), (926, 50098), (932, 50077),

Gene: Ekhein\_59 Start: 51454, Stop: 49922, Start Num: 262

Candidate Starts for Ekhein\_59:

(146, 51709), (168, 51658), (179, 51607), (202, 51553), (213, 51523), (Start: 237 @51490 has 2 MA's), (Start: 244 @51481 has 1 MA's), (Start: 262 @51454 has 25 MA's), (359, 51286), (381, 51244), (404, 51196), (408, 51184), (412, 51172), (414, 51166), (422, 51145), (436, 51118), (491, 50977), (518, 50890), (521, 50875), (526, 50863), (544, 50833), (567, 50782), (581, 50755), (605, 50704), (623, 50662), (637, 50644), (638, 50641), (645, 50614), (658, 50572), (682, 50527), (757, 50392), (764, 50377), (773, 50356), (821, 50299), (831, 50275), (832, 50272), (845, 50215), (846, 50209), (847, 50203), (848, 50197), (862, 50146), (868, 50122), (878, 50083), (880, 50071), (882, 50068), (919, 49975), (926, 49960), (932, 49939),

Gene: Eleri\_40 Start: 30943, Stop: 29531, Start Num: 295

Candidate Starts for Eleri\_40:

(Start: 295 @30943 has 21 MA's), (309, 30913), (Start: 314 @30907 has 1 MA's), (337, 30874), (439, 30682), (450, 30655), (470, 30595), (487, 30568), (490, 30565), (500, 30523), (518, 30469), (533, 30427), (614, 30256), (625, 30235), (634, 30220), (640, 30208), (643, 30196), (644, 30193), (647, 30175), (678, 30094), (695, 30058), (729, 30004), (754, 29962), (781, 29932), (791, 29908), (795, 29902), (820, 29860), (837, 29791), (845, 29767), (846, 29761), (847, 29755), (850, 29743), (874,

29647), (877, 29638), (886, 29620), (889, 29608), (904, 29563),

Gene: Elinal\_60 Start: 40792, Stop: 39314, Start Num: 242

Candidate Starts for Elinal\_60:

(Start: 242 @40792 has 41 MA's), (286, 40729), (297, 40708), (300, 40702), (Start: 314 @40675 has 1 MA's), (350, 40621), (374, 40585), (380, 40570), (421, 40474), (425, 40465), (436, 40444), (457, 40378), (490, 40342), (504, 40288), (506, 40282), (509, 40276), (536, 40198), (544, 40183), (591, 40084), (624, 40009), (634, 39985), (640, 39973), (645, 39952), (648, 39937), (651, 39928), (659, 39907), (688, 39868), (692, 39859), (701, 39844), (733, 39793), (782, 39721), (803, 39679), (806, 39676), (811, 39661), (840, 39565), (853, 39514), (861, 39484), (869, 39451), (888, 39394), (893, 39379),

Gene: Elliott\_53 Start: 38726, Stop: 37248, Start Num: 242

Candidate Starts for Elliott\_53:

(Start: 242 @38726 has 41 MA's), (297, 38639), (300, 38633), (350, 38552), (366, 38531), (421, 38408), (422, 38405), (504, 38222), (506, 38216), (509, 38210), (536, 38132), (591, 38018), (602, 37991), (614, 37967), (640, 37907), (651, 37862), (659, 37841), (688, 37802), (697, 37784), (780, 37667), (803, 37619), (806, 37616), (811, 37601), (840, 37505), (846, 37484), (853, 37454),

Gene: Ellewin\_92 Start: 75969, Stop: 77813, Start Num: 63

Candidate Starts for Ellewin\_92:

(Start: 63 @75969 has 2 MA's), (143, 76242), (204, 76350), (Start: 246 @76416 has 9 MA's), (287, 76485), (Start: 293 @76494 has 18 MA's), (399, 76569), (433, 76665), (508, 76878), (519, 76923), (537, 76962), (549, 76983), (572, 77028), (640, 77091), (647, 77124), (651, 77136), (655, 77148), (729, 77265), (732, 77271), (769, 77334), (786, 77373), (796, 77394), (832, 77478), (854, 77571), (860, 77595), (912, 77763), (913, 77766),

Gene: Emalyn\_52 Start: 37827, Stop: 36349, Start Num: 242

Candidate Starts for Emalyn\_52:

(Start: 242 @37827 has 41 MA's), (297, 37740), (300, 37734), (366, 37632), (Start: 384 @37590 has 1 MA's), (412, 37533), (418, 37515), (421, 37509), (490, 37377), (504, 37323), (506, 37317), (509, 37311), (536, 37233), (591, 37119), (602, 37092), (614, 37068), (632, 37029), (645, 36987), (651, 36963), (659, 36942), (688, 36903), (697, 36885), (701, 36879), (747, 36813), (780, 36768), (803, 36720), (806, 36717), (811, 36702), (840, 36606), (846, 36585), (853, 36555), (861, 36525), (904, 36387),

Gene: Emianna\_72 Start: 56707, Stop: 54641, Start Num: 36

Candidate Starts for Emianna\_72:

(2, 57205), (5, 57004), (8, 56911), (9, 56899), (12, 56881), (Start: 36 @56707 has 31 MA's), (Start: 84 @56569 has 2 MA's), (89, 56545), (147, 56341), (168, 56296), (225, 56188), (300, 56074), (301, 56071), (359, 55981), (362, 55978), (402, 55918), (466, 55780), (475, 55762), (488, 55738), (522, 55615), (568, 55510), (640, 55384), (654, 55330), (725, 55204), (729, 55195), (742, 55171), (781, 55099), (783, 55093), (796, 55063), (821, 55006), (837, 54946), (854, 54883), (874, 54802),

Gene: Endor\_41 Start: 31504, Stop: 30116, Start Num: 290

Candidate Starts for Endor\_41:

(216, 31618), (235, 31597), (Start: 290 @31504 has 124 MA's), (382, 31360), (Start: 384 @31354 has 1 MA's), (386, 31351), (439, 31237), (450, 31210), (470, 31150), (487, 31123), (490, 31120), (518, 31024), (533, 30982), (614, 30811), (625, 30790), (652, 30715), (695, 30655), (757, 30559), (823, 30442), (831, 30424), (846, 30358), (847, 30352), (850, 30340), (874, 30244), (894, 30190), (895, 30187), (903, 30163), (917, 30133),

Gene: Ennea\_79 Start: 57918, Stop: 55861, Start Num: 36

Candidate Starts for Ennea\_79:

(6, 58206), (10, 58098), (Start: 36 @57918 has 31 MA's), (154, 57543), (226, 57402), (268, 57351), (300, 57291), (301, 57288), (348, 57216), (359, 57198), (402, 57135), (405, 57129), (415, 57102), (454, 57036), (466, 56997), (475, 56979), (488, 56955), (522, 56832), (535, 56799), (568, 56736), (640, 56613), (668, 56544), (673, 56526), (729, 56421), (733, 56412), (768, 56352), (781, 56319), (783, 56313), (796, 56283), (821, 56226), (837, 56166), (846, 56136), (854, 56103), (901, 55938),

Gene: Erk16\_52 Start: 39875, Stop: 41818, Start Num: 55

Candidate Starts for Erk16\_52:

(39, 39812), (Start: 55 @39875 has 51 MA's), (72, 39902), (Start: 97 @39974 has 1 MA's), (110, 40028), (125, 40088), (131, 40115), (146, 40166), (163, 40208), (181, 40244), (225, 40331), (287, 40424), (297, 40439), (306, 40460), (381, 40562), (399, 40595), (410, 40619), (447, 40679), (482, 40766), (504, 40841), (540, 40931), (568, 40982), (570, 40985), (625, 41075), (640, 41093), (647, 41126), (679, 41192), (689, 41210), (729, 41273), (781, 41357), (831, 41474), (837, 41522), (854, 41585), (874, 41669),

Gene: Erla\_40 Start: 30799, Stop: 29411, Start Num: 290

Candidate Starts for Erla\_40:

(175, 31021), (Start: 290 @30799 has 124 MA's), (382, 30655), (Start: 384 @30649 has 1 MA's), (386, 30646), (439, 30532), (450, 30505), (470, 30445), (487, 30418), (490, 30415), (518, 30319), (533, 30277), (614, 30106), (625, 30085), (634, 30070), (640, 30058), (652, 30010), (695, 29950), (757, 29854), (797, 29791), (823, 29737), (846, 29653), (847, 29647), (850, 29635), (869, 29560), (874, 29539), (894, 29485), (895, 29482), (903, 29458),

Gene: Erudite\_39 Start: 25497, Stop: 27404, Start Num: 69

Candidate Starts for Erudite\_39:

(19, 25323), (Start: 69 @25497 has 40 MA's), (88, 25560), (99, 25581), (111, 25635), (150, 25770), (161, 25797), (170, 25812), (192, 25857), (Start: 295 @26031 has 21 MA's), (301, 26040), (359, 26130), (381, 26172), (388, 26187), (468, 26373), (518, 26508), (520, 26520), (539, 26553), (640, 26682), (673, 26769), (689, 26799), (831, 27072), (838, 27111), (853, 27171), (875, 27261), (886, 27291), (898, 27333), (922, 27384),

Gene: Erutan\_60 Start: 40423, Stop: 42336, Start Num: 55

Candidate Starts for Erutan\_60:

(20, 40297), (22, 40306), (23, 40318), (32, 40351), (Start: 54 @40420 has 11 MA's), (Start: 55 @40423 has 51 MA's), (Start: 69 @40435 has 40 MA's), (83, 40483), (96, 40516), (135, 40675), (145, 40702), (147, 40711), (181, 40783), (225, 40870), (252, 40903), (Start: 293 @40966 has 18 MA's), (352, 41056), (370, 41083), (445, 41212), (453, 41236), (466, 41278), (490, 41326), (496, 41347), (500, 41368), (518, 41425), (540, 41479), (561, 41521), (590, 41581), (647, 41677), (648, 41680), (791, 41908), (831, 41998), (837, 42034), (839, 42040), (853, 42094), (864, 42133), (892, 42235), (897, 42250), (904, 42271),

Gene: Espinosa\_40 Start: 30814, Stop: 29426, Start Num: 290

Candidate Starts for Espinosa\_40:

(175, 31036), (Start: 290 @30814 has 124 MA's), (382, 30670), (Start: 384 @30664 has 1 MA's), (386, 30661), (439, 30547), (450, 30520), (470, 30460), (487, 30433), (490, 30430), (518, 30334), (533, 30292), (614, 30121), (625, 30100), (634, 30085), (652, 30025), (695, 29965), (757, 29869), (797, 29806), (823, 29752), (846, 29668), (847, 29662), (850, 29650), (874, 29554), (894, 29500), (895, 29497), (903, 29473),

Gene: EstebanJulior\_26 Start: 21743, Stop: 23140, Start Num: 253

Candidate Starts for EstebanJulior\_26:

(Start: 253 @21743 has 72 MA's), (Start: 288 @21803 has 1 MA's), (353, 21908), (354, 21911), (398, 21995), (416, 22028), (447, 22079), (450, 22085), (491, 22166), (493, 22175), (503, 22211), (512, 22229), (513, 22232), (520, 22265), (527, 22286), (596, 22418), (621, 22475), (626, 22484), (637, 22505), (640, 22511), (647, 22544), (652, 22559), (695, 22619), (715, 22649), (782, 22730), (803, 22772), (820, 22805), (835, 22868), (838, 22877), (842, 22889), (844, 22895), (847, 22910), (850, 22922), (852, 22931), (872, 23018), (894, 23075), (907, 23108),

Gene: Etna\_40 Start: 31284, Stop: 29893, Start Num: 290

Candidate Starts for Etna\_40:

(216, 31398), (277, 31314), (Start: 290 @31284 has 124 MA's), (382, 31137), (Start: 384 @31131 has 1 MA's), (386, 31128), (439, 31014), (450, 30987), (470, 30927), (487, 30900), (490, 30897), (518, 30801), (533, 30759), (614, 30588), (625, 30567), (695, 30432), (757, 30336), (823, 30219), (831, 30201), (846, 30135), (847, 30129), (850, 30117), (874, 30021), (894, 29967), (895, 29964), (903, 29940), (917, 29910),

Gene: Etta\_40 Start: 30803, Stop: 29415, Start Num: 290

Candidate Starts for Etta\_40:

(175, 31025), (Start: 290 @30803 has 124 MA's), (382, 30659), (Start: 384 @30653 has 1 MA's), (386, 30650), (439, 30536), (450, 30509), (470, 30449), (487, 30422), (490, 30419), (518, 30323), (533, 30281), (614, 30110), (625, 30089), (634, 30074), (640, 30062), (652, 30014), (695, 29954), (757, 29858), (797, 29795), (823, 29741), (846, 29657), (847, 29651), (850, 29639), (869, 29564), (874, 29543), (894, 29489), (895, 29486), (903, 29462),

Gene: Eunoia\_26 Start: 21745, Stop: 23139, Start Num: 253

Candidate Starts for Eunoia\_26:

(Start: 253 @21745 has 72 MA's), (Start: 288 @21802 has 1 MA's), (341, 21889), (353, 21907), (354, 21910), (398, 21994), (416, 22027), (447, 22078), (450, 22084), (470, 22144), (493, 22174), (503, 22210), (512, 22228), (527, 22285), (538, 22303), (541, 22309), (555, 22336), (596, 22417), (607, 22444), (619, 22468), (626, 22483), (640, 22510), (647, 22543), (652, 22558), (742, 22690), (781, 22726), (791, 22753), (799, 22765), (810, 22783), (837, 22873), (839, 22879), (844, 22894), (845, 22897), (852, 22930), (868, 22990), (872, 23017), (894, 23074), (907, 23107), (918, 23131),

Gene: Exiguo\_58 Start: 51466, Stop: 49934, Start Num: 262

Candidate Starts for Exiguo\_58:

(146, 51721), (168, 51670), (179, 51619), (202, 51565), (213, 51535), (Start: 237 @51502 has 2 MA's), (Start: 244 @51493 has 1 MA's), (Start: 262 @51466 has 25 MA's), (359, 51298), (381, 51256), (404, 51208), (408, 51196), (412, 51184), (414, 51178), (422, 51157), (436, 51130), (491, 50989), (518, 50902), (521, 50887), (526, 50875), (544, 50845), (567, 50794), (581, 50767), (605, 50716), (623, 50674), (637, 50656), (638, 50653), (645, 50626), (658, 50584), (682, 50539), (757, 50404), (764, 50389), (773, 50368), (821, 50311), (831, 50287), (832, 50284), (845, 50227), (846, 50221), (847, 50215), (848, 50209), (862, 50158), (868, 50134), (878, 50095), (880, 50083), (882, 50080), (919, 49987), (926, 49972), (932, 49951),

Gene: Exploradora\_42 Start: 30803, Stop: 29415, Start Num: 290

Candidate Starts for Exploradora\_42:

(175, 31025), (Start: 290 @30803 has 124 MA's), (382, 30659), (Start: 384 @30653 has 1 MA's), (386, 30650), (439, 30536), (450, 30509), (470, 30449), (487, 30422), (490, 30419), (518, 30323), (533, 30281), (614, 30110), (625, 30089), (634, 30074), (652, 30014), (695, 29954), (757, 29858), (797, 29795), (823, 29741), (846, 29657), (847, 29651), (850, 29639), (874, 29543), (894, 29489), (895, 29486), (903, 29462),

Gene: FF47\_48 Start: 38882, Stop: 37371, Start Num: 217

Candidate Starts for FF47\_48:

(Start: 217 @38882 has 2 MA's), (245, 38846), (298, 38756), (300, 38753), (328, 38705), (374, 38636), (424, 38522), (491, 38393), (504, 38342), (506, 38336), (509, 38330), (516, 38306), (536, 38252), (602, 38111), (604, 38108), (631, 38051), (651, 37979), (652, 37976), (781, 37781), (803, 37736), (837, 37631), (853, 37571), (904, 37403), (915, 37382),

Gene: FarmerDoug\_40 Start: 31139, Stop: 29748, Start Num: 290

Candidate Starts for FarmerDoug\_40:

(147, 31427), (157, 31406), (Start: 290 @31139 has 124 MA's), (382, 30992), (Start: 384 @30986 has 1 MA's), (386, 30983), (412, 30923), (439, 30869), (450, 30842), (470, 30782), (487, 30755), (490, 30752), (518, 30656), (533, 30614), (614, 30443), (625, 30422), (640, 30395), (652, 30347), (687, 30305), (695, 30287), (757, 30191), (823, 30074), (831, 30056), (839, 30014), (846, 29990), (847, 29984), (850, 29972), (874, 29876), (894, 29822), (895, 29819), (903, 29795), (917, 29765),

Gene: Feastonyeet\_56 Start: 40283, Stop: 38805, Start Num: 242

Candidate Starts for Feastonyeet\_56:

(191, 40361), (218, 40310), (Start: 221 @40307 has 1 MA's), (Start: 242 @40283 has 41 MA's), (286, 40220), (297, 40199), (300, 40193), (Start: 314 @40166 has 1 MA's), (350, 40112), (374, 40076), (380, 40061), (421, 39965), (425, 39956), (436, 39935), (457, 39869), (490, 39833), (504, 39779), (506, 39773), (509, 39767), (536, 39689), (544, 39674), (591, 39575), (624, 39500), (634, 39476), (640, 39464), (645, 39443), (648, 39428), (651, 39419), (659, 39398), (688, 39359), (692, 39350), (701, 39335), (733, 39284), (782, 39212), (803, 39170), (811, 39152), (840, 39056), (853, 39005), (861, 38975), (869, 38942), (888, 38885), (893, 38870),

Gene: FelixAlejandro\_64 Start: 54160, Stop: 52628, Start Num: 262

Candidate Starts for FelixAlejandro\_64:

(146, 54415), (168, 54364), (202, 54259), (213, 54229), (Start: 237 @54196 has 2 MA's), (Start: 244 @54187 has 1 MA's), (Start: 262 @54160 has 25 MA's), (336, 54028), (359, 53992), (381, 53950), (390, 53932), (404, 53902), (408, 53890), (412, 53878), (414, 53872), (422, 53851), (491, 53683), (518, 53596), (521, 53581), (526, 53569), (544, 53539), (567, 53488), (605, 53410), (616, 53386), (623, 53368), (637, 53350), (638, 53347), (641, 53338), (645, 53320), (682, 53233), (757, 53098), (764, 53083), (773, 53062), (831, 52981), (832, 52978), (845, 52921), (846, 52915), (848, 52903), (862, 52852), (868, 52828), (878, 52789), (880, 52777), (882, 52774), (919, 52681), (926, 52666), (932, 52645),

Gene: Figueroism\_41 Start: 31108, Stop: 29720, Start Num: 290

Candidate Starts for Figueroism\_41:

(175, 31330), (Start: 290 @31108 has 124 MA's), (382, 30964), (Start: 384 @30958 has 1 MA's), (386, 30955), (439, 30841), (450, 30814), (470, 30754), (487, 30727), (490, 30724), (518, 30628), (533, 30586), (614, 30415), (625, 30394), (634, 30379), (640, 30367), (652, 30319), (695, 30259), (757, 30163), (797, 30100), (823, 30046), (846, 29962), (847, 29956), (850, 29944), (874, 29848), (894, 29794), (895, 29791), (903, 29767),

Gene: Finny\_41 Start: 30901, Stop: 29525, Start Num: 314

Candidate Starts for Finny\_41:

(Start: 292 @30940 has 7 MA's), (Start: 295 @30937 has 21 MA's), (309, 30907), (Start: 314 @30901 has 1 MA's), (337, 30868), (439, 30676), (450, 30649), (470, 30589), (487, 30562), (490, 30559), (500, 30517), (518, 30463), (533, 30421), (589, 30307), (614, 30250), (625, 30229), (640, 30202), (643, 30190), (644, 30187), (647, 30169), (678, 30088), (695, 30052), (729, 29998), (754, 29956), (781, 29926), (791, 29902), (795, 29896), (820, 29854), (837, 29785), (845, 29761), (846, 29755), (847, 29749), (850, 29737), (886, 29614), (889, 29602), (904, 29557),

Gene: FireCastle\_33 Start: 23203, Stop: 24633, Start Num: 255

Candidate Starts for FireCastle\_33:



(205, 23134), (Start: 255 @23203 has 4 MA's), (Start: 258 @23206 has 13 MA's), (428, 23524), (448, 23563), (455, 23584), (498, 23671), (503, 23692), (640, 24007), (645, 24028), (652, 24055), (678, 24082), (679, 24085), (692, 24112), (695, 24118), (718, 24154), (760, 24202), (783, 24232), (822, 24316), (832, 24337), (845, 24391), (848, 24409), (852, 24424), (856, 24436), (866, 24475), (872, 24511), (875, 24517), (879, 24529), (902, 24592), (920, 24628),

Gene: Flakey\_58 Start: 52330, Stop: 50798, Start Num: 262

Candidate Starts for Flakey\_58:

(146, 52585), (168, 52534), (179, 52483), (202, 52429), (213, 52399), (Start: 237 @52366 has 2 MA's), (Start: 244 @52357 has 1 MA's), (Start: 262 @52330 has 25 MA's), (359, 52162), (381, 52120), (404, 52072), (408, 52060), (412, 52048), (414, 52042), (422, 52021), (436, 51994), (491, 51853), (518, 51766), (521, 51751), (526, 51739), (544, 51709), (567, 51658), (581, 51631), (605, 51580), (623, 51538), (637, 51520), (638, 51517), (645, 51490), (658, 51448), (682, 51403), (757, 51268), (764, 51253), (773, 51232), (821, 51175), (831, 51151), (832, 51148), (845, 51091), (846, 51085), (847, 51079), (848, 51073), (862, 51022), (868, 50998), (878, 50959), (880, 50947), (882, 50944), (919, 50851), (926, 50836), (932, 50815),

Gene: Flapper\_75 Start: 57019, Stop: 54962, Start Num: 36

Candidate Starts for Flapper\_75:

(6, 57304), (11, 57187), (14, 57169), (Start: 36 @57019 has 31 MA's), (111, 56794), (225, 56506), (268, 56452), (287, 56416), (300, 56392), (301, 56389), (352, 56311), (359, 56299), (372, 56281), (402, 56236), (405, 56230), (419, 56191), (454, 56137), (466, 56098), (475, 56080), (522, 55933), (535, 55900), (550, 55870), (551, 55864), (568, 55837), (640, 55714), (668, 55645), (673, 55627), (729, 55522), (733, 55513), (744, 55495), (768, 55453), (783, 55414), (796, 55384), (808, 55366), (821, 55327), (837, 55267), (846, 55237), (854, 55204), (865, 55162), (917, 55006),

Gene: Float294\_74 Start: 57824, Stop: 55767, Start Num: 36

Candidate Starts for Float294\_74:

(10, 58004), (Start: 36 @57824 has 31 MA's), (154, 57449), (206, 57341), (226, 57308), (268, 57257), (300, 57197), (301, 57194), (348, 57122), (359, 57104), (402, 57041), (405, 57035), (415, 57008), (454, 56942), (466, 56903), (475, 56885), (488, 56861), (522, 56738), (535, 56705), (568, 56642), (640, 56519), (668, 56450), (673, 56432), (729, 56327), (768, 56258), (783, 56219), (793, 56195), (796, 56189), (821, 56132), (837, 56072), (846, 56042), (854, 56009), (901, 55844),

Gene: Fluke\_29 Start: 22148, Stop: 23548, Start Num: 253

Candidate Starts for Fluke\_29:

(Start: 253 @22148 has 72 MA's), (Start: 288 @22211 has 1 MA's), (353, 22316), (354, 22319), (398, 22403), (416, 22436), (447, 22487), (450, 22493), (491, 22574), (492, 22577), (493, 22583), (503, 22619), (512, 22637), (513, 22640), (520, 22673), (527, 22694), (538, 22712), (555, 22745), (596, 22826), (607, 22853), (621, 22883), (626, 22892), (640, 22919), (647, 22952), (652, 22967), (692, 23021), (705, 23042), (713, 23054), (723, 23066), (839, 23288), (842, 23297), (844, 23303), (852, 23339), (868, 23399), (872, 23426), (907, 23516),

Gene: Forza\_170 Start: 96758, Stop: 94848, Start Num: 62

Candidate Starts for Forza\_170:

(Start: 62 @96758 has 5 MA's), (127, 96554), (141, 96506), (162, 96461), (189, 96380), (195, 96368), (254, 96263), (273, 96236), (396, 96131), (406, 96107), (459, 95942), (568, 95675), (572, 95666), (586, 95639), (647, 95570), (766, 95321), (791, 95255), (805, 95231), (847, 95096), (863, 95036), (883, 94964),

Gene: Fowlmouth\_74 Start: 44820, Stop: 46667, Start Num: 91

Candidate Starts for Fowlmouth\_74:

(Start: 91 @44820 has 3 MA's), (102, 44838), (108, 44874), (121, 44925), (154, 45033), (170, 45066), (200, 45126), (Start: 217 @45168 has 2 MA's), (251, 45207), (305, 45303), (311, 45315), (329, 45342), (340, 45357), (346, 45366), (373, 45405), (378, 45420), (417, 45507), (422, 45519), (472, 45618), (475, 45624), (488, 45648), (504, 45708), (533, 45786), (548, 45813), (561, 45843), (568, 45855), (580, 45879), (638, 45951), (640, 45957), (647, 45990), (652, 46005), (669, 46029), (670, 46032), (679, 46056), (837, 46380), (840, 46389), (847, 46416), (853, 46440), (865, 46485), (874, 46527), (890, 46575), (896, 46593), (923, 46650),

Gene: Foxboro\_72 Start: 56919, Stop: 54853, Start Num: 36

Candidate Starts for Foxboro\_72:

(8, 57123), (9, 57111), (12, 57093), (Start: 36 @56919 has 31 MA's), (Start: 84 @56781 has 2 MA's), (89, 56757), (147, 56553), (168, 56508), (225, 56400), (300, 56286), (301, 56283), (359, 56193), (362, 56190), (402, 56130), (466, 55992), (475, 55974), (488, 55950), (522, 55827), (568, 55722), (640, 55596), (654, 55542), (725, 55416), (729, 55407), (742, 55383), (781, 55311), (783, 55305), (796, 55275), (821, 55218), (837, 55158), (854, 55095), (874, 55014),

Gene: FreddieHg\_40 Start: 25185, Stop: 27092, Start Num: 69

Candidate Starts for FreddieHg\_40:

(19, 25011), (Start: 69 @25185 has 40 MA's), (88, 25248), (99, 25269), (111, 25323), (150, 25458), (170, 25500), (192, 25545), (Start: 295 @25719 has 21 MA's), (301, 25728), (359, 25818), (381, 25860), (388, 25875), (468, 26061), (518, 26196), (520, 26208), (539, 26241), (640, 26370), (689, 26487), (831, 26760), (838, 26799), (853, 26859), (875, 26949), (886, 26979), (898, 27021), (922, 27072),

Gene: Fribs8\_48 Start: 37679, Stop: 36189, Start Num: 243

Candidate Starts for Fribs8\_48:

(Start: 243 @37679 has 3 MA's), (297, 37595), (300, 37589), (Start: 314 @37562 has 1 MA's), (350, 37508), (354, 37502), (374, 37472), (Start: 384 @37445 has 1 MA's), (421, 37364), (422, 37361), (425, 37355), (436, 37334), (457, 37268), (490, 37232), (497, 37208), (504, 37178), (505, 37175), (506, 37172), (509, 37166), (527, 37103), (536, 37088), (544, 37073), (602, 36947), (624, 36899), (645, 36842), (647, 36830), (651, 36818), (652, 36815), (678, 36779), (688, 36758), (690, 36755), (697, 36740), (716, 36713), (729, 36677), (733, 36668), (781, 36599), (803, 36554), (822, 36509), (828, 36494), (834, 36464), (840, 36440), (853, 36389), (861, 36359), (878, 36293), (888, 36269), (898, 36236), (915, 36200),

Gene: Frizzle\_36 Start: 32091, Stop: 30688, Start Num: 264

Candidate Starts for Frizzle\_36:

(153, 32331), (156, 32328), (193, 32217), (Start: 264 @32091 has 2 MA's), (303, 32016), (316, 31992), (318, 31989), (343, 31959), (345, 31956), (404, 31845), (448, 31770), (450, 31767), (455, 31749), (465, 31716), (467, 31713), (491, 31686), (498, 31662), (505, 31635), (556, 31509), (557, 31506), (616, 31383), (619, 31380), (633, 31350), (634, 31347), (677, 31263), (701, 31218), (803, 31071), (819, 31041), (820, 31038), (875, 30819), (886, 30777),

Gene: Fulcrum\_60 Start: 40439, Stop: 42352, Start Num: 55

Candidate Starts for Fulcrum\_60:

(20, 40313), (22, 40322), (23, 40334), (32, 40367), (Start: 54 @40436 has 11 MA's), (Start: 55 @40439 has 51 MA's), (Start: 69 @40451 has 40 MA's), (83, 40499), (96, 40532), (113, 40601), (135, 40691), (145, 40718), (147, 40727), (181, 40799), (252, 40919), (Start: 293 @40982 has 18 MA's), (352, 41072), (370, 41099), (445, 41228), (453, 41252), (466, 41294), (482, 41321), (490, 41342), (496, 41363), (500, 41384), (518, 41441), (522, 41459), (540, 41495), (561, 41537), (590, 41597), (647, 41693), (648, 41696), (791, 41924), (831, 42014), (837, 42050), (839, 42056), (853, 42110), (864, 42149), (892, 42251), (897, 42266), (904, 42287),

Gene: Fulton\_40 Start: 29072, Stop: 27645, Start Num: 293

Candidate Starts for Fulton\_40:

(Start: 293 @29072 has 18 MA's), (306, 29042), (309, 29036), (Start: 384 @28922 has 1 MA's), (386, 28919), (487, 28682), (490, 28679), (589, 28424), (612, 28373), (614, 28367), (640, 28319), (647, 28286), (652, 28271), (682, 28199), (695, 28172), (701, 28163), (729, 28118), (732, 28112), (749, 28085), (797, 28013), (831, 27941), (837, 27905), (840, 27896), (845, 27881), (846, 27875), (850, 27857), (861, 27815), (877, 27752), (899, 27689), (903, 27680),

Gene: Fury\_82 Start: 56141, Stop: 54093, Start Num: 36

Candidate Starts for Fury\_82:

(Start: 36 @56141 has 31 MA's), (86, 55988), (98, 55973), (118, 55892), (154, 55769), (168, 55739), (225, 55631), (252, 55598), (283, 55547), (301, 55514), (359, 55424), (378, 55391), (402, 55361), (446, 55286), (475, 55205), (496, 55154), (522, 55058), (535, 55025), (551, 54989), (568, 54962), (638, 54845), (640, 54839), (668, 54770), (673, 54752), (679, 54740), (768, 54578), (783, 54545), (796, 54515), (805, 54500), (821, 54458), (854, 54335), (874, 54254), (885, 54230), (901, 54170),

Gene: GMA2\_64 Start: 67776, Stop: 65812, Start Num: 63

Candidate Starts for GMA2\_64:

(Start: 63 @67776 has 2 MA's), (107, 67644), (189, 67386), (254, 67269), (Start: 258 @67263 has 13 MA's), (273, 67242), (Start: 295 @67197 has 21 MA's), (396, 67137), (406, 67113), (418, 67077), (441, 67011), (453, 66972), (473, 66918), (496, 66864), (565, 66684), (572, 66672), (647, 66576), (653, 66558), (677, 66504), (740, 66342), (805, 66198), (839, 66093), (854, 66036), (863, 66003), (904, 65859),

Gene: GMA3\_58 Start: 50868, Stop: 49351, Start Num: 285

Candidate Starts for GMA3\_58:

(160, 51117), (164, 51111), (184, 51039), (Start: 285 @50868 has 5 MA's), (343, 50772), (359, 50745), (374, 50727), (377, 50718), (392, 50691), (404, 50673), (414, 50643), (425, 50613), (434, 50592), (442, 50571), (470, 50493), (485, 50463), (490, 50448), (496, 50427), (522, 50334), (542, 50298), (567, 50244), (605, 50166), (638, 50103), (645, 50076), (648, 50061), (651, 50052), (688, 49989), (711, 49950), (742, 49890), (753, 49869), (754, 49866), (757, 49863), (777, 49815), (837, 49653), (848, 49611), (861, 49563), (878, 49497), (880, 49485),

Gene: GMA7\_51 Start: 46927, Stop: 45296, Start Num: 180

Candidate Starts for GMA7\_51:

(Start: 180 @46927 has 3 MA's), (187, 46915), (208, 46864), (211, 46858), (254, 46801), (359, 46660), (381, 46618), (386, 46606), (404, 46570), (405, 46567), (414, 46540), (427, 46504), (436, 46492), (442, 46477), (485, 46369), (518, 46264), (521, 46249), (582, 46126), (605, 46078), (616, 46054), (623, 46036), (645, 45988), (661, 45937), (682, 45901), (691, 45883), (757, 45766), (790, 45715), (821, 45673), (837, 45613), (848, 45571), (862, 45520), (868, 45496), (926, 45334), (932, 45313),

Gene: GOATification\_60 Start: 40439, Stop: 42352, Start Num: 55

Candidate Starts for GOATification\_60:

(20, 40313), (22, 40322), (23, 40334), (32, 40367), (Start: 54 @40436 has 11 MA's), (Start: 55 @40439 has 51 MA's), (Start: 69 @40451 has 40 MA's), (83, 40499), (96, 40532), (113, 40601), (135, 40691), (145, 40718), (147, 40727), (181, 40799), (252, 40919), (Start: 293 @40982 has 18 MA's), (352, 41072), (370, 41099), (445, 41228), (453, 41252), (466, 41294), (482, 41321), (490, 41342), (496, 41363), (500, 41384), (518, 41441), (522, 41459), (540, 41495), (561, 41537), (590, 41597), (647, 41693), (648, 41696), (791, 41924), (831, 42014), (837, 42050), (839, 42056), (853, 42110), (864, 42149), (892, 42251), (897, 42266), (904, 42287),

Gene: GRU1\_61 Start: 48864, Stop: 46807, Start Num: 36

Candidate Starts for GRU1\_61:

(11, 49032), (Start: 36 @48864 has 31 MA's), (200, 48402), (225, 48351), (300, 48237), (301, 48234), (352, 48156), (359, 48144), (372, 48126), (402, 48081), (405, 48075), (419, 48036), (454, 47982), (466, 47943), (475, 47925), (522, 47778), (535, 47745), (551, 47709), (568, 47682), (640, 47559), (668, 47490), (673, 47472), (685, 47451), (729, 47367), (768, 47298), (783, 47259), (796, 47229), (821, 47172), (837, 47112), (846, 47082), (854, 47049), (865, 47007), (917, 46851),

Gene: GTE2\_44 Start: 38337, Stop: 36952, Start Num: 300

Candidate Starts for GTE2\_44:

(Start: 242 @38430 has 41 MA's), (300, 38337), (Start: 314 @38310 has 1 MA's), (366, 38235), (374, 38220), (Start: 384 @38193 has 1 MA's), (421, 38112), (490, 37980), (504, 37926), (506, 37920), (509, 37914), (536, 37836), (591, 37722), (602, 37695), (632, 37632), (651, 37566), (659, 37545), (688, 37506), (697, 37488), (701, 37482), (780, 37371), (803, 37323), (811, 37305), (840, 37209), (846, 37188), (853, 37158),

Gene: GTE5\_60 Start: 49067, Stop: 47640, Start Num: 301

Candidate Starts for GTE5\_60:

(6, 49982), (11, 49865), (14, 49847), (Start: 36 @49697 has 31 MA's), (111, 49472), (225, 49184), (268, 49130), (287, 49094), (301, 49067), (352, 48989), (359, 48977), (372, 48959), (402, 48914), (405, 48908), (419, 48869), (454, 48815), (466, 48776), (475, 48758), (522, 48611), (535, 48578), (550, 48548), (551, 48542), (568, 48515), (640, 48392), (668, 48323), (673, 48305), (729, 48200), (733, 48191), (744, 48173), (768, 48131), (783, 48092), (796, 48062), (821, 48005), (837, 47945), (846, 47915), (854, 47882), (865, 47840), (917, 47684),

Gene: GTE7\_50 Start: 46958, Stop: 45327, Start Num: 180

Candidate Starts for GTE7\_50:

(Start: 180 @46958 has 3 MA's), (187, 46946), (208, 46895), (211, 46889), (254, 46832), (359, 46691), (381, 46649), (386, 46637), (404, 46601), (405, 46598), (414, 46571), (436, 46523), (442, 46508), (485, 46400), (518, 46295), (521, 46280), (582, 46157), (605, 46109), (616, 46085), (623, 46067), (645, 46019), (661, 45968), (682, 45932), (691, 45914), (757, 45797), (790, 45746), (821, 45704), (837, 45644), (848, 45602), (862, 45551), (868, 45527), (926, 45365), (932, 45344),

Gene: GTE8\_60 Start: 49561, Stop: 47633, Start Num: 84

Candidate Starts for GTE8\_60:

(8, 49903), (12, 49873), (18, 49798), (Start: 36 @49699 has 31 MA's), (Start: 84 @49561 has 2 MA's), (89, 49537), (168, 49288), (225, 49180), (300, 49066), (301, 49063), (359, 48973), (362, 48970), (402, 48910), (475, 48754), (482, 48745), (488, 48730), (522, 48607), (568, 48502), (580, 48478), (640, 48376), (654, 48322), (670, 48301), (729, 48187), (781, 48091), (783, 48085), (796, 48055), (816, 48016), (821, 47998), (837, 47938), (854, 47875), (874, 47794), (901, 47710),

Gene: GaeCeo\_42 Start: 31326, Stop: 29935, Start Num: 290

Candidate Starts for GaeCeo\_42:

(Start: 290 @31326 has 124 MA's), (382, 31182), (Start: 384 @31176 has 1 MA's), (412, 31113), (450, 31032), (470, 30972), (487, 30945), (490, 30942), (492, 30936), (518, 30846), (533, 30804), (614, 30633), (625, 30612), (634, 30597), (640, 30585), (653, 30534), (695, 30477), (703, 30465), (797, 30315), (807, 30303), (831, 30243), (837, 30207), (839, 30201), (845, 30183), (846, 30177), (847, 30171), (861, 30117), (869, 30084), (874, 30063), (889, 30024),

Gene: GalacticEye\_57 Start: 52570, Stop: 51158, Start Num: 330

Candidate Starts for GalacticEye\_57:

(146, 52918), (191, 52789), (236, 52702), (Start: 237 @52699 has 2 MA's), (Start: 330 @52570 has 27 MA's), (359, 52525), (404, 52435), (405, 52432), (407, 52426), (414, 52405), (442, 52342), (485, 52234), (491, 52216), (518, 52129), (521, 52114), (544, 52072), (582, 51991), (605, 51943), (623, 51901), (637, 51883), (638, 51880), (645, 51853), (661, 51802), (682, 51766), (711, 51715), (757,

51631), (767, 51610), (845, 51454), (846, 51448), (848, 51436), (880, 51310), (926, 51196),

Gene: GardenB\_40 Start: 31225, Stop: 29840, Start Num: 290

Candidate Starts for GardenB\_40:

(277, 31255), (Start: 290 @31225 has 124 MA's), (374, 31102), (382, 31081), (Start: 384 @31075 has 1 MA's), (386, 31072), (439, 30958), (470, 30871), (487, 30844), (490, 30841), (518, 30745), (533, 30703), (614, 30532), (634, 30496), (695, 30376), (711, 30352), (797, 30217), (823, 30163), (839, 30103), (846, 30079), (847, 30073), (850, 30061), (874, 29965), (894, 29911),

Gene: Garey24\_41 Start: 30782, Stop: 29394, Start Num: 290

Candidate Starts for Garey24\_41:

(175, 31004), (Start: 290 @30782 has 124 MA's), (382, 30638), (Start: 384 @30632 has 1 MA's), (386, 30629), (439, 30515), (450, 30488), (470, 30428), (487, 30401), (490, 30398), (518, 30302), (533, 30260), (614, 30089), (625, 30068), (634, 30053), (640, 30041), (652, 29993), (695, 29933), (797, 29774), (823, 29720), (846, 29636), (847, 29630), (850, 29618), (869, 29543), (874, 29522), (894, 29468), (895, 29465), (903, 29441),

Gene: Gargoyle\_41 Start: 31123, Stop: 29735, Start Num: 290

Candidate Starts for Gargoyle\_41:

(46, 31774), (148, 31420), (175, 31345), (Start: 290 @31123 has 124 MA's), (382, 30979), (Start: 384 @30973 has 1 MA's), (386, 30970), (439, 30856), (450, 30829), (470, 30769), (487, 30742), (490, 30739), (518, 30643), (533, 30601), (614, 30430), (625, 30409), (634, 30394), (652, 30334), (695, 30274), (757, 30178), (797, 30115), (823, 30061), (846, 29977), (847, 29971), (850, 29959), (874, 29863), (894, 29809), (895, 29806), (903, 29782),

Gene: Garnacho\_121 Start: 66944, Stop: 68410, Start Num: 310

Candidate Starts for Garnacho\_121:

(Start: 255 @66839 has 4 MA's), (299, 66920), (302, 66926), (310, 66944), (313, 66947), (354, 67010), (421, 67157), (452, 67223), (471, 67286), (504, 67361), (539, 67463), (550, 67487), (579, 67538), (584, 67547), (587, 67562), (589, 67568), (591, 67574), (617, 67622), (622, 67637), (817, 68012), (849, 68135), (853, 68147), (886, 68267), (910, 68336),

Gene: Gelo\_40 Start: 30809, Stop: 29421, Start Num: 290

Candidate Starts for Gelo\_40:

(175, 31031), (Start: 290 @30809 has 124 MA's), (382, 30665), (Start: 384 @30659 has 1 MA's), (386, 30656), (439, 30542), (450, 30515), (470, 30455), (487, 30428), (490, 30425), (518, 30329), (533, 30287), (614, 30116), (625, 30095), (634, 30080), (640, 30068), (652, 30020), (695, 29960), (757, 29864), (797, 29801), (823, 29747), (846, 29663), (847, 29657), (850, 29645), (869, 29570), (874, 29549), (894, 29495), (895, 29492), (903, 29468),

Gene: Genamy16\_63 Start: 39814, Stop: 41730, Start Num: 54

Candidate Starts for Genamy16\_63:

(Start: 54 @39814 has 11 MA's), (Start: 55 @39817 has 51 MA's), (Start: 69 @39829 has 40 MA's), (83, 39877), (96, 39910), (131, 40051), (135, 40069), (145, 40096), (147, 40105), (181, 40177), (252, 40297), (Start: 293 @40360 has 18 MA's), (352, 40450), (370, 40477), (445, 40606), (453, 40630), (466, 40672), (472, 40684), (482, 40699), (490, 40720), (496, 40741), (500, 40762), (518, 40819), (522, 40837), (540, 40873), (561, 40915), (590, 40975), (647, 41071), (648, 41074), (760, 41251), (791, 41302), (831, 41392), (837, 41428), (839, 41434), (853, 41488), (864, 41527), (892, 41629), (897, 41644), (904, 41665),

Gene: Gershwin\_40 Start: 30816, Stop: 29428, Start Num: 290

Candidate Starts for Gershwin\_40:

(175, 31038), (Start: 290 @30816 has 124 MA's), (382, 30672), (Start: 384 @30666 has 1 MA's), (386, 30663), (439, 30549), (450, 30522), (470, 30462), (487, 30435), (490, 30432), (517, 30339), (518, 30336), (533, 30294), (614, 30123), (625, 30102), (634, 30087), (640, 30075), (652, 30027), (695, 29967), (757, 29871), (797, 29808), (823, 29754), (846, 29670), (847, 29664), (850, 29652), (869, 29577), (874, 29556), (894, 29502), (895, 29499), (903, 29475),

Gene: Ghobes\_35 Start: 32092, Stop: 30689, Start Num: 264

Candidate Starts for Ghobes\_35:

(153, 32332), (156, 32329), (193, 32218), (Start: 264 @32092 has 2 MA's), (303, 32017), (316, 31993), (318, 31990), (343, 31960), (345, 31957), (404, 31846), (448, 31771), (450, 31768), (465, 31717), (467, 31714), (491, 31687), (498, 31663), (505, 31636), (556, 31510), (557, 31507), (616, 31384), (619, 31381), (633, 31351), (634, 31348), (677, 31264), (701, 31219), (781, 31117), (803, 31072), (819, 31042), (820, 31039), (845, 30946), (847, 30934), (875, 30820), (886, 30778),

Gene: GiJojo\_116 Start: 68346, Stop: 69914, Start Num: 258

Candidate Starts for GiJojo\_116:

(Start: 258 @68346 has 13 MA's), (299, 68424), (302, 68430), (313, 68451), (317, 68457), (342, 68493), (354, 68514), (387, 68577), (389, 68580), (396, 68595), (421, 68661), (452, 68727), (453, 68736), (504, 68865), (539, 68967), (550, 68991), (554, 69003), (579, 69042), (584, 69051), (591, 69078), (622, 69141), (761, 69411), (822, 69534), (847, 69627), (849, 69639), (886, 69771), (910, 69840), (913, 69846), (932, 69894),

Gene: GiKK\_57 Start: 39360, Stop: 37885, Start Num: 246

Candidate Starts for GiKK\_57:

(Start: 246 @39360 has 9 MA's), (Start: 278 @39318 has 1 MA's), (300, 39270), (Start: 314 @39243 has 1 MA's), (350, 39189), (366, 39168), (371, 39159), (374, 39153), (412, 39069), (415, 39060), (422, 39042), (425, 39036), (490, 38913), (504, 38859), (506, 38853), (509, 38847), (521, 38802), (536, 38769), (634, 38556), (645, 38523), (656, 38484), (688, 38439), (697, 38421), (701, 38415), (731, 38370), (733, 38364), (747, 38343), (781, 38295), (782, 38292), (803, 38250), (806, 38247), (811, 38232), (840, 38136), (853, 38085), (854, 38082), (869, 38022), (878, 37989), (886, 37974), (888, 37965), (903, 37920), (913, 37899),

Gene: Gibbin\_62 Start: 41245, Stop: 43161, Start Num: 54

Candidate Starts for Gibbin\_62:

(20, 41122), (22, 41131), (23, 41143), (32, 41176), (48, 41233), (Start: 54 @41245 has 11 MA's), (Start: 55 @41248 has 51 MA's), (Start: 69 @41260 has 40 MA's), (83, 41308), (96, 41341), (113, 41410), (135, 41500), (145, 41527), (147, 41536), (181, 41608), (225, 41695), (252, 41728), (Start: 293 @41791 has 18 MA's), (352, 41881), (445, 42037), (453, 42061), (466, 42103), (490, 42151), (496, 42172), (500, 42193), (518, 42250), (522, 42268), (540, 42304), (561, 42346), (590, 42406), (647, 42502), (648, 42505), (791, 42733), (831, 42823), (837, 42859), (839, 42865), (853, 42919), (864, 42958), (892, 43060), (897, 43075), (904, 43096),

Gene: Gibbles\_56 Start: 50443, Stop: 48953, Start Num: 282

Candidate Starts for Gibbles\_56:

(Start: 282 @50443 has 5 MA's), (336, 50350), (343, 50341), (350, 50329), (359, 50314), (374, 50296), (405, 50239), (430, 50167), (432, 50164), (460, 50071), (476, 50038), (489, 50005), (490, 50002), (496, 49981), (518, 49912), (533, 49876), (574, 49789), (593, 49738), (605, 49726), (607, 49723), (620, 49693), (648, 49621), (651, 49612), (726, 49489), (729, 49483), (832, 49309), (841, 49264), (848, 49234), (928, 48982),

Gene: Gibbous\_48 Start: 37401, Stop: 35911, Start Num: 243

Candidate Starts for Gibbous\_48:

(Start: 243 @37401 has 3 MA's), (Start: 278 @37359 has 1 MA's), (297, 37317), (300, 37311), (Start: 314 @37284 has 1 MA's), (350, 37230), (354, 37224), (374, 37194), (Start: 384 @37167 has 1 MA's), (421, 37086), (422, 37083), (425, 37077), (436, 37056), (457, 36990), (490, 36954), (497, 36930), (504, 36900), (506, 36894), (509, 36888), (527, 36825), (536, 36810), (544, 36795), (602, 36669), (637, 36591), (647, 36552), (651, 36540), (652, 36537), (678, 36501), (687, 36483), (688, 36480), (690, 36477), (697, 36462), (716, 36435), (720, 36423), (781, 36321), (803, 36276), (806, 36273), (822, 36231), (828, 36216), (838, 36168), (840, 36162), (853, 36111), (878, 36015), (888, 35991), (898, 35958), (913, 35925), (915, 35922),

Gene: Gibson\_70 Start: 50318, Stop: 48432, Start Num: 53

Candidate Starts for Gibson\_70:

(Start: 53 @50318 has 8 MA's), (Start: 69 @50303 has 40 MA's), (88, 50240), (93, 50231), (122, 50126), (132, 50087), (138, 50063), (170, 49988), (181, 49964), (276, 49805), (Start: 295 @49766 has 21 MA's), (301, 49757), (370, 49649), (422, 49541), (490, 49388), (503, 49337), (520, 49277), (565, 49190), (568, 49187), (647, 49082), (650, 49073), (654, 49061), (710, 48962), (791, 48845), (798, 48833), (811, 48806), (838, 48716), (843, 48701), (856, 48647), (869, 48590), (904, 48482), (913, 48464),

Gene: Gilda\_40 Start: 25935, Stop: 27842, Start Num: 69

Candidate Starts for Gilda\_40:

(Start: 69 @25935 has 40 MA's), (88, 25998), (99, 26019), (111, 26073), (170, 26250), (192, 26295), (Start: 295 @26469 has 21 MA's), (301, 26478), (359, 26568), (388, 26625), (468, 26811), (518, 26946), (520, 26958), (539, 26991), (640, 27120), (689, 27237), (744, 27312), (837, 27546), (838, 27549), (853, 27609), (875, 27699), (886, 27729), (898, 27771), (922, 27822),

Gene: Gisselle\_25 Start: 20615, Stop: 22009, Start Num: 253

Candidate Starts for Gisselle\_25:

(Start: 253 @20615 has 72 MA's), (Start: 288 @20672 has 1 MA's), (353, 20777), (354, 20780), (398, 20864), (416, 20897), (448, 20951), (450, 20954), (493, 21044), (503, 21080), (513, 21101), (520, 21134), (527, 21155), (596, 21287), (607, 21314), (626, 21353), (640, 21380), (647, 21413), (652, 21428), (655, 21437), (692, 21482), (715, 21518), (782, 21599), (791, 21623), (803, 21641), (810, 21653), (832, 21713), (835, 21737), (837, 21743), (838, 21746), (844, 21764), (845, 21767), (850, 21791), (852, 21800), (872, 21887), (892, 21938), (907, 21977),

Gene: Giuseppe\_53 Start: 39718, Stop: 41661, Start Num: 55

Candidate Starts for Giuseppe\_53:

(Start: 55 @39718 has 51 MA's), (72, 39745), (Start: 97 @39817 has 1 MA's), (110, 39871), (125, 39931), (129, 39949), (131, 39958), (146, 40009), (163, 40051), (181, 40087), (225, 40174), (287, 40267), (297, 40282), (306, 40303), (381, 40405), (399, 40438), (410, 40462), (447, 40522), (482, 40609), (504, 40684), (540, 40774), (568, 40825), (570, 40828), (625, 40918), (640, 40936), (647, 40969), (673, 41023), (679, 41035), (689, 41053), (729, 41116), (781, 41200), (831, 41317), (837, 41365), (854, 41428), (874, 41512),

Gene: Glamour\_40 Start: 31091, Stop: 29679, Start Num: 295

Candidate Starts for Glamour\_40:

(Start: 295 @31091 has 21 MA's), (309, 31061), (Start: 314 @31055 has 1 MA's), (337, 31022), (439, 30830), (450, 30803), (470, 30743), (487, 30716), (490, 30713), (500, 30671), (518, 30617), (533, 30575), (589, 30461), (614, 30404), (625, 30383), (634, 30368), (640, 30356), (643, 30344), (644, 30341), (647, 30323), (678, 30242), (695, 30206), (729, 30152), (754, 30110), (781, 30080), (791, 30056), (795, 30050), (820, 30008), (837, 29939), (845, 29915), (846, 29909), (847, 29903), (850, 29891), (874, 29795), (877, 29786), (886, 29768), (889, 29756), (904, 29711),

Gene: Glenn\_29 Start: 22157, Stop: 23557, Start Num: 253

Candidate Starts for Glenn\_29:

(Start: 253 @22157 has 72 MA's), (Start: 288 @22220 has 1 MA's), (353, 22325), (354, 22328), (398, 22412), (416, 22445), (447, 22496), (450, 22502), (491, 22583), (492, 22586), (493, 22592), (503, 22628), (512, 22646), (513, 22649), (520, 22682), (527, 22703), (538, 22721), (555, 22754), (596, 22835), (607, 22862), (621, 22892), (626, 22901), (640, 22928), (647, 22961), (652, 22976), (692, 23030), (705, 23051), (713, 23063), (723, 23075), (839, 23297), (842, 23306), (844, 23312), (852, 23348), (868, 23408), (872, 23435), (907, 23525),

Gene: Gmala1\_55 Start: 48612, Stop: 47071, Start Num: 271

Candidate Starts for Gmala1\_55:

(271, 48612), (343, 48507), (359, 48480), (392, 48426), (404, 48408), (425, 48348), (428, 48339), (448, 48288), (457, 48264), (461, 48252), (463, 48246), (485, 48201), (490, 48186), (496, 48165), (497, 48162), (526, 48063), (542, 48036), (582, 47952), (589, 47928), (605, 47904), (620, 47871), (651, 47790), (679, 47742), (688, 47727), (738, 47634), (753, 47607), (754, 47604), (787, 47520), (809, 47484), (814, 47469), (831, 47424), (847, 47352), (848, 47346), (886, 47205), (928, 47106), (929, 47103),

Gene: GodonK\_184 Start: 93693, Stop: 91774, Start Num: 68

Candidate Starts for GodonK\_184:

