

Pham 215767

1: EtZBrutus_9 + 8	73	73		388				52		551		73	73				105		128	140	147	152	168	179
2: Mabel_10 + 5	73	73		388				52		551		73	73				105		128	140	147	152	168	179
3: Aneem_10 + 8	73	73		388				52		551		73	73				105		128	140	147	152	168	179
4: Bud_10	70			21	8			52		551		73	73				105		128	140	147	152	168	179
5: Kinmap_8	70			21	8			52		551		73	73				105		128	140	147	152	168	179
6: Nergal_26	73	73		388				52		551		73	73				105		128	140	147	152	168	179
7: MalagasyRose_30	73	73		388				52		551		73	73				105		128	140	147	152	168	179
8: 244_34 + 58	73	73		388				52		551		73	73				105		128	140	147	152	168	179
9: CrystalP_32 + 2	73	73		388				52		551		73	73				105		128	140	147	152	168	179
10: Stark_33 + 34	73	73		388				52		551		73	73				105		128	140	147	152	168	179
11: Chotabhai_32 + 1	73	73		388				52		551		73	73				105		128	140	147	152	168	179
12: Icee_31 + 3	73	73		388				52		551		73	73				105		128	140	147	152	168	179
13: Goku_32 + 1	73	73		388				52		551		73	73				105		128	140	147	152	168	179
14: Astrei_31 + 3	73	73		388				52		551		73	73				105		128	140	147	152	168	179
15: Qualification_33	73	73		388				52		551		73	73				105		128	140	147	152	168	179
16: BilboSwaggins_34 + 4	73	73		388				52		551		73	73				105		128	140	147	152	168	179
17: FairyPath_32	73	73		388				52		551		73	73				105		128	140	147	152	168	179
18: Amao_32	73	73		388				52		551		73	73				105		128	140	147	152	168	179
19: IFOP_32	73	73		388				52		551		73	73				105		128	140	147	152	168	179
20: Dove_44 + 3	73	73		388				52		551		73	73				105		128	140	147	152	168	179
21: Odette_47 + 3	73	73		388				52		551		73	73				105		128	140	147	152	168	179
22: Hannacoonda_42	73	73		388				52		551		73	73				105		128	140	147	152	168	179
23: Constella_39	73	73		388				52		551		73	73				105		128	140	147	152	168	179
24: Beem_47 + 10	73	73		388				52		551		73	73				105		128	140	147	152	168	179
25: Redno2_45 + 2	73	73		388				52		551		73	73				105		128	140	147	152	168	179
26: Duke13_50 + 3	73	73		388				52		551		73	73				105		128	140	147	152	168	179
27: Wanda_53	73	73		388				52		551		73	73				105		128	140	147	152	168	179
28: Shaboozey_38	73	73		388				52		551		73	73				105		128	140	147	152	168	179
29: Nekros_45	73	73		388				52		551		73	73				105		128	140	147	152	168	179
30: Omega_50	73	73		388				52		551		73	73				105		128	140	147	152	168	179
31: LittleE_51	73	73		388				52		551		73	73				105		128	140	147	152	168	179
32: Minerva_53	73	73		388				52		551		73	73				105		128	140	147	152	168	179
33: MarkPnew_30	73	73		388				52		551		73	73				105		128	140	147	152	168	179
34: Mdavu_26 + 9	73	73		388				52		551		73	73				105		128	140	147	152	168	179
35: Kisi_29 + 2	73	73		388				52		551		73	73				105		128	140	147	152	168	179
36: Oscar_29	73	73		388				52		551		73	73				105		128	140	147	152	168	179
37: Chris_29	73	73		388				52		551		73	73				105		128	140	147	152	168	179
38: Nibb_29	73	73		388				52		551		73	73				105		128	140	147	152	168	179
39: MachCheese_31	73	73		388				52		551		73	73				105		128	140	147	152	168	179
40: Hurricane_31	73	73		388				52		551		73	73				105		128	140	147	152	168	179
41: Pharo_29	73	73		388				52		551		73	73				105		128	140	147	152	168	179
42: Pixie_30	73	73		388				52		551		73	73				105		128	140	147	152	168	179
43: TBond007_30	73	73		388				52		551		73	73				105		128	140	147	152	168	179
44: Keshu_31	73	73		388				52		551		73	73				105		128	140	147	152	168	179
45: Lea83_32	73	73		388				52		551		73	73				105		128	140	147	152	168	179
46: ShedlockHolmes	73	73		388				52		551		73	73				105		128	140	147	152	168	179
47: TumbleTrouble_29	73	73		388				52		551		73	73				105		128	140	147	152	168	179
48: Maithus_32 + 6	73	73		388				52		551		73	73				105		128	140	147	152	168	179
49: Miti_31	73	73		388				52		551		73	73				105		128	140	147	152	168	179
50: Juliette_33 + 2	73	73		388				52		551		73	73				105		128	140	147	152	168	179

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51: Bobquesha_32	70	70	300	76	551	70	75	87	88	88	103	115	119	129	142	175	185
52: MissDaisy_31 + 1	70	70	300	76	51	70	75	87	88	88	103	115	119	129	142	175	185
53: Chancellor_31 + 2	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
54: OmniCritical_31	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
55: Reptar3000_31	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
56: Taquito_31	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
57: Lebo14_32	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
58: Eponine_33	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
59: Dadosky_30 + 4	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
60: Omnicron_30	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
61: vivvj_28	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
62: SoSeph_29 + 1	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
63: Paola_29	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
64: Guilsminger_29	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
65: Thyatra_29	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
66: InvictusManeo_29	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
67: OkRoe_29	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
68: Waterfour_29	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
69: Miryou_29	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
70: Kratio_28	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
71: Leston_29	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
72: Feyre_29 + 1	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
73: Edugator_29	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
74: Krueger_30	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
75: Phrank_30 + 2	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
76: Sunflower1121_29 + 1	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
77: Ximemla_30	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
78: TCM_31	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
79: Tierra_30	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
80: SirPhilip_29	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
81: PhelpsODU_30 + 1	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
82: Syra333_30	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
83: Whitty_27 + 5	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
84: Nate_28 + 1	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185
85: Gala_32	70	70	300	76	51	52	53	87	87	91	103	115	119	129	142	175	185

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 215767 Report

This analysis was run 02/22/25 on database version 588.

Pham number 215767 has 291 members, 25 are drafts.

Phages represented in each track:

- Track 1 : Et2Brutus\_9, Orange\_10, Mulciber\_10, Salz\_10, Snape\_10, Hutc2\_10, Sham4\_10, Petersenfast\_9, Fibonacci\_10
- Track 2 : Mabel\_10, Jabith\_10, Lucivia\_10, TinyTimmy\_10, Ebony\_10, Insomnia\_10
- Track 3 : Aneem\_10, Munch\_10, MaCh\_10, Bachome\_10, Joselito\_10, Gilberta\_10, Flaverint\_10, Timothy\_10, Bowtie\_10
- Track 4 : Bud\_10
- Track 5 : Kinmap\_8
- Track 6 : Nergal\_26
- Track 7 : MalagasyRose\_30
- Track 8 : 244\_34, PhatBacter\_32, BugsBunny\_30, MPhalcon\_31, Elph10\_33, Phrux\_32, Goldilocks\_33, BadStone\_31, StormChicken\_32, HuffyPuff\_31, Petra64142\_34, HanKaySha\_33, AmericanBeauty\_34, DoctorDiddles\_32, Bask21\_32, FireRed\_32, Xandras\_34, MISSy\_31, Nimrod\_32, Saints25\_33, Paperbeatsrock\_34, StolenFromERC\_34, Easy2Say\_34, Holt\_33, StellaBean\_32, Policronamos\_32, Palpatine\_32, JeTaime\_34, Thimble\_32, Stank\_35, Hoonter\_34, Lilac\_34, Ukulele\_32, Becksu\_32, TBrady12\_34, Phaux\_31, Rimmer\_31, Dumbo\_32, SophKB\_32, Czyszczonek1\_33, Buck\_31, Kanye\_34, Highbury\_33, FoghornLeghorn\_31, Dusk\_31, BigBubba\_33, Lilizi\_34, Hopey\_34, OrionPax\_33, Porky\_32, Pumpkin\_34, MadamMonkfish\_32, Murica\_31, Murphy\_33, Pharsalus\_33, xkcd\_33, Miniwave\_32, Gator\_30, Tarkin\_34
- Track 9 : CrystalP\_32, Henry\_33, ShamWow\_32
- Track 10 : Stark\_33, Gemini\_35, Cjw1\_32, Elite2014\_31, Misfit\_32, Emmina\_33, Moldemort\_33, BaboJay\_31, Simpliphy\_33, Gage\_34, ChosenOne\_32, Lilpickle\_31, Phaja\_32, Bruin\_32, Argent26\_34, Rakim\_33, Kimchi\_34, Nala\_32, ShereKhan\_34, Filch\_33, YassJohnny\_33, Teaspoon\_33, Bench\_34, NoSleep\_33, RiverMonster\_32, Adnama\_35, GoldenSpark\_34, Thresher\_33, Maxxinista\_33, Balomoji\_31, GooberAzure\_34, Terminus\_32, Wiggin\_35, Command613\_33, Inca\_31
- Track 11 : ChotaBhai\_32, ABCat\_31, Willez\_31, Tuco\_33, Contagion\_31, Tomaszewski\_31, Mosby\_31, Flypotenuse\_30, Myrale\_32, Manda\_33, Marshmallow\_32, Cookies\_32, Harella\_31, Glexan\_30, SirDuracell\_31, Youngblood\_32, Pat3\_31, DrDrey\_33, Sassay\_31
- Track 12 : Icee\_31, NelitzaMV\_32, Sotrice96\_32, Cactus\_33
- Track 13 : Goku\_32, Eureka\_32
- Track 14 : Asriel\_31, Traaww1\_30, Barbarian\_31, TeardropMSU\_31
- Track 15 : Quallification\_33
- Track 16 : BilboSwaggins\_32, Mindy\_32, Daikon\_31, Kostya\_33, Toto\_32
- Track 17 : FairyPath\_32

- Track 18 : Amao\_32
- Track 19 : IHOP\_32
- Track 20 : Dove\_44, Klein\_47, NihilNomen\_46, Pound\_48
- Track 21 : Odette\_47, JuicyJay\_49, Schatzie\_44, Bombitas\_43
- Track 22 : Hannaconda\_42, KashFlow\_39
- Track 23 : Constella\_39
- Track 24 : Beem\_47, Hughesyang\_45, Halley\_47, ThreeRngTarjay\_45, Ejimix\_47, Kalah2\_47, Yeet\_45, Phoebus\_46, HokkenD\_40, Bagrid\_46, EricMillard\_47
- Track 25 : Redno2\_45, Dallas\_49, Zelink\_48
- Track 26 : Duke13\_50, Optimus\_52, BAKA\_51, DmpstrDiver\_48
- Track 27 : Wanda\_53
- Track 28 : Shaboozey\_38
- Track 29 : Nekros\_45
- Track 30 : Omega\_50
- Track 31 : LittleE\_51
- Track 32 : Minerva\_53
- Track 33 : MarkPhew\_30
- Track 34 : Mdavu\_26, Teejan\_26, Enkosi\_26, Binglebops\_26, Torres\_26, Amelie\_26, Nikao\_26, LilPharaoh\_26, SgtBeansprout\_26, Nutello\_26
- Track 35 : KiSi\_29, LeMond\_29, Scarlett\_29
- Track 36 : Oscar\_29
- Track 37 : Chris\_29
- Track 38 : Nibb\_29
- Track 39 : MacnCheese\_31
- Track 40 : Hurricane\_31
- Track 41 : Pharb\_29
- Track 42 : Pixie\_30
- Track 43 : TBond007\_30
- Track 44 : Keshu\_31
- Track 45 : Lea83\_32
- Track 46 : ShedlockHolmes\_31
- Track 47 : TribbleTrouble\_29
- Track 48 : Malthus\_32, Y10\_31, Fionnbharth\_31, Kraw\_32, JF1\_31, Y2\_31, Wintermute\_31
- Track 49 : Mitti\_31
- Track 50 : Juliette\_33, SamScheppers\_31, Ruthiejr\_32
- Track 51 : Bobquesha\_32
- Track 52 : MissDaisy\_31, Patt\_31
- Track 53 : Chancellor\_31, Cheetobro\_31, Slarp\_31
- Track 54 : OmniCritical\_31
- Track 55 : Reptar3000\_31
- Track 56 : Taquito\_31
- Track 57 : Lebo14\_32
- Track 58 : Eponine\_33
- Track 59 : Dadosky\_30, Neighly\_30, Larva\_30, Psycho\_30, AlleyCat\_30
- Track 60 : Omnicron\_30
- Track 61 : ViviJ\_28
- Track 62 : SoSeph\_29, Heftyboy\_29
- Track 63 : Paola\_29
- Track 64 : Guillsminger\_29
- Track 65 : Thyatira\_29
- Track 66 : InvictusManeo\_29, Collard\_29, Agent47\_29
- Track 67 : OkiRoe\_29

- Track 68 : Waterfoul\_29
- Track 69 : Miryou\_29
- Track 70 : Kratio\_28
- Track 71 : Leston\_29
- Track 72 : Feyre\_29, Gengar\_29
- Track 73 : Edugator\_29
- Track 74 : Krueger\_30
- Track 75 : Phrank\_30, Cain\_30, Bryler\_30
- Track 76 : Sunflower1121\_29, Shadow1\_29
- Track 77 : Ximenita\_31
- Track 78 : TClif\_31
- Track 79 : Tierra\_30
- Track 80 : SirPhilip\_29
- Track 81 : PhelpsODU\_30, Unicorn\_30
- Track 82 : Syra333\_30
- Track 83 : Whitty\_27, RonRayGun\_27, ZenTime222\_27, Nairb\_27, Bernal13\_27, Ibrahim\_27
- Track 84 : Nette\_28, Mendokysei\_26
- Track 85 : Gaia\_32

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

The start number called the most often in the published annotations is 19, it was called in 223 of the 266 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 244\_34, ABCat\_31, Adnama\_35, Agent47\_29, AlleyCat\_30, AmericanBeauty\_34, Aneem\_10, Argent26\_34, Asriel\_31, BaboJay\_31, Bachome\_10, BadStone\_31, Bagrid\_46, Balomoji\_31, Barbarian\_31, Bask21\_32, Becksu\_32, Beem\_47, Bench\_34, Bernal13\_27, BigBubba\_33, Bobquesha\_32, Bombitas\_43, Bowtie\_10, Bruin\_32, Bryler\_30, Buck\_31, Bud\_10, BugsBunny\_30, Cactus\_33, Cain\_30, Chancellor\_31, Cheetobro\_31, ChosenOne\_32, ChotaBhai\_32, Cjw1\_32, Collard\_29, Command613\_33, Constella\_39, Contagion\_31, Cookies\_32, CrystalP\_32, Czyszczon1\_33, Dadosky\_30, Dallas\_49, DoctorDiddles\_32, Dove\_44, DrDrey\_33, Dumbo\_32, Dusk\_31, Easy2Say\_34, Edugator\_29, Ejimix\_47, Elite2014\_31, Elph10\_33, Emmina\_33, Eponine\_33, EricMillard\_47, Et2Brutus\_9, Eureka\_32, Feyre\_29, Fibonacci\_10, Filch\_33, Fionnbharth\_31, FireRed\_32, Flaverint\_10, Flypotenuse\_30, FoghornLeghorn\_31, Gage\_34, Gator\_30, Gemini\_35, Gengar\_29, Gilberta\_10, Glexan\_30, Goku\_32, GoldenSpark\_34, Goldilocks\_33, GooberAzure\_34, Halley\_47, HanKaySha\_33, Hannaconda\_42, Harella\_31, Heftyboy\_29, Henry\_33, Highbury\_33, HokkenD\_40, Holt\_33, Hoonter\_34, Hopey\_34, HufflyPuff\_31, Hughesyang\_45, Hutc2\_10, IHOP\_32, Ibrahim\_27, Icee\_31, Inca\_31, InvictusManeo\_29, JF1\_31, JeTaime\_34, Joselito\_10, JuicyJay\_49, Juliette\_33, Kalah2\_47, Kanye\_34, KashFlow\_39, Kimchi\_34, Klein\_47, Kratio\_28, Kraw\_32, Krueger\_30, Larva\_30, Lebo14\_32, Lilac\_34, Lilizi\_34, Lilpickle\_31, LittleE\_51, MISSy\_31, MPhalcon\_31, MaCh\_10, MadamMonkfish\_32, MalagasyRose\_30, Malthus\_32, Manda\_33, Marshmallow\_32, Maxxinista\_33, Mendokysei\_26, Miniwave\_32, Miryou\_29, Misfit\_32, MissDaisy\_31, Mitti\_31, Moldemort\_33, Mosby\_31, Mulciber\_10, Munch\_10, Murica\_31, Murphy\_33, Myrale\_32, Nairb\_27, Nala\_32, Neighly\_30, Nekros\_45, NelitzaMV\_32, Nette\_28,

NihilNomen\_46, Nimrod\_32, NoSleep\_33, Odette\_47, OkiRoe\_29, Omega\_50, OmniCritical\_31, Omnicron\_30, Orange\_10, OrionPax\_33, Palpatine\_32, Paola\_29, Paperbeatsrock\_34, Pat3\_31, Patt\_31, Petersenfast\_9, Petra64142\_34, Phaja\_32, Pharsalus\_33, PhatBacter\_32, Phaux\_31, PhelpsODU\_30, Phoebus\_46, Phrank\_30, Phrux\_32, Policronamos\_32, Porky\_32, Pound\_48, Psycho\_30, Pumpkin\_34, Quallification\_33, Rakim\_33, Redno2\_45, Reptar3000\_31, Rimmer\_31, RiverMonster\_32, RonRayGun\_27, Ruthiejr\_32, Saints25\_33, Salz\_10, SamScheppers\_31, Sassay\_31, Schatzie\_44, Shaboozey\_38, Shadow1\_29, Sham4\_10, ShamWow\_32, ShereKhan\_34, Simpliphy\_33, SirDuracell\_31, Slarp\_31, Snape\_10, SoSeph\_29, SophKB\_32, Sotrice96\_32, Stank\_35, Stark\_33, StellaBean\_32, StolenFromERC\_34, StormChicken\_32, Sunflower1121\_29, Syra333\_30, TBrady12\_34, TClif\_31, Taquito\_31, Tarkin\_34, TeardropMSU\_31, Teaspoon\_33, Terminus\_32, Thimble\_32, ThreeRngTarjay\_45, Thresher\_33, Thyatira\_29, Tierra\_30, Timothy\_10, Tomaszewski\_31, Traaww1\_30, Tuco\_33, Ukulele\_32, Unicorn\_30, Waterfoul\_29, Whitty\_27, Wiggin\_35, Willez\_31, Wintermute\_31, Xandras\_34, Ximenita\_31, Y10\_31, Y2\_31, YassJohnny\_33, Yeet\_45, Youngblood\_32, Zelink\_48, ZenTime222\_27, xkcd\_33,

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

- Amao\_32, BilboSwaggins\_32, Daikon\_31, FairyPath\_32, Guillsminger\_29, Kostya\_33, Leston\_29, Mindy\_32, Toto\_32, ViviJ\_28,

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

- Amelie\_26, BAKA\_51, Biglebops\_26, Chris\_29, DmpstrDiver\_48, Duke13\_50, Ebony\_10, Enkosi\_26, Gaia\_32, Hurricane\_31, Insomnia\_10, Jabith\_10, Keshu\_31, KiSi\_29, Kinmap\_8, LeMond\_29, Lea83\_32, LilPharaoh\_26, Lucivia\_10, Mabel\_10, MacnCheese\_31, MarkPhew\_30, Mdavu\_26, Minerva\_53, Nergal\_26, Nibb\_29, Nikao\_26, Nutello\_26, Optimus\_52, Oscar\_29, Pharb\_29, Pixie\_30, Scarlett\_29, SgtBeansprout\_26, ShedlockHolmes\_31, SirPhilip\_29, TBond007\_30, Teejan\_26, TinyTimmy\_10, Torres\_26, TribbleTrouble\_29, Wanda\_53,

### Summary by start number:

Start 16:

- Found in 6 of 291 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 2 of 266
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Minerva\_53 (J), Wanda\_53 (J),

Start 17:

- Found in 17 of 291 ( 5.8% ) of genes in pham
- Manual Annotations of this start: 15 of 266
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amelie\_26 (K1), Biglebops\_26 (K1), Chris\_29 (K1), Enkosi\_26 (K1), KiSi\_29 (K1), LeMond\_29 (K1), LilPharaoh\_26 (K1), MarkPhew\_30 (K1), Mdavu\_26 (K1), Nibb\_29 (K1), Nikao\_26 (K1), Nutello\_26 (K1), Oscar\_29 (K1), Scarlett\_29 (K1), SgtBeansprout\_26 (K1), Teejan\_26 (K1), Torres\_26 (K1),

Start 18:

- Found in 1 of 291 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 266
- Called 100.0% of time when present

- Phage (with cluster) where this start called: SirPhilip\_29 (K6),

Start 19:

- Found in 249 of 291 ( 85.6% ) of genes in pham
- Manual Annotations of this start: 223 of 266
- Called 96.0% of time when present
- Phage (with cluster) where this start called: 244\_34 (E), ABCat\_31 (E), Adnama\_35 (E), Agent47\_29 (K5), AlleyCat\_30 (K5), AmericanBeauty\_34 (E), Aneem\_10 (A11), Argent26\_34 (E), Asriel\_31 (E), BaboJay\_31 (E), Bachome\_10 (A11), BadStone\_31 (E), Bagrid\_46 (J), Balomoji\_31 (E), Barbarian\_31 (E), Bask21\_32 (E), Becksu\_32 (E), Beem\_47 (J), Bench\_34 (E), Bernal13\_27 (T), BigBubba\_33 (E), Bobquesha\_32 (K4), Bombitas\_43 (J), Bowtie\_10 (A11), Bruin\_32 (E), Bryler\_30 (K6), Buck\_31 (E), Bud\_10 (A11), BugsBunny\_30 (E), Cactus\_33 (E), Cain\_30 (K6), Chancellor\_31 (K4), Cheetobro\_31 (K4), ChosenOne\_32 (E), ChotaBhai\_32 (E), Cjw1\_32 (E), Collard\_29 (K5), Command613\_33 (E), Constella\_39 (J), Contagion\_31 (E), Cookies\_32 (E), CrystalP\_32 (E), Czystoczon1\_33 (E), Dadosky\_30 (K5), Dallas\_49 (J), DoctorDiddles\_32 (E), Dove\_44 (J), DrDrey\_33 (E), Dumbo\_32 (E), Dusk\_31 (E), Easy2Say\_34 (E), Edugator\_29 (K5), Ejimix\_47 (J), Elite2014\_31 (E), Elph10\_33 (E), Emmina\_33 (E), Eponine\_33 (K4), EricMillard\_47 (J), Et2Brutus\_9 (A11), Eureka\_32 (E), Feyre\_29 (K5), Fibonacci\_10 (A11), Filch\_33 (E), Fionnbharth\_31 (K4), FireRed\_32 (E), Flaverint\_10 (A11), Flypotenuse\_30 (E), FoghornLeghorn\_31 (E), Gage\_34 (E), Gator\_30 (E), Gemini\_35 (E), Gengar\_29 (K5), Gilberta\_10 (A11), Glexan\_30 (E), Goku\_32 (E), GoldenSpark\_34 (E), Goldilocks\_33 (E), GooberAzure\_34 (E), Halley\_47 (J), HanKaySha\_33 (E), Hannaconda\_42 (J), Harella\_31 (E), Heftyboy\_29 (K5), Henry\_33 (E), Highbury\_33 (E), HokkenD\_40 (J), Holt\_33 (E), Hoonter\_34 (E), Hopey\_34 (E), HuffyPuff\_31 (E), Hughesyang\_45 (J), Hutc2\_10 (A11), IHOP\_32 (E), Ibrahim\_27 (T), Icee\_31 (E), Inca\_31 (E), InvictusManeo\_29 (K5), JF1\_31 (K4), JeTaimie\_34 (E), Joselito\_10 (A11), JuicyJay\_49 (J), Juliette\_33 (K4), Kalah2\_47 (J), Kanye\_34 (E), KashFlow\_39 (J), Kimchi\_34 (E), Klein\_47 (J), Kratio\_28 (K5), Kraw\_32 (K4), Krueger\_30 (K6), Larva\_30 (K5), Lebo14\_32 (K4), Lilac\_34 (E), Lilizi\_34 (E), Lilpickle\_31 (E), LittleE\_51 (J), MISSy\_31 (E), MPhalcon\_31 (E), MaCh\_10 (A11), MadamMonkfish\_32 (E), MalagasyRose\_30 (AG), Malthus\_32 (K4), Manda\_33 (E), Marshmallow\_32 (E), Maxxinista\_33 (E), Mendokysei\_26 (T), Miniwave\_32 (E), Miryou\_29 (K5), Misfit\_32 (E), MissDaisy\_31 (K4), Mitti\_31 (K4), Moldemort\_33 (E), Mosby\_31 (E), Mulciber\_10 (A11), Munch\_10 (A11), Murica\_31 (E), Murphy\_33 (E), Myrale\_32 (E), Nairb\_27 (T), Nala\_32 (E), Neighly\_30 (K3), Nekros\_45 (J), NelitzaMV\_32 (E), Nette\_28 (T), NihilNomen\_46 (J), Nimrod\_32 (E), NoSleep\_33 (E), Odette\_47 (J), OkiRoe\_29 (K5), Omega\_50 (J), OmniCritical\_31 (K4), Omnicron\_30 (K5), Orange\_10 (A11), OrionPax\_33 (E), Palpatine\_32 (E), Paola\_29 (K5), Paperbeatsrock\_34 (E), Pat3\_31 (E), Patt\_31 (K4), Petersenfast\_9 (A11), Petra64142\_34 (E), Phaja\_32 (E), Pharsalus\_33 (E), PhatBacter\_32 (E), Phaux\_31 (E), PhelpsODU\_30 (K6), Phoebus\_46 (J), Phrank\_30 (K6), Phrux\_32 (E), Policronamos\_32 (E), Porky\_32 (E), Pound\_48 (J), Psycho\_30 (K5), Pumpkin\_34 (E), Quallification\_33 (E), Rakim\_33 (E), Redno2\_45 (J), Reptar3000\_31 (K4), Rimmer\_31 (E), RiverMonster\_32 (E), RonRayGun\_27 (T), Ruthiejr\_32 (K4), Saints25\_33 (E), Salz\_10 (A11), SamScheppers\_31 (K4), Sassay\_31 (E), Schatzie\_44 (J), Shaboozey\_38 (J), Shadow1\_29 (K6), Sham4\_10 (A11), ShamWow\_32 (E), ShereKhan\_34 (E), Simpliphy\_33 (E), SirDuracell\_31 (E), Slarp\_31 (K4), Snape\_10 (A11), SoSeph\_29 (K5), SophKB\_32 (E), Sotrice96\_32 (E), Stank\_35 (E), Stark\_33 (E), StellaBean\_32 (E), StolenFromERC\_34 (E), StormChicken\_32 (E), Sunflower1121\_29 (K6), Syra333\_30 (K6), TBrady12\_34 (E), TClif\_31 (K6), Taquito\_31 (K4), Tarkin\_34 (E), TeardropMSU\_31 (E), Teaspoon\_33