(Start: 68 @93693 has 7 MA's), (78, 93651), (115, 93537), (135, 93462), (166, 93393), (189, 93324), (406, 93051), (412, 93033), (421, 93009), (433, 92970), (499, 92790), (522, 92706), (534, 92682), (565, 92622), (572, 92610), (586, 92583), (647, 92514), (648, 92511), (741, 92295), (748, 92277), (751, 92271), (781, 92205), (798, 92166), (805, 92154), (817, 92127), (840, 92046), (848, 92013), (854, 91992), (863, 91959), (875, 91908), (883, 91890),

Gene: GoldHunter\_54 Start: 38843, Stop: 37365, Start Num: 242

Candidate Starts for GoldHunter\_54:

(Start: 242 @38843 has 41 MA's), (297, 38756), (300, 38750), (350, 38669), (366, 38648), (421, 38525), (422, 38522), (504, 38339), (506, 38333), (509, 38327), (536, 38249), (591, 38135), (602, 38108), (614, 38084), (640, 38024), (651, 37979), (659, 37958), (688, 37919), (697, 37901), (780, 37784), (803, 37736), (806, 37733), (811, 37718), (840, 37622), (846, 37601), (853, 37571),

Gene: Golden\_39 Start: 30647, Stop: 29256, Start Num: 292

Candidate Starts for Golden\_39:

(Start: 292 @30647 has 7 MA's), (Start: 295 @30644 has 21 MA's), (309, 30614), (382, 30506), (386, 30497), (410, 30443), (447, 30362), (470, 30296), (490, 30266), (501, 30221), (518, 30170), (611, 29966), (614, 29957), (634, 29918), (640, 29906), (643, 29894), (644, 29891), (653, 29855), (657, 29846), (678, 29831), (695, 29795), (703, 29783), (711, 29771), (757, 29696), (797, 29636), (837, 29528), (840, 29519), (845, 29504), (846, 29498), (847, 29492), (919, 29270),

Gene: GoldenEssence\_90 Start: 74530, Stop: 76368, Start Num: 63

Candidate Starts for GoldenEssence\_90:

(Start: 63 @74530 has 2 MA's), (115, 74689), (143, 74785), (183, 74845), (200, 74875), (252, 74965), (273, 74995), (298, 75046), (398, 75106), (537, 75502), (549, 75523), (572, 75568), (638, 75625), (640, 75631), (647, 75664), (651, 75676), (655, 75688), (668, 75703), (679, 75733), (700, 75772), (744, 75829), (748, 75835), (766, 75868), (796, 75937), (832, 76021), (860, 76138), (915, 76312), (931, 76354),

Gene: Goodman\_34 Start: 23371, Stop: 24798, Start Num: 258

Candidate Starts for Goodman\_34:

(Start: 258 @23371 has 13 MA's), (Start: 384 @23587 has 1 MA's), (428, 23689), (448, 23728), (470, 23791), (498, 23836), (503, 23857), (541, 23956), (616, 24124), (640, 24172), (645, 24193), (652, 24220), (678, 24247), (692, 24277), (695, 24283), (718, 24319), (783, 24397), (822, 24481), (831,



24499), (832, 24502), (852, 24589), (856, 24601), (866, 24640), (872, 24676), (875, 24682), (894, 24733), (902, 24757),

Gene: GordDuk1\_59 Start: 49176, Stop: 47635, Start Num: 271

Candidate Starts for GordDuk1\_59:

(271, 49176), (343, 49071), (359, 49044), (392, 48990), (404, 48972), (425, 48912), (428, 48903), (448, 48852), (457, 48828), (461, 48816), (463, 48810), (485, 48765), (490, 48750), (496, 48729), (497, 48726), (526, 48627), (542, 48600), (582, 48516), (589, 48492), (605, 48468), (620, 48435), (623, 48426), (645, 48378), (651, 48354), (679, 48306), (738, 48198), (753, 48171), (787, 48084), (809, 48048), (814, 48033), (831, 47988), (847, 47916), (848, 47910), (928, 47670), (929, 47667),

Gene: GordTnk2\_60 Start: 49330, Stop: 47789, Start Num: 271

Candidate Starts for GordTnk2\_60:

(271, 49330), (343, 49225), (359, 49198), (392, 49144), (404, 49126), (425, 49066), (428, 49057), (448, 49006), (457, 48982), (461, 48970), (463, 48964), (485, 48919), (490, 48904), (496, 48883), (497, 48880), (526, 48781), (542, 48754), (582, 48670), (589, 48646), (605, 48622), (620, 48589), (651, 48508), (679, 48460), (738, 48352), (753, 48325), (754, 48322), (787, 48238), (809, 48202), (814, 48187), (831, 48142), (847, 48070), (848, 48064), (886, 47923), (928, 47824), (929, 47821),

Gene: Gorgeous\_70 Start: 47020, Stop: 45626, Start Num: 265

Candidate Starts for Gorgeous\_70:

(Start: 265 @47020 has 13 MA's), (300, 46951), (348, 46876), (361, 46858), (376, 46828), (412, 46747), (470, 46597), (532, 46453), (571, 46414), (633, 46300), (649, 46249), (662, 46228), (674, 46198), (681, 46183), (689, 46171), (746, 46090), (781, 46042), (791, 46015), (804, 45994), (833, 45910), (851, 45844), (905, 45655), (911, 45643),

Gene: Gorko\_58 Start: 51458, Stop: 49926, Start Num: 262

Candidate Starts for Gorko\_58:

(146, 51713), (168, 51662), (179, 51611), (202, 51557), (213, 51527), (Start: 237 @51494 has 2 MA's), (Start: 244 @51485 has 1 MA's), (Start: 262 @51458 has 25 MA's), (359, 51290), (381, 51248), (404, 51200), (408, 51188), (412, 51176), (414, 51170), (422, 51149), (436, 51122), (491, 50981), (518, 50894), (521, 50879), (526, 50867), (544, 50837), (567, 50786), (581, 50759), (605, 50708), (637, 50648), (638, 50645), (645, 50618), (658, 50576), (682, 50531), (757, 50396), (764, 50381), (773, 50360), (831, 50279), (832, 50276), (845, 50219), (846, 50213), (847, 50207), (848, 50201), (868, 50126), (878, 50087), (880, 50075), (882, 50072), (919, 49979), (926, 49964), (932, 49943),

Gene: GourdThymes\_59 Start: 52332, Stop: 50800, Start Num: 262

Candidate Starts for GourdThymes\_59:

(146, 52587), (168, 52536), (179, 52485), (202, 52431), (213, 52401), (Start: 237 @52368 has 2 MA's), (Start: 244 @52359 has 1 MA's), (Start: 262 @52332 has 25 MA's), (359, 52164), (381, 52122), (404, 52074), (408, 52062), (412, 52050), (414, 52044), (422, 52023), (436, 51996), (491, 51855), (518, 51768), (521, 51753), (526, 51741), (544, 51711), (567, 51660), (581, 51633), (605, 51582), (616, 51558), (623, 51540), (637, 51522), (638, 51519), (645, 51492), (658, 51450), (682, 51405), (757, 51270), (764, 51255), (773, 51234), (821, 51177), (831, 51153), (832, 51150), (845, 51093), (846, 51087), (847, 51081), (848, 51075), (862, 51024), (868, 51000), (878, 50961), (880, 50949), (882, 50946), (919, 50853), (926, 50838), (932, 50817),

Gene: GreenHearts\_29 Start: 22236, Stop: 23627, Start Num: 253

Candidate Starts for GreenHearts\_29:

(Start: 253 @22236 has 72 MA's), (305, 22323), (353, 22395), (354, 22398), (390, 22464), (398, 22482), (400, 22488), (416, 22515), (450, 22572), (465, 22623), (493, 22662), (503, 22698), (512, 22716), (520, 22752), (527, 22773), (538, 22791), (555, 22824), (583, 22863), (596, 22905), (607, 22932), (619, 22956), (637, 22992), (640, 22998), (647, 23031), (652, 23046), (655, 23055), (692,

23100), (713, 23133), (715, 23136), (783, 23220), (791, 23241), (799, 23253), (803, 23259), (810, 23271), (837, 23361), (838, 23364), (839, 23367), (844, 23382), (845, 23385), (850, 23409), (852, 23418), (872, 23505), (892, 23556), (907, 23595), (918, 23619),

Gene: Greenlvy\_40 Start: 29681, Stop: 28254, Start Num: 293

Candidate Starts for Greenlvy\_40:

(163, 29951), (172, 29927), (178, 29900), (196, 29852), (210, 29813), (Start: 293 @29681 has 18 MA's), (306, 29651), (309, 29645), (Start: 384 @29531 has 1 MA's), (386, 29528), (388, 29525), (487, 29291), (490, 29288), (589, 29033), (612, 28982), (614, 28976), (640, 28928), (647, 28895), (695, 28781), (701, 28772), (729, 28727), (732, 28721), (749, 28694), (797, 28622), (831, 28550), (837, 28514), (840, 28505), (845, 28490), (846, 28484), (850, 28466), (861, 28424), (877, 28361), (903, 28289),

Gene: Greenbelt\_105 Start: 46451, Stop: 44553, Start Num: 48

Candidate Starts for Greenbelt\_105:

(Start: 40 @46496 has 1 MA's), (48, 46451), (50, 46445), (57, 46433), (93, 46355), (111, 46289), (115, 46271), (122, 46250), (133, 46205), (138, 46187), (149, 46157), (170, 46112), (181, 46088), (254, 45962), (300, 45887), (301, 45884), (320, 45851), (344, 45818), (370, 45779), (424, 45668), (445, 45629), (472, 45554), (520, 45407), (539, 45374), (568, 45317), (647, 45212), (654, 45191), (750, 45050), (798, 44960), (815, 44927), (843, 44828), (853, 44783), (856, 44774), (894, 44639), (922, 44573), (924, 44570),

Gene: Greenhouse\_29 Start: 22160, Stop: 23551, Start Num: 253

Candidate Starts for Greenhouse\_29:

(197, 22058), (212, 22100), (232, 22127), (Start: 253 @22160 has 72 MA's), (305, 22247), (353, 22319), (354, 22322), (390, 22388), (398, 22406), (400, 22412), (416, 22439), (450, 22496), (465, 22547), (469, 22553), (470, 22556), (493, 22586), (503, 22622), (512, 22640), (520, 22676), (527, 22697), (538, 22715), (583, 22787), (596, 22829), (607, 22856), (619, 22880), (637, 22916), (640, 22922), (647, 22955), (652, 22970), (655, 22979), (713, 23057), (715, 23060), (783, 23144), (791, 23165), (799, 23177), (803, 23183), (810, 23195), (837, 23285), (844, 23306), (845, 23309), (850, 23333), (852, 23342), (872, 23429), (892, 23480), (907, 23519), (918, 23543),

Gene: Gretellyn\_60 Start: 41292, Stop: 43208, Start Num: 54

Candidate Starts for Gretellyn\_60:

(Start: 54 @41292 has 11 MA's), (Start: 55 @41295 has 51 MA's), (Start: 69 @41307 has 40 MA's), (83, 41355), (96, 41388), (113, 41457), (135, 41547), (145, 41574), (147, 41583), (181, 41655), (225, 41742), (252, 41775), (Start: 293 @41838 has 18 MA's), (352, 41928), (370, 41955), (445, 42084), (453, 42108), (466, 42150), (490, 42198), (496, 42219), (500, 42240), (518, 42297), (540, 42351), (561, 42393), (590, 42453), (647, 42549), (648, 42552), (760, 42729), (791, 42780), (831, 42870), (837, 42906), (839, 42912), (853, 42966), (864, 43005), (892, 43107), (897, 43122), (904, 43143),

Gene: Greys\_41 Start: 31116, Stop: 29728, Start Num: 290

Candidate Starts for Greys\_41:

(46, 31767), (148, 31413), (175, 31338), (Start: 290 @31116 has 124 MA's), (382, 30972), (Start: 384 @30966 has 1 MA's), (386, 30963), (439, 30849), (450, 30822), (470, 30762), (487, 30735), (490, 30732), (518, 30636), (533, 30594), (614, 30423), (625, 30402), (640, 30375), (652, 30327), (695, 30267), (797, 30108), (823, 30054), (846, 29970), (847, 29964), (850, 29952), (874, 29856), (894, 29802), (895, 29799), (903, 29775),

Gene: GrootJr\_74 Start: 56101, Stop: 54035, Start Num: 36

Candidate Starts for GrootJr\_74:

(8, 56305), (9, 56293), (12, 56275), (Start: 36 @56101 has 31 MA's), (Start: 84 @55963 has 2 MA's), (89, 55939), (147, 55735), (168, 55690), (225, 55582), (300, 55468), (301, 55465), (359, 55375), (362,

55372), (402, 55312), (466, 55174), (475, 55156), (488, 55132), (522, 55009), (568, 54904), (640, 54778), (654, 54724), (725, 54598), (729, 54589), (742, 54565), (781, 54493), (783, 54487), (796, 54457), (821, 54400), (837, 54340), (854, 54277), (874, 54196),

Gene: Gubbabump\_40 Start: 30796, Stop: 29408, Start Num: 290

Candidate Starts for Gubbabump\_40:

(46, 31447), (148, 31093), (175, 31018), (Start: 290 @30796 has 124 MA's), (382, 30652), (Start: 384 @30646 has 1 MA's), (386, 30643), (439, 30529), (450, 30502), (470, 30442), (487, 30415), (490, 30412), (518, 30316), (533, 30274), (614, 30103), (625, 30082), (634, 30067), (652, 30007), (695, 29947), (757, 29851), (797, 29788), (823, 29734), (846, 29650), (847, 29644), (850, 29632), (874, 29536), (894, 29482), (895, 29479), (903, 29455),

Gene: Guetzie\_40 Start: 30629, Stop: 29241, Start Num: 295

Candidate Starts for Guetzie\_40:

(Start: 292 @30632 has 7 MA's), (Start: 295 @30629 has 21 MA's), (309, 30599), (382, 30491), (386, 30482), (410, 30428), (447, 30347), (470, 30281), (490, 30251), (501, 30206), (518, 30155), (611, 29951), (614, 29942), (634, 29903), (640, 29891), (643, 29879), (644, 29876), (653, 29840), (657, 29831), (678, 29816), (695, 29780), (703, 29768), (711, 29756), (757, 29681), (797, 29621), (837, 29513), (840, 29504), (845, 29489), (846, 29483), (847, 29477), (919, 29255),

Gene: Guillaume\_57 Start: 52620, Stop: 51208, Start Num: 330

Candidate Starts for Guillaume\_57:

(146, 52968), (191, 52839), (Start: 237 @52749 has 2 MA's), (Start: 330 @52620 has 27 MA's), (359, 52575), (404, 52485), (405, 52482), (407, 52476), (414, 52455), (442, 52392), (485, 52284), (491, 52266), (518, 52179), (521, 52164), (544, 52122), (582, 52041), (605, 51993), (623, 51951), (637, 51933), (638, 51930), (645, 51903), (661, 51852), (682, 51816), (711, 51765), (757, 51681), (767, 51660), (845, 51504), (846, 51498), (848, 51486), (880, 51360), (926, 51246),

Gene: Gumball\_52 Start: 39923, Stop: 41866, Start Num: 55

Candidate Starts for Gumball\_52:

(39, 39860), (Start: 55 @39923 has 51 MA's), (72, 39950), (Start: 97 @40022 has 1 MA's), (110, 40076), (125, 40136), (131, 40163), (146, 40214), (163, 40256), (181, 40292), (225, 40379), (287, 40472), (297, 40487), (306, 40508), (381, 40610), (399, 40643), (410, 40667), (447, 40727), (482, 40814), (504, 40889), (540, 40979), (568, 41030), (570, 41033), (625, 41123), (640, 41141), (647, 41174), (679, 41240), (689, 41258), (729, 41321), (781, 41405), (831, 41522), (837, 41570), (854, 41633), (874, 41717),

Gene: GuyFagieri\_70 Start: 52937, Stop: 50901, Start Num: 38

Candidate Starts for GuyFagieri\_70:

(3, 53405), (4, 53399), (Start: 38 @52937 has 6 MA's), (77, 52829), (168, 52544), (200, 52487), (225, 52436), (236, 52421), (Start: 295 @52331 has 21 MA's), (301, 52319), (316, 52292), (359, 52226), (406, 52154), (422, 52112), (447, 52085), (472, 52013), (496, 51956), (568, 51776), (580, 51752), (618, 51689), (640, 51653), (673, 51566), (744, 51434), (766, 51395), (768, 51392), (821, 51260), (837, 51200), (854, 51137), (865, 51095), (885, 51032),

Gene: Hager\_41 Start: 25422, Stop: 27329, Start Num: 69

Candidate Starts for Hager\_41:

(19, 25248), (Start: 69 @25422 has 40 MA's), (88, 25485), (99, 25506), (111, 25560), (161, 25722), (170, 25737), (192, 25782), (Start: 295 @25956 has 21 MA's), (301, 25965), (359, 26055), (362, 26058), (381, 26097), (388, 26112), (398, 26130), (468, 26298), (504, 26391), (510, 26406), (518, 26433), (520, 26445), (539, 26478), (640, 26607), (689, 26724), (831, 26997), (838, 27036), (853, 27096), (875, 27186), (886, 27216), (898, 27258), (922, 27309),

Gene: Hail2Pitt\_56 Start: 53096, Stop: 51684, Start Num: 330

Candidate Starts for Hail2Pitt\_56:

(146, 53444), (191, 53315), (236, 53228), (Start: 237 @53225 has 2 MA's), (Start: 330 @53096 has 27 MA's), (359, 53051), (404, 52961), (405, 52958), (407, 52952), (414, 52931), (442, 52868), (485, 52760), (491, 52742), (518, 52655), (521, 52640), (544, 52598), (582, 52517), (605, 52469), (623, 52427), (637, 52409), (638, 52406), (645, 52379), (661, 52328), (682, 52292), (711, 52241), (757, 52157), (767, 52136), (845, 51980), (846, 51974), (848, 51962), (880, 51836), (926, 51722),

Gene: Hamlet\_40 Start: 31266, Stop: 29875, Start Num: 290

Candidate Starts for Hamlet\_40:

(214, 31368), (216, 31365), (219, 31362), (Start: 290 @31266 has 124 MA's), (382, 31119), (Start: 384 @31113 has 1 MA's), (386, 31110), (439, 30996), (450, 30969), (470, 30909), (487, 30882), (490, 30879), (518, 30783), (533, 30741), (614, 30570), (625, 30549), (640, 30522), (695, 30414), (757, 30318), (823, 30201), (831, 30183), (846, 30117), (847, 30111), (850, 30099), (874, 30003), (894, 29949), (895, 29946), (903, 29922), (917, 29892),

Gene: HanSolo\_40 Start: 30803, Stop: 29415, Start Num: 290

Candidate Starts for HanSolo\_40:

(46, 31454), (148, 31100), (175, 31025), (Start: 290 @30803 has 124 MA's), (382, 30659), (Start: 384 @30653 has 1 MA's), (386, 30650), (439, 30536), (450, 30509), (470, 30449), (487, 30422), (490, 30419), (518, 30323), (533, 30281), (614, 30110), (634, 30074), (652, 30014), (695, 29954), (757, 29858), (797, 29795), (823, 29741), (846, 29657), (847, 29651), (850, 29639), (874, 29543), (894, 29489), (895, 29486), (903, 29462),

Gene: HankSprout\_41 Start: 30683, Stop: 29295, Start Num: 290

Candidate Starts for HankSprout\_41:

(175, 30905), (Start: 290 @30683 has 124 MA's), (382, 30539), (Start: 384 @30533 has 1 MA's), (386, 30530), (439, 30416), (450, 30389), (470, 30329), (487, 30302), (490, 30299), (518, 30203), (533, 30161), (588, 30050), (614, 29990), (625, 29969), (634, 29954), (652, 29894), (695, 29834), (757, 29738), (797, 29675), (823, 29621), (846, 29537), (847, 29531), (850, 29519), (874, 29423), (894, 29369), (895, 29366), (903, 29342),

Gene: Harambe\_57 Start: 52887, Stop: 51475, Start Num: 330

Candidate Starts for Harambe\_57:

(146, 53235), (191, 53106), (236, 53019), (Start: 237 @53016 has 2 MA's), (Start: 330 @52887 has 27 MA's), (359, 52842), (404, 52752), (405, 52749), (407, 52743), (414, 52722), (442, 52659), (485, 52551), (491, 52533), (518, 52446), (521, 52431), (544, 52389), (582, 52308), (605, 52260), (623, 52218), (637, 52200), (638, 52197), (645, 52170), (661, 52119), (682, 52083), (711, 52032), (757, 51948), (767, 51927), (845, 51771), (846, 51765), (848, 51753), (880, 51627), (926, 51513),

Gene: Hasitha\_40 Start: 29084, Stop: 27657, Start Num: 293

Candidate Starts for Hasitha\_40:

(Start: 293 @29084 has 18 MA's), (306, 29054), (309, 29048), (Start: 384 @28934 has 1 MA's), (386, 28931), (487, 28694), (490, 28691), (589, 28436), (612, 28385), (614, 28379), (640, 28331), (647, 28298), (652, 28283), (682, 28211), (695, 28184), (701, 28175), (729, 28130), (732, 28124), (749, 28097), (797, 28025), (831, 27953), (837, 27917), (840, 27908), (845, 27893), (846, 27887), (850, 27869), (861, 27827), (877, 27764), (899, 27701), (903, 27692),

Gene: Haunter\_40 Start: 25327, Stop: 27234, Start Num: 69

Candidate Starts for Haunter\_40:

(Start: 69 @25327 has 40 MA's), (88, 25390), (99, 25411), (111, 25465), (123, 25507), (170, 25642), (192, 25687), (Start: 295 @25861 has 21 MA's), (301, 25870), (359, 25960), (388, 26017), (468, 26203), (518, 26338), (520, 26350), (539, 26383), (561, 26428), (640, 26512), (689, 26629), (831,

26902), (837, 26938), (838, 26941), (853, 27001), (875, 27091), (886, 27121), (898, 27163), (922, 27214),

Gene: Hawkeye\_56 Start: 39560, Stop: 41506, Start Num: 55

Candidate Starts for Hawkeye\_56:

(Start: 55 @39560 has 51 MA's), (85, 39638), (107, 39707), (110, 39716), (118, 39746), (125, 39776), (131, 39803), (134, 39815), (163, 39893), (170, 39905), (225, 40016), (252, 40049), (297, 40124), (350, 40202), (372, 40232), (388, 40268), (413, 40322), (447, 40373), (492, 40487), (521, 40595), (565, 40673), (568, 40676), (580, 40700), (586, 40712), (625, 40769), (635, 40775), (640, 40787), (645, 40808), (647, 40820), (668, 40856), (679, 40886), (689, 40904), (729, 40967), (781, 41051), (796, 41087), (819, 41132), (831, 41168), (837, 41216), (839, 41222), (854, 41279), (921, 41483), (925, 41489), (926, 41492),

Gene: HayZem\_62 Start: 52710, Stop: 51079, Start Num: 180

Candidate Starts for HayZem\_62:

(Start: 180 @52710 has 3 MA's), (187, 52698), (208, 52647), (211, 52641), (254, 52584), (359, 52443), (381, 52401), (386, 52389), (404, 52353), (405, 52350), (414, 52323), (427, 52287), (436, 52275), (442, 52260), (485, 52152), (518, 52047), (521, 52032), (582, 51909), (605, 51861), (616, 51837), (623, 51819), (645, 51771), (661, 51720), (682, 51684), (691, 51666), (757, 51549), (790, 51498), (821, 51456), (837, 51396), (848, 51354), (862, 51303), (868, 51279), (926, 51117), (932, 51096),

Gene: Hello\_57 Start: 52849, Stop: 51437, Start Num: 330

Candidate Starts for Hello\_57:

(146, 53197), (191, 53068), (236, 52981), (Start: 237 @52978 has 2 MA's), (Start: 330 @52849 has 27 MA's), (359, 52804), (404, 52714), (405, 52711), (407, 52705), (414, 52684), (442, 52621), (485, 52513), (491, 52495), (518, 52408), (521, 52393), (544, 52351), (582, 52270), (605, 52222), (623, 52180), (637, 52162), (638, 52159), (645, 52132), (661, 52081), (682, 52045), (711, 51994), (757, 51910), (767, 51889), (845, 51733), (846, 51727), (848, 51715), (880, 51589), (926, 51475),

Gene: Helpful\_56 Start: 40102, Stop: 42045, Start Num: 55

Candidate Starts for Helpful\_56:

(35, 40033), (Start: 55 @40102 has 51 MA's), (72, 40129), (Start: 97 @40201 has 1 MA's), (110, 40255), (125, 40315), (129, 40333), (131, 40342), (146, 40393), (163, 40435), (181, 40471), (225, 40558), (287, 40651), (297, 40666), (306, 40687), (381, 40789), (399, 40822), (410, 40846), (447, 40906), (482, 40993), (504, 41068), (540, 41158), (568, 41209), (570, 41212), (625, 41302), (640, 41320), (647, 41353), (673, 41407), (679, 41419), (689, 41437), (729, 41500), (781, 41584), (831, 41701), (837, 41749), (854, 41812), (874, 41896),

Gene: Henococcus\_42 Start: 30892, Stop: 32286, Start Num: 261

Candidate Starts for Henococcus\_42:

(Start: 261 @30892 has 12 MA's), (Start: 264 @30895 has 2 MA's), (303, 30970), (316, 30994), (343, 31024), (345, 31027), (353, 31039), (405, 31129), (418, 31153), (447, 31198), (450, 31204), (470, 31264), (491, 31285), (506, 31339), (547, 31438), (556, 31465), (562, 31474), (616, 31600), (640, 31648), (645, 31669), (647, 31681), (652, 31696), (679, 31726), (695, 31759), (701, 31768), (727, 31810), (782, 31876), (783, 31879), (791, 31900), (803, 31918), (811, 31936), (832, 31990), (837, 32020), (852, 32077), (853, 32080), (866, 32128), (879, 32182), (905, 32251), (914, 32269),

Gene: Herb\_26 Start: 21732, Stop: 23129, Start Num: 253

Candidate Starts for Herb\_26:

(Start: 253 @21732 has 72 MA's), (Start: 288 @21792 has 1 MA's), (341, 21879), (353, 21897), (354, 21900), (398, 21984), (400, 21990), (416, 22017), (447, 22068), (450, 22074), (465, 22125), (470, 22134), (491, 22155), (493, 22164), (503, 22200), (513, 22221), (520, 22254), (527, 22275), (538, 22293), (541, 22299), (555, 22326), (566, 22338), (576, 22353), (596, 22407), (619, 22458), (621,

22464), (626, 22473), (632, 22479), (640, 22500), (647, 22533), (652, 22548), (655, 22557), (742, 22680), (782, 22719), (791, 22743), (799, 22755), (837, 22863), (839, 22869), (842, 22878), (844, 22884), (852, 22920), (872, 23007), (907, 23097), (918, 23121),

Gene: HerculesXL\_40 Start: 29477, Stop: 28092, Start Num: 293

Candidate Starts for HerculesXL\_40:

(Start: 293 @29477 has 18 MA's), (412, 29264), (439, 29201), (447, 29180), (487, 29087), (490, 29084), (496, 29063), (500, 29042), (533, 28946), (614, 28775), (627, 28751), (634, 28739), (640, 28727), (643, 28715), (644, 28712), (647, 28694), (652, 28679), (695, 28619), (703, 28607), (711, 28595), (757, 28523), (781, 28493), (797, 28460), (837, 28352), (840, 28343), (845, 28328), (846, 28322), (847, 28316), (850, 28304), (874, 28208), (877, 28199), (889, 28169), (903, 28127),

Gene: Hexbug\_60 Start: 41082, Stop: 39607, Start Num: 246

Candidate Starts for Hexbug\_60:

(Start: 246 @41082 has 9 MA's), (Start: 278 @41040 has 1 MA's), (300, 40992), (Start: 314 @40965 has 1 MA's), (366, 40890), (371, 40881), (374, 40875), (412, 40791), (418, 40773), (422, 40764), (425, 40758), (490, 40635), (504, 40581), (506, 40575), (509, 40569), (527, 40506), (536, 40491), (544, 40476), (634, 40278), (645, 40245), (656, 40206), (688, 40161), (726, 40098), (733, 40086), (747, 40065), (756, 40050), (781, 40017), (782, 40014), (806, 39969), (828, 39912), (840, 39858), (853, 39807), (886, 39696), (892, 39675),

Gene: Heylee\_73 Start: 47198, Stop: 45804, Start Num: 265

Candidate Starts for Heylee\_73:

(Start: 265 @47198 has 13 MA's), (300, 47129), (348, 47054), (361, 47036), (376, 47006), (412, 46925), (425, 46895), (437, 46871), (532, 46631), (571, 46592), (633, 46478), (649, 46427), (662, 46406), (674, 46376), (681, 46361), (689, 46349), (746, 46268), (781, 46220), (791, 46193), (804, 46172), (833, 46088), (851, 46022), (905, 45833), (911, 45821),

Gene: Hiddenleaf\_40 Start: 25169, Stop: 27076, Start Num: 69

Candidate Starts for Hiddenleaf\_40:

(19, 24995), (Start: 69 @25169 has 40 MA's), (88, 25232), (99, 25253), (111, 25307), (150, 25442), (170, 25484), (192, 25529), (Start: 295 @25703 has 21 MA's), (301, 25712), (359, 25802), (381, 25844), (388, 25859), (468, 26045), (518, 26180), (520, 26192), (539, 26225), (640, 26354), (689, 26471), (831, 26744), (838, 26783), (853, 26843), (875, 26933), (886, 26963), (898, 27005), (922, 27056),

Gene: HippoPololi\_50 Start: 37814, Stop: 36324, Start Num: 242

Candidate Starts for HippoPololi\_50:

(Start: 242 @37814 has 41 MA's), (Start: 278 @37772 has 1 MA's), (297, 37730), (300, 37724), (Start: 314 @37697 has 1 MA's), (350, 37643), (374, 37607), (Start: 384 @37580 has 1 MA's), (421, 37499), (422, 37496), (425, 37490), (436, 37469), (457, 37403), (490, 37367), (497, 37343), (504, 37313), (506, 37307), (509, 37301), (536, 37223), (602, 37082), (637, 37004), (647, 36965), (652, 36950), (678, 36914), (688, 36893), (690, 36890), (697, 36875), (716, 36848), (733, 36803), (781, 36734), (803, 36689), (806, 36686), (822, 36644), (828, 36629), (837, 36584), (838, 36581), (840, 36575), (853, 36524), (861, 36494), (888, 36404), (898, 36371), (915, 36335),

Gene: Hollow\_57 Start: 53503, Stop: 51797, Start Num: 171

Candidate Starts for Hollow\_57:

(Start: 171 @53503 has 6 MA's), (Start: 173 @53491 has 2 MA's), (207, 53392), (Start: 221 @53371 has 1 MA's), (270, 53305), (336, 53206), (359, 53170), (374, 53146), (377, 53137), (381, 53128), (404, 53080), (412, 53056), (427, 53014), (437, 52999), (442, 52984), (461, 52927), (462, 52924), (489, 52864), (490, 52861), (509, 52795), (512, 52792), (521, 52756), (522, 52753), (533, 52735), (538, 52726), (544, 52714), (564, 52666), (582, 52633), (589, 52609), (605, 52585), (616, 52561), (645,

52495), (682, 52396), (754, 52264), (757, 52261), (831, 52144), (832, 52141), (845, 52084), (848, 52066), (878, 51949), (879, 51946), (882, 51934), (926, 51835), (932, 51814),

Gene: Horseradish\_55 Start: 38581, Stop: 37103, Start Num: 242

Candidate Starts for Horseradish\_55:

(Start: 242 @38581 has 41 MA's), (297, 38494), (300, 38488), (Start: 330 @38437 has 27 MA's), (366, 38386), (374, 38371), (412, 38287), (421, 38263), (425, 38254), (490, 38131), (504, 38077), (506, 38071), (509, 38065), (518, 38035), (536, 37987), (591, 37873), (602, 37846), (614, 37822), (645, 37741), (651, 37717), (659, 37696), (688, 37657), (697, 37639), (701, 37633), (780, 37522), (782, 37516), (803, 37474), (811, 37456), (837, 37369), (840, 37360), (846, 37339), (853, 37309), (861, 37279), (869, 37246), (889, 37186), (898, 37156),

Gene: Hotorobo\_59 Start: 52337, Stop: 50805, Start Num: 262

Candidate Starts for Hotorobo\_59:

(146, 52592), (168, 52541), (179, 52490), (202, 52436), (213, 52406), (Start: 237 @52373 has 2 MA's), (Start: 244 @52364 has 1 MA's), (Start: 262 @52337 has 25 MA's), (359, 52169), (381, 52127), (404, 52079), (408, 52067), (412, 52055), (414, 52049), (422, 52028), (436, 52001), (491, 51860), (518, 51773), (521, 51758), (526, 51746), (544, 51716), (567, 51665), (581, 51638), (605, 51587), (637, 51527), (638, 51524), (645, 51497), (658, 51455), (682, 51410), (757, 51275), (764, 51260), (773, 51239), (831, 51158), (832, 51155), (845, 51098), (846, 51092), (847, 51086), (848, 51080), (868, 51005), (878, 50966), (880, 50954), (882, 50951), (919, 50858), (926, 50843), (932, 50822),

Gene: Htur\_33 Start: 23465, Stop: 24892, Start Num: 256

Candidate Starts for Htur\_33:

(227, 23426), (Start: 244 @23447 has 1 MA's), (Start: 256 @23465 has 3 MA's), (448, 23822), (470, 23885), (498, 23930), (503, 23951), (616, 24218), (640, 24266), (645, 24287), (652, 24314), (678, 24341), (679, 24344), (692, 24371), (695, 24377), (718, 24413), (783, 24491), (791, 24512), (803, 24530), (810, 24542), (837, 24626), (852, 24683), (856, 24695), (866, 24734), (872, 24770), (875, 24776),

Gene: HubbaBubba\_68 Start: 51470, Stop: 49620, Start Num: 111

Candidate Starts for HubbaBubba\_68:

(9, 51893), (12, 51875), (Start: 36 @51701 has 31 MA's), (111, 51470), (149, 51332), (225, 51182), (252, 51149), (300, 51068), (301, 51065), (359, 50975), (362, 50972), (402, 50912), (475, 50756), (522, 50609), (568, 50501), (580, 50477), (640, 50375), (654, 50321), (668, 50306), (708, 50225), (729, 50186), (765, 50123), (781, 50084), (783, 50078), (796, 50048), (837, 49931), (854, 49868), (869, 49805), (874, 49787), (901, 49703),

Gene: HungryHenry\_40 Start: 30808, Stop: 29420, Start Num: 290

Candidate Starts for HungryHenry\_40:

(46, 31459), (148, 31105), (175, 31030), (Start: 290 @30808 has 124 MA's), (382, 30664), (Start: 384 @30658 has 1 MA's), (386, 30655), (439, 30541), (450, 30514), (470, 30454), (487, 30427), (490, 30424), (518, 30328), (533, 30286), (614, 30115), (625, 30094), (634, 30079), (652, 30019), (695, 29959), (757, 29863), (797, 29800), (823, 29746), (846, 29662), (847, 29656), (850, 29644), (874, 29548), (894, 29494), (895, 29491), (903, 29467),

Gene: HunterDalle\_26 Start: 21745, Stop: 23139, Start Num: 253

Candidate Starts for HunterDalle\_26:

(Start: 253 @21745 has 72 MA's), (Start: 288 @21802 has 1 MA's), (341, 21889), (353, 21907), (354, 21910), (398, 21994), (416, 22027), (447, 22078), (450, 22084), (470, 22144), (493, 22174), (503, 22210), (512, 22228), (520, 22264), (527, 22285), (538, 22303), (541, 22309), (555, 22336), (596, 22417), (607, 22444), (619, 22468), (626, 22483), (640, 22510), (647, 22543), (652, 22558), (781, 22726), (791, 22753), (799, 22765), (810, 22783), (837, 22873), (839, 22879), (844, 22894), (845,

22897), (852, 22930), (868, 22990), (872, 23017), (894, 23074), (907, 23107), (918, 23131),

Gene: Huntingdon\_29 Start: 22127, Stop: 23518, Start Num: 253

Candidate Starts for Huntingdon\_29:

(Start: 253 @22127 has 72 MA's), (305, 22214), (353, 22286), (354, 22289), (390, 22355), (398, 22373), (400, 22379), (416, 22406), (450, 22463), (491, 22544), (493, 22553), (503, 22589), (512, 22607), (520, 22643), (527, 22664), (538, 22682), (555, 22715), (583, 22754), (596, 22796), (607, 22823), (619, 22847), (637, 22883), (640, 22889), (647, 22922), (652, 22937), (655, 22946), (692, 22991), (713, 23024), (715, 23027), (782, 23108), (799, 23144), (803, 23150), (810, 23162), (837, 23252), (844, 23273), (845, 23276), (850, 23300), (852, 23309), (872, 23396), (892, 23447), (907, 23486), (918, 23510),

Gene: Huwbert\_59 Start: 36808, Stop: 38358, Start Num: 244

Candidate Starts for Huwbert\_59:

(Start: 241 @36805 has 1 MA's), (Start: 244 @36808 has 1 MA's), (284, 36874), (300, 36904), (316, 36934), (343, 36973), (360, 37000), (371, 37015), (396, 37069), (409, 37099), (445, 37183), (475, 37267), (480, 37276), (483, 37279), (518, 37399), (521, 37414), (560, 37501), (589, 37567), (599, 37591), (647, 37714), (651, 37726), (709, 37813), (762, 37912), (780, 37930), (834, 38068), (898, 38296), (901, 38305), (903, 38308),

Gene: IDyn\_69 Start: 52448, Stop: 50367, Start Num: 36

Candidate Starts for IDyn\_69:

(9, 52640), (12, 52622), (18, 52547), (Start: 36 @52448 has 31 MA's), (111, 52217), (149, 52079), (225, 51929), (252, 51896), (297, 51821), (300, 51815), (301, 51812), (359, 51722), (362, 51719), (402, 51659), (475, 51503), (522, 51356), (568, 51248), (580, 51224), (640, 51122), (654, 51068), (668, 51053), (708, 50972), (729, 50933), (765, 50870), (781, 50831), (783, 50825), (796, 50795), (837, 50678), (854, 50615), (869, 50552), (874, 50534), (901, 50450),

Gene: Ichor\_70 Start: 47416, Stop: 46022, Start Num: 265

Candidate Starts for Ichor\_70:

(Start: 265 @47416 has 13 MA's), (300, 47347), (348, 47272), (361, 47254), (376, 47224), (412, 47143), (532, 46849), (571, 46810), (633, 46696), (662, 46624), (674, 46594), (681, 46579), (689, 46567), (728, 46516), (759, 46465), (775, 46447), (781, 46438), (804, 46390), (851, 46240), (905, 46051),

Gene: Ilzat\_40 Start: 30819, Stop: 29431, Start Num: 290

Candidate Starts for Ilzat\_40:

(46, 31470), (148, 31116), (175, 31041), (Start: 290 @30819 has 124 MA's), (382, 30675), (Start: 384 @30669 has 1 MA's), (386, 30666), (439, 30552), (450, 30525), (470, 30465), (487, 30438), (490, 30435), (518, 30339), (533, 30297), (614, 30126), (625, 30105), (634, 30090), (652, 30030), (695, 29970), (757, 29874), (797, 29811), (823, 29757), (846, 29673), (847, 29667), (850, 29655), (874, 29559), (894, 29505), (895, 29502), (903, 29478),

Gene: IndiRoo\_34 Start: 21703, Stop: 23130, Start Num: 258

Candidate Starts for IndiRoo\_34:

(238, 21682), (Start: 258 @21703 has 13 MA's), (447, 22057), (448, 22060), (455, 22081), (498, 22168), (513, 22210), (634, 22492), (640, 22504), (645, 22525), (652, 22552), (678, 22579), (679, 22582), (692, 22609), (695, 22615), (718, 22651), (791, 22750), (822, 22813), (832, 22834), (845, 22888), (852, 22921), (856, 22933), (866, 22972), (872, 23008), (875, 23014), (879, 23026), (892, 23059), (902, 23089),

Gene: Indlulamithi\_65 Start: 45619, Stop: 47481, Start Num: 97

Candidate Starts for Indlulamithi\_65:



(Start: 97 @45619 has 1 MA's), (103, 45634), (170, 45862), (200, 45922), (Start: 217 @45964 has 2 MA's), (Start: 248 @46000 has 3 MA's), (273, 46033), (281, 46051), (311, 46111), (323, 46129), (346, 46162), (373, 46201), (413, 46291), (421, 46312), (422, 46315), (445, 46336), (508, 46513), (533, 46582), (550, 46618), (561, 46639), (568, 46651), (598, 46717), (638, 46759), (640, 46765), (647, 46798), (652, 46813), (669, 46837), (670, 46840), (679, 46864), (685, 46873), (744, 46960), (805, 47065), (843, 47206), (869, 47314), (874, 47335), (880, 47350), (896, 47401), (923, 47458), (926, 47464), (929, 47476),

Gene: Intolerant\_41 Start: 31037, Stop: 32431, Start Num: 261

Candidate Starts for Intolerant\_41:

(Start: 261 @31037 has 12 MA's), (Start: 264 @31040 has 2 MA's), (303, 31115), (316, 31139), (343, 31169), (353, 31184), (405, 31274), (424, 31310), (470, 31409), (474, 31418), (508, 31487), (556, 31610), (616, 31745), (632, 31772), (640, 31793), (645, 31814), (679, 31871), (695, 31904), (701, 31913), (727, 31955), (782, 32021), (791, 32045), (803, 32063), (811, 32081), (832, 32135), (837, 32165), (852, 32222), (853, 32225), (866, 32273), (874, 32312), (879, 32327), (905, 32396), (914, 32414), (918, 32423),

Gene: Inventa\_41 Start: 31114, Stop: 29726, Start Num: 290

Candidate Starts for Inventa\_41:

(46, 31765), (148, 31411), (175, 31336), (Start: 290 @31114 has 124 MA's), (382, 30970), (Start: 384 @30964 has 1 MA's), (386, 30961), (439, 30847), (450, 30820), (470, 30760), (487, 30733), (490, 30730), (518, 30634), (533, 30592), (611, 30430), (614, 30421), (625, 30400), (634, 30385), (640, 30373), (652, 30325), (695, 30265), (757, 30169), (797, 30106), (823, 30052), (846, 29968), (847, 29962), (850, 29950), (874, 29854), (894, 29800), (895, 29797), (903, 29773),

Gene: loannes\_41 Start: 31118, Stop: 29730, Start Num: 290

Candidate Starts for loannes\_41:

(175, 31340), (Start: 290 @31118 has 124 MA's), (382, 30974), (Start: 384 @30968 has 1 MA's), (439, 30851), (450, 30824), (470, 30764), (487, 30737), (490, 30734), (517, 30641), (518, 30638), (533, 30596), (614, 30425), (625, 30404), (634, 30389), (640, 30377), (652, 30329), (695, 30269), (757, 30173), (797, 30110), (823, 30056), (846, 29972), (847, 29966), (850, 29954), (869, 29879), (874, 29858), (894, 29804), (895, 29801), (903, 29777),

Gene: Ixel\_41 Start: 29711, Stop: 28434, Start Num: 363

Candidate Starts for Ixel\_41:

(Start: 293 @29819 has 18 MA's), (Start: 363 @29711 has 1 MA's), (382, 29675), (386, 29666), (439, 29543), (447, 29522), (487, 29429), (490, 29426), (500, 29384), (516, 29336), (518, 29330), (533, 29288), (592, 29165), (614, 29117), (625, 29096), (640, 29069), (643, 29057), (644, 29054), (647, 29036), (695, 28961), (703, 28949), (757, 28865), (786, 28820), (831, 28730), (837, 28694), (840, 28685), (845, 28670), (846, 28664), (847, 28658), (850, 28646), (874, 28550), (889, 28511),

Gene: JDawG\_39 Start: 25586, Stop: 27493, Start Num: 69

Candidate Starts for JDawG\_39:

(19, 25412), (Start: 69 @25586 has 40 MA's), (88, 25649), (99, 25670), (111, 25724), (150, 25859), (170, 25901), (192, 25946), (Start: 295 @26120 has 21 MA's), (301, 26129), (359, 26219), (381, 26261), (388, 26276), (468, 26462), (518, 26597), (520, 26609), (539, 26642), (586, 26735), (640, 26771), (675, 26861), (689, 26888), (837, 27197), (838, 27200), (853, 27260), (875, 27350), (886, 27380), (898, 27422), (922, 27473),

Gene: JackieB\_42 Start: 30731, Stop: 32125, Start Num: 261

Candidate Starts for JackieB\_42:

(Start: 261 @30731 has 12 MA's), (Start: 264 @30734 has 2 MA's), (303, 30809), (316, 30833), (343, 30863), (345, 30866), (353, 30878), (405, 30968), (418, 30992), (447, 31037), (450, 31043), (470,

31103), (491, 31124), (506, 31178), (547, 31277), (556, 31304), (562, 31313), (616, 31439), (640, 31487), (645, 31508), (647, 31520), (652, 31535), (679, 31565), (695, 31598), (701, 31607), (727, 31649), (783, 31718), (791, 31739), (803, 31757), (811, 31775), (832, 31829), (837, 31859), (852, 31916), (853, 31919), (866, 31967), (879, 32021), (905, 32090), (914, 32108),

Gene: JacoRen57\_46 Start: 39673, Stop: 38201, Start Num: 248

Candidate Starts for JacoRen57\_46:

(239, 39685), (Start: 248 @39673 has 3 MA's), (298, 39586), (300, 39583), (354, 39496), (366, 39481), (371, 39472), (421, 39358), (504, 39172), (509, 39160), (536, 39082), (631, 38881), (647, 38821), (651, 38809), (652, 38806), (803, 38566), (811, 38548), (832, 38494), (840, 38452), (846, 38431), (853, 38401), (857, 38386), (886, 38290), (889, 38278), (912, 38218),

Gene: Jaek\_70 Start: 47416, Stop: 46022, Start Num: 265

Candidate Starts for Jaek\_70:

(Start: 265 @47416 has 13 MA's), (300, 47347), (348, 47272), (361, 47254), (376, 47224), (412, 47143), (532, 46849), (571, 46810), (633, 46696), (662, 46624), (674, 46594), (681, 46579), (689, 46567), (728, 46516), (759, 46465), (775, 46447), (781, 46438), (804, 46390), (851, 46240), (905, 46051),

Gene: Jalebi\_59 Start: 41637, Stop: 43553, Start Num: 54

Candidate Starts for Jalebi\_59:

(Start: 54 @41637 has 11 MA's), (Start: 55 @41640 has 51 MA's), (Start: 69 @41652 has 40 MA's), (83, 41700), (113, 41802), (135, 41892), (145, 41919), (147, 41928), (181, 42000), (252, 42120), (Start: 293 @42183 has 18 MA's), (352, 42273), (370, 42300), (445, 42429), (453, 42453), (466, 42495), (490, 42543), (496, 42564), (500, 42585), (518, 42642), (540, 42696), (561, 42738), (590, 42798), (647, 42894), (648, 42897), (760, 43074), (791, 43125), (830, 43212), (831, 43215), (837, 43251), (839, 43257), (853, 43311), (864, 43350), (892, 43452), (897, 43467), (904, 43488),

Gene: Jamemuya19\_61 Start: 39419, Stop: 41335, Start Num: 54

Candidate Starts for Jamemuya19\_61:

(Start: 54 @39419 has 11 MA's), (Start: 55 @39422 has 51 MA's), (Start: 69 @39434 has 40 MA's), (83, 39482), (96, 39515), (135, 39674), (145, 39701), (147, 39710), (181, 39782), (252, 39902), (Start: 293 @39965 has 18 MA's), (352, 40055), (370, 40082), (445, 40211), (453, 40235), (466, 40277), (472, 40289), (482, 40304), (490, 40325), (496, 40346), (500, 40367), (518, 40424), (522, 40442), (540, 40478), (561, 40520), (590, 40580), (647, 40676), (648, 40679), (760, 40856), (791, 40907), (831, 40997), (837, 41033), (839, 41039), (853, 41093), (864, 41132), (892, 41234), (897, 41249), (904, 41270),

Gene: Jams\_57 Start: 52059, Stop: 50647, Start Num: 330

Candidate Starts for Jams\_57:

(146, 52407), (191, 52278), (Start: 237 @52188 has 2 MA's), (Start: 330 @52059 has 27 MA's), (359, 52014), (404, 51924), (405, 51921), (407, 51915), (414, 51894), (442, 51831), (470, 51753), (485, 51723), (491, 51705), (518, 51618), (521, 51603), (544, 51561), (582, 51480), (605, 51432), (623, 51390), (637, 51372), (638, 51369), (645, 51342), (661, 51291), (682, 51255), (711, 51204), (757, 51120), (767, 51099), (845, 50943), (846, 50937), (848, 50925), (880, 50799), (926, 50685),

Gene: Jamzy\_58 Start: 39427, Stop: 37952, Start Num: 246

Candidate Starts for Jamzy\_58:

(Start: 246 @39427 has 9 MA's), (300, 39337), (Start: 314 @39310 has 1 MA's), (350, 39256), (366, 39235), (371, 39226), (374, 39220), (412, 39136), (415, 39127), (422, 39109), (425, 39103), (490, 38980), (504, 38926), (506, 38920), (509, 38914), (521, 38869), (536, 38836), (634, 38623), (645, 38590), (656, 38551), (688, 38506), (697, 38488), (701, 38482), (731, 38437), (733, 38431), (747, 38410), (781, 38362), (782, 38359), (803, 38317), (806, 38314), (811, 38299), (840, 38203), (853,

38152), (869, 38089), (892, 38020), (913, 37966),

Gene: Janus167\_40 Start: 30803, Stop: 29415, Start Num: 290

Candidate Starts for Janus167\_40:

(175, 31025), (Start: 290 @30803 has 124 MA's), (382, 30659), (Start: 384 @30653 has 1 MA's), (386, 30650), (439, 30536), (450, 30509), (470, 30449), (487, 30422), (490, 30419), (518, 30323), (533, 30281), (614, 30110), (625, 30089), (634, 30074), (640, 30062), (652, 30014), (695, 29954), (757, 29858), (797, 29795), (823, 29741), (846, 29657), (847, 29651), (850, 29639), (874, 29543), (894, 29489), (895, 29486), (903, 29462),

Gene: JasonD\_45 Start: 31699, Stop: 30293, Start Num: 288

Candidate Starts for JasonD\_45:

(178, 31888), (222, 31798), (224, 31795), (Start: 288 @31699 has 1 MA's), (382, 31552), (Start: 384 @31546 has 1 MA's), (412, 31483), (439, 31429), (450, 31402), (470, 31342), (487, 31315), (490, 31312), (518, 31216), (533, 31174), (611, 31012), (614, 31003), (625, 30982), (632, 30976), (634, 30967), (653, 30904), (678, 30883), (695, 30847), (711, 30823), (758, 30748), (786, 30706), (846, 30550), (847, 30544), (850, 30532), (874, 30436), (886, 30409), (894, 30382),

Gene: JasperRussell\_40 Start: 30803, Stop: 29415, Start Num: 290

Candidate Starts for JasperRussell\_40:

(148, 31100), (175, 31025), (Start: 290 @30803 has 124 MA's), (382, 30659), (Start: 384 @30653 has 1 MA's), (386, 30650), (439, 30536), (450, 30509), (470, 30449), (487, 30422), (490, 30419), (518, 30323), (533, 30281), (614, 30110), (625, 30089), (634, 30074), (652, 30014), (695, 29954), (757, 29858), (797, 29795), (823, 29741), (846, 29657), (847, 29651), (850, 29639), (874, 29543), (894, 29489), (895, 29486), (903, 29462),

Gene: Jellybones\_61 Start: 53432, Stop: 51900, Start Num: 262

Candidate Starts for Jellybones\_61:

(146, 53687), (168, 53636), (191, 53558), (202, 53531), (213, 53501), (Start: 237 @53468 has 2 MA's), (Start: 244 @53459 has 1 MA's), (Start: 262 @53432 has 25 MA's), (336, 53300), (359, 53264), (381, 53222), (390, 53204), (404, 53174), (408, 53162), (414, 53144), (436, 53096), (518, 52868), (521, 52853), (526, 52841), (544, 52811), (567, 52760), (605, 52682), (616, 52658), (623, 52640), (637, 52622), (638, 52619), (641, 52610), (645, 52592), (658, 52550), (682, 52505), (691, 52487), (757, 52370), (764, 52355), (773, 52334), (821, 52277), (831, 52253), (832, 52250), (845, 52193), (846, 52187), (848, 52175), (862, 52124), (868, 52100), (878, 52061), (880, 52049), (882, 52046), (919, 51953), (926, 51938), (932, 51917),

Gene: Jemerald\_42 Start: 31717, Stop: 30299, Start Num: 293

Candidate Starts for Jemerald\_42:

(Start: 293 @31717 has 18 MA's), (Start: 295 @31711 has 21 MA's), (382, 31573), (410, 31510), (439, 31450), (447, 31429), (486, 31342), (487, 31336), (490, 31333), (496, 31312), (509, 31267), (516, 31243), (518, 31237), (533, 31195), (599, 31057), (614, 31024), (627, 31000), (652, 30928), (662, 30901), (682, 30853), (695, 30826), (749, 30739), (757, 30730), (818, 30631), (837, 30559), (840, 30550), (845, 30535), (846, 30529), (874, 30415), (889, 30376), (891, 30370), (903, 30334), (904, 30331),

Gene: Jenos\_44 Start: 32344, Stop: 30941, Start Num: 290

Candidate Starts for Jenos\_44:

(159, 32587), (163, 32578), (178, 32527), (185, 32506), (222, 32437), (Start: 290 @32344 has 124 MA's), (382, 32200), (Start: 384 @32194 has 1 MA's), (412, 32131), (439, 32077), (450, 32050), (470, 31990), (487, 31963), (490, 31960), (518, 31864), (533, 31822), (611, 31660), (614, 31651), (625, 31630), (640, 31603), (653, 31552), (695, 31495), (729, 31441), (757, 31399), (786, 31354), (839, 31222), (846, 31198), (847, 31192), (850, 31180), (874, 31084), (886, 31057), (894, 31030), (918,

30973),

Gene: Jera\_34 Start: 22504, Stop: 23931, Start Num: 258

Candidate Starts for Jera\_34:

(230, 22462), (Start: 258 @22504 has 13 MA's), (428, 22822), (498, 22969), (503, 22990), (506, 22999), (616, 23257), (640, 23305), (645, 23326), (679, 23383), (695, 23416), (718, 23452), (783, 23530), (791, 23551), (831, 23632), (832, 23635), (852, 23722), (856, 23734), (866, 23773), (872, 23809), (875, 23815), (879, 23827), (902, 23890),

Gene: Jerbirus\_42 Start: 30803, Stop: 29415, Start Num: 290

Candidate Starts for Jerbirus\_42:

(46, 31454), (148, 31100), (175, 31025), (Start: 290 @30803 has 124 MA's), (382, 30659), (Start: 384 @30653 has 1 MA's), (386, 30650), (439, 30536), (450, 30509), (470, 30449), (487, 30422), (490, 30419), (518, 30323), (533, 30281), (614, 30110), (625, 30089), (634, 30074), (652, 30014), (695, 29954), (757, 29858), (797, 29795), (823, 29741), (846, 29657), (847, 29651), (850, 29639), (874, 29543), (894, 29489), (895, 29486), (903, 29462),

Gene: JeriBeth\_42 Start: 30666, Stop: 29278, Start Num: 290

Candidate Starts for JeriBeth\_42:

(175, 30888), (Start: 290 @30666 has 124 MA's), (382, 30522), (Start: 384 @30516 has 1 MA's), (386, 30513), (439, 30399), (450, 30372), (470, 30312), (487, 30285), (490, 30282), (518, 30186), (533, 30144), (614, 29973), (625, 29952), (634, 29937), (652, 29877), (695, 29817), (757, 29721), (797, 29658), (823, 29604), (846, 29520), (847, 29514), (850, 29502), (874, 29406), (894, 29352), (895, 29349), (903, 29325),

Gene: Jifall16\_71 Start: 56412, Stop: 54346, Start Num: 36

Candidate Starts for Jifall16\_71:

(2, 56910), (5, 56709), (8, 56616), (9, 56604), (12, 56586), (Start: 36 @56412 has 31 MA's), (Start: 84 @56274 has 2 MA's), (89, 56250), (147, 56046), (168, 56001), (225, 55893), (300, 55779), (301, 55776), (359, 55686), (362, 55683), (402, 55623), (466, 55485), (475, 55467), (488, 55443), (522, 55320), (568, 55215), (640, 55089), (654, 55035), (725, 54909), (729, 54900), (742, 54876), (781, 54804), (783, 54798), (796, 54768), (821, 54711), (837, 54651), (854, 54588), (874, 54507),

Gene: JingleBells\_40 Start: 25290, Stop: 27197, Start Num: 69

Candidate Starts for JingleBells\_40:

(19, 25116), (Start: 69 @25290 has 40 MA's), (88, 25353), (99, 25374), (111, 25428), (128, 25491), (150, 25563), (170, 25605), (192, 25650), (Start: 295 @25824 has 21 MA's), (301, 25833), (359, 25923), (381, 25965), (388, 25980), (468, 26166), (518, 26301), (520, 26313), (539, 26346), (640, 26475), (689, 26592), (837, 26901), (838, 26904), (853, 26964), (875, 27054), (886, 27084), (898, 27126), (922, 27177),

Gene: Jingles\_39 Start: 30570, Stop: 29173, Start Num: 285

Candidate Starts for Jingles\_39:

(200, 30717), (220, 30672), (240, 30642), (Start: 285 @30570 has 5 MA's), (Start: 292 @30558 has 7 MA's), (Start: 295 @30552 has 21 MA's), (309, 30522), (382, 30414), (Start: 384 @30408 has 1 MA's), (386, 30405), (394, 30390), (465, 30213), (470, 30204), (474, 30195), (490, 30174), (500, 30132), (518, 30078), (614, 29865), (625, 29844), (634, 29829), (640, 29817), (644, 29802), (653, 29766), (657, 29757), (678, 29742), (695, 29706), (757, 29607), (797, 29544), (812, 29517), (835, 29442), (837, 29436), (840, 29427), (845, 29412), (846, 29406), (847, 29400), (850, 29388), (886, 29265), (889, 29253),

Gene: Joann\_29 Start: 22094, Stop: 23485, Start Num: 253

Candidate Starts for Joann\_29:

(Start: 253 @22094 has 72 MA's), (305, 22181), (353, 22253), (354, 22256), (390, 22322), (398, 22340), (416, 22373), (450, 22430), (465, 22481), (469, 22487), (470, 22490), (493, 22520), (503, 22556), (512, 22574), (520, 22610), (527, 22631), (538, 22649), (555, 22682), (583, 22721), (596, 22763), (607, 22790), (619, 22814), (637, 22850), (640, 22856), (647, 22889), (652, 22904), (655, 22913), (692, 22958), (705, 22979), (713, 22991), (782, 23075), (791, 23099), (799, 23111), (803, 23117), (810, 23129), (837, 23219), (839, 23225), (844, 23240), (845, 23243), (850, 23267), (852, 23276), (872, 23363), (907, 23453), (918, 23477),

Gene: Johann\_34 Start: 23371, Stop: 24798, Start Num: 258

Candidate Starts for Johann\_34:

(Start: 258 @23371 has 13 MA's), (Start: 384 @23587 has 1 MA's), (428, 23689), (448, 23728), (470, 23791), (498, 23836), (503, 23857), (541, 23956), (616, 24124), (640, 24172), (645, 24193), (652, 24220), (678, 24247), (692, 24277), (695, 24283), (718, 24319), (783, 24397), (822, 24481), (831, 24499), (832, 24502), (852, 24589), (856, 24601), (866, 24640), (872, 24676), (875, 24682), (894, 24733), (902, 24757),

Gene: John316\_62 Start: 53495, Stop: 51963, Start Num: 262

Candidate Starts for John316\_62:

(146, 53750), (168, 53699), (179, 53648), (202, 53594), (213, 53564), (Start: 237 @53531 has 2 MA's), (Start: 244 @53522 has 1 MA's), (Start: 262 @53495 has 25 MA's), (359, 53327), (381, 53285), (404, 53237), (408, 53225), (412, 53213), (414, 53207), (422, 53186), (436, 53159), (518, 52931), (521, 52916), (526, 52904), (544, 52874), (567, 52823), (581, 52796), (605, 52745), (623, 52703), (637, 52685), (638, 52682), (645, 52655), (658, 52613), (682, 52568), (757, 52433), (764, 52418), (773, 52397), (831, 52316), (832, 52313), (845, 52256), (846, 52250), (847, 52244), (848, 52238), (868, 52163), (878, 52124), (880, 52112), (882, 52109), (919, 52016), (926, 52001), (932, 51980),

Gene: Jormungandr\_57 Start: 52602, Stop: 51190, Start Num: 330

Candidate Starts for Jormungandr\_57:

(146, 52950), (191, 52821), (Start: 237 @52731 has 2 MA's), (Start: 330 @52602 has 27 MA's), (359, 52557), (404, 52467), (405, 52464), (407, 52458), (414, 52437), (442, 52374), (485, 52266), (491, 52248), (518, 52161), (521, 52146), (544, 52104), (582, 52023), (605, 51975), (623, 51933), (637, 51915), (638, 51912), (645, 51885), (661, 51834), (682, 51798), (711, 51747), (757, 51663), (767, 51642), (845, 51486), (846, 51480), (848, 51468), (880, 51342), (926, 51228),

Gene: Juanyo\_39 Start: 30553, Stop: 29183, Start Num: 295

Candidate Starts for Juanyo\_39:

(Start: 292 @30556 has 7 MA's), (Start: 295 @30553 has 21 MA's), (Start: 363 @30451 has 1 MA's), (439, 30292), (450, 30265), (470, 30205), (487, 30178), (490, 30175), (514, 30094), (518, 30079), (589, 29923), (614, 29866), (625, 29845), (632, 29839), (634, 29830), (643, 29806), (647, 29785), (652, 29770), (664, 29746), (695, 29710), (729, 29656), (797, 29551), (807, 29539), (820, 29512), (831, 29479), (837, 29443), (840, 29434), (845, 29419), (846, 29413), (847, 29407), (850, 29395), (874, 29299), (877, 29290), (886, 29272), (889, 29260), (903, 29218), (916, 29191),

Gene: Juicer\_42 Start: 31717, Stop: 30299, Start Num: 293

Candidate Starts for Juicer\_42:

(Start: 293 @31717 has 18 MA's), (Start: 295 @31711 has 21 MA's), (382, 31573), (410, 31510), (439, 31450), (447, 31429), (486, 31342), (487, 31336), (490, 31333), (496, 31312), (509, 31267), (516, 31243), (518, 31237), (533, 31195), (599, 31057), (614, 31024), (627, 31000), (652, 30928), (662, 30901), (682, 30853), (695, 30826), (749, 30739), (757, 30730), (818, 30631), (837, 30559), (840, 30550), (845, 30535), (846, 30529), (874, 30415), (889, 30376), (891, 30370), (903, 30334), (904, 30331),

Gene: Jumbo\_57 Start: 53259, Stop: 51742, Start Num: 285

Candidate Starts for Jumbo\_57:

(Start: 285 @53259 has 5 MA's), (343, 53163), (350, 53151), (359, 53136), (425, 53004), (437, 52980), (438, 52977), (448, 52944), (490, 52839), (496, 52818), (517, 52746), (542, 52689), (587, 52587), (605, 52557), (640, 52488), (679, 52395), (688, 52380), (709, 52344), (726, 52311), (742, 52281), (753, 52260), (773, 52218), (777, 52206), (817, 52131), (848, 52014), (857, 51981), (868, 51939), (886, 51873), (928, 51774), (929, 51771),

Gene: Jumboset\_29 Start: 22100, Stop: 23500, Start Num: 253

Candidate Starts for Jumboset\_29:

(Start: 253 @22100 has 72 MA's), (Start: 288 @22163 has 1 MA's), (353, 22268), (354, 22271), (398, 22355), (416, 22388), (447, 22439), (450, 22445), (491, 22526), (492, 22529), (493, 22535), (503, 22571), (512, 22589), (513, 22592), (527, 22646), (555, 22697), (596, 22778), (607, 22805), (621, 22835), (626, 22844), (640, 22871), (647, 22904), (652, 22919), (692, 22973), (705, 22994), (713, 23006), (723, 23018), (839, 23240), (842, 23249), (844, 23255), (852, 23291), (868, 23351), (872, 23378), (907, 23468),

Gene: KSunshine22\_95 Start: 77618, Stop: 79462, Start Num: 63

Candidate Starts for KSunshine22\_95:

(Start: 63 @77618 has 2 MA's), (143, 77891), (204, 77999), (Start: 246 @78065 has 9 MA's), (287, 78134), (Start: 293 @78143 has 18 MA's), (399, 78218), (508, 78527), (519, 78572), (549, 78632), (572, 78677), (638, 78734), (640, 78740), (647, 78773), (651, 78785), (655, 78797), (729, 78914), (732, 78920), (769, 78983), (786, 79022), (796, 79043), (832, 79127), (854, 79220), (860, 79244), (912, 79412), (913, 79415),

Gene: Kabluna\_75 Start: 55961, Stop: 53874, Start Num: 36

Candidate Starts for Kabluna\_75:

(Start: 36 @55961 has 31 MA's), (77, 55841), (Start: 94 @55796 has 1 MA's), (95, 55793), (168, 55538), (225, 55430), (268, 55376), (301, 55313), (359, 55223), (362, 55220), (375, 55196), (402, 55160), (466, 55022), (475, 55004), (482, 54995), (488, 54980), (522, 54857), (551, 54773), (568, 54746), (580, 54722), (640, 54623), (654, 54569), (685, 54515), (708, 54473), (729, 54434), (768, 54365), (781, 54332), (796, 54296), (819, 54251), (821, 54239), (837, 54179), (854, 54116), (901, 53951), (913, 53927),

Gene: Kale\_40 Start: 30818, Stop: 29430, Start Num: 290

Candidate Starts for Kale\_40:

(175, 31040), (Start: 290 @30818 has 124 MA's), (382, 30674), (Start: 384 @30668 has 1 MA's), (386, 30665), (439, 30551), (450, 30524), (470, 30464), (487, 30437), (490, 30434), (518, 30338), (533, 30296), (614, 30125), (625, 30104), (634, 30089), (652, 30029), (695, 29969), (757, 29873), (797, 29810), (823, 29756), (846, 29672), (847, 29666), (850, 29654), (869, 29579), (874, 29558), (894, 29504), (895, 29501), (903, 29477),

Gene: Kalizoi\_29 Start: 22099, Stop: 23499, Start Num: 253

Candidate Starts for Kalizoi\_29:

(Start: 253 @22099 has 72 MA's), (Start: 288 @22162 has 1 MA's), (353, 22267), (354, 22270), (398, 22354), (416, 22387), (447, 22438), (450, 22444), (491, 22525), (492, 22528), (493, 22534), (503, 22570), (512, 22588), (513, 22591), (527, 22645), (555, 22696), (596, 22777), (607, 22804), (621, 22834), (626, 22843), (640, 22870), (647, 22903), (652, 22918), (692, 22972), (705, 22993), (713, 23005), (723, 23017), (839, 23239), (842, 23248), (844, 23254), (852, 23290), (868, 23350), (872, 23377), (907, 23467), (918, 23491), (920, 23494),

Gene: Kampe\_58 Start: 50421, Stop: 48931, Start Num: 282

Candidate Starts for Kampe\_58:

(Start: 282 @50421 has 5 MA's), (336, 50328), (343, 50319), (350, 50307), (359, 50292), (374, 50274), (405, 50217), (430, 50145), (432, 50142), (460, 50049), (476, 50016), (489, 49983), (490, 49980), (496, 49959), (518, 49890), (533, 49854), (574, 49767), (605, 49704), (607, 49701), (620, 49671), (648, 49599), (651, 49590), (726, 49467), (729, 49461), (817, 49329), (832, 49287), (841, 49242), (848, 49212), (928, 48960),

Gene: KandZ\_52 Start: 39857, Stop: 41800, Start Num: 55

Candidate Starts for KandZ\_52:

(39, 39794), (Start: 55 @39857 has 51 MA's), (72, 39884), (Start: 97 @39956 has 1 MA's), (110, 40010), (125, 40070), (131, 40097), (146, 40148), (163, 40190), (181, 40226), (225, 40313), (287, 40406), (297, 40421), (306, 40442), (381, 40544), (399, 40577), (410, 40601), (447, 40661), (482, 40748), (504, 40823), (540, 40913), (568, 40964), (570, 40967), (625, 41057), (640, 41075), (647, 41108), (679, 41174), (689, 41192), (729, 41255), (781, 41339), (831, 41456), (837, 41504), (854, 41567), (874, 41651),

Gene: KannH\_40 Start: 30803, Stop: 29415, Start Num: 290

Candidate Starts for KannH\_40:

(46, 31454), (148, 31100), (175, 31025), (Start: 290 @30803 has 124 MA's), (382, 30659), (Start: 384 @30653 has 1 MA's), (386, 30650), (439, 30536), (450, 30509), (470, 30449), (487, 30422), (490, 30419), (518, 30323), (533, 30281), (614, 30110), (625, 30089), (634, 30074), (652, 30014), (695, 29954), (757, 29858), (797, 29795), (823, 29741), (846, 29657), (847, 29651), (850, 29639), (874, 29543), (894, 29489), (895, 29486), (903, 29462),

Gene: Karate\_39 Start: 25940, Stop: 27847, Start Num: 69

Candidate Starts for Karate\_39:

(19, 25766), (Start: 69 @25940 has 40 MA's), (88, 26003), (99, 26024), (111, 26078), (161, 26240), (170, 26255), (192, 26300), (Start: 295 @26474 has 21 MA's), (301, 26483), (359, 26573), (362, 26576), (388, 26630), (468, 26816), (518, 26951), (520, 26963), (640, 27125), (689, 27242), (838, 27554), (853, 27614), (875, 27704), (886, 27734), (898, 27776), (922, 27827),

Gene: Kaseim\_57 Start: 52137, Stop: 50632, Start Num: 260

Candidate Starts for Kaseim\_57:

(146, 52392), (191, 52263), (Start: 237 @52173 has 2 MA's), (Start: 260 @52137 has 1 MA's), (Start: 330 @52044 has 27 MA's), (359, 51999), (404, 51909), (405, 51906), (407, 51900), (414, 51879), (442, 51816), (485, 51708), (491, 51690), (518, 51603), (521, 51588), (544, 51546), (582, 51465), (605, 51417), (623, 51375), (637, 51357), (638, 51354), (645, 51327), (661, 51276), (682, 51240), (711, 51189), (757, 51105), (767, 51084), (845, 50928), (846, 50922), (848, 50910), (880, 50784), (926, 50670),

Gene: KatChan\_42 Start: 30536, Stop: 29130, Start Num: 293

Candidate Starts for KatChan\_42:

(Start: 293 @30536 has 18 MA's), (306, 30506), (383, 30389), (Start: 384 @30386 has 1 MA's), (386, 30383), (412, 30323), (419, 30302), (439, 30260), (450, 30233), (487, 30146), (490, 30143), (500, 30101), (516, 30050), (589, 29888), (614, 29831), (643, 29771), (645, 29762), (647, 29750), (678, 29711), (691, 29684), (692, 29681), (695, 29675), (749, 29588), (758, 29576), (837, 29408), (840, 29399), (845, 29384), (846, 29378), (847, 29372), (850, 29360), (886, 29237), (893, 29213), (903, 29183),

Gene: Kate\_41 Start: 25943, Stop: 27850, Start Num: 69

Candidate Starts for Kate\_41:

(Start: 69 @25943 has 40 MA's), (88, 26006), (99, 26027), (111, 26081), (170, 26258), (192, 26303), (Start: 295 @26477 has 21 MA's), (301, 26486), (359, 26576), (388, 26633), (468, 26819), (518, 26954), (520, 26966), (539, 26999), (640, 27128), (689, 27245), (744, 27320), (837, 27554), (838,

27557), (853, 27617), (875, 27707), (886, 27737), (898, 27779), (922, 27830),

Gene: Katyusha\_57 Start: 53319, Stop: 51616, Start Num: 171

Candidate Starts for Katyusha\_57:

(Start: 171 @53319 has 6 MA's), (Start: 173 @53307 has 2 MA's), (270, 53124), (Start: 330 @53034 has 27 MA's), (336, 53025), (359, 52989), (374, 52965), (377, 52956), (381, 52947), (404, 52899), (412, 52875), (442, 52803), (443, 52800), (448, 52782), (462, 52743), (509, 52614), (521, 52575), (522, 52572), (533, 52554), (538, 52545), (544, 52533), (564, 52485), (582, 52452), (605, 52404), (616, 52380), (645, 52314), (682, 52215), (736, 52116), (742, 52107), (754, 52083), (757, 52080), (821, 51987), (831, 51963), (832, 51960), (845, 51903), (848, 51885), (878, 51768), (879, 51765), (882, 51753), (926, 51654), (932, 51633),

Gene: Kauala\_39 Start: 30568, Stop: 29171, Start Num: 285

Candidate Starts for Kauala\_39:

(176, 30784), (200, 30715), (204, 30700), (240, 30640), (Start: 285 @30568 has 5 MA's), (Start: 292 @30556 has 7 MA's), (Start: 295 @30550 has 21 MA's), (309, 30520), (382, 30412), (Start: 384 @30406 has 1 MA's), (386, 30403), (394, 30388), (470, 30202), (490, 30172), (500, 30130), (518, 30076), (527, 30043), (614, 29863), (625, 29842), (634, 29827), (640, 29815), (643, 29803), (644, 29800), (653, 29764), (678, 29740), (687, 29722), (695, 29704), (797, 29542), (823, 29488), (835, 29440), (837, 29434), (840, 29425), (845, 29410), (846, 29404), (847, 29398), (850, 29386), (886, 29263), (889, 29251),

Gene: KayGee\_58 Start: 40792, Stop: 39314, Start Num: 242

Candidate Starts for KayGee\_58:

(Start: 242 @40792 has 41 MA's), (286, 40729), (297, 40708), (300, 40702), (Start: 314 @40675 has 1 MA's), (350, 40621), (374, 40585), (380, 40570), (421, 40474), (425, 40465), (436, 40444), (457, 40378), (490, 40342), (504, 40288), (506, 40282), (509, 40276), (536, 40198), (544, 40183), (591, 40084), (624, 40009), (634, 39985), (640, 39973), (645, 39952), (648, 39937), (651, 39928), (659, 39907), (688, 39868), (692, 39859), (701, 39844), (733, 39793), (782, 39721), (803, 39679), (806, 39676), (811, 39661), (840, 39565), (853, 39514), (861, 39484), (869, 39451), (888, 39394), (893, 39379),

Gene: Kharcho\_61 Start: 33998, Stop: 35899, Start Num: 117

Candidate Starts for Kharcho\_61:

(92, 33905), (Start: 117 @33998 has 2 MA's), (137, 34085), (155, 34139), (174, 34190), (189, 34238), (198, 34262), (274, 34388), (279, 34397), (Start: 384 @34583 has 1 MA's), (405, 34625), (467, 34772), (486, 34793), (503, 34850), (513, 34874), (523, 34916), (541, 34952), (601, 35090), (644, 35192), (715, 35318), (729, 35342), (755, 35384), (863, 35669), (878, 35732), (889, 35762), (925, 35843), (929, 35858),

Gene: KidneyBean\_72 Start: 56536, Stop: 54470, Start Num: 36

Candidate Starts for KidneyBean\_72:

(2, 57034), (5, 56833), (8, 56740), (9, 56728), (12, 56710), (Start: 36 @56536 has 31 MA's), (Start: 84 @56398 has 2 MA's), (89, 56374), (147, 56170), (168, 56125), (225, 56017), (300, 55903), (301, 55900), (359, 55810), (362, 55807), (402, 55747), (466, 55609), (475, 55591), (488, 55567), (522, 55444), (568, 55339), (640, 55213), (654, 55159), (725, 55033), (729, 55024), (742, 55000), (781, 54928), (783, 54922), (796, 54892), (821, 54835), (837, 54775), (854, 54712), (874, 54631),

Gene: KimJongPhill\_74 Start: 51796, Stop: 53328, Start Num: 228

Candidate Starts for KimJongPhill\_74:

(105, 51421), (144, 51580), (149, 51595), (190, 51715), (Start: 228 @51796 has 2 MA's), (297, 51910), (300, 51916), (324, 51958), (328, 51964), (Start: 330 @51967 has 27 MA's), (334, 51973), (353, 52000), (368, 52021), (386, 52063), (406, 52105), (413, 52126), (418, 52141), (421, 52147), (422,



52150), (424, 52153), (487, 52294), (490, 52300), (504, 52354), (509, 52366), (516, 52390), (521, 52411), (536, 52444), (569, 52507), (573, 52516), (589, 52558), (637, 52675), (645, 52702), (647, 52714), (651, 52726), (652, 52729), (780, 52912), (791, 52942), (799, 52954), (803, 52960), (815, 52984), (838, 53068), (853, 53125), (858, 53143), (886, 53236), (890, 53251), (898, 53278),

Gene: Kimchi1738\_73 Start: 52700, Stop: 50775, Start Num: 67

Candidate Starts for Kimchi1738\_73:

(30, 52793), (Start: 67 @52700 has 8 MA's), (120, 52529), (133, 52475), (225, 52271), (324, 52115), (359, 52064), (362, 52061), (393, 52019), (472, 51857), (478, 51848), (640, 51491), (647, 51458), (744, 51272), (821, 51119), (839, 51053), (843, 51041), (847, 51023), (854, 50996), (869, 50933), (880, 50900), (903, 50828),

Gene: KingBob\_26 Start: 21732, Stop: 23129, Start Num: 253

Candidate Starts for KingBob\_26:

(Start: 253 @21732 has 72 MA's), (Start: 288 @21792 has 1 MA's), (341, 21879), (353, 21897), (354, 21900), (398, 21984), (400, 21990), (416, 22017), (447, 22068), (450, 22074), (465, 22125), (470, 22134), (491, 22155), (493, 22164), (503, 22200), (513, 22221), (520, 22254), (527, 22275), (538, 22293), (541, 22299), (555, 22326), (566, 22338), (576, 22353), (596, 22407), (619, 22458), (621, 22464), (626, 22473), (632, 22479), (640, 22500), (647, 22533), (652, 22548), (655, 22557), (742, 22680), (782, 22719), (791, 22743), (799, 22755), (837, 22863), (839, 22869), (842, 22878), (844, 22884), (852, 22920), (872, 23007), (907, 23097), (918, 23121),

Gene: KingJulien\_40 Start: 31053, Stop: 29878, Start Num: 412

Candidate Starts for KingJulien\_40:

(147, 31557), (157, 31536), (Start: 290 @31269 has 124 MA's), (382, 31122), (Start: 384 @31116 has 1 MA's), (386, 31113), (412, 31053), (439, 30999), (450, 30972), (470, 30912), (487, 30885), (490, 30882), (518, 30786), (533, 30744), (614, 30573), (625, 30552), (695, 30417), (757, 30321), (823, 30204), (831, 30186), (846, 30120), (847, 30114), (850, 30102), (874, 30006), (894, 29952), (895, 29949), (903, 29925), (917, 29895),

Gene: Kittykat\_25 Start: 20600, Stop: 21994, Start Num: 253

Candidate Starts for Kittykat\_25:

(Start: 253 @20600 has 72 MA's), (Start: 288 @20657 has 1 MA's), (353, 20762), (354, 20765), (398, 20849), (416, 20882), (448, 20936), (450, 20939), (493, 21029), (503, 21065), (513, 21086), (520, 21119), (527, 21140), (596, 21272), (607, 21299), (626, 21338), (640, 21365), (647, 21398), (652, 21413), (655, 21422), (692, 21467), (715, 21503), (782, 21584), (791, 21608), (803, 21626), (810, 21638), (832, 21698), (835, 21722), (837, 21728), (838, 21731), (844, 21749), (845, 21752), (850, 21776), (852, 21785), (872, 21872), (892, 21923), (907, 21962),

Gene: Klimt\_41 Start: 30834, Stop: 29413, Start Num: 290

Candidate Starts for Klimt\_41:

(175, 31056), (Start: 290 @30834 has 124 MA's), (382, 30690), (Start: 384 @30684 has 1 MA's), (386, 30681), (439, 30567), (450, 30540), (470, 30480), (487, 30453), (490, 30450), (518, 30354), (533, 30312), (611, 30150), (614, 30141), (625, 30120), (640, 30093), (647, 30060), (652, 30045), (687, 29970), (695, 29952), (757, 29856), (797, 29793), (823, 29739), (846, 29655), (847, 29649), (850, 29637), (869, 29562), (874, 29541), (894, 29487), (895, 29484), (903, 29460),

Gene: Knox\_41 Start: 31118, Stop: 29730, Start Num: 290

Candidate Starts for Knox\_41:

(46, 31769), (148, 31415), (175, 31340), (Start: 290 @31118 has 124 MA's), (382, 30974), (Start: 384 @30968 has 1 MA's), (386, 30965), (439, 30851), (450, 30824), (470, 30764), (487, 30737), (490, 30734), (518, 30638), (533, 30596), (614, 30425), (625, 30404), (640, 30377), (652, 30329), (695, 30269), (797, 30110), (823, 30056), (846, 29972), (847, 29966), (850, 29954), (874, 29858), (894,

29804), (895, 29801), (903, 29777),

Gene: Koji\_39 Start: 30726, Stop: 29332, Start Num: 292

Candidate Starts for Koji\_39:

(200, 30885), (220, 30840), (240, 30810), (280, 30756), (Start: 285 @30738 has 5 MA's), (Start: 292 @30726 has 7 MA's), (Start: 295 @30720 has 21 MA's), (309, 30690), (382, 30582), (Start: 384 @30576 has 1 MA's), (386, 30573), (394, 30558), (470, 30372), (474, 30363), (490, 30342), (500, 30300), (518, 30246), (614, 30033), (625, 30012), (634, 29997), (640, 29985), (644, 29970), (653, 29934), (678, 29910), (695, 29874), (699, 29868), (757, 29775), (797, 29712), (812, 29685), (835, 29610), (837, 29604), (840, 29595), (845, 29580), (846, 29574), (847, 29568), (850, 29556), (886, 29433), (889, 29421), (919, 29346),

Gene: Konstantine\_65 Start: 46884, Stop: 48941, Start Num: 55

Candidate Starts for Konstantine\_65:

(Start: 55 @46884 has 51 MA's), (81, 46944), (82, 46947), (Start: 109 @47040 has 3 MA's), (112, 47052), (118, 47073), (150, 47196), (151, 47199), (154, 47208), (170, 47241), (174, 47262), (189, 47310), (206, 47352), (252, 47415), (268, 47436), (273, 47442), (300, 47496), (413, 47682), (417, 47694), (425, 47712), (445, 47727), (447, 47733), (568, 48051), (570, 48054), (590, 48099), (635, 48150), (640, 48162), (673, 48252), (679, 48264), (696, 48297), (713, 48321), (718, 48330), (783, 48420), (798, 48453), (836, 48564), (837, 48567), (838, 48570), (839, 48573), (853, 48627), (869, 48693), (874, 48711), (934, 48888),

Gene: Korra\_30 Start: 22105, Stop: 23505, Start Num: 253

Candidate Starts for Korra\_30:

(Start: 253 @22105 has 72 MA's), (Start: 288 @22168 has 1 MA's), (353, 22273), (354, 22276), (398, 22360), (416, 22393), (447, 22444), (450, 22450), (491, 22531), (492, 22534), (493, 22540), (503, 22576), (512, 22594), (513, 22597), (520, 22630), (527, 22651), (555, 22702), (596, 22783), (607, 22810), (621, 22840), (626, 22849), (640, 22876), (647, 22909), (652, 22924), (692, 22978), (705, 22999), (713, 23011), (723, 23023), (803, 23137), (839, 23245), (842, 23254), (844, 23260), (852, 23296), (868, 23356), (872, 23383), (907, 23473),

Gene: Kors\_43 Start: 26688, Stop: 28622, Start Num: 70

Candidate Starts for Kors\_43:

(15, 26448), (Start: 33 @26592 has 1 MA's), (Start: 68 @26682 has 7 MA's), (Start: 70 @26688 has 3 MA's), (111, 26835), (115, 26853), (118, 26862), (170, 27012), (236, 27138), (Start: 295 @27228 has 21 MA's), (301, 27237), (350, 27312), (359, 27327), (381, 27369), (397, 27399), (453, 27531), (520, 27717), (531, 27735), (539, 27750), (568, 27807), (635, 27867), (656, 27939), (734, 28077), (771, 28143), (782, 28173), (819, 28251), (838, 28329), (853, 28389), (875, 28479), (884, 28497), (924, 28605),

Gene: Kovu\_95 Start: 56142, Stop: 57803, Start Num: 182

Candidate Starts for Kovu\_95:

(140, 56019), (153, 56058), (Start: 182 @56142 has 8 MA's), (208, 56202), (266, 56289), (269, 56292), (369, 56463), (375, 56475), (436, 56595), (450, 56631), (456, 56655), (467, 56688), (473, 56700), (495, 56736), (497, 56742), (513, 56790), (523, 56832), (585, 56952), (609, 57015), (622, 57048), (639, 57078), (644, 57099), (652, 57132), (680, 57165), (713, 57222), (729, 57249), (755, 57291), (788, 57348), (803, 57372), (817, 57402), (822, 57420), (832, 57447), (836, 57474), (856, 57549), (863, 57576), (872, 57624), (877, 57636), (886, 57657), (888, 57666), (889, 57669), (898, 57696), (900, 57702), (913, 57729), (926, 57756), (929, 57768), (930, 57771), (932, 57777),

Gene: Krampus\_40 Start: 25943, Stop: 27850, Start Num: 69

Candidate Starts for Krampus\_40:

(19, 25769), (Start: 69 @25943 has 40 MA's), (88, 26006), (99, 26027), (111, 26081), (161, 26243), (170, 26258), (192, 26303), (Start: 295 @26477 has 21 MA's), (301, 26486), (359, 26576), (381, 26618), (388, 26633), (468, 26819), (518, 26954), (520, 26966), (539, 26999), (640, 27128), (689, 27245), (744, 27320), (837, 27554), (838, 27557), (853, 27617), (875, 27707), (886, 27737), (898, 27779), (922, 27830),

Gene: Kurt\_72 Start: 56722, Stop: 54656, Start Num: 36

Candidate Starts for Kurt\_72:

(2, 57220), (5, 57019), (8, 56926), (9, 56914), (12, 56896), (Start: 36 @56722 has 31 MA's), (Start: 84 @56584 has 2 MA's), (89, 56560), (147, 56356), (168, 56311), (225, 56203), (300, 56089), (301, 56086), (359, 55996), (362, 55993), (402, 55933), (466, 55795), (475, 55777), (488, 55753), (522, 55630), (568, 55525), (640, 55399), (654, 55345), (725, 55219), (729, 55210), (742, 55186), (781, 55114), (783, 55108), (796, 55078), (821, 55021), (837, 54961), (854, 54898), (874, 54817),

Gene: Kurt1\_41 Start: 31114, Stop: 29726, Start Num: 290

Candidate Starts for Kurt1\_41:

(46, 31765), (148, 31411), (175, 31336), (Start: 290 @31114 has 124 MA's), (382, 30970), (Start: 384 @30964 has 1 MA's), (386, 30961), (439, 30847), (450, 30820), (470, 30760), (487, 30733), (490, 30730), (518, 30634), (533, 30592), (611, 30430), (614, 30421), (625, 30400), (634, 30385), (640, 30373), (652, 30325), (695, 30265), (757, 30169), (797, 30106), (823, 30052), (846, 29968), (847, 29962), (850, 29950), (874, 29854), (894, 29800), (895, 29797), (903, 29773),

Gene: Kvothe\_56 Start: 53206, Stop: 51515, Start Num: 173

Candidate Starts for Kvothe\_56:

(Start: 171 @53218 has 6 MA's), (Start: 173 @53206 has 2 MA's), (270, 53023), (Start: 330 @52933 has 27 MA's), (336, 52924), (359, 52888), (374, 52864), (377, 52855), (381, 52846), (404, 52798), (412, 52774), (442, 52702), (448, 52681), (461, 52645), (462, 52642), (509, 52513), (512, 52510), (521, 52474), (522, 52471), (533, 52453), (538, 52444), (544, 52432), (564, 52384), (582, 52351), (605, 52303), (616, 52279), (645, 52213), (682, 52114), (736, 52015), (742, 52006), (754, 51982), (757, 51979), (821, 51886), (831, 51862), (832, 51859), (845, 51802), (848, 51784), (878, 51667), (879, 51664), (882, 51652), (926, 51553), (932, 51532),

Gene: Labelle\_76 Start: 49171, Stop: 51204, Start Num: 59

Candidate Starts for Labelle\_76:

(Start: 59 @49171 has 3 MA's), (72, 49195), (93, 49258), (111, 49324), (123, 49375), (124, 49378), (154, 49486), (170, 49519), (189, 49558), (201, 49582), (236, 49645), (252, 49663), (254, 49666), (268, 49684), (273, 49690), (306, 49759), (324, 49786), (335, 49798), (367, 49831), (413, 49933), (472, 50056), (488, 50086), (518, 50191), (522, 50209), (565, 50299), (568, 50302), (606, 50404), (622, 50443), (635, 50470), (640, 50482), (652, 50530), (663, 50548), (673, 50575), (679, 50587), (685, 50596), (783, 50734), (805, 50779), (836, 50884), (869, 51013), (880, 51046), (886, 51064), (903, 51118), (922, 51157),

Gene: Lahirium\_57 Start: 53124, Stop: 51712, Start Num: 330

Candidate Starts for Lahirium\_57:

(146, 53472), (191, 53343), (Start: 237 @53253 has 2 MA's), (Start: 330 @53124 has 27 MA's), (359, 53079), (404, 52989), (405, 52986), (407, 52980), (414, 52959), (442, 52896), (485, 52788), (491, 52770), (518, 52683), (521, 52668), (544, 52626), (582, 52545), (605, 52497), (623, 52455), (637, 52437), (638, 52434), (645, 52407), (661, 52356), (682, 52320), (711, 52269), (757, 52185), (767, 52164), (845, 52008), (846, 52002), (848, 51990), (880, 51864), (926, 51750),

Gene: Lakshmi\_29 Start: 22120, Stop: 23511, Start Num: 253

Candidate Starts for Lakshmi\_29:

(Start: 253 @22120 has 72 MA's), (305, 22207), (353, 22279), (354, 22282), (388, 22345), (390, 22348), (398, 22366), (400, 22372), (416, 22399), (450, 22456), (465, 22507), (469, 22513), (470, 22516), (493, 22546), (503, 22582), (512, 22600), (520, 22636), (527, 22657), (538, 22675), (555, 22708), (583, 22747), (596, 22789), (607, 22816), (619, 22840), (637, 22876), (640, 22882), (647, 22915), (652, 22930), (655, 22939), (692, 22984), (713, 23017), (715, 23020), (783, 23104), (791, 23125), (799, 23137), (810, 23155), (837, 23245), (844, 23266), (845, 23269), (850, 23293), (852, 23302), (872, 23389), (892, 23440), (907, 23479), (918, 23503),

Gene: Lambo\_58 Start: 40249, Stop: 42159, Start Num: 55

Candidate Starts for Lambo\_58:

(Start: 54 @40246 has 11 MA's), (Start: 55 @40249 has 51 MA's), (Start: 69 @40261 has 40 MA's), (83, 40309), (96, 40342), (145, 40528), (150, 40543), (181, 40609), (225, 40696), (252, 40729), (302, 40810), (306, 40819), (312, 40828), (417, 41002), (419, 41008), (445, 41035), (482, 41128), (490, 41149), (492, 41155), (496, 41170), (500, 41191), (518, 41248), (522, 41266), (540, 41302), (561, 41344), (590, 41404), (647, 41500), (648, 41503), (791, 41731), (831, 41821), (837, 41857), (839, 41863), (853, 41917), (864, 41956), (892, 42058), (897, 42073), (904, 42094),

Gene: Laroye\_95 Start: 55108, Stop: 56772, Start Num: 182

Candidate Starts for Laroye\_95:

(Start: 182 @55108 has 8 MA's), (208, 55171), (Start: 248 @55231 has 3 MA's), (274, 55267), (Start: 294 @55312 has 1 MA's), (369, 55432), (416, 55525), (426, 55549), (436, 55561), (455, 55615), (473, 55666), (495, 55702), (502, 55729), (513, 55756), (523, 55798), (585, 55915), (615, 55993), (622, 56011), (644, 56062), (652, 56095), (680, 56128), (713, 56185), (729, 56212), (755, 56254), (788, 56311), (803, 56335), (817, 56365), (822, 56383), (832, 56410), (856, 56512), (863, 56539), (866, 56551), (886, 56620), (888, 56629), (889, 56632), (898, 56659), (900, 56665), (919, 56701), (926, 56716), (930, 56731), (933, 56752),

Gene: Lauer\_52 Start: 41675, Stop: 40197, Start Num: 242

Candidate Starts for Lauer\_52:

(Start: 242 @41675 has 41 MA's), (286, 41612), (300, 41585), (Start: 314 @41558 has 1 MA's), (350, 41504), (366, 41483), (380, 41453), (425, 41348), (436, 41327), (457, 41261), (490, 41225), (504, 41171), (506, 41165), (509, 41159), (536, 41081), (544, 41066), (591, 40967), (624, 40892), (634, 40868), (640, 40856), (645, 40835), (648, 40820), (651, 40811), (659, 40790), (688, 40751), (692, 40742), (733, 40676), (782, 40604), (803, 40562), (806, 40559), (811, 40544), (840, 40448), (853, 40397), (861, 40367), (869, 40334), (888, 40277), (893, 40262),

Gene: LazerLemon\_42 Start: 31529, Stop: 32923, Start Num: 261

Candidate Starts for LazerLemon\_42:

(203, 31445), (Start: 261 @31529 has 12 MA's), (281, 31562), (303, 31607), (316, 31631), (343, 31661), (345, 31664), (353, 31676), (405, 31766), (418, 31790), (470, 31901), (506, 31976), (520, 32021), (544, 32072), (547, 32075), (553, 32096), (616, 32237), (632, 32264), (640, 32285), (645, 32306), (679, 32363), (692, 32390), (695, 32396), (701, 32405), (727, 32447), (782, 32513), (783, 32516), (791, 32537), (803, 32555), (811, 32573), (832, 32627), (852, 32714), (853, 32717), (866, 32765), (874, 32804), (879, 32819), (905, 32888), (914, 32906), (918, 32915),

Gene: Leafus\_40 Start: 31402, Stop: 30011, Start Num: 290

Candidate Starts for Leafus\_40:

(216, 31516), (277, 31432), (Start: 290 @31402 has 124 MA's), (382, 31255), (Start: 384 @31249 has 1 MA's), (386, 31246), (439, 31132), (450, 31105), (470, 31045), (487, 31018), (490, 31015), (518, 30919), (533, 30877), (614, 30706), (625, 30685), (640, 30658), (695, 30550), (757, 30454), (823, 30337), (831, 30319), (846, 30253), (847, 30247), (850, 30235), (874, 30139), (894, 30085), (895, 30082), (903, 30058), (917, 30028),

Gene: Lederberg\_45 Start: 37131, Stop: 38507, Start Num: 275

Candidate Starts for Lederberg\_45:

(Start: 275 @37131 has 7 MA's), (315, 37200), (326, 37218), (389, 37311), (423, 37371), (427, 37377), (428, 37380), (487, 37500), (494, 37518), (529, 37635), (593, 37773), (610, 37812), (626, 37845), (632, 37851), (637, 37866), (647, 37905), (687, 37965), (699, 37989), (735, 38025), (789, 38094), (793, 38100), (832, 38181), (854, 38277), (857, 38289), (860, 38301), (872, 38358), (875, 38364), (879, 38376), (889, 38406), (909, 38457),

Gene: LeoJr\_100 Start: 80857, Stop: 82713, Start Num: 63

Candidate Starts for LeoJr\_100:

(Start: 63 @80857 has 2 MA's), (143, 81130), (204, 81235), (281, 81358), (287, 81370), (Start: 293 @81379 has 18 MA's), (408, 81475), (433, 81550), (453, 81610), (508, 81763), (519, 81808), (549, 81868), (572, 81913), (638, 81970), (640, 81976), (647, 82009), (651, 82021), (655, 82033), (729, 82150), (731, 82153), (766, 82210), (782, 82246), (786, 82258), (796, 82279), (832, 82363), (854, 82456), (860, 82480), (912, 82648), (913, 82651),

Gene: Leopard\_64 Start: 46071, Stop: 48014, Start Num: 55

Candidate Starts for Leopard\_64:

(Start: 55 @46071 has 51 MA's), (71, 46092), (80, 46122), (Start: 109 @46221 has 3 MA's), (125, 46284), (145, 46356), (147, 46365), (170, 46413), (331, 46686), (333, 46689), (418, 46851), (447, 46887), (472, 46959), (478, 46968), (492, 47001), (508, 47058), (512, 47070), (540, 47139), (546, 47148), (552, 47166), (568, 47190), (635, 47286), (640, 47298), (647, 47331), (670, 47373), (700, 47436), (772, 47541), (847, 47757), (853, 47781), (854, 47784), (865, 47826), (871, 47856), (880, 47880), (927, 47997),

Gene: LiSara\_92 Start: 55240, Stop: 56904, Start Num: 182

Candidate Starts for LiSara\_92:

(Start: 182 @55240 has 8 MA's), (208, 55303), (Start: 248 @55363 has 3 MA's), (274, 55399), (Start: 294 @55444 has 1 MA's), (369, 55564), (416, 55657), (426, 55681), (436, 55693), (455, 55747), (473, 55798), (495, 55834), (502, 55861), (513, 55888), (523, 55930), (585, 56047), (615, 56125), (622, 56143), (644, 56194), (652, 56227), (680, 56260), (713, 56317), (729, 56344), (755, 56386), (788, 56443), (803, 56467), (817, 56497), (822, 56515), (832, 56542), (856, 56644), (863, 56671), (866, 56683), (886, 56752), (888, 56761), (898, 56791), (900, 56797), (919, 56833), (926, 56848), (930, 56863), (933, 56884),

Gene: Librie\_40 Start: 29071, Stop: 27644, Start Num: 293

Candidate Starts for Librie\_40:

(Start: 293 @29071 has 18 MA's), (306, 29041), (309, 29035), (Start: 384 @28921 has 1 MA's), (386, 28918), (487, 28681), (490, 28678), (589, 28423), (612, 28372), (614, 28366), (640, 28318), (647, 28285), (652, 28270), (682, 28198), (695, 28171), (701, 28162), (729, 28117), (732, 28111), (749, 28084), (797, 28012), (831, 27940), (837, 27904), (840, 27895), (845, 27880), (846, 27874), (850, 27856), (861, 27814), (877, 27751), (899, 27688), (903, 27679),

Gene: Lidong\_57 Start: 52859, Stop: 51447, Start Num: 330

Candidate Starts for Lidong\_57:

(146, 53207), (191, 53078), (Start: 237 @52988 has 2 MA's), (Start: 330 @52859 has 27 MA's), (359, 52814), (404, 52724), (405, 52721), (407, 52715), (414, 52694), (442, 52631), (470, 52553), (485, 52523), (491, 52505), (518, 52418), (521, 52403), (544, 52361), (582, 52280), (605, 52232), (623, 52190), (637, 52172), (638, 52169), (645, 52142), (661, 52091), (682, 52055), (711, 52004), (757, 51920), (767, 51899), (845, 51743), (846, 51737), (848, 51725), (880, 51599), (926, 51485),

Gene: LilStuart\_25 Start: 20568, Stop: 21962, Start Num: 253

Candidate Starts for LilStuart\_25:

(Start: 253 @20568 has 72 MA's), (Start: 288 @20625 has 1 MA's), (353, 20730), (354, 20733), (398, 20817), (416, 20850), (447, 20901), (450, 20907), (491, 20988), (492, 20991), (493, 20997), (503, 21033), (512, 21051), (513, 21054), (520, 21087), (527, 21108), (596, 21240), (607, 21267), (626, 21306), (637, 21327), (640, 21333), (647, 21366), (652, 21381), (655, 21390), (692, 21435), (715, 21471), (742, 21513), (791, 21576), (803, 21594), (837, 21696), (838, 21699), (844, 21717), (845, 21720), (850, 21744), (852, 21753), (872, 21840), (907, 21930), (918, 21954), (920, 21957),

Gene: LilTerminator\_40 Start: 29093, Stop: 27666, Start Num: 293

Candidate Starts for LilTerminator\_40:

(Start: 293 @29093 has 18 MA's), (306, 29063), (309, 29057), (Start: 384 @28943 has 1 MA's), (386, 28940), (388, 28937), (447, 28796), (487, 28703), (490, 28700), (589, 28445), (612, 28394), (614, 28388), (640, 28340), (643, 28328), (647, 28307), (695, 28193), (701, 28184), (729, 28139), (732, 28133), (749, 28106), (797, 28034), (831, 27962), (837, 27926), (840, 27917), (845, 27902), (846, 27896), (850, 27878), (861, 27836), (877, 27773), (903, 27701),

Gene: Lila22\_61 Start: 41200, Stop: 43113, Start Num: 55

Candidate Starts for Lila22\_61:

(Start: 54 @41197 has 11 MA's), (Start: 55 @41200 has 51 MA's), (Start: 69 @41212 has 40 MA's), (83, 41260), (96, 41293), (145, 41479), (150, 41494), (181, 41560), (225, 41647), (251, 41677), (252, 41680), (Start: 293 @41743 has 18 MA's), (302, 41761), (306, 41770), (352, 41833), (370, 41860), (445, 41989), (453, 42013), (466, 42055), (490, 42103), (496, 42124), (500, 42145), (518, 42202), (540, 42256), (561, 42298), (590, 42358), (647, 42454), (648, 42457), (760, 42634), (791, 42685), (831, 42775), (837, 42811), (839, 42817), (853, 42871), (864, 42910), (892, 43012), (897, 43027), (904, 43048),

Gene: LilyPad\_52 Start: 37853, Stop: 39895, Start Num: 69

Candidate Starts for LilyPad\_52:

(Start: 69 @37853 has 40 MA's), (113, 38006), (127, 38066), (170, 38180), (181, 38204), (223, 38288), (252, 38324), (370, 38492), (373, 38498), (381, 38519), (424, 38606), (482, 38717), (496, 38759), (500, 38780), (522, 38855), (568, 38939), (577, 38960), (586, 38975), (606, 39020), (608, 39023), (613, 39035), (615, 39041), (617, 39044), (628, 39077), (634, 39131), (642, 39152), (647, 39182), (651, 39194), (665, 39227), (696, 39296), (725, 39353), (751, 39401), (781, 39446), (791, 39473), (843, 39620), (858, 39680), (869, 39728), (874, 39749), (893, 39806), (898, 39824), (904, 39839), (925, 39881),

Gene: Linayshia\_33 Start: 23433, Stop: 24860, Start Num: 256

Candidate Starts for Linayshia\_33:

(227, 23391), (Start: 256 @23433 has 3 MA's), (448, 23790), (470, 23853), (498, 23898), (503, 23919), (616, 24186), (640, 24234), (645, 24255), (652, 24282), (678, 24309), (679, 24312), (692, 24339), (695, 24345), (718, 24381), (783, 24459), (791, 24480), (803, 24498), (810, 24510), (837, 24594), (852, 24651), (856, 24663), (866, 24702), (872, 24738), (875, 24744),

Gene: Linetti\_59 Start: 53022, Stop: 51613, Start Num: 330

Candidate Starts for Linetti\_59:

(146, 53400), (168, 53349), (179, 53298), (202, 53244), (213, 53214), (Start: 237 @53181 has 2 MA's), (Start: 244 @53172 has 1 MA's), (Start: 262 @53145 has 25 MA's), (Start: 330 @53022 has 27 MA's), (359, 52977), (381, 52935), (404, 52887), (405, 52884), (407, 52878), (408, 52875), (412, 52863), (414, 52857), (427, 52821), (436, 52809), (437, 52806), (485, 52686), (491, 52668), (509, 52605), (518, 52581), (521, 52566), (544, 52524), (581, 52446), (605, 52395), (637, 52335), (638, 52332), (641, 52323), (645, 52305), (658, 52263), (682, 52218), (757, 52083), (764, 52068), (773, 52047), (831, 51966), (832, 51963), (845, 51906), (846, 51900), (848, 51888), (862, 51837), (866, 51822), (868, 51813), (878, 51774), (880, 51762), (919, 51666), (926, 51651),

Gene: Litotes\_29 Start: 22115, Stop: 23509, Start Num: 253

Candidate Starts for Litotes\_29:

(Start: 253 @22115 has 72 MA's), (Start: 288 @22172 has 1 MA's), (353, 22277), (398, 22364), (448, 22451), (450, 22454), (493, 22544), (503, 22580), (506, 22589), (512, 22598), (527, 22655), (538, 22673), (555, 22706), (566, 22718), (596, 22787), (607, 22814), (619, 22838), (640, 22880), (647, 22913), (652, 22928), (655, 22937), (723, 23027), (781, 23096), (791, 23123), (803, 23141), (810, 23153), (837, 23243), (839, 23249), (842, 23258), (844, 23264), (852, 23300), (872, 23387), (892, 23438), (894, 23444), (907, 23477), (918, 23501),

Gene: LittleFella\_57 Start: 39855, Stop: 41873, Start Num: 66

Candidate Starts for LittleFella\_57:

(Start: 66 @39855 has 1 MA's), (121, 40053), (124, 40062), (125, 40065), (132, 40095), (145, 40137), (147, 40146), (183, 40224), (190, 40236), (225, 40305), (252, 40338), (254, 40341), (373, 40521), (410, 40602), (424, 40629), (478, 40734), (496, 40776), (500, 40797), (568, 40956), (580, 40980), (606, 41037), (608, 41040), (615, 41058), (629, 41097), (638, 41157), (642, 41169), (645, 41187), (647, 41199), (654, 41220), (702, 41307), (712, 41310), (713, 41313), (751, 41379), (781, 41424), (791, 41451), (831, 41544), (847, 41619), (849, 41631), (853, 41643), (856, 41652), (858, 41661), (869, 41709), (874, 41727), (893, 41784), (904, 41817), (926, 41856),

Gene: Lizz\_70 Start: 50158, Stop: 48272, Start Num: 53

Candidate Starts for Lizz\_70:

(37, 50218), (Start: 53 @50158 has 8 MA's), (Start: 69 @50143 has 40 MA's), (88, 50080), (93, 50071), (99, 50059), (122, 49966), (138, 49903), (145, 49885), (170, 49828), (181, 49804), (276, 49645), (Start: 295 @49606 has 21 MA's), (301, 49597), (370, 49489), (422, 49381), (466, 49276), (503, 49177), (520, 49117), (565, 49030), (568, 49027), (647, 48922), (650, 48913), (654, 48901), (710, 48802), (791, 48685), (798, 48673), (811, 48646), (838, 48556), (843, 48541), (856, 48487), (869, 48430), (913, 48304),

Gene: Lizzo\_59 Start: 52326, Stop: 50794, Start Num: 262

Candidate Starts for Lizzo\_59:

(146, 52581), (168, 52530), (179, 52479), (202, 52425), (213, 52395), (Start: 237 @52362 has 2 MA's), (Start: 244 @52353 has 1 MA's), (Start: 262 @52326 has 25 MA's), (359, 52158), (381, 52116), (404, 52068), (408, 52056), (412, 52044), (414, 52038), (422, 52017), (436, 51990), (491, 51849), (518, 51762), (521, 51747), (526, 51735), (544, 51705), (567, 51654), (581, 51627), (605, 51576), (616, 51552), (623, 51534), (637, 51516), (638, 51513), (645, 51486), (658, 51444), (682, 51399), (757, 51264), (764, 51249), (773, 51228), (821, 51171), (831, 51147), (845, 51087), (846, 51081), (847, 51075), (848, 51069), (862, 51018), (868, 50994), (878, 50955), (880, 50943), (882, 50940), (919, 50847), (926, 50832), (932, 50811),

Gene: Lollipop1437\_76 Start: 57598, Stop: 55541, Start Num: 36

Candidate Starts for Lollipop1437\_76:

(6, 57886), (10, 57778), (Start: 36 @57598 has 31 MA's), (154, 57223), (206, 57115), (226, 57082), (268, 57031), (300, 56971), (301, 56968), (348, 56896), (359, 56878), (402, 56815), (405, 56809), (415, 56782), (454, 56716), (466, 56677), (475, 56659), (488, 56635), (522, 56512), (535, 56479), (568, 56416), (640, 56293), (668, 56224), (673, 56206), (729, 56101), (733, 56092), (768, 56032), (783, 55993), (796, 55963), (821, 55906), (837, 55846), (846, 55816), (854, 55783), (901, 55618),

Gene: LordBart\_42 Start: 26597, Stop: 28531, Start Num: 70

Candidate Starts for LordBart\_42:

(15, 26357), (Start: 33 @26501 has 1 MA's), (Start: 68 @26591 has 7 MA's), (Start: 70 @26597 has 3 MA's), (111, 26744), (115, 26762), (170, 26921), (Start: 295 @27137 has 21 MA's), (301, 27146), (359, 27236), (381, 27278), (397, 27308), (453, 27440), (520, 27626), (531, 27644), (539, 27659), (568, 27716), (635, 27776), (656, 27848), (734, 27986), (771, 28052), (782, 28082), (783, 28085), (819,

28160), (838, 28238), (853, 28298), (875, 28388), (884, 28406),

Gene: Lovelyunicorn\_41 Start: 31119, Stop: 29731, Start Num: 290

Candidate Starts for Lovelyunicorn\_41:

(46, 31770), (148, 31416), (175, 31341), (Start: 290 @31119 has 124 MA's), (382, 30975), (Start: 384 @30969 has 1 MA's), (386, 30966), (439, 30852), (450, 30825), (470, 30765), (487, 30738), (490, 30735), (518, 30639), (533, 30597), (614, 30426), (625, 30405), (640, 30378), (652, 30330), (695, 30270), (797, 30111), (823, 30057), (846, 29973), (847, 29967), (850, 29955), (874, 29859), (894, 29805), (895, 29802), (903, 29778),

Gene: Lucky3\_39 Start: 30647, Stop: 29256, Start Num: 292

Candidate Starts for Lucky3\_39:

(Start: 292 @30647 has 7 MA's), (Start: 295 @30644 has 21 MA's), (309, 30614), (382, 30506), (386, 30497), (410, 30443), (447, 30362), (470, 30296), (490, 30266), (501, 30221), (518, 30170), (611, 29966), (614, 29957), (634, 29918), (640, 29906), (643, 29894), (644, 29891), (653, 29855), (657, 29846), (678, 29831), (695, 29795), (703, 29783), (711, 29771), (757, 29696), (797, 29636), (837, 29528), (840, 29519), (845, 29504), (846, 29498), (847, 29492), (919, 29270),

Gene: LuckyBarnes\_64 Start: 49560, Stop: 48223, Start Num: 308

Candidate Starts for LuckyBarnes\_64:

(233, 49698), (Start: 275 @49635 has 7 MA's), (Start: 308 @49560 has 1 MA's), (358, 49485), (364, 49479), (379, 49449), (401, 49401), (413, 49383), (429, 49344), (454, 49290), (492, 49221), (514, 49149), (536, 49083), (575, 49002), (610, 48915), (619, 48897), (621, 48891), (626, 48882), (652, 48807), (701, 48735), (763, 48648), (781, 48633), (789, 48609), (791, 48606), (793, 48603), (865, 48384), (872, 48345), (875, 48342), (889, 48300), (900, 48264),

Gene: LuckyLeo\_57 Start: 40044, Stop: 41966, Start Num: 54

Candidate Starts for LuckyLeo\_57:

(21, 39927), (24, 39948), (29, 39969), (43, 39999), (48, 40032), (Start: 54 @40044 has 11 MA's), (Start: 55 @40047 has 51 MA's), (Start: 69 @40062 has 40 MA's), (74, 40077), (83, 40110), (96, 40143), (98, 40146), (Start: 109 @40194 has 3 MA's), (113, 40212), (135, 40302), (142, 40320), (145, 40329), (147, 40338), (181, 40410), (252, 40530), (254, 40533), (Start: 293 @40593 has 18 MA's), (302, 40611), (352, 40683), (370, 40710), (447, 40845), (453, 40863), (466, 40905), (478, 40926), (482, 40932), (496, 40974), (500, 40995), (508, 41016), (518, 41052), (561, 41151), (565, 41160), (590, 41211), (647, 41307), (648, 41310), (724, 41421), (760, 41487), (781, 41511), (791, 41538), (848, 41706), (853, 41724), (859, 41748), (864, 41763), (865, 41769), (874, 41811), (880, 41826), (892, 41865), (897, 41880), (904, 41901), (930, 41958),

Gene: LuckySocke\_124 Start: 67230, Stop: 68801, Start Num: 255

Candidate Starts for LuckySocke\_124:

(Start: 255 @67230 has 4 MA's), (299, 67311), (310, 67335), (354, 67401), (396, 67482), (421, 67548), (452, 67614), (453, 67623), (491, 67701), (504, 67752), (539, 67854), (549, 67875), (550, 67878), (579, 67929), (584, 67938), (587, 67953), (591, 67965), (617, 68013), (622, 68028), (761, 68298), (774, 68310), (781, 68334), (822, 68421), (847, 68514), (849, 68526), (853, 68538), (881, 68646), (886, 68658), (904, 68715), (910, 68727), (913, 68733), (932, 68781),

Gene: Lucy\_25 Start: 20556, Stop: 21950, Start Num: 253

Candidate Starts for Lucy\_25:

(Start: 253 @20556 has 72 MA's), (Start: 288 @20613 has 1 MA's), (353, 20718), (354, 20721), (398, 20805), (416, 20838), (450, 20895), (491, 20976), (492, 20979), (493, 20985), (503, 21021), (512, 21039), (513, 21042), (520, 21075), (527, 21096), (555, 21147), (596, 21228), (607, 21255), (626, 21294), (637, 21315), (640, 21321), (647, 21354), (652, 21369), (679, 21396), (692, 21423), (715, 21459), (791, 21564), (803, 21582), (837, 21684), (838, 21687), (844, 21705), (845, 21708), (850,



21732), (852, 21741), (872, 21828), (892, 21879), (893, 21882), (907, 21918), (918, 21942),

Gene: Ludgate\_41 Start: 31117, Stop: 29729, Start Num: 290

Candidate Starts for Ludgate\_41:

(175, 31339), (Start: 290 @31117 has 124 MA's), (382, 30973), (Start: 384 @30967 has 1 MA's), (386, 30964), (439, 30850), (450, 30823), (470, 30763), (487, 30736), (490, 30733), (518, 30637), (533, 30595), (614, 30424), (625, 30403), (634, 30388), (640, 30376), (652, 30328), (695, 30268), (757, 30172), (797, 30109), (823, 30055), (846, 29971), (847, 29965), (850, 29953), (869, 29878), (874, 29857), (894, 29803), (895, 29800), (903, 29776),

Gene: Luker\_58 Start: 53170, Stop: 51665, Start Num: 260

Candidate Starts for Luker\_58:

(146, 53425), (191, 53296), (Start: 237 @53206 has 2 MA's), (Start: 260 @53170 has 1 MA's), (Start: 330 @53077 has 27 MA's), (359, 53032), (404, 52942), (405, 52939), (407, 52933), (414, 52912), (442, 52849), (485, 52741), (491, 52723), (518, 52636), (521, 52621), (544, 52579), (582, 52498), (605, 52450), (623, 52408), (637, 52390), (638, 52387), (645, 52360), (661, 52309), (682, 52273), (711, 52222), (757, 52138), (767, 52117), (845, 51961), (846, 51955), (848, 51943), (880, 51817), (926, 51703),

Gene: Luna18\_42 Start: 30536, Stop: 29130, Start Num: 293

Candidate Starts for Luna18\_42:

(Start: 293 @30536 has 18 MA's), (306, 30506), (383, 30389), (Start: 384 @30386 has 1 MA's), (386, 30383), (412, 30323), (419, 30302), (439, 30260), (450, 30233), (487, 30146), (490, 30143), (500, 30101), (516, 30050), (589, 29888), (614, 29831), (643, 29771), (645, 29762), (647, 29750), (678, 29711), (691, 29684), (692, 29681), (695, 29675), (749, 29588), (758, 29576), (837, 29408), (840, 29399), (845, 29384), (846, 29378), (847, 29372), (850, 29360), (886, 29237), (893, 29213), (903, 29183),

Gene: MAnor\_58 Start: 41147, Stop: 39669, Start Num: 242

Candidate Starts for MAnor\_58:

(Start: 221 @41174 has 1 MA's), (Start: 242 @41147 has 41 MA's), (286, 41084), (300, 41057), (Start: 314 @41030 has 1 MA's), (350, 40976), (366, 40955), (368, 40952), (374, 40940), (380, 40925), (Start: 384 @40913 has 1 MA's), (425, 40820), (490, 40697), (504, 40643), (506, 40637), (509, 40631), (536, 40553), (544, 40538), (591, 40439), (632, 40349), (634, 40340), (640, 40328), (645, 40307), (648, 40292), (651, 40283), (659, 40262), (688, 40223), (692, 40214), (701, 40199), (729, 40157), (781, 40079), (782, 40076), (803, 40034), (811, 40016), (840, 39920), (853, 39869), (861, 39839), (869, 39806), (888, 39749), (893, 39734),

Gene: MCubed\_40 Start: 30968, Stop: 29556, Start Num: 295

Candidate Starts for MCubed\_40:

(Start: 292 @30971 has 7 MA's), (Start: 295 @30968 has 21 MA's), (309, 30938), (Start: 314 @30932 has 1 MA's), (337, 30899), (439, 30707), (450, 30680), (470, 30620), (487, 30593), (490, 30590), (500, 30548), (518, 30494), (533, 30452), (589, 30338), (614, 30281), (625, 30260), (634, 30245), (640, 30233), (643, 30221), (644, 30218), (647, 30200), (678, 30119), (695, 30083), (729, 30029), (754, 29987), (781, 29957), (786, 29942), (791, 29933), (795, 29927), (820, 29885), (837, 29816), (845, 29792), (846, 29786), (847, 29780), (850, 29768), (874, 29672), (877, 29663), (886, 29645), (889, 29633), (891, 29627), (904, 29588),

Gene: MScarn\_57 Start: 38763, Stop: 37285, Start Num: 242

Candidate Starts for MScarn\_57:

(Start: 242 @38763 has 41 MA's), (297, 38676), (300, 38670), (Start: 330 @38619 has 27 MA's), (366, 38568), (374, 38553), (412, 38469), (421, 38445), (425, 38436), (490, 38313), (504, 38259), (506, 38253), (509, 38247), (536, 38169), (591, 38055), (602, 38028), (614, 38004), (645, 37923), (651,

37899), (659, 37878), (688, 37839), (697, 37821), (701, 37815), (780, 37704), (782, 37698), (803, 37656), (811, 37638), (837, 37551), (840, 37542), (846, 37521), (853, 37491), (861, 37461), (869, 37428), (889, 37368), (898, 37338),

Gene: MaVan\_49 Start: 37938, Stop: 36448, Start Num: 242

Candidate Starts for MaVan\_49:

(Start: 242 @37938 has 41 MA's), (300, 37848), (Start: 314 @37821 has 1 MA's), (343, 37779), (374, 37731), (Start: 384 @37704 has 1 MA's), (421, 37623), (422, 37620), (425, 37614), (436, 37593), (457, 37527), (504, 37437), (509, 37425), (527, 37362), (536, 37347), (544, 37332), (599, 37215), (602, 37206), (637, 37128), (645, 37101), (647, 37089), (651, 37077), (678, 37038), (688, 37017), (690, 37014), (697, 36999), (733, 36927), (781, 36858), (803, 36813), (822, 36768), (828, 36753), (834, 36723), (840, 36699), (853, 36648), (861, 36618), (878, 36552), (888, 36528), (898, 36495), (915, 36459),

Gene: MacGully\_81 Start: 56374, Stop: 54335, Start Num: 40

Candidate Starts for MacGully\_81:

(Start: 40 @56374 has 1 MA's), (60, 56305), (64, 56299), (170, 55975), (183, 55951), (225, 55870), (226, 55867), (Start: 295 @55765 has 21 MA's), (300, 55756), (316, 55726), (359, 55660), (406, 55588), (447, 55519), (472, 55447), (496, 55390), (568, 55210), (580, 55186), (618, 55123), (640, 55087), (668, 55018), (670, 55012), (673, 55000), (768, 54826), (846, 54604), (854, 54571), (865, 54529), (871, 54499), (874, 54490), (885, 54466), (886, 54457), (898, 54415),

Gene: Maco6\_48 Start: 38222, Stop: 36711, Start Num: 217

Candidate Starts for Maco6\_48:

(Start: 217 @38222 has 2 MA's), (245, 38186), (298, 38096), (300, 38093), (328, 38045), (374, 37976), (424, 37862), (491, 37733), (504, 37682), (506, 37676), (509, 37670), (516, 37646), (536, 37592), (602, 37451), (604, 37448), (631, 37391), (651, 37319), (652, 37316), (762, 37142), (781, 37121), (803, 37076), (837, 36971), (853, 36911), (904, 36743), (915, 36722),

Gene: Madi\_50 Start: 36692, Stop: 38746, Start Num: 69

Candidate Starts for Madi\_50:

(Start: 69 @36692 has 40 MA's), (76, 36716), (99, 36779), (119, 36863), (127, 36905), (223, 37127), (252, 37163), (298, 37238), (320, 37277), (355, 37319), (373, 37337), (381, 37358), (388, 37370), (417, 37430), (424, 37445), (445, 37463), (472, 37541), (482, 37556), (484, 37559), (496, 37598), (500, 37619), (539, 37721), (568, 37778), (577, 37799), (580, 37802), (586, 37814), (608, 37862), (611, 37868), (628, 37916), (630, 37949), (635, 37973), (642, 37991), (647, 38021), (700, 38144), (713, 38177), (719, 38189), (729, 38204), (751, 38243), (781, 38288), (791, 38315), (829, 38399), (843, 38462), (853, 38504), (856, 38513), (858, 38522), (869, 38570), (871, 38579), (874, 38591), (880, 38606), (893, 38648),

Gene: Madruga\_74 Start: 48812, Stop: 50845, Start Num: 59

Candidate Starts for Madruga\_74:

(28, 48722), (Start: 59 @48812 has 3 MA's), (72, 48836), (93, 48899), (111, 48965), (123, 49016), (124, 49019), (154, 49127), (170, 49160), (189, 49199), (201, 49223), (236, 49286), (252, 49304), (268, 49325), (273, 49331), (306, 49400), (324, 49427), (335, 49439), (367, 49472), (413, 49574), (472, 49697), (488, 49727), (518, 49832), (522, 49850), (565, 49940), (568, 49943), (606, 50045), (622, 50084), (635, 50111), (640, 50123), (652, 50171), (663, 50189), (673, 50216), (679, 50228), (685, 50237), (783, 50375), (805, 50420), (836, 50525), (869, 50654), (880, 50687), (886, 50705), (903, 50759), (922, 50798),

Gene: MaeLinda\_41 Start: 31118, Stop: 29730, Start Num: 290

Candidate Starts for MaeLinda\_41:

(148, 31415), (175, 31340), (Start: 290 @31118 has 124 MA's), (382, 30974), (Start: 384 @30968 has 1 MA's), (386, 30965), (439, 30851), (450, 30824), (470, 30764), (487, 30737), (490, 30734), (492, 30728), (518, 30638), (533, 30596), (614, 30425), (634, 30389), (640, 30377), (647, 30344), (652, 30329), (695, 30269), (797, 30110), (823, 30056), (846, 29972), (847, 29966), (850, 29954), (874, 29858), (894, 29804), (895, 29801), (903, 29777),

Gene: Makoto\_25 Start: 20576, Stop: 21970, Start Num: 253

Candidate Starts for Makoto\_25:

(Start: 253 @20576 has 72 MA's), (Start: 288 @20633 has 1 MA's), (353, 20738), (398, 20825), (416, 20858), (450, 20915), (465, 20966), (491, 20996), (492, 20999), (493, 21005), (503, 21041), (512, 21059), (513, 21062), (520, 21095), (527, 21116), (596, 21248), (607, 21275), (626, 21314), (637, 21335), (640, 21341), (647, 21374), (652, 21389), (655, 21398), (692, 21443), (715, 21479), (742, 21521), (791, 21584), (803, 21602), (837, 21704), (838, 21707), (844, 21725), (845, 21728), (850, 21752), (852, 21761), (872, 21848), (907, 21938), (918, 21962),

Gene: MamaPearl\_26 Start: 21743, Stop: 23140, Start Num: 253

Candidate Starts for MamaPearl\_26:

(Start: 253 @21743 has 72 MA's), (Start: 288 @21803 has 1 MA's), (353, 21908), (354, 21911), (398, 21995), (416, 22028), (447, 22079), (450, 22085), (491, 22166), (493, 22175), (503, 22211), (512, 22229), (513, 22232), (520, 22265), (527, 22286), (596, 22418), (621, 22475), (626, 22484), (637, 22505), (640, 22511), (647, 22544), (652, 22559), (695, 22619), (715, 22649), (782, 22730), (803, 22772), (820, 22805), (835, 22868), (838, 22877), (842, 22889), (844, 22895), (847, 22910), (850, 22922), (852, 22931), (872, 23018), (894, 23075), (907, 23108),

Gene: ManRay\_40 Start: 30816, Stop: 29428, Start Num: 290

Candidate Starts for ManRay\_40:

(175, 31038), (Start: 290 @30816 has 124 MA's), (382, 30672), (Start: 384 @30666 has 1 MA's), (386, 30663), (439, 30549), (450, 30522), (470, 30462), (487, 30435), (490, 30432), (518, 30336), (533, 30294), (614, 30123), (625, 30102), (634, 30087), (652, 30027), (695, 29967), (757, 29871), (797, 29808), (823, 29754), (846, 29670), (847, 29664), (850, 29652), (874, 29556), (894, 29502), (895, 29499), (903, 29475),

Gene: Mandalorian\_39 Start: 30635, Stop: 29223, Start Num: 295

Candidate Starts for Mandalorian\_39:

(Start: 292 @30638 has 7 MA's), (Start: 295 @30635 has 21 MA's), (309, 30605), (Start: 314 @30599 has 1 MA's), (Start: 384 @30491 has 1 MA's), (388, 30485), (439, 30374), (450, 30347), (465, 30296), (470, 30287), (487, 30260), (490, 30257), (500, 30215), (518, 30161), (589, 30005), (612, 29954), (614, 29948), (625, 29927), (632, 29921), (634, 29912), (640, 29900), (643, 29888), (669, 29810), (695, 29750), (699, 29744), (729, 29696), (754, 29654), (797, 29591), (807, 29579), (818, 29555), (820, 29552), (837, 29483), (840, 29474), (845, 29459), (846, 29453), (847, 29447), (850, 29435), (877, 29330), (886, 29312), (889, 29300), (904, 29255),

Gene: Mareelih\_167 Start: 96276, Stop: 94366, Start Num: 62

Candidate Starts for Mareelih\_167:

(Start: 62 @96276 has 5 MA's), (127, 96072), (141, 96024), (162, 95979), (189, 95898), (195, 95886), (254, 95781), (273, 95754), (396, 95649), (406, 95625), (459, 95460), (568, 95193), (572, 95184), (586, 95157), (647, 95088), (766, 94839), (791, 94773), (805, 94749), (847, 94614), (863, 94554), (883, 94482),

Gene: Margaret\_58 Start: 39745, Stop: 38270, Start Num: 246

Candidate Starts for Margaret\_58:

(Start: 246 @39745 has 9 MA's), (Start: 278 @39703 has 1 MA's), (300, 39655), (Start: 314 @39628 has 1 MA's), (334, 39598), (350, 39574), (366, 39553), (371, 39544), (374, 39538), (Start: 384 @39511

has 1 MA's), (412, 39454), (415, 39445), (422, 39427), (425, 39421), (490, 39298), (504, 39244), (506, 39238), (509, 39232), (527, 39169), (536, 39154), (544, 39139), (632, 38950), (634, 38941), (640, 38929), (645, 38908), (656, 38869), (660, 38860), (688, 38824), (697, 38806), (701, 38800), (731, 38755), (733, 38749), (781, 38680), (806, 38632), (811, 38617), (822, 38590), (828, 38575), (840, 38521), (853, 38470), (869, 38407), (886, 38359), (889, 38347), (892, 38338),

Gene: Maria1952\_26 Start: 21732, Stop: 23129, Start Num: 253

Candidate Starts for Maria1952\_26:

(Start: 253 @21732 has 72 MA's), (Start: 288 @21792 has 1 MA's), (341, 21879), (353, 21897), (354, 21900), (398, 21984), (400, 21990), (416, 22017), (447, 22068), (450, 22074), (465, 22125), (470, 22134), (491, 22155), (493, 22164), (503, 22200), (513, 22221), (520, 22254), (527, 22275), (538, 22293), (541, 22299), (555, 22326), (566, 22338), (576, 22353), (596, 22407), (619, 22458), (621, 22464), (626, 22473), (632, 22479), (640, 22500), (647, 22533), (652, 22548), (655, 22557), (742, 22680), (782, 22719), (791, 22743), (799, 22755), (837, 22863), (839, 22869), (842, 22878), (844, 22884), (852, 22920), (872, 23007), (907, 23097), (918, 23121),

Gene: Marietta\_72 Start: 52748, Stop: 50667, Start Num: 36

Candidate Starts for Marietta\_72:

(9, 52940), (12, 52922), (18, 52847), (Start: 36 @52748 has 31 MA's), (225, 52229), (252, 52196), (268, 52175), (297, 52121), (300, 52115), (301, 52112), (359, 52022), (362, 52019), (402, 51959), (475, 51803), (522, 51656), (568, 51548), (580, 51524), (640, 51422), (654, 51368), (668, 51353), (708, 51272), (729, 51233), (765, 51170), (781, 51131), (783, 51125), (796, 51095), (837, 50978), (854, 50915), (869, 50852), (874, 50834), (901, 50750),

Gene: Marky\_44 Start: 31624, Stop: 33015, Start Num: 264

Candidate Starts for Marky\_44:

(247, 31615), (Start: 264 @31624 has 2 MA's), (267, 31630), (303, 31699), (316, 31723), (353, 31768), (406, 31861), (447, 31927), (498, 32038), (506, 32068), (508, 32071), (556, 32194), (616, 32329), (632, 32356), (640, 32377), (645, 32398), (647, 32410), (727, 32539), (783, 32608), (791, 32629), (803, 32647), (811, 32665), (832, 32719), (837, 32749), (852, 32806), (853, 32809), (866, 32857), (886, 32926), (905, 32980), (914, 32998),

Gene: Martin\_42 Start: 31123, Stop: 29735, Start Num: 290

Candidate Starts for Martin\_42:

(46, 31774), (148, 31420), (175, 31345), (Start: 290 @31123 has 124 MA's), (382, 30979), (Start: 384 @30973 has 1 MA's), (386, 30970), (439, 30856), (450, 30829), (470, 30769), (487, 30742), (490, 30739), (518, 30643), (533, 30601), (611, 30439), (614, 30430), (625, 30409), (634, 30394), (640, 30382), (652, 30334), (695, 30274), (757, 30178), (797, 30115), (823, 30061), (846, 29977), (847, 29971), (850, 29959), (874, 29863), (894, 29809), (895, 29806), (903, 29782),

Gene: Maselop\_72 Start: 53166, Stop: 51130, Start Num: 38

Candidate Starts for Maselop\_72:

(13, 53334), (Start: 38 @53166 has 6 MA's), (Start: 58 @53100 has 1 MA's), (77, 53058), (111, 52953), (168, 52773), (200, 52716), (225, 52665), (236, 52650), (Start: 295 @52560 has 21 MA's), (301, 52548), (359, 52455), (406, 52383), (447, 52314), (472, 52242), (496, 52185), (568, 52005), (580, 51981), (618, 51918), (640, 51882), (673, 51795), (744, 51663), (766, 51624), (768, 51621), (783, 51576), (837, 51429), (854, 51366), (865, 51324), (874, 51285), (885, 51261),

Gene: Mayweather\_61 Start: 41658, Stop: 40414, Start Num: 384

Candidate Starts for Mayweather\_61:

(Start: 242 @41892 has 41 MA's), (286, 41829), (300, 41802), (Start: 314 @41775 has 1 MA's), (350, 41721), (366, 41700), (368, 41697), (374, 41685), (380, 41670), (Start: 384 @41658 has 1 MA's), (425, 41565), (490, 41442), (504, 41388), (506, 41382), (509, 41376), (536, 41298), (544, 41283), (591,

41184), (632, 41094), (634, 41085), (640, 41073), (645, 41052), (648, 41037), (651, 41028), (659, 41007), (688, 40968), (692, 40959), (701, 40944), (729, 40902), (781, 40824), (782, 40821), (803, 40779), (811, 40761), (840, 40665), (853, 40614), (861, 40584), (869, 40551), (888, 40494), (893, 40479),

Gene: Mbo2\_52 Start: 42925, Stop: 41438, Start Num: 285

Candidate Starts for Mbo2\_52:

(218, 43012), (Start: 285 @42925 has 5 MA's), (336, 42838), (359, 42802), (374, 42784), (381, 42769), (388, 42754), (396, 42742), (404, 42730), (406, 42724), (421, 42682), (470, 42559), (512, 42445), (542, 42370), (567, 42316), (603, 42241), (605, 42238), (616, 42214), (638, 42175), (647, 42136), (667, 42094), (767, 41911), (802, 41851), (813, 41833), (831, 41788), (832, 41785), (841, 41737), (844, 41728), (848, 41707), (853, 41689), (859, 41665), (866, 41641), (878, 41599), (886, 41572), (889, 41560), (898, 41530), (904, 41515), (926, 41473),

Gene: McGalleon\_43 Start: 32555, Stop: 31152, Start Num: 290

Candidate Starts for McGalleon\_43:

(163, 32789), (178, 32738), (222, 32648), (Start: 290 @32555 has 124 MA's), (382, 32411), (Start: 384 @32405 has 1 MA's), (412, 32342), (439, 32288), (450, 32261), (470, 32201), (487, 32174), (490, 32171), (517, 32078), (518, 32075), (533, 32033), (611, 31871), (614, 31862), (625, 31841), (640, 31814), (653, 31763), (695, 31706), (729, 31652), (757, 31610), (786, 31565), (839, 31433), (846, 31409), (847, 31403), (850, 31391), (874, 31295), (886, 31268), (894, 31241), (903, 31214), (918, 31184),

Gene: MeganNoll\_29 Start: 22157, Stop: 23557, Start Num: 253

Candidate Starts for MeganNoll\_29:

(Start: 253 @22157 has 72 MA's), (Start: 288 @22220 has 1 MA's), (353, 22325), (354, 22328), (398, 22412), (416, 22445), (447, 22496), (450, 22502), (491, 22583), (492, 22586), (493, 22592), (503, 22628), (512, 22646), (513, 22649), (527, 22703), (555, 22754), (596, 22835), (607, 22862), (621, 22892), (626, 22901), (640, 22928), (647, 22961), (652, 22976), (692, 23030), (705, 23051), (713, 23063), (723, 23075), (839, 23297), (842, 23306), (844, 23312), (852, 23348), (868, 23408), (872, 23435), (907, 23525),

Gene: Megatron06\_62 Start: 46630, Stop: 48687, Start Num: 55

Candidate Starts for Megatron06\_62:

(Start: 55 @46630 has 51 MA's), (81, 46690), (82, 46693), (Start: 109 @46786 has 3 MA's), (112, 46798), (118, 46819), (150, 46942), (151, 46945), (154, 46954), (170, 46987), (174, 47008), (189, 47056), (206, 47098), (252, 47161), (268, 47182), (273, 47188), (300, 47242), (413, 47428), (417, 47440), (425, 47458), (445, 47473), (447, 47479), (568, 47797), (570, 47800), (590, 47845), (635, 47896), (640, 47908), (673, 47998), (679, 48010), (696, 48043), (713, 48067), (718, 48076), (783, 48166), (798, 48199), (836, 48310), (837, 48313), (838, 48316), (839, 48319), (848, 48355), (853, 48373), (869, 48439), (874, 48457), (934, 48634),

Gene: MerCougar\_75 Start: 57668, Stop: 55593, Start Num: 36

Candidate Starts for MerCougar\_75:

(Start: 36 @57668 has 31 MA's), (77, 57548), (Start: 94 @57503 has 1 MA's), (95, 57500), (168, 57257), (200, 57200), (225, 57149), (268, 57095), (301, 57032), (359, 56942), (362, 56939), (375, 56915), (402, 56879), (475, 56723), (488, 56699), (522, 56576), (568, 56465), (580, 56441), (640, 56342), (654, 56288), (685, 56234), (708, 56192), (729, 56153), (744, 56126), (768, 56084), (781, 56051), (796, 56015), (819, 55970), (821, 55958), (837, 55898), (874, 55754), (901, 55670),

Gene: Mercedes\_36 Start: 28234, Stop: 26813, Start Num: 293

Candidate Starts for Mercedes\_36:

(Start: 293 @28234 has 18 MA's), (309, 28198), (373, 28114), (410, 28027), (412, 28021), (444, 27949), (447, 27937), (487, 27844), (490, 27841), (503, 27790), (589, 27586), (614, 27529), (640, 27481), (647, 27448), (653, 27430), (695, 27334), (701, 27325), (729, 27280), (732, 27274), (757, 27238), (786, 27193), (797, 27175), (837, 27067), (840, 27058), (845, 27043), (846, 27037), (893, 26872),

Gene: Microdon\_41 Start: 30843, Stop: 32237, Start Num: 261

Candidate Starts for Microdon\_41:

(Start: 261 @30843 has 12 MA's), (Start: 264 @30846 has 2 MA's), (303, 30921), (316, 30945), (320, 30951), (343, 30975), (353, 30990), (354, 30993), (394, 31065), (405, 31080), (424, 31116), (470, 31215), (556, 31416), (616, 31551), (632, 31578), (640, 31599), (679, 31677), (695, 31710), (701, 31719), (727, 31761), (782, 31827), (783, 31830), (791, 31851), (803, 31869), (811, 31887), (832, 31941), (837, 31971), (852, 32028), (853, 32031), (866, 32079), (874, 32118), (879, 32133), (905, 32202), (914, 32220), (918, 32229),

Gene: Milani\_33 Start: 22173, Stop: 23600, Start Num: 258

Candidate Starts for Milani\_33:

(Start: 258 @22173 has 13 MA's), (447, 22527), (448, 22530), (455, 22551), (498, 22638), (640, 22974), (645, 22995), (652, 23022), (678, 23049), (679, 23052), (695, 23085), (718, 23121), (782, 23196), (791, 23220), (822, 23283), (832, 23304), (845, 23358), (852, 23391), (856, 23403), (866, 23442), (872, 23478), (875, 23484), (879, 23496), (886, 23511), (902, 23559), (907, 23568), (918, 23592),

Gene: MillyPhilly\_41 Start: 31111, Stop: 29723, Start Num: 290

Candidate Starts for MillyPhilly\_41:

(46, 31762), (148, 31408), (175, 31333), (Start: 290 @31111 has 124 MA's), (382, 30967), (Start: 384 @30961 has 1 MA's), (386, 30958), (439, 30844), (450, 30817), (470, 30757), (487, 30730), (490, 30727), (518, 30631), (533, 30589), (611, 30427), (614, 30418), (625, 30397), (634, 30382), (640, 30370), (652, 30322), (695, 30262), (757, 30166), (797, 30103), (823, 30049), (846, 29965), (847, 29959), (850, 29947), (874, 29851), (894, 29797), (895, 29794), (903, 29770),

Gene: Mima20\_62 Start: 40803, Stop: 42716, Start Num: 55

Candidate Starts for Mima20\_62:

(Start: 54 @40800 has 11 MA's), (Start: 55 @40803 has 51 MA's), (Start: 69 @40815 has 40 MA's), (83, 40863), (96, 40896), (113, 40965), (135, 41055), (145, 41082), (147, 41091), (181, 41163), (252, 41283), (Start: 293 @41346 has 18 MA's), (352, 41436), (370, 41463), (445, 41592), (453, 41616), (466, 41658), (490, 41706), (496, 41727), (500, 41748), (518, 41805), (540, 41859), (561, 41901), (590, 41961), (647, 42057), (648, 42060), (760, 42237), (791, 42288), (831, 42378), (837, 42414), (839, 42420), (853, 42474), (864, 42513), (892, 42615), (897, 42630), (904, 42651),

Gene: Mimi\_107 Start: 80085, Stop: 81923, Start Num: 63

Candidate Starts for Mimi\_107:

(Start: 63 @80085 has 2 MA's), (87, 80166), (115, 80244), (143, 80340), (183, 80400), (200, 80430), (273, 80550), (298, 80601), (398, 80661), (515, 81000), (537, 81057), (549, 81078), (572, 81123), (638, 81180), (640, 81186), (647, 81219), (651, 81231), (655, 81243), (679, 81288), (700, 81327), (744, 81384), (748, 81390), (766, 81423), (796, 81492), (832, 81576), (860, 81693), (915, 81867), (931, 81909),

Gene: Minos\_58 Start: 52601, Stop: 51189, Start Num: 330

Candidate Starts for Minos\_58:

(146, 52949), (191, 52820), (236, 52733), (Start: 237 @52730 has 2 MA's), (Start: 330 @52601 has 27 MA's), (359, 52556), (404, 52466), (405, 52463), (407, 52457), (414, 52436), (442, 52373), (485, 52265), (491, 52247), (518, 52160), (521, 52145), (544, 52103), (582, 52022), (605, 51974), (623,

51932), (637, 51914), (638, 51911), (645, 51884), (661, 51833), (682, 51797), (711, 51746), (757, 51662), (767, 51641), (845, 51485), (846, 51479), (848, 51467), (880, 51341), (926, 51227),

Gene: Misaeng\_29 Start: 22230, Stop: 23621, Start Num: 253

Candidate Starts for Misaeng\_29:

(Start: 253 @22230 has 72 MA's), (305, 22317), (353, 22389), (354, 22392), (390, 22458), (398, 22476), (416, 22509), (450, 22566), (491, 22647), (493, 22656), (503, 22692), (512, 22710), (520, 22746), (527, 22767), (538, 22785), (555, 22818), (596, 22899), (607, 22926), (619, 22950), (637, 22986), (640, 22992), (647, 23025), (652, 23040), (655, 23049), (692, 23094), (713, 23127), (715, 23130), (783, 23214), (799, 23247), (803, 23253), (810, 23265), (837, 23355), (839, 23361), (844, 23376), (845, 23379), (847, 23391), (850, 23403), (852, 23412), (872, 23499), (907, 23589),

Gene: MoiGyank\_63 Start: 41576, Stop: 43489, Start Num: 55

Candidate Starts for MoiGyank\_63:

(Start: 54 @41573 has 11 MA's), (Start: 55 @41576 has 51 MA's), (Start: 69 @41588 has 40 MA's), (83, 41636), (96, 41669), (113, 41738), (135, 41828), (145, 41855), (147, 41864), (181, 41936), (252, 42056), (Start: 293 @42119 has 18 MA's), (352, 42209), (445, 42365), (453, 42389), (466, 42431), (490, 42479), (496, 42500), (500, 42521), (518, 42578), (522, 42596), (540, 42632), (561, 42674), (590, 42734), (647, 42830), (648, 42833), (760, 43010), (791, 43061), (831, 43151), (837, 43187), (839, 43193), (848, 43229), (853, 43247), (864, 43286), (892, 43388), (897, 43403), (904, 43424),

Gene: Moki\_25 Start: 20566, Stop: 21960, Start Num: 253

Candidate Starts for Moki\_25:

(Start: 253 @20566 has 72 MA's), (Start: 288 @20623 has 1 MA's), (353, 20728), (398, 20815), (416, 20848), (448, 20902), (450, 20905), (493, 20995), (503, 21031), (512, 21049), (513, 21052), (527, 21106), (596, 21238), (607, 21265), (621, 21295), (626, 21304), (640, 21331), (647, 21364), (652, 21379), (679, 21406), (692, 21433), (715, 21469), (742, 21511), (791, 21574), (803, 21592), (832, 21664), (835, 21688), (837, 21694), (838, 21697), (844, 21715), (845, 21718), (850, 21742), (852, 21751), (872, 21838), (892, 21889), (907, 21928),

Gene: Molivia\_74 Start: 46115, Stop: 44718, Start Num: 265

Candidate Starts for Molivia\_74:

(Start: 265 @46115 has 13 MA's), (Start: 290 @46064 has 124 MA's), (320, 46013), (321, 46010), (334, 45992), (347, 45974), (361, 45953), (416, 45830), (470, 45692), (530, 45551), (571, 45509), (581, 45488), (633, 45395), (651, 45338), (662, 45323), (674, 45293), (692, 45260), (746, 45185), (781, 45137), (791, 45110), (796, 45101), (804, 45089), (839, 44987), (848, 44948), (851, 44939), (886, 44807), (899, 44762), (911, 44738),

Gene: MonChoix\_39 Start: 31157, Stop: 29766, Start Num: 290

Candidate Starts for MonChoix\_39:

(Start: 290 @31157 has 124 MA's), (382, 31010), (Start: 384 @31004 has 1 MA's), (386, 31001), (439, 30887), (450, 30860), (470, 30800), (487, 30773), (490, 30770), (518, 30674), (533, 30632), (614, 30461), (632, 30434), (652, 30365), (695, 30305), (823, 30092), (831, 30074), (837, 30038), (846, 30008), (847, 30002), (850, 29990), (874, 29894), (894, 29840), (895, 29837),

Gene: Monty\_58 Start: 51476, Stop: 49944, Start Num: 262

Candidate Starts for Monty\_58:

(146, 51731), (168, 51680), (179, 51629), (202, 51575), (213, 51545), (Start: 237 @51512 has 2 MA's), (Start: 244 @51503 has 1 MA's), (Start: 262 @51476 has 25 MA's), (359, 51308), (381, 51266), (404, 51218), (408, 51206), (412, 51194), (414, 51188), (422, 51167), (436, 51140), (491, 50999), (518, 50912), (521, 50897), (526, 50885), (544, 50855), (567, 50804), (581, 50777), (605, 50726), (637, 50666), (638, 50663), (645, 50636), (658, 50594), (682, 50549), (757, 50414), (764, 50399), (773, 50378), (831, 50297), (832, 50294), (845, 50237), (846, 50231), (847, 50225), (848, 50219), (868,

50144), (878, 50105), (880, 50093), (882, 50090), (919, 49997), (926, 49982), (932, 49961),

Gene: MontyDev\_68 Start: 47606, Stop: 49366, Start Num: 158

Candidate Starts for MontyDev\_68:

(Start: 158 @47606 has 9 MA's), (190, 47675), (Start: 248 @47771 has 3 MA's), (254, 47780), (301, 47861), (327, 47906), (421, 48083), (445, 48107), (459, 48155), (488, 48215), (492, 48227), (511, 48293), (552, 48416), (568, 48440), (580, 48464), (640, 48668), (647, 48701), (652, 48716), (673, 48755), (675, 48758), (679, 48767), (729, 48836), (805, 48968), (837, 49091), (838, 49094), (846, 49121), (853, 49151), (855, 49157), (856, 49160), (860, 49178), (864, 49190), (904, 49325), (919, 49352), (921, 49355),

Gene: Mopey\_54 Start: 39729, Stop: 41672, Start Num: 55

Candidate Starts for Mopey\_54:

(Start: 55 @39729 has 51 MA's), (72, 39756), (Start: 97 @39828 has 1 MA's), (110, 39882), (125, 39942), (129, 39960), (131, 39969), (146, 40020), (163, 40062), (181, 40098), (225, 40185), (287, 40278), (297, 40293), (306, 40314), (381, 40416), (399, 40449), (410, 40473), (447, 40533), (482, 40620), (504, 40695), (540, 40785), (568, 40836), (570, 40839), (625, 40929), (640, 40947), (647, 40980), (673, 41034), (679, 41046), (689, 41064), (729, 41127), (781, 41211), (831, 41328), (837, 41376), (854, 41439), (874, 41523),

Gene: Morrigan\_42 Start: 30540, Stop: 29155, Start Num: 294

Candidate Starts for Morrigan\_42:

(Start: 293 @30543 has 18 MA's), (Start: 294 @30540 has 1 MA's), (306, 30513), (Start: 314 @30501 has 1 MA's), (316, 30498), (Start: 363 @30435 has 1 MA's), (412, 30330), (434, 30279), (439, 30267), (487, 30153), (490, 30150), (500, 30108), (516, 30057), (614, 29838), (640, 29790), (643, 29778), (644, 29775), (645, 29769), (647, 29757), (678, 29718), (695, 29682), (703, 29670), (729, 29628), (749, 29595), (757, 29586), (758, 29583), (797, 29523), (837, 29415), (840, 29406), (845, 29391), (846, 29385), (847, 29379), (850, 29367), (877, 29262), (886, 29244), (893, 29220), (903, 29190),

Gene: MortySmith\_38 Start: 24974, Stop: 26881, Start Num: 69

Candidate Starts for MortySmith\_38:

(19, 24800), (Start: 69 @24974 has 40 MA's), (88, 25037), (99, 25058), (111, 25112), (150, 25247), (170, 25289), (192, 25334), (Start: 295 @25508 has 21 MA's), (301, 25517), (359, 25607), (381, 25649), (388, 25664), (468, 25850), (518, 25985), (520, 25997), (539, 26030), (640, 26159), (689, 26276), (837, 26585), (838, 26588), (853, 26648), (875, 26738), (886, 26768), (898, 26810), (922, 26861),

Gene: MrMiyagi\_73 Start: 45205, Stop: 47052, Start Num: 91

Candidate Starts for MrMiyagi\_73:

(Start: 91 @45205 has 3 MA's), (102, 45223), (108, 45259), (121, 45310), (154, 45418), (170, 45451), (200, 45511), (Start: 217 @45553 has 2 MA's), (251, 45592), (305, 45688), (311, 45700), (329, 45727), (340, 45742), (346, 45751), (373, 45790), (378, 45805), (417, 45892), (422, 45904), (472, 46003), (475, 46009), (488, 46033), (504, 46093), (533, 46171), (548, 46198), (561, 46228), (568, 46240), (580, 46264), (640, 46342), (647, 46375), (652, 46390), (669, 46414), (670, 46417), (679, 46441), (837, 46765), (840, 46774), (847, 46801), (853, 46825), (865, 46870), (874, 46912), (890, 46960), (896, 46978), (923, 47035),

Gene: MrWorldwide\_41 Start: 31121, Stop: 29733, Start Num: 290

Candidate Starts for MrWorldwide\_41:

(46, 31772), (148, 31418), (175, 31343), (Start: 290 @31121 has 124 MA's), (382, 30977), (Start: 384 @30971 has 1 MA's), (386, 30968), (439, 30854), (450, 30827), (470, 30767), (487, 30740), (490, 30737), (518, 30641), (533, 30599), (611, 30437), (614, 30428), (625, 30407), (634, 30392), (640, 30380), (652, 30332), (695, 30272), (757, 30176), (797, 30113), (823, 30059), (846, 29975), (847,



29969), (850, 29957), (874, 29861), (894, 29807), (895, 29804), (903, 29780),

Gene: MrWormie\_57 Start: 51762, Stop: 50350, Start Num: 330

Candidate Starts for MrWormie\_57:

(146, 52110), (191, 51981), (Start: 237 @51891 has 2 MA's), (Start: 330 @51762 has 27 MA's), (359, 51717), (404, 51627), (405, 51624), (407, 51618), (414, 51597), (442, 51534), (485, 51426), (491, 51408), (518, 51321), (521, 51306), (544, 51264), (582, 51183), (605, 51135), (623, 51093), (637, 51075), (638, 51072), (645, 51045), (661, 50994), (682, 50958), (711, 50907), (757, 50823), (767, 50802), (845, 50646), (846, 50640), (848, 50628), (880, 50502), (926, 50388),

Gene: Msay19\_64 Start: 54046, Stop: 52514, Start Num: 262

Candidate Starts for Msay19\_64:

(146, 54301), (168, 54250), (202, 54145), (213, 54115), (Start: 237 @54082 has 2 MA's), (Start: 244 @54073 has 1 MA's), (Start: 262 @54046 has 25 MA's), (359, 53878), (381, 53836), (390, 53818), (404, 53788), (408, 53776), (412, 53764), (414, 53758), (422, 53737), (491, 53569), (518, 53482), (521, 53467), (526, 53455), (544, 53425), (567, 53374), (605, 53296), (616, 53272), (623, 53254), (637, 53236), (638, 53233), (641, 53224), (645, 53206), (658, 53164), (682, 53119), (691, 53101), (757, 52984), (764, 52969), (773, 52948), (831, 52867), (832, 52864), (845, 52807), (846, 52801), (848, 52789), (868, 52714), (878, 52675), (880, 52663), (882, 52660), (919, 52567), (926, 52552),

Gene: Muddy\_50 Start: 39454, Stop: 37943, Start Num: 217

Candidate Starts for Muddy\_50:

(Start: 217 @39454 has 2 MA's), (245, 39418), (298, 39328), (300, 39325), (328, 39277), (374, 39208), (424, 39094), (491, 38965), (504, 38914), (506, 38908), (509, 38902), (516, 38878), (536, 38824), (602, 38683), (604, 38680), (631, 38623), (651, 38551), (652, 38548), (762, 38374), (781, 38353), (803, 38308), (837, 38203), (853, 38143), (904, 37975), (915, 37954),

Gene: MunkgeeRoachy\_51 Start: 38189, Stop: 36711, Start Num: 242

Candidate Starts for MunkgeeRoachy\_51:

(Start: 242 @38189 has 41 MA's), (300, 38096), (350, 38015), (366, 37994), (421, 37871), (422, 37868), (504, 37685), (506, 37679), (509, 37673), (518, 37643), (536, 37595), (591, 37481), (602, 37454), (614, 37430), (640, 37370), (651, 37325), (659, 37304), (688, 37265), (697, 37247), (701, 37241), (803, 37082), (806, 37079), (811, 37064), (840, 36968), (846, 36947), (853, 36917),

Gene: NadineRae\_71 Start: 52357, Stop: 50276, Start Num: 36

Candidate Starts for NadineRae\_71:

(Start: 36 @52357 has 31 MA's), (111, 52126), (225, 51838), (252, 51805), (268, 51784), (297, 51730), (300, 51724), (301, 51721), (359, 51631), (362, 51628), (402, 51568), (475, 51412), (522, 51265), (551, 51184), (568, 51157), (580, 51133), (640, 51031), (654, 50977), (668, 50962), (708, 50881), (729, 50842), (765, 50779), (781, 50740), (783, 50734), (796, 50704), (837, 50587), (854, 50524), (869, 50461), (874, 50443), (901, 50359),

Gene: Nagem\_41 Start: 31114, Stop: 29726, Start Num: 290

Candidate Starts for Nagem\_41:

(46, 31765), (148, 31411), (175, 31336), (Start: 290 @31114 has 124 MA's), (382, 30970), (Start: 384 @30964 has 1 MA's), (386, 30961), (439, 30847), (450, 30820), (470, 30760), (487, 30733), (490, 30730), (518, 30634), (533, 30592), (611, 30430), (614, 30421), (625, 30400), (634, 30385), (640, 30373), (652, 30325), (695, 30265), (757, 30169), (797, 30106), (823, 30052), (846, 29968), (847, 29962), (850, 29950), (869, 29875), (874, 29854), (894, 29800), (895, 29797), (903, 29773),

Gene: Nancia\_25 Start: 20580, Stop: 21974, Start Num: 253

Candidate Starts for Nancia\_25:

(Start: 253 @20580 has 72 MA's), (Start: 288 @20637 has 1 MA's), (353, 20742), (354, 20745), (398, 20829), (416, 20862), (447, 20913), (450, 20919), (491, 21000), (492, 21003), (493, 21009), (503, 21045), (512, 21063), (513, 21066), (520, 21099), (527, 21120), (596, 21252), (607, 21279), (626, 21318), (637, 21339), (640, 21345), (647, 21378), (652, 21393), (655, 21402), (692, 21447), (715, 21483), (742, 21525), (791, 21588), (803, 21606), (837, 21708), (838, 21711), (844, 21729), (845, 21732), (850, 21756), (852, 21765), (872, 21852), (907, 21942), (918, 21966),

Gene: NarutoRun\_40 Start: 25911, Stop: 27818, Start Num: 69

Candidate Starts for NarutoRun\_40:

(Start: 69 @25911 has 40 MA's), (88, 25974), (99, 25995), (111, 26049), (170, 26226), (192, 26271), (Start: 295 @26445 has 21 MA's), (301, 26454), (359, 26544), (388, 26601), (468, 26787), (518, 26922), (520, 26934), (539, 26967), (640, 27096), (689, 27213), (744, 27288), (837, 27522), (838, 27525), (853, 27585), (875, 27675), (886, 27705), (898, 27747), (922, 27798),

Gene: NatB6\_72 Start: 55674, Stop: 53746, Start Num: 84

Candidate Starts for NatB6\_72:

(2, 56310), (5, 56109), (8, 56016), (9, 56004), (12, 55986), (Start: 36 @55812 has 31 MA's), (Start: 84 @55674 has 2 MA's), (89, 55650), (147, 55446), (168, 55401), (225, 55293), (300, 55179), (301, 55176), (359, 55086), (362, 55083), (402, 55023), (466, 54885), (475, 54867), (488, 54843), (522, 54720), (568, 54615), (640, 54489), (654, 54435), (670, 54414), (729, 54300), (781, 54204), (783, 54198), (796, 54168), (821, 54111), (837, 54051), (854, 53988), (874, 53907),

Gene: Nattles\_40 Start: 30803, Stop: 29415, Start Num: 290

Candidate Starts for Nattles\_40:

(175, 31025), (Start: 290 @30803 has 124 MA's), (382, 30659), (Start: 384 @30653 has 1 MA's), (386, 30650), (439, 30536), (450, 30509), (470, 30449), (487, 30422), (490, 30419), (517, 30326), (518, 30323), (533, 30281), (614, 30110), (625, 30089), (634, 30074), (640, 30062), (652, 30014), (695, 29954), (757, 29858), (797, 29795), (823, 29741), (846, 29657), (847, 29651), (850, 29639), (869, 29564), (874, 29543), (894, 29489), (895, 29486), (903, 29462),

Gene: Nebulous\_39 Start: 32131, Stop: 30701, Start Num: 290

Candidate Starts for Nebulous\_39:

(Start: 290 @32131 has 124 MA's), (306, 32098), (337, 32053), (Start: 384 @31978 has 1 MA's), (386, 31975), (444, 31843), (447, 31831), (487, 31738), (490, 31735), (491, 31732), (527, 31603), (612, 31429), (614, 31423), (625, 31402), (640, 31375), (643, 31363), (644, 31360), (647, 31342), (670, 31285), (695, 31228), (703, 31216), (729, 31174), (757, 31132), (779, 31108), (797, 31069), (823, 31015), (837, 30961), (840, 30952), (845, 30937), (846, 30931), (877, 30808), (886, 30790), (893, 30766),

Gene: Neferthena\_41 Start: 31335, Stop: 29905, Start Num: 290

Candidate Starts for Neferthena\_41:

(Start: 290 @31335 has 124 MA's), (306, 31302), (337, 31257), (382, 31188), (Start: 384 @31182 has 1 MA's), (386, 31179), (444, 31047), (487, 30942), (490, 30939), (612, 30633), (614, 30627), (625, 30606), (640, 30579), (647, 30546), (670, 30489), (688, 30447), (695, 30432), (703, 30420), (729, 30378), (757, 30336), (779, 30312), (786, 30291), (797, 30273), (823, 30219), (837, 30165), (840, 30156), (845, 30141), (846, 30135), (874, 30021), (891, 29976), (893, 29970), (899, 29949), (903, 29940),

Gene: Neoevie\_57 Start: 52863, Stop: 51451, Start Num: 330

Candidate Starts for Neoevie\_57:

(146, 53211), (191, 53082), (236, 52995), (Start: 237 @52992 has 2 MA's), (Start: 330 @52863 has 27 MA's), (359, 52818), (404, 52728), (405, 52725), (407, 52719), (414, 52698), (442, 52635), (485, 52527), (491, 52509), (518, 52422), (521, 52407), (544, 52365), (582, 52284), (605, 52236), (623,

52194), (637, 52176), (638, 52173), (645, 52146), (661, 52095), (682, 52059), (711, 52008), (757, 51924), (767, 51903), (845, 51747), (846, 51741), (848, 51729), (880, 51603), (926, 51489),

Gene: Neptune\_40 Start: 25911, Stop: 27818, Start Num: 69

Candidate Starts for Neptune\_40:

(Start: 69 @25911 has 40 MA's), (88, 25974), (99, 25995), (111, 26049), (170, 26226), (192, 26271), (Start: 295 @26445 has 21 MA's), (301, 26454), (359, 26544), (468, 26787), (518, 26922), (520, 26934), (539, 26967), (640, 27096), (689, 27213), (744, 27288), (837, 27522), (838, 27525), (853, 27585), (875, 27675), (886, 27705), (898, 27747), (922, 27798),

Gene: Newt\_58 Start: 53091, Stop: 51679, Start Num: 330

Candidate Starts for Newt\_58:

(146, 53439), (191, 53310), (236, 53223), (Start: 237 @53220 has 2 MA's), (Start: 330 @53091 has 27 MA's), (359, 53046), (404, 52956), (405, 52953), (407, 52947), (414, 52926), (442, 52863), (485, 52755), (491, 52737), (518, 52650), (521, 52635), (544, 52593), (582, 52512), (605, 52464), (623, 52422), (637, 52404), (638, 52401), (645, 52374), (661, 52323), (682, 52287), (711, 52236), (757, 52152), (767, 52131), (845, 51975), (846, 51969), (848, 51957), (880, 51831), (926, 51717),

Gene: Niagara\_57 Start: 53309, Stop: 51606, Start Num: 171

Candidate Starts for Niagara\_57:

(Start: 171 @53309 has 6 MA's), (Start: 173 @53297 has 2 MA's), (270, 53114), (Start: 330 @53024 has 27 MA's), (336, 53015), (359, 52979), (374, 52955), (377, 52946), (381, 52937), (404, 52889), (412, 52865), (442, 52793), (448, 52772), (461, 52736), (462, 52733), (509, 52604), (512, 52601), (521, 52565), (522, 52562), (533, 52544), (538, 52535), (544, 52523), (564, 52475), (582, 52442), (605, 52394), (616, 52370), (645, 52304), (682, 52205), (736, 52106), (742, 52097), (754, 52073), (757, 52070), (821, 51977), (831, 51953), (832, 51950), (845, 51893), (848, 51875), (878, 51758), (879, 51755), (882, 51743), (926, 51644), (932, 51623),

Gene: Nibbles\_48 Start: 37634, Stop: 36144, Start Num: 242

Candidate Starts for Nibbles\_48:

(Start: 242 @37634 has 41 MA's), (300, 37544), (Start: 314 @37517 has 1 MA's), (343, 37475), (371, 37433), (374, 37427), (Start: 384 @37400 has 1 MA's), (421, 37319), (422, 37316), (425, 37310), (436, 37289), (457, 37223), (504, 37133), (509, 37121), (536, 37043), (544, 37028), (599, 36911), (602, 36902), (637, 36824), (645, 36797), (647, 36785), (651, 36773), (678, 36734), (688, 36713), (690, 36710), (697, 36695), (733, 36623), (803, 36509), (822, 36464), (828, 36449), (834, 36419), (840, 36395), (853, 36344), (854, 36341), (861, 36314), (878, 36248), (888, 36224), (898, 36191), (915, 36155),

Gene: NickSell\_41 Start: 31124, Stop: 29736, Start Num: 290

Candidate Starts for NickSell\_41:

(46, 31775), (148, 31421), (175, 31346), (Start: 290 @31124 has 124 MA's), (382, 30980), (Start: 384 @30974 has 1 MA's), (386, 30971), (439, 30857), (450, 30830), (470, 30770), (487, 30743), (490, 30740), (518, 30644), (533, 30602), (611, 30440), (614, 30431), (625, 30410), (634, 30395), (640, 30383), (652, 30335), (695, 30275), (757, 30179), (797, 30116), (823, 30062), (846, 29978), (847, 29972), (850, 29960), (874, 29864), (894, 29810), (895, 29807), (903, 29783),

Gene: Nilo\_68 Start: 47960, Stop: 49720, Start Num: 158

Candidate Starts for Nilo\_68:

(Start: 158 @47960 has 9 MA's), (190, 48029), (Start: 248 @48125 has 3 MA's), (254, 48134), (301, 48215), (327, 48260), (445, 48461), (459, 48509), (488, 48569), (492, 48581), (511, 48647), (552, 48770), (568, 48794), (580, 48818), (640, 49022), (647, 49055), (652, 49070), (673, 49109), (675, 49112), (679, 49121), (729, 49190), (805, 49322), (837, 49445), (838, 49448), (846, 49475), (853, 49505), (855, 49511), (856, 49514), (860, 49532), (864, 49544), (904, 49679), (921, 49709),

Gene: Nimi13\_57 Start: 52610, Stop: 51198, Start Num: 330

Candidate Starts for Nimi13\_57:

(146, 52958), (191, 52829), (Start: 237 @52739 has 2 MA's), (Start: 330 @52610 has 27 MA's), (359, 52565), (404, 52475), (405, 52472), (407, 52466), (414, 52445), (442, 52382), (485, 52274), (491, 52256), (518, 52169), (521, 52154), (544, 52112), (582, 52031), (605, 51983), (623, 51941), (637, 51923), (638, 51920), (645, 51893), (661, 51842), (682, 51806), (711, 51755), (757, 51671), (767, 51650), (845, 51494), (846, 51488), (848, 51476), (880, 51350), (926, 51236),

Gene: Nina\_53 Start: 39329, Stop: 37851, Start Num: 242

Candidate Starts for Nina\_53:

(Start: 242 @39329 has 41 MA's), (297, 39242), (300, 39236), (350, 39155), (421, 39011), (422, 39008), (504, 38825), (506, 38819), (509, 38813), (536, 38735), (591, 38621), (602, 38594), (614, 38570), (640, 38510), (651, 38465), (659, 38444), (688, 38405), (697, 38387), (780, 38270), (803, 38222), (806, 38219), (811, 38204), (840, 38108), (846, 38087), (853, 38057),

Gene: NoShow\_58 Start: 42406, Stop: 40934, Start Num: 248

Candidate Starts for NoShow\_58:

(Start: 248 @42406 has 3 MA's), (300, 42316), (Start: 314 @42289 has 1 MA's), (354, 42229), (412, 42115), (424, 42085), (504, 41905), (506, 41899), (509, 41893), (536, 41815), (631, 41614), (651, 41542), (652, 41539), (656, 41527), (688, 41482), (729, 41422), (747, 41392), (811, 41281), (832, 41227), (840, 41185), (853, 41134), (878, 41038), (889, 41011), (904, 40966),

Gene: Nodigi\_60 Start: 41112, Stop: 39637, Start Num: 246

Candidate Starts for Nodigi\_60:

(183, 41229), (188, 41223), (Start: 246 @41112 has 9 MA's), (Start: 278 @41070 has 1 MA's), (300, 41022), (Start: 314 @40995 has 1 MA's), (366, 40920), (371, 40911), (374, 40905), (412, 40821), (418, 40803), (422, 40794), (425, 40788), (490, 40665), (504, 40611), (506, 40605), (509, 40599), (527, 40536), (536, 40521), (544, 40506), (634, 40308), (645, 40275), (656, 40236), (688, 40191), (726, 40128), (731, 40122), (733, 40116), (747, 40095), (756, 40080), (781, 40047), (782, 40044), (806, 39999), (828, 39942), (840, 39888), (853, 39837), (869, 39774), (886, 39726), (892, 39705),

Gene: Nonagon\_72 Start: 46348, Stop: 44768, Start Num: 229

Candidate Starts for Nonagon\_72:

(186, 46438), (Start: 229 @46348 has 2 MA's), (263, 46297), (274, 46282), (321, 46189), (332, 46174), (354, 46144), (366, 46129), (376, 46105), (392, 46078), (410, 46033), (425, 45994), (430, 45979), (447, 45937), (464, 45883), (499, 45820), (525, 45730), (531, 45715), (542, 45694), (571, 45637), (581, 45616), (612, 45532), (633, 45481), (663, 45388), (670, 45373), (679, 45349), (687, 45334), (688, 45331), (701, 45307), (705, 45301), (715, 45286), (762, 45202), (781, 45181), (782, 45178), (794, 45148), (796, 45145), (825, 45076), (829, 45064), (837, 45022), (839, 45016), (848, 44977), (854, 44953), (873, 44872), (888, 44830), (889, 44827),

Gene: NorManre\_63 Start: 40960, Stop: 42873, Start Num: 55

Candidate Starts for NorManre\_63:

(20, 40834), (22, 40843), (23, 40855), (32, 40888), (Start: 54 @40957 has 11 MA's), (Start: 55 @40960 has 51 MA's), (Start: 69 @40972 has 40 MA's), (83, 41020), (113, 41122), (135, 41212), (145, 41239), (147, 41248), (181, 41320), (252, 41440), (Start: 293 @41503 has 18 MA's), (352, 41593), (370, 41620), (445, 41749), (453, 41773), (466, 41815), (490, 41863), (496, 41884), (500, 41905), (518, 41962), (522, 41980), (540, 42016), (561, 42058), (590, 42118), (647, 42214), (648, 42217), (760, 42394), (791, 42445), (831, 42535), (837, 42571), (839, 42577), (853, 42631), (864, 42670), (892, 42772), (897, 42787), (904, 42808), (930, 42865),

Gene: NosilaM\_73 Start: 56110, Stop: 54188, Start Num: 94

Candidate Starts for NosilaM\_73:

(Start: 36 @56275 has 31 MA's), (Start: 94 @56110 has 1 MA's), (95, 56107), (168, 55852), (225, 55744), (268, 55690), (301, 55627), (359, 55537), (362, 55534), (375, 55510), (402, 55474), (466, 55336), (475, 55318), (482, 55309), (488, 55294), (522, 55171), (551, 55087), (568, 55060), (580, 55036), (640, 54937), (654, 54883), (685, 54829), (708, 54787), (729, 54748), (768, 54679), (781, 54646), (796, 54610), (819, 54565), (821, 54553), (837, 54493), (854, 54430), (901, 54265),

Gene: Nova\_52 Start: 40183, Stop: 42126, Start Num: 55

Candidate Starts for Nova\_52:

(39, 40120), (Start: 55 @40183 has 51 MA's), (72, 40210), (Start: 97 @40282 has 1 MA's), (110, 40336), (125, 40396), (131, 40423), (146, 40474), (147, 40477), (163, 40516), (181, 40552), (225, 40639), (287, 40732), (297, 40747), (306, 40768), (381, 40870), (399, 40903), (410, 40927), (447, 40987), (482, 41074), (504, 41149), (540, 41239), (568, 41290), (570, 41293), (625, 41383), (640, 41401), (647, 41434), (679, 41500), (689, 41518), (729, 41581), (781, 41665), (831, 41782), (837, 41830), (854, 41893), (874, 41977),

Gene: NovaSharks\_62 Start: 39405, Stop: 41321, Start Num: 54

Candidate Starts for NovaSharks\_62:

(Start: 54 @39405 has 11 MA's), (Start: 55 @39408 has 51 MA's), (Start: 69 @39420 has 40 MA's), (83, 39468), (96, 39501), (135, 39660), (145, 39687), (147, 39696), (181, 39768), (252, 39888), (Start: 293 @39951 has 18 MA's), (352, 40041), (370, 40068), (445, 40197), (453, 40221), (466, 40263), (472, 40275), (482, 40290), (490, 40311), (496, 40332), (500, 40353), (518, 40410), (522, 40428), (540, 40464), (561, 40506), (590, 40566), (647, 40662), (648, 40665), (760, 40842), (791, 40893), (831, 40983), (837, 41019), (839, 41025), (853, 41079), (864, 41118), (892, 41220), (897, 41235), (904, 41256),

Gene: NovumRegina\_72 Start: 56100, Stop: 54034, Start Num: 36

Candidate Starts for NovumRegina\_72:

(8, 56304), (9, 56292), (12, 56274), (Start: 36 @56100 has 31 MA's), (Start: 84 @55962 has 2 MA's), (89, 55938), (147, 55734), (168, 55689), (225, 55581), (300, 55467), (301, 55464), (359, 55374), (362, 55371), (402, 55311), (466, 55173), (475, 55155), (488, 55131), (522, 55008), (568, 54903), (640, 54777), (654, 54723), (725, 54597), (729, 54588), (742, 54564), (781, 54492), (783, 54486), (796, 54456), (821, 54399), (837, 54339), (854, 54276), (874, 54195),

Gene: Nubia\_29 Start: 22080, Stop: 23471, Start Num: 253

Candidate Starts for Nubia\_29:

(Start: 253 @22080 has 72 MA's), (305, 22167), (353, 22239), (354, 22242), (390, 22308), (398, 22326), (400, 22332), (416, 22359), (450, 22416), (465, 22467), (493, 22506), (503, 22542), (512, 22560), (520, 22596), (527, 22617), (538, 22635), (555, 22668), (583, 22707), (596, 22749), (607, 22776), (619, 22800), (637, 22836), (640, 22842), (647, 22875), (652, 22890), (655, 22899), (692, 22944), (713, 22977), (715, 22980), (791, 23085), (799, 23097), (810, 23115), (837, 23205), (844, 23226), (845, 23229), (850, 23253), (852, 23262), (872, 23349), (892, 23400), (907, 23439), (918, 23463),

Gene: Nucci\_39 Start: 30618, Stop: 29206, Start Num: 295

Candidate Starts for Nucci\_39:

(Start: 292 @30621 has 7 MA's), (Start: 295 @30618 has 21 MA's), (309, 30588), (Start: 314 @30582 has 1 MA's), (337, 30549), (Start: 384 @30474 has 1 MA's), (388, 30468), (439, 30357), (450, 30330), (465, 30279), (470, 30270), (487, 30243), (490, 30240), (500, 30198), (518, 30144), (589, 29988), (612, 29937), (614, 29931), (625, 29910), (632, 29904), (634, 29895), (640, 29883), (643, 29871), (669, 29793), (695, 29733), (699, 29727), (729, 29679), (754, 29637), (797, 29574), (807, 29562), (818, 29538), (820, 29535), (837, 29466), (840, 29457), (845, 29442), (846, 29436), (847, 29430), (850, 29418), (877, 29313), (886, 29295), (889, 29283), (904, 29238),

Gene: OMalley\_26 Start: 21745, Stop: 23139, Start Num: 253

Candidate Starts for OMalley\_26:

(Start: 253 @21745 has 72 MA's), (Start: 288 @21802 has 1 MA's), (341, 21889), (353, 21907), (354, 21910), (398, 21994), (416, 22027), (447, 22078), (450, 22084), (470, 22144), (493, 22174), (503, 22210), (512, 22228), (527, 22285), (538, 22303), (541, 22309), (555, 22336), (596, 22417), (607, 22444), (619, 22468), (626, 22483), (640, 22510), (647, 22543), (652, 22558), (742, 22690), (781, 22726), (791, 22753), (799, 22765), (810, 22783), (837, 22873), (839, 22879), (844, 22894), (845, 22897), (852, 22930), (868, 22990), (872, 23017), (894, 23074), (907, 23107), (918, 23131),

Gene: Oaker\_60 Start: 46344, Stop: 48401, Start Num: 55

Candidate Starts for Oaker\_60:

(Start: 55 @46344 has 51 MA's), (81, 46404), (82, 46407), (Start: 109 @46500 has 3 MA's), (112, 46512), (118, 46533), (150, 46656), (151, 46659), (154, 46668), (170, 46701), (174, 46722), (189, 46770), (206, 46812), (252, 46875), (268, 46896), (273, 46902), (300, 46956), (413, 47142), (417, 47154), (425, 47172), (445, 47187), (447, 47193), (568, 47511), (570, 47514), (590, 47559), (635, 47610), (640, 47622), (673, 47712), (679, 47724), (696, 47757), (713, 47781), (718, 47790), (783, 47880), (798, 47913), (836, 48024), (837, 48027), (838, 48030), (839, 48033), (848, 48069), (853, 48087), (869, 48153), (874, 48171), (934, 48348),

Gene: Oats\_40 Start: 30816, Stop: 29428, Start Num: 290

Candidate Starts for Oats\_40:

(175, 31038), (Start: 290 @30816 has 124 MA's), (382, 30672), (Start: 384 @30666 has 1 MA's), (386, 30663), (439, 30549), (450, 30522), (470, 30462), (487, 30435), (490, 30432), (517, 30339), (518, 30336), (533, 30294), (614, 30123), (625, 30102), (634, 30087), (640, 30075), (652, 30027), (695, 29967), (757, 29871), (797, 29808), (823, 29754), (846, 29670), (847, 29664), (850, 29652), (869, 29577), (874, 29556), (894, 29502), (895, 29499), (903, 29475),

Gene: OldNelly\_42 Start: 31120, Stop: 29732, Start Num: 290

Candidate Starts for OldNelly\_42:

(175, 31342), (Start: 290 @31120 has 124 MA's), (382, 30976), (Start: 384 @30970 has 1 MA's), (386, 30967), (439, 30853), (450, 30826), (470, 30766), (487, 30739), (490, 30736), (492, 30730), (518, 30640), (533, 30598), (614, 30427), (634, 30391), (640, 30379), (647, 30346), (652, 30331), (695, 30271), (757, 30175), (797, 30112), (823, 30058), (846, 29974), (847, 29968), (850, 29956), (874, 29860), (894, 29806), (895, 29803), (903, 29779),

Gene: Olympi\_34 Start: 23358, Stop: 24785, Start Num: 258

Candidate Starts for Olympi\_34:

(Start: 258 @23358 has 13 MA's), (Start: 384 @23574 has 1 MA's), (428, 23676), (448, 23715), (470, 23778), (498, 23823), (503, 23844), (541, 23943), (616, 24111), (640, 24159), (645, 24180), (652, 24207), (678, 24234), (692, 24264), (695, 24270), (718, 24306), (783, 24384), (831, 24486), (832, 24489), (852, 24576), (856, 24588), (866, 24627), (872, 24663), (879, 24681), (902, 24744),

Gene: Onyinye\_65 Start: 45953, Stop: 47881, Start Num: 55

Candidate Starts for Onyinye\_65:

(Start: 55 @45953 has 51 MA's), (71, 45974), (80, 46004), (Start: 109 @46103 has 3 MA's), (125, 46166), (145, 46238), (147, 46247), (170, 46295), (297, 46511), (306, 46532), (323, 46553), (325, 46556), (339, 46568), (357, 46595), (418, 46718), (447, 46754), (472, 46826), (478, 46835), (492, 46868), (508, 46925), (512, 46937), (540, 47006), (546, 47015), (552, 47033), (568, 47057), (635, 47153), (640, 47165), (647, 47198), (670, 47240), (700, 47303), (772, 47408), (847, 47624), (853, 47648), (854, 47651), (865, 47693), (871, 47723), (880, 47747), (927, 47864),

Gene: Orchid\_57 Start: 50422, Stop: 48932, Start Num: 282

Candidate Starts for Orchid\_57:

(Start: 282 @50422 has 5 MA's), (336, 50329), (343, 50320), (350, 50308), (359, 50293), (374, 50275), (405, 50218), (430, 50146), (432, 50143), (460, 50050), (476, 50017), (489, 49984), (490, 49981), (496, 49960), (518, 49891), (533, 49855), (574, 49768), (605, 49705), (607, 49702), (620, 49672), (648, 49600), (651, 49591), (726, 49468), (729, 49462), (817, 49330), (832, 49288), (841, 49243), (848, 49213), (928, 48961),

Gene: Orla\_60 Start: 41041, Stop: 39566, Start Num: 246

Candidate Starts for Orla\_60:

(Start: 246 @41041 has 9 MA's), (Start: 278 @40999 has 1 MA's), (300, 40951), (Start: 314 @40924 has 1 MA's), (366, 40849), (371, 40840), (374, 40834), (412, 40750), (418, 40732), (422, 40723), (425, 40717), (490, 40594), (504, 40540), (506, 40534), (509, 40528), (527, 40465), (536, 40450), (544, 40435), (634, 40237), (645, 40204), (656, 40165), (688, 40120), (726, 40057), (731, 40051), (733, 40045), (781, 39976), (782, 39973), (806, 39928), (828, 39871), (840, 39817), (853, 39766), (886, 39655), (892, 39634),

Gene: Ottawa\_61 Start: 33948, Stop: 35849, Start Num: 117

Candidate Starts for Ottawa\_61:

(92, 33855), (Start: 117 @33948 has 2 MA's), (137, 34035), (155, 34089), (174, 34140), (189, 34188), (198, 34212), (274, 34338), (279, 34347), (Start: 384 @34533 has 1 MA's), (405, 34575), (467, 34722), (486, 34743), (503, 34800), (513, 34824), (523, 34866), (541, 34902), (601, 35040), (644, 35142), (715, 35268), (729, 35292), (755, 35334), (863, 35619), (878, 35682), (889, 35712), (925, 35793), (929, 35808),

Gene: OtterstedtS21\_60 Start: 40582, Stop: 42495, Start Num: 55

Candidate Starts for OtterstedtS21\_60:

(Start: 54 @40579 has 11 MA's), (Start: 55 @40582 has 51 MA's), (Start: 69 @40594 has 40 MA's), (83, 40642), (96, 40675), (113, 40744), (135, 40834), (145, 40861), (147, 40870), (181, 40942), (225, 41029), (252, 41062), (Start: 293 @41125 has 18 MA's), (352, 41215), (445, 41371), (453, 41395), (466, 41437), (490, 41485), (496, 41506), (500, 41527), (518, 41584), (540, 41638), (561, 41680), (590, 41740), (647, 41836), (648, 41839), (760, 42016), (791, 42067), (831, 42157), (837, 42193), (839, 42199), (853, 42253), (864, 42292), (892, 42394), (897, 42409), (904, 42430),

Gene: Outis\_73 Start: 56760, Stop: 54685, Start Num: 36

Candidate Starts for Outis\_73:

(Start: 36 @56760 has 31 MA's), (77, 56640), (Start: 94 @56595 has 1 MA's), (95, 56592), (168, 56349), (200, 56292), (225, 56241), (268, 56187), (301, 56124), (359, 56034), (362, 56031), (375, 56007), (402, 55971), (475, 55815), (488, 55791), (522, 55668), (568, 55557), (580, 55533), (640, 55434), (654, 55380), (685, 55326), (708, 55284), (729, 55245), (768, 55176), (781, 55143), (796, 55107), (819, 55062), (821, 55050), (837, 54990), (854, 54927), (874, 54846), (901, 54762),

Gene: OverHedge\_40 Start: 25901, Stop: 27808, Start Num: 69

Candidate Starts for OverHedge\_40:

(Start: 69 @25901 has 40 MA's), (88, 25964), (99, 25985), (111, 26039), (170, 26216), (192, 26261), (Start: 295 @26435 has 21 MA's), (301, 26444), (359, 26534), (388, 26591), (468, 26777), (518, 26912), (520, 26924), (539, 26957), (640, 27086), (689, 27203), (744, 27278), (837, 27512), (838, 27515), (853, 27575), (875, 27665), (886, 27695), (898, 27737), (922, 27788),

Gene: Oxtobor96\_42 Start: 31119, Stop: 29731, Start Num: 290

Candidate Starts for Oxtobor96\_42:

(46, 31770), (148, 31416), (175, 31341), (Start: 290 @31119 has 124 MA's), (382, 30975), (Start: 384 @30969 has 1 MA's), (386, 30966), (439, 30852), (450, 30825), (470, 30765), (487, 30738), (490, 30735), (518, 30639), (533, 30597), (614, 30426), (625, 30405), (640, 30378), (652, 30330), (695,

30270), (797, 30111), (823, 30057), (846, 29973), (847, 29967), (850, 29955), (874, 29859), (894, 29805), (895, 29802), (903, 29778),

Gene: Oxynfrius\_29 Start: 22093, Stop: 23484, Start Num: 253

Candidate Starts for Oxynfrius\_29:

(Start: 253 @22093 has 72 MA's), (305, 22180), (353, 22252), (354, 22255), (390, 22321), (398, 22339), (400, 22345), (416, 22372), (450, 22429), (465, 22480), (493, 22519), (503, 22555), (512, 22573), (520, 22609), (527, 22630), (538, 22648), (555, 22681), (583, 22720), (596, 22762), (607, 22789), (619, 22813), (637, 22849), (640, 22855), (647, 22888), (652, 22903), (655, 22912), (692, 22957), (713, 22990), (715, 22993), (791, 23098), (799, 23110), (810, 23128), (837, 23218), (844, 23239), (845, 23242), (850, 23266), (852, 23275), (872, 23362), (892, 23413), (907, 23452), (918, 23476),

Gene: P1201\_75 Start: 57035, Stop: 55065, Start Num: 67

Candidate Starts for P1201\_75:

(Start: 67 @57035 has 8 MA's), (110, 56897), (116, 56873), (152, 56741), (211, 56618), (225, 56600), (226, 56597), (359, 56390), (447, 56249), (539, 55979), (550, 55955), (561, 55934), (586, 55886), (640, 55790), (647, 55757), (675, 55700), (678, 55694), (679, 55691), (783, 55502), (847, 55319), (854, 55292), (869, 55229), (874, 55211),

Gene: PBI1\_50 Start: 39660, Stop: 41603, Start Num: 55

Candidate Starts for PBI1\_50:

(Start: 55 @39660 has 51 MA's), (72, 39687), (Start: 97 @39759 has 1 MA's), (110, 39813), (125, 39873), (129, 39891), (131, 39900), (146, 39951), (163, 39993), (181, 40029), (225, 40116), (287, 40209), (297, 40224), (306, 40245), (381, 40347), (399, 40380), (410, 40404), (447, 40464), (482, 40551), (504, 40626), (540, 40716), (568, 40767), (570, 40770), (625, 40860), (640, 40878), (647, 40911), (673, 40965), (679, 40977), (689, 40995), (729, 41058), (781, 41142), (831, 41259), (837, 41307), (854, 41370), (874, 41454),

Gene: PHTowN\_70 Start: 50156, Stop: 48270, Start Num: 53

Candidate Starts for PHTowN\_70:

(37, 50216), (Start: 53 @50156 has 8 MA's), (Start: 69 @50141 has 40 MA's), (88, 50078), (93, 50069), (99, 50057), (122, 49964), (138, 49901), (145, 49883), (170, 49826), (181, 49802), (276, 49643), (Start: 295 @49604 has 21 MA's), (301, 49595), (370, 49487), (422, 49379), (466, 49274), (503, 49175), (520, 49115), (565, 49028), (568, 49025), (647, 48920), (650, 48911), (654, 48899), (710, 48800), (750, 48761), (791, 48683), (798, 48671), (811, 48644), (838, 48554), (843, 48539), (856, 48485), (869, 48428), (913, 48302),

Gene: PLOT\_53 Start: 39756, Stop: 41699, Start Num: 55

Candidate Starts for PLOT\_53:

(39, 39693), (Start: 55 @39756 has 51 MA's), (72, 39783), (Start: 97 @39855 has 1 MA's), (110, 39909), (125, 39969), (131, 39996), (146, 40047), (163, 40089), (181, 40125), (225, 40212), (287, 40305), (297, 40320), (306, 40341), (381, 40443), (399, 40476), (410, 40500), (447, 40560), (482, 40647), (504, 40722), (540, 40812), (568, 40863), (570, 40866), (625, 40956), (640, 40974), (647, 41007), (679, 41073), (689, 41091), (729, 41154), (781, 41238), (831, 41355), (837, 41403), (854, 41466), (874, 41550),

Gene: Pajaza\_37 Start: 29766, Stop: 28396, Start Num: 295

Candidate Starts for Pajaza\_37:

(Start: 295 @29766 has 21 MA's), (378, 29637), (388, 29616), (439, 29505), (440, 29502), (467, 29418), (470, 29412), (477, 29400), (490, 29382), (496, 29361), (518, 29286), (527, 29253), (611, 29082), (612, 29079), (614, 29073), (615, 29070), (634, 29037), (652, 28977), (695, 28917), (699, 28911), (701, 28908), (703, 28905), (754, 28821), (830, 28689), (837, 28650), (845, 28626), (846,



28620), (850, 28602), (874, 28506), (886, 28479), (889, 28467), (899, 28434), (904, 28422),

Gene: Papafritta\_40 Start: 30824, Stop: 29436, Start Num: 290

Candidate Starts for Papafritta\_40:

(148, 31121), (175, 31046), (Start: 290 @30824 has 124 MA's), (382, 30680), (Start: 384 @30674 has 1 MA's), (386, 30671), (439, 30557), (450, 30530), (470, 30470), (487, 30443), (490, 30440), (518, 30344), (533, 30302), (614, 30131), (625, 30110), (634, 30095), (652, 30035), (682, 30002), (695, 29975), (757, 29879), (797, 29816), (823, 29762), (846, 29678), (847, 29672), (850, 29660), (874, 29564), (894, 29510), (895, 29507), (903, 29483),

Gene: Papyrus\_66 Start: 47571, Stop: 49331, Start Num: 158

Candidate Starts for Papyrus\_66:

(Start: 158 @47571 has 9 MA's), (190, 47640), (Start: 248 @47736 has 3 MA's), (254, 47745), (301, 47826), (327, 47871), (445, 48072), (459, 48120), (488, 48180), (492, 48192), (511, 48258), (552, 48381), (568, 48405), (580, 48429), (640, 48633), (647, 48666), (652, 48681), (673, 48720), (675, 48723), (679, 48732), (729, 48801), (805, 48933), (837, 49056), (838, 49059), (846, 49086), (853, 49116), (855, 49122), (856, 49125), (860, 49143), (864, 49155), (904, 49290), (919, 49317), (921, 49320),

Gene: ParleG\_41 Start: 31121, Stop: 29733, Start Num: 290

Candidate Starts for ParleG\_41:

(46, 31772), (148, 31418), (175, 31343), (Start: 290 @31121 has 124 MA's), (382, 30977), (Start: 384 @30971 has 1 MA's), (386, 30968), (439, 30854), (450, 30827), (470, 30767), (487, 30740), (490, 30737), (518, 30641), (533, 30599), (611, 30437), (614, 30428), (625, 30407), (634, 30392), (640, 30380), (652, 30332), (695, 30272), (757, 30176), (797, 30113), (823, 30059), (846, 29975), (847, 29969), (850, 29957), (874, 29861), (894, 29807), (895, 29804), (903, 29780),

Gene: PartyCup\_29 Start: 22162, Stop: 23556, Start Num: 253

Candidate Starts for PartyCup\_29:

(Start: 253 @22162 has 72 MA's), (Start: 288 @22219 has 1 MA's), (353, 22324), (398, 22411), (447, 22495), (448, 22498), (450, 22501), (493, 22591), (503, 22627), (506, 22636), (512, 22645), (527, 22702), (538, 22720), (555, 22753), (566, 22765), (596, 22834), (607, 22861), (619, 22885), (637, 22921), (640, 22927), (647, 22960), (652, 22975), (655, 22984), (723, 23074), (781, 23143), (791, 23170), (803, 23188), (810, 23200), (837, 23290), (839, 23296), (842, 23305), (844, 23311), (852, 23347), (872, 23434), (894, 23491), (907, 23524), (918, 23548),

Gene: ParvusTarda\_59 Start: 39954, Stop: 41870, Start Num: 54

Candidate Starts for ParvusTarda\_59:

(20, 39831), (22, 39840), (23, 39852), (32, 39885), (Start: 54 @39954 has 11 MA's), (Start: 55 @39957 has 51 MA's), (Start: 69 @39969 has 40 MA's), (83, 40017), (96, 40050), (113, 40119), (135, 40209), (145, 40236), (147, 40245), (181, 40317), (225, 40404), (252, 40437), (Start: 293 @40500 has 18 MA's), (352, 40590), (445, 40746), (453, 40770), (466, 40812), (490, 40860), (496, 40881), (500, 40902), (518, 40959), (540, 41013), (561, 41055), (590, 41115), (647, 41211), (648, 41214), (760, 41391), (791, 41442), (831, 41532), (837, 41568), (839, 41574), (853, 41628), (864, 41667), (892, 41769), (897, 41784), (904, 41805),

Gene: Patbob\_102 Start: 80820, Stop: 82658, Start Num: 63

Candidate Starts for Patbob\_102:

(Start: 63 @80820 has 2 MA's), (115, 80979), (143, 81075), (183, 81135), (200, 81165), (252, 81255), (273, 81285), (298, 81336), (398, 81396), (537, 81792), (549, 81813), (572, 81858), (640, 81921), (647, 81954), (651, 81966), (655, 81978), (679, 82023), (700, 82062), (744, 82119), (748, 82125), (766, 82158), (796, 82227), (832, 82311), (860, 82428), (915, 82602), (931, 82644),

Gene: Patience\_76 Start: 49716, Stop: 51749, Start Num: 59

Candidate Starts for Patience\_76:

(Start: 59 @49716 has 3 MA's), (72, 49740), (93, 49803), (111, 49869), (123, 49920), (124, 49923), (154, 50031), (170, 50064), (189, 50103), (201, 50127), (236, 50190), (252, 50208), (254, 50211), (268, 50229), (273, 50235), (306, 50304), (324, 50331), (335, 50343), (367, 50376), (413, 50478), (472, 50601), (488, 50631), (518, 50736), (522, 50754), (565, 50844), (568, 50847), (606, 50949), (622, 50988), (635, 51015), (638, 51021), (640, 51027), (652, 51075), (663, 51093), (673, 51120), (679, 51132), (685, 51141), (836, 51429), (869, 51558), (880, 51591), (886, 51609), (903, 51663), (922, 51702),

Gene: Patio\_74 Start: 56655, Stop: 54598, Start Num: 36

Candidate Starts for Patio\_74:

(6, 56943), (10, 56835), (Start: 36 @56655 has 31 MA's), (154, 56280), (206, 56172), (226, 56139), (268, 56088), (300, 56028), (301, 56025), (348, 55953), (359, 55935), (402, 55872), (405, 55866), (415, 55839), (454, 55773), (466, 55734), (475, 55716), (488, 55692), (504, 55632), (522, 55569), (535, 55536), (568, 55473), (640, 55350), (668, 55281), (673, 55263), (729, 55158), (733, 55149), (768, 55089), (781, 55056), (783, 55050), (796, 55020), (821, 54963), (837, 54903), (846, 54873), (854, 54840), (901, 54675),

Gene: Patos\_63 Start: 40959, Stop: 42872, Start Num: 55

Candidate Starts for Patos\_63:

(20, 40833), (22, 40842), (23, 40854), (32, 40887), (Start: 54 @40956 has 11 MA's), (Start: 55 @40959 has 51 MA's), (Start: 69 @40971 has 40 MA's), (83, 41019), (113, 41121), (135, 41211), (145, 41238), (147, 41247), (181, 41319), (252, 41439), (Start: 293 @41502 has 18 MA's), (352, 41592), (370, 41619), (445, 41748), (453, 41772), (466, 41814), (490, 41862), (496, 41883), (500, 41904), (518, 41961), (522, 41979), (540, 42015), (561, 42057), (590, 42117), (647, 42213), (648, 42216), (760, 42393), (791, 42444), (831, 42534), (837, 42570), (839, 42576), (853, 42630), (864, 42669), (892, 42771), (897, 42786), (904, 42807), (930, 42864),

Gene: PatrickStar\_58 Start: 50421, Stop: 48931, Start Num: 282

Candidate Starts for PatrickStar\_58:

(Start: 282 @50421 has 5 MA's), (336, 50328), (343, 50319), (350, 50307), (359, 50292), (374, 50274), (405, 50217), (430, 50145), (432, 50142), (460, 50049), (476, 50016), (489, 49983), (490, 49980), (496, 49959), (518, 49890), (533, 49854), (574, 49767), (605, 49704), (607, 49701), (620, 49671), (648, 49599), (651, 49590), (726, 49467), (729, 49461), (817, 49329), (832, 49287), (841, 49242), (848, 49212), (928, 48960),

Gene: PauloDiaboli\_114 Start: 78533, Stop: 76683, Start Num: 68

Candidate Starts for PauloDiaboli\_114:

(42, 78602), (44, 78596), (Start: 68 @78533 has 7 MA's), (80, 78488), (83, 78476), (124, 78350), (141, 78287), (183, 78212), (Start: 244 @78104 has 1 MA's), (Start: 255 @78086 has 4 MA's), (Start: 295 @78017 has 21 MA's), (Start: 308 @77990 has 1 MA's), (396, 77930), (453, 77765), (504, 77621), (534, 77534), (549, 77507), (568, 77471), (572, 77462), (638, 77405), (640, 77399), (651, 77354), (655, 77342), (671, 77321), (680, 77297), (700, 77261), (736, 77216), (783, 77132), (785, 77129), (786, 77123), (817, 77060), (846, 76958), (868, 76871), (879, 76829), (894, 76778),

Gene: Peep\_41 Start: 31106, Stop: 29718, Start Num: 290

Candidate Starts for Peep\_41:

(175, 31328), (257, 31166), (Start: 290 @31106 has 124 MA's), (382, 30962), (Start: 384 @30956 has 1 MA's), (386, 30953), (439, 30839), (450, 30812), (470, 30752), (487, 30725), (490, 30722), (518, 30626), (533, 30584), (614, 30413), (625, 30392), (634, 30377), (640, 30365), (652, 30317), (695, 30257), (757, 30161), (797, 30098), (823, 30044), (846, 29960), (847, 29954), (850, 29942), (874, 29846), (894, 29792), (895, 29789), (903, 29765),

Gene: Penelope2018\_53 Start: 39774, Stop: 41717, Start Num: 55

Candidate Starts for Penelope2018\_53:

(35, 39705), (Start: 55 @39774 has 51 MA's), (72, 39801), (Start: 97 @39873 has 1 MA's), (110, 39927), (125, 39987), (129, 40005), (131, 40014), (146, 40065), (163, 40107), (181, 40143), (225, 40230), (287, 40323), (297, 40338), (306, 40359), (381, 40461), (399, 40494), (410, 40518), (447, 40578), (482, 40665), (504, 40740), (540, 40830), (568, 40881), (570, 40884), (625, 40974), (640, 40992), (647, 41025), (673, 41079), (679, 41091), (689, 41109), (729, 41172), (781, 41256), (831, 41373), (837, 41421), (854, 41484), (874, 41568),

Gene: Peppino\_40 Start: 31250, Stop: 29859, Start Num: 290

Candidate Starts for Peppino\_40:

(216, 31364), (277, 31280), (Start: 290 @31250 has 124 MA's), (382, 31103), (Start: 384 @31097 has 1 MA's), (386, 31094), (439, 30980), (450, 30953), (470, 30893), (487, 30866), (490, 30863), (518, 30767), (533, 30725), (614, 30554), (625, 30533), (640, 30506), (695, 30398), (757, 30302), (823, 30185), (831, 30167), (846, 30101), (847, 30095), (874, 29987), (894, 29933), (895, 29930), (903, 29906), (917, 29876),

Gene: PermaG\_34 Start: 23404, Stop: 24831, Start Num: 256

Candidate Starts for PermaG\_34:

(Start: 228 @23362 has 2 MA's), (Start: 256 @23404 has 3 MA's), (353, 23560), (447, 23758), (448, 23761), (450, 23764), (455, 23782), (498, 23869), (503, 23890), (541, 23989), (576, 24055), (616, 24157), (619, 24160), (640, 24205), (645, 24226), (652, 24253), (678, 24280), (679, 24283), (686, 24295), (692, 24310), (695, 24316), (718, 24352), (742, 24388), (760, 24400), (783, 24430), (822, 24514), (831, 24532), (832, 24535), (852, 24622), (856, 24634), (866, 24673), (872, 24709), (875, 24715), (902, 24790),

Gene: PeteyPab\_71 Start: 52509, Stop: 50584, Start Num: 67

Candidate Starts for PeteyPab\_71:

(30, 52602), (34, 52596), (Start: 67 @52509 has 8 MA's), (120, 52338), (133, 52284), (225, 52080), (324, 51924), (359, 51873), (362, 51870), (393, 51828), (446, 51741), (447, 51738), (472, 51666), (478, 51657), (638, 51306), (640, 51300), (647, 51267), (821, 50928), (839, 50862), (843, 50850), (847, 50832), (854, 50805), (869, 50742), (880, 50709), (903, 50637),

Gene: Phanita\_39 Start: 30844, Stop: 29468, Start Num: 314

Candidate Starts for Phanita\_39:

(Start: 292 @30883 has 7 MA's), (Start: 295 @30880 has 21 MA's), (309, 30850), (Start: 314 @30844 has 1 MA's), (337, 30811), (439, 30619), (450, 30592), (470, 30532), (487, 30505), (490, 30502), (500, 30460), (518, 30406), (533, 30364), (589, 30250), (614, 30193), (625, 30172), (640, 30145), (643, 30133), (644, 30130), (647, 30112), (678, 30031), (695, 29995), (729, 29941), (754, 29899), (781, 29869), (791, 29845), (795, 29839), (820, 29797), (837, 29728), (845, 29704), (846, 29698), (847, 29692), (850, 29680), (886, 29557), (889, 29545), (904, 29500),

Gene: Pharpay\_40 Start: 25956, Stop: 27863, Start Num: 69

Candidate Starts for Pharpay\_40:

(Start: 69 @25956 has 40 MA's), (88, 26019), (99, 26040), (111, 26094), (170, 26271), (192, 26316), (Start: 295 @26490 has 21 MA's), (301, 26499), (359, 26589), (388, 26646), (468, 26832), (518, 26967), (520, 26979), (539, 27012), (640, 27141), (689, 27258), (744, 27333), (837, 27567), (838, 27570), (853, 27630), (875, 27720), (886, 27750), (898, 27792), (922, 27843),

Gene: Phendrix\_173 Start: 92821, Stop: 90896, Start Num: 68

Candidate Starts for Phendrix\_173:

(Start: 68 @92821 has 7 MA's), (78, 92779), (115, 92665), (135, 92590), (166, 92521), (189, 92452), (406, 92179), (412, 92161), (421, 92137), (433, 92098), (499, 91918), (522, 91834), (534, 91810), (565, 91750), (572, 91738), (586, 91711), (647, 91642), (648, 91639), (721, 91474), (741, 91423), (751, 91399), (781, 91333), (798, 91294), (805, 91282), (840, 91174), (848, 91141), (854, 91120), (863, 91087), (875, 91036), (883, 91018),

Gene: Pherbot\_39 Start: 30554, Stop: 29172, Start Num: 292

Candidate Starts for Pherbot\_39:

(280, 30581), (Start: 292 @30554 has 7 MA's), (Start: 295 @30551 has 21 MA's), (309, 30521), (382, 30413), (Start: 384 @30407 has 1 MA's), (386, 30404), (394, 30389), (470, 30203), (474, 30194), (490, 30173), (500, 30131), (518, 30077), (614, 29864), (625, 29843), (634, 29828), (640, 29816), (644, 29801), (653, 29765), (657, 29756), (678, 29741), (695, 29705), (757, 29606), (797, 29543), (812, 29516), (835, 29441), (837, 29435), (840, 29426), (845, 29411), (846, 29405), (847, 29399), (850, 29387), (886, 29264), (889, 29252),

Gene: Pherferi\_41 Start: 31114, Stop: 29726, Start Num: 290

Candidate Starts for Pherferi\_41:

(46, 31765), (148, 31411), (175, 31336), (Start: 290 @31114 has 124 MA's), (382, 30970), (Start: 384 @30964 has 1 MA's), (386, 30961), (439, 30847), (450, 30820), (470, 30760), (487, 30733), (490, 30730), (518, 30634), (533, 30592), (611, 30430), (614, 30421), (625, 30400), (634, 30385), (640, 30373), (652, 30325), (695, 30265), (757, 30169), (797, 30106), (823, 30052), (846, 29968), (847, 29962), (850, 29950), (874, 29854), (894, 29800), (895, 29797), (903, 29773),

Gene: Phiderman\_41 Start: 31111, Stop: 29723, Start Num: 290

Candidate Starts for Phiderman\_41:

(46, 31762), (148, 31408), (175, 31333), (Start: 290 @31111 has 124 MA's), (382, 30967), (Start: 384 @30961 has 1 MA's), (386, 30958), (439, 30844), (450, 30817), (470, 30757), (487, 30730), (490, 30727), (518, 30631), (533, 30589), (611, 30427), (614, 30418), (625, 30397), (634, 30382), (640, 30370), (652, 30322), (695, 30262), (757, 30166), (797, 30103), (823, 30049), (846, 29965), (847, 29959), (850, 29947), (874, 29851), (894, 29797), (895, 29794), (903, 29770),

Gene: Philon9\_55 Start: 53812, Stop: 52235, Start Num: 221

Candidate Starts for Philon9\_55:

(Start: 171 @53944 has 6 MA's), (Start: 173 @53932 has 2 MA's), (Start: 221 @53812 has 1 MA's), (250, 53779), (270, 53749), (Start: 275 @53743 has 7 MA's), (336, 53635), (359, 53599), (374, 53575), (377, 53566), (381, 53557), (404, 53509), (405, 53506), (407, 53500), (408, 53497), (456, 53374), (462, 53353), (489, 53293), (512, 53221), (518, 53200), (521, 53185), (522, 53182), (526, 53173), (605, 53014), (633, 52963), (638, 52951), (640, 52945), (645, 52924), (659, 52879), (682, 52834), (705, 52792), (736, 52735), (753, 52705), (754, 52702), (757, 52699), (792, 52645), (845, 52522), (848, 52504), (878, 52387), (879, 52384), (882, 52372), (932, 52252),

Gene: Phireproof\_41 Start: 31120, Stop: 29732, Start Num: 290

Candidate Starts for Phireproof\_41:

(175, 31342), (Start: 290 @31120 has 124 MA's), (382, 30976), (Start: 384 @30970 has 1 MA's), (386, 30967), (439, 30853), (450, 30826), (470, 30766), (487, 30739), (490, 30736), (518, 30640), (533, 30598), (611, 30436), (614, 30427), (625, 30406), (634, 30391), (640, 30379), (652, 30331), (695, 30271), (757, 30175), (797, 30112), (823, 30058), (846, 29974), (847, 29968), (850, 29956), (874, 29860), (894, 29806), (895, 29803), (903, 29779),

Gene: Phomeo\_72 Start: 56270, Stop: 54342, Start Num: 84

Candidate Starts for Phomeo\_72:

(2, 56906), (5, 56705), (8, 56612), (9, 56600), (12, 56582), (Start: 36 @56408 has 31 MA's), (Start: 84 @56270 has 2 MA's), (89, 56246), (147, 56042), (168, 55997), (225, 55889), (300, 55775), (301,

55772), (359, 55682), (362, 55679), (402, 55619), (466, 55481), (475, 55463), (488, 55439), (522, 55316), (568, 55211), (640, 55085), (654, 55031), (725, 54905), (729, 54896), (742, 54872), (781, 54800), (783, 54794), (796, 54764), (821, 54707), (837, 54647), (854, 54584), (874, 54503),

Gene: Phrampa\_96 Start: 82318, Stop: 84156, Start Num: 63

Candidate Starts for Phrampa\_96:

(Start: 63 @82318 has 2 MA's), (115, 82477), (143, 82573), (183, 82633), (200, 82663), (252, 82753), (273, 82783), (398, 82894), (515, 83233), (549, 83311), (572, 83356), (640, 83419), (647, 83452), (651, 83464), (655, 83476), (668, 83491), (669, 83494), (679, 83521), (700, 83560), (744, 83617), (748, 83623), (766, 83656), (796, 83725), (832, 83809), (860, 83926), (915, 84100), (931, 84142),

Gene: PhredFlintston\_41 Start: 31114, Stop: 29726, Start Num: 290

Candidate Starts for PhredFlintston\_41:

(46, 31765), (148, 31411), (175, 31336), (Start: 290 @31114 has 124 MA's), (382, 30970), (Start: 384 @30964 has 1 MA's), (386, 30961), (439, 30847), (450, 30820), (470, 30760), (487, 30733), (490, 30730), (518, 30634), (533, 30592), (611, 30430), (614, 30421), (625, 30400), (634, 30385), (640, 30373), (652, 30325), (695, 30265), (757, 30169), (797, 30106), (823, 30052), (846, 29968), (847, 29962), (850, 29950), (874, 29854), (894, 29800), (895, 29797), (903, 29773),

Gene: Phreeze\_60 Start: 45650, Stop: 47707, Start Num: 55

Candidate Starts for Phreeze\_60:

(Start: 55 @45650 has 51 MA's), (81, 45710), (82, 45713), (Start: 109 @45806 has 3 MA's), (112, 45818), (118, 45839), (150, 45962), (151, 45965), (154, 45974), (170, 46007), (174, 46028), (189, 46076), (252, 46181), (268, 46202), (273, 46208), (300, 46262), (413, 46448), (417, 46460), (425, 46478), (445, 46493), (447, 46499), (568, 46817), (570, 46820), (590, 46865), (635, 46916), (640, 46928), (673, 47018), (679, 47030), (696, 47063), (713, 47087), (718, 47096), (783, 47186), (798, 47219), (836, 47330), (837, 47333), (838, 47336), (839, 47339), (853, 47393), (869, 47459), (874, 47477), (934, 47654),

Gene: Phriends\_41 Start: 31120, Stop: 29732, Start Num: 290

Candidate Starts for Phriends\_41:

(175, 31342), (Start: 290 @31120 has 124 MA's), (382, 30976), (Start: 384 @30970 has 1 MA's), (386, 30967), (439, 30853), (450, 30826), (470, 30766), (487, 30739), (490, 30736), (492, 30730), (518, 30640), (533, 30598), (614, 30427), (634, 30391), (640, 30379), (647, 30346), (652, 30331), (695, 30271), (757, 30175), (797, 30112), (823, 30058), (846, 29974), (847, 29968), (850, 29956), (874, 29860), (894, 29806), (895, 29803), (903, 29779),

Gene: PhunaPhoke\_40 Start: 25929, Stop: 27836, Start Num: 69

Candidate Starts for PhunaPhoke\_40:

(Start: 69 @25929 has 40 MA's), (88, 25992), (99, 26013), (111, 26067), (170, 26244), (192, 26289), (Start: 295 @26463 has 21 MA's), (301, 26472), (359, 26562), (388, 26619), (468, 26805), (518, 26940), (520, 26952), (539, 26985), (640, 27114), (689, 27231), (744, 27306), (837, 27540), (838, 27543), (853, 27603), (875, 27693), (886, 27723), (898, 27765), (922, 27816),

Gene: PierreThree\_58 Start: 52668, Stop: 51259, Start Num: 330

Candidate Starts for PierreThree\_58:

(146, 53046), (168, 52995), (179, 52944), (202, 52890), (213, 52860), (Start: 237 @52827 has 2 MA's), (Start: 244 @52818 has 1 MA's), (Start: 262 @52791 has 25 MA's), (Start: 330 @52668 has 27 MA's), (359, 52623), (381, 52581), (404, 52533), (405, 52530), (407, 52524), (408, 52521), (412, 52509), (414, 52503), (436, 52455), (437, 52452), (485, 52332), (491, 52314), (509, 52251), (518, 52227), (521, 52212), (567, 52119), (605, 52041), (637, 51981), (638, 51978), (641, 51969), (645, 51951), (658, 51909), (682, 51864), (691, 51846), (757, 51729), (764, 51714), (773, 51693), (831, 51612), (832, 51609), (845, 51552), (846, 51546), (848, 51534), (862, 51483), (866, 51468), (868, 51459),

(878, 51420), (880, 51408), (919, 51312), (926, 51297),

Gene: Pikmin\_37 Start: 29766, Stop: 28396, Start Num: 295

Candidate Starts for Pikmin\_37:

(Start: 295 @29766 has 21 MA's), (378, 29637), (388, 29616), (439, 29505), (440, 29502), (467, 29418), (470, 29412), (477, 29400), (490, 29382), (496, 29361), (518, 29286), (527, 29253), (611, 29082), (612, 29079), (614, 29073), (615, 29070), (634, 29037), (652, 28977), (695, 28917), (699, 28911), (701, 28908), (703, 28905), (754, 28821), (830, 28689), (837, 28650), (845, 28626), (846, 28620), (850, 28602), (874, 28506), (886, 28479), (889, 28467), (899, 28434), (904, 28422),

Gene: PinkFriday\_25 Start: 20614, Stop: 22011, Start Num: 253

Candidate Starts for PinkFriday\_25:

(Start: 253 @20614 has 72 MA's), (Start: 288 @20674 has 1 MA's), (341, 20761), (353, 20779), (398, 20866), (400, 20872), (416, 20899), (447, 20950), (450, 20956), (470, 21016), (491, 21037), (493, 21046), (503, 21082), (512, 21100), (513, 21103), (520, 21136), (527, 21157), (538, 21175), (541, 21181), (555, 21208), (576, 21235), (596, 21289), (600, 21301), (607, 21316), (619, 21340), (626, 21355), (632, 21361), (640, 21382), (647, 21415), (652, 21430), (655, 21439), (695, 21490), (742, 21562), (791, 21625), (803, 21643), (832, 21715), (835, 21739), (837, 21745), (838, 21748), (844, 21766), (852, 21802), (872, 21889), (907, 21979), (918, 22003),

Gene: PitaDog\_25 Start: 20567, Stop: 21961, Start Num: 253

Candidate Starts for PitaDog\_25:

(Start: 253 @20567 has 72 MA's), (Start: 288 @20624 has 1 MA's), (353, 20729), (354, 20732), (398, 20816), (416, 20849), (447, 20900), (450, 20906), (491, 20987), (492, 20990), (493, 20996), (503, 21032), (512, 21050), (513, 21053), (520, 21086), (527, 21107), (596, 21239), (607, 21266), (626, 21305), (637, 21326), (640, 21332), (647, 21365), (652, 21380), (655, 21389), (692, 21434), (715, 21470), (742, 21512), (791, 21575), (803, 21593), (837, 21695), (838, 21698), (844, 21716), (845, 21719), (850, 21743), (852, 21752), (872, 21839), (907, 21929), (918, 21953),

Gene: Pleakley\_82 Start: 56142, Stop: 54094, Start Num: 36

Candidate Starts for Pleakley\_82:

(Start: 36 @56142 has 31 MA's), (86, 55989), (98, 55974), (118, 55893), (154, 55770), (168, 55740), (225, 55632), (252, 55599), (283, 55548), (301, 55515), (359, 55425), (378, 55392), (402, 55362), (446, 55287), (475, 55206), (496, 55155), (522, 55059), (535, 55026), (551, 54990), (568, 54963), (638, 54846), (640, 54840), (668, 54771), (673, 54753), (679, 54741), (768, 54579), (783, 54546), (796, 54516), (805, 54501), (821, 54459), (854, 54336), (874, 54255), (885, 54231), (901, 54171),

Gene: Pocket\_40 Start: 30843, Stop: 29422, Start Num: 290

Candidate Starts for Pocket\_40:

(175, 31065), (Start: 290 @30843 has 124 MA's), (382, 30699), (Start: 384 @30693 has 1 MA's), (386, 30690), (439, 30576), (450, 30549), (470, 30489), (487, 30462), (490, 30459), (518, 30363), (533, 30321), (611, 30159), (614, 30150), (625, 30129), (640, 30102), (647, 30069), (652, 30054), (687, 29979), (695, 29961), (757, 29865), (797, 29802), (823, 29748), (846, 29664), (847, 29658), (850, 29646), (869, 29571), (874, 29550), (894, 29496), (895, 29493), (903, 29469),

Gene: PokyPuppy\_58 Start: 52764, Stop: 51256, Start Num: 278

Candidate Starts for PokyPuppy\_58:

(146, 53043), (168, 52992), (179, 52941), (200, 52893), (202, 52887), (213, 52857), (Start: 237 @52824 has 2 MA's), (Start: 244 @52815 has 1 MA's), (Start: 262 @52788 has 25 MA's), (Start: 278 @52764 has 1 MA's), (Start: 330 @52665 has 27 MA's), (359, 52620), (381, 52578), (404, 52530), (405, 52527), (407, 52521), (408, 52518), (414, 52500), (436, 52452), (485, 52329), (491, 52311), (518, 52224), (521, 52209), (567, 52116), (581, 52089), (605, 52038), (637, 51978), (638, 51975), (641, 51966), (645, 51948), (658, 51906), (682, 51861), (757, 51726), (764, 51711), (773, 51690),