(E), Terminus\_32 (E), Thimble\_32 (E), ThreeRngTarjay\_45 (J), Thresher\_33 (E), Thyatira\_29 (K5), Tierra\_30 (K6), Timothy\_10 (A11), Tomaszewski\_31 (E), Traaww1\_30 (E), Tuco\_33 (E), Ukulele\_32 (E), Unicorn\_30 (K6), Waterfoul\_29 (K5), Whitty\_27 (T), Wiggin\_35 (E), Willez\_31 (E), Wintermute\_31 (K4), Xandras\_34 (E), Ximenita\_31 (K6), Y10\_31 (K4), Y2\_31 (K4), YassJohnny\_33 (E), Yeet\_45 (J), Youngblood\_32 (E), Zelink\_48 (J), ZenTime222\_27 (T), xkcd\_33 (E),

Start 20:

- Found in 25 of 291 ( 8.6% ) of genes in pham
- Manual Annotations of this start: 20 of 266
- Called 88.0% of time when present
- Phage (with cluster) where this start called: BAKA\_51 (J), DmpstrDiver\_48 (J), Duke13\_50 (J), Ebony\_10 (A11), Gaia\_32 (X), Hurricane\_31 (K3), Insomnia\_10 (A11), Jabith\_10 (A11), Keshu\_31 (K3), Kinmap\_8 (A21), Lea83\_32 (K3), Lucivia\_10 (A11), Mabel\_10 (A11), MacnCheese\_31 (K3), Nergal\_26 (AG), Optimus\_52 (J), Pharb\_29 (K3), Pixie\_30 (K3), ShedlockHolmes\_31 (K3), TBond007\_30 (K3), TinyTimmy\_10 (A11), TripleTrouble\_29 (K3),

Start 21:

- Found in 23 of 291 ( 7.9% ) of genes in pham
- Manual Annotations of this start: 1 of 266
- Called 4.3% of time when present
- Phage (with cluster) where this start called: Guillsminger\_29 (K5),

Start 22:

- Found in 23 of 291 ( 7.9% ) of genes in pham
- Manual Annotations of this start: 1 of 266
- Called 8.7% of time when present
- Phage (with cluster) where this start called: Leston\_29 (K5), ViviJ\_28 (K5),

Start 28:

- Found in 168 of 291 ( 57.7% ) of genes in pham
- Manual Annotations of this start: 3 of 266
- Called 4.2% of time when present
- Phage (with cluster) where this start called: Amao\_32 (E), BilboSwaggins\_32 (E), Daikon\_31 (E), FairyPath\_32 (E), Kostya\_33 (E), Mindy\_32 (E), Toto\_32 (E),

### Summary by clusters:

There are 12 clusters represented in this pham: A21, E, AG, J, K3, K1, K6, K5, K4, X, A11, T,

Info for manual annotations of cluster A11:

- Start number 19 was manually annotated 18 times for cluster A11.
- Start number 20 was manually annotated 6 times for cluster A11.

Info for manual annotations of cluster AG:

- Start number 19 was manually annotated 1 time for cluster AG.
- Start number 20 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster E:

- Start number 19 was manually annotated 122 times for cluster E.



- Start number 28 was manually annotated 3 times for cluster E.

Info for manual annotations of cluster J:

- Start number 16 was manually annotated 2 times for cluster J.
- Start number 19 was manually annotated 25 times for cluster J.
- Start number 20 was manually annotated 4 times for cluster J.

Info for manual annotations of cluster K1:

- Start number 17 was manually annotated 15 times for cluster K1.

Info for manual annotations of cluster K3:

- Start number 20 was manually annotated 8 times for cluster K3.

Info for manual annotations of cluster K4:

- Start number 19 was manually annotated 19 times for cluster K4.

Info for manual annotations of cluster K5:

- Start number 19 was manually annotated 19 times for cluster K5.
- Start number 21 was manually annotated 1 time for cluster K5.
- Start number 22 was manually annotated 1 time for cluster K5.

Info for manual annotations of cluster K6:

- Start number 18 was manually annotated 1 time for cluster K6.
- Start number 19 was manually annotated 12 times for cluster K6.

Info for manual annotations of cluster T:

- Start number 19 was manually annotated 7 times for cluster T.

Info for manual annotations of cluster X:

- Start number 20 was manually annotated 1 time for cluster X.

### ***Gene Information:***

Gene: 244\_34 Start: 29921, Stop: 31423, Start Num: 19

Candidate Starts for 244\_34:

(Start: 19 @29921 has 223 MA's), (Start: 28 @29990 has 3 MA's), (35, 30068), (47, 30164), (49, 30185), (51, 30191), (55, 30275), (57, 30296), (60, 30347), (64, 30401), (71, 30476), (85, 30611), (87, 30623), (93, 30692), (95, 30701), (103, 30806), (112, 30875), (119, 31001), (126, 31082), (144, 31178), (150, 31205), (155, 31232), (156, 31238), (162, 31256), (170, 31292),

Gene: ABCat\_31 Start: 29633, Stop: 31135, Start Num: 19

Candidate Starts for ABCat\_31:

(Start: 19 @29633 has 223 MA's), (Start: 28 @29702 has 3 MA's), (35, 29780), (47, 29876), (49, 29897), (51, 29903), (55, 29987), (57, 30008), (60, 30059), (64, 30113), (71, 30188), (85, 30323), (87, 30335), (93, 30404), (95, 30413), (103, 30518), (112, 30587), (119, 30713), (126, 30794), (155, 30944), (156, 30950), (162, 30968), (170, 31004),

Gene: Adnama\_35 Start: 30148, Stop: 31650, Start Num: 19

Candidate Starts for Adnama\_35:

(Start: 19 @30148 has 223 MA's), (Start: 28 @30217 has 3 MA's), (35, 30295), (47, 30391), (49, 30412), (51, 30418), (55, 30502), (57, 30523), (60, 30574), (64, 30628), (71, 30703), (85, 30838), (87,

30850), (93, 30919), (95, 30928), (103, 31033), (112, 31102), (119, 31228), (126, 31309), (150, 31432), (155, 31459), (156, 31465), (162, 31483), (170, 31519),

Gene: Agent47\_29 Start: 25596, Stop: 27230, Start Num: 19

Candidate Starts for Agent47\_29:

(Start: 19 @25596 has 223 MA's), (Start: 21 @25602 has 1 MA's), (Start: 22 @25617 has 1 MA's), (32, 25722), (36, 25746), (39, 25761), (44, 25809), (52, 25881), (55, 25932), (57, 25953), (69, 26103), (70, 26115), (71, 26130), (75, 26169), (86, 26277), (87, 26286), (93, 26355), (94, 26361), (95, 26364), (110, 26529), (112, 26538), (115, 26577), (117, 26622), (119, 26658), (126, 26742), (129, 26775), (130, 26778), (155, 26925), (156, 26931), (166, 26967), (170, 26985), (186, 27120), (192, 27186), (196, 27219),

Gene: AlleyCat\_30 Start: 25527, Stop: 27161, Start Num: 19

Candidate Starts for AlleyCat\_30:

(Start: 19 @25527 has 223 MA's), (Start: 21 @25533 has 1 MA's), (Start: 22 @25548 has 1 MA's), (30, 25611), (32, 25653), (36, 25677), (39, 25692), (44, 25740), (52, 25812), (53, 25815), (55, 25863), (57, 25884), (69, 26034), (70, 26046), (75, 26100), (86, 26208), (87, 26217), (93, 26286), (94, 26292), (95, 26295), (102, 26382), (107, 26436), (110, 26460), (115, 26508), (119, 26589), (126, 26673), (129, 26706), (130, 26709), (155, 26856), (156, 26862), (166, 26898), (170, 26916), (186, 27051), (192, 27117), (196, 27150),

Gene: Amao\_32 Start: 28914, Stop: 30347, Start Num: 28

Candidate Starts for Amao\_32:

(2, 28620), (Start: 19 @28845 has 223 MA's), (Start: 28 @28914 has 3 MA's), (35, 28992), (47, 29088), (49, 29109), (51, 29115), (55, 29199), (57, 29220), (60, 29271), (64, 29325), (71, 29400), (85, 29535), (87, 29547), (93, 29616), (95, 29625), (103, 29730), (112, 29799), (119, 29925), (126, 30006), (144, 30102), (150, 30129), (155, 30156), (156, 30162), (162, 30180), (170, 30216),

Gene: Amelie\_26 Start: 24344, Stop: 25981, Start Num: 17

Candidate Starts for Amelie\_26:

(Start: 17 @24344 has 15 MA's), (25, 24386), (29, 24425), (33, 24482), (35, 24491), (42, 24563), (48, 24590), (55, 24698), (57, 24719), (59, 24752), (71, 24896), (75, 24935), (87, 25052), (89, 25091), (91, 25100), (93, 25121), (94, 25127), (95, 25130), (103, 25235), (110, 25295), (119, 25424), (126, 25499), (142, 25592), (187, 25874), (194, 25955), (196, 25970),

Gene: AmericanBeauty\_34 Start: 29628, Stop: 31130, Start Num: 19

Candidate Starts for AmericanBeauty\_34:

(Start: 19 @29628 has 223 MA's), (Start: 28 @29697 has 3 MA's), (35, 29775), (47, 29871), (49, 29892), (51, 29898), (55, 29982), (57, 30003), (60, 30054), (64, 30108), (71, 30183), (85, 30318), (87, 30330), (93, 30399), (95, 30408), (103, 30513), (112, 30582), (119, 30708), (126, 30789), (144, 30885), (150, 30912), (155, 30939), (156, 30945), (162, 30963), (170, 30999),

Gene: Aneem\_10 Start: 6224, Stop: 7624, Start Num: 19

Candidate Starts for Aneem\_10:

(13, 6185), (Start: 19 @6224 has 223 MA's), (35, 6371), (39, 6389), (52, 6509), (55, 6560), (57, 6581), (59, 6614), (73, 6761), (77, 6824), (79, 6830), (98, 6974), (105, 7055), (109, 7082), (128, 7286), (135, 7307), (140, 7331), (147, 7391), (152, 7424), (168, 7490), (179, 7586),

Gene: Argent26\_34 Start: 29631, Stop: 31133, Start Num: 19

Candidate Starts for Argent26\_34:

(Start: 19 @29631 has 223 MA's), (Start: 28 @29700 has 3 MA's), (35, 29778), (47, 29874), (49, 29895), (51, 29901), (55, 29985), (57, 30006), (60, 30057), (64, 30111), (71, 30186), (85, 30321), (87, 30333), (93, 30402), (95, 30411), (103, 30516), (112, 30585), (119, 30711), (126, 30792), (150,

30915), (155, 30942), (156, 30948), (162, 30966), (170, 31002),

Gene: Asriel\_31 Start: 28502, Stop: 30004, Start Num: 19

Candidate Starts for Asriel\_31:

(Start: 19 @28502 has 223 MA's), (Start: 28 @28571 has 3 MA's), (35, 28649), (47, 28745), (49, 28766), (51, 28772), (55, 28856), (57, 28877), (60, 28928), (64, 28982), (70, 29042), (85, 29192), (87, 29204), (93, 29273), (95, 29282), (103, 29387), (112, 29456), (119, 29582), (126, 29663), (155, 29813), (156, 29819), (162, 29837), (170, 29873),

Gene: BAKA\_51 Start: 40867, Stop: 42300, Start Num: 20

Candidate Starts for BAKA\_51:

(15, 40834), (Start: 16 @40858 has 2 MA's), (Start: 20 @40867 has 20 MA's), (40, 41032), (41, 41053), (43, 41083), (49, 41125), (50, 41128), (57, 41236), (72, 41422), (76, 41473), (91, 41605), (95, 41638), (96, 41641), (116, 41833), (120, 41920), (125, 41983), (126, 42007), (127, 42016), (152, 42166), (161, 42199), (162, 42202),

Gene: BaboJay\_31 Start: 29191, Stop: 30693, Start Num: 19

Candidate Starts for BaboJay\_31:

(Start: 19 @29191 has 223 MA's), (Start: 28 @29260 has 3 MA's), (35, 29338), (47, 29434), (49, 29455), (51, 29461), (55, 29545), (57, 29566), (60, 29617), (64, 29671), (71, 29746), (85, 29881), (87, 29893), (93, 29962), (95, 29971), (103, 30076), (112, 30145), (119, 30271), (126, 30352), (150, 30475), (155, 30502), (156, 30508), (162, 30526), (170, 30562),

Gene: Bachome\_10 Start: 6221, Stop: 7621, Start Num: 19

Candidate Starts for Bachome\_10:

(13, 6182), (Start: 19 @6221 has 223 MA's), (35, 6368), (39, 6386), (52, 6506), (55, 6557), (57, 6578), (59, 6611), (73, 6758), (77, 6821), (79, 6827), (98, 6971), (105, 7052), (109, 7079), (128, 7283), (135, 7304), (140, 7328), (147, 7388), (152, 7421), (168, 7487), (179, 7583),

Gene: BadStone\_31 Start: 29633, Stop: 31135, Start Num: 19

Candidate Starts for BadStone\_31:

(Start: 19 @29633 has 223 MA's), (Start: 28 @29702 has 3 MA's), (35, 29780), (47, 29876), (49, 29897), (51, 29903), (55, 29987), (57, 30008), (60, 30059), (64, 30113), (71, 30188), (85, 30323), (87, 30335), (93, 30404), (95, 30413), (103, 30518), (112, 30587), (119, 30713), (126, 30794), (144, 30890), (150, 30917), (155, 30944), (156, 30950), (162, 30968), (170, 31004),

Gene: Bagrid\_46 Start: 40215, Stop: 41633, Start Num: 19

Candidate Starts for Bagrid\_46:

(Start: 19 @40215 has 223 MA's), (27, 40269), (32, 40341), (35, 40362), (45, 40443), (52, 40500), (55, 40551), (56, 40563), (57, 40572), (61, 40623), (72, 40755), (76, 40806), (91, 40938), (95, 40971), (96, 40974), (116, 41166), (120, 41253), (125, 41316), (126, 41340), (127, 41349), (152, 41499), (161, 41532), (162, 41535),

Gene: Balomoji\_31 Start: 29367, Stop: 30869, Start Num: 19

Candidate Starts for Balomoji\_31:

(Start: 19 @29367 has 223 MA's), (Start: 28 @29436 has 3 MA's), (35, 29514), (47, 29610), (49, 29631), (51, 29637), (55, 29721), (57, 29742), (60, 29793), (64, 29847), (71, 29922), (85, 30057), (87, 30069), (93, 30138), (95, 30147), (103, 30252), (112, 30321), (119, 30447), (126, 30528), (150, 30651), (155, 30678), (156, 30684), (162, 30702), (170, 30738),

Gene: Barbarian\_31 Start: 28502, Stop: 30004, Start Num: 19

Candidate Starts for Barbarian\_31:

(Start: 19 @28502 has 223 MA's), (Start: 28 @28571 has 3 MA's), (35, 28649), (47, 28745), (49, 28766), (51, 28772), (55, 28856), (57, 28877), (60, 28928), (64, 28982), (70, 29042), (85, 29192), (87, 29204), (93, 29273), (95, 29282), (103, 29387), (112, 29456), (119, 29582), (126, 29663), (155, 29813), (156, 29819), (162, 29837), (170, 29873),

Gene: Bask21\_32 Start: 28819, Stop: 30321, Start Num: 19

Candidate Starts for Bask21\_32:

(Start: 19 @28819 has 223 MA's), (Start: 28 @28888 has 3 MA's), (35, 28966), (47, 29062), (49, 29083), (51, 29089), (55, 29173), (57, 29194), (60, 29245), (64, 29299), (71, 29374), (85, 29509), (87, 29521), (93, 29590), (95, 29599), (103, 29704), (112, 29773), (119, 29899), (126, 29980), (144, 30076), (150, 30103), (155, 30130), (156, 30136), (162, 30154), (170, 30190),

Gene: Becksu\_32 Start: 29824, Stop: 31326, Start Num: 19

Candidate Starts for Becksu\_32:

(Start: 19 @29824 has 223 MA's), (Start: 28 @29893 has 3 MA's), (35, 29971), (47, 30067), (49, 30088), (51, 30094), (55, 30178), (57, 30199), (60, 30250), (64, 30304), (71, 30379), (85, 30514), (87, 30526), (93, 30595), (95, 30604), (103, 30709), (112, 30778), (119, 30904), (126, 30985), (144, 31081), (150, 31108), (155, 31135), (156, 31141), (162, 31159), (170, 31195),

Gene: Beem\_47 Start: 40781, Stop: 42199, Start Num: 19

Candidate Starts for Beem\_47:

(Start: 19 @40781 has 223 MA's), (27, 40835), (32, 40907), (35, 40928), (45, 41009), (52, 41066), (55, 41117), (56, 41129), (57, 41138), (61, 41189), (72, 41321), (76, 41372), (91, 41504), (95, 41537), (96, 41540), (116, 41732), (120, 41819), (125, 41882), (126, 41906), (127, 41915), (152, 42065), (161, 42098), (162, 42101),

Gene: Bench\_34 Start: 29501, Stop: 31003, Start Num: 19

Candidate Starts for Bench\_34:

(Start: 19 @29501 has 223 MA's), (Start: 28 @29570 has 3 MA's), (35, 29648), (47, 29744), (49, 29765), (51, 29771), (55, 29855), (57, 29876), (60, 29927), (64, 29981), (71, 30056), (85, 30191), (87, 30203), (93, 30272), (95, 30281), (103, 30386), (112, 30455), (119, 30581), (126, 30662), (150, 30785), (155, 30812), (156, 30818), (162, 30836), (170, 30872),

Gene: Bernal13\_27 Start: 23579, Stop: 25162, Start Num: 19

Candidate Starts for Bernal13\_27:

(Start: 19 @23579 has 223 MA's), (29, 23660), (31, 23678), (36, 23729), (38, 23741), (39, 23744), (55, 23915), (58, 23942), (70, 24104), (72, 24125), (75, 24149), (80, 24215), (86, 24257), (90, 24311), (95, 24353), (102, 24437), (106, 24473), (107, 24491), (119, 24641), (126, 24728), (146, 24839), (163, 24920), (189, 25121),

Gene: BigBubba\_33 Start: 29404, Stop: 30906, Start Num: 19

Candidate Starts for BigBubba\_33:

(Start: 19 @29404 has 223 MA's), (Start: 28 @29473 has 3 MA's), (35, 29551), (47, 29647), (49, 29668), (51, 29674), (55, 29758), (57, 29779), (60, 29830), (64, 29884), (71, 29959), (85, 30094), (87, 30106), (93, 30175), (95, 30184), (103, 30289), (112, 30358), (119, 30484), (126, 30565), (144, 30661), (150, 30688), (155, 30715), (156, 30721), (162, 30739), (170, 30775),

Gene: Biglebops\_26 Start: 24344, Stop: 25981, Start Num: 17

Candidate Starts for Biglebops\_26:

(Start: 17 @24344 has 15 MA's), (25, 24386), (29, 24425), (33, 24482), (35, 24491), (42, 24563), (48, 24590), (55, 24698), (57, 24719), (59, 24752), (71, 24896), (75, 24935), (87, 25052), (89, 25091), (91, 25100), (93, 25121), (94, 25127), (95, 25130), (103, 25235), (110, 25295), (119, 25424), (126, 25499), (142, 25592), (187, 25874), (194, 25955), (196, 25970),

Gene: BilboSwaggins\_32 Start: 29710, Stop: 31143, Start Num: 28

Candidate Starts for BilboSwaggins\_32:

(Start: 19 @29641 has 223 MA's), (Start: 28 @29710 has 3 MA's), (35, 29788), (47, 29884), (49, 29905), (51, 29911), (55, 29995), (57, 30016), (60, 30067), (64, 30121), (71, 30196), (85, 30331), (87, 30343), (93, 30412), (95, 30421), (103, 30526), (112, 30595), (119, 30721), (126, 30802), (155, 30952), (162, 30976), (170, 31012),

Gene: Bobquesha\_32 Start: 25768, Stop: 27381, Start Num: 19

Candidate Starts for Bobquesha\_32:

(Start: 19 @25768 has 223 MA's), (Start: 28 @25837 has 3 MA's), (32, 25894), (33, 25906), (35, 25915), (36, 25918), (39, 25933), (46, 25987), (55, 26104), (57, 26125), (70, 26287), (75, 26332), (87, 26449), (88, 26476), (93, 26518), (95, 26527), (103, 26632), (115, 26740), (119, 26821), (126, 26902), (127, 26911), (142, 26974), (175, 27190), (185, 27250),

Gene: Bombitas\_43 Start: 39837, Stop: 41255, Start Num: 19

Candidate Starts for Bombitas\_43:

(Start: 19 @39837 has 223 MA's), (27, 39891), (32, 39963), (35, 39984), (45, 40065), (52, 40122), (55, 40173), (56, 40185), (57, 40194), (61, 40245), (72, 40377), (76, 40428), (85, 40503), (91, 40560), (95, 40593), (96, 40596), (116, 40788), (120, 40875), (125, 40938), (126, 40962), (127, 40971), (152, 41121), (161, 41154), (162, 41157),

Gene: Bowtie\_10 Start: 6224, Stop: 7624, Start Num: 19

Candidate Starts for Bowtie\_10:

(13, 6185), (Start: 19 @6224 has 223 MA's), (35, 6371), (39, 6389), (52, 6509), (55, 6560), (57, 6581), (59, 6614), (73, 6761), (77, 6824), (79, 6830), (98, 6974), (105, 7055), (109, 7082), (128, 7286), (135, 7307), (140, 7331), (147, 7391), (152, 7424), (168, 7490), (179, 7586),

Gene: Bruin\_32 Start: 29661, Stop: 31163, Start Num: 19

Candidate Starts for Bruin\_32:

(Start: 19 @29661 has 223 MA's), (Start: 28 @29730 has 3 MA's), (35, 29808), (47, 29904), (49, 29925), (51, 29931), (55, 30015), (57, 30036), (60, 30087), (64, 30141), (71, 30216), (85, 30351), (87, 30363), (93, 30432), (95, 30441), (103, 30546), (112, 30615), (119, 30741), (126, 30822), (150, 30945), (155, 30972), (156, 30978), (162, 30996), (170, 31032),

Gene: Bryler\_30 Start: 24221, Stop: 25867, Start Num: 19

Candidate Starts for Bryler\_30:

(Start: 19 @24221 has 223 MA's), (27, 24275), (29, 24302), (33, 24359), (35, 24368), (55, 24557), (57, 24578), (65, 24701), (71, 24755), (75, 24794), (93, 24980), (95, 24989), (103, 25094), (113, 25166), (115, 25202), (119, 25283), (126, 25361), (129, 25394), (134, 25406), (139, 25439), (143, 25466), (154, 25544), (165, 25589), (181, 25718), (186, 25757), (190, 25787), (194, 25841),

Gene: Buck\_31 Start: 29597, Stop: 31099, Start Num: 19

Candidate Starts for Buck\_31:

(Start: 19 @29597 has 223 MA's), (Start: 28 @29666 has 3 MA's), (35, 29744), (47, 29840), (49, 29861), (51, 29867), (55, 29951), (57, 29972), (60, 30023), (64, 30077), (71, 30152), (85, 30287), (87, 30299), (93, 30368), (95, 30377), (103, 30482), (112, 30551), (119, 30677), (126, 30758), (144, 30854), (150, 30881), (155, 30908), (156, 30914), (162, 30932), (170, 30968),

Gene: Bud\_10 Start: 6230, Stop: 7630, Start Num: 19

Candidate Starts for Bud\_10:

(13, 6191), (Start: 19 @6230 has 223 MA's), (35, 6377), (39, 6395), (52, 6515), (55, 6566), (57, 6587), (59, 6620), (73, 6767), (77, 6830), (98, 6980), (105, 7061), (109, 7088), (128, 7292), (135, 7313), (140,

7337), (147, 7397), (152, 7430), (168, 7496), (179, 7592),

Gene: BugsBunny\_30 Start: 29230, Stop: 30732, Start Num: 19

Candidate Starts for BugsBunny\_30:

(Start: 19 @29230 has 223 MA's), (Start: 28 @29299 has 3 MA's), (35, 29377), (47, 29473), (49, 29494), (51, 29500), (55, 29584), (57, 29605), (60, 29656), (64, 29710), (71, 29785), (85, 29920), (87, 29932), (93, 30001), (95, 30010), (103, 30115), (112, 30184), (119, 30310), (126, 30391), (144, 30487), (150, 30514), (155, 30541), (156, 30547), (162, 30565), (170, 30601),

Gene: Cactus\_33 Start: 28852, Stop: 30354, Start Num: 19

Candidate Starts for Cactus\_33:

(Start: 19 @28852 has 223 MA's), (Start: 28 @28921 has 3 MA's), (35, 28999), (47, 29095), (49, 29116), (51, 29122), (55, 29206), (57, 29227), (60, 29278), (70, 29392), (85, 29542), (87, 29554), (93, 29623), (95, 29632), (103, 29737), (112, 29806), (119, 29932), (126, 30013), (155, 30163), (156, 30169), (162, 30187), (170, 30223),

Gene: Cain\_30 Start: 24209, Stop: 25855, Start Num: 19

Candidate Starts for Cain\_30:

(Start: 19 @24209 has 223 MA's), (27, 24263), (29, 24290), (33, 24347), (35, 24356), (55, 24545), (57, 24566), (65, 24689), (71, 24743), (75, 24782), (93, 24968), (95, 24977), (103, 25082), (113, 25154), (115, 25190), (119, 25271), (126, 25349), (129, 25382), (134, 25394), (139, 25427), (143, 25454), (154, 25532), (165, 25577), (181, 25706), (186, 25745), (190, 25775), (194, 25829),

Gene: Chancellor\_31 Start: 26030, Stop: 27640, Start Num: 19

Candidate Starts for Chancellor\_31:

(Start: 19 @26030 has 223 MA's), (Start: 28 @26099 has 3 MA's), (32, 26156), (33, 26168), (35, 26177), (36, 26180), (39, 26195), (51, 26282), (52, 26315), (55, 26366), (57, 26387), (70, 26549), (75, 26594), (87, 26711), (91, 26759), (93, 26780), (94, 26786), (95, 26789), (115, 27002), (119, 27083), (121, 27101), (126, 27164), (127, 27173), (142, 27236), (175, 27452), (185, 27512),

Gene: Cheetobro\_31 Start: 26027, Stop: 27637, Start Num: 19

Candidate Starts for Cheetobro\_31:

(Start: 19 @26027 has 223 MA's), (Start: 28 @26096 has 3 MA's), (32, 26153), (33, 26165), (35, 26174), (36, 26177), (39, 26192), (51, 26279), (52, 26312), (55, 26363), (57, 26384), (70, 26546), (75, 26591), (87, 26708), (91, 26756), (93, 26777), (94, 26783), (95, 26786), (115, 26999), (119, 27080), (121, 27098), (126, 27161), (127, 27170), (142, 27233), (175, 27449), (185, 27509),

Gene: ChosenOne\_32 Start: 28849, Stop: 30351, Start Num: 19

Candidate Starts for ChosenOne\_32:

(Start: 19 @28849 has 223 MA's), (Start: 28 @28918 has 3 MA's), (35, 28996), (47, 29092), (49, 29113), (51, 29119), (55, 29203), (57, 29224), (60, 29275), (64, 29329), (71, 29404), (85, 29539), (87, 29551), (93, 29620), (95, 29629), (103, 29734), (112, 29803), (119, 29929), (126, 30010), (150, 30133), (155, 30160), (156, 30166), (162, 30184), (170, 30220),

Gene: ChotaBhai\_32 Start: 28887, Stop: 30389, Start Num: 19

Candidate Starts for ChotaBhai\_32:

(Start: 19 @28887 has 223 MA's), (Start: 28 @28956 has 3 MA's), (35, 29034), (47, 29130), (49, 29151), (51, 29157), (55, 29241), (57, 29262), (60, 29313), (64, 29367), (71, 29442), (85, 29577), (87, 29589), (93, 29658), (95, 29667), (103, 29772), (112, 29841), (119, 29967), (126, 30048), (155, 30198), (156, 30204), (162, 30222), (170, 30258),

Gene: Chris\_29 Start: 24088, Stop: 25749, Start Num: 17

Candidate Starts for Chris\_29:

(Start: 17 @24088 has 15 MA's), (24, 24124), (25, 24127), (27, 24139), (29, 24166), (35, 24232), (49, 24349), (55, 24439), (57, 24460), (59, 24493), (70, 24622), (71, 24637), (75, 24676), (93, 24862), (95, 24871), (103, 24976), (115, 25084), (119, 25165), (126, 25246), (129, 25279), (137, 25300), (156, 25435), (171, 25507), (178, 25573), (194, 25723),

Gene: Cjw1\_32 Start: 30401, Stop: 31903, Start Num: 19

Candidate Starts for Cjw1\_32:

(Start: 19 @30401 has 223 MA's), (Start: 28 @30470 has 3 MA's), (35, 30548), (47, 30644), (49, 30665), (51, 30671), (55, 30755), (57, 30776), (60, 30827), (64, 30881), (71, 30956), (85, 31091), (87, 31103), (93, 31172), (95, 31181), (103, 31286), (112, 31355), (119, 31481), (126, 31562), (150, 31685), (155, 31712), (156, 31718), (162, 31736), (170, 31772),

Gene: Collard\_29 Start: 25557, Stop: 27191, Start Num: 19

Candidate Starts for Collard\_29:

(Start: 19 @25557 has 223 MA's), (Start: 21 @25563 has 1 MA's), (Start: 22 @25578 has 1 MA's), (32, 25683), (36, 25707), (39, 25722), (44, 25770), (52, 25842), (55, 25893), (57, 25914), (69, 26064), (70, 26076), (71, 26091), (75, 26130), (86, 26238), (87, 26247), (93, 26316), (94, 26322), (95, 26325), (110, 26490), (112, 26499), (115, 26538), (117, 26583), (119, 26619), (126, 26703), (129, 26736), (130, 26739), (155, 26886), (156, 26892), (166, 26928), (170, 26946), (186, 27081), (192, 27147), (196, 27180),

Gene: Command613\_33 Start: 29908, Stop: 31410, Start Num: 19

Candidate Starts for Command613\_33:

(Start: 19 @29908 has 223 MA's), (Start: 28 @29977 has 3 MA's), (35, 30055), (47, 30151), (49, 30172), (51, 30178), (55, 30262), (57, 30283), (60, 30334), (64, 30388), (71, 30463), (85, 30598), (87, 30610), (93, 30679), (95, 30688), (103, 30793), (112, 30862), (119, 30988), (126, 31069), (150, 31192), (155, 31219), (156, 31225), (162, 31243), (170, 31279),

Gene: Constella\_39 Start: 36912, Stop: 38330, Start Num: 19

Candidate Starts for Constella\_39:

(Start: 19 @36912 has 223 MA's), (27, 36966), (32, 37038), (34, 37053), (35, 37059), (45, 37140), (55, 37248), (56, 37260), (57, 37269), (59, 37302), (61, 37320), (72, 37452), (76, 37503), (91, 37635), (95, 37668), (96, 37671), (116, 37863), (120, 37950), (125, 38013), (126, 38037), (127, 38046), (136, 38091), (138, 38103), (152, 38196), (153, 38199), (161, 38229), (162, 38232),

Gene: Contagion\_31 Start: 29145, Stop: 30647, Start Num: 19

Candidate Starts for Contagion\_31:

(Start: 19 @29145 has 223 MA's), (Start: 28 @29214 has 3 MA's), (35, 29292), (47, 29388), (49, 29409), (51, 29415), (55, 29499), (57, 29520), (60, 29571), (64, 29625), (71, 29700), (85, 29835), (87, 29847), (93, 29916), (95, 29925), (103, 30030), (112, 30099), (119, 30225), (126, 30306), (155, 30456), (156, 30462), (162, 30480), (170, 30516),

Gene: Cookies\_32 Start: 29510, Stop: 31012, Start Num: 19

Candidate Starts for Cookies\_32:

(Start: 19 @29510 has 223 MA's), (Start: 28 @29579 has 3 MA's), (35, 29657), (47, 29753), (49, 29774), (51, 29780), (55, 29864), (57, 29885), (60, 29936), (64, 29990), (71, 30065), (85, 30200), (87, 30212), (93, 30281), (95, 30290), (103, 30395), (112, 30464), (119, 30590), (126, 30671), (155, 30821), (156, 30827), (162, 30845), (170, 30881),

Gene: CrystalP\_32 Start: 29641, Stop: 31143, Start Num: 19

Candidate Starts for CrystalP\_32:

(Start: 19 @29641 has 223 MA's), (Start: 28 @29710 has 3 MA's), (35, 29788), (47, 29884), (49, 29905), (51, 29911), (55, 29995), (57, 30016), (60, 30067), (64, 30121), (71, 30196), (85, 30331), (87,

30343), (93, 30412), (95, 30421), (103, 30526), (112, 30595), (119, 30721), (126, 30802), (155, 30952), (162, 30976), (170, 31012),

Gene: Czyszczone1\_33 Start: 29386, Stop: 30888, Start Num: 19

Candidate Starts for Czyszczone1\_33:

(Start: 19 @29386 has 223 MA's), (Start: 28 @29455 has 3 MA's), (35, 29533), (47, 29629), (49, 29650), (51, 29656), (55, 29740), (57, 29761), (60, 29812), (64, 29866), (71, 29941), (85, 30076), (87, 30088), (93, 30157), (95, 30166), (103, 30271), (112, 30340), (119, 30466), (126, 30547), (144, 30643), (150, 30670), (155, 30697), (156, 30703), (162, 30721), (170, 30757),

Gene: Dadosky\_30 Start: 25528, Stop: 27162, Start Num: 19

Candidate Starts for Dadosky\_30:

(Start: 19 @25528 has 223 MA's), (Start: 21 @25534 has 1 MA's), (Start: 22 @25549 has 1 MA's), (30, 25612), (32, 25654), (36, 25678), (39, 25693), (44, 25741), (52, 25813), (53, 25816), (55, 25864), (57, 25885), (69, 26035), (70, 26047), (75, 26101), (86, 26209), (87, 26218), (93, 26287), (94, 26293), (95, 26296), (102, 26383), (107, 26437), (110, 26461), (115, 26509), (119, 26590), (126, 26674), (129, 26707), (130, 26710), (155, 26857), (156, 26863), (166, 26899), (170, 26917), (186, 27052), (192, 27118), (196, 27151),

Gene: Daikon\_31 Start: 29448, Stop: 30881, Start Num: 28

Candidate Starts for Daikon\_31:

(Start: 19 @29379 has 223 MA's), (Start: 28 @29448 has 3 MA's), (35, 29526), (47, 29622), (49, 29643), (51, 29649), (55, 29733), (57, 29754), (60, 29805), (64, 29859), (71, 29934), (85, 30069), (87, 30081), (93, 30150), (95, 30159), (103, 30264), (112, 30333), (119, 30459), (126, 30540), (155, 30690), (162, 30714), (170, 30750),

Gene: Dallas\_49 Start: 40306, Stop: 41724, Start Num: 19

Candidate Starts for Dallas\_49:

(Start: 19 @40306 has 223 MA's), (27, 40360), (32, 40432), (35, 40453), (45, 40534), (52, 40591), (55, 40642), (56, 40654), (57, 40663), (61, 40714), (72, 40846), (76, 40897), (91, 41029), (95, 41062), (96, 41065), (100, 41110), (116, 41257), (120, 41344), (125, 41407), (126, 41431), (127, 41440), (152, 41590), (161, 41623), (162, 41626),

Gene: DmpstrDiver\_48 Start: 40296, Stop: 41729, Start Num: 20

Candidate Starts for DmpstrDiver\_48:

(15, 40263), (Start: 16 @40287 has 2 MA's), (Start: 20 @40296 has 20 MA's), (40, 40461), (41, 40482), (43, 40512), (49, 40554), (50, 40557), (57, 40665), (72, 40851), (76, 40902), (91, 41034), (95, 41067), (96, 41070), (116, 41262), (120, 41349), (125, 41412), (126, 41436), (127, 41445), (152, 41595), (161, 41628), (162, 41631),

Gene: DoctorDiddles\_32 Start: 28803, Stop: 30305, Start Num: 19

Candidate Starts for DoctorDiddles\_32:

(Start: 19 @28803 has 223 MA's), (Start: 28 @28872 has 3 MA's), (35, 28950), (47, 29046), (49, 29067), (51, 29073), (55, 29157), (57, 29178), (60, 29229), (64, 29283), (71, 29358), (85, 29493), (87, 29505), (93, 29574), (95, 29583), (103, 29688), (112, 29757), (119, 29883), (126, 29964), (144, 30060), (150, 30087), (155, 30114), (156, 30120), (162, 30138), (170, 30174),

Gene: Dove\_44 Start: 39836, Stop: 41254, Start Num: 19

Candidate Starts for Dove\_44:

(Start: 19 @39836 has 223 MA's), (27, 39890), (32, 39962), (35, 39983), (45, 40064), (52, 40121), (55, 40172), (56, 40184), (57, 40193), (61, 40244), (72, 40376), (76, 40427), (85, 40502), (91, 40559), (95, 40592), (96, 40595), (116, 40787), (120, 40874), (125, 40937), (126, 40961), (127, 40970), (149, 41099), (155, 41132), (161, 41153), (162, 41156),



Gene: DrDrey\_33 Start: 30133, Stop: 31635, Start Num: 19

Candidate Starts for DrDrey\_33:

(Start: 19 @30133 has 223 MA's), (Start: 28 @30202 has 3 MA's), (35, 30280), (47, 30376), (49, 30397), (51, 30403), (55, 30487), (57, 30508), (60, 30559), (64, 30613), (71, 30688), (85, 30823), (87, 30835), (93, 30904), (95, 30913), (103, 31018), (112, 31087), (119, 31213), (126, 31294), (155, 31444), (156, 31450), (162, 31468), (170, 31504),

Gene: Duke13\_50 Start: 40614, Stop: 42047, Start Num: 20

Candidate Starts for Duke13\_50:

(15, 40581), (Start: 16 @40605 has 2 MA's), (Start: 20 @40614 has 20 MA's), (40, 40779), (41, 40800), (43, 40830), (49, 40872), (50, 40875), (57, 40983), (72, 41169), (76, 41220), (91, 41352), (95, 41385), (96, 41388), (116, 41580), (120, 41667), (125, 41730), (126, 41754), (127, 41763), (152, 41913), (161, 41946), (162, 41949),

Gene: Dumbo\_32 Start: 29108, Stop: 30610, Start Num: 19

Candidate Starts for Dumbo\_32:

(Start: 19 @29108 has 223 MA's), (Start: 28 @29177 has 3 MA's), (35, 29255), (47, 29351), (49, 29372), (51, 29378), (55, 29462), (57, 29483), (60, 29534), (64, 29588), (71, 29663), (85, 29798), (87, 29810), (93, 29879), (95, 29888), (103, 29993), (112, 30062), (119, 30188), (126, 30269), (144, 30365), (150, 30392), (155, 30419), (156, 30425), (162, 30443), (170, 30479),

Gene: Dusk\_31 Start: 29293, Stop: 30795, Start Num: 19

Candidate Starts for Dusk\_31:

(Start: 19 @29293 has 223 MA's), (Start: 28 @29362 has 3 MA's), (35, 29440), (47, 29536), (49, 29557), (51, 29563), (55, 29647), (57, 29668), (60, 29719), (64, 29773), (71, 29848), (85, 29983), (87, 29995), (93, 30064), (95, 30073), (103, 30178), (112, 30247), (119, 30373), (126, 30454), (144, 30550), (150, 30577), (155, 30604), (156, 30610), (162, 30628), (170, 30664),

Gene: Easy2Say\_34 Start: 30891, Stop: 32393, Start Num: 19

Candidate Starts for Easy2Say\_34:

(Start: 19 @30891 has 223 MA's), (Start: 28 @30960 has 3 MA's), (35, 31038), (47, 31134), (49, 31155), (51, 31161), (55, 31245), (57, 31266), (60, 31317), (64, 31371), (71, 31446), (85, 31581), (87, 31593), (93, 31662), (95, 31671), (103, 31776), (112, 31845), (119, 31971), (126, 32052), (144, 32148), (150, 32175), (155, 32202), (156, 32208), (162, 32226), (170, 32262),

Gene: Ebony\_10 Start: 6285, Stop: 7682, Start Num: 20

Candidate Starts for Ebony\_10:

(Start: 20 @6285 has 20 MA's), (34, 6423), (35, 6429), (39, 6447), (52, 6567), (55, 6618), (57, 6639), (59, 6672), (73, 6819), (77, 6882), (79, 6888), (98, 7032), (105, 7113), (109, 7140), (128, 7344), (135, 7365), (140, 7389), (147, 7449), (152, 7482), (168, 7548), (179, 7644),

Gene: Edugator\_29 Start: 25527, Stop: 27161, Start Num: 19

Candidate Starts for Edugator\_29:

(Start: 19 @25527 has 223 MA's), (Start: 21 @25533 has 1 MA's), (Start: 22 @25548 has 1 MA's), (30, 25611), (32, 25653), (33, 25665), (36, 25677), (39, 25692), (44, 25740), (52, 25812), (53, 25815), (55, 25863), (57, 25884), (69, 26034), (70, 26046), (75, 26100), (86, 26208), (87, 26217), (93, 26286), (94, 26292), (95, 26295), (102, 26382), (107, 26436), (110, 26460), (115, 26508), (119, 26589), (126, 26673), (129, 26706), (130, 26709), (155, 26856), (156, 26862), (170, 26916), (186, 27051), (192, 27117), (196, 27150),

Gene: Ejimix\_47 Start: 41566, Stop: 42984, Start Num: 19

Candidate Starts for Ejimix\_47:

(Start: 19 @41566 has 223 MA's), (27, 41620), (32, 41692), (35, 41713), (45, 41794), (52, 41851), (55, 41902), (56, 41914), (57, 41923), (61, 41974), (72, 42106), (76, 42157), (91, 42289), (95, 42322), (96, 42325), (116, 42517), (120, 42604), (125, 42667), (126, 42691), (127, 42700), (152, 42850), (161, 42883), (162, 42886),

Gene: Elite2014\_31 Start: 28848, Stop: 30350, Start Num: 19

Candidate Starts for Elite2014\_31:

(Start: 19 @28848 has 223 MA's), (Start: 28 @28917 has 3 MA's), (35, 28995), (47, 29091), (49, 29112), (51, 29118), (55, 29202), (57, 29223), (60, 29274), (64, 29328), (71, 29403), (85, 29538), (87, 29550), (93, 29619), (95, 29628), (103, 29733), (112, 29802), (119, 29928), (126, 30009), (150, 30132), (155, 30159), (156, 30165), (162, 30183), (170, 30219),

Gene: Elph10\_33 Start: 29111, Stop: 30613, Start Num: 19

Candidate Starts for Elph10\_33:

(Start: 19 @29111 has 223 MA's), (Start: 28 @29180 has 3 MA's), (35, 29258), (47, 29354), (49, 29375), (51, 29381), (55, 29465), (57, 29486), (60, 29537), (64, 29591), (71, 29666), (85, 29801), (87, 29813), (93, 29882), (95, 29891), (103, 29996), (112, 30065), (119, 30191), (126, 30272), (144, 30368), (150, 30395), (155, 30422), (156, 30428), (162, 30446), (170, 30482),

Gene: Emmina\_33 Start: 29469, Stop: 30971, Start Num: 19

Candidate Starts for Emmina\_33:

(Start: 19 @29469 has 223 MA's), (Start: 28 @29538 has 3 MA's), (35, 29616), (47, 29712), (49, 29733), (51, 29739), (55, 29823), (57, 29844), (60, 29895), (64, 29949), (71, 30024), (85, 30159), (87, 30171), (93, 30240), (95, 30249), (103, 30354), (112, 30423), (119, 30549), (126, 30630), (150, 30753), (155, 30780), (156, 30786), (162, 30804), (170, 30840),

Gene: Enkosi\_26 Start: 24344, Stop: 25981, Start Num: 17

Candidate Starts for Enkosi\_26:

(Start: 17 @24344 has 15 MA's), (25, 24386), (29, 24425), (33, 24482), (35, 24491), (42, 24563), (48, 24590), (55, 24698), (57, 24719), (59, 24752), (71, 24896), (75, 24935), (87, 25052), (89, 25091), (91, 25100), (93, 25121), (94, 25127), (95, 25130), (103, 25235), (110, 25295), (119, 25424), (126, 25499), (142, 25592), (187, 25874), (194, 25955), (196, 25970),

Gene: Eponine\_33 Start: 26784, Stop: 28394, Start Num: 19

Candidate Starts for Eponine\_33:

(Start: 19 @26784 has 223 MA's), (Start: 28 @26853 has 3 MA's), (32, 26910), (33, 26922), (35, 26931), (36, 26934), (39, 26949), (46, 27003), (51, 27036), (52, 27069), (55, 27120), (57, 27141), (59, 27174), (70, 27303), (75, 27348), (87, 27465), (91, 27513), (93, 27534), (94, 27540), (95, 27543), (103, 27648), (115, 27756), (119, 27837), (121, 27855), (126, 27918), (127, 27927), (142, 27990), (175, 28206), (185, 28266),

Gene: EricMillard\_47 Start: 41067, Stop: 42485, Start Num: 19

Candidate Starts for EricMillard\_47:

(Start: 19 @41067 has 223 MA's), (27, 41121), (32, 41193), (35, 41214), (45, 41295), (52, 41352), (55, 41403), (56, 41415), (57, 41424), (61, 41475), (72, 41607), (76, 41658), (91, 41790), (95, 41823), (96, 41826), (116, 42018), (120, 42105), (125, 42168), (126, 42192), (127, 42201), (152, 42351), (161, 42384), (162, 42387),

Gene: Et2Brutus\_9 Start: 6227, Stop: 7627, Start Num: 19

Candidate Starts for Et2Brutus\_9:

(13, 6188), (Start: 19 @6227 has 223 MA's), (34, 6368), (35, 6374), (39, 6392), (52, 6512), (55, 6563), (57, 6584), (59, 6617), (73, 6764), (77, 6827), (79, 6833), (98, 6977), (105, 7058), (109, 7085), (128, 7289), (135, 7310), (140, 7334), (147, 7394), (152, 7427), (168, 7493), (179, 7589),

Gene: Eureka\_32 Start: 29624, Stop: 31126, Start Num: 19

Candidate Starts for Eureka\_32:

(Start: 19 @29624 has 223 MA's), (Start: 28 @29693 has 3 MA's), (35, 29771), (47, 29867), (49, 29888), (51, 29894), (55, 29978), (57, 29999), (60, 30050), (64, 30104), (71, 30179), (85, 30314), (87, 30326), (93, 30395), (95, 30404), (103, 30509), (112, 30578), (119, 30704), (126, 30785), (144, 30881), (155, 30935), (156, 30941), (162, 30959), (170, 30995),

Gene: FairyPath\_32 Start: 29905, Stop: 31338, Start Num: 28

Candidate Starts for FairyPath\_32:

(Start: 19 @29836 has 223 MA's), (Start: 28 @29905 has 3 MA's), (35, 29983), (47, 30079), (49, 30100), (51, 30106), (55, 30190), (57, 30211), (60, 30262), (64, 30316), (71, 30391), (85, 30526), (87, 30538), (93, 30607), (95, 30616), (103, 30721), (112, 30790), (119, 30916), (126, 30997), (144, 31093), (150, 31120), (155, 31147), (156, 31153), (162, 31171), (170, 31207),

Gene: Feyre\_29 Start: 25333, Stop: 26967, Start Num: 19

Candidate Starts for Feyre\_29:

(Start: 19 @25333 has 223 MA's), (Start: 21 @25339 has 1 MA's), (Start: 22 @25354 has 1 MA's), (32, 25459), (36, 25483), (39, 25498), (44, 25546), (52, 25618), (53, 25621), (55, 25669), (57, 25690), (66, 25819), (69, 25840), (70, 25852), (71, 25867), (75, 25906), (86, 26014), (87, 26023), (93, 26092), (94, 26098), (95, 26101), (103, 26206), (107, 26242), (110, 26266), (115, 26314), (119, 26395), (126, 26479), (129, 26512), (130, 26515), (144, 26608), (150, 26635), (155, 26662), (156, 26668), (166, 26704), (170, 26722), (171, 26740), (173, 26773), (176, 26797), (182, 26833), (184, 26848), (186, 26857), (192, 26923), (194, 26941),

Gene: Fibonacci\_10 Start: 6227, Stop: 7627, Start Num: 19

Candidate Starts for Fibonacci\_10:

(13, 6188), (Start: 19 @6227 has 223 MA's), (34, 6368), (35, 6374), (39, 6392), (52, 6512), (55, 6563), (57, 6584), (59, 6617), (73, 6764), (77, 6827), (79, 6833), (98, 6977), (105, 7058), (109, 7085), (128, 7289), (135, 7310), (140, 7334), (147, 7394), (152, 7427), (168, 7493), (179, 7589),

Gene: Filch\_33 Start: 29399, Stop: 30901, Start Num: 19

Candidate Starts for Filch\_33:

(Start: 19 @29399 has 223 MA's), (Start: 28 @29468 has 3 MA's), (35, 29546), (47, 29642), (49, 29663), (51, 29669), (55, 29753), (57, 29774), (60, 29825), (64, 29879), (71, 29954), (85, 30089), (87, 30101), (93, 30170), (95, 30179), (103, 30284), (112, 30353), (119, 30479), (126, 30560), (150, 30683), (155, 30710), (156, 30716), (162, 30734), (170, 30770),

Gene: Fionnbharth\_31 Start: 26020, Stop: 27630, Start Num: 19

Candidate Starts for Fionnbharth\_31:

(Start: 19 @26020 has 223 MA's), (Start: 28 @26089 has 3 MA's), (32, 26146), (33, 26158), (35, 26167), (36, 26170), (39, 26185), (46, 26239), (51, 26272), (52, 26305), (55, 26356), (57, 26377), (59, 26410), (62, 26467), (70, 26539), (75, 26584), (87, 26701), (91, 26749), (93, 26770), (94, 26776), (95, 26779), (103, 26884), (115, 26992), (119, 27073), (121, 27091), (126, 27154), (127, 27163), (142, 27226), (175, 27442), (185, 27502),

Gene: FireRed\_32 Start: 29669, Stop: 31171, Start Num: 19

Candidate Starts for FireRed\_32:

(Start: 19 @29669 has 223 MA's), (Start: 28 @29738 has 3 MA's), (35, 29816), (47, 29912), (49, 29933), (51, 29939), (55, 30023), (57, 30044), (60, 30095), (64, 30149), (71, 30224), (85, 30359), (87, 30371), (93, 30440), (95, 30449), (103, 30554), (112, 30623), (119, 30749), (126, 30830), (144, 30926), (150, 30953), (155, 30980), (156, 30986), (162, 31004), (170, 31040),

Gene: Flaverint\_10 Start: 6224, Stop: 7624, Start Num: 19

Candidate Starts for Flaverint\_10:

(13, 6185), (Start: 19 @6224 has 223 MA's), (35, 6371), (39, 6389), (52, 6509), (55, 6560), (57, 6581), (59, 6614), (73, 6761), (77, 6824), (79, 6830), (98, 6974), (105, 7055), (109, 7082), (128, 7286), (135, 7307), (140, 7331), (147, 7391), (152, 7424), (168, 7490), (179, 7586),

Gene: Flypotenuse\_30 Start: 29237, Stop: 30739, Start Num: 19

Candidate Starts for Flypotenuse\_30:

(Start: 19 @29237 has 223 MA's), (Start: 28 @29306 has 3 MA's), (35, 29384), (47, 29480), (49, 29501), (51, 29507), (55, 29591), (57, 29612), (60, 29663), (64, 29717), (71, 29792), (85, 29927), (87, 29939), (93, 30008), (95, 30017), (103, 30122), (112, 30191), (119, 30317), (126, 30398), (155, 30548), (156, 30554), (162, 30572), (170, 30608),

Gene: FoghornLeghorn\_31 Start: 29145, Stop: 30647, Start Num: 19

Candidate Starts for FoghornLeghorn\_31:

(Start: 19 @29145 has 223 MA's), (Start: 28 @29214 has 3 MA's), (35, 29292), (47, 29388), (49, 29409), (51, 29415), (55, 29499), (57, 29520), (60, 29571), (64, 29625), (71, 29700), (85, 29835), (87, 29847), (93, 29916), (95, 29925), (103, 30030), (112, 30099), (119, 30225), (126, 30306), (144, 30402), (150, 30429), (155, 30456), (156, 30462), (162, 30480), (170, 30516),

Gene: Gage\_34 Start: 29631, Stop: 31133, Start Num: 19

Candidate Starts for Gage\_34:

(Start: 19 @29631 has 223 MA's), (Start: 28 @29700 has 3 MA's), (35, 29778), (47, 29874), (49, 29895), (51, 29901), (55, 29985), (57, 30006), (60, 30057), (64, 30111), (71, 30186), (85, 30321), (87, 30333), (93, 30402), (95, 30411), (103, 30516), (112, 30585), (119, 30711), (126, 30792), (150, 30915), (155, 30942), (156, 30948), (162, 30966), (170, 31002),

Gene: Gaia\_32 Start: 28916, Stop: 30328, Start Num: 20

Candidate Starts for Gaia\_32:

(3, 28700), (4, 28709), (5, 28712), (8, 28784), (9, 28787), (11, 28859), (12, 28871), (14, 28877), (Start: 20 @28916 has 20 MA's), (Start: 21 @28919 has 1 MA's), (Start: 28 @28982 has 3 MA's), (36, 29063), (40, 29081), (41, 29102), (43, 29132), (49, 29174), (50, 29177), (51, 29180), (57, 29285), (72, 29471), (73, 29477), (76, 29522), (95, 29687), (102, 29768), (116, 29882), (119, 29966), (120, 29969), (124, 30029), (125, 30032), (126, 30056), (131, 30080), (132, 30083), (155, 30209), (156, 30215), (161, 30230), (162, 30233),

Gene: Gator\_30 Start: 29249, Stop: 30751, Start Num: 19

Candidate Starts for Gator\_30:

(Start: 19 @29249 has 223 MA's), (Start: 28 @29318 has 3 MA's), (35, 29396), (47, 29492), (49, 29513), (51, 29519), (55, 29603), (57, 29624), (60, 29675), (64, 29729), (71, 29804), (85, 29939), (87, 29951), (93, 30020), (95, 30029), (103, 30134), (112, 30203), (119, 30329), (126, 30410), (144, 30506), (150, 30533), (155, 30560), (156, 30566), (162, 30584), (170, 30620),

Gene: Gemini\_35 Start: 30148, Stop: 31650, Start Num: 19

Candidate Starts for Gemini\_35:

(Start: 19 @30148 has 223 MA's), (Start: 28 @30217 has 3 MA's), (35, 30295), (47, 30391), (49, 30412), (51, 30418), (55, 30502), (57, 30523), (60, 30574), (64, 30628), (71, 30703), (85, 30838), (87, 30850), (93, 30919), (95, 30928), (103, 31033), (112, 31102), (119, 31228), (126, 31309), (150, 31432), (155, 31459), (156, 31465), (162, 31483), (170, 31519),

Gene: Gengar\_29 Start: 25443, Stop: 27077, Start Num: 19

Candidate Starts for Gengar\_29:

(Start: 19 @25443 has 223 MA's), (Start: 21 @25449 has 1 MA's), (Start: 22 @25464 has 1 MA's), (32, 25569), (36, 25593), (39, 25608), (44, 25656), (52, 25728), (53, 25731), (55, 25779), (57, 25800), (66, 25929), (69, 25950), (70, 25962), (71, 25977), (75, 26016), (86, 26124), (87, 26133), (93, 26202), (94, 26208), (95, 26211), (103, 26316), (107, 26352), (110, 26376), (115, 26424), (119, 26505), (126, 26589), (129, 26622), (130, 26625), (144, 26718), (150, 26745), (155, 26772), (156, 26778), (166, 26814), (170, 26832), (171, 26850), (173, 26883), (176, 26907), (182, 26943), (184, 26958), (186, 26967), (192, 27033), (194, 27051),

Gene: Gilberta\_10 Start: 6221, Stop: 7621, Start Num: 19

Candidate Starts for Gilberta\_10:

(13, 6182), (Start: 19 @6221 has 223 MA's), (35, 6368), (39, 6386), (52, 6506), (55, 6557), (57, 6578), (59, 6611), (73, 6758), (77, 6821), (79, 6827), (98, 6971), (105, 7052), (109, 7079), (128, 7283), (135, 7304), (140, 7328), (147, 7388), (152, 7421), (168, 7487), (179, 7583),

Gene: Glexan\_30 Start: 29237, Stop: 30739, Start Num: 19

Candidate Starts for Glexan\_30:

(Start: 19 @29237 has 223 MA's), (Start: 28 @29306 has 3 MA's), (35, 29384), (47, 29480), (49, 29501), (51, 29507), (55, 29591), (57, 29612), (60, 29663), (64, 29717), (71, 29792), (85, 29927), (87, 29939), (93, 30008), (95, 30017), (103, 30122), (112, 30191), (119, 30317), (126, 30398), (155, 30548), (156, 30554), (162, 30572), (170, 30608),

Gene: Goku\_32 Start: 29353, Stop: 30855, Start Num: 19

Candidate Starts for Goku\_32:

(Start: 19 @29353 has 223 MA's), (Start: 28 @29422 has 3 MA's), (35, 29500), (47, 29596), (49, 29617), (51, 29623), (55, 29707), (57, 29728), (60, 29779), (64, 29833), (71, 29908), (85, 30043), (87, 30055), (93, 30124), (95, 30133), (103, 30238), (112, 30307), (119, 30433), (126, 30514), (144, 30610), (155, 30664), (156, 30670), (162, 30688), (170, 30724),

Gene: GoldenSpark\_34 Start: 29631, Stop: 31133, Start Num: 19

Candidate Starts for GoldenSpark\_34:

(Start: 19 @29631 has 223 MA's), (Start: 28 @29700 has 3 MA's), (35, 29778), (47, 29874), (49, 29895), (51, 29901), (55, 29985), (57, 30006), (60, 30057), (64, 30111), (71, 30186), (85, 30321), (87, 30333), (93, 30402), (95, 30411), (103, 30516), (112, 30585), (119, 30711), (126, 30792), (150, 30915), (155, 30942), (156, 30948), (162, 30966), (170, 31002),

Gene: Goldilocks\_33 Start: 29051, Stop: 30553, Start Num: 19

Candidate Starts for Goldilocks\_33:

(Start: 19 @29051 has 223 MA's), (Start: 28 @29120 has 3 MA's), (35, 29198), (47, 29294), (49, 29315), (51, 29321), (55, 29405), (57, 29426), (60, 29477), (64, 29531), (71, 29606), (85, 29741), (87, 29753), (93, 29822), (95, 29831), (103, 29936), (112, 30005), (119, 30131), (126, 30212), (144, 30308), (150, 30335), (155, 30362), (156, 30368), (162, 30386), (170, 30422),

Gene: GooberAzure\_34 Start: 29631, Stop: 31133, Start Num: 19

Candidate Starts for GooberAzure\_34:

(Start: 19 @29631 has 223 MA's), (Start: 28 @29700 has 3 MA's), (35, 29778), (47, 29874), (49, 29895), (51, 29901), (55, 29985), (57, 30006), (60, 30057), (64, 30111), (71, 30186), (85, 30321), (87, 30333), (93, 30402), (95, 30411), (103, 30516), (112, 30585), (119, 30711), (126, 30792), (150, 30915), (155, 30942), (156, 30948), (162, 30966), (170, 31002),

Gene: Guillsminger\_29 Start: 25421, Stop: 27049, Start Num: 21

Candidate Starts for Guillsminger\_29:

(Start: 19 @25415 has 223 MA's), (Start: 21 @25421 has 1 MA's), (Start: 22 @25436 has 1 MA's), (32, 25541), (36, 25565), (39, 25580), (44, 25628), (52, 25700), (53, 25703), (55, 25751), (57, 25772), (66,

25901), (69, 25922), (70, 25934), (71, 25949), (75, 25988), (86, 26096), (87, 26105), (93, 26174), (94, 26180), (95, 26183), (103, 26288), (107, 26324), (110, 26348), (115, 26396), (119, 26477), (126, 26561), (129, 26594), (130, 26597), (144, 26690), (150, 26717), (155, 26744), (156, 26750), (166, 26786), (170, 26804), (171, 26822), (173, 26855), (184, 26930), (186, 26939), (192, 27005), (194, 27023),

Gene: Halley\_47 Start: 40780, Stop: 42198, Start Num: 19

Candidate Starts for Halley\_47:

(Start: 19 @40780 has 223 MA's), (27, 40834), (32, 40906), (35, 40927), (45, 41008), (52, 41065), (55, 41116), (56, 41128), (57, 41137), (61, 41188), (72, 41320), (76, 41371), (91, 41503), (95, 41536), (96, 41539), (116, 41731), (120, 41818), (125, 41881), (126, 41905), (127, 41914), (152, 42064), (161, 42097), (162, 42100),

Gene: HanKaySha\_33 Start: 29383, Stop: 30885, Start Num: 19

Candidate Starts for HanKaySha\_33:

(Start: 19 @29383 has 223 MA's), (Start: 28 @29452 has 3 MA's), (35, 29530), (47, 29626), (49, 29647), (51, 29653), (55, 29737), (57, 29758), (60, 29809), (64, 29863), (71, 29938), (85, 30073), (87, 30085), (93, 30154), (95, 30163), (103, 30268), (112, 30337), (119, 30463), (126, 30544), (144, 30640), (150, 30667), (155, 30694), (156, 30700), (162, 30718), (170, 30754),

Gene: Hannaconda\_42 Start: 34598, Stop: 36019, Start Num: 19

Candidate Starts for Hannaconda\_42:

(Start: 19 @34598 has 223 MA's), (35, 34745), (55, 34934), (57, 34955), (61, 35006), (72, 35138), (76, 35189), (95, 35354), (100, 35402), (120, 35636), (125, 35699), (126, 35723), (127, 35732), (152, 35882), (161, 35915), (162, 35918),

Gene: Harella\_31 Start: 29753, Stop: 31255, Start Num: 19

Candidate Starts for Harella\_31:

(Start: 19 @29753 has 223 MA's), (Start: 28 @29822 has 3 MA's), (35, 29900), (47, 29996), (49, 30017), (51, 30023), (55, 30107), (57, 30128), (60, 30179), (64, 30233), (71, 30308), (85, 30443), (87, 30455), (93, 30524), (95, 30533), (103, 30638), (112, 30707), (119, 30833), (126, 30914), (155, 31064), (156, 31070), (162, 31088), (170, 31124),

Gene: Heftyboy\_29 Start: 25564, Stop: 27198, Start Num: 19

Candidate Starts for Heftyboy\_29:

(Start: 19 @25564 has 223 MA's), (Start: 21 @25570 has 1 MA's), (Start: 22 @25585 has 1 MA's), (32, 25690), (36, 25714), (44, 25777), (52, 25849), (53, 25852), (55, 25900), (57, 25921), (66, 26050), (69, 26071), (70, 26083), (71, 26098), (75, 26137), (83, 26230), (86, 26245), (87, 26254), (93, 26323), (94, 26329), (95, 26332), (110, 26497), (115, 26545), (119, 26626), (126, 26710), (129, 26743), (130, 26746), (150, 26866), (155, 26893), (156, 26899), (166, 26935), (170, 26953), (171, 26971), (182, 27064), (184, 27079), (186, 27088), (192, 27154),

Gene: Henry\_33 Start: 29641, Stop: 31143, Start Num: 19

Candidate Starts for Henry\_33:

(Start: 19 @29641 has 223 MA's), (Start: 28 @29710 has 3 MA's), (35, 29788), (47, 29884), (49, 29905), (51, 29911), (55, 29995), (57, 30016), (60, 30067), (64, 30121), (71, 30196), (85, 30331), (87, 30343), (93, 30412), (95, 30421), (103, 30526), (112, 30595), (119, 30721), (126, 30802), (155, 30952), (162, 30976), (170, 31012),

Gene: Highbury\_33 Start: 29299, Stop: 30801, Start Num: 19

Candidate Starts for Highbury\_33:

(Start: 19 @29299 has 223 MA's), (Start: 28 @29368 has 3 MA's), (35, 29446), (47, 29542), (49, 29563), (51, 29569), (55, 29653), (57, 29674), (60, 29725), (64, 29779), (71, 29854), (85, 29989), (87,

30001), (93, 30070), (95, 30079), (103, 30184), (112, 30253), (119, 30379), (126, 30460), (144, 30556), (150, 30583), (155, 30610), (156, 30616), (162, 30634), (170, 30670),

Gene: HokkenD\_40 Start: 39049, Stop: 40467, Start Num: 19

Candidate Starts for HokkenD\_40:

(Start: 19 @39049 has 223 MA's), (27, 39103), (32, 39175), (35, 39196), (45, 39277), (52, 39334), (55, 39385), (56, 39397), (57, 39406), (61, 39457), (72, 39589), (76, 39640), (91, 39772), (95, 39805), (96, 39808), (116, 40000), (120, 40087), (125, 40150), (126, 40174), (127, 40183), (152, 40333), (161, 40366), (162, 40369),

Gene: Holt\_33 Start: 28918, Stop: 30420, Start Num: 19

Candidate Starts for Holt\_33:

(Start: 19 @28918 has 223 MA's), (Start: 28 @28987 has 3 MA's), (35, 29065), (47, 29161), (49, 29182), (51, 29188), (55, 29272), (57, 29293), (60, 29344), (64, 29398), (71, 29473), (85, 29608), (87, 29620), (93, 29689), (95, 29698), (103, 29803), (112, 29872), (119, 29998), (126, 30079), (144, 30175), (150, 30202), (155, 30229), (156, 30235), (162, 30253), (170, 30289),

Gene: Hoonter\_34 Start: 29631, Stop: 31133, Start Num: 19

Candidate Starts for Hoonter\_34:

(Start: 19 @29631 has 223 MA's), (Start: 28 @29700 has 3 MA's), (35, 29778), (47, 29874), (49, 29895), (51, 29901), (55, 29985), (57, 30006), (60, 30057), (64, 30111), (71, 30186), (85, 30321), (87, 30333), (93, 30402), (95, 30411), (103, 30516), (112, 30585), (119, 30711), (126, 30792), (144, 30888), (150, 30915), (155, 30942), (156, 30948), (162, 30966), (170, 31002),

Gene: Hokey\_34 Start: 29918, Stop: 31420, Start Num: 19

Candidate Starts for Hokey\_34:

(Start: 19 @29918 has 223 MA's), (Start: 28 @29987 has 3 MA's), (35, 30065), (47, 30161), (49, 30182), (51, 30188), (55, 30272), (57, 30293), (60, 30344), (64, 30398), (71, 30473), (85, 30608), (87, 30620), (93, 30689), (95, 30698), (103, 30803), (112, 30872), (119, 30998), (126, 31079), (144, 31175), (150, 31202), (155, 31229), (156, 31235), (162, 31253), (170, 31289),

Gene: HufflyPuff\_31 Start: 29625, Stop: 31127, Start Num: 19

Candidate Starts for HufflyPuff\_31:

(Start: 19 @29625 has 223 MA's), (Start: 28 @29694 has 3 MA's), (35, 29772), (47, 29868), (49, 29889), (51, 29895), (55, 29979), (57, 30000), (60, 30051), (64, 30105), (71, 30180), (85, 30315), (87, 30327), (93, 30396), (95, 30405), (103, 30510), (112, 30579), (119, 30705), (126, 30786), (144, 30882), (150, 30909), (155, 30936), (156, 30942), (162, 30960), (170, 30996),

Gene: Hughesyang\_45 Start: 40709, Stop: 42127, Start Num: 19

Candidate Starts for Hughesyang\_45:

(Start: 19 @40709 has 223 MA's), (27, 40763), (32, 40835), (35, 40856), (45, 40937), (52, 40994), (55, 41045), (56, 41057), (57, 41066), (61, 41117), (72, 41249), (76, 41300), (91, 41432), (95, 41465), (96, 41468), (116, 41660), (120, 41747), (125, 41810), (126, 41834), (127, 41843), (152, 41993), (161, 42026), (162, 42029),

Gene: Hurricane\_31 Start: 25714, Stop: 27399, Start Num: 20

Candidate Starts for Hurricane\_31:

(Start: 20 @25714 has 20 MA's), (29, 25792), (35, 25858), (37, 25864), (49, 25957), (54, 26005), (55, 26047), (56, 26059), (57, 26068), (71, 26248), (75, 26287), (87, 26404), (91, 26452), (93, 26473), (94, 26479), (95, 26482), (103, 26587), (112, 26656), (117, 26740), (119, 26776), (126, 26854), (129, 26887), (143, 26959), (158, 27052), (165, 27082),

Gene: Hutc2\_10 Start: 6227, Stop: 7627, Start Num: 19

Candidate Starts for Hutc2\_10:

(13, 6188), (Start: 19 @6227 has 223 MA's), (34, 6368), (35, 6374), (39, 6392), (52, 6512), (55, 6563), (57, 6584), (59, 6617), (73, 6764), (77, 6827), (79, 6833), (98, 6977), (105, 7058), (109, 7085), (128, 7289), (135, 7310), (140, 7334), (147, 7394), (152, 7427), (168, 7493), (179, 7589),

Gene: IHOP\_32 Start: 29818, Stop: 31320, Start Num: 19

Candidate Starts for IHOP\_32:

(Start: 19 @29818 has 223 MA's), (Start: 28 @29887 has 3 MA's), (35, 29965), (47, 30061), (49, 30082), (51, 30088), (55, 30172), (57, 30193), (60, 30244), (64, 30298), (71, 30373), (85, 30508), (87, 30520), (93, 30589), (95, 30598), (103, 30703), (112, 30772), (119, 30898), (126, 30979), (150, 31102), (155, 31129), (156, 31135), (162, 31153), (170, 31189),

Gene: Ibrahim\_27 Start: 23579, Stop: 25162, Start Num: 19

Candidate Starts for Ibrahim\_27:

(Start: 19 @23579 has 223 MA's), (29, 23660), (31, 23678), (36, 23729), (38, 23741), (39, 23744), (55, 23915), (58, 23942), (70, 24104), (72, 24125), (75, 24149), (80, 24215), (86, 24257), (90, 24311), (95, 24353), (102, 24437), (106, 24473), (107, 24491), (119, 24641), (126, 24728), (146, 24839), (163, 24920), (189, 25121),

Gene: Icee\_31 Start: 29299, Stop: 30801, Start Num: 19

Candidate Starts for Icee\_31:

(Start: 19 @29299 has 223 MA's), (Start: 28 @29368 has 3 MA's), (35, 29446), (47, 29542), (49, 29563), (51, 29569), (55, 29653), (57, 29674), (60, 29725), (70, 29839), (85, 29989), (87, 30001), (93, 30070), (95, 30079), (103, 30184), (112, 30253), (119, 30379), (126, 30460), (155, 30610), (156, 30616), (162, 30634), (170, 30670),

Gene: Inca\_31 Start: 28320, Stop: 29822, Start Num: 19

Candidate Starts for Inca\_31:

(Start: 19 @28320 has 223 MA's), (Start: 28 @28389 has 3 MA's), (35, 28467), (47, 28563), (49, 28584), (51, 28590), (55, 28674), (57, 28695), (60, 28746), (64, 28800), (71, 28875), (85, 29010), (87, 29022), (93, 29091), (95, 29100), (103, 29205), (112, 29274), (119, 29400), (126, 29481), (150, 29604), (155, 29631), (156, 29637), (162, 29655), (170, 29691),

Gene: Insomnia\_10 Start: 6279, Stop: 7676, Start Num: 20

Candidate Starts for Insomnia\_10:

(Start: 20 @6279 has 20 MA's), (34, 6417), (35, 6423), (39, 6441), (52, 6561), (55, 6612), (57, 6633), (59, 6666), (73, 6813), (77, 6876), (79, 6882), (98, 7026), (105, 7107), (109, 7134), (128, 7338), (135, 7359), (140, 7383), (147, 7443), (152, 7476), (168, 7542), (179, 7638),

Gene: InvictusManeo\_29 Start: 25600, Stop: 27234, Start Num: 19

Candidate Starts for InvictusManeo\_29:

(Start: 19 @25600 has 223 MA's), (Start: 21 @25606 has 1 MA's), (Start: 22 @25621 has 1 MA's), (32, 25726), (36, 25750), (39, 25765), (44, 25813), (52, 25885), (55, 25936), (57, 25957), (69, 26107), (70, 26119), (71, 26134), (75, 26173), (86, 26281), (87, 26290), (93, 26359), (94, 26365), (95, 26368), (110, 26533), (112, 26542), (115, 26581), (117, 26626), (119, 26662), (126, 26746), (129, 26779), (130, 26782), (155, 26929), (156, 26935), (166, 26971), (170, 26989), (186, 27124), (192, 27190), (196, 27223),

Gene: JF1\_31 Start: 26019, Stop: 27629, Start Num: 19

Candidate Starts for JF1\_31:

(Start: 19 @26019 has 223 MA's), (Start: 28 @26088 has 3 MA's), (32, 26145), (33, 26157), (35, 26166), (36, 26169), (39, 26184), (46, 26238), (51, 26271), (52, 26304), (55, 26355), (57, 26376), (59, 26409), (62, 26466), (70, 26538), (75, 26583), (87, 26700), (91, 26748), (93, 26769), (94, 26775), (95,



26778), (103, 26883), (115, 26991), (119, 27072), (121, 27090), (126, 27153), (127, 27162), (142, 27225), (175, 27441), (185, 27501),

Gene: Jabith\_10 Start: 6279, Stop: 7676, Start Num: 20

Candidate Starts for Jabith\_10:

(Start: 20 @6279 has 20 MA's), (34, 6417), (35, 6423), (39, 6441), (52, 6561), (55, 6612), (57, 6633), (59, 6666), (73, 6813), (77, 6876), (79, 6882), (98, 7026), (105, 7107), (109, 7134), (128, 7338), (135, 7359), (140, 7383), (147, 7443), (152, 7476), (168, 7542), (179, 7638),

Gene: JeTaime\_34 Start: 30442, Stop: 31944, Start Num: 19

Candidate Starts for JeTaime\_34:

(Start: 19 @30442 has 223 MA's), (Start: 28 @30511 has 3 MA's), (35, 30589), (47, 30685), (49, 30706), (51, 30712), (55, 30796), (57, 30817), (60, 30868), (64, 30922), (71, 30997), (85, 31132), (87, 31144), (93, 31213), (95, 31222), (103, 31327), (112, 31396), (119, 31522), (126, 31603), (144, 31699), (150, 31726), (155, 31753), (156, 31759), (162, 31777), (170, 31813),

Gene: Joselito\_10 Start: 6224, Stop: 7624, Start Num: 19

Candidate Starts for Joselito\_10:

(13, 6185), (Start: 19 @6224 has 223 MA's), (35, 6371), (39, 6389), (52, 6509), (55, 6560), (57, 6581), (59, 6614), (73, 6761), (77, 6824), (79, 6830), (98, 6974), (105, 7055), (109, 7082), (128, 7286), (135, 7307), (140, 7331), (147, 7391), (152, 7424), (168, 7490), (179, 7586),

Gene: JuicyJay\_49 Start: 42529, Stop: 43947, Start Num: 19

Candidate Starts for JuicyJay\_49:

(Start: 19 @42529 has 223 MA's), (27, 42583), (32, 42655), (35, 42676), (45, 42757), (52, 42814), (55, 42865), (56, 42877), (57, 42886), (61, 42937), (72, 43069), (76, 43120), (85, 43195), (91, 43252), (95, 43285), (96, 43288), (116, 43480), (120, 43567), (125, 43630), (126, 43654), (127, 43663), (152, 43813), (161, 43846), (162, 43849),

Gene: Juliette\_33 Start: 26178, Stop: 27788, Start Num: 19

Candidate Starts for Juliette\_33:

(Start: 19 @26178 has 223 MA's), (Start: 28 @26247 has 3 MA's), (32, 26304), (33, 26316), (35, 26325), (36, 26328), (39, 26343), (51, 26430), (52, 26463), (55, 26514), (57, 26535), (59, 26568), (70, 26697), (75, 26742), (87, 26859), (91, 26907), (93, 26928), (94, 26934), (95, 26937), (115, 27150), (119, 27231), (121, 27249), (126, 27312), (127, 27321), (142, 27384), (175, 27600), (185, 27660),

Gene: Kalah2\_47 Start: 41117, Stop: 42535, Start Num: 19

Candidate Starts for Kalah2\_47:

(Start: 19 @41117 has 223 MA's), (27, 41171), (32, 41243), (35, 41264), (45, 41345), (52, 41402), (55, 41453), (56, 41465), (57, 41474), (61, 41525), (72, 41657), (76, 41708), (91, 41840), (95, 41873), (96, 41876), (116, 42068), (120, 42155), (125, 42218), (126, 42242), (127, 42251), (152, 42401), (161, 42434), (162, 42437),

Gene: Kanye\_34 Start: 30627, Stop: 32129, Start Num: 19

Candidate Starts for Kanye\_34:

(Start: 19 @30627 has 223 MA's), (Start: 28 @30696 has 3 MA's), (35, 30774), (47, 30870), (49, 30891), (51, 30897), (55, 30981), (57, 31002), (60, 31053), (64, 31107), (71, 31182), (85, 31317), (87, 31329), (93, 31398), (95, 31407), (103, 31512), (112, 31581), (119, 31707), (126, 31788), (144, 31884), (150, 31911), (155, 31938), (156, 31944), (162, 31962), (170, 31998),

Gene: KashFlow\_39 Start: 34219, Stop: 35640, Start Num: 19

Candidate Starts for KashFlow\_39:

(Start: 19 @34219 has 223 MA's), (35, 34366), (55, 34555), (57, 34576), (61, 34627), (72, 34759), (76, 34810), (95, 34975), (100, 35023), (120, 35257), (125, 35320), (126, 35344), (127, 35353), (152, 35503), (161, 35536), (162, 35539),

Gene: Keshu\_31 Start: 25708, Stop: 27387, Start Num: 20

Candidate Starts for Keshu\_31:

(Start: 20 @25708 has 20 MA's), (29, 25786), (35, 25852), (37, 25858), (49, 25951), (55, 26041), (56, 26053), (57, 26062), (71, 26242), (75, 26281), (87, 26398), (91, 26446), (93, 26467), (94, 26473), (95, 26476), (103, 26581), (112, 26650), (117, 26734), (119, 26770), (126, 26851), (143, 26956), (158, 27049), (165, 27079), (180, 27196), (184, 27271),

Gene: KiSi\_29 Start: 23968, Stop: 25626, Start Num: 17

Candidate Starts for KiSi\_29:

(Start: 17 @23968 has 15 MA's), (33, 24103), (35, 24112), (36, 24115), (39, 24130), (47, 24208), (55, 24319), (57, 24340), (59, 24373), (63, 24439), (70, 24502), (71, 24517), (75, 24556), (87, 24673), (93, 24742), (95, 24751), (103, 24856), (110, 24916), (115, 24964), (119, 25045), (126, 25123), (129, 25156), (154, 25303), (156, 25312), (171, 25384), (178, 25450), (194, 25600),

Gene: Kimchi\_34 Start: 29634, Stop: 31136, Start Num: 19

Candidate Starts for Kimchi\_34:

(Start: 19 @29634 has 223 MA's), (Start: 28 @29703 has 3 MA's), (35, 29781), (47, 29877), (49, 29898), (51, 29904), (55, 29988), (57, 30009), (60, 30060), (64, 30114), (71, 30189), (85, 30324), (87, 30336), (93, 30405), (95, 30414), (103, 30519), (112, 30588), (119, 30714), (126, 30795), (150, 30918), (155, 30945), (156, 30951), (162, 30969), (170, 31005),

Gene: Kinmap\_8 Start: 4508, Stop: 5944, Start Num: 20

Candidate Starts for Kinmap\_8:

(Start: 20 @4508 has 20 MA's), (27, 4559), (35, 4652), (36, 4655), (42, 4724), (55, 4859), (57, 4880), (59, 4913), (74, 5060), (81, 5159), (82, 5162), (92, 5231), (97, 5267), (99, 5279), (101, 5321), (104, 5348), (108, 5372), (114, 5414), (118, 5468), (122, 5513), (126, 5573), (140, 5648), (145, 5705), (156, 5762), (174, 5873),

Gene: Klein\_47 Start: 40341, Stop: 41759, Start Num: 19

Candidate Starts for Klein\_47:

(Start: 19 @40341 has 223 MA's), (27, 40395), (32, 40467), (35, 40488), (45, 40569), (52, 40626), (55, 40677), (56, 40689), (57, 40698), (61, 40749), (72, 40881), (76, 40932), (85, 41007), (91, 41064), (95, 41097), (96, 41100), (116, 41292), (120, 41379), (125, 41442), (126, 41466), (127, 41475), (149, 41604), (155, 41637), (161, 41658), (162, 41661),

Gene: Kostya\_33 Start: 29711, Stop: 31144, Start Num: 28

Candidate Starts for Kostya\_33:

(Start: 19 @29642 has 223 MA's), (Start: 28 @29711 has 3 MA's), (35, 29789), (47, 29885), (49, 29906), (51, 29912), (55, 29996), (57, 30017), (60, 30068), (64, 30122), (71, 30197), (85, 30332), (87, 30344), (93, 30413), (95, 30422), (103, 30527), (112, 30596), (119, 30722), (126, 30803), (155, 30953), (162, 30977), (170, 31013),

Gene: Kratio\_28 Start: 25231, Stop: 26865, Start Num: 19

Candidate Starts for Kratio\_28:

(Start: 19 @25231 has 223 MA's), (Start: 21 @25237 has 1 MA's), (Start: 22 @25252 has 1 MA's), (32, 25357), (36, 25381), (39, 25396), (44, 25444), (52, 25516), (55, 25567), (57, 25588), (69, 25738), (70, 25750), (71, 25765), (75, 25804), (86, 25912), (87, 25921), (93, 25990), (94, 25996), (95, 25999), (102, 26086), (110, 26164), (112, 26173), (115, 26212), (117, 26257), (119, 26293), (126, 26377), (129, 26410), (130, 26413), (155, 26560), (156, 26566), (166, 26602), (170, 26620), (186, 26755), (192,

26821), (196, 26854),

Gene: Kraw\_32 Start: 25943, Stop: 27553, Start Num: 19

Candidate Starts for Kraw\_32:

(Start: 19 @25943 has 223 MA's), (Start: 28 @26012 has 3 MA's), (32, 26069), (33, 26081), (35, 26090), (36, 26093), (39, 26108), (46, 26162), (51, 26195), (52, 26228), (55, 26279), (57, 26300), (59, 26333), (62, 26390), (70, 26462), (75, 26507), (87, 26624), (91, 26672), (93, 26693), (94, 26699), (95, 26702), (103, 26807), (115, 26915), (119, 26996), (121, 27014), (126, 27077), (127, 27086), (142, 27149), (175, 27365), (185, 27425),

Gene: Krueger\_30 Start: 24088, Stop: 25734, Start Num: 19

Candidate Starts for Krueger\_30:

(Start: 19 @24088 has 223 MA's), (Start: 28 @24157 has 3 MA's), (29, 24169), (33, 24226), (35, 24235), (55, 24424), (57, 24445), (59, 24481), (71, 24625), (75, 24664), (85, 24769), (93, 24850), (94, 24856), (95, 24859), (103, 24964), (113, 25036), (115, 25072), (119, 25153), (126, 25228), (129, 25261), (139, 25306), (143, 25333), (154, 25411), (165, 25456), (181, 25585), (186, 25624), (188, 25633), (190, 25654), (194, 25708),

Gene: Larva\_30 Start: 25395, Stop: 27029, Start Num: 19

Candidate Starts for Larva\_30:

(Start: 19 @25395 has 223 MA's), (Start: 21 @25401 has 1 MA's), (Start: 22 @25416 has 1 MA's), (30, 25479), (32, 25521), (36, 25545), (39, 25560), (44, 25608), (52, 25680), (53, 25683), (55, 25731), (57, 25752), (69, 25902), (70, 25914), (75, 25968), (86, 26076), (87, 26085), (93, 26154), (94, 26160), (95, 26163), (102, 26250), (107, 26304), (110, 26328), (115, 26376), (119, 26457), (126, 26541), (129, 26574), (130, 26577), (155, 26724), (156, 26730), (166, 26766), (170, 26784), (186, 26919), (192, 26985), (196, 27018),

Gene: LeMond\_29 Start: 24039, Stop: 25697, Start Num: 17

Candidate Starts for LeMond\_29:

(Start: 17 @24039 has 15 MA's), (33, 24174), (35, 24183), (36, 24186), (39, 24201), (47, 24279), (55, 24390), (57, 24411), (59, 24444), (63, 24510), (70, 24573), (71, 24588), (75, 24627), (87, 24744), (93, 24813), (95, 24822), (103, 24927), (110, 24987), (115, 25035), (119, 25116), (126, 25194), (129, 25227), (154, 25374), (156, 25383), (171, 25455), (178, 25521), (194, 25671),

Gene: Lea83\_32 Start: 25778, Stop: 27457, Start Num: 20

Candidate Starts for Lea83\_32:

(Start: 20 @25778 has 20 MA's), (29, 25856), (33, 25913), (35, 25922), (49, 26021), (55, 26111), (56, 26123), (57, 26132), (71, 26312), (75, 26351), (87, 26468), (91, 26516), (93, 26537), (94, 26543), (95, 26546), (103, 26651), (112, 26720), (117, 26804), (119, 26840), (126, 26918), (129, 26951), (143, 27023), (158, 27116), (164, 27143), (165, 27146), (180, 27263),

Gene: Lebo14\_32 Start: 26033, Stop: 27643, Start Num: 19

Candidate Starts for Lebo14\_32:

(Start: 19 @26033 has 223 MA's), (Start: 28 @26102 has 3 MA's), (32, 26159), (33, 26171), (35, 26180), (36, 26183), (39, 26198), (51, 26285), (52, 26318), (55, 26369), (57, 26390), (70, 26552), (75, 26597), (87, 26714), (93, 26783), (94, 26789), (95, 26792), (115, 27005), (119, 27086), (121, 27104), (126, 27167), (127, 27176), (142, 27239), (175, 27455), (185, 27515),

Gene: Leston\_29 Start: 25566, Stop: 27179, Start Num: 22

Candidate Starts for Leston\_29:

(Start: 19 @25545 has 223 MA's), (Start: 21 @25551 has 1 MA's), (Start: 22 @25566 has 1 MA's), (32, 25671), (36, 25695), (39, 25710), (44, 25758), (52, 25830), (53, 25833), (55, 25881), (57, 25902), (66, 26031), (69, 26052), (70, 26064), (71, 26079), (75, 26118), (86, 26226), (87, 26235), (93, 26304), (94,

26310), (95, 26313), (103, 26418), (107, 26454), (110, 26478), (115, 26526), (119, 26607), (126, 26691), (129, 26724), (130, 26727), (144, 26820), (150, 26847), (155, 26874), (156, 26880), (166, 26916), (170, 26934), (171, 26952), (173, 26985), (184, 27060), (186, 27069), (192, 27135), (194, 27153),

Gene: LilPharaoh\_26 Start: 24344, Stop: 25981, Start Num: 17

Candidate Starts for LilPharaoh\_26:

(Start: 17 @24344 has 15 MA's), (25, 24386), (29, 24425), (33, 24482), (35, 24491), (42, 24563), (48, 24590), (55, 24698), (57, 24719), (59, 24752), (71, 24896), (75, 24935), (87, 25052), (89, 25091), (91, 25100), (93, 25121), (94, 25127), (95, 25130), (103, 25235), (110, 25295), (119, 25424), (126, 25499), (142, 25592), (187, 25874), (194, 25955), (196, 25970),

Gene: Lilac\_34 Start: 29138, Stop: 30640, Start Num: 19

Candidate Starts for Lilac\_34:

(Start: 19 @29138 has 223 MA's), (Start: 28 @29207 has 3 MA's), (35, 29285), (47, 29381), (49, 29402), (51, 29408), (55, 29492), (57, 29513), (60, 29564), (64, 29618), (71, 29693), (85, 29828), (87, 29840), (93, 29909), (95, 29918), (103, 30023), (112, 30092), (119, 30218), (126, 30299), (144, 30395), (150, 30422), (155, 30449), (156, 30455), (162, 30473), (170, 30509),

Gene: Lilizi\_34 Start: 29346, Stop: 30848, Start Num: 19

Candidate Starts for Lilizi\_34:

(Start: 19 @29346 has 223 MA's), (Start: 28 @29415 has 3 MA's), (35, 29493), (47, 29589), (49, 29610), (51, 29616), (55, 29700), (57, 29721), (60, 29772), (64, 29826), (71, 29901), (85, 30036), (87, 30048), (93, 30117), (95, 30126), (103, 30231), (112, 30300), (119, 30426), (126, 30507), (144, 30603), (150, 30630), (155, 30657), (156, 30663), (162, 30681), (170, 30717),

Gene: Lilpickle\_31 Start: 28848, Stop: 30350, Start Num: 19

Candidate Starts for Lilpickle\_31:

(Start: 19 @28848 has 223 MA's), (Start: 28 @28917 has 3 MA's), (35, 28995), (47, 29091), (49, 29112), (51, 29118), (55, 29202), (57, 29223), (60, 29274), (64, 29328), (71, 29403), (85, 29538), (87, 29550), (93, 29619), (95, 29628), (103, 29733), (112, 29802), (119, 29928), (126, 30009), (150, 30132), (155, 30159), (156, 30165), (162, 30183), (170, 30219),

Gene: LittleE\_51 Start: 40578, Stop: 41996, Start Num: 19

Candidate Starts for LittleE\_51:

(Start: 19 @40578 has 223 MA's), (35, 40725), (52, 40863), (55, 40914), (56, 40926), (57, 40935), (59, 40968), (61, 40986), (72, 41118), (76, 41169), (95, 41334), (100, 41382), (120, 41616), (125, 41679), (126, 41703), (127, 41712), (152, 41862), (161, 41895), (162, 41898),

Gene: Lucivia\_10 Start: 6276, Stop: 7673, Start Num: 20

Candidate Starts for Lucivia\_10:

(Start: 20 @6276 has 20 MA's), (34, 6414), (35, 6420), (39, 6438), (52, 6558), (55, 6609), (57, 6630), (59, 6663), (73, 6810), (77, 6873), (79, 6879), (98, 7023), (105, 7104), (109, 7131), (128, 7335), (135, 7356), (140, 7380), (147, 7440), (152, 7473), (168, 7539), (179, 7635),

Gene: MISSy\_31 Start: 29153, Stop: 30655, Start Num: 19

Candidate Starts for MISSy\_31:

(Start: 19 @29153 has 223 MA's), (Start: 28 @29222 has 3 MA's), (35, 29300), (47, 29396), (49, 29417), (51, 29423), (55, 29507), (57, 29528), (60, 29579), (64, 29633), (71, 29708), (85, 29843), (87, 29855), (93, 29924), (95, 29933), (103, 30038), (112, 30107), (119, 30233), (126, 30314), (144, 30410), (150, 30437), (155, 30464), (156, 30470), (162, 30488), (170, 30524),

Gene: MPhalcon\_31 Start: 29147, Stop: 30649, Start Num: 19

Candidate Starts for MPhalcon\_31:

(Start: 19 @29147 has 223 MA's), (Start: 28 @29216 has 3 MA's), (35, 29294), (47, 29390), (49, 29411), (51, 29417), (55, 29501), (57, 29522), (60, 29573), (64, 29627), (71, 29702), (85, 29837), (87, 29849), (93, 29918), (95, 29927), (103, 30032), (112, 30101), (119, 30227), (126, 30308), (144, 30404), (150, 30431), (155, 30458), (156, 30464), (162, 30482), (170, 30518),

Gene: MaCh\_10 Start: 6221, Stop: 7621, Start Num: 19

Candidate Starts for MaCh\_10:

(13, 6182), (Start: 19 @6221 has 223 MA's), (35, 6368), (39, 6386), (52, 6506), (55, 6557), (57, 6578), (59, 6611), (73, 6758), (77, 6821), (79, 6827), (98, 6971), (105, 7052), (109, 7079), (128, 7283), (135, 7304), (140, 7328), (147, 7388), (152, 7421), (168, 7487), (179, 7583),

Gene: Mabel\_10 Start: 6291, Stop: 7688, Start Num: 20

Candidate Starts for Mabel\_10:

(Start: 20 @6291 has 20 MA's), (34, 6429), (35, 6435), (39, 6453), (52, 6573), (55, 6624), (57, 6645), (59, 6678), (73, 6825), (77, 6888), (79, 6894), (98, 7038), (105, 7119), (109, 7146), (128, 7350), (135, 7371), (140, 7395), (147, 7455), (152, 7488), (168, 7554), (179, 7650),

Gene: MacnCheese\_31 Start: 25776, Stop: 27434, Start Num: 20

Candidate Starts for MacnCheese\_31:

(Start: 20 @25776 has 20 MA's), (29, 25854), (32, 25899), (35, 25920), (37, 25926), (49, 26019), (54, 26067), (55, 26109), (56, 26121), (57, 26130), (68, 26265), (71, 26310), (75, 26349), (84, 26448), (87, 26466), (91, 26514), (93, 26535), (94, 26541), (95, 26544), (103, 26649), (112, 26718), (117, 26802), (119, 26838), (126, 26913), (141, 27006), (154, 27093), (155, 27096), (165, 27132), (167, 27144), (177, 27231), (186, 27327), (193, 27405), (194, 27411),

Gene: MadamMonkfish\_32 Start: 29059, Stop: 30561, Start Num: 19

Candidate Starts for MadamMonkfish\_32:

(Start: 19 @29059 has 223 MA's), (Start: 28 @29128 has 3 MA's), (35, 29206), (47, 29302), (49, 29323), (51, 29329), (55, 29413), (57, 29434), (60, 29485), (64, 29539), (71, 29614), (85, 29749), (87, 29761), (93, 29830), (95, 29839), (103, 29944), (112, 30013), (119, 30139), (126, 30220), (144, 30316), (150, 30343), (155, 30370), (156, 30376), (162, 30394), (170, 30430),

Gene: MalagasyRose\_30 Start: 24210, Stop: 25847, Start Num: 19

Candidate Starts for MalagasyRose\_30:

(Start: 19 @24210 has 223 MA's), (23, 24237), (30, 24294), (32, 24336), (35, 24357), (39, 24375), (53, 24516), (55, 24561), (57, 24582), (59, 24615), (66, 24711), (70, 24744), (71, 24759), (72, 24765), (75, 24798), (85, 24903), (86, 24906), (87, 24915), (88, 24942), (93, 24984), (95, 24993), (103, 25098), (110, 25158), (115, 25206), (119, 25287), (126, 25368), (127, 25377), (129, 25401), (148, 25512), (155, 25551), (169, 25602), (171, 25629), (183, 25725), (186, 25737), (190, 25767), (194, 25821),

Gene: Malthus\_32 Start: 25943, Stop: 27553, Start Num: 19

Candidate Starts for Malthus\_32:

(Start: 19 @25943 has 223 MA's), (Start: 28 @26012 has 3 MA's), (32, 26069), (33, 26081), (35, 26090), (36, 26093), (39, 26108), (46, 26162), (51, 26195), (52, 26228), (55, 26279), (57, 26300), (59, 26333), (62, 26390), (70, 26462), (75, 26507), (87, 26624), (91, 26672), (93, 26693), (94, 26699), (95, 26702), (103, 26807), (115, 26915), (119, 26996), (121, 27014), (126, 27077), (127, 27086), (142, 27149), (175, 27365), (185, 27425),

Gene: Manda\_33 Start: 30126, Stop: 31628, Start Num: 19

Candidate Starts for Manda\_33:

(Start: 19 @30126 has 223 MA's), (Start: 28 @30195 has 3 MA's), (35, 30273), (47, 30369), (49, 30390), (51, 30396), (55, 30480), (57, 30501), (60, 30552), (64, 30606), (71, 30681), (85, 30816), (87,

30828), (93, 30897), (95, 30906), (103, 31011), (112, 31080), (119, 31206), (126, 31287), (155, 31437), (156, 31443), (162, 31461), (170, 31497),

Gene: MarkPhew\_30 Start: 23940, Stop: 25595, Start Num: 17

Candidate Starts for MarkPhew\_30:

(Start: 17 @23940 has 15 MA's), (25, 23979), (26, 23985), (29, 24018), (35, 24084), (47, 24180), (55, 24291), (57, 24312), (59, 24345), (70, 24474), (71, 24489), (75, 24528), (91, 24693), (93, 24714), (95, 24723), (103, 24828), (115, 24936), (119, 25017), (126, 25098), (154, 25278), (171, 25359), (178, 25425), (187, 25488), (194, 25569),

Gene: Marshmallow\_32 Start: 29639, Stop: 31141, Start Num: 19

Candidate Starts for Marshmallow\_32:

(Start: 19 @29639 has 223 MA's), (Start: 28 @29708 has 3 MA's), (35, 29786), (47, 29882), (49, 29903), (51, 29909), (55, 29993), (57, 30014), (60, 30065), (64, 30119), (71, 30194), (85, 30329), (87, 30341), (93, 30410), (95, 30419), (103, 30524), (112, 30593), (119, 30719), (126, 30800), (155, 30950), (156, 30956), (162, 30974), (170, 31010),

Gene: Maxxinista\_33 Start: 29108, Stop: 30610, Start Num: 19

Candidate Starts for Maxxinista\_33:

(Start: 19 @29108 has 223 MA's), (Start: 28 @29177 has 3 MA's), (35, 29255), (47, 29351), (49, 29372), (51, 29378), (55, 29462), (57, 29483), (60, 29534), (64, 29588), (71, 29663), (85, 29798), (87, 29810), (93, 29879), (95, 29888), (103, 29993), (112, 30062), (119, 30188), (126, 30269), (150, 30392), (155, 30419), (156, 30425), (162, 30443), (170, 30479),

Gene: Mdavu\_26 Start: 24332, Stop: 25969, Start Num: 17

Candidate Starts for Mdavu\_26:

(Start: 17 @24332 has 15 MA's), (25, 24374), (29, 24413), (33, 24470), (35, 24479), (42, 24551), (48, 24578), (55, 24686), (57, 24707), (59, 24740), (71, 24884), (75, 24923), (87, 25040), (89, 25079), (91, 25088), (93, 25109), (94, 25115), (95, 25118), (103, 25223), (110, 25283), (119, 25412), (126, 25487), (142, 25580), (187, 25862), (194, 25943), (196, 25958),

Gene: Mendokysei\_26 Start: 23388, Stop: 24968, Start Num: 19

Candidate Starts for Mendokysei\_26:

(Start: 19 @23388 has 223 MA's), (29, 23469), (38, 23550), (55, 23724), (58, 23751), (62, 23835), (67, 23877), (70, 23910), (75, 23955), (80, 24021), (83, 24048), (86, 24063), (90, 24117), (95, 24159), (102, 24243), (106, 24279), (107, 24297), (119, 24447), (123, 24504), (126, 24534), (146, 24645), (151, 24663), (163, 24726),

Gene: Mindy\_32 Start: 29488, Stop: 30921, Start Num: 28

Candidate Starts for Mindy\_32:

(Start: 19 @29419 has 223 MA's), (Start: 28 @29488 has 3 MA's), (35, 29566), (47, 29662), (49, 29683), (51, 29689), (55, 29773), (57, 29794), (60, 29845), (64, 29899), (71, 29974), (85, 30109), (87, 30121), (93, 30190), (95, 30199), (103, 30304), (112, 30373), (119, 30499), (126, 30580), (155, 30730), (162, 30754), (170, 30790),

Gene: Minerva\_53 Start: 42154, Stop: 43596, Start Num: 16

Candidate Starts for Minerva\_53:

(15, 42130), (Start: 16 @42154 has 2 MA's), (Start: 20 @42163 has 20 MA's), (40, 42328), (41, 42349), (43, 42379), (49, 42421), (50, 42424), (57, 42532), (72, 42718), (76, 42769), (91, 42901), (95, 42934), (96, 42937), (116, 43129), (120, 43216), (125, 43279), (126, 43303), (127, 43312), (149, 43441), (155, 43474), (161, 43495), (162, 43498),

Gene: Miniwave\_32 Start: 29838, Stop: 31340, Start Num: 19

Candidate Starts for Miniwave\_32:

(Start: 19 @29838 has 223 MA's), (Start: 28 @29907 has 3 MA's), (35, 29985), (47, 30081), (49, 30102), (51, 30108), (55, 30192), (57, 30213), (60, 30264), (64, 30318), (71, 30393), (85, 30528), (87, 30540), (93, 30609), (95, 30618), (103, 30723), (112, 30792), (119, 30918), (126, 30999), (144, 31095), (150, 31122), (155, 31149), (156, 31155), (162, 31173), (170, 31209),

Gene: Miryou\_29 Start: 25400, Stop: 27034, Start Num: 19

Candidate Starts for Miryou\_29:

(Start: 19 @25400 has 223 MA's), (Start: 21 @25406 has 1 MA's), (Start: 22 @25421 has 1 MA's), (32, 25526), (35, 25547), (36, 25550), (39, 25565), (44, 25613), (52, 25685), (53, 25688), (55, 25736), (57, 25757), (66, 25886), (69, 25907), (70, 25919), (71, 25934), (75, 25973), (86, 26081), (87, 26090), (93, 26159), (94, 26165), (95, 26168), (103, 26273), (107, 26309), (110, 26333), (115, 26381), (119, 26462), (126, 26546), (129, 26579), (130, 26582), (144, 26675), (150, 26702), (155, 26729), (156, 26735), (166, 26771), (170, 26789), (171, 26807), (173, 26840), (182, 26900), (192, 26990), (194, 27008), (196, 27023),

Gene: Misfit\_32 Start: 29728, Stop: 31230, Start Num: 19

Candidate Starts for Misfit\_32:

(Start: 19 @29728 has 223 MA's), (Start: 28 @29797 has 3 MA's), (35, 29875), (47, 29971), (49, 29992), (51, 29998), (55, 30082), (57, 30103), (60, 30154), (64, 30208), (71, 30283), (85, 30418), (87, 30430), (93, 30499), (95, 30508), (103, 30613), (112, 30682), (119, 30808), (126, 30889), (150, 31012), (155, 31039), (156, 31045), (162, 31063), (170, 31099),

Gene: MissDaisy\_31 Start: 25786, Stop: 27396, Start Num: 19

Candidate Starts for MissDaisy\_31:

(Start: 19 @25786 has 223 MA's), (Start: 28 @25855 has 3 MA's), (32, 25912), (33, 25924), (35, 25933), (36, 25936), (39, 25951), (46, 26005), (55, 26122), (57, 26143), (70, 26305), (75, 26350), (87, 26467), (88, 26494), (93, 26536), (95, 26545), (103, 26650), (115, 26758), (119, 26839), (126, 26920), (127, 26929), (142, 26992), (175, 27208),

Gene: Mitti\_31 Start: 25944, Stop: 27554, Start Num: 19

Candidate Starts for Mitti\_31:

(Start: 19 @25944 has 223 MA's), (Start: 28 @26013 has 3 MA's), (32, 26070), (33, 26082), (35, 26091), (36, 26094), (39, 26109), (46, 26163), (51, 26196), (55, 26280), (57, 26301), (59, 26334), (70, 26463), (75, 26508), (87, 26625), (93, 26694), (94, 26700), (95, 26703), (115, 26916), (119, 26997), (121, 27015), (126, 27078), (127, 27087), (142, 27150), (175, 27366), (185, 27426),

Gene: Moldemort\_33 Start: 29383, Stop: 30885, Start Num: 19

Candidate Starts for Moldemort\_33:

(Start: 19 @29383 has 223 MA's), (Start: 28 @29452 has 3 MA's), (35, 29530), (47, 29626), (49, 29647), (51, 29653), (55, 29737), (57, 29758), (60, 29809), (64, 29863), (71, 29938), (85, 30073), (87, 30085), (93, 30154), (95, 30163), (103, 30268), (112, 30337), (119, 30463), (126, 30544), (150, 30667), (155, 30694), (156, 30700), (162, 30718), (170, 30754),

Gene: Mosby\_31 Start: 29145, Stop: 30647, Start Num: 19

Candidate Starts for Mosby\_31:

(Start: 19 @29145 has 223 MA's), (Start: 28 @29214 has 3 MA's), (35, 29292), (47, 29388), (49, 29409), (51, 29415), (55, 29499), (57, 29520), (60, 29571), (64, 29625), (71, 29700), (85, 29835), (87, 29847), (93, 29916), (95, 29925), (103, 30030), (112, 30099), (119, 30225), (126, 30306), (155, 30456), (156, 30462), (162, 30480), (170, 30516),

Gene: Mulciber\_10 Start: 6227, Stop: 7627, Start Num: 19

Candidate Starts for Mulciber\_10:

(13, 6188), (Start: 19 @6227 has 223 MA's), (34, 6368), (35, 6374), (39, 6392), (52, 6512), (55, 6563), (57, 6584), (59, 6617), (73, 6764), (77, 6827), (79, 6833), (98, 6977), (105, 7058), (109, 7085), (128, 7289), (135, 7310), (140, 7334), (147, 7394), (152, 7427), (168, 7493), (179, 7589),

Gene: Munch\_10 Start: 6224, Stop: 7624, Start Num: 19

Candidate Starts for Munch\_10:

(13, 6185), (Start: 19 @6224 has 223 MA's), (35, 6371), (39, 6389), (52, 6509), (55, 6560), (57, 6581), (59, 6614), (73, 6761), (77, 6824), (79, 6830), (98, 6974), (105, 7055), (109, 7082), (128, 7286), (135, 7307), (140, 7331), (147, 7391), (152, 7424), (168, 7490), (179, 7586),

Gene: Murica\_31 Start: 29625, Stop: 31127, Start Num: 19

Candidate Starts for Murica\_31:

(Start: 19 @29625 has 223 MA's), (Start: 28 @29694 has 3 MA's), (35, 29772), (47, 29868), (49, 29889), (51, 29895), (55, 29979), (57, 30000), (60, 30051), (64, 30105), (71, 30180), (85, 30315), (87, 30327), (93, 30396), (95, 30405), (103, 30510), (112, 30579), (119, 30705), (126, 30786), (144, 30882), (150, 30909), (155, 30936), (156, 30942), (162, 30960), (170, 30996),

Gene: Murphy\_33 Start: 29620, Stop: 31122, Start Num: 19

Candidate Starts for Murphy\_33:

(Start: 19 @29620 has 223 MA's), (Start: 28 @29689 has 3 MA's), (35, 29767), (47, 29863), (49, 29884), (51, 29890), (55, 29974), (57, 29995), (60, 30046), (64, 30100), (71, 30175), (85, 30310), (87, 30322), (93, 30391), (95, 30400), (103, 30505), (112, 30574), (119, 30700), (126, 30781), (144, 30877), (150, 30904), (155, 30931), (156, 30937), (162, 30955), (170, 30991),

Gene: Myrale\_32 Start: 29504, Stop: 31006, Start Num: 19

Candidate Starts for Myrale\_32:

(Start: 19 @29504 has 223 MA's), (Start: 28 @29573 has 3 MA's), (35, 29651), (47, 29747), (49, 29768), (51, 29774), (55, 29858), (57, 29879), (60, 29930), (64, 29984), (71, 30059), (85, 30194), (87, 30206), (93, 30275), (95, 30284), (103, 30389), (112, 30458), (119, 30584), (126, 30665), (155, 30815), (156, 30821), (162, 30839), (170, 30875),

Gene: Nairb\_27 Start: 23579, Stop: 25162, Start Num: 19

Candidate Starts for Nairb\_27:

(Start: 19 @23579 has 223 MA's), (29, 23660), (31, 23678), (36, 23729), (38, 23741), (39, 23744), (55, 23915), (58, 23942), (70, 24104), (72, 24125), (75, 24149), (80, 24215), (86, 24257), (90, 24311), (95, 24353), (102, 24437), (106, 24473), (107, 24491), (119, 24641), (126, 24728), (146, 24839), (163, 24920), (189, 25121),

Gene: Nala\_32 Start: 29659, Stop: 31161, Start Num: 19

Candidate Starts for Nala\_32:

(Start: 19 @29659 has 223 MA's), (Start: 28 @29728 has 3 MA's), (35, 29806), (47, 29902), (49, 29923), (51, 29929), (55, 30013), (57, 30034), (60, 30085), (64, 30139), (71, 30214), (85, 30349), (87, 30361), (93, 30430), (95, 30439), (103, 30544), (112, 30613), (119, 30739), (126, 30820), (150, 30943), (155, 30970), (156, 30976), (162, 30994), (170, 31030),

Gene: Neighly\_30 Start: 25394, Stop: 27028, Start Num: 19

Candidate Starts for Neighly\_30:

(Start: 19 @25394 has 223 MA's), (Start: 21 @25400 has 1 MA's), (Start: 22 @25415 has 1 MA's), (30, 25478), (32, 25520), (36, 25544), (39, 25559), (44, 25607), (52, 25679), (53, 25682), (55, 25730), (57, 25751), (69, 25901), (70, 25913), (75, 25967), (86, 26075), (87, 26084), (93, 26153), (94, 26159), (95, 26162), (102, 26249), (107, 26303), (110, 26327), (115, 26375), (119, 26456), (126, 26540), (129, 26573), (130, 26576), (155, 26723), (156, 26729), (166, 26765), (170, 26783), (186, 26918), (192, 26984), (196, 27017),



Gene: Nekros\_45 Start: 39651, Stop: 41069, Start Num: 19

Candidate Starts for Nekros\_45:

(Start: 19 @39651 has 223 MA's), (30, 39735), (35, 39798), (45, 39879), (55, 39987), (57, 40008), (59, 40041), (61, 40059), (72, 40191), (76, 40242), (95, 40407), (100, 40455), (116, 40602), (120, 40689), (125, 40752), (126, 40776), (127, 40785), (152, 40935), (161, 40968), (162, 40971),

Gene: NelitzaMV\_32 Start: 29709, Stop: 31211, Start Num: 19

Candidate Starts for NelitzaMV\_32:

(Start: 19 @29709 has 223 MA's), (Start: 28 @29778 has 3 MA's), (35, 29856), (47, 29952), (49, 29973), (51, 29979), (55, 30063), (57, 30084), (60, 30135), (70, 30249), (85, 30399), (87, 30411), (93, 30480), (95, 30489), (103, 30594), (112, 30663), (119, 30789), (126, 30870), (155, 31020), (156, 31026), (162, 31044), (170, 31080),

Gene: Nergal\_26 Start: 22488, Stop: 24122, Start Num: 20

Candidate Starts for Nergal\_26:

(Start: 20 @22488 has 20 MA's), (Start: 28 @22557 has 3 MA's), (29, 22569), (33, 22626), (37, 22641), (55, 22824), (57, 22845), (58, 22851), (60, 22896), (70, 23007), (91, 23226), (93, 23247), (94, 23253), (95, 23256), (103, 23361), (110, 23421), (113, 23433), (115, 23469), (117, 23520), (119, 23556), (126, 23631), (129, 23664), (133, 23676), (139, 23715), (155, 23814), (167, 23862), (194, 24096),

Gene: Nette\_28 Start: 23397, Stop: 24977, Start Num: 19

Candidate Starts for Nette\_28:

(Start: 19 @23397 has 223 MA's), (29, 23478), (38, 23559), (55, 23733), (58, 23760), (62, 23844), (67, 23886), (70, 23919), (75, 23964), (80, 24030), (83, 24057), (86, 24072), (90, 24126), (95, 24168), (102, 24252), (106, 24288), (107, 24306), (119, 24456), (123, 24513), (126, 24543), (146, 24654), (151, 24672), (163, 24735),

Gene: Nibb\_29 Start: 24078, Stop: 25730, Start Num: 17

Candidate Starts for Nibb\_29:

(Start: 17 @24078 has 15 MA's), (27, 24129), (29, 24156), (35, 24222), (47, 24318), (55, 24429), (57, 24450), (59, 24483), (70, 24612), (75, 24666), (91, 24831), (93, 24852), (95, 24861), (103, 24966), (110, 25026), (115, 25074), (119, 25155), (126, 25233), (129, 25266), (154, 25413), (156, 25422), (157, 25425), (171, 25494), (178, 25560), (187, 25623), (194, 25704),

Gene: NihilNomen\_46 Start: 40857, Stop: 42275, Start Num: 19

Candidate Starts for NihilNomen\_46:

(Start: 19 @40857 has 223 MA's), (27, 40911), (32, 40983), (35, 41004), (45, 41085), (52, 41142), (55, 41193), (56, 41205), (57, 41214), (61, 41265), (72, 41397), (76, 41448), (85, 41523), (91, 41580), (95, 41613), (96, 41616), (116, 41808), (120, 41895), (125, 41958), (126, 41982), (127, 41991), (149, 42120), (155, 42153), (161, 42174), (162, 42177),

Gene: Nikao\_26 Start: 24344, Stop: 25981, Start Num: 17

Candidate Starts for Nikao\_26:

(Start: 17 @24344 has 15 MA's), (25, 24386), (29, 24425), (33, 24482), (35, 24491), (42, 24563), (48, 24590), (55, 24698), (57, 24719), (59, 24752), (71, 24896), (75, 24935), (87, 25052), (89, 25091), (91, 25100), (93, 25121), (94, 25127), (95, 25130), (103, 25235), (110, 25295), (119, 25424), (126, 25499), (142, 25592), (187, 25874), (194, 25955), (196, 25970),

Gene: Nimrod\_32 Start: 29883, Stop: 31385, Start Num: 19

Candidate Starts for Nimrod\_32:

(Start: 19 @29883 has 223 MA's), (Start: 28 @29952 has 3 MA's), (35, 30030), (47, 30126), (49, 30147), (51, 30153), (55, 30237), (57, 30258), (60, 30309), (64, 30363), (71, 30438), (85, 30573), (87,

30585), (93, 30654), (95, 30663), (103, 30768), (112, 30837), (119, 30963), (126, 31044), (144, 31140), (150, 31167), (155, 31194), (156, 31200), (162, 31218), (170, 31254),

Gene: NoSleep\_33 Start: 29380, Stop: 30882, Start Num: 19

Candidate Starts for NoSleep\_33:

(Start: 19 @29380 has 223 MA's), (Start: 28 @29449 has 3 MA's), (35, 29527), (47, 29623), (49, 29644), (51, 29650), (55, 29734), (57, 29755), (60, 29806), (64, 29860), (71, 29935), (85, 30070), (87, 30082), (93, 30151), (95, 30160), (103, 30265), (112, 30334), (119, 30460), (126, 30541), (150, 30664), (155, 30691), (156, 30697), (162, 30715), (170, 30751),

Gene: Nutello\_26 Start: 24344, Stop: 25981, Start Num: 17

Candidate Starts for Nutello\_26:

(Start: 17 @24344 has 15 MA's), (25, 24386), (29, 24425), (33, 24482), (35, 24491), (42, 24563), (48, 24590), (55, 24698), (57, 24719), (59, 24752), (71, 24896), (75, 24935), (87, 25052), (89, 25091), (91, 25100), (93, 25121), (94, 25127), (95, 25130), (103, 25235), (110, 25295), (119, 25424), (126, 25499), (142, 25592), (187, 25874), (194, 25955), (196, 25970),

Gene: Odette\_47 Start: 40090, Stop: 41508, Start Num: 19

Candidate Starts for Odette\_47:

(Start: 19 @40090 has 223 MA's), (27, 40144), (32, 40216), (35, 40237), (45, 40318), (52, 40375), (55, 40426), (56, 40438), (57, 40447), (61, 40498), (72, 40630), (76, 40681), (85, 40756), (91, 40813), (95, 40846), (96, 40849), (116, 41041), (120, 41128), (125, 41191), (126, 41215), (127, 41224), (152, 41374), (161, 41407), (162, 41410),

Gene: OkiRoe\_29 Start: 25416, Stop: 27050, Start Num: 19

Candidate Starts for OkiRoe\_29:

(Start: 19 @25416 has 223 MA's), (Start: 21 @25422 has 1 MA's), (Start: 22 @25437 has 1 MA's), (32, 25542), (36, 25566), (39, 25581), (44, 25629), (52, 25701), (53, 25704), (55, 25752), (57, 25773), (66, 25902), (69, 25923), (70, 25935), (71, 25950), (75, 25989), (86, 26097), (87, 26106), (93, 26175), (94, 26181), (95, 26184), (107, 26325), (110, 26349), (115, 26397), (119, 26478), (126, 26562), (129, 26595), (130, 26598), (150, 26718), (155, 26745), (156, 26751), (166, 26787), (170, 26805), (171, 26823), (173, 26856), (182, 26916), (192, 27006), (194, 27024), (196, 27039),

Gene: Omega\_50 Start: 41222, Stop: 42643, Start Num: 19

Candidate Starts for Omega\_50:

(Start: 19 @41222 has 223 MA's), (35, 41369), (45, 41450), (55, 41558), (56, 41570), (57, 41579), (59, 41612), (61, 41630), (72, 41762), (76, 41813), (95, 41978), (100, 42026), (116, 42173), (120, 42260), (126, 42347), (127, 42356), (152, 42506), (161, 42539), (162, 42542),

Gene: OmniCritical\_31 Start: 25928, Stop: 27538, Start Num: 19

Candidate Starts for OmniCritical\_31:

(Start: 19 @25928 has 223 MA's), (Start: 28 @25997 has 3 MA's), (32, 26054), (33, 26066), (35, 26075), (36, 26078), (39, 26093), (46, 26147), (51, 26180), (52, 26213), (55, 26264), (57, 26285), (59, 26318), (70, 26447), (75, 26492), (87, 26609), (91, 26657), (93, 26678), (94, 26684), (95, 26687), (115, 26900), (119, 26981), (121, 26999), (126, 27062), (127, 27071), (142, 27134), (175, 27350), (185, 27410),

Gene: Omnicron\_30 Start: 24325, Stop: 25953, Start Num: 19

Candidate Starts for Omnicron\_30:

(Start: 19 @24325 has 223 MA's), (Start: 22 @24346 has 1 MA's), (30, 24409), (32, 24451), (53, 24613), (55, 24661), (57, 24682), (62, 24772), (66, 24811), (70, 24844), (71, 24859), (72, 24865), (75, 24898), (78, 24946), (86, 25006), (87, 25015), (94, 25090), (95, 25093), (103, 25198), (112, 25267), (115, 25306), (119, 25387), (126, 25468), (129, 25501), (130, 25504), (150, 25624), (155, 25651),

(156, 25657), (166, 25693), (170, 25711), (171, 25729), (186, 25843), (194, 25927), (195, 25930), (196, 25942),

Gene: Optimus\_52 Start: 41748, Stop: 43181, Start Num: 20

Candidate Starts for Optimus\_52:

(15, 41715), (Start: 16 @41739 has 2 MA's), (Start: 20 @41748 has 20 MA's), (40, 41913), (41, 41934), (43, 41964), (49, 42006), (50, 42009), (57, 42117), (72, 42303), (76, 42354), (91, 42486), (95, 42519), (96, 42522), (116, 42714), (120, 42801), (125, 42864), (126, 42888), (127, 42897), (152, 43047), (161, 43080), (162, 43083),

Gene: Orange\_10 Start: 6224, Stop: 7624, Start Num: 19

Candidate Starts for Orange\_10:

(13, 6185), (Start: 19 @6224 has 223 MA's), (34, 6365), (35, 6371), (39, 6389), (52, 6509), (55, 6560), (57, 6581), (59, 6614), (73, 6761), (77, 6824), (79, 6830), (98, 6974), (105, 7055), (109, 7082), (128, 7286), (135, 7307), (140, 7331), (147, 7391), (152, 7424), (168, 7490), (179, 7586),

Gene: OrionPax\_33 Start: 29386, Stop: 30888, Start Num: 19

Candidate Starts for OrionPax\_33:

(Start: 19 @29386 has 223 MA's), (Start: 28 @29455 has 3 MA's), (35, 29533), (47, 29629), (49, 29650), (51, 29656), (55, 29740), (57, 29761), (60, 29812), (64, 29866), (71, 29941), (85, 30076), (87, 30088), (93, 30157), (95, 30166), (103, 30271), (112, 30340), (119, 30466), (126, 30547), (144, 30643), (150, 30670), (155, 30697), (156, 30703), (162, 30721), (170, 30757),

Gene: Oscar\_29 Start: 24040, Stop: 25698, Start Num: 17

Candidate Starts for Oscar\_29:

(Start: 17 @24040 has 15 MA's), (33, 24175), (35, 24184), (36, 24187), (39, 24202), (47, 24280), (55, 24391), (57, 24412), (59, 24445), (63, 24511), (70, 24574), (71, 24589), (75, 24628), (87, 24745), (93, 24814), (95, 24823), (103, 24928), (110, 24988), (115, 25036), (119, 25117), (126, 25195), (129, 25228), (154, 25375), (156, 25384), (171, 25456), (178, 25522), (191, 25645), (194, 25672),

Gene: Palpatine\_32 Start: 29655, Stop: 31157, Start Num: 19

Candidate Starts for Palpatine\_32:

(Start: 19 @29655 has 223 MA's), (Start: 28 @29724 has 3 MA's), (35, 29802), (47, 29898), (49, 29919), (51, 29925), (55, 30009), (57, 30030), (60, 30081), (64, 30135), (71, 30210), (85, 30345), (87, 30357), (93, 30426), (95, 30435), (103, 30540), (112, 30609), (119, 30735), (126, 30816), (144, 30912), (150, 30939), (155, 30966), (156, 30972), (162, 30990), (170, 31026),

Gene: Paola\_29 Start: 25415, Stop: 27049, Start Num: 19

Candidate Starts for Paola\_29:

(Start: 19 @25415 has 223 MA's), (Start: 21 @25421 has 1 MA's), (Start: 22 @25436 has 1 MA's), (32, 25541), (36, 25565), (39, 25580), (44, 25628), (52, 25700), (53, 25703), (55, 25751), (57, 25772), (66, 25901), (69, 25922), (70, 25934), (71, 25949), (75, 25988), (86, 26096), (87, 26105), (93, 26174), (94, 26180), (95, 26183), (103, 26288), (107, 26324), (110, 26348), (115, 26396), (119, 26477), (126, 26561), (129, 26594), (130, 26597), (144, 26690), (150, 26717), (155, 26744), (156, 26750), (166, 26786), (170, 26804), (171, 26822), (173, 26855), (184, 26930), (186, 26939), (192, 27005), (194, 27023),

Gene: Paperbeatsrock\_34 Start: 30621, Stop: 32123, Start Num: 19

Candidate Starts for Paperbeatsrock\_34:

(Start: 19 @30621 has 223 MA's), (Start: 28 @30690 has 3 MA's), (35, 30768), (47, 30864), (49, 30885), (51, 30891), (55, 30975), (57, 30996), (60, 31047), (64, 31101), (71, 31176), (85, 31311), (87, 31323), (93, 31392), (95, 31401), (103, 31506), (112, 31575), (119, 31701), (126, 31782), (144, 31878), (150, 31905), (155, 31932), (156, 31938), (162, 31956), (170, 31992),

Gene: Pat3\_31 Start: 28367, Stop: 29869, Start Num: 19

Candidate Starts for Pat3\_31:

(Start: 19 @28367 has 223 MA's), (Start: 28 @28436 has 3 MA's), (35, 28514), (47, 28610), (49, 28631), (51, 28637), (55, 28721), (57, 28742), (60, 28793), (64, 28847), (71, 28922), (85, 29057), (87, 29069), (93, 29138), (95, 29147), (103, 29252), (112, 29321), (119, 29447), (126, 29528), (155, 29678), (156, 29684), (162, 29702), (170, 29738),

Gene: Patt\_31 Start: 25762, Stop: 27372, Start Num: 19

Candidate Starts for Patt\_31:

(Start: 19 @25762 has 223 MA's), (Start: 28 @25831 has 3 MA's), (32, 25888), (33, 25900), (35, 25909), (36, 25912), (39, 25927), (46, 25981), (55, 26098), (57, 26119), (70, 26281), (75, 26326), (87, 26443), (88, 26470), (93, 26512), (95, 26521), (103, 26626), (115, 26734), (119, 26815), (126, 26896), (127, 26905), (142, 26968), (175, 27184),

Gene: Petersenfast\_9 Start: 6227, Stop: 7627, Start Num: 19

Candidate Starts for Petersenfast\_9:

(13, 6188), (Start: 19 @6227 has 223 MA's), (34, 6368), (35, 6374), (39, 6392), (52, 6512), (55, 6563), (57, 6584), (59, 6617), (73, 6764), (77, 6827), (79, 6833), (98, 6977), (105, 7058), (109, 7085), (128, 7289), (135, 7310), (140, 7334), (147, 7394), (152, 7427), (168, 7493), (179, 7589),

Gene: Petra64142\_34 Start: 30101, Stop: 31603, Start Num: 19

Candidate Starts for Petra64142\_34:

(Start: 19 @30101 has 223 MA's), (Start: 28 @30170 has 3 MA's), (35, 30248), (47, 30344), (49, 30365), (51, 30371), (55, 30455), (57, 30476), (60, 30527), (64, 30581), (71, 30656), (85, 30791), (87, 30803), (93, 30872), (95, 30881), (103, 30986), (112, 31055), (119, 31181), (126, 31262), (144, 31358), (150, 31385), (155, 31412), (156, 31418), (162, 31436), (170, 31472),

Gene: Phaja\_32 Start: 29817, Stop: 31319, Start Num: 19

Candidate Starts for Phaja\_32:

(Start: 19 @29817 has 223 MA's), (Start: 28 @29886 has 3 MA's), (35, 29964), (47, 30060), (49, 30081), (51, 30087), (55, 30171), (57, 30192), (60, 30243), (64, 30297), (71, 30372), (85, 30507), (87, 30519), (93, 30588), (95, 30597), (103, 30702), (112, 30771), (119, 30897), (126, 30978), (150, 31101), (155, 31128), (156, 31134), (162, 31152), (170, 31188),

Gene: Pharb\_29 Start: 25069, Stop: 26709, Start Num: 20

Candidate Starts for Pharb\_29:

(Start: 20 @25069 has 20 MA's), (24, 25105), (29, 25147), (33, 25204), (35, 25213), (37, 25219), (55, 25402), (56, 25414), (57, 25423), (68, 25558), (71, 25603), (75, 25642), (84, 25741), (86, 25750), (87, 25759), (93, 25828), (94, 25834), (95, 25837), (103, 25942), (112, 26011), (117, 26095), (119, 26131), (126, 26206), (141, 26299), (165, 26425), (172, 26470), (192, 26668),

Gene: Pharsalus\_33 Start: 30421, Stop: 31923, Start Num: 19

Candidate Starts for Pharsalus\_33:

(Start: 19 @30421 has 223 MA's), (Start: 28 @30490 has 3 MA's), (35, 30568), (47, 30664), (49, 30685), (51, 30691), (55, 30775), (57, 30796), (60, 30847), (64, 30901), (71, 30976), (85, 31111), (87, 31123), (93, 31192), (95, 31201), (103, 31306), (112, 31375), (119, 31501), (126, 31582), (144, 31678), (150, 31705), (155, 31732), (156, 31738), (162, 31756), (170, 31792),

Gene: PhatBacter\_32 Start: 29669, Stop: 31171, Start Num: 19

Candidate Starts for PhatBacter\_32:

(Start: 19 @29669 has 223 MA's), (Start: 28 @29738 has 3 MA's), (35, 29816), (47, 29912), (49, 29933), (51, 29939), (55, 30023), (57, 30044), (60, 30095), (64, 30149), (71, 30224), (85, 30359), (87,

30371), (93, 30440), (95, 30449), (103, 30554), (112, 30623), (119, 30749), (126, 30830), (144, 30926), (150, 30953), (155, 30980), (156, 30986), (162, 31004), (170, 31040),

Gene: Phaux\_31 Start: 29667, Stop: 31169, Start Num: 19

Candidate Starts for Phaux\_31:

(Start: 19 @29667 has 223 MA's), (Start: 28 @29736 has 3 MA's), (35, 29814), (47, 29910), (49, 29931), (51, 29937), (55, 30021), (57, 30042), (60, 30093), (64, 30147), (71, 30222), (85, 30357), (87, 30369), (93, 30438), (95, 30447), (103, 30552), (112, 30621), (119, 30747), (126, 30828), (144, 30924), (150, 30951), (155, 30978), (156, 30984), (162, 31002), (170, 31038),

Gene: PhelpsODU\_30 Start: 24247, Stop: 25893, Start Num: 19

Candidate Starts for PhelpsODU\_30:

(Start: 19 @24247 has 223 MA's), (Start: 28 @24316 has 3 MA's), (29, 24328), (33, 24385), (35, 24394), (55, 24583), (57, 24604), (65, 24727), (71, 24781), (75, 24820), (93, 25006), (95, 25015), (103, 25120), (113, 25192), (115, 25228), (119, 25309), (126, 25387), (129, 25420), (134, 25432), (139, 25465), (143, 25492), (154, 25570), (165, 25615), (181, 25744), (186, 25783), (190, 25813),

Gene: Phoebus\_46 Start: 41067, Stop: 42485, Start Num: 19

Candidate Starts for Phoebus\_46:

(Start: 19 @41067 has 223 MA's), (27, 41121), (32, 41193), (35, 41214), (45, 41295), (52, 41352), (55, 41403), (56, 41415), (57, 41424), (61, 41475), (72, 41607), (76, 41658), (91, 41790), (95, 41823), (96, 41826), (116, 42018), (120, 42105), (125, 42168), (126, 42192), (127, 42201), (152, 42351), (161, 42384), (162, 42387),

Gene: Phrank\_30 Start: 24197, Stop: 25843, Start Num: 19

Candidate Starts for Phrank\_30:

(Start: 19 @24197 has 223 MA's), (27, 24251), (29, 24278), (33, 24335), (35, 24344), (55, 24533), (57, 24554), (65, 24677), (71, 24731), (75, 24770), (93, 24956), (95, 24965), (103, 25070), (113, 25142), (115, 25178), (119, 25259), (126, 25337), (129, 25370), (134, 25382), (139, 25415), (143, 25442), (154, 25520), (165, 25565), (181, 25694), (186, 25733), (190, 25763), (194, 25817),

Gene: Phrux\_32 Start: 29382, Stop: 30884, Start Num: 19

Candidate Starts for Phrux\_32:

(Start: 19 @29382 has 223 MA's), (Start: 28 @29451 has 3 MA's), (35, 29529), (47, 29625), (49, 29646), (51, 29652), (55, 29736), (57, 29757), (60, 29808), (64, 29862), (71, 29937), (85, 30072), (87, 30084), (93, 30153), (95, 30162), (103, 30267), (112, 30336), (119, 30462), (126, 30543), (144, 30639), (150, 30666), (155, 30693), (156, 30699), (162, 30717), (170, 30753),

Gene: Pixie\_30 Start: 25256, Stop: 26941, Start Num: 20

Candidate Starts for Pixie\_30:

(Start: 20 @25256 has 20 MA's), (29, 25334), (34, 25394), (35, 25400), (37, 25406), (49, 25499), (55, 25589), (56, 25601), (57, 25610), (71, 25790), (75, 25829), (87, 25946), (91, 25994), (93, 26015), (94, 26021), (95, 26024), (103, 26129), (112, 26198), (117, 26282), (119, 26318), (126, 26396), (129, 26429), (143, 26501), (158, 26594), (165, 26624), (180, 26741),

Gene: Policronamos\_32 Start: 29667, Stop: 31169, Start Num: 19

Candidate Starts for Policronamos\_32:

(Start: 19 @29667 has 223 MA's), (Start: 28 @29736 has 3 MA's), (35, 29814), (47, 29910), (49, 29931), (51, 29937), (55, 30021), (57, 30042), (60, 30093), (64, 30147), (71, 30222), (85, 30357), (87, 30369), (93, 30438), (95, 30447), (103, 30552), (112, 30621), (119, 30747), (126, 30828), (144, 30924), (150, 30951), (155, 30978), (156, 30984), (162, 31002), (170, 31038),

Gene: Porky\_32 Start: 29478, Stop: 30980, Start Num: 19

Candidate Starts for Porky\_32:

(Start: 19 @29478 has 223 MA's), (Start: 28 @29547 has 3 MA's), (35, 29625), (47, 29721), (49, 29742), (51, 29748), (55, 29832), (57, 29853), (60, 29904), (64, 29958), (71, 30033), (85, 30168), (87, 30180), (93, 30249), (95, 30258), (103, 30363), (112, 30432), (119, 30558), (126, 30639), (144, 30735), (150, 30762), (155, 30789), (156, 30795), (162, 30813), (170, 30849),

Gene: Pound\_48 Start: 42088, Stop: 43506, Start Num: 19

Candidate Starts for Pound\_48:

(Start: 19 @42088 has 223 MA's), (27, 42142), (32, 42214), (35, 42235), (45, 42316), (52, 42373), (55, 42424), (56, 42436), (57, 42445), (61, 42496), (72, 42628), (76, 42679), (85, 42754), (91, 42811), (95, 42844), (96, 42847), (116, 43039), (120, 43126), (125, 43189), (126, 43213), (127, 43222), (149, 43351), (155, 43384), (161, 43405), (162, 43408),

Gene: Psycho\_30 Start: 25525, Stop: 27159, Start Num: 19

Candidate Starts for Psycho\_30:

(Start: 19 @25525 has 223 MA's), (Start: 21 @25531 has 1 MA's), (Start: 22 @25546 has 1 MA's), (30, 25609), (32, 25651), (36, 25675), (39, 25690), (44, 25738), (52, 25810), (53, 25813), (55, 25861), (57, 25882), (69, 26032), (70, 26044), (75, 26098), (86, 26206), (87, 26215), (93, 26284), (94, 26290), (95, 26293), (102, 26380), (107, 26434), (110, 26458), (115, 26506), (119, 26587), (126, 26671), (129, 26704), (130, 26707), (155, 26854), (156, 26860), (166, 26896), (170, 26914), (186, 27049), (192, 27115), (196, 27148),

Gene: Pumpkin\_34 Start: 29718, Stop: 31220, Start Num: 19

Candidate Starts for Pumpkin\_34:

(Start: 19 @29718 has 223 MA's), (Start: 28 @29787 has 3 MA's), (35, 29865), (47, 29961), (49, 29982), (51, 29988), (55, 30072), (57, 30093), (60, 30144), (64, 30198), (71, 30273), (85, 30408), (87, 30420), (93, 30489), (95, 30498), (103, 30603), (112, 30672), (119, 30798), (126, 30879), (144, 30975), (150, 31002), (155, 31029), (156, 31035), (162, 31053), (170, 31089),

Gene: Quallification\_33 Start: 29847, Stop: 31349, Start Num: 19

Candidate Starts for Quallification\_33:

(2, 29622), (Start: 19 @29847 has 223 MA's), (Start: 28 @29916 has 3 MA's), (35, 29994), (47, 30090), (49, 30111), (51, 30117), (55, 30201), (57, 30222), (60, 30273), (64, 30327), (71, 30402), (85, 30537), (87, 30549), (93, 30618), (95, 30627), (103, 30732), (112, 30801), (119, 30927), (126, 31008), (144, 31104), (150, 31131), (155, 31158), (156, 31164), (162, 31182), (170, 31218),

Gene: Rakim\_33 Start: 29747, Stop: 31249, Start Num: 19

Candidate Starts for Rakim\_33:

(Start: 19 @29747 has 223 MA's), (Start: 28 @29816 has 3 MA's), (35, 29894), (47, 29990), (49, 30011), (51, 30017), (55, 30101), (57, 30122), (60, 30173), (64, 30227), (71, 30302), (85, 30437), (87, 30449), (93, 30518), (95, 30527), (103, 30632), (112, 30701), (119, 30827), (126, 30908), (150, 31031), (155, 31058), (156, 31064), (162, 31082), (170, 31118),

Gene: Redno2\_45 Start: 37822, Stop: 39240, Start Num: 19

Candidate Starts for Redno2\_45:

(Start: 19 @37822 has 223 MA's), (27, 37876), (32, 37948), (35, 37969), (45, 38050), (52, 38107), (55, 38158), (56, 38170), (57, 38179), (61, 38230), (72, 38362), (76, 38413), (91, 38545), (95, 38578), (96, 38581), (100, 38626), (116, 38773), (120, 38860), (125, 38923), (126, 38947), (127, 38956), (152, 39106), (161, 39139), (162, 39142),

Gene: Reptar3000\_31 Start: 25755, Stop: 27365, Start Num: 19

Candidate Starts for Reptar3000\_31:

(Start: 19 @25755 has 223 MA's), (Start: 28 @25824 has 3 MA's), (32, 25881), (33, 25893), (35, 25902), (36, 25905), (39, 25920), (46, 25974), (51, 26007), (53, 26043), (55, 26091), (57, 26112), (59, 26145), (69, 26262), (70, 26274), (75, 26319), (87, 26436), (91, 26484), (93, 26505), (95, 26514), (103, 26619), (110, 26679), (112, 26688), (113, 26691), (119, 26808), (126, 26889), (127, 26898), (142, 26961), (175, 27177), (185, 27237),

Gene: Rimmer\_31 Start: 29207, Stop: 30709, Start Num: 19

Candidate Starts for Rimmer\_31:

(Start: 19 @29207 has 223 MA's), (Start: 28 @29276 has 3 MA's), (35, 29354), (47, 29450), (49, 29471), (51, 29477), (55, 29561), (57, 29582), (60, 29633), (64, 29687), (71, 29762), (85, 29897), (87, 29909), (93, 29978), (95, 29987), (103, 30092), (112, 30161), (119, 30287), (126, 30368), (144, 30464), (150, 30491), (155, 30518), (156, 30524), (162, 30542), (170, 30578),

Gene: RiverMonster\_32 Start: 29396, Stop: 30898, Start Num: 19

Candidate Starts for RiverMonster\_32:

(Start: 19 @29396 has 223 MA's), (Start: 28 @29465 has 3 MA's), (35, 29543), (47, 29639), (49, 29660), (51, 29666), (55, 29750), (57, 29771), (60, 29822), (64, 29876), (71, 29951), (85, 30086), (87, 30098), (93, 30167), (95, 30176), (103, 30281), (112, 30350), (119, 30476), (126, 30557), (150, 30680), (155, 30707), (156, 30713), (162, 30731), (170, 30767),

Gene: RonRayGun\_27 Start: 23579, Stop: 25162, Start Num: 19

Candidate Starts for RonRayGun\_27:

(Start: 19 @23579 has 223 MA's), (29, 23660), (31, 23678), (36, 23729), (38, 23741), (39, 23744), (55, 23915), (58, 23942), (70, 24104), (72, 24125), (75, 24149), (80, 24215), (86, 24257), (90, 24311), (95, 24353), (102, 24437), (106, 24473), (107, 24491), (119, 24641), (126, 24728), (146, 24839), (163, 24920), (189, 25121),

Gene: Ruthiejr\_32 Start: 25909, Stop: 27519, Start Num: 19

Candidate Starts for Ruthiejr\_32:

(Start: 19 @25909 has 223 MA's), (Start: 28 @25978 has 3 MA's), (32, 26035), (33, 26047), (35, 26056), (36, 26059), (39, 26074), (51, 26161), (52, 26194), (55, 26245), (57, 26266), (59, 26299), (70, 26428), (75, 26473), (87, 26590), (91, 26638), (93, 26659), (94, 26665), (95, 26668), (115, 26881), (119, 26962), (121, 26980), (126, 27043), (127, 27052), (142, 27115), (175, 27331), (185, 27391),

Gene: Saints25\_33 Start: 29299, Stop: 30801, Start Num: 19

Candidate Starts for Saints25\_33:

(Start: 19 @29299 has 223 MA's), (Start: 28 @29368 has 3 MA's), (35, 29446), (47, 29542), (49, 29563), (51, 29569), (55, 29653), (57, 29674), (60, 29725), (64, 29779), (71, 29854), (85, 29989), (87, 30001), (93, 30070), (95, 30079), (103, 30184), (112, 30253), (119, 30379), (126, 30460), (144, 30556), (150, 30583), (155, 30610), (156, 30616), (162, 30634), (170, 30670),

Gene: Salz\_10 Start: 6224, Stop: 7624, Start Num: 19

Candidate Starts for Salz\_10:

(13, 6185), (Start: 19 @6224 has 223 MA's), (34, 6365), (35, 6371), (39, 6389), (52, 6509), (55, 6560), (57, 6581), (59, 6614), (73, 6761), (77, 6824), (79, 6830), (98, 6974), (105, 7055), (109, 7082), (128, 7286), (135, 7307), (140, 7331), (147, 7391), (152, 7424), (168, 7490), (179, 7586),

Gene: SamScheppers\_31 Start: 26422, Stop: 28032, Start Num: 19

Candidate Starts for SamScheppers\_31:

(Start: 19 @26422 has 223 MA's), (Start: 28 @26491 has 3 MA's), (32, 26548), (33, 26560), (35, 26569), (36, 26572), (39, 26587), (51, 26674), (52, 26707), (55, 26758), (57, 26779), (59, 26812), (70, 26941), (75, 26986), (87, 27103), (91, 27151), (93, 27172), (94, 27178), (95, 27181), (115, 27394), (119, 27475), (121, 27493), (126, 27556), (127, 27565), (142, 27628), (175, 27844), (185, 27904),

Gene: Sassay\_31 Start: 29145, Stop: 30647, Start Num: 19

Candidate Starts for Sassay\_31:

(Start: 19 @29145 has 223 MA's), (Start: 28 @29214 has 3 MA's), (35, 29292), (47, 29388), (49, 29409), (51, 29415), (55, 29499), (57, 29520), (60, 29571), (64, 29625), (71, 29700), (85, 29835), (87, 29847), (93, 29916), (95, 29925), (103, 30030), (112, 30099), (119, 30225), (126, 30306), (155, 30456), (156, 30462), (162, 30480), (170, 30516),

Gene: Scarlett\_29 Start: 24041, Stop: 25699, Start Num: 17

Candidate Starts for Scarlett\_29:

(Start: 17 @24041 has 15 MA's), (33, 24176), (35, 24185), (36, 24188), (39, 24203), (47, 24281), (55, 24392), (57, 24413), (59, 24446), (63, 24512), (70, 24575), (71, 24590), (75, 24629), (87, 24746), (93, 24815), (95, 24824), (103, 24929), (110, 24989), (115, 25037), (119, 25118), (126, 25196), (129, 25229), (154, 25376), (156, 25385), (171, 25457), (178, 25523), (194, 25673),

Gene: Schatzie\_44 Start: 39838, Stop: 41256, Start Num: 19

Candidate Starts for Schatzie\_44:

(Start: 19 @39838 has 223 MA's), (27, 39892), (32, 39964), (35, 39985), (45, 40066), (52, 40123), (55, 40174), (56, 40186), (57, 40195), (61, 40246), (72, 40378), (76, 40429), (85, 40504), (91, 40561), (95, 40594), (96, 40597), (116, 40789), (120, 40876), (125, 40939), (126, 40963), (127, 40972), (152, 41122), (161, 41155), (162, 41158),

Gene: SgtBeansprout\_26 Start: 24344, Stop: 25981, Start Num: 17

Candidate Starts for SgtBeansprout\_26:

(Start: 17 @24344 has 15 MA's), (25, 24386), (29, 24425), (33, 24482), (35, 24491), (42, 24563), (48, 24590), (55, 24698), (57, 24719), (59, 24752), (71, 24896), (75, 24935), (87, 25052), (89, 25091), (91, 25100), (93, 25121), (94, 25127), (95, 25130), (103, 25235), (110, 25295), (119, 25424), (126, 25499), (142, 25592), (187, 25874), (194, 25955), (196, 25970),

Gene: Shaboozey\_38 Start: 33959, Stop: 35380, Start Num: 19

Candidate Starts for Shaboozey\_38:

(Start: 19 @33959 has 223 MA's), (35, 34106), (45, 34187), (55, 34295), (56, 34307), (57, 34316), (59, 34349), (61, 34367), (72, 34499), (76, 34550), (95, 34715), (100, 34763), (116, 34910), (120, 34997), (125, 35060), (126, 35084), (127, 35093), (152, 35243), (161, 35276), (162, 35279),

Gene: Shadow1\_29 Start: 24070, Stop: 25716, Start Num: 19

Candidate Starts for Shadow1\_29:

(Start: 19 @24070 has 223 MA's), (Start: 28 @24139 has 3 MA's), (29, 24151), (33, 24208), (35, 24217), (55, 24406), (57, 24427), (65, 24550), (69, 24577), (70, 24589), (71, 24604), (75, 24643), (93, 24829), (95, 24838), (103, 24943), (110, 25003), (115, 25051), (119, 25132), (126, 25210), (129, 25243), (134, 25255), (139, 25288), (143, 25315), (154, 25393), (165, 25438), (181, 25567), (186, 25606), (188, 25615), (190, 25636),

Gene: Sham4\_10 Start: 6227, Stop: 7627, Start Num: 19

Candidate Starts for Sham4\_10:

(13, 6188), (Start: 19 @6227 has 223 MA's), (34, 6368), (35, 6374), (39, 6392), (52, 6512), (55, 6563), (57, 6584), (59, 6617), (73, 6764), (77, 6827), (79, 6833), (98, 6977), (105, 7058), (109, 7085), (128, 7289), (135, 7310), (140, 7334), (147, 7394), (152, 7427), (168, 7493), (179, 7589),

Gene: ShamWow\_32 Start: 29641, Stop: 31143, Start Num: 19

Candidate Starts for ShamWow\_32:

(Start: 19 @29641 has 223 MA's), (Start: 28 @29710 has 3 MA's), (35, 29788), (47, 29884), (49, 29905), (51, 29911), (55, 29995), (57, 30016), (60, 30067), (64, 30121), (71, 30196), (85, 30331), (87,



30343), (93, 30412), (95, 30421), (103, 30526), (112, 30595), (119, 30721), (126, 30802), (155, 30952), (162, 30976), (170, 31012),