(821, 51633), (832, 51606), (845, 51549), (846, 51543), (848, 51531), (862, 51480), (868, 51456), (878, 51417), (880, 51405), (882, 51402), (919, 51309), (926, 51294),

Gene: Poland\_64 Start: 54025, Stop: 52493, Start Num: 262

Candidate Starts for Poland\_64:

(146, 54280), (168, 54229), (202, 54124), (213, 54094), (Start: 237 @54061 has 2 MA's), (Start: 244 @54052 has 1 MA's), (Start: 262 @54025 has 25 MA's), (359, 53857), (381, 53815), (390, 53797), (404, 53767), (408, 53755), (412, 53743), (414, 53737), (422, 53716), (491, 53548), (518, 53461), (521, 53446), (526, 53434), (544, 53404), (567, 53353), (605, 53275), (616, 53251), (623, 53233), (637, 53215), (638, 53212), (641, 53203), (645, 53185), (658, 53143), (682, 53098), (691, 53080), (757, 52963), (764, 52948), (773, 52927), (831, 52846), (832, 52843), (845, 52786), (846, 52780), (848, 52768), (868, 52693), (878, 52654), (880, 52642), (882, 52639), (919, 52546), (926, 52531),

Gene: Polyuki\_72 Start: 53158, Stop: 51122, Start Num: 38

Candidate Starts for Polyuki\_72:

(13, 53326), (Start: 38 @53158 has 6 MA's), (Start: 58 @53092 has 1 MA's), (77, 53050), (168, 52765), (200, 52708), (225, 52657), (236, 52642), (Start: 295 @52552 has 21 MA's), (301, 52540), (359, 52447), (406, 52375), (447, 52306), (472, 52234), (496, 52177), (568, 51997), (580, 51973), (618, 51910), (640, 51874), (673, 51787), (744, 51655), (766, 51616), (768, 51613), (783, 51568), (837, 51421), (854, 51358), (865, 51316), (874, 51277), (885, 51253),

Gene: Pons\_58 Start: 40779, Stop: 39301, Start Num: 242

Candidate Starts for Pons\_58:

(191, 40860), (Start: 221 @40806 has 1 MA's), (Start: 242 @40779 has 41 MA's), (286, 40716), (300, 40689), (Start: 314 @40662 has 1 MA's), (350, 40608), (366, 40587), (368, 40584), (380, 40557), (Start: 384 @40545 has 1 MA's), (425, 40452), (490, 40329), (504, 40275), (506, 40269), (509, 40263), (536, 40185), (544, 40170), (588, 40080), (591, 40071), (602, 40044), (632, 39981), (634, 39972), (640, 39960), (645, 39939), (648, 39924), (651, 39915), (659, 39894), (688, 39855), (692, 39846), (701, 39831), (781, 39711), (782, 39708), (803, 39666), (811, 39648), (840, 39552), (853, 39501), (861, 39471), (869, 39438), (888, 39381), (893, 39366),

Gene: PotPie\_56 Start: 41318, Stop: 39840, Start Num: 242

Candidate Starts for PotPie\_56:

(191, 41396), (218, 41345), (Start: 221 @41342 has 1 MA's), (Start: 242 @41318 has 41 MA's), (286, 41255), (297, 41234), (300, 41228), (Start: 314 @41201 has 1 MA's), (350, 41147), (374, 41111), (380, 41096), (421, 41000), (425, 40991), (436, 40970), (457, 40904), (490, 40868), (504, 40814), (506, 40808), (509, 40802), (536, 40724), (544, 40709), (591, 40610), (624, 40535), (634, 40511), (640, 40499), (645, 40478), (648, 40463), (651, 40454), (659, 40433), (688, 40394), (692, 40385), (701, 40370), (733, 40319), (781, 40250), (782, 40247), (803, 40205), (811, 40187), (840, 40091), (853, 40040), (861, 40010), (869, 39977), (888, 39920), (893, 39905),

Gene: PotatoChip\_72 Start: 52511, Stop: 50586, Start Num: 67

Candidate Starts for PotatoChip\_72:

(30, 52604), (34, 52598), (Start: 67 @52511 has 8 MA's), (120, 52340), (133, 52286), (225, 52082), (324, 51926), (359, 51875), (362, 51872), (393, 51830), (446, 51743), (447, 51740), (472, 51668), (478, 51659), (638, 51308), (640, 51302), (647, 51269), (821, 50930), (839, 50864), (843, 50852), (847, 50834), (854, 50807), (869, 50744), (880, 50711), (903, 50639),

Gene: Potatoes\_29 Start: 22153, Stop: 23553, Start Num: 253

Candidate Starts for Potatoes\_29:

(Start: 253 @22153 has 72 MA's), (Start: 288 @22216 has 1 MA's), (353, 22321), (354, 22324), (398, 22408), (416, 22441), (447, 22492), (450, 22498), (491, 22579), (492, 22582), (493, 22588), (503, 22624), (512, 22642), (513, 22645), (527, 22699), (555, 22750), (596, 22831), (607, 22858), (621,

22888), (626, 22897), (640, 22924), (647, 22957), (652, 22972), (692, 23026), (705, 23047), (713, 23059), (723, 23071), (839, 23293), (842, 23302), (844, 23308), (852, 23344), (868, 23404), (872, 23431), (907, 23521),

Gene: Potty\_40 Start: 25934, Stop: 27841, Start Num: 69

Candidate Starts for Potty\_40:

(Start: 69 @25934 has 40 MA's), (88, 25997), (99, 26018), (111, 26072), (170, 26249), (192, 26294), (Start: 295 @26468 has 21 MA's), (301, 26477), (359, 26567), (388, 26624), (468, 26810), (518, 26945), (520, 26957), (539, 26990), (640, 27119), (689, 27236), (744, 27311), (837, 27545), (838, 27548), (853, 27608), (875, 27698), (886, 27728), (898, 27770), (922, 27821),

Gene: Poultruss\_39 Start: 26280, Stop: 28187, Start Num: 69

Candidate Starts for Poultruss\_39:

(Start: 69 @26280 has 40 MA's), (88, 26343), (99, 26364), (111, 26418), (170, 26595), (192, 26640), (Start: 295 @26814 has 21 MA's), (301, 26823), (359, 26913), (388, 26970), (468, 27156), (518, 27291), (520, 27303), (539, 27336), (640, 27465), (689, 27582), (838, 27894), (853, 27954), (875, 28044), (886, 28074), (898, 28116), (922, 28167),

Gene: Prager\_53 Start: 39749, Stop: 41692, Start Num: 55

Candidate Starts for Prager\_53:

(Start: 55 @39749 has 51 MA's), (72, 39776), (Start: 97 @39848 has 1 MA's), (110, 39902), (125, 39962), (129, 39980), (131, 39989), (146, 40040), (163, 40082), (181, 40118), (225, 40205), (287, 40298), (297, 40313), (306, 40334), (381, 40436), (399, 40469), (410, 40493), (447, 40553), (482, 40640), (504, 40715), (540, 40805), (568, 40856), (570, 40859), (625, 40949), (640, 40967), (647, 41000), (673, 41054), (679, 41066), (689, 41084), (729, 41147), (781, 41231), (831, 41348), (837, 41396), (854, 41459), (874, 41543),

Gene: Preamble\_25 Start: 20577, Stop: 21971, Start Num: 253

Candidate Starts for Preamble\_25:

(Start: 253 @20577 has 72 MA's), (Start: 288 @20634 has 1 MA's), (353, 20739), (354, 20742), (398, 20826), (416, 20859), (448, 20913), (450, 20916), (493, 21006), (503, 21042), (513, 21063), (520, 21096), (527, 21117), (555, 21168), (596, 21249), (607, 21276), (626, 21315), (640, 21342), (647, 21375), (652, 21390), (655, 21399), (692, 21444), (715, 21480), (782, 21561), (791, 21585), (803, 21603), (810, 21615), (832, 21675), (835, 21699), (837, 21705), (838, 21708), (844, 21726), (845, 21729), (850, 21753), (852, 21762), (872, 21849), (892, 21900), (907, 21939),

Gene: Predator\_60 Start: 44295, Stop: 46307, Start Num: 55

Candidate Starts for Predator\_60:

(Start: 55 @44295 has 51 MA's), (65, 44310), (79, 44349), (86, 44379), (90, 44388), (99, 44403), (111, 44457), (112, 44463), (138, 44568), (154, 44619), (163, 44640), (170, 44652), (189, 44721), (200, 44742), (231, 44802), (252, 44826), (268, 44847), (273, 44853), (413, 45093), (417, 45105), (445, 45138), (447, 45144), (488, 45246), (565, 45459), (568, 45462), (590, 45510), (635, 45561), (638, 45567), (640, 45573), (673, 45663), (679, 45675), (751, 45798), (783, 45831), (836, 45975), (840, 45987), (848, 46020), (869, 46104), (874, 46122), (875, 46125), (891, 46173), (913, 46230),

Gene: PrincePhergus\_39 Start: 30573, Stop: 29191, Start Num: 292

Candidate Starts for PrincePhergus\_39:

(280, 30600), (Start: 292 @30573 has 7 MA's), (Start: 295 @30570 has 21 MA's), (309, 30540), (382, 30432), (Start: 384 @30426 has 1 MA's), (386, 30423), (394, 30408), (465, 30231), (470, 30222), (474, 30213), (490, 30192), (500, 30150), (518, 30096), (614, 29883), (625, 29862), (634, 29847), (640, 29835), (644, 29820), (653, 29784), (657, 29775), (678, 29760), (695, 29724), (757, 29625), (797, 29562), (812, 29535), (835, 29460), (837, 29454), (840, 29445), (845, 29430), (846, 29424), (847, 29418), (850, 29406), (886, 29283), (889, 29271),



Gene: PsychoKiller\_52 Start: 38727, Stop: 37249, Start Num: 242

Candidate Starts for PsychoKiller\_52:

(Start: 242 @38727 has 41 MA's), (297, 38640), (300, 38634), (350, 38553), (366, 38532), (421, 38409), (422, 38406), (504, 38223), (506, 38217), (509, 38211), (536, 38133), (591, 38019), (602, 37992), (614, 37968), (640, 37908), (651, 37863), (659, 37842), (688, 37803), (697, 37785), (780, 37668), (803, 37620), (806, 37617), (811, 37602), (840, 37506), (846, 37485), (853, 37455),

Gene: Puissant\_62 Start: 45753, Stop: 47810, Start Num: 55

Candidate Starts for Puissant\_62:

(Start: 55 @45753 has 51 MA's), (79, 45807), (82, 45816), (Start: 109 @45909 has 3 MA's), (111, 45915), (118, 45942), (151, 46068), (154, 46077), (170, 46110), (174, 46131), (189, 46179), (200, 46200), (252, 46284), (254, 46287), (268, 46305), (273, 46311), (300, 46365), (413, 46551), (417, 46563), (425, 46581), (445, 46596), (447, 46602), (568, 46920), (570, 46923), (590, 46968), (635, 47019), (640, 47031), (673, 47121), (679, 47133), (696, 47166), (713, 47190), (718, 47199), (783, 47289), (798, 47322), (836, 47433), (837, 47436), (838, 47439), (839, 47442), (853, 47496), (856, 47505), (874, 47580), (885, 47604), (891, 47631), (934, 47757),

Gene: Pumancara\_25 Start: 20596, Stop: 21993, Start Num: 253

Candidate Starts for Pumancara\_25:

(Start: 253 @20596 has 72 MA's), (Start: 288 @20656 has 1 MA's), (341, 20743), (353, 20761), (398, 20848), (400, 20854), (416, 20881), (447, 20932), (450, 20938), (470, 20998), (491, 21019), (493, 21028), (503, 21064), (512, 21082), (513, 21085), (520, 21118), (527, 21139), (541, 21163), (555, 21190), (576, 21217), (596, 21271), (600, 21283), (607, 21298), (619, 21322), (626, 21337), (640, 21364), (647, 21397), (652, 21412), (655, 21421), (695, 21472), (742, 21544), (782, 21583), (791, 21607), (803, 21625), (832, 21697), (835, 21721), (837, 21727), (838, 21730), (844, 21748), (852, 21784), (872, 21871), (887, 21910), (907, 21961), (918, 21985), (920, 21988),

Gene: Pumpernickel\_111 Start: 80095, Stop: 78248, Start Num: 68

Candidate Starts for Pumpernickel\_111:

(Start: 68 @80095 has 7 MA's), (141, 79855), (142, 79852), (149, 79831), (183, 79780), (Start: 244 @79672 has 1 MA's), (Start: 258 @79651 has 13 MA's), (399, 79489), (473, 79276), (499, 79210), (504, 79189), (508, 79180), (523, 79123), (534, 79102), (549, 79075), (568, 79039), (572, 79030), (577, 79018), (638, 78973), (640, 78967), (647, 78934), (702, 78823), (704, 78820), (732, 78778), (765, 78727), (817, 78607), (827, 78580), (842, 78520), (876, 78382), (879, 78376), (893, 78328), (917, 78268),

Gene: PuppyEggo\_41 Start: 31121, Stop: 29733, Start Num: 290

Candidate Starts for PuppyEggo\_41:

(46, 31772), (148, 31418), (175, 31343), (Start: 290 @31121 has 124 MA's), (382, 30977), (Start: 384 @30971 has 1 MA's), (386, 30968), (439, 30854), (450, 30827), (470, 30767), (487, 30740), (490, 30737), (518, 30641), (533, 30599), (614, 30428), (625, 30407), (640, 30380), (652, 30332), (695, 30272), (797, 30113), (823, 30059), (846, 29975), (847, 29969), (850, 29957), (874, 29861), (894, 29807), (895, 29804), (903, 29780),

Gene: QuadZero\_39 Start: 29101, Stop: 27674, Start Num: 293

Candidate Starts for QuadZero\_39:

(259, 29158), (Start: 293 @29101 has 18 MA's), (306, 29071), (309, 29065), (Start: 384 @28951 has 1 MA's), (386, 28948), (388, 28945), (487, 28711), (490, 28708), (589, 28453), (612, 28402), (614, 28396), (640, 28348), (647, 28315), (652, 28300), (695, 28201), (729, 28147), (732, 28141), (749, 28114), (797, 28042), (831, 27970), (837, 27934), (840, 27925), (845, 27910), (846, 27904), (850, 27886), (861, 27844), (877, 27781), (903, 27709),

Gene: Quartz\_40 Start: 30748, Stop: 29336, Start Num: 295

Candidate Starts for Quartz\_40:

(Start: 292 @30751 has 7 MA's), (Start: 295 @30748 has 21 MA's), (309, 30718), (Start: 314 @30712 has 1 MA's), (337, 30679), (Start: 384 @30604 has 1 MA's), (388, 30598), (439, 30487), (450, 30460), (465, 30409), (470, 30400), (487, 30373), (490, 30370), (500, 30328), (518, 30274), (589, 30118), (612, 30067), (614, 30061), (625, 30040), (632, 30034), (634, 30025), (640, 30013), (643, 30001), (669, 29923), (695, 29863), (699, 29857), (729, 29809), (754, 29767), (797, 29704), (807, 29692), (818, 29668), (820, 29665), (837, 29596), (840, 29587), (845, 29572), (846, 29566), (847, 29560), (850, 29548), (877, 29443), (886, 29425), (889, 29413), (904, 29368),

Gene: Quasar\_53 Start: 39431, Stop: 37953, Start Num: 242

Candidate Starts for Quasar\_53:

(Start: 242 @39431 has 41 MA's), (297, 39344), (300, 39338), (366, 39236), (421, 39113), (422, 39110), (504, 38927), (506, 38921), (509, 38915), (536, 38837), (591, 38723), (602, 38696), (614, 38672), (640, 38612), (651, 38567), (659, 38546), (688, 38507), (697, 38489), (780, 38372), (803, 38324), (806, 38321), (811, 38306), (840, 38210), (846, 38189), (853, 38159),

Gene: RAP15\_29 Start: 22157, Stop: 23557, Start Num: 253

Candidate Starts for RAP15\_29:

(Start: 253 @22157 has 72 MA's), (Start: 288 @22220 has 1 MA's), (353, 22325), (354, 22328), (398, 22412), (416, 22445), (447, 22496), (450, 22502), (491, 22583), (492, 22586), (493, 22592), (503, 22628), (512, 22646), (513, 22649), (527, 22703), (555, 22754), (596, 22835), (607, 22862), (621, 22892), (626, 22901), (640, 22928), (647, 22961), (652, 22976), (692, 23030), (705, 23051), (713, 23063), (723, 23075), (839, 23297), (842, 23306), (844, 23312), (852, 23348), (868, 23408), (872, 23435), (907, 23525),

Gene: Raccoon\_40 Start: 31223, Stop: 29832, Start Num: 290

Candidate Starts for Raccoon\_40:

(214, 31325), (216, 31322), (219, 31319), (Start: 290 @31223 has 124 MA's), (382, 31076), (Start: 384 @31070 has 1 MA's), (386, 31067), (439, 30953), (450, 30926), (470, 30866), (487, 30839), (490, 30836), (518, 30740), (533, 30698), (614, 30527), (625, 30506), (640, 30479), (695, 30371), (757, 30275), (823, 30158), (831, 30140), (846, 30074), (847, 30068), (850, 30056), (874, 29960), (894, 29906), (895, 29903), (903, 29879), (917, 29849),

Gene: Racecar\_102 Start: 80738, Stop: 82576, Start Num: 63

Candidate Starts for Racecar\_102:

(Start: 63 @80738 has 2 MA's), (87, 80819), (115, 80897), (143, 80993), (183, 81053), (200, 81083), (273, 81203), (298, 81254), (398, 81314), (515, 81653), (537, 81710), (549, 81731), (572, 81776), (638, 81833), (640, 81839), (647, 81872), (651, 81884), (655, 81896), (679, 81941), (700, 81980), (744, 82037), (748, 82043), (766, 82076), (796, 82145), (832, 82229), (860, 82346), (915, 82520), (931, 82562),

Gene: Rachella\_40 Start: 25937, Stop: 27844, Start Num: 69

Candidate Starts for Rachella\_40:

(Start: 69 @25937 has 40 MA's), (88, 26000), (99, 26021), (111, 26075), (170, 26252), (192, 26297), (Start: 295 @26471 has 21 MA's), (301, 26480), (359, 26570), (388, 26627), (468, 26813), (518, 26948), (520, 26960), (539, 26993), (640, 27122), (689, 27239), (744, 27314), (837, 27548), (838, 27551), (853, 27611), (875, 27701), (886, 27731), (898, 27773), (922, 27824),

Gene: Ranch\_60 Start: 39414, Stop: 41327, Start Num: 55

Candidate Starts for Ranch\_60:

(48, 39399), (Start: 54 @39411 has 11 MA's), (Start: 55 @39414 has 51 MA's), (Start: 69 @39426 has 40 MA's), (83, 39474), (96, 39507), (113, 39576), (135, 39666), (145, 39693), (147, 39702), (181,

39774), (252, 39894), (Start: 293 @39957 has 18 MA's), (352, 40047), (370, 40074), (445, 40203), (453, 40227), (466, 40269), (490, 40317), (492, 40323), (496, 40338), (500, 40359), (518, 40416), (540, 40470), (561, 40512), (590, 40572), (647, 40668), (648, 40671), (760, 40848), (791, 40899), (831, 40989), (837, 41025), (839, 41031), (853, 41085), (864, 41124), (892, 41226), (897, 41241), (904, 41262),

Gene: RanchParmCat\_57 Start: 39886, Stop: 38411, Start Num: 246

Candidate Starts for RanchParmCat\_57:

(Start: 246 @39886 has 9 MA's), (Start: 278 @39844 has 1 MA's), (300, 39796), (Start: 314 @39769 has 1 MA's), (334, 39739), (350, 39715), (366, 39694), (371, 39685), (374, 39679), (Start: 384 @39652 has 1 MA's), (412, 39595), (415, 39586), (422, 39568), (425, 39562), (490, 39439), (504, 39385), (506, 39379), (509, 39373), (527, 39310), (536, 39295), (544, 39280), (632, 39091), (634, 39082), (645, 39049), (656, 39010), (660, 39001), (688, 38965), (697, 38947), (701, 38941), (731, 38896), (733, 38890), (781, 38821), (806, 38773), (811, 38758), (828, 38716), (840, 38662), (848, 38629), (853, 38611), (869, 38548), (886, 38500), (889, 38488), (892, 38479), (915, 38422),

Gene: Rapheph\_41 Start: 31114, Stop: 29726, Start Num: 290

Candidate Starts for Rapheph\_41:

(46, 31765), (148, 31411), (175, 31336), (Start: 290 @31114 has 124 MA's), (382, 30970), (Start: 384 @30964 has 1 MA's), (386, 30961), (439, 30847), (450, 30820), (470, 30760), (487, 30733), (490, 30730), (518, 30634), (533, 30592), (611, 30430), (614, 30421), (625, 30400), (634, 30385), (640, 30373), (652, 30325), (695, 30265), (757, 30169), (797, 30106), (823, 30052), (846, 29968), (847, 29962), (850, 29950), (874, 29854), (894, 29800), (895, 29797), (903, 29773),

Gene: Raptor\_41 Start: 31121, Stop: 29733, Start Num: 290

Candidate Starts for Raptor\_41:

(175, 31343), (Start: 290 @31121 has 124 MA's), (382, 30977), (Start: 384 @30971 has 1 MA's), (386, 30968), (439, 30854), (450, 30827), (470, 30767), (487, 30740), (490, 30737), (518, 30641), (533, 30599), (614, 30428), (625, 30407), (634, 30392), (640, 30380), (652, 30332), (695, 30272), (757, 30176), (797, 30113), (823, 30059), (846, 29975), (847, 29969), (850, 29957), (869, 29882), (874, 29861), (894, 29807), (895, 29804), (903, 29780),

Gene: Rasovi\_33 Start: 23465, Stop: 24892, Start Num: 256

Candidate Starts for Rasovi\_33:

(227, 23426), (Start: 244 @23447 has 1 MA's), (Start: 256 @23465 has 3 MA's), (448, 23822), (470, 23885), (498, 23930), (503, 23951), (616, 24218), (640, 24266), (645, 24287), (652, 24314), (678, 24341), (679, 24344), (692, 24371), (695, 24377), (718, 24413), (783, 24491), (791, 24512), (803, 24530), (810, 24542), (837, 24626), (852, 24683), (856, 24695), (866, 24734), (872, 24770), (875, 24776),

Gene: RazorC\_60 Start: 39561, Stop: 41474, Start Num: 55

Candidate Starts for RazorC\_60:

(Start: 54 @39558 has 11 MA's), (Start: 55 @39561 has 51 MA's), (Start: 69 @39573 has 40 MA's), (83, 39621), (96, 39654), (135, 39813), (145, 39840), (147, 39849), (181, 39921), (252, 40041), (Start: 293 @40104 has 18 MA's), (352, 40194), (370, 40221), (445, 40350), (453, 40374), (466, 40416), (472, 40428), (482, 40443), (490, 40464), (496, 40485), (500, 40506), (518, 40563), (522, 40581), (540, 40617), (561, 40659), (590, 40719), (647, 40815), (648, 40818), (760, 40995), (791, 41046), (831, 41136), (837, 41172), (839, 41178), (853, 41232), (864, 41271), (892, 41373), (897, 41388), (904, 41409),

Gene: RcigaStruga\_29 Start: 22127, Stop: 23518, Start Num: 253

Candidate Starts for RcigaStruga\_29:

(Start: 253 @22127 has 72 MA's), (305, 22214), (353, 22286), (354, 22289), (390, 22355), (398, 22373), (400, 22379), (416, 22406), (450, 22463), (491, 22544), (493, 22553), (503, 22589), (512, 22607), (520, 22643), (527, 22664), (538, 22682), (555, 22715), (583, 22754), (596, 22796), (607, 22823), (619, 22847), (637, 22883), (640, 22889), (647, 22922), (652, 22937), (655, 22946), (692, 22991), (713, 23024), (715, 23027), (782, 23108), (799, 23144), (803, 23150), (810, 23162), (837, 23252), (844, 23273), (845, 23276), (850, 23300), (852, 23309), (872, 23396), (892, 23447), (907, 23486), (918, 23510),

Gene: RedBaron\_56 Start: 39388, Stop: 37904, Start Num: 239

Candidate Starts for RedBaron\_56:

(239, 39388), (Start: 246 @39379 has 9 MA's), (286, 39316), (297, 39295), (300, 39289), (350, 39208), (366, 39187), (421, 39064), (422, 39061), (492, 38926), (504, 38878), (506, 38872), (509, 38866), (536, 38788), (591, 38674), (602, 38647), (614, 38623), (640, 38563), (651, 38518), (659, 38497), (688, 38458), (697, 38440), (780, 38323), (803, 38275), (806, 38272), (811, 38257), (840, 38161), (846, 38140), (853, 38110),

Gene: RedRaider\_79 Start: 58956, Stop: 56899, Start Num: 36

Candidate Starts for RedRaider\_79:

(1, 59529), (6, 59244), (Start: 36 @58956 has 31 MA's), (154, 58581), (170, 58548), (226, 58440), (268, 58389), (300, 58329), (301, 58326), (348, 58254), (359, 58236), (402, 58173), (405, 58167), (454, 58074), (475, 58017), (488, 57993), (522, 57870), (535, 57837), (568, 57774), (640, 57651), (668, 57582), (673, 57564), (729, 57459), (733, 57450), (768, 57390), (783, 57351), (796, 57321), (821, 57264), (837, 57204), (846, 57174), (854, 57141), (871, 57069), (901, 56976),

Gene: Redfield\_40 Start: 31255, Stop: 29864, Start Num: 290

Candidate Starts for Redfield\_40:

(214, 31357), (216, 31354), (219, 31351), (Start: 290 @31255 has 124 MA's), (382, 31108), (Start: 384 @31102 has 1 MA's), (386, 31099), (439, 30985), (450, 30958), (470, 30898), (487, 30871), (490, 30868), (518, 30772), (533, 30730), (614, 30559), (625, 30538), (640, 30511), (695, 30403), (757, 30307), (823, 30190), (831, 30172), (846, 30106), (847, 30100), (850, 30088), (874, 29992), (894, 29938), (895, 29935), (903, 29911), (917, 29881),

Gene: ReginaGlobina\_100 Start: 80422, Stop: 82278, Start Num: 63

Candidate Starts for ReginaGlobina\_100:

(Start: 63 @80422 has 2 MA's), (143, 80695), (204, 80800), (281, 80923), (287, 80935), (Start: 293 @80944 has 18 MA's), (408, 81040), (433, 81115), (453, 81175), (508, 81328), (519, 81373), (549, 81433), (572, 81478), (638, 81535), (640, 81541), (647, 81574), (651, 81586), (655, 81598), (729, 81715), (731, 81718), (766, 81775), (782, 81811), (786, 81823), (796, 81844), (832, 81928), (854, 82021), (860, 82045), (912, 82213), (913, 82216),

Gene: RemRem\_60 Start: 51466, Stop: 49934, Start Num: 262

Candidate Starts for RemRem\_60:

(146, 51721), (168, 51670), (179, 51619), (202, 51565), (213, 51535), (Start: 237 @51502 has 2 MA's), (Start: 244 @51493 has 1 MA's), (Start: 262 @51466 has 25 MA's), (359, 51298), (381, 51256), (404, 51208), (408, 51196), (412, 51184), (414, 51178), (422, 51157), (436, 51130), (491, 50989), (518, 50902), (521, 50887), (526, 50875), (544, 50845), (567, 50794), (581, 50767), (605, 50716), (623, 50674), (637, 50656), (638, 50653), (645, 50626), (658, 50584), (682, 50539), (757, 50404), (764, 50389), (773, 50368), (821, 50311), (831, 50287), (832, 50284), (845, 50227), (846, 50221), (847, 50215), (848, 50209), (862, 50158), (868, 50134), (878, 50095), (880, 50083), (882, 50080), (919, 49987), (926, 49972), (932, 49951),

Gene: RenegadeRaider\_42 Start: 30486, Stop: 29236, Start Num: 382

Candidate Starts for RenegadeRaider\_42:

(200, 30789), (220, 30744), (240, 30714), (280, 30660), (Start: 285 @30642 has 5 MA's), (Start: 292 @30630 has 7 MA's), (Start: 295 @30624 has 21 MA's), (309, 30594), (382, 30486), (Start: 384 @30480 has 1 MA's), (386, 30477), (394, 30462), (470, 30276), (474, 30267), (490, 30246), (500, 30204), (518, 30150), (614, 29937), (625, 29916), (634, 29901), (640, 29889), (644, 29874), (653, 29838), (657, 29829), (678, 29814), (695, 29778), (757, 29679), (797, 29616), (812, 29589), (835, 29514), (837, 29508), (840, 29499), (845, 29484), (846, 29478), (847, 29472), (886, 29337), (889, 29325), (919, 29250),

Gene: Renzie\_41 Start: 31109, Stop: 29721, Start Num: 290

Candidate Starts for Renzie\_41:

(175, 31331), (Start: 290 @31109 has 124 MA's), (382, 30965), (Start: 384 @30959 has 1 MA's), (386, 30956), (439, 30842), (450, 30815), (470, 30755), (487, 30728), (490, 30725), (518, 30629), (533, 30587), (614, 30416), (625, 30395), (634, 30380), (640, 30368), (652, 30320), (695, 30260), (757, 30164), (797, 30101), (823, 30047), (846, 29963), (847, 29957), (850, 29945), (869, 29870), (874, 29849), (894, 29795), (895, 29792), (903, 29768),

Gene: Reynauld\_56 Start: 50676, Stop: 49183, Start Num: 285

Candidate Starts for Reynauld\_56:

(Start: 285 @50676 has 5 MA's), (304, 50640), (323, 50607), (Start: 330 @50598 has 27 MA's), (336, 50589), (343, 50580), (348, 50571), (359, 50553), (395, 50493), (404, 50481), (407, 50472), (463, 50325), (489, 50268), (496, 50244), (516, 50181), (567, 50067), (603, 49992), (605, 49989), (616, 49965), (623, 49947), (638, 49926), (647, 49887), (651, 49875), (652, 49872), (753, 49695), (770, 49659), (848, 49446), (859, 49404), (876, 49338), (898, 49263), (904, 49248),

Gene: Rie18\_40 Start: 25493, Stop: 27400, Start Num: 69

Candidate Starts for Rie18\_40:

(19, 25319), (Start: 69 @25493 has 40 MA's), (88, 25556), (99, 25577), (111, 25631), (161, 25793), (170, 25808), (192, 25853), (Start: 295 @26027 has 21 MA's), (301, 26036), (359, 26126), (362, 26129), (381, 26168), (388, 26183), (454, 26333), (468, 26369), (510, 26477), (518, 26504), (520, 26516), (539, 26549), (640, 26678), (689, 26795), (838, 27107), (853, 27167), (875, 27257), (886, 27287), (887, 27293), (898, 27329), (922, 27380),

Gene: RikSengupta\_42 Start: 26725, Stop: 28659, Start Num: 70

Candidate Starts for RikSengupta\_42:

(Start: 33 @26629 has 1 MA's), (Start: 68 @26719 has 7 MA's), (Start: 70 @26725 has 3 MA's), (111, 26872), (115, 26890), (170, 27049), (236, 27175), (Start: 295 @27265 has 21 MA's), (301, 27274), (359, 27364), (381, 27406), (397, 27436), (453, 27568), (520, 27754), (531, 27772), (539, 27787), (568, 27844), (635, 27904), (656, 27976), (725, 28093), (734, 28114), (771, 28180), (782, 28210), (819, 28288), (838, 28366), (853, 28426), (864, 28465), (875, 28516), (884, 28534), (924, 28642),

Gene: Rings\_71 Start: 47461, Stop: 46067, Start Num: 265

Candidate Starts for Rings\_71:

(Start: 265 @47461 has 13 MA's), (300, 47392), (348, 47317), (361, 47299), (376, 47269), (412, 47188), (470, 47038), (532, 46894), (571, 46855), (633, 46741), (649, 46690), (662, 46669), (674, 46639), (681, 46624), (689, 46612), (746, 46531), (781, 46483), (791, 46456), (804, 46435), (833, 46351), (851, 46285), (905, 46096), (911, 46084),

Gene: Riovina\_26 Start: 21745, Stop: 23139, Start Num: 253

Candidate Starts for Riovina\_26:

(Start: 253 @21745 has 72 MA's), (Start: 288 @21802 has 1 MA's), (341, 21889), (353, 21907), (354, 21910), (398, 21994), (416, 22027), (447, 22078), (450, 22084), (470, 22144), (493, 22174), (503, 22210), (512, 22228), (527, 22285), (538, 22303), (541, 22309), (555, 22336), (596, 22417), (607, 22444), (619, 22468), (626, 22483), (640, 22510), (647, 22543), (652, 22558), (742, 22690), (781,

22726), (791, 22753), (799, 22765), (810, 22783), (837, 22873), (839, 22879), (844, 22894), (845, 22897), (852, 22930), (868, 22990), (872, 23017), (894, 23074), (907, 23107), (918, 23131),

Gene: Riparian\_68 Start: 47408, Stop: 49168, Start Num: 158

Candidate Starts for Riparian\_68:

(Start: 158 @47408 has 9 MA's), (190, 47477), (Start: 248 @47573 has 3 MA's), (254, 47582), (301, 47663), (327, 47708), (445, 47909), (459, 47957), (488, 48017), (492, 48029), (511, 48095), (552, 48218), (568, 48242), (580, 48266), (640, 48470), (647, 48503), (652, 48518), (673, 48557), (675, 48560), (679, 48569), (729, 48638), (805, 48770), (837, 48893), (838, 48896), (846, 48923), (853, 48953), (855, 48959), (856, 48962), (860, 48980), (864, 48992), (904, 49127), (921, 49157),

Gene: Riverdale\_29 Start: 22087, Stop: 23487, Start Num: 253

Candidate Starts for Riverdale\_29:

(Start: 253 @22087 has 72 MA's), (Start: 288 @22150 has 1 MA's), (353, 22255), (354, 22258), (398, 22342), (416, 22375), (447, 22426), (450, 22432), (491, 22513), (492, 22516), (493, 22522), (503, 22558), (512, 22576), (513, 22579), (520, 22612), (527, 22633), (538, 22651), (555, 22684), (596, 22765), (607, 22792), (621, 22822), (626, 22831), (640, 22858), (647, 22891), (652, 22906), (692, 22960), (705, 22981), (713, 22993), (723, 23005), (839, 23227), (842, 23236), (844, 23242), (852, 23278), (868, 23338), (872, 23365), (907, 23455),

Gene: Riyhil\_41 Start: 31124, Stop: 29736, Start Num: 290

Candidate Starts for Riyhil\_41:

(175, 31346), (Start: 290 @31124 has 124 MA's), (382, 30980), (Start: 384 @30974 has 1 MA's), (386, 30971), (439, 30857), (450, 30830), (470, 30770), (487, 30743), (490, 30740), (518, 30644), (533, 30602), (614, 30431), (625, 30410), (634, 30395), (640, 30383), (652, 30335), (695, 30275), (757, 30179), (797, 30116), (823, 30062), (846, 29978), (847, 29972), (850, 29960), (874, 29864), (894, 29810), (895, 29807), (903, 29783),

Gene: RobinSparkles\_61 Start: 50974, Stop: 49484, Start Num: 282

Candidate Starts for RobinSparkles\_61:

(Start: 282 @50974 has 5 MA's), (336, 50881), (343, 50872), (350, 50860), (359, 50845), (374, 50827), (405, 50770), (430, 50698), (432, 50695), (460, 50602), (476, 50569), (489, 50536), (490, 50533), (496, 50512), (518, 50443), (533, 50407), (574, 50320), (605, 50257), (607, 50254), (620, 50224), (648, 50152), (651, 50143), (726, 50020), (729, 50014), (817, 49882), (832, 49840), (841, 49795), (848, 49765), (928, 49513),

Gene: Robinson\_41 Start: 31112, Stop: 29724, Start Num: 290

Candidate Starts for Robinson\_41:

(175, 31334), (Start: 290 @31112 has 124 MA's), (382, 30968), (Start: 384 @30962 has 1 MA's), (386, 30959), (439, 30845), (450, 30818), (470, 30758), (487, 30731), (490, 30728), (518, 30632), (533, 30590), (614, 30419), (625, 30398), (634, 30383), (640, 30371), (652, 30323), (695, 30263), (757, 30167), (797, 30104), (823, 30050), (846, 29966), (847, 29960), (850, 29948), (874, 29852), (894, 29798), (895, 29795), (903, 29771),

Gene: Rockabye\_105 Start: 73971, Stop: 75830, Start Num: 63

Candidate Starts for Rockabye\_105:

(Start: 63 @73971 has 2 MA's), (130, 74187), (143, 74229), (145, 74235), (Start: 171 @74268 has 6 MA's), (200, 74337), (204, 74352), (225, 74388), (252, 74427), (298, 74508), (398, 74568), (504, 74871), (549, 74985), (572, 75030), (640, 75093), (647, 75126), (651, 75138), (675, 75186), (685, 75204), (729, 75270), (731, 75273), (744, 75291), (766, 75330), (796, 75399), (805, 75414), (817, 75441), (830, 75477), (832, 75483), (860, 75600), (893, 75720), (913, 75771),

Gene: Rog141\_40 Start: 30803, Stop: 29415, Start Num: 290

Candidate Starts for Rog141\_40:

(46, 31454), (148, 31100), (175, 31025), (Start: 290 @30803 has 124 MA's), (382, 30659), (Start: 384 @30653 has 1 MA's), (386, 30650), (439, 30536), (450, 30509), (470, 30449), (487, 30422), (490, 30419), (518, 30323), (533, 30281), (614, 30110), (625, 30089), (634, 30074), (652, 30014), (695, 29954), (757, 29858), (797, 29795), (823, 29741), (846, 29657), (847, 29651), (850, 29639), (874, 29543), (894, 29489), (895, 29486), (903, 29462),

Gene: Rooney\_70 Start: 50294, Stop: 48408, Start Num: 53

Candidate Starts for Rooney\_70:

(Start: 53 @50294 has 8 MA's), (Start: 69 @50279 has 40 MA's), (88, 50216), (93, 50207), (122, 50102), (132, 50063), (138, 50039), (170, 49964), (181, 49940), (276, 49781), (Start: 295 @49742 has 21 MA's), (301, 49733), (370, 49625), (422, 49517), (447, 49469), (490, 49364), (503, 49313), (520, 49253), (552, 49187), (565, 49166), (568, 49163), (647, 49058), (650, 49049), (654, 49037), (710, 48938), (791, 48821), (798, 48809), (811, 48782), (838, 48692), (843, 48677), (856, 48623), (869, 48566), (904, 48458), (913, 48440),

Gene: Rope\_66 Start: 47562, Stop: 49322, Start Num: 158

Candidate Starts for Rope\_66:

(Start: 158 @47562 has 9 MA's), (190, 47631), (Start: 248 @47727 has 3 MA's), (254, 47736), (301, 47817), (327, 47862), (445, 48063), (459, 48111), (488, 48171), (492, 48183), (511, 48249), (552, 48372), (568, 48396), (580, 48420), (640, 48624), (647, 48657), (652, 48672), (673, 48711), (675, 48714), (679, 48723), (729, 48792), (805, 48924), (837, 49047), (838, 49050), (846, 49077), (853, 49107), (855, 49113), (856, 49116), (860, 49134), (864, 49146), (904, 49281), (919, 49308), (921, 49311),

Gene: RoyalG\_59 Start: 52241, Stop: 50709, Start Num: 262

Candidate Starts for RoyalG\_59:

(146, 52496), (168, 52445), (202, 52340), (213, 52310), (Start: 237 @52277 has 2 MA's), (Start: 244 @52268 has 1 MA's), (Start: 262 @52241 has 25 MA's), (Start: 330 @52118 has 27 MA's), (359, 52073), (381, 52031), (404, 51983), (405, 51980), (407, 51974), (408, 51971), (414, 51953), (422, 51932), (436, 51905), (485, 51782), (491, 51764), (518, 51677), (521, 51662), (567, 51569), (605, 51491), (616, 51467), (637, 51431), (645, 51401), (658, 51359), (682, 51314), (757, 51179), (764, 51164), (773, 51143), (832, 51059), (845, 51002), (846, 50996), (848, 50984), (862, 50933), (868, 50909), (878, 50870), (880, 50858), (882, 50855), (919, 50762), (926, 50747),

Gene: Rozby\_29 Start: 22088, Stop: 23488, Start Num: 253

Candidate Starts for Rozby\_29:

(Start: 253 @22088 has 72 MA's), (Start: 288 @22151 has 1 MA's), (353, 22256), (354, 22259), (398, 22343), (416, 22376), (447, 22427), (450, 22433), (491, 22514), (492, 22517), (493, 22523), (503, 22559), (512, 22577), (513, 22580), (520, 22613), (527, 22634), (538, 22652), (555, 22685), (596, 22766), (607, 22793), (621, 22823), (626, 22832), (640, 22859), (647, 22892), (652, 22907), (692, 22961), (705, 22982), (713, 22994), (723, 23006), (839, 23228), (842, 23237), (844, 23243), (852, 23279), (868, 23339), (872, 23366), (907, 23456),

Gene: Rumi\_61 Start: 39105, Stop: 41018, Start Num: 55

Candidate Starts for Rumi\_61:

(Start: 54 @39102 has 11 MA's), (Start: 55 @39105 has 51 MA's), (Start: 69 @39117 has 40 MA's), (83, 39165), (96, 39198), (135, 39357), (145, 39384), (147, 39393), (181, 39465), (252, 39585), (Start: 293 @39648 has 18 MA's), (352, 39738), (370, 39765), (445, 39894), (453, 39918), (466, 39960), (472, 39972), (482, 39987), (490, 40008), (496, 40029), (500, 40050), (518, 40107), (522, 40125), (540, 40161), (561, 40203), (590, 40263), (647, 40359), (648, 40362), (760, 40539), (791, 40590), (831, 40680), (837, 40716), (839, 40722), (853, 40776), (864, 40815), (892, 40917), (897, 40932), (904, 40953),

Gene: SBlackberry\_33 Start: 23236, Stop: 24663, Start Num: 258

Candidate Starts for SBlackberry\_33:

(Start: 258 @23236 has 13 MA's), (428, 23554), (448, 23593), (470, 23656), (498, 23701), (503, 23722), (541, 23821), (616, 23989), (640, 24037), (645, 24058), (652, 24085), (678, 24112), (692, 24142), (694, 24145), (695, 24148), (718, 24184), (783, 24262), (822, 24346), (831, 24364), (832, 24367), (852, 24454), (856, 24466), (866, 24505), (872, 24541), (875, 24547), (892, 24592), (902, 24622),

Gene: SJReid\_108 Start: 73084, Stop: 74940, Start Num: 63

Candidate Starts for SJReid\_108:

(Start: 63 @73084 has 2 MA's), (143, 73342), (145, 73348), (Start: 171 @73381 has 6 MA's), (177, 73390), (200, 73450), (204, 73465), (252, 73540), (273, 73570), (298, 73621), (398, 73681), (504, 73984), (549, 74098), (572, 74143), (638, 74200), (640, 74206), (647, 74239), (651, 74251), (675, 74299), (679, 74308), (685, 74317), (731, 74386), (766, 74443), (796, 74512), (830, 74590), (832, 74596), (854, 74689), (860, 74713), (883, 74794), (893, 74833), (913, 74884),

Gene: SJay\_41 Start: 31115, Stop: 29727, Start Num: 290

Candidate Starts for SJay\_41:

(46, 31766), (148, 31412), (175, 31337), (Start: 290 @31115 has 124 MA's), (382, 30971), (Start: 384 @30965 has 1 MA's), (386, 30962), (439, 30848), (450, 30821), (470, 30761), (487, 30734), (490, 30731), (518, 30635), (533, 30593), (611, 30431), (614, 30422), (625, 30401), (634, 30386), (640, 30374), (652, 30326), (695, 30266), (757, 30170), (797, 30107), (823, 30053), (846, 29969), (847, 29963), (850, 29951), (869, 29876), (874, 29855), (894, 29801), (895, 29798), (903, 29774),

Gene: Sadboi\_61 Start: 41296, Stop: 43209, Start Num: 55

Candidate Starts for Sadboi\_61:

(Start: 54 @41293 has 11 MA's), (Start: 55 @41296 has 51 MA's), (Start: 69 @41308 has 40 MA's), (83, 41356), (96, 41389), (113, 41458), (135, 41548), (145, 41575), (147, 41584), (181, 41656), (225, 41743), (252, 41776), (Start: 293 @41839 has 18 MA's), (352, 41929), (370, 41956), (445, 42085), (453, 42109), (466, 42151), (490, 42199), (496, 42220), (500, 42241), (518, 42298), (540, 42352), (561, 42394), (590, 42454), (647, 42550), (648, 42553), (760, 42730), (791, 42781), (831, 42871), (837, 42907), (839, 42913), (853, 42967), (864, 43006), (892, 43108), (897, 43123), (904, 43144),

Gene: Salgado\_95 Start: 54910, Stop: 56574, Start Num: 182

Candidate Starts for Salgado\_95:

(Start: 182 @54910 has 8 MA's), (208, 54973), (Start: 248 @55033 has 3 MA's), (274, 55069), (Start: 294 @55114 has 1 MA's), (369, 55234), (416, 55327), (426, 55351), (436, 55363), (455, 55417), (473, 55468), (495, 55504), (502, 55531), (513, 55558), (523, 55600), (585, 55717), (615, 55795), (622, 55813), (644, 55864), (652, 55897), (680, 55930), (713, 55987), (729, 56014), (755, 56056), (788, 56113), (803, 56137), (817, 56167), (822, 56185), (832, 56212), (856, 56314), (863, 56341), (866, 56353), (886, 56422), (888, 56431), (898, 56461), (900, 56467), (919, 56503), (926, 56518), (930, 56533), (933, 56554),

Gene: Sam12\_58 Start: 51466, Stop: 49934, Start Num: 262

Candidate Starts for Sam12\_58:

(146, 51721), (168, 51670), (179, 51619), (202, 51565), (213, 51535), (Start: 237 @51502 has 2 MA's), (Start: 244 @51493 has 1 MA's), (Start: 262 @51466 has 25 MA's), (359, 51298), (381, 51256), (404, 51208), (408, 51196), (412, 51184), (414, 51178), (422, 51157), (436, 51130), (491, 50989), (518, 50902), (521, 50887), (526, 50875), (544, 50845), (567, 50794), (581, 50767), (605, 50716), (623, 50674), (637, 50656), (638, 50653), (645, 50626), (658, 50584), (682, 50539), (757, 50404), (764, 50389), (773, 50368), (821, 50311), (831, 50287), (832, 50284), (845, 50227), (846, 50221), (847, 50215), (848, 50209), (862, 50158), (868, 50134), (878, 50095), (880, 50083), (882, 50080), (919,



49987), (926, 49972), (932, 49951),

Gene: SamW\_45 Start: 36746, Stop: 38122, Start Num: 275

Candidate Starts for SamW\_45:

(Start: 275 @36746 has 7 MA's), (315, 36815), (326, 36833), (389, 36926), (423, 36986), (427, 36992), (428, 36995), (487, 37115), (494, 37133), (529, 37250), (593, 37388), (610, 37427), (626, 37460), (632, 37466), (637, 37481), (647, 37520), (687, 37580), (699, 37604), (735, 37640), (789, 37709), (793, 37715), (832, 37796), (854, 37892), (857, 37904), (860, 37916), (872, 37973), (875, 37979), (879, 37991), (889, 38021), (909, 38072),

Gene: Sampudon\_60 Start: 41637, Stop: 43553, Start Num: 54

Candidate Starts for Sampudon\_60:

(Start: 54 @41637 has 11 MA's), (Start: 55 @41640 has 51 MA's), (Start: 69 @41652 has 40 MA's), (83, 41700), (113, 41802), (135, 41892), (145, 41919), (147, 41928), (181, 42000), (252, 42120), (Start: 293 @42183 has 18 MA's), (352, 42273), (370, 42300), (445, 42429), (453, 42453), (466, 42495), (490, 42543), (496, 42564), (500, 42585), (518, 42642), (540, 42696), (561, 42738), (590, 42798), (647, 42894), (648, 42897), (760, 43074), (791, 43125), (830, 43212), (831, 43215), (837, 43251), (839, 43257), (853, 43311), (864, 43350), (892, 43452), (897, 43467), (904, 43488),

Gene: Sansa\_39 Start: 31177, Stop: 29765, Start Num: 295

Candidate Starts for Sansa\_39:

(Start: 295 @31177 has 21 MA's), (309, 31147), (Start: 314 @31141 has 1 MA's), (337, 31108), (439, 30916), (450, 30889), (470, 30829), (487, 30802), (490, 30799), (500, 30757), (518, 30703), (533, 30661), (589, 30547), (614, 30490), (625, 30469), (634, 30454), (640, 30442), (643, 30430), (644, 30427), (647, 30409), (678, 30328), (695, 30292), (729, 30238), (754, 30196), (781, 30166), (786, 30151), (791, 30142), (795, 30136), (820, 30094), (837, 30025), (845, 30001), (846, 29995), (847, 29989), (850, 29977), (877, 29872), (886, 29854), (889, 29842), (904, 29797),

Gene: Sapo\_34 Start: 32116, Stop: 30710, Start Num: 261

Candidate Starts for Sapo\_34:

(153, 32353), (156, 32350), (193, 32239), (199, 32224), (Start: 261 @32116 has 12 MA's), (303, 32038), (318, 32011), (343, 31981), (345, 31978), (455, 31771), (465, 31738), (556, 31531), (626, 31384), (634, 31369), (709, 31228), (803, 31093), (819, 31063), (820, 31060), (837, 30991), (838, 30988), (845, 30967), (853, 30931), (854, 30928), (875, 30841), (879, 30829), (907, 30742),

Gene: Saratos\_40 Start: 30928, Stop: 29516, Start Num: 295

Candidate Starts for Saratos\_40:

(Start: 292 @30931 has 7 MA's), (Start: 295 @30928 has 21 MA's), (309, 30898), (Start: 314 @30892 has 1 MA's), (337, 30859), (439, 30667), (450, 30640), (470, 30580), (487, 30553), (490, 30550), (492, 30544), (500, 30508), (509, 30484), (518, 30454), (533, 30412), (589, 30298), (614, 30241), (625, 30220), (634, 30205), (640, 30193), (643, 30181), (644, 30178), (647, 30160), (678, 30079), (695, 30043), (729, 29989), (754, 29947), (781, 29917), (786, 29902), (791, 29893), (795, 29887), (820, 29845), (837, 29776), (845, 29752), (846, 29746), (847, 29740), (850, 29728), (877, 29623), (886, 29605), (889, 29593), (904, 29548),

Gene: Savage2526\_29 Start: 22151, Stop: 23551, Start Num: 253

Candidate Starts for Savage2526\_29:

(Start: 253 @22151 has 72 MA's), (Start: 288 @22214 has 1 MA's), (353, 22319), (354, 22322), (398, 22406), (416, 22439), (447, 22490), (450, 22496), (491, 22577), (492, 22580), (493, 22586), (503, 22622), (512, 22640), (513, 22643), (527, 22697), (555, 22748), (596, 22829), (607, 22856), (621, 22886), (626, 22895), (640, 22922), (647, 22955), (652, 22970), (692, 23024), (705, 23045), (713, 23057), (723, 23069), (839, 23291), (842, 23300), (844, 23306), (852, 23342), (868, 23402), (872, 23429), (907, 23519),

Gene: Schimmels22\_39 Start: 29851, Stop: 28466, Start Num: 293

Candidate Starts for Schimmels22\_39:

(Start: 293 @29851 has 18 MA's), (439, 29575), (447, 29554), (487, 29461), (490, 29458), (496, 29437), (500, 29416), (533, 29320), (614, 29149), (627, 29125), (634, 29113), (640, 29101), (643, 29089), (644, 29086), (647, 29068), (652, 29053), (679, 29026), (695, 28993), (711, 28969), (757, 28897), (781, 28867), (797, 28834), (837, 28726), (840, 28717), (845, 28702), (846, 28696), (847, 28690), (850, 28678), (874, 28582), (877, 28573), (889, 28543), (903, 28501),

Gene: Schnapsidee\_40 Start: 31262, Stop: 29871, Start Num: 290

Candidate Starts for Schnapsidee\_40:

(214, 31364), (216, 31361), (219, 31358), (Start: 290 @31262 has 124 MA's), (382, 31115), (Start: 384 @31109 has 1 MA's), (386, 31106), (439, 30992), (450, 30965), (470, 30905), (487, 30878), (490, 30875), (518, 30779), (533, 30737), (614, 30566), (625, 30545), (640, 30518), (695, 30410), (757, 30314), (823, 30197), (831, 30179), (846, 30113), (847, 30107), (850, 30095), (874, 29999), (894, 29945), (895, 29942), (903, 29918), (917, 29888),

Gene: Schubert\_39 Start: 30441, Stop: 29047, Start Num: 289

Candidate Starts for Schubert\_39:

(Start: 289 @30441 has 1 MA's), (382, 30297), (Start: 384 @30291 has 1 MA's), (386, 30288), (388, 30285), (450, 30147), (470, 30087), (490, 30057), (518, 29961), (533, 29919), (588, 29808), (614, 29748), (634, 29712), (640, 29700), (653, 29649), (655, 29643), (695, 29592), (703, 29580), (747, 29508), (754, 29496), (797, 29433), (837, 29325), (845, 29301), (846, 29295), (847, 29289), (850, 29277), (861, 29235), (886, 29154), (889, 29142), (904, 29097),

Gene: Scissor2024\_40 Start: 29498, Stop: 28113, Start Num: 293

Candidate Starts for Scissor2024\_40:

(Start: 293 @29498 has 18 MA's), (412, 29285), (439, 29222), (447, 29201), (487, 29108), (490, 29105), (496, 29084), (500, 29063), (533, 28967), (614, 28796), (627, 28772), (634, 28760), (640, 28748), (643, 28736), (644, 28733), (647, 28715), (652, 28700), (679, 28673), (695, 28640), (703, 28628), (711, 28616), (757, 28544), (786, 28499), (797, 28481), (837, 28373), (840, 28364), (845, 28349), (846, 28343), (847, 28337), (874, 28229), (877, 28220), (889, 28190), (903, 28148),

Gene: Scuba\_83 Start: 56215, Stop: 54161, Start Num: 36

Candidate Starts for Scuba\_83:

(7, 56488), (Start: 36 @56215 has 31 MA's), (86, 56062), (98, 56047), (118, 55966), (154, 55843), (168, 55813), (225, 55705), (252, 55672), (283, 55621), (301, 55588), (359, 55498), (378, 55465), (402, 55435), (475, 55279), (496, 55228), (522, 55132), (535, 55099), (551, 55063), (568, 55036), (640, 54913), (668, 54844), (673, 54826), (679, 54814), (768, 54652), (783, 54613), (796, 54583), (805, 54568), (837, 54466), (854, 54403), (874, 54322), (885, 54298), (901, 54238),

Gene: Scuttle\_29 Start: 22156, Stop: 23556, Start Num: 253

Candidate Starts for Scuttle\_29:

(Start: 253 @22156 has 72 MA's), (Start: 288 @22219 has 1 MA's), (353, 22324), (354, 22327), (398, 22411), (416, 22444), (447, 22495), (450, 22501), (491, 22582), (492, 22585), (493, 22591), (503, 22627), (512, 22645), (513, 22648), (520, 22681), (527, 22702), (555, 22753), (596, 22834), (607, 22861), (626, 22900), (640, 22927), (647, 22960), (652, 22975), (692, 23029), (705, 23050), (713, 23062), (723, 23074), (803, 23188), (839, 23296), (842, 23305), (844, 23311), (852, 23347), (868, 23407), (872, 23434), (907, 23524),

Gene: Sedgewig\_40 Start: 30801, Stop: 29413, Start Num: 290

Candidate Starts for Sedgewig\_40:

(46, 31452), (148, 31098), (175, 31023), (Start: 290 @30801 has 124 MA's), (382, 30657), (Start: 384 @30651 has 1 MA's), (386, 30648), (436, 30543), (439, 30534), (450, 30507), (470, 30447), (487, 30420), (490, 30417), (518, 30321), (533, 30279), (614, 30108), (625, 30087), (634, 30072), (652, 30012), (695, 29952), (757, 29856), (797, 29793), (823, 29739), (846, 29655), (847, 29649), (850, 29637), (894, 29487), (895, 29484), (903, 29460),

Gene: Send513\_66 Start: 47939, Stop: 49699, Start Num: 158

Candidate Starts for Send513\_66:

(Start: 158 @47939 has 9 MA's), (190, 48008), (Start: 248 @48104 has 3 MA's), (254, 48113), (301, 48194), (327, 48239), (445, 48440), (459, 48488), (488, 48548), (492, 48560), (511, 48626), (552, 48749), (568, 48773), (580, 48797), (640, 49001), (647, 49034), (652, 49049), (673, 49088), (675, 49091), (679, 49100), (729, 49169), (805, 49301), (837, 49424), (838, 49427), (846, 49454), (853, 49484), (855, 49490), (856, 49493), (860, 49511), (864, 49523), (904, 49658), (921, 49688),

Gene: Sergei\_26 Start: 21732, Stop: 23129, Start Num: 253

Candidate Starts for Sergei\_26:

(Start: 253 @21732 has 72 MA's), (Start: 288 @21792 has 1 MA's), (341, 21879), (353, 21897), (354, 21900), (398, 21984), (400, 21990), (416, 22017), (447, 22068), (450, 22074), (465, 22125), (470, 22134), (491, 22155), (493, 22164), (503, 22200), (513, 22221), (520, 22254), (527, 22275), (538, 22293), (541, 22299), (555, 22326), (566, 22338), (576, 22353), (596, 22407), (619, 22458), (621, 22464), (626, 22473), (632, 22479), (640, 22500), (647, 22533), (652, 22548), (655, 22557), (742, 22680), (782, 22719), (791, 22743), (799, 22755), (837, 22863), (839, 22869), (842, 22878), (844, 22884), (852, 22920), (872, 23007), (907, 23097), (918, 23121),

Gene: ShaiHulud\_42 Start: 31118, Stop: 29730, Start Num: 290

Candidate Starts for ShaiHulud\_42:

(46, 31769), (148, 31415), (175, 31340), (Start: 290 @31118 has 124 MA's), (382, 30974), (Start: 384 @30968 has 1 MA's), (386, 30965), (439, 30851), (450, 30824), (470, 30764), (487, 30737), (490, 30734), (518, 30638), (533, 30596), (614, 30425), (625, 30404), (640, 30377), (652, 30329), (695, 30269), (797, 30110), (823, 30056), (846, 29972), (847, 29966), (850, 29954), (874, 29858), (894, 29804), (895, 29801), (903, 29777),

Gene: ShakeNBake\_70 Start: 50183, Stop: 48297, Start Num: 53

Candidate Starts for ShakeNBake\_70:

(37, 50243), (Start: 53 @50183 has 8 MA's), (Start: 69 @50168 has 40 MA's), (88, 50105), (93, 50096), (99, 50084), (122, 49991), (138, 49928), (145, 49910), (170, 49853), (181, 49829), (276, 49670), (Start: 295 @49631 has 21 MA's), (301, 49622), (370, 49514), (422, 49406), (466, 49301), (503, 49202), (520, 49142), (565, 49055), (568, 49052), (647, 48947), (650, 48938), (654, 48926), (710, 48827), (750, 48788), (791, 48710), (798, 48698), (811, 48671), (838, 48581), (843, 48566), (856, 48512), (869, 48455), (913, 48329),

Gene: Shamu\_41 Start: 31107, Stop: 29695, Start Num: 295

Candidate Starts for Shamu\_41:

(Start: 292 @31110 has 7 MA's), (Start: 295 @31107 has 21 MA's), (309, 31077), (Start: 314 @31071 has 1 MA's), (337, 31038), (439, 30846), (450, 30819), (470, 30759), (487, 30732), (490, 30729), (500, 30687), (509, 30663), (518, 30633), (533, 30591), (589, 30477), (614, 30420), (625, 30399), (634, 30384), (640, 30372), (643, 30360), (644, 30357), (647, 30339), (678, 30258), (695, 30222), (729, 30168), (754, 30126), (781, 30096), (791, 30072), (795, 30066), (820, 30024), (837, 29955), (845, 29931), (846, 29925), (847, 29919), (850, 29907), (874, 29811), (877, 29802), (886, 29784), (889, 29772), (904, 29727),

Gene: SheckWes\_60 Start: 40367, Stop: 38889, Start Num: 242

Candidate Starts for SheckWes\_60:

(191, 40448), (Start: 221 @40394 has 1 MA's), (Start: 242 @40367 has 41 MA's), (286, 40304), (297, 40283), (300, 40277), (Start: 314 @40250 has 1 MA's), (350, 40196), (366, 40175), (374, 40160), (380, 40145), (415, 40064), (425, 40040), (457, 39953), (490, 39917), (504, 39863), (506, 39857), (509, 39851), (536, 39773), (544, 39758), (588, 39668), (591, 39659), (602, 39632), (632, 39569), (634, 39560), (640, 39548), (645, 39527), (648, 39512), (651, 39503), (659, 39482), (688, 39443), (692, 39434), (701, 39419), (729, 39377), (747, 39347), (781, 39299), (782, 39296), (803, 39254), (811, 39236), (840, 39140), (853, 39089), (861, 39059), (869, 39026), (888, 38969), (893, 38954),

Gene: Shee\_41 Start: 31111, Stop: 29723, Start Num: 290

Candidate Starts for Shee\_41:

(46, 31762), (148, 31408), (175, 31333), (Start: 290 @31111 has 124 MA's), (382, 30967), (Start: 384 @30961 has 1 MA's), (386, 30958), (439, 30844), (450, 30817), (470, 30757), (487, 30730), (490, 30727), (518, 30631), (533, 30589), (611, 30427), (614, 30418), (625, 30397), (634, 30382), (640, 30370), (652, 30322), (695, 30262), (757, 30166), (797, 30103), (823, 30049), (846, 29965), (847, 29959), (850, 29947), (874, 29851), (894, 29797), (895, 29794), (903, 29770),

Gene: Shelley\_57 Start: 52086, Stop: 50674, Start Num: 330

Candidate Starts for Shelley\_57:

(146, 52434), (191, 52305), (Start: 237 @52215 has 2 MA's), (Start: 330 @52086 has 27 MA's), (359, 52041), (404, 51951), (405, 51948), (407, 51942), (414, 51921), (442, 51858), (470, 51780), (485, 51750), (491, 51732), (518, 51645), (521, 51630), (544, 51588), (582, 51507), (605, 51459), (623, 51417), (637, 51399), (638, 51396), (645, 51369), (661, 51318), (682, 51282), (711, 51231), (757, 51147), (767, 51126), (845, 50970), (846, 50964), (848, 50952), (880, 50826), (926, 50712),

Gene: Shrew\_71 Start: 40994, Stop: 42517, Start Num: 248

Candidate Starts for Shrew\_71:

(Start: 217 @40949 has 2 MA's), (223, 40955), (Start: 248 @40994 has 3 MA's), (Start: 278 @41036 has 1 MA's), (283, 41054), (300, 41087), (Start: 330 @41138 has 27 MA's), (353, 41171), (371, 41198), (382, 41225), (422, 41315), (504, 41531), (505, 41534), (516, 41567), (520, 41585), (560, 41660), (581, 41699), (584, 41705), (647, 41873), (651, 41885), (733, 42023), (762, 42071), (893, 42440), (894, 42443), (903, 42470), (906, 42476),

Gene: Shrooms\_93 Start: 54534, Stop: 56189, Start Num: 182

Candidate Starts for Shrooms\_93:

(Start: 182 @54534 has 8 MA's), (208, 54597), (213, 54606), (Start: 228 @54627 has 2 MA's), (272, 54690), (348, 54828), (369, 54858), (416, 54951), (436, 54987), (455, 55041), (473, 55092), (492, 55116), (495, 55128), (502, 55155), (510, 55176), (513, 55182), (523, 55224), (585, 55341), (615, 55419), (622, 55437), (644, 55488), (652, 55521), (680, 55554), (707, 55602), (729, 55638), (755, 55680), (817, 55791), (822, 55809), (832, 55836), (836, 55863), (863, 55965), (886, 56046), (888, 56055), (889, 56058), (898, 56085), (900, 56091), (919, 56127), (926, 56142), (933, 56178),

Gene: Sienna\_50 Start: 36692, Stop: 38746, Start Num: 69

Candidate Starts for Sienna\_50:

(Start: 69 @36692 has 40 MA's), (76, 36716), (99, 36779), (119, 36863), (127, 36905), (223, 37127), (252, 37163), (298, 37238), (320, 37277), (355, 37319), (373, 37337), (381, 37358), (388, 37370), (417, 37430), (424, 37445), (445, 37463), (472, 37541), (482, 37556), (484, 37559), (496, 37598), (500, 37619), (539, 37721), (568, 37778), (577, 37799), (580, 37802), (586, 37814), (608, 37862), (611, 37868), (628, 37916), (630, 37949), (635, 37973), (642, 37991), (647, 38021), (700, 38144), (713, 38177), (719, 38189), (729, 38204), (751, 38243), (781, 38288), (791, 38315), (829, 38399), (843, 38462), (853, 38504), (856, 38513), (858, 38522), (869, 38570), (871, 38579), (874, 38591), (880, 38606), (893, 38648),

Gene: SilentWarrior\_40 Start: 25182, Stop: 27089, Start Num: 69

Candidate Starts for SilentWarrior\_40:

(19, 25008), (Start: 69 @25182 has 40 MA's), (88, 25245), (99, 25266), (111, 25320), (150, 25455), (170, 25497), (192, 25542), (Start: 295 @25716 has 21 MA's), (301, 25725), (359, 25815), (381, 25857), (388, 25872), (468, 26058), (518, 26193), (520, 26205), (539, 26238), (640, 26367), (689, 26484), (831, 26757), (838, 26796), (853, 26856), (875, 26946), (886, 26976), (898, 27018), (922, 27069),

Gene: Sinatra\_40 Start: 30565, Stop: 29183, Start Num: 292

Candidate Starts for Sinatra\_40:

(280, 30592), (Start: 292 @30565 has 7 MA's), (Start: 295 @30562 has 21 MA's), (309, 30532), (382, 30424), (Start: 384 @30418 has 1 MA's), (386, 30415), (394, 30400), (470, 30214), (474, 30205), (490, 30184), (500, 30142), (518, 30088), (614, 29875), (625, 29854), (634, 29839), (640, 29827), (644, 29812), (653, 29776), (657, 29767), (678, 29752), (695, 29716), (757, 29617), (797, 29554), (812, 29527), (835, 29452), (837, 29446), (840, 29437), (845, 29422), (846, 29416), (847, 29410), (850, 29398), (886, 29275), (889, 29263),

Gene: SirHarley\_54 Start: 39905, Stop: 41848, Start Num: 55

Candidate Starts for SirHarley\_54:

(39, 39842), (Start: 55 @39905 has 51 MA's), (72, 39932), (Start: 97 @40004 has 1 MA's), (110, 40058), (125, 40118), (131, 40145), (146, 40196), (163, 40238), (181, 40274), (225, 40361), (287, 40454), (297, 40469), (306, 40490), (381, 40592), (399, 40625), (410, 40649), (447, 40709), (482, 40796), (504, 40871), (540, 40961), (568, 41012), (570, 41015), (625, 41105), (640, 41123), (647, 41156), (679, 41222), (689, 41240), (729, 41303), (781, 41387), (831, 41504), (837, 41552), (854, 41615), (874, 41699),

Gene: SirVictor\_40 Start: 30629, Stop: 29241, Start Num: 295

Candidate Starts for SirVictor\_40:

(Start: 292 @30632 has 7 MA's), (Start: 295 @30629 has 21 MA's), (309, 30599), (382, 30491), (386, 30482), (410, 30428), (447, 30347), (470, 30281), (490, 30251), (501, 30206), (518, 30155), (611, 29951), (614, 29942), (634, 29903), (640, 29891), (643, 29879), (644, 29876), (653, 29840), (657, 29831), (678, 29816), (695, 29780), (703, 29768), (711, 29756), (757, 29681), (797, 29621), (837, 29513), (840, 29504), (845, 29489), (846, 29483), (847, 29477), (919, 29255),

Gene: Sixama\_168 Start: 96248, Stop: 94338, Start Num: 62

Candidate Starts for Sixama\_168:

(Start: 62 @96248 has 5 MA's), (73, 96227), (75, 96218), (78, 96200), (Start: 94 @96155 has 1 MA's), (100, 96140), (107, 96116), (115, 96086), (141, 95996), (162, 95951), (169, 95939), (189, 95870), (254, 95753), (273, 95726), (406, 95597), (445, 95480), (459, 95432), (492, 95363), (549, 95201), (568, 95165), (572, 95156), (580, 95141), (586, 95129), (640, 95093), (647, 95060), (678, 94985), (685, 94973), (706, 94934), (724, 94883), (805, 94721), (863, 94526), (876, 94469), (890, 94424),

Gene: SketchMex\_53 Start: 38648, Stop: 37170, Start Num: 242

Candidate Starts for SketchMex\_53:

(Start: 242 @38648 has 41 MA's), (297, 38561), (300, 38555), (Start: 330 @38504 has 27 MA's), (366, 38453), (374, 38438), (412, 38354), (421, 38330), (425, 38321), (490, 38198), (504, 38144), (506, 38138), (509, 38132), (536, 38054), (591, 37940), (602, 37913), (614, 37889), (645, 37808), (651, 37784), (659, 37763), (688, 37724), (697, 37706), (701, 37700), (780, 37589), (782, 37583), (803, 37541), (811, 37523), (837, 37436), (840, 37427), (846, 37406), (853, 37376), (861, 37346), (869, 37313), (898, 37223),

Gene: Skysand\_75 Start: 57318, Stop: 55261, Start Num: 36

Candidate Starts for Skysand\_75:

(6, 57606), (10, 57498), (Start: 36 @57318 has 31 MA's), (154, 56943), (226, 56802), (268, 56751), (300, 56691), (301, 56688), (348, 56616), (359, 56598), (402, 56535), (405, 56529), (454, 56436), (466, 56397), (475, 56379), (488, 56355), (522, 56232), (535, 56199), (568, 56136), (640, 56013), (668, 55944), (673, 55926), (729, 55821), (768, 55752), (783, 55713), (793, 55689), (796, 55683), (821, 55626), (837, 55566), (846, 55536), (854, 55503), (901, 55338), (922, 55296),

Gene: Snakehole\_40 Start: 25114, Stop: 27021, Start Num: 69

Candidate Starts for Snakehole\_40:

(Start: 69 @25114 has 40 MA's), (88, 25177), (99, 25198), (111, 25252), (170, 25429), (192, 25474), (Start: 295 @25648 has 21 MA's), (301, 25657), (359, 25747), (388, 25804), (468, 25990), (518, 26125), (520, 26137), (539, 26170), (640, 26299), (689, 26416), (837, 26725), (838, 26728), (853, 26788), (875, 26878), (886, 26908), (898, 26950), (922, 27001),

Gene: SoilGremlin\_42 Start: 31117, Stop: 29729, Start Num: 290

Candidate Starts for SoilGremlin\_42:

(175, 31339), (Start: 290 @31117 has 124 MA's), (382, 30973), (Start: 384 @30967 has 1 MA's), (386, 30964), (439, 30850), (450, 30823), (470, 30763), (487, 30736), (490, 30733), (492, 30727), (518, 30637), (533, 30595), (614, 30424), (634, 30388), (640, 30376), (647, 30343), (652, 30328), (695, 30268), (757, 30172), (797, 30109), (823, 30055), (846, 29971), (847, 29965), (850, 29953), (874, 29857), (894, 29803), (895, 29800), (903, 29776),

Gene: Sombrero\_60 Start: 52033, Stop: 50501, Start Num: 262

Candidate Starts for Sombrero\_60:

(146, 52288), (168, 52237), (202, 52132), (213, 52102), (Start: 237 @52069 has 2 MA's), (Start: 244 @52060 has 1 MA's), (Start: 262 @52033 has 25 MA's), (359, 51865), (381, 51823), (404, 51775), (408, 51763), (412, 51751), (414, 51745), (422, 51724), (491, 51556), (518, 51469), (521, 51454), (526, 51442), (544, 51412), (567, 51361), (605, 51283), (616, 51259), (623, 51241), (637, 51223), (638, 51220), (641, 51211), (645, 51193), (682, 51106), (757, 50971), (764, 50956), (773, 50935), (831, 50854), (832, 50851), (845, 50794), (846, 50788), (848, 50776), (862, 50725), (868, 50701), (878, 50662), (880, 50650), (882, 50647), (919, 50554), (926, 50539), (932, 50518),

Gene: SonOfLevi\_41 Start: 30834, Stop: 29413, Start Num: 290

Candidate Starts for SonOfLevi\_41:

(175, 31056), (Start: 290 @30834 has 124 MA's), (382, 30690), (Start: 384 @30684 has 1 MA's), (386, 30681), (439, 30567), (450, 30540), (470, 30480), (487, 30453), (490, 30450), (518, 30354), (533, 30312), (611, 30150), (614, 30141), (625, 30120), (640, 30093), (647, 30060), (652, 30045), (687, 29970), (695, 29952), (757, 29856), (797, 29793), (823, 29739), (846, 29655), (847, 29649), (850, 29637), (869, 29562), (874, 29541), (894, 29487), (895, 29484), (903, 29460),

Gene: Sopespian\_50 Start: 38728, Stop: 37250, Start Num: 242

Candidate Starts for Sopespian\_50:

(Start: 242 @38728 has 41 MA's), (297, 38641), (300, 38635), (350, 38554), (366, 38533), (421, 38410), (422, 38407), (504, 38224), (506, 38218), (509, 38212), (536, 38134), (591, 38020), (602, 37993), (614, 37969), (640, 37909), (651, 37864), (659, 37843), (688, 37804), (697, 37786), (780, 37669), (803, 37621), (806, 37618), (811, 37603), (840, 37507), (846, 37486), (853, 37456),

Gene: SorJuana\_70 Start: 47020, Stop: 45626, Start Num: 265

Candidate Starts for SorJuana\_70:

(Start: 265 @47020 has 13 MA's), (300, 46951), (348, 46876), (361, 46858), (376, 46828), (412, 46747), (470, 46597), (532, 46453), (571, 46414), (633, 46300), (649, 46249), (662, 46228), (674, 46198), (681, 46183), (689, 46171), (746, 46090), (781, 46042), (791, 46015), (804, 45994), (833, 45910), (851, 45844), (905, 45655), (911, 45643),

Gene: Sparcetus\_42 Start: 26604, Stop: 28538, Start Num: 70

Candidate Starts for Sparcetus\_42:

(Start: 33 @26508 has 1 MA's), (Start: 68 @26598 has 7 MA's), (Start: 70 @26604 has 3 MA's), (111, 26751), (115, 26769), (170, 26928), (236, 27054), (Start: 295 @27144 has 21 MA's), (301, 27153), (359, 27243), (397, 27315), (453, 27447), (520, 27633), (531, 27651), (539, 27666), (568, 27723), (635, 27783), (656, 27855), (734, 27993), (771, 28059), (782, 28089), (783, 28092), (819, 28167), (838, 28245), (853, 28305), (864, 28344), (875, 28395), (884, 28413), (924, 28521),

Gene: Squibbles\_58 Start: 52329, Stop: 50797, Start Num: 262

Candidate Starts for Squibbles\_58:

(146, 52584), (168, 52533), (179, 52482), (202, 52428), (213, 52398), (Start: 237 @52365 has 2 MA's), (Start: 244 @52356 has 1 MA's), (Start: 262 @52329 has 25 MA's), (359, 52161), (381, 52119), (404, 52071), (408, 52059), (412, 52047), (414, 52041), (422, 52020), (436, 51993), (491, 51852), (518, 51765), (521, 51750), (526, 51738), (544, 51708), (567, 51657), (581, 51630), (605, 51579), (623, 51537), (637, 51519), (638, 51516), (645, 51489), (658, 51447), (682, 51402), (757, 51267), (764, 51252), (773, 51231), (821, 51174), (832, 51147), (845, 51090), (846, 51084), (847, 51078), (848, 51072), (862, 51021), (868, 50997), (878, 50958), (880, 50946), (882, 50943), (919, 50850), (926, 50835), (932, 50814),

Gene: StAB\_50 Start: 39824, Stop: 41185, Start Num: 275

Candidate Starts for StAB\_50:

(Start: 275 @39824 has 7 MA's), (315, 39893), (326, 39911), (389, 40004), (420, 40058), (423, 40064), (427, 40070), (428, 40073), (487, 40193), (494, 40211), (529, 40328), (593, 40466), (610, 40505), (626, 40538), (632, 40544), (637, 40559), (647, 40598), (687, 40658), (735, 40718), (793, 40793), (832, 40874), (854, 40970), (872, 41051), (875, 41057), (879, 41069), (889, 41099),

Gene: Stanktossa\_41 Start: 31114, Stop: 29726, Start Num: 290

Candidate Starts for Stanktossa\_41:

(46, 31765), (148, 31411), (175, 31336), (Start: 290 @31114 has 124 MA's), (382, 30970), (Start: 384 @30964 has 1 MA's), (386, 30961), (439, 30847), (450, 30820), (470, 30760), (487, 30733), (490, 30730), (518, 30634), (533, 30592), (588, 30481), (614, 30421), (634, 30385), (640, 30373), (647, 30340), (652, 30325), (695, 30265), (757, 30169), (797, 30106), (823, 30052), (846, 29968), (847, 29962), (850, 29950), (874, 29854), (894, 29800), (895, 29797), (903, 29773),

Gene: StarStruck\_73 Start: 56760, Stop: 54685, Start Num: 36

Candidate Starts for StarStruck\_73:

(Start: 36 @56760 has 31 MA's), (77, 56640), (Start: 94 @56595 has 1 MA's), (95, 56592), (168, 56349), (200, 56292), (225, 56241), (268, 56187), (301, 56124), (359, 56034), (362, 56031), (375, 56007), (402, 55971), (475, 55815), (488, 55791), (522, 55668), (568, 55557), (580, 55533), (640, 55434), (654, 55380), (685, 55326), (708, 55284), (729, 55245), (768, 55176), (781, 55143), (796, 55107), (819, 55062), (821, 55050), (837, 54990), (854, 54927), (874, 54846), (901, 54762),

Gene: Starburst\_53 Start: 38723, Stop: 37245, Start Num: 242

Candidate Starts for Starburst\_53:

(Start: 242 @38723 has 41 MA's), (297, 38636), (300, 38630), (350, 38549), (366, 38528), (422, 38402), (504, 38219), (506, 38213), (509, 38207), (536, 38129), (591, 38015), (602, 37988), (614, 37964), (640, 37904), (651, 37859), (659, 37838), (688, 37799), (697, 37781), (780, 37664), (803, 37616), (806, 37613), (811, 37598), (840, 37502), (846, 37481), (853, 37451),

Gene: SteamedHams\_54 Start: 38292, Stop: 36814, Start Num: 242

Candidate Starts for SteamedHams\_54:

(Start: 242 @38292 has 41 MA's), (300, 38199), (Start: 314 @38172 has 1 MA's), (366, 38097), (Start: 384 @38055 has 1 MA's), (421, 37974), (490, 37842), (504, 37788), (509, 37776), (536, 37698), (591,

37584), (602, 37557), (614, 37533), (632, 37494), (651, 37428), (659, 37407), (697, 37350), (780, 37233), (803, 37185), (811, 37167), (840, 37071), (846, 37050), (853, 37020),

Gene: SteveFrench\_58 Start: 52481, Stop: 50949, Start Num: 262

Candidate Starts for SteveFrench\_58:

(146, 52736), (168, 52685), (202, 52580), (213, 52550), (Start: 237 @52517 has 2 MA's), (Start: 244 @52508 has 1 MA's), (Start: 262 @52481 has 25 MA's), (Start: 330 @52358 has 27 MA's), (359, 52313), (381, 52271), (404, 52223), (405, 52220), (407, 52214), (408, 52211), (414, 52193), (422, 52172), (436, 52145), (485, 52022), (491, 52004), (518, 51917), (521, 51902), (567, 51809), (605, 51731), (616, 51707), (637, 51671), (645, 51641), (658, 51599), (682, 51554), (757, 51419), (764, 51404), (773, 51383), (832, 51299), (845, 51242), (846, 51236), (848, 51224), (862, 51173), (868, 51149), (878, 51110), (880, 51098), (882, 51095), (919, 51002), (926, 50987),

Gene: Sticker17\_57 Start: 52601, Stop: 51189, Start Num: 330

Candidate Starts for Sticker17\_57:

(146, 52949), (191, 52820), (236, 52733), (Start: 237 @52730 has 2 MA's), (Start: 330 @52601 has 27 MA's), (359, 52556), (404, 52466), (405, 52463), (407, 52457), (414, 52436), (442, 52373), (485, 52265), (491, 52247), (518, 52160), (521, 52145), (544, 52103), (582, 52022), (605, 51974), (623, 51932), (637, 51914), (638, 51911), (645, 51884), (661, 51833), (682, 51797), (711, 51746), (757, 51662), (767, 51641), (845, 51485), (846, 51479), (848, 51467), (880, 51341), (926, 51227),

Gene: Stickynote\_71 Start: 52712, Stop: 50787, Start Num: 67

Candidate Starts for Stickynote\_71:

(30, 52805), (Start: 67 @52712 has 8 MA's), (120, 52541), (133, 52487), (225, 52283), (324, 52127), (359, 52076), (362, 52073), (393, 52031), (446, 51944), (447, 51941), (472, 51869), (478, 51860), (640, 51503), (647, 51470), (675, 51413), (821, 51131), (839, 51065), (843, 51053), (847, 51035), (848, 51029), (854, 51008), (869, 50945), (880, 50912), (892, 50873),

Gene: Stiles\_49 Start: 38782, Stop: 40143, Start Num: 275

Candidate Starts for Stiles\_49:

(Start: 275 @38782 has 7 MA's), (319, 38857), (322, 38863), (326, 38869), (389, 38962), (420, 39016), (423, 39022), (427, 39028), (428, 39031), (487, 39151), (494, 39169), (529, 39286), (593, 39424), (610, 39463), (626, 39496), (632, 39502), (637, 39517), (647, 39556), (687, 39616), (793, 39751), (832, 39832), (854, 39928), (872, 40009), (875, 40015), (879, 40027), (889, 40057),

Gene: StingRay\_40 Start: 30819, Stop: 29431, Start Num: 290

Candidate Starts for StingRay\_40:

(175, 31041), (Start: 290 @30819 has 124 MA's), (382, 30675), (Start: 384 @30669 has 1 MA's), (386, 30666), (439, 30552), (450, 30525), (470, 30465), (487, 30438), (490, 30435), (518, 30339), (533, 30297), (614, 30126), (625, 30105), (634, 30090), (652, 30030), (682, 29997), (695, 29970), (757, 29874), (797, 29811), (823, 29757), (846, 29673), (847, 29667), (850, 29655), (874, 29559), (894, 29505), (895, 29502), (903, 29478),

Gene: StirfryIV\_40 Start: 30812, Stop: 29424, Start Num: 290

Candidate Starts for StirfryIV\_40:

(46, 31463), (148, 31109), (175, 31034), (Start: 290 @30812 has 124 MA's), (382, 30668), (Start: 384 @30662 has 1 MA's), (386, 30659), (439, 30545), (450, 30518), (470, 30458), (487, 30431), (490, 30428), (518, 30332), (533, 30290), (614, 30119), (625, 30098), (634, 30083), (652, 30023), (695, 29963), (757, 29867), (797, 29804), (823, 29750), (846, 29666), (847, 29660), (850, 29648), (874, 29552), (894, 29498), (895, 29495), (903, 29471),

Gene: Stormbreaker8\_40 Start: 31269, Stop: 29878, Start Num: 290

Candidate Starts for Stormbreaker8\_40:



(147, 31557), (157, 31536), (Start: 290 @31269 has 124 MA's), (382, 31122), (Start: 384 @31116 has 1 MA's), (386, 31113), (412, 31053), (439, 30999), (450, 30972), (470, 30912), (487, 30885), (490, 30882), (518, 30786), (533, 30744), (614, 30573), (625, 30552), (695, 30417), (757, 30321), (823, 30204), (831, 30186), (846, 30120), (847, 30114), (850, 30102), (874, 30006), (894, 29952), (895, 29949), (903, 29925), (917, 29895),

Gene: Strathdee\_41 Start: 31119, Stop: 29731, Start Num: 290

Candidate Starts for Strathdee\_41:

(46, 31770), (148, 31416), (175, 31341), (Start: 290 @31119 has 124 MA's), (382, 30975), (Start: 384 @30969 has 1 MA's), (386, 30966), (439, 30852), (450, 30825), (470, 30765), (487, 30738), (490, 30735), (518, 30639), (533, 30597), (614, 30426), (625, 30405), (640, 30378), (652, 30330), (695, 30270), (797, 30111), (823, 30057), (846, 29973), (847, 29967), (850, 29955), (874, 29859), (894, 29805), (895, 29802), (903, 29778),

Gene: Stuff\_42 Start: 31323, Stop: 32717, Start Num: 261

Candidate Starts for Stuff\_42:

(Start: 261 @31323 has 12 MA's), (Start: 264 @31326 has 2 MA's), (303, 31401), (316, 31425), (320, 31431), (343, 31455), (353, 31470), (354, 31473), (356, 31476), (394, 31545), (405, 31560), (424, 31596), (470, 31695), (491, 31716), (508, 31773), (556, 31896), (616, 32031), (632, 32058), (640, 32079), (679, 32157), (695, 32190), (701, 32199), (727, 32241), (782, 32307), (791, 32331), (803, 32349), (811, 32367), (832, 32421), (837, 32451), (852, 32508), (853, 32511), (866, 32559), (874, 32598), (879, 32613), (905, 32682), (914, 32700), (918, 32709),

Gene: Sucha\_30 Start: 20665, Stop: 22092, Start Num: 258

Candidate Starts for Sucha\_30:

(238, 20644), (Start: 258 @20665 has 13 MA's), (447, 21019), (448, 21022), (455, 21043), (498, 21130), (513, 21172), (634, 21454), (640, 21466), (645, 21487), (652, 21514), (678, 21541), (679, 21544), (692, 21571), (695, 21577), (718, 21613), (791, 21712), (822, 21775), (832, 21796), (845, 21850), (852, 21883), (856, 21895), (866, 21934), (872, 21970), (875, 21976), (879, 21988), (892, 22021), (902, 22051),

Gene: Sukkupi\_71 Start: 54175, Stop: 52319, Start Num: 109

Candidate Starts for Sukkupi\_71:

(9, 54592), (12, 54574), (18, 54499), (Start: 36 @54400 has 31 MA's), (Start: 109 @54175 has 3 MA's), (225, 53881), (252, 53848), (268, 53827), (297, 53773), (300, 53767), (301, 53764), (359, 53674), (362, 53671), (402, 53611), (475, 53455), (522, 53308), (568, 53200), (580, 53176), (640, 53074), (654, 53020), (668, 53005), (708, 52924), (729, 52885), (765, 52822), (781, 52783), (783, 52777), (796, 52747), (837, 52630), (854, 52567), (869, 52504), (874, 52486), (901, 52402),

Gene: SummitAcademy\_56 Start: 40461, Stop: 38983, Start Num: 242

Candidate Starts for SummitAcademy\_56:

(191, 40539), (218, 40488), (Start: 221 @40485 has 1 MA's), (Start: 242 @40461 has 41 MA's), (286, 40398), (297, 40377), (300, 40371), (Start: 314 @40344 has 1 MA's), (350, 40290), (374, 40254), (380, 40239), (421, 40143), (425, 40134), (436, 40113), (457, 40047), (490, 40011), (504, 39957), (506, 39951), (509, 39945), (536, 39867), (544, 39852), (591, 39753), (624, 39678), (634, 39654), (640, 39642), (645, 39621), (648, 39606), (651, 39597), (659, 39576), (688, 39537), (692, 39528), (701, 39513), (733, 39462), (782, 39390), (803, 39348), (806, 39345), (811, 39330), (840, 39234), (853, 39183), (861, 39153), (869, 39120), (888, 39063), (893, 39048),

Gene: SuperSulley\_74 Start: 57198, Stop: 55111, Start Num: 36

Candidate Starts for SuperSulley\_74:

(Start: 36 @57198 has 31 MA's), (77, 57078), (Start: 94 @57033 has 1 MA's), (95, 57030), (168, 56775), (225, 56667), (268, 56613), (301, 56550), (359, 56460), (362, 56457), (375, 56433), (402,

56397), (466, 56259), (475, 56241), (482, 56232), (488, 56217), (522, 56094), (551, 56010), (568, 55983), (580, 55959), (640, 55860), (654, 55806), (685, 55752), (708, 55710), (729, 55671), (768, 55602), (781, 55569), (796, 55533), (819, 55488), (821, 55476), (837, 55416), (839, 55410), (854, 55353), (901, 55188), (913, 55164),

Gene: Superfresh\_41 Start: 31109, Stop: 29721, Start Num: 290

Candidate Starts for Superfresh\_41:

(175, 31331), (Start: 290 @31109 has 124 MA's), (382, 30965), (Start: 384 @30959 has 1 MA's), (386, 30956), (439, 30842), (450, 30815), (470, 30755), (487, 30728), (490, 30725), (518, 30629), (533, 30587), (614, 30416), (625, 30395), (634, 30380), (640, 30368), (652, 30320), (695, 30260), (757, 30164), (797, 30101), (823, 30047), (846, 29963), (847, 29957), (850, 29945), (869, 29870), (874, 29849), (894, 29795), (895, 29792), (903, 29768),

Gene: Suppi\_29 Start: 22165, Stop: 23559, Start Num: 253

Candidate Starts for Suppi\_29:

(Start: 253 @22165 has 72 MA's), (Start: 288 @22222 has 1 MA's), (353, 22327), (398, 22414), (447, 22498), (448, 22501), (450, 22504), (493, 22594), (503, 22630), (506, 22639), (512, 22648), (527, 22705), (538, 22723), (555, 22756), (566, 22768), (596, 22837), (607, 22864), (619, 22888), (640, 22930), (647, 22963), (652, 22978), (655, 22987), (723, 23077), (781, 23146), (791, 23173), (803, 23191), (810, 23203), (837, 23293), (839, 23299), (842, 23308), (844, 23314), (852, 23350), (872, 23437), (892, 23488), (907, 23527), (918, 23551),

Gene: Survivors\_49 Start: 37834, Stop: 36344, Start Num: 242

Candidate Starts for Survivors\_49:

(Start: 242 @37834 has 41 MA's), (300, 37744), (Start: 314 @37717 has 1 MA's), (343, 37675), (371, 37633), (374, 37627), (Start: 384 @37600 has 1 MA's), (421, 37519), (422, 37516), (425, 37510), (436, 37489), (457, 37423), (504, 37333), (509, 37321), (527, 37258), (536, 37243), (544, 37228), (599, 37111), (602, 37102), (637, 37024), (645, 36997), (647, 36985), (651, 36973), (678, 36934), (688, 36913), (690, 36910), (697, 36895), (733, 36823), (803, 36709), (822, 36664), (828, 36649), (834, 36619), (840, 36595), (853, 36544), (861, 36514), (878, 36448), (888, 36424), (898, 36391), (915, 36355),

Gene: Suzy\_49 Start: 37573, Stop: 39624, Start Num: 69

Candidate Starts for Suzy\_49:

(Start: 69 @37573 has 40 MA's), (99, 37660), (112, 37720), (119, 37744), (127, 37786), (223, 38008), (252, 38044), (355, 38200), (373, 38218), (381, 38239), (388, 38251), (417, 38311), (424, 38326), (445, 38344), (472, 38422), (482, 38437), (484, 38440), (496, 38479), (500, 38500), (568, 38659), (577, 38680), (580, 38683), (586, 38695), (608, 38743), (611, 38749), (613, 38755), (630, 38830), (642, 38872), (647, 38902), (700, 39025), (713, 39058), (719, 39070), (751, 39124), (791, 39196), (796, 39205), (829, 39280), (840, 39334), (853, 39385), (858, 39403), (869, 39451), (871, 39460), (874, 39472), (880, 39487), (893, 39529), (903, 39559),

Gene: SweatNTears\_55 Start: 38970, Stop: 37492, Start Num: 242

Candidate Starts for SweatNTears\_55:

(Start: 242 @38970 has 41 MA's), (297, 38883), (300, 38877), (350, 38796), (421, 38652), (422, 38649), (504, 38466), (506, 38460), (509, 38454), (536, 38376), (591, 38262), (602, 38235), (614, 38211), (640, 38151), (651, 38106), (659, 38085), (688, 38046), (697, 38028), (780, 37911), (803, 37863), (806, 37860), (811, 37845), (840, 37749), (846, 37728), (853, 37698),

Gene: Symere\_42 Start: 30799, Stop: 29411, Start Num: 290

Candidate Starts for Symere\_42:

(46, 31450), (148, 31096), (175, 31021), (Start: 290 @30799 has 124 MA's), (382, 30655), (Start: 384 @30649 has 1 MA's), (386, 30646), (436, 30541), (439, 30532), (450, 30505), (470, 30445), (487,

30418), (490, 30415), (518, 30319), (533, 30277), (614, 30106), (625, 30085), (634, 30070), (652, 30010), (695, 29950), (757, 29854), (797, 29791), (823, 29737), (846, 29653), (847, 29647), (850, 29635), (894, 29485), (895, 29482), (903, 29458),

Gene: TMaxx\_40 Start: 26999, Stop: 25191, Start Num: 66

Candidate Starts for TMaxx\_40:

(47, 27044), (Start: 66 @26999 has 1 MA's), (83, 26939), (107, 26876), (146, 26738), (204, 26609), (Start: 258 @26525 has 13 MA's), (399, 26387), (458, 26201), (496, 26108), (500, 26087), (572, 25916), (580, 25901), (640, 25853), (672, 25784), (676, 25778), (684, 25763), (714, 25724), (729, 25715), (765, 25661), (766, 25658), (776, 25640), (782, 25622), (840, 25466), (848, 25433), (856, 25406), (861, 25385), (893, 25268), (913, 25217),

Gene: Talia1610\_101 Start: 80103, Stop: 81941, Start Num: 63

Candidate Starts for Talia1610\_101:

(Start: 63 @80103 has 2 MA's), (87, 80184), (115, 80262), (143, 80358), (183, 80418), (200, 80448), (273, 80568), (298, 80619), (398, 80679), (515, 81018), (537, 81075), (549, 81096), (572, 81141), (638, 81198), (640, 81204), (647, 81237), (651, 81249), (655, 81261), (679, 81306), (700, 81345), (744, 81402), (748, 81408), (766, 81441), (796, 81510), (832, 81594), (860, 81711), (915, 81885), (931, 81927),

Gene: Talos\_126 Start: 67581, Stop: 69077, Start Num: 296

Candidate Starts for Talos\_126:

(Start: 258 @67509 has 13 MA's), (Start: 282 @67554 has 5 MA's), (296, 67581), (299, 67587), (310, 67611), (354, 67677), (396, 67758), (421, 67824), (449, 67881), (452, 67890), (453, 67899), (471, 67953), (504, 68028), (539, 68130), (549, 68151), (550, 68154), (579, 68205), (584, 68214), (587, 68229), (591, 68241), (617, 68289), (622, 68304), (636, 68325), (761, 68574), (774, 68586), (781, 68610), (796, 68646), (817, 68679), (822, 68697), (849, 68802), (881, 68922), (886, 68934), (904, 68991), (910, 69003), (913, 69009), (932, 69057),

Gene: TatarkaPM\_41 Start: 31124, Stop: 29736, Start Num: 290

Candidate Starts for TatarkaPM\_41:

(46, 31775), (148, 31421), (175, 31346), (Start: 290 @31124 has 124 MA's), (382, 30980), (Start: 384 @30974 has 1 MA's), (386, 30971), (439, 30857), (450, 30830), (470, 30770), (487, 30743), (490, 30740), (518, 30644), (533, 30602), (611, 30440), (614, 30431), (625, 30410), (634, 30395), (640, 30383), (652, 30335), (695, 30275), (757, 30179), (797, 30116), (823, 30062), (846, 29978), (847, 29972), (850, 29960), (874, 29864), (894, 29810), (895, 29807), (903, 29783),

Gene: TattModd\_29 Start: 22150, Stop: 23550, Start Num: 253

Candidate Starts for TattModd\_29:

(Start: 253 @22150 has 72 MA's), (Start: 288 @22213 has 1 MA's), (353, 22318), (354, 22321), (398, 22405), (416, 22438), (447, 22489), (450, 22495), (491, 22576), (492, 22579), (493, 22585), (503, 22621), (512, 22639), (513, 22642), (520, 22675), (527, 22696), (538, 22714), (555, 22747), (596, 22828), (607, 22855), (621, 22885), (626, 22894), (640, 22921), (647, 22954), (652, 22969), (692, 23023), (705, 23044), (713, 23056), (723, 23068), (839, 23290), (842, 23299), (844, 23305), (852, 23341), (868, 23401), (872, 23428), (907, 23518),

Gene: Teagan\_41 Start: 31114, Stop: 29726, Start Num: 290

Candidate Starts for Teagan\_41:

(46, 31765), (148, 31411), (175, 31336), (Start: 290 @31114 has 124 MA's), (382, 30970), (Start: 384 @30964 has 1 MA's), (386, 30961), (439, 30847), (450, 30820), (470, 30760), (487, 30733), (490, 30730), (518, 30634), (533, 30592), (614, 30421), (625, 30400), (640, 30373), (652, 30325), (695, 30265), (797, 30106), (823, 30052), (846, 29968), (847, 29962), (850, 29950), (874, 29854), (894, 29800), (895, 29797), (903, 29773),

Gene: Teal\_57 Start: 53068, Stop: 51656, Start Num: 330

Candidate Starts for Teal\_57:

(146, 53416), (191, 53287), (236, 53200), (Start: 237 @53197 has 2 MA's), (Start: 330 @53068 has 27 MA's), (359, 53023), (404, 52933), (405, 52930), (407, 52924), (414, 52903), (442, 52840), (485, 52732), (491, 52714), (518, 52627), (521, 52612), (544, 52570), (582, 52489), (605, 52441), (623, 52399), (637, 52381), (638, 52378), (645, 52351), (661, 52300), (682, 52264), (711, 52213), (757, 52129), (767, 52108), (845, 51952), (846, 51946), (848, 51934), (880, 51808), (926, 51694),

Gene: Teatealatte\_58 Start: 53221, Stop: 51518, Start Num: 171

Candidate Starts for Teatealatte\_58:

(Start: 171 @53221 has 6 MA's), (Start: 173 @53209 has 2 MA's), (270, 53026), (Start: 330 @52936 has 27 MA's), (336, 52927), (359, 52891), (374, 52867), (377, 52858), (381, 52849), (404, 52801), (408, 52789), (412, 52777), (437, 52720), (442, 52705), (443, 52702), (448, 52684), (461, 52648), (462, 52645), (509, 52516), (512, 52513), (521, 52477), (522, 52474), (533, 52456), (538, 52447), (544, 52435), (564, 52387), (582, 52354), (605, 52306), (616, 52282), (645, 52216), (682, 52117), (736, 52018), (754, 51985), (757, 51982), (811, 51916), (831, 51865), (832, 51862), (845, 51805), (848, 51787), (878, 51670), (879, 51667), (882, 51655), (926, 51556), (932, 51535),

Gene: TeddyBear\_40 Start: 30816, Stop: 29428, Start Num: 290

Candidate Starts for TeddyBear\_40:

(175, 31038), (Start: 290 @30816 has 124 MA's), (382, 30672), (Start: 384 @30666 has 1 MA's), (386, 30663), (439, 30549), (450, 30522), (470, 30462), (487, 30435), (490, 30432), (517, 30339), (518, 30336), (533, 30294), (614, 30123), (625, 30102), (634, 30087), (640, 30075), (652, 30027), (695, 29967), (757, 29871), (797, 29808), (823, 29754), (846, 29670), (847, 29664), (850, 29652), (869, 29577), (874, 29556), (894, 29502), (895, 29499), (903, 29475),

Gene: Tedro\_40 Start: 25407, Stop: 27314, Start Num: 69

Candidate Starts for Tedro\_40:

(Start: 69 @25407 has 40 MA's), (88, 25470), (99, 25491), (111, 25545), (170, 25722), (192, 25767), (Start: 295 @25941 has 21 MA's), (301, 25950), (359, 26040), (388, 26097), (468, 26283), (518, 26418), (520, 26430), (539, 26463), (561, 26508), (640, 26592), (689, 26709), (831, 26982), (837, 27018), (838, 27021), (853, 27081), (875, 27171), (886, 27201), (898, 27243), (922, 27294),

Gene: Teech\_56 Start: 53010, Stop: 51319, Start Num: 173

Candidate Starts for Teech\_56:

(Start: 171 @53022 has 6 MA's), (Start: 173 @53010 has 2 MA's), (270, 52827), (Start: 330 @52737 has 27 MA's), (336, 52728), (359, 52692), (374, 52668), (377, 52659), (381, 52650), (404, 52602), (412, 52578), (442, 52506), (448, 52485), (461, 52449), (462, 52446), (509, 52317), (512, 52314), (521, 52278), (522, 52275), (533, 52257), (538, 52248), (544, 52236), (564, 52188), (582, 52155), (605, 52107), (616, 52083), (645, 52017), (682, 51918), (736, 51819), (742, 51810), (754, 51786), (757, 51783), (811, 51717), (831, 51666), (832, 51663), (845, 51606), (848, 51588), (878, 51471), (879, 51468), (882, 51456), (926, 51357), (932, 51336),

Gene: Temper16\_26 Start: 21732, Stop: 23129, Start Num: 253

Candidate Starts for Temper16\_26:

(Start: 253 @21732 has 72 MA's), (Start: 288 @21792 has 1 MA's), (341, 21879), (353, 21897), (354, 21900), (398, 21984), (400, 21990), (416, 22017), (447, 22068), (450, 22074), (465, 22125), (470, 22134), (491, 22155), (493, 22164), (503, 22200), (513, 22221), (520, 22254), (527, 22275), (538, 22293), (541, 22299), (555, 22326), (566, 22338), (576, 22353), (596, 22407), (619, 22458), (621, 22464), (626, 22473), (632, 22479), (640, 22500), (647, 22533), (652, 22548), (655, 22557), (742, 22680), (782, 22719), (791, 22743), (799, 22755), (837, 22863), (839, 22869), (842, 22878), (844, 22884), (852, 22920), (872, 23007), (907, 23097), (918, 23121),

Gene: Tenda\_40 Start: 30814, Stop: 29426, Start Num: 290

Candidate Starts for Tenda\_40:

(175, 31036), (Start: 290 @30814 has 124 MA's), (382, 30670), (Start: 384 @30664 has 1 MA's), (386, 30661), (439, 30547), (450, 30520), (470, 30460), (487, 30433), (490, 30430), (518, 30334), (533, 30292), (614, 30121), (625, 30100), (634, 30085), (652, 30025), (695, 29965), (757, 29869), (797, 29806), (823, 29752), (846, 29668), (847, 29662), (850, 29650), (874, 29554), (894, 29500), (895, 29497), (903, 29473),

Gene: Terapin\_51 Start: 36616, Stop: 38670, Start Num: 69

Candidate Starts for Terapin\_51:

(Start: 69 @36616 has 40 MA's), (76, 36640), (99, 36703), (119, 36787), (127, 36829), (223, 37051), (252, 37087), (298, 37162), (320, 37201), (355, 37243), (373, 37261), (381, 37282), (388, 37294), (417, 37354), (424, 37369), (445, 37387), (472, 37465), (482, 37480), (484, 37483), (496, 37522), (500, 37543), (539, 37645), (568, 37702), (577, 37723), (580, 37726), (586, 37738), (608, 37786), (611, 37792), (628, 37840), (630, 37873), (635, 37897), (642, 37915), (647, 37945), (700, 38068), (713, 38101), (719, 38113), (729, 38128), (751, 38167), (781, 38212), (791, 38239), (829, 38323), (843, 38386), (853, 38428), (856, 38437), (858, 38446), (869, 38494), (871, 38503), (874, 38515), (880, 38530), (893, 38572),

Gene: Theresita\_31 Start: 21253, Stop: 22665, Start Num: 258

Candidate Starts for Theresita\_31:

(Start: 258 @21253 has 13 MA's), (345, 21397), (356, 21415), (403, 21505), (477, 21664), (492, 21682), (493, 21688), (498, 21703), (503, 21724), (513, 21745), (600, 21955), (616, 21991), (640, 22039), (645, 22060), (647, 22072), (652, 22087), (678, 22114), (686, 22129), (718, 22186), (782, 22261), (791, 22285), (810, 22315), (816, 22327), (832, 22369), (837, 22399), (852, 22456), (856, 22468), (875, 22549), (876, 22552), (886, 22576), (892, 22594), (902, 22624),

Gene: Thompsone\_41 Start: 31121, Stop: 29733, Start Num: 290

Candidate Starts for Thompsone\_41:

(46, 31772), (148, 31418), (175, 31343), (Start: 290 @31121 has 124 MA's), (382, 30977), (Start: 384 @30971 has 1 MA's), (386, 30968), (439, 30854), (450, 30827), (470, 30767), (487, 30740), (490, 30737), (518, 30641), (533, 30599), (614, 30428), (625, 30407), (640, 30380), (652, 30332), (695, 30272), (797, 30113), (823, 30059), (846, 29975), (847, 29969), (850, 29957), (869, 29882), (874, 29861), (894, 29807), (895, 29804), (903, 29780),

Gene: Thorongil\_41 Start: 31121, Stop: 29733, Start Num: 290

Candidate Starts for Thorongil\_41:

(216, 31220), (219, 31217), (222, 31214), (283, 31130), (Start: 290 @31121 has 124 MA's), (382, 30977), (Start: 384 @30971 has 1 MA's), (386, 30968), (439, 30854), (450, 30827), (470, 30767), (487, 30740), (490, 30737), (518, 30641), (533, 30599), (614, 30428), (625, 30407), (634, 30392), (640, 30380), (652, 30332), (695, 30272), (797, 30113), (823, 30059), (846, 29975), (847, 29969), (850, 29957), (869, 29882), (874, 29861), (894, 29807), (895, 29804), (903, 29780),

Gene: Thoth\_53 Start: 39727, Stop: 41670, Start Num: 55

Candidate Starts for Thoth\_53:

(Start: 55 @39727 has 51 MA's), (72, 39754), (Start: 97 @39826 has 1 MA's), (110, 39880), (125, 39940), (129, 39958), (131, 39967), (146, 40018), (163, 40060), (181, 40096), (225, 40183), (287, 40276), (297, 40291), (306, 40312), (381, 40414), (399, 40447), (410, 40471), (447, 40531), (482, 40618), (504, 40693), (540, 40783), (568, 40834), (570, 40837), (625, 40927), (640, 40945), (647, 40978), (673, 41032), (679, 41044), (689, 41062), (729, 41125), (781, 41209), (831, 41326), (837, 41374), (854, 41437), (874, 41521),

Gene: Thumb\_62 Start: 46085, Stop: 48142, Start Num: 55

Candidate Starts for Thumb\_62:

(Start: 55 @46085 has 51 MA's), (81, 46145), (82, 46148), (Start: 109 @46241 has 3 MA's), (112, 46253), (118, 46274), (150, 46397), (151, 46400), (154, 46409), (170, 46442), (174, 46463), (189, 46511), (252, 46616), (268, 46637), (273, 46643), (300, 46697), (413, 46883), (417, 46895), (425, 46913), (445, 46928), (447, 46934), (568, 47252), (570, 47255), (590, 47300), (635, 47351), (640, 47363), (673, 47453), (679, 47465), (696, 47498), (713, 47522), (718, 47531), (783, 47621), (798, 47654), (836, 47765), (837, 47768), (838, 47771), (839, 47774), (853, 47828), (869, 47894), (874, 47912), (934, 48089),

Gene: Thunderclap\_70 Start: 47442, Stop: 46048, Start Num: 265

Candidate Starts for Thunderclap\_70:

(Start: 265 @47442 has 13 MA's), (300, 47373), (348, 47298), (361, 47280), (376, 47250), (412, 47169), (437, 47115), (470, 47019), (532, 46875), (571, 46836), (633, 46722), (649, 46671), (662, 46650), (674, 46620), (681, 46605), (689, 46593), (746, 46512), (781, 46464), (791, 46437), (804, 46416), (833, 46332), (851, 46266), (905, 46077), (911, 46065),

Gene: Tillicus\_57 Start: 39985, Stop: 41907, Start Num: 56

Candidate Starts for Tillicus\_57:

(21, 39862), (24, 39883), (29, 39904), (43, 39934), (48, 39967), (Start: 54 @39979 has 11 MA's), (56, 39985), (Start: 69 @40003 has 40 MA's), (72, 40015), (83, 40051), (96, 40084), (98, 40087), (Start: 109 @40135 has 3 MA's), (113, 40153), (135, 40243), (142, 40261), (145, 40270), (147, 40279), (181, 40351), (252, 40471), (254, 40474), (Start: 293 @40534 has 18 MA's), (302, 40552), (352, 40624), (370, 40651), (447, 40786), (453, 40804), (466, 40846), (478, 40867), (482, 40873), (496, 40915), (500, 40936), (508, 40957), (518, 40993), (540, 41050), (548, 41062), (561, 41092), (565, 41101), (590, 41152), (647, 41248), (648, 41251), (724, 41362), (750, 41410), (781, 41452), (791, 41479), (829, 41563), (848, 41647), (853, 41665), (859, 41689), (864, 41704), (874, 41752), (880, 41767), (892, 41806), (897, 41821), (904, 41842), (930, 41899),

Gene: TinSulphur\_42 Start: 31120, Stop: 29732, Start Num: 290

Candidate Starts for TinSulphur\_42:

(46, 31771), (148, 31417), (175, 31342), (Start: 290 @31120 has 124 MA's), (382, 30976), (Start: 384 @30970 has 1 MA's), (386, 30967), (439, 30853), (450, 30826), (470, 30766), (487, 30739), (490, 30736), (518, 30640), (533, 30598), (611, 30436), (614, 30427), (625, 30406), (634, 30391), (640, 30379), (652, 30331), (695, 30271), (757, 30175), (797, 30112), (823, 30058), (846, 29974), (847, 29968), (850, 29956), (874, 29860), (894, 29806), (895, 29803), (903, 29779),

Gene: TinyMiny\_42 Start: 26527, Stop: 28557, Start Num: 33

Candidate Starts for TinyMiny\_42:

(15, 26383), (Start: 33 @26527 has 1 MA's), (Start: 68 @26617 has 7 MA's), (Start: 70 @26623 has 3 MA's), (111, 26770), (115, 26788), (118, 26797), (170, 26947), (236, 27073), (Start: 295 @27163 has 21 MA's), (301, 27172), (359, 27262), (381, 27304), (453, 27466), (520, 27652), (531, 27670), (539, 27685), (568, 27742), (635, 27802), (656, 27874), (734, 28012), (771, 28078), (782, 28108), (819, 28186), (838, 28264), (853, 28324), (864, 28363), (875, 28414), (884, 28432), (924, 28540),

Gene: Tinyman4\_39 Start: 29477, Stop: 28092, Start Num: 293

Candidate Starts for Tinyman4\_39:

(Start: 293 @29477 has 18 MA's), (412, 29264), (439, 29201), (447, 29180), (487, 29087), (490, 29084), (496, 29063), (500, 29042), (533, 28946), (614, 28775), (627, 28751), (634, 28739), (640, 28727), (643, 28715), (644, 28712), (647, 28694), (652, 28679), (695, 28619), (703, 28607), (711, 28595), (757, 28523), (781, 28493), (797, 28460), (837, 28352), (840, 28343), (845, 28328), (846, 28322), (847, 28316), (850, 28304), (874, 28208), (877, 28199), (889, 28169), (903, 28127),

Gene: Tolls\_54 Start: 38563, Stop: 37085, Start Num: 242

Candidate Starts for Tolls\_54:

(Start: 242 @38563 has 41 MA's), (300, 38470), (Start: 314 @38443 has 1 MA's), (366, 38368), (Start: 384 @38326 has 1 MA's), (421, 38245), (490, 38113), (504, 38059), (509, 38047), (536, 37969), (591, 37855), (602, 37828), (614, 37804), (651, 37699), (659, 37678), (688, 37639), (697, 37621), (701, 37615), (780, 37504), (803, 37456), (811, 37438), (840, 37342), (846, 37321), (853, 37291),

Gene: Tracker\_72 Start: 55556, Stop: 53490, Start Num: 36

Candidate Starts for Tracker\_72:

(8, 55760), (9, 55748), (12, 55730), (Start: 36 @55556 has 31 MA's), (Start: 84 @55418 has 2 MA's), (89, 55394), (147, 55190), (168, 55145), (225, 55037), (300, 54923), (301, 54920), (359, 54830), (362, 54827), (402, 54767), (466, 54629), (475, 54611), (488, 54587), (522, 54464), (568, 54359), (640, 54233), (654, 54179), (725, 54053), (729, 54044), (742, 54020), (781, 53948), (783, 53942), (796, 53912), (821, 53855), (837, 53795), (854, 53732), (874, 53651),

Gene: Tredge\_57 Start: 53221, Stop: 51518, Start Num: 171

Candidate Starts for Tredge\_57:

(Start: 171 @53221 has 6 MA's), (Start: 173 @53209 has 2 MA's), (270, 53026), (Start: 330 @52936 has 27 MA's), (336, 52927), (359, 52891), (374, 52867), (377, 52858), (381, 52849), (404, 52801), (408, 52789), (412, 52777), (437, 52720), (442, 52705), (443, 52702), (448, 52684), (461, 52648), (462, 52645), (509, 52516), (512, 52513), (521, 52477), (522, 52474), (533, 52456), (538, 52447), (544, 52435), (564, 52387), (582, 52354), (605, 52306), (616, 52282), (645, 52216), (682, 52117), (736, 52018), (754, 51985), (757, 51982), (811, 51916), (831, 51865), (832, 51862), (845, 51805), (848, 51787), (878, 51670), (879, 51667), (882, 51655), (926, 51556), (932, 51535),

Gene: Triscuit\_58 Start: 36727, Stop: 38280, Start Num: 241

Candidate Starts for Triscuit\_58:

(Start: 241 @36727 has 1 MA's), (Start: 244 @36730 has 1 MA's), (300, 36826), (316, 36856), (343, 36895), (360, 36922), (371, 36937), (392, 36982), (396, 36991), (409, 37021), (445, 37105), (475, 37189), (480, 37198), (483, 37201), (518, 37321), (521, 37336), (560, 37423), (599, 37513), (647, 37636), (651, 37648), (709, 37735), (762, 37834), (780, 37852), (834, 37990), (898, 38218), (901, 38227), (903, 38230),

Gene: Trogglehumper\_76 Start: 59717, Stop: 58170, Start Num: 262

Candidate Starts for Trogglehumper\_76:

(198, 59828), (234, 59762), (Start: 262 @59717 has 25 MA's), (338, 59600), (359, 59567), (Start: 384 @59525 has 1 MA's), (388, 59519), (404, 59495), (427, 59429), (433, 59420), (435, 59417), (456, 59354), (470, 59315), (496, 59249), (517, 59183), (521, 59165), (526, 59153), (538, 59135), (559, 59087), (563, 59081), (605, 59003), (623, 58961), (637, 58943), (652, 58886), (655, 58877), (732, 58751), (754, 58709), (757, 58706), (767, 58685), (778, 58652), (805, 58595), (848, 58445), (855, 58421), (868, 58370), (893, 58280), (908, 58241), (924, 58220), (927, 58208), (928, 58205), (932, 58193),

Gene: Troje\_55 Start: 38986, Stop: 37508, Start Num: 242

Candidate Starts for Troje\_55:

(Start: 242 @38986 has 41 MA's), (297, 38899), (300, 38893), (Start: 330 @38842 has 27 MA's), (366, 38791), (374, 38776), (412, 38692), (421, 38668), (425, 38659), (490, 38536), (504, 38482), (506, 38476), (509, 38470), (518, 38440), (536, 38392), (591, 38278), (602, 38251), (614, 38227), (645, 38146), (651, 38122), (659, 38101), (688, 38062), (697, 38044), (701, 38038), (780, 37927), (782, 37921), (803, 37879), (811, 37861), (837, 37774), (840, 37765), (846, 37744), (853, 37714), (861, 37684), (869, 37651), (898, 37561),

Gene: Troll4\_53 Start: 39859, Stop: 41802, Start Num: 55

Candidate Starts for Troll4\_53:

(Start: 55 @39859 has 51 MA's), (72, 39886), (Start: 97 @39958 has 1 MA's), (110, 40012), (125, 40072), (129, 40090), (131, 40099), (146, 40150), (163, 40192), (181, 40228), (225, 40315), (287, 40408), (297, 40423), (306, 40444), (381, 40546), (399, 40579), (410, 40603), (447, 40663), (482, 40750), (504, 40825), (540, 40915), (568, 40966), (570, 40969), (625, 41059), (640, 41077), (647, 41110), (673, 41164), (679, 41176), (689, 41194), (729, 41257), (781, 41341), (831, 41458), (837, 41506), (854, 41569), (874, 41653),

Gene: Troy\_45 Start: 36746, Stop: 38122, Start Num: 275

Candidate Starts for Troy\_45:

(Start: 275 @36746 has 7 MA's), (315, 36815), (326, 36833), (389, 36926), (423, 36986), (427, 36992), (428, 36995), (487, 37115), (494, 37133), (529, 37250), (593, 37388), (610, 37427), (626, 37460), (632, 37466), (637, 37481), (647, 37520), (687, 37580), (699, 37604), (735, 37640), (789, 37709), (793, 37715), (832, 37796), (854, 37892), (857, 37904), (860, 37916), (872, 37973), (875, 37979), (879, 37991), (889, 38021), (909, 38072),

Gene: TurboVicky\_33 Start: 23252, Stop: 24679, Start Num: 258

Candidate Starts for TurboVicky\_33:

(230, 23210), (Start: 258 @23252 has 13 MA's), (428, 23570), (498, 23717), (503, 23738), (616, 24005), (640, 24053), (645, 24074), (679, 24131), (695, 24164), (718, 24200), (783, 24278), (791, 24299), (831, 24380), (832, 24383), (852, 24470), (856, 24482), (866, 24521), (872, 24557), (875, 24563), (879, 24575), (902, 24638),

Gene: Turuncu\_75 Start: 56841, Stop: 54784, Start Num: 36

Candidate Starts for Turuncu\_75:

(6, 57126), (11, 57009), (14, 56991), (Start: 36 @56841 has 31 MA's), (225, 56328), (268, 56274), (287, 56238), (301, 56211), (352, 56133), (359, 56121), (402, 56058), (405, 56052), (454, 55959), (466, 55920), (475, 55902), (522, 55755), (535, 55722), (550, 55692), (551, 55686), (568, 55659), (640, 55536), (668, 55467), (673, 55449), (729, 55344), (733, 55335), (768, 55275), (783, 55236), (796, 55206), (808, 55188), (821, 55149), (837, 55089), (846, 55059), (854, 55026), (865, 54984), (917, 54828),

Gene: Typher\_35 Start: 23381, Stop: 24808, Start Num: 258

Candidate Starts for Typher\_35:

(230, 23339), (Start: 258 @23381 has 13 MA's), (428, 23699), (470, 23801), (498, 23846), (503, 23867), (616, 24134), (640, 24182), (645, 24203), (679, 24260), (695, 24293), (718, 24329), (783, 24407), (791, 24428), (831, 24509), (832, 24512), (852, 24599), (856, 24611), (866, 24650), (872, 24686), (879, 24704), (902, 24767),

Gene: Typhonomachy\_53 Start: 38552, Stop: 37074, Start Num: 242

Candidate Starts for Typhonomachy\_53:

(Start: 242 @38552 has 41 MA's), (297, 38465), (300, 38459), (350, 38378), (366, 38357), (422, 38231), (504, 38048), (506, 38042), (509, 38036), (536, 37958), (591, 37844), (602, 37817), (614, 37793), (640, 37733), (651, 37688), (659, 37667), (688, 37628), (697, 37610), (780, 37493), (803, 37445), (806, 37442), (811, 37427), (840, 37331), (846, 37310), (853, 37280),

Gene: UNTPL\_44 Start: 31380, Stop: 32774, Start Num: 261

Candidate Starts for UNTPL\_44:

(Start: 261 @31380 has 12 MA's), (Start: 264 @31383 has 2 MA's), (303, 31458), (316, 31482), (343, 31512), (353, 31527), (405, 31617), (424, 31653), (470, 31752), (474, 31761), (508, 31830), (556, 31953), (616, 32088), (632, 32115), (640, 32136), (679, 32214), (695, 32247), (701, 32256), (727, 32298), (782, 32364), (791, 32388), (803, 32406), (811, 32424), (832, 32478), (837, 32508), (852, 32565), (853, 32568), (866, 32616), (874, 32655), (879, 32670), (905, 32739), (914, 32757), (918,



32766),

Gene: Urla\_26 Start: 21745, Stop: 23142, Start Num: 253

Candidate Starts for Urla\_26:

(Start: 253 @21745 has 72 MA's), (Start: 288 @21805 has 1 MA's), (353, 21910), (398, 21997), (416, 22030), (447, 22081), (450, 22087), (491, 22168), (493, 22177), (503, 22213), (512, 22231), (513, 22234), (520, 22267), (527, 22288), (578, 22369), (596, 22420), (607, 22447), (621, 22477), (626, 22486), (637, 22507), (640, 22513), (647, 22546), (652, 22561), (655, 22570), (695, 22621), (715, 22651), (782, 22732), (803, 22774), (820, 22807), (835, 22870), (842, 22891), (844, 22897), (847, 22912), (852, 22933), (872, 23020), (894, 23077), (907, 23110),

Gene: Vallejo\_29 Start: 22089, Stop: 23489, Start Num: 253

Candidate Starts for Vallejo\_29:

(Start: 253 @22089 has 72 MA's), (Start: 288 @22152 has 1 MA's), (353, 22257), (354, 22260), (398, 22344), (416, 22377), (447, 22428), (450, 22434), (491, 22515), (492, 22518), (493, 22524), (503, 22560), (512, 22578), (513, 22581), (520, 22614), (527, 22635), (538, 22653), (555, 22686), (596, 22767), (607, 22794), (621, 22824), (626, 22833), (640, 22860), (647, 22893), (652, 22908), (692, 22962), (705, 22983), (713, 22995), (723, 23007), (839, 23229), (842, 23238), (844, 23244), (852, 23280), (868, 23340), (872, 23367), (907, 23457),

Gene: Velene\_41 Start: 31119, Stop: 29731, Start Num: 290

Candidate Starts for Velene\_41:

(46, 31770), (148, 31416), (175, 31341), (Start: 290 @31119 has 124 MA's), (382, 30975), (Start: 384 @30969 has 1 MA's), (386, 30966), (439, 30852), (450, 30825), (470, 30765), (487, 30738), (490, 30735), (518, 30639), (533, 30597), (614, 30426), (625, 30405), (640, 30378), (652, 30330), (695, 30270), (797, 30111), (823, 30057), (846, 29973), (847, 29967), (850, 29955), (874, 29859), (894, 29805), (895, 29802), (903, 29778),

Gene: Vine\_59 Start: 41084, Stop: 39606, Start Num: 242

Candidate Starts for Vine\_59:

(191, 41162), (218, 41111), (Start: 221 @41108 has 1 MA's), (Start: 242 @41084 has 41 MA's), (286, 41021), (297, 41000), (300, 40994), (Start: 314 @40967 has 1 MA's), (350, 40913), (374, 40877), (380, 40862), (421, 40766), (425, 40757), (436, 40736), (457, 40670), (490, 40634), (504, 40580), (506, 40574), (509, 40568), (536, 40490), (544, 40475), (591, 40376), (624, 40301), (634, 40277), (640, 40265), (645, 40244), (648, 40229), (651, 40220), (659, 40199), (688, 40160), (692, 40151), (701, 40136), (733, 40085), (781, 40016), (782, 40013), (803, 39971), (811, 39953), (840, 39857), (853, 39806), (861, 39776), (869, 39743), (888, 39686), (893, 39671),

Gene: Visconti\_54 Start: 39739, Stop: 41682, Start Num: 55

Candidate Starts for Visconti\_54:

(Start: 55 @39739 has 51 MA's), (72, 39766), (Start: 97 @39838 has 1 MA's), (110, 39892), (125, 39952), (129, 39970), (131, 39979), (146, 40030), (163, 40072), (181, 40108), (225, 40195), (287, 40288), (297, 40303), (306, 40324), (381, 40426), (399, 40459), (410, 40483), (447, 40543), (482, 40630), (504, 40705), (540, 40795), (568, 40846), (570, 40849), (625, 40939), (640, 40957), (647, 40990), (673, 41044), (679, 41056), (689, 41074), (729, 41137), (781, 41221), (831, 41338), (837, 41386), (854, 41449), (874, 41533),

Gene: Vispistious\_41 Start: 31121, Stop: 29733, Start Num: 290

Candidate Starts for Vispistious\_41:

(46, 31772), (148, 31418), (175, 31343), (Start: 290 @31121 has 124 MA's), (382, 30977), (Start: 384 @30971 has 1 MA's), (386, 30968), (439, 30854), (450, 30827), (470, 30767), (487, 30740), (490, 30737), (518, 30641), (533, 30599), (614, 30428), (625, 30407), (640, 30380), (652, 30332), (695, 30272), (797, 30113), (823, 30059), (846, 29975), (847, 29969), (850, 29957), (874, 29861), (894,

29807), (895, 29804), (903, 29780),

Gene: Vitaenoi\_55 Start: 53796, Stop: 52234, Start Num: 221

Candidate Starts for Vitaenoi\_55:

(Start: 171 @53928 has 6 MA's), (Start: 173 @53916 has 2 MA's), (Start: 221 @53796 has 1 MA's), (250, 53763), (270, 53733), (336, 53634), (359, 53598), (374, 53574), (377, 53565), (381, 53556), (404, 53508), (405, 53505), (407, 53499), (408, 53496), (456, 53373), (462, 53352), (489, 53292), (512, 53220), (518, 53199), (521, 53184), (522, 53181), (526, 53172), (605, 53013), (633, 52962), (638, 52950), (640, 52944), (645, 52923), (659, 52878), (682, 52833), (705, 52791), (736, 52734), (753, 52704), (754, 52701), (757, 52698), (792, 52644), (845, 52521), (848, 52503), (878, 52386), (879, 52383), (882, 52371), (932, 52251),

Gene: Vulture\_26 Start: 21745, Stop: 23139, Start Num: 253

Candidate Starts for Vulture\_26:

(Start: 253 @21745 has 72 MA's), (Start: 288 @21802 has 1 MA's), (341, 21889), (353, 21907), (354, 21910), (398, 21994), (416, 22027), (447, 22078), (450, 22084), (470, 22144), (493, 22174), (503, 22210), (512, 22228), (520, 22264), (527, 22285), (538, 22303), (541, 22309), (555, 22336), (596, 22417), (607, 22444), (619, 22468), (626, 22483), (640, 22510), (647, 22543), (652, 22558), (781, 22726), (791, 22753), (799, 22765), (810, 22783), (837, 22873), (839, 22879), (844, 22894), (845, 22897), (852, 22930), (868, 22990), (872, 23017), (894, 23074), (907, 23107), (918, 23131),

Gene: WaddleDee\_94 Start: 75744, Stop: 77588, Start Num: 63

Candidate Starts for WaddleDee\_94:

(Start: 63 @75744 has 2 MA's), (143, 76017), (204, 76125), (Start: 246 @76191 has 9 MA's), (287, 76260), (Start: 293 @76269 has 18 MA's), (399, 76344), (508, 76653), (519, 76698), (537, 76737), (549, 76758), (572, 76803), (638, 76860), (640, 76866), (647, 76899), (651, 76911), (655, 76923), (729, 77040), (732, 77046), (782, 77136), (796, 77169), (832, 77253), (854, 77346), (860, 77370), (912, 77538), (913, 77541),

Gene: WaldoWhy\_55 Start: 39836, Stop: 41779, Start Num: 55

Candidate Starts for WaldoWhy\_55:

(Start: 55 @39836 has 51 MA's), (72, 39863), (Start: 97 @39935 has 1 MA's), (110, 39989), (125, 40049), (129, 40067), (131, 40076), (146, 40127), (163, 40169), (181, 40205), (225, 40292), (287, 40385), (297, 40400), (306, 40421), (381, 40523), (399, 40556), (410, 40580), (447, 40640), (482, 40727), (504, 40802), (540, 40892), (568, 40943), (570, 40946), (625, 41036), (640, 41054), (647, 41087), (673, 41141), (679, 41153), (689, 41171), (729, 41234), (781, 41318), (831, 41435), (837, 41483), (854, 41546), (874, 41630),

Gene: Waltz\_91 Start: 53322, Stop: 54977, Start Num: 182

Candidate Starts for Waltz\_91:

(Start: 182 @53322 has 8 MA's), (208, 53385), (213, 53394), (272, 53478), (369, 53646), (416, 53739), (436, 53775), (455, 53829), (473, 53880), (495, 53916), (502, 53943), (513, 53970), (520, 54003), (523, 54012), (585, 54129), (615, 54207), (622, 54225), (644, 54276), (652, 54309), (680, 54342), (707, 54390), (729, 54426), (755, 54468), (817, 54579), (822, 54597), (832, 54624), (836, 54651), (856, 54726), (863, 54753), (879, 54819), (886, 54834), (888, 54843), (889, 54846), (898, 54873), (900, 54879), (926, 54930), (932, 54951), (933, 54966),

Gene: Wardwill\_41 Start: 29255, Stop: 27828, Start Num: 293

Candidate Starts for Wardwill\_41:

(Start: 293 @29255 has 18 MA's), (306, 29225), (309, 29219), (Start: 384 @29105 has 1 MA's), (386, 29102), (388, 29099), (487, 28865), (490, 28862), (589, 28607), (599, 28583), (612, 28556), (614, 28550), (640, 28502), (647, 28469), (695, 28355), (701, 28346), (729, 28301), (732, 28295), (749, 28268), (797, 28196), (831, 28124), (837, 28088), (840, 28079), (845, 28064), (846, 28058), (850,

28040), (861, 27998), (877, 27935), (903, 27863),

Gene: Wawa\_29 Start: 22126, Stop: 23526, Start Num: 253

Candidate Starts for Wawa\_29:

(Start: 253 @22126 has 72 MA's), (Start: 288 @22189 has 1 MA's), (353, 22294), (354, 22297), (398, 22381), (416, 22414), (447, 22465), (450, 22471), (491, 22552), (492, 22555), (493, 22561), (503, 22597), (512, 22615), (513, 22618), (520, 22651), (527, 22672), (538, 22690), (555, 22723), (596, 22804), (607, 22831), (621, 22861), (626, 22870), (640, 22897), (647, 22930), (652, 22945), (692, 22999), (705, 23020), (713, 23032), (723, 23044), (803, 23158), (839, 23266), (842, 23275), (844, 23281), (852, 23317), (868, 23377), (872, 23404), (907, 23494),

Gene: Wayne\_29 Start: 22211, Stop: 23605, Start Num: 253

Candidate Starts for Wayne\_29:

(Start: 253 @22211 has 72 MA's), (Start: 288 @22268 has 1 MA's), (353, 22373), (398, 22460), (447, 22544), (448, 22547), (450, 22550), (493, 22640), (503, 22676), (506, 22685), (512, 22694), (527, 22751), (538, 22769), (555, 22802), (566, 22814), (596, 22883), (607, 22910), (619, 22934), (640, 22976), (647, 23009), (652, 23024), (655, 23033), (723, 23123), (781, 23192), (791, 23219), (803, 23237), (810, 23249), (837, 23339), (839, 23345), (842, 23354), (844, 23360), (852, 23396), (872, 23483), (892, 23534), (907, 23573), (918, 23597),

Gene: Weiss13\_66 Start: 47645, Stop: 49405, Start Num: 158

Candidate Starts for Weiss13\_66:

(Start: 158 @47645 has 9 MA's), (190, 47714), (Start: 248 @47810 has 3 MA's), (254, 47819), (301, 47900), (327, 47945), (445, 48146), (459, 48194), (488, 48254), (492, 48266), (511, 48332), (552, 48455), (568, 48479), (580, 48503), (640, 48707), (647, 48740), (652, 48755), (673, 48794), (675, 48797), (679, 48806), (729, 48875), (805, 49007), (837, 49130), (838, 49133), (846, 49160), (853, 49190), (855, 49196), (856, 49199), (860, 49217), (864, 49229), (904, 49364), (921, 49394),

Gene: Wentworth\_70 Start: 50269, Stop: 48383, Start Num: 53

Candidate Starts for Wentworth\_70:

(31, 50335), (37, 50326), (45, 50305), (51, 50272), (Start: 53 @50269 has 8 MA's), (Start: 69 @50254 has 40 MA's), (88, 50191), (93, 50182), (99, 50170), (Start: 109 @50122 has 3 MA's), (118, 50089), (122, 50077), (127, 50056), (138, 50014), (170, 49939), (181, 49915), (Start: 295 @49717 has 21 MA's), (301, 49708), (327, 49663), (370, 49600), (422, 49492), (447, 49444), (490, 49339), (503, 49288), (520, 49228), (565, 49141), (568, 49138), (647, 49033), (650, 49024), (654, 49012), (710, 48913), (791, 48796), (798, 48784), (811, 48757), (815, 48751), (838, 48667), (856, 48598), (869, 48541), (872, 48523), (892, 48469), (913, 48415),

Gene: WestPM\_37 Start: 29337, Stop: 27952, Start Num: 291

Candidate Starts for WestPM\_37:

(Start: 291 @29337 has 1 MA's), (412, 29124), (439, 29061), (447, 29040), (487, 28947), (490, 28944), (496, 28923), (500, 28902), (533, 28806), (589, 28692), (599, 28668), (614, 28635), (627, 28611), (634, 28599), (640, 28587), (643, 28575), (644, 28572), (647, 28554), (679, 28512), (695, 28479), (703, 28467), (711, 28455), (757, 28383), (837, 28212), (840, 28203), (845, 28188), (846, 28182), (847, 28176), (874, 28068), (877, 28059), (889, 28029), (899, 27996), (903, 27987),

Gene: Wheelbite\_90 Start: 54992, Stop: 56656, Start Num: 182

Candidate Starts for Wheelbite\_90:

(Start: 182 @54992 has 8 MA's), (208, 55055), (213, 55064), (274, 55151), (Start: 294 @55196 has 1 MA's), (369, 55316), (416, 55409), (426, 55433), (436, 55445), (455, 55499), (473, 55550), (495, 55586), (502, 55613), (510, 55634), (513, 55640), (523, 55682), (585, 55799), (615, 55877), (622, 55895), (644, 55946), (652, 55979), (680, 56012), (713, 56069), (729, 56096), (755, 56138), (803, 56219), (817, 56249), (822, 56267), (832, 56294), (836, 56321), (856, 56396), (863, 56423), (866,

56435), (886, 56504), (887, 56510), (888, 56513), (889, 56516), (898, 56543), (900, 56549), (919, 56585), (926, 56600), (930, 56615), (933, 56636),

Gene: Wheezy\_72 Start: 55632, Stop: 53704, Start Num: 84

Candidate Starts for Wheezy\_72:

(8, 55974), (9, 55962), (12, 55944), (Start: 36 @55770 has 31 MA's), (Start: 84 @55632 has 2 MA's), (89, 55608), (147, 55404), (168, 55359), (225, 55251), (300, 55137), (301, 55134), (359, 55044), (362, 55041), (402, 54981), (466, 54843), (475, 54825), (488, 54801), (522, 54678), (568, 54573), (640, 54447), (654, 54393), (725, 54267), (729, 54258), (742, 54234), (781, 54162), (783, 54156), (796, 54126), (821, 54069), (837, 54009), (854, 53946), (874, 53865),

Gene: WhoseManz\_71 Start: 52415, Stop: 50334, Start Num: 36

Candidate Starts for WhoseManz\_71:

(9, 52607), (12, 52589), (18, 52514), (Start: 36 @52415 has 31 MA's), (225, 51896), (252, 51863), (268, 51842), (297, 51788), (300, 51782), (301, 51779), (359, 51689), (362, 51686), (402, 51626), (475, 51470), (522, 51323), (568, 51215), (580, 51191), (640, 51089), (654, 51035), (668, 51020), (708, 50939), (729, 50900), (765, 50837), (781, 50798), (783, 50792), (796, 50762), (837, 50645), (854, 50582), (869, 50519), (874, 50501), (901, 50417),

Gene: WildNOut\_41 Start: 31117, Stop: 29729, Start Num: 290

Candidate Starts for WildNOut\_41:

(46, 31768), (148, 31414), (175, 31339), (Start: 290 @31117 has 124 MA's), (382, 30973), (Start: 384 @30967 has 1 MA's), (386, 30964), (439, 30850), (450, 30823), (470, 30763), (487, 30736), (490, 30733), (518, 30637), (533, 30595), (614, 30424), (625, 30403), (640, 30376), (652, 30328), (695, 30268), (797, 30109), (823, 30055), (846, 29971), (847, 29965), (850, 29953), (874, 29857), (894, 29803), (895, 29800), (903, 29776),

Gene: Wilkos\_72 Start: 50432, Stop: 48546, Start Num: 53

Candidate Starts for Wilkos\_72:

(24, 50525), (31, 50498), (37, 50489), (45, 50468), (51, 50435), (Start: 53 @50432 has 8 MA's), (Start: 69 @50417 has 40 MA's), (88, 50354), (93, 50345), (99, 50333), (Start: 109 @50285 has 3 MA's), (118, 50252), (122, 50240), (127, 50219), (138, 50177), (170, 50102), (Start: 217 @49994 has 2 MA's), (254, 49949), (Start: 295 @49880 has 21 MA's), (301, 49871), (370, 49763), (447, 49607), (481, 49523), (490, 49502), (503, 49451), (520, 49391), (568, 49301), (595, 49247), (647, 49196), (650, 49187), (654, 49175), (673, 49142), (710, 49076), (798, 48947), (811, 48920), (815, 48914), (838, 48830), (856, 48761), (859, 48746), (869, 48704), (872, 48686), (892, 48632), (913, 48578),

Gene: WilliamStrong\_40 Start: 30915, Stop: 29497, Start Num: 293

Candidate Starts for WilliamStrong\_40:

(Start: 293 @30915 has 18 MA's), (Start: 295 @30909 has 21 MA's), (306, 30885), (Start: 363 @30807 has 1 MA's), (383, 30768), (Start: 384 @30765 has 1 MA's), (412, 30702), (434, 30651), (444, 30630), (450, 30612), (460, 30573), (487, 30525), (490, 30522), (491, 30519), (500, 30480), (516, 30429), (589, 30267), (611, 30219), (612, 30216), (614, 30210), (625, 30189), (643, 30150), (647, 30129), (695, 30015), (703, 30003), (729, 29961), (749, 29928), (757, 29919), (797, 29856), (837, 29748), (840, 29739), (845, 29724), (846, 29718), (847, 29712), (850, 29700), (886, 29577), (889, 29565),

Gene: Winzigespinne\_40 Start: 30802, Stop: 29414, Start Num: 290

Candidate Starts for Winzigespinne\_40:

(175, 31024), (Start: 290 @30802 has 124 MA's), (382, 30658), (Start: 384 @30652 has 1 MA's), (386, 30649), (439, 30535), (450, 30508), (470, 30448), (487, 30421), (490, 30418), (518, 30322), (533, 30280), (614, 30109), (625, 30088), (634, 30073), (640, 30061), (652, 30013), (695, 29953), (757, 29857), (797, 29794), (823, 29740), (846, 29656), (847, 29650), (850, 29638), (869, 29563), (894, 29488), (895, 29485), (903, 29461),

Gene: Woes\_57 Start: 53248, Stop: 51707, Start Num: 237

Candidate Starts for Woes\_57:

(146, 53467), (191, 53338), (236, 53251), (Start: 237 @53248 has 2 MA's), (Start: 330 @53119 has 27 MA's), (359, 53074), (404, 52984), (405, 52981), (407, 52975), (414, 52954), (442, 52891), (485, 52783), (491, 52765), (518, 52678), (521, 52663), (544, 52621), (582, 52540), (605, 52492), (623, 52450), (637, 52432), (638, 52429), (645, 52402), (661, 52351), (682, 52315), (711, 52264), (757, 52180), (767, 52159), (845, 52003), (846, 51997), (848, 51985), (880, 51859), (926, 51745),

Gene: Wojtek\_56 Start: 39665, Stop: 41593, Start Num: 54

Candidate Starts for Wojtek\_56:

(24, 39569), (27, 39578), (29, 39590), (43, 39620), (48, 39653), (Start: 54 @39665 has 11 MA's), (56, 39671), (Start: 69 @39689 has 40 MA's), (74, 39704), (83, 39737), (96, 39770), (98, 39773), (113, 39839), (131, 39911), (135, 39929), (142, 39947), (145, 39956), (147, 39965), (181, 40037), (252, 40157), (254, 40160), (Start: 293 @40220 has 18 MA's), (302, 40238), (352, 40310), (370, 40337), (447, 40472), (453, 40490), (466, 40532), (478, 40553), (482, 40559), (496, 40601), (500, 40622), (508, 40643), (518, 40679), (540, 40736), (548, 40748), (561, 40778), (565, 40787), (590, 40838), (647, 40934), (648, 40937), (724, 41048), (781, 41138), (791, 41165), (831, 41255), (848, 41333), (853, 41351), (859, 41375), (864, 41390), (892, 41492), (897, 41507), (904, 41528),

Gene: Wollypog\_43 Start: 30596, Stop: 32524, Start Num: 58

Candidate Starts for Wollypog\_43:

(Start: 58 @30596 has 1 MA's), (72, 30620), (111, 30746), (125, 30794), (138, 30848), (163, 30911), (170, 30923), (225, 31034), (276, 31100), (Start: 278 @31106 has 1 MA's), (329, 31199), (350, 31229), (359, 31244), (365, 31250), (488, 31514), (500, 31562), (504, 31574), (518, 31619), (550, 31688), (558, 31709), (647, 31829), (679, 31895), (700, 31934), (748, 31997), (840, 32228), (865, 32327), (870, 32354), (898, 32453), (901, 32462),

Gene: WonderBoy\_25 Start: 20548, Stop: 21942, Start Num: 253

Candidate Starts for WonderBoy\_25:

(Start: 253 @20548 has 72 MA's), (Start: 288 @20605 has 1 MA's), (353, 20710), (398, 20797), (416, 20830), (447, 20881), (450, 20887), (491, 20968), (492, 20971), (493, 20977), (503, 21013), (512, 21031), (513, 21034), (520, 21067), (527, 21088), (596, 21220), (607, 21247), (626, 21286), (637, 21307), (640, 21313), (647, 21346), (652, 21361), (655, 21370), (692, 21415), (715, 21451), (742, 21493), (791, 21556), (803, 21574), (837, 21676), (838, 21679), (844, 21697), (845, 21700), (850, 21724), (852, 21733), (872, 21820), (907, 21910), (918, 21934),

Gene: Worcestershire\_59 Start: 51468, Stop: 49936, Start Num: 262

Candidate Starts for Worcestershire\_59:

(146, 51723), (168, 51672), (179, 51621), (202, 51567), (213, 51537), (Start: 237 @51504 has 2 MA's), (Start: 244 @51495 has 1 MA's), (Start: 262 @51468 has 25 MA's), (359, 51300), (381, 51258), (404, 51210), (408, 51198), (412, 51186), (414, 51180), (422, 51159), (436, 51132), (491, 50991), (518, 50904), (521, 50889), (526, 50877), (544, 50847), (567, 50796), (581, 50769), (605, 50718), (616, 50694), (623, 50676), (637, 50658), (638, 50655), (645, 50628), (658, 50586), (682, 50541), (757, 50406), (764, 50391), (773, 50370), (831, 50289), (832, 50286), (845, 50229), (846, 50223), (847, 50217), (848, 50211), (868, 50136), (878, 50097), (880, 50085), (882, 50082), (919, 49989), (926, 49974), (932, 49953),

Gene: Xenia2\_54 Start: 38993, Stop: 40912, Start Num: 55

Candidate Starts for Xenia2\_54:

(Start: 54 @38990 has 11 MA's), (Start: 55 @38993 has 51 MA's), (Start: 69 @39008 has 40 MA's), (83, 39056), (96, 39089), (98, 39092), (145, 39275), (147, 39284), (181, 39356), (189, 39371), (194, 39380), (254, 39479), (Start: 293 @39539 has 18 MA's), (417, 39752), (445, 39785), (482, 39878),

(488, 39893), (496, 39920), (500, 39941), (540, 40055), (561, 40097), (565, 40106), (586, 40145), (590, 40157), (625, 40202), (635, 40208), (647, 40253), (652, 40268), (719, 40361), (781, 40454), (837, 40607), (848, 40649), (853, 40667), (854, 40670), (892, 40808), (904, 40844), (929, 40898),

Gene: Yakult\_55 Start: 39767, Stop: 38292, Start Num: 246

Candidate Starts for Yakult\_55:

(Start: 246 @39767 has 9 MA's), (Start: 278 @39725 has 1 MA's), (300, 39677), (Start: 314 @39650 has 1 MA's), (Start: 330 @39626 has 27 MA's), (350, 39596), (366, 39575), (371, 39566), (374, 39560), (412, 39476), (415, 39467), (418, 39458), (422, 39449), (425, 39443), (490, 39320), (504, 39266), (506, 39260), (509, 39254), (521, 39209), (536, 39176), (632, 38972), (634, 38963), (656, 38891), (688, 38846), (697, 38828), (701, 38822), (731, 38777), (733, 38771), (747, 38750), (781, 38702), (782, 38699), (803, 38657), (806, 38654), (811, 38639), (840, 38543), (853, 38492), (869, 38429), (886, 38381), (892, 38360), (915, 38303),

Gene: Yappy\_96 Start: 49042, Stop: 47645, Start Num: 249

Candidate Starts for Yappy\_96:

(Start: 249 @49042 has 1 MA's), (300, 48952), (307, 48940), (321, 48919), (356, 48868), (385, 48811), (392, 48805), (430, 48712), (438, 48700), (455, 48649), (470, 48604), (490, 48586), (506, 48526), (545, 48439), (576, 48412), (612, 48346), (662, 48232), (674, 48202), (689, 48175), (701, 48166), (717, 48142), (722, 48130), (737, 48097), (739, 48094), (752, 48076), (781, 48046), (789, 48022), (798, 48007), (831, 47932), (838, 47899), (851, 47848), (856, 47827), (867, 47785), (873, 47752), (896, 47686), (903, 47665),

Gene: Yara\_66 Start: 49125, Stop: 47230, Start Num: 53

Candidate Starts for Yara\_66:

(Start: 53 @49125 has 8 MA's), (60, 49113), (Start: 69 @49110 has 40 MA's), (80, 49071), (88, 49047), (93, 49038), (99, 49026), (122, 48933), (138, 48870), (170, 48795), (181, 48771), (189, 48756), (254, 48645), (268, 48624), (Start: 295 @48576 has 21 MA's), (381, 48438), (472, 48240), (490, 48198), (503, 48147), (520, 48087), (522, 48081), (568, 47997), (647, 47892), (654, 47871), (669, 47853), (682, 47820), (710, 47772), (791, 47649), (798, 47637), (811, 47610), (838, 47520), (839, 47517), (856, 47451), (869, 47394), (872, 47376), (874, 47373), (898, 47301), (922, 47250),

Gene: Yarn\_50 Start: 38320, Stop: 36842, Start Num: 242

Candidate Starts for Yarn\_50:

(Start: 242 @38320 has 41 MA's), (300, 38227), (Start: 314 @38200 has 1 MA's), (366, 38125), (Start: 384 @38083 has 1 MA's), (421, 38002), (490, 37870), (504, 37816), (509, 37804), (536, 37726), (591, 37612), (602, 37585), (614, 37561), (632, 37522), (651, 37456), (659, 37435), (697, 37378), (780, 37261), (803, 37213), (811, 37195), (840, 37099), (846, 37078), (853, 37048),

Gene: Yeezus\_70 Start: 47415, Stop: 46021, Start Num: 265

Candidate Starts for Yeezus\_70:

(Start: 265 @47415 has 13 MA's), (300, 47346), (348, 47271), (361, 47253), (376, 47223), (412, 47142), (532, 46848), (571, 46809), (633, 46695), (662, 46623), (674, 46593), (681, 46578), (689, 46566), (728, 46515), (759, 46464), (775, 46446), (781, 46437), (804, 46389), (851, 46239), (905, 46050),

Gene: Yelo\_65 Start: 48022, Stop: 49782, Start Num: 158

Candidate Starts for Yelo\_65:

(Start: 158 @48022 has 9 MA's), (190, 48091), (Start: 248 @48187 has 3 MA's), (254, 48196), (301, 48277), (327, 48322), (445, 48523), (459, 48571), (488, 48631), (492, 48643), (511, 48709), (552, 48832), (568, 48856), (580, 48880), (640, 49084), (647, 49117), (652, 49132), (673, 49171), (675, 49174), (679, 49183), (729, 49252), (805, 49384), (837, 49507), (838, 49510), (846, 49537), (853, 49567), (855, 49573), (856, 49576), (860, 49594), (864, 49606), (904, 49741), (921, 49771),

Gene: Yikes\_62 Start: 41734, Stop: 43647, Start Num: 55

Candidate Starts for Yikes\_62:

(20, 41608), (22, 41617), (23, 41629), (32, 41662), (48, 41719), (Start: 54 @41731 has 11 MA's), (Start: 55 @41734 has 51 MA's), (Start: 69 @41746 has 40 MA's), (83, 41794), (96, 41827), (113, 41896), (135, 41986), (145, 42013), (147, 42022), (181, 42094), (252, 42214), (Start: 293 @42277 has 18 MA's), (352, 42367), (370, 42394), (445, 42523), (453, 42547), (466, 42589), (490, 42637), (496, 42658), (500, 42679), (518, 42736), (540, 42790), (561, 42832), (590, 42892), (647, 42988), (648, 42991), (760, 43168), (791, 43219), (831, 43309), (837, 43345), (839, 43351), (853, 43405), (864, 43444), (892, 43546), (897, 43561), (904, 43582),

Gene: Yndexa\_71 Start: 54175, Stop: 52319, Start Num: 109

Candidate Starts for Yndexa\_71:

(9, 54592), (12, 54574), (18, 54499), (Start: 36 @54400 has 31 MA's), (Start: 109 @54175 has 3 MA's), (225, 53881), (252, 53848), (268, 53827), (297, 53773), (300, 53767), (301, 53764), (359, 53674), (362, 53671), (402, 53611), (475, 53455), (522, 53308), (568, 53200), (580, 53176), (640, 53074), (654, 53020), (668, 53005), (708, 52924), (729, 52885), (765, 52822), (781, 52783), (783, 52777), (796, 52747), (837, 52630), (854, 52567), (869, 52504), (874, 52486), (901, 52402),

Gene: Yucky\_60 Start: 40876, Stop: 39398, Start Num: 242

Candidate Starts for Yucky\_60:

(191, 40954), (218, 40903), (Start: 221 @40900 has 1 MA's), (Start: 242 @40876 has 41 MA's), (286, 40813), (297, 40792), (300, 40786), (Start: 314 @40759 has 1 MA's), (350, 40705), (374, 40669), (380, 40654), (421, 40558), (425, 40549), (436, 40528), (457, 40462), (490, 40426), (504, 40372), (506, 40366), (509, 40360), (536, 40282), (544, 40267), (591, 40168), (624, 40093), (634, 40069), (640, 40057), (645, 40036), (648, 40021), (651, 40012), (659, 39991), (688, 39952), (692, 39943), (701, 39928), (733, 39877), (781, 39808), (782, 39805), (803, 39763), (811, 39745), (840, 39649), (853, 39598), (861, 39568), (869, 39535), (888, 39478), (893, 39463),

Gene: Yummy\_55 Start: 38695, Stop: 37217, Start Num: 242

Candidate Starts for Yummy\_55:

(Start: 242 @38695 has 41 MA's), (297, 38608), (300, 38602), (Start: 330 @38551 has 27 MA's), (366, 38500), (374, 38485), (412, 38401), (421, 38377), (425, 38368), (490, 38245), (504, 38191), (506, 38185), (509, 38179), (518, 38149), (536, 38101), (591, 37987), (602, 37960), (614, 37936), (645, 37855), (651, 37831), (659, 37810), (688, 37771), (697, 37753), (701, 37747), (780, 37636), (782, 37630), (803, 37588), (811, 37570), (837, 37483), (840, 37474), (846, 37453), (853, 37423), (861, 37393), (869, 37360), (889, 37300), (898, 37270),

Gene: YuuY\_40 Start: 31212, Stop: 29842, Start Num: 295

Candidate Starts for YuuY\_40:

(Start: 295 @31212 has 21 MA's), (337, 31143), (388, 31062), (439, 30951), (450, 30924), (470, 30864), (487, 30837), (490, 30834), (518, 30738), (589, 30582), (614, 30525), (625, 30504), (634, 30489), (640, 30477), (643, 30465), (645, 30456), (647, 30444), (652, 30429), (664, 30405), (695, 30369), (701, 30360), (729, 30315), (754, 30273), (797, 30210), (807, 30198), (820, 30171), (837, 30102), (840, 30093), (845, 30078), (846, 30072), (847, 30066), (850, 30054), (874, 29958), (877, 29949), (886, 29931), (889, 29919),

Gene: Zada\_42 Start: 31090, Stop: 29702, Start Num: 290

Candidate Starts for Zada\_42:

(148, 31387), (175, 31312), (Start: 290 @31090 has 124 MA's), (382, 30946), (Start: 384 @30940 has 1 MA's), (386, 30937), (439, 30823), (450, 30796), (470, 30736), (487, 30709), (490, 30706), (518, 30610), (533, 30568), (588, 30457), (614, 30397), (634, 30361), (640, 30349), (652, 30301), (695, 30241), (757, 30145), (797, 30082), (823, 30028), (846, 29944), (847, 29938), (850, 29926), (874,

29830), (894, 29776), (895, 29773), (903, 29749),

Gene: Zanella\_33 Start: 23260, Stop: 24687, Start Num: 258

Candidate Starts for Zanella\_33:

(230, 23218), (Start: 258 @23260 has 13 MA's), (428, 23578), (498, 23725), (503, 23746), (616, 24013), (640, 24061), (645, 24082), (679, 24139), (695, 24172), (718, 24208), (783, 24286), (791, 24307), (831, 24388), (832, 24391), (852, 24478), (856, 24490), (866, 24529), (872, 24565), (875, 24571), (876, 24574), (879, 24583), (902, 24646),

Gene: Zany\_58 Start: 41140, Stop: 43056, Start Num: 54

Candidate Starts for Zany\_58:

(Start: 54 @41140 has 11 MA's), (Start: 55 @41143 has 51 MA's), (Start: 69 @41155 has 40 MA's), (83, 41203), (96, 41236), (113, 41305), (135, 41395), (145, 41422), (147, 41431), (181, 41503), (252, 41623), (Start: 293 @41686 has 18 MA's), (306, 41713), (352, 41776), (370, 41803), (445, 41932), (453, 41956), (466, 41998), (490, 42046), (496, 42067), (500, 42088), (518, 42145), (540, 42199), (561, 42241), (590, 42301), (647, 42397), (648, 42400), (791, 42628), (831, 42718), (837, 42754), (839, 42760), (853, 42814), (864, 42853), (892, 42955), (897, 42970), (904, 42991),

Gene: Zareef\_51 Start: 37928, Stop: 36438, Start Num: 242

Candidate Starts for Zareef\_51:

(Start: 242 @37928 has 41 MA's), (300, 37838), (Start: 314 @37811 has 1 MA's), (343, 37769), (371, 37727), (374, 37721), (Start: 384 @37694 has 1 MA's), (421, 37613), (422, 37610), (425, 37604), (436, 37583), (457, 37517), (504, 37427), (509, 37415), (527, 37352), (536, 37337), (544, 37322), (599, 37205), (602, 37196), (637, 37118), (645, 37091), (647, 37079), (651, 37067), (678, 37028), (688, 37007), (690, 37004), (697, 36989), (733, 36917), (781, 36848), (803, 36803), (822, 36758), (828, 36743), (834, 36713), (840, 36689), (853, 36638), (861, 36608), (878, 36542), (888, 36518), (898, 36485), (915, 36449),

Gene: Zayuliv\_40 Start: 29694, Stop: 28267, Start Num: 293

Candidate Starts for Zayuliv\_40:

(Start: 293 @29694 has 18 MA's), (306, 29664), (309, 29658), (Start: 384 @29544 has 1 MA's), (386, 29541), (388, 29538), (487, 29304), (490, 29301), (589, 29046), (612, 28995), (614, 28989), (640, 28941), (647, 28908), (695, 28794), (701, 28785), (729, 28740), (732, 28734), (749, 28707), (797, 28635), (831, 28563), (837, 28527), (840, 28518), (845, 28503), (846, 28497), (850, 28479), (861, 28437), (877, 28374), (903, 28302),

Gene: Zenitsu\_40 Start: 30973, Stop: 29561, Start Num: 295

Candidate Starts for Zenitsu\_40:

(Start: 292 @30976 has 7 MA's), (Start: 295 @30973 has 21 MA's), (309, 30943), (Start: 314 @30937 has 1 MA's), (337, 30904), (439, 30712), (450, 30685), (470, 30625), (487, 30598), (490, 30595), (500, 30553), (518, 30499), (533, 30457), (589, 30343), (614, 30286), (625, 30265), (634, 30250), (640, 30238), (643, 30226), (644, 30223), (647, 30205), (678, 30124), (695, 30088), (729, 30034), (754, 29992), (781, 29962), (786, 29947), (791, 29938), (795, 29932), (820, 29890), (837, 29821), (845, 29797), (846, 29791), (847, 29785), (850, 29773), (874, 29677), (877, 29668), (886, 29650), (889, 29638), (891, 29632), (904, 29593),

Gene: Zenon\_68 Start: 47968, Stop: 49728, Start Num: 158

Candidate Starts for Zenon\_68:

(Start: 158 @47968 has 9 MA's), (190, 48037), (Start: 248 @48133 has 3 MA's), (254, 48142), (301, 48223), (327, 48268), (445, 48469), (459, 48517), (488, 48577), (492, 48589), (511, 48655), (552, 48778), (568, 48802), (580, 48826), (640, 49030), (647, 49063), (652, 49078), (673, 49117), (675, 49120), (679, 49129), (729, 49198), (805, 49330), (837, 49453), (838, 49456), (846, 49483), (853, 49513), (855, 49519), (856, 49522), (860, 49540), (864, 49552), (904, 49687), (921, 49717),



Gene: Zepp\_40 Start: 29128, Stop: 27701, Start Num: 293

Candidate Starts for Zepp\_40:

(Start: 293 @29128 has 18 MA's), (306, 29098), (309, 29092), (Start: 384 @28978 has 1 MA's), (386, 28975), (465, 28774), (487, 28738), (490, 28735), (589, 28480), (612, 28429), (614, 28423), (640, 28375), (643, 28363), (647, 28342), (682, 28255), (695, 28228), (701, 28219), (729, 28174), (749, 28141), (786, 28087), (797, 28069), (831, 27997), (837, 27961), (840, 27952), (845, 27937), (846, 27931), (850, 27913), (877, 27808), (903, 27736),

Gene: Zion\_72 Start: 52509, Stop: 50584, Start Num: 67

Candidate Starts for Zion\_72:

(30, 52602), (34, 52596), (Start: 67 @52509 has 8 MA's), (120, 52338), (133, 52284), (225, 52080), (324, 51924), (359, 51873), (362, 51870), (393, 51828), (446, 51741), (447, 51738), (472, 51666), (478, 51657), (638, 51306), (640, 51300), (647, 51267), (821, 50928), (839, 50862), (843, 50850), (847, 50832), (854, 50805), (869, 50742), (880, 50709), (903, 50637),

Gene: Zooman\_98 Start: 76212, Stop: 74272, Start Num: 68

Candidate Starts for Zooman\_98:

(Start: 68 @76212 has 7 MA's), (107, 76086), (114, 76059), (141, 75966), (142, 75963), (183, 75891), (225, 75810), (Start: 241 @75786 has 1 MA's), (397, 75510), (499, 75225), (504, 75204), (535, 75114), (568, 75054), (572, 75045), (580, 75030), (638, 74988), (640, 74982), (647, 74949), (651, 74937), (654, 74928), (671, 74904), (700, 74844), (732, 74808), (785, 74712), (786, 74706), (817, 74643), (824, 74622), (827, 74616), (846, 74541), (847, 74535), (852, 74514), (868, 74454), (879, 74412), (886, 74388), (889, 74376),

Gene: Zorro\_29 Start: 22105, Stop: 23505, Start Num: 253

Candidate Starts for Zorro\_29:

(Start: 253 @22105 has 72 MA's), (Start: 288 @22168 has 1 MA's), (353, 22273), (354, 22276), (398, 22360), (416, 22393), (447, 22444), (450, 22450), (491, 22531), (492, 22534), (493, 22540), (503, 22576), (512, 22594), (513, 22597), (520, 22630), (527, 22651), (555, 22702), (596, 22783), (607, 22810), (621, 22840), (626, 22849), (640, 22876), (647, 22909), (652, 22924), (692, 22978), (705, 22999), (713, 23011), (723, 23023), (839, 23245), (842, 23254), (844, 23260), (852, 23296), (868, 23356), (872, 23383), (907, 23473),

Gene: Zuko\_72 Start: 51866, Stop: 53398, Start Num: 228

Candidate Starts for Zuko\_72:

(190, 51788), (Start: 228 @51866 has 2 MA's), (252, 51899), (300, 51986), (324, 52028), (328, 52034), (Start: 330 @52037 has 27 MA's), (334, 52043), (353, 52070), (368, 52091), (371, 52097), (386, 52133), (406, 52175), (413, 52196), (418, 52211), (421, 52217), (422, 52220), (487, 52364), (490, 52370), (491, 52373), (504, 52424), (506, 52430), (509, 52436), (516, 52460), (521, 52481), (536, 52514), (569, 52577), (573, 52586), (597, 52649), (637, 52745), (645, 52772), (647, 52784), (651, 52796), (652, 52799), (733, 52916), (791, 53012), (803, 53030), (815, 53054), (837, 53135), (838, 53138), (839, 53141), (853, 53195), (861, 53225), (875, 53282), (886, 53306), (890, 53321),