Gene: ShedlockHolmes\_31 Start: 25778, Stop: 27463, Start Num: 20

Candidate Starts for ShedlockHolmes\_31:

(Start: 20 @25778 has 20 MA's), (29, 25856), (33, 25913), (35, 25922), (49, 26021), (55, 26111), (56, 26123), (57, 26132), (71, 26312), (75, 26351), (87, 26468), (91, 26516), (93, 26537), (94, 26543), (95, 26546), (103, 26651), (112, 26720), (117, 26804), (119, 26840), (126, 26918), (129, 26951), (143, 27023), (158, 27116), (165, 27146), (180, 27263), (184, 27347),

Gene: ShereKhan\_34 Start: 30624, Stop: 32126, Start Num: 19

Candidate Starts for ShereKhan\_34:

(Start: 19 @30624 has 223 MA's), (Start: 28 @30693 has 3 MA's), (35, 30771), (47, 30867), (49, 30888), (51, 30894), (55, 30978), (57, 30999), (60, 31050), (64, 31104), (71, 31179), (85, 31314), (87, 31326), (93, 31395), (95, 31404), (103, 31509), (112, 31578), (119, 31704), (126, 31785), (150, 31908), (155, 31935), (156, 31941), (162, 31959), (170, 31995),

Gene: Simpliphy\_33 Start: 29386, Stop: 30888, Start Num: 19

Candidate Starts for Simpliphy\_33:

(Start: 19 @29386 has 223 MA's), (Start: 28 @29455 has 3 MA's), (35, 29533), (47, 29629), (49, 29650), (51, 29656), (55, 29740), (57, 29761), (60, 29812), (64, 29866), (71, 29941), (85, 30076), (87, 30088), (93, 30157), (95, 30166), (103, 30271), (112, 30340), (119, 30466), (126, 30547), (150, 30670), (155, 30697), (156, 30703), (162, 30721), (170, 30757),

Gene: SirDuracell\_31 Start: 28306, Stop: 29808, Start Num: 19

Candidate Starts for SirDuracell\_31:

(Start: 19 @28306 has 223 MA's), (Start: 28 @28375 has 3 MA's), (35, 28453), (47, 28549), (49, 28570), (51, 28576), (55, 28660), (57, 28681), (60, 28732), (64, 28786), (71, 28861), (85, 28996), (87, 29008), (93, 29077), (95, 29086), (103, 29191), (112, 29260), (119, 29386), (126, 29467), (155, 29617), (156, 29623), (162, 29641), (170, 29677),

Gene: SirPhilip\_29 Start: 23735, Stop: 25366, Start Num: 18

Candidate Starts for SirPhilip\_29:

(1, 23474), (Start: 18 @23735 has 1 MA's), (Start: 20 @23741 has 20 MA's), (25, 23780), (29, 23819), (32, 23864), (33, 23876), (35, 23885), (44, 23951), (55, 24074), (57, 24095), (59, 24131), (70, 24260), (75, 24314), (84, 24413), (87, 24431), (93, 24500), (95, 24509), (103, 24614), (110, 24674), (115, 24722), (119, 24803), (126, 24881), (129, 24914), (154, 25061), (155, 25064), (171, 25142),

Gene: Slarp\_31 Start: 26030, Stop: 27640, Start Num: 19

Candidate Starts for Slarp\_31:

(Start: 19 @26030 has 223 MA's), (Start: 28 @26099 has 3 MA's), (32, 26156), (33, 26168), (35, 26177), (36, 26180), (39, 26195), (51, 26282), (52, 26315), (55, 26366), (57, 26387), (70, 26549), (75, 26594), (87, 26711), (91, 26759), (93, 26780), (94, 26786), (95, 26789), (115, 27002), (119, 27083), (121, 27101), (126, 27164), (127, 27173), (142, 27236), (175, 27452), (185, 27512),

Gene: Snape\_10 Start: 6230, Stop: 7630, Start Num: 19

Candidate Starts for Snape\_10:

(13, 6191), (Start: 19 @6230 has 223 MA's), (34, 6371), (35, 6377), (39, 6395), (52, 6515), (55, 6566), (57, 6587), (59, 6620), (73, 6767), (77, 6830), (79, 6836), (98, 6980), (105, 7061), (109, 7088), (128, 7292), (135, 7313), (140, 7337), (147, 7397), (152, 7430), (168, 7496), (179, 7592),

Gene: SoSeph\_29 Start: 25564, Stop: 27198, Start Num: 19

Candidate Starts for SoSeph\_29:

(Start: 19 @25564 has 223 MA's), (Start: 21 @25570 has 1 MA's), (Start: 22 @25585 has 1 MA's), (32, 25690), (36, 25714), (44, 25777), (52, 25849), (53, 25852), (55, 25900), (57, 25921), (66, 26050), (69, 26071), (70, 26083), (71, 26098), (75, 26137), (83, 26230), (86, 26245), (87, 26254), (93, 26323), (94, 26329), (95, 26332), (110, 26497), (115, 26545), (119, 26626), (126, 26710), (129, 26743), (130, 26746), (150, 26866), (155, 26893), (156, 26899), (166, 26935), (170, 26953), (171, 26971), (182, 27064), (184, 27079), (186, 27088), (192, 27154),

Gene: SophKB\_32 Start: 29640, Stop: 31142, Start Num: 19

Candidate Starts for SophKB\_32:

(Start: 19 @29640 has 223 MA's), (Start: 28 @29709 has 3 MA's), (35, 29787), (47, 29883), (49, 29904), (51, 29910), (55, 29994), (57, 30015), (60, 30066), (64, 30120), (71, 30195), (85, 30330), (87, 30342), (93, 30411), (95, 30420), (103, 30525), (112, 30594), (119, 30720), (126, 30801), (144, 30897), (150, 30924), (155, 30951), (156, 30957), (162, 30975), (170, 31011),

Gene: Sotrice96\_32 Start: 29595, Stop: 31097, Start Num: 19

Candidate Starts for Sotrice96\_32:

(Start: 19 @29595 has 223 MA's), (Start: 28 @29664 has 3 MA's), (35, 29742), (47, 29838), (49, 29859), (51, 29865), (55, 29949), (57, 29970), (60, 30021), (70, 30135), (85, 30285), (87, 30297), (93, 30366), (95, 30375), (103, 30480), (112, 30549), (119, 30675), (126, 30756), (155, 30906), (156, 30912), (162, 30930), (170, 30966),

Gene: Stank\_35 Start: 30147, Stop: 31649, Start Num: 19

Candidate Starts for Stank\_35:

(Start: 19 @30147 has 223 MA's), (Start: 28 @30216 has 3 MA's), (35, 30294), (47, 30390), (49, 30411), (51, 30417), (55, 30501), (57, 30522), (60, 30573), (64, 30627), (71, 30702), (85, 30837), (87, 30849), (93, 30918), (95, 30927), (103, 31032), (112, 31101), (119, 31227), (126, 31308), (144, 31404), (150, 31431), (155, 31458), (156, 31464), (162, 31482), (170, 31518),

Gene: Stark\_33 Start: 29399, Stop: 30901, Start Num: 19

Candidate Starts for Stark\_33:

(Start: 19 @29399 has 223 MA's), (Start: 28 @29468 has 3 MA's), (35, 29546), (47, 29642), (49, 29663), (51, 29669), (55, 29753), (57, 29774), (60, 29825), (64, 29879), (71, 29954), (85, 30089), (87, 30101), (93, 30170), (95, 30179), (103, 30284), (112, 30353), (119, 30479), (126, 30560), (150, 30683), (155, 30710), (156, 30716), (162, 30734), (170, 30770),

Gene: StellaBean\_32 Start: 29640, Stop: 31142, Start Num: 19

Candidate Starts for StellaBean\_32:

(Start: 19 @29640 has 223 MA's), (Start: 28 @29709 has 3 MA's), (35, 29787), (47, 29883), (49, 29904), (51, 29910), (55, 29994), (57, 30015), (60, 30066), (64, 30120), (71, 30195), (85, 30330), (87, 30342), (93, 30411), (95, 30420), (103, 30525), (112, 30594), (119, 30720), (126, 30801), (144, 30897), (150, 30924), (155, 30951), (156, 30957), (162, 30975), (170, 31011),

Gene: StolenFromERC\_34 Start: 29631, Stop: 31133, Start Num: 19

Candidate Starts for StolenFromERC\_34:

(Start: 19 @29631 has 223 MA's), (Start: 28 @29700 has 3 MA's), (35, 29778), (47, 29874), (49, 29895), (51, 29901), (55, 29985), (57, 30006), (60, 30057), (64, 30111), (71, 30186), (85, 30321), (87, 30333), (93, 30402), (95, 30411), (103, 30516), (112, 30585), (119, 30711), (126, 30792), (144, 30888), (150, 30915), (155, 30942), (156, 30948), (162, 30966), (170, 31002),

Gene: StormChicken\_32 Start: 29815, Stop: 31317, Start Num: 19

Candidate Starts for StormChicken\_32:

(Start: 19 @29815 has 223 MA's), (Start: 28 @29884 has 3 MA's), (35, 29962), (47, 30058), (49, 30079), (51, 30085), (55, 30169), (57, 30190), (60, 30241), (64, 30295), (71, 30370), (85, 30505), (87,

30517), (93, 30586), (95, 30595), (103, 30700), (112, 30769), (119, 30895), (126, 30976), (144, 31072), (150, 31099), (155, 31126), (156, 31132), (162, 31150), (170, 31186),

Gene: Sunflower1121\_29 Start: 24082, Stop: 25728, Start Num: 19

Candidate Starts for Sunflower1121\_29:

(Start: 19 @24082 has 223 MA's), (Start: 28 @24151 has 3 MA's), (29, 24163), (33, 24220), (35, 24229), (55, 24418), (57, 24439), (65, 24562), (69, 24589), (70, 24601), (71, 24616), (75, 24655), (93, 24841), (95, 24850), (103, 24955), (110, 25015), (115, 25063), (119, 25144), (126, 25222), (129, 25255), (134, 25267), (139, 25300), (143, 25327), (154, 25405), (165, 25450), (181, 25579), (186, 25618), (188, 25627), (190, 25648),

Gene: Syra333\_30 Start: 24095, Stop: 25738, Start Num: 19

Candidate Starts for Syra333\_30:

(Start: 19 @24095 has 223 MA's), (Start: 28 @24164 has 3 MA's), (29, 24176), (33, 24233), (35, 24242), (55, 24431), (57, 24452), (65, 24575), (69, 24602), (71, 24629), (75, 24668), (85, 24773), (93, 24854), (95, 24863), (103, 24968), (110, 25028), (115, 25076), (119, 25157), (121, 25175), (126, 25235), (129, 25268), (134, 25280), (139, 25313), (143, 25340), (154, 25418), (165, 25463), (181, 25592), (186, 25628), (190, 25658), (194, 25712),

Gene: TBond007\_30 Start: 25255, Stop: 26940, Start Num: 20

Candidate Starts for TBond007\_30:

(Start: 20 @25255 has 20 MA's), (29, 25333), (35, 25399), (37, 25405), (49, 25498), (55, 25588), (56, 25600), (57, 25609), (71, 25789), (75, 25828), (87, 25945), (91, 25993), (93, 26014), (94, 26020), (95, 26023), (103, 26128), (112, 26197), (117, 26281), (119, 26317), (126, 26395), (129, 26428), (143, 26500), (158, 26593), (165, 26623), (180, 26740), (184, 26824),

Gene: TBrady12\_34 Start: 29631, Stop: 31133, Start Num: 19

Candidate Starts for TBrady12\_34:

(Start: 19 @29631 has 223 MA's), (Start: 28 @29700 has 3 MA's), (35, 29778), (47, 29874), (49, 29895), (51, 29901), (55, 29985), (57, 30006), (60, 30057), (64, 30111), (71, 30186), (85, 30321), (87, 30333), (93, 30402), (95, 30411), (103, 30516), (112, 30585), (119, 30711), (126, 30792), (144, 30888), (150, 30915), (155, 30942), (156, 30948), (162, 30966), (170, 31002),

Gene: TClif\_31 Start: 24557, Stop: 26188, Start Num: 19

Candidate Starts for TClif\_31:

(6, 24419), (7, 24428), (10, 24476), (Start: 19 @24557 has 223 MA's), (Start: 28 @24626 has 3 MA's), (29, 24638), (33, 24695), (35, 24704), (55, 24893), (57, 24914), (69, 25064), (75, 25130), (93, 25316), (95, 25325), (103, 25430), (110, 25490), (115, 25538), (117, 25589), (119, 25625), (126, 25700), (129, 25733), (150, 25835), (154, 25859), (159, 25877), (160, 25880), (186, 26078), (194, 26162),

Gene: Taquito\_31 Start: 26469, Stop: 28079, Start Num: 19

Candidate Starts for Taquito\_31:

(Start: 19 @26469 has 223 MA's), (Start: 28 @26538 has 3 MA's), (32, 26595), (33, 26607), (35, 26616), (36, 26619), (39, 26634), (51, 26721), (52, 26754), (55, 26805), (57, 26826), (70, 26988), (75, 27033), (87, 27150), (91, 27198), (93, 27219), (94, 27225), (95, 27228), (103, 27333), (115, 27441), (119, 27522), (121, 27540), (126, 27603), (127, 27612), (142, 27675), (175, 27891), (185, 27951),

Gene: Tarkin\_34 Start: 30630, Stop: 32132, Start Num: 19

Candidate Starts for Tarkin\_34:

(Start: 19 @30630 has 223 MA's), (Start: 28 @30699 has 3 MA's), (35, 30777), (47, 30873), (49, 30894), (51, 30900), (55, 30984), (57, 31005), (60, 31056), (64, 31110), (71, 31185), (85, 31320), (87, 31332), (93, 31401), (95, 31410), (103, 31515), (112, 31584), (119, 31710), (126, 31791), (144, 31887), (150, 31914), (155, 31941), (156, 31947), (162, 31965), (170, 32001),

Gene: TeardropMSU\_31 Start: 29541, Stop: 31043, Start Num: 19

Candidate Starts for TeardropMSU\_31:

(Start: 19 @29541 has 223 MA's), (Start: 28 @29610 has 3 MA's), (35, 29688), (47, 29784), (49, 29805), (51, 29811), (55, 29895), (57, 29916), (60, 29967), (64, 30021), (70, 30081), (85, 30231), (87, 30243), (93, 30312), (95, 30321), (103, 30426), (112, 30495), (119, 30621), (126, 30702), (155, 30852), (156, 30858), (162, 30876), (170, 30912),

Gene: Teaspoon\_33 Start: 29594, Stop: 31096, Start Num: 19

Candidate Starts for Teaspoon\_33:

(Start: 19 @29594 has 223 MA's), (Start: 28 @29663 has 3 MA's), (35, 29741), (47, 29837), (49, 29858), (51, 29864), (55, 29948), (57, 29969), (60, 30020), (64, 30074), (71, 30149), (85, 30284), (87, 30296), (93, 30365), (95, 30374), (103, 30479), (112, 30548), (119, 30674), (126, 30755), (150, 30878), (155, 30905), (156, 30911), (162, 30929), (170, 30965),

Gene: Teejan\_26 Start: 24344, Stop: 25981, Start Num: 17

Candidate Starts for Teejan\_26:

(Start: 17 @24344 has 15 MA's), (25, 24386), (29, 24425), (33, 24482), (35, 24491), (42, 24563), (48, 24590), (55, 24698), (57, 24719), (59, 24752), (71, 24896), (75, 24935), (87, 25052), (89, 25091), (91, 25100), (93, 25121), (94, 25127), (95, 25130), (103, 25235), (110, 25295), (119, 25424), (126, 25499), (142, 25592), (187, 25874), (194, 25955), (196, 25970),

Gene: Terminus\_32 Start: 29728, Stop: 31230, Start Num: 19

Candidate Starts for Terminus\_32:

(Start: 19 @29728 has 223 MA's), (Start: 28 @29797 has 3 MA's), (35, 29875), (47, 29971), (49, 29992), (51, 29998), (55, 30082), (57, 30103), (60, 30154), (64, 30208), (71, 30283), (85, 30418), (87, 30430), (93, 30499), (95, 30508), (103, 30613), (112, 30682), (119, 30808), (126, 30889), (150, 31012), (155, 31039), (156, 31045), (162, 31063), (170, 31099),

Gene: Thimble\_32 Start: 28591, Stop: 30093, Start Num: 19

Candidate Starts for Thimble\_32:

(Start: 19 @28591 has 223 MA's), (Start: 28 @28660 has 3 MA's), (35, 28738), (47, 28834), (49, 28855), (51, 28861), (55, 28945), (57, 28966), (60, 29017), (64, 29071), (71, 29146), (85, 29281), (87, 29293), (93, 29362), (95, 29371), (103, 29476), (112, 29545), (119, 29671), (126, 29752), (144, 29848), (150, 29875), (155, 29902), (156, 29908), (162, 29926), (170, 29962),

Gene: ThreeRngTarjay\_45 Start: 40917, Stop: 42335, Start Num: 19

Candidate Starts for ThreeRngTarjay\_45:

(Start: 19 @40917 has 223 MA's), (27, 40971), (32, 41043), (35, 41064), (45, 41145), (52, 41202), (55, 41253), (56, 41265), (57, 41274), (61, 41325), (72, 41457), (76, 41508), (91, 41640), (95, 41673), (96, 41676), (116, 41868), (120, 41955), (125, 42018), (126, 42042), (127, 42051), (152, 42201), (161, 42234), (162, 42237),

Gene: Thresher\_33 Start: 30395, Stop: 31897, Start Num: 19

Candidate Starts for Thresher\_33:

(Start: 19 @30395 has 223 MA's), (Start: 28 @30464 has 3 MA's), (35, 30542), (47, 30638), (49, 30659), (51, 30665), (55, 30749), (57, 30770), (60, 30821), (64, 30875), (71, 30950), (85, 31085), (87, 31097), (93, 31166), (95, 31175), (103, 31280), (112, 31349), (119, 31475), (126, 31556), (150, 31679), (155, 31706), (156, 31712), (162, 31730), (170, 31766),

Gene: Thyatira\_29 Start: 25415, Stop: 27049, Start Num: 19

Candidate Starts for Thyatira\_29:

(Start: 19 @25415 has 223 MA's), (Start: 21 @25421 has 1 MA's), (Start: 22 @25436 has 1 MA's), (32, 25541), (36, 25565), (44, 25628), (52, 25700), (53, 25703), (55, 25751), (57, 25772), (66, 25901), (69, 25922), (70, 25934), (71, 25949), (75, 25988), (86, 26096), (87, 26105), (93, 26174), (94, 26180), (95, 26183), (103, 26288), (107, 26324), (110, 26348), (115, 26396), (119, 26477), (126, 26561), (129, 26594), (130, 26597), (150, 26717), (155, 26744), (156, 26750), (166, 26786), (170, 26804), (171, 26822), (173, 26855), (182, 26915), (192, 27005), (194, 27023), (196, 27038),

Gene: Tierra\_30 Start: 24918, Stop: 26564, Start Num: 19

Candidate Starts for Tierra\_30:

(Start: 19 @24918 has 223 MA's), (27, 24972), (29, 24999), (33, 25056), (35, 25065), (55, 25254), (57, 25275), (71, 25452), (75, 25491), (93, 25677), (95, 25686), (103, 25791), (113, 25863), (115, 25899), (119, 25980), (126, 26058), (129, 26091), (134, 26103), (139, 26136), (143, 26163), (154, 26241), (165, 26286), (181, 26415), (186, 26454), (190, 26484), (194, 26538),

Gene: Timothy\_10 Start: 6224, Stop: 7624, Start Num: 19

Candidate Starts for Timothy\_10:

(13, 6185), (Start: 19 @6224 has 223 MA's), (35, 6371), (39, 6389), (52, 6509), (55, 6560), (57, 6581), (59, 6614), (73, 6761), (77, 6824), (79, 6830), (98, 6974), (105, 7055), (109, 7082), (128, 7286), (135, 7307), (140, 7331), (147, 7391), (152, 7424), (168, 7490), (179, 7586),

Gene: TinyTimmy\_10 Start: 6279, Stop: 7676, Start Num: 20

Candidate Starts for TinyTimmy\_10:

(Start: 20 @6279 has 20 MA's), (34, 6417), (35, 6423), (39, 6441), (52, 6561), (55, 6612), (57, 6633), (59, 6666), (73, 6813), (77, 6876), (79, 6882), (98, 7026), (105, 7107), (109, 7134), (128, 7338), (135, 7359), (140, 7383), (147, 7443), (152, 7476), (168, 7542), (179, 7638),

Gene: Tomaszewski\_31 Start: 29238, Stop: 30740, Start Num: 19

Candidate Starts for Tomaszewski\_31:

(Start: 19 @29238 has 223 MA's), (Start: 28 @29307 has 3 MA's), (35, 29385), (47, 29481), (49, 29502), (51, 29508), (55, 29592), (57, 29613), (60, 29664), (64, 29718), (71, 29793), (85, 29928), (87, 29940), (93, 30009), (95, 30018), (103, 30123), (112, 30192), (119, 30318), (126, 30399), (155, 30549), (156, 30555), (162, 30573), (170, 30609),

Gene: Torres\_26 Start: 24344, Stop: 25981, Start Num: 17

Candidate Starts for Torres\_26:

(Start: 17 @24344 has 15 MA's), (25, 24386), (29, 24425), (33, 24482), (35, 24491), (42, 24563), (48, 24590), (55, 24698), (57, 24719), (59, 24752), (71, 24896), (75, 24935), (87, 25052), (89, 25091), (91, 25100), (93, 25121), (94, 25127), (95, 25130), (103, 25235), (110, 25295), (119, 25424), (126, 25499), (142, 25592), (187, 25874), (194, 25955), (196, 25970),

Gene: Toto\_32 Start: 29710, Stop: 31143, Start Num: 28

Candidate Starts for Toto\_32:

(Start: 19 @29641 has 223 MA's), (Start: 28 @29710 has 3 MA's), (35, 29788), (47, 29884), (49, 29905), (51, 29911), (55, 29995), (57, 30016), (60, 30067), (64, 30121), (71, 30196), (85, 30331), (87, 30343), (93, 30412), (95, 30421), (103, 30526), (112, 30595), (119, 30721), (126, 30802), (155, 30952), (162, 30976), (170, 31012),

Gene: Traaww1\_30 Start: 29279, Stop: 30781, Start Num: 19

Candidate Starts for Traaww1\_30:

(Start: 19 @29279 has 223 MA's), (Start: 28 @29348 has 3 MA's), (35, 29426), (47, 29522), (49, 29543), (51, 29549), (55, 29633), (57, 29654), (60, 29705), (64, 29759), (70, 29819), (85, 29969), (87, 29981), (93, 30050), (95, 30059), (103, 30164), (112, 30233), (119, 30359), (126, 30440), (155, 30590), (156, 30596), (162, 30614), (170, 30650),

Gene: TribelTrouble\_29 Start: 25351, Stop: 26991, Start Num: 20

Candidate Starts for TribelTrouble\_29:

(Start: 20 @25351 has 20 MA's), (29, 25429), (35, 25495), (37, 25501), (48, 25576), (54, 25642), (55, 25684), (56, 25696), (57, 25705), (68, 25840), (71, 25885), (75, 25924), (84, 26023), (86, 26032), (87, 26041), (91, 26089), (93, 26110), (94, 26116), (95, 26119), (103, 26224), (111, 26290), (112, 26293), (117, 26377), (119, 26413), (126, 26491), (141, 26584), (165, 26710), (167, 26722), (171, 26752), (184, 26875), (194, 26968),

Gene: Tuco\_33 Start: 30149, Stop: 31651, Start Num: 19

Candidate Starts for Tuco\_33:

(Start: 19 @30149 has 223 MA's), (Start: 28 @30218 has 3 MA's), (35, 30296), (47, 30392), (49, 30413), (51, 30419), (55, 30503), (57, 30524), (60, 30575), (64, 30629), (71, 30704), (85, 30839), (87, 30851), (93, 30920), (95, 30929), (103, 31034), (112, 31103), (119, 31229), (126, 31310), (155, 31460), (156, 31466), (162, 31484), (170, 31520),

Gene: Ukulele\_32 Start: 29399, Stop: 30901, Start Num: 19

Candidate Starts for Ukulele\_32:

(Start: 19 @29399 has 223 MA's), (Start: 28 @29468 has 3 MA's), (35, 29546), (47, 29642), (49, 29663), (51, 29669), (55, 29753), (57, 29774), (60, 29825), (64, 29879), (71, 29954), (85, 30089), (87, 30101), (93, 30170), (95, 30179), (103, 30284), (112, 30353), (119, 30479), (126, 30560), (144, 30656), (150, 30683), (155, 30710), (156, 30716), (162, 30734), (170, 30770),

Gene: Unicorn\_30 Start: 24247, Stop: 25893, Start Num: 19

Candidate Starts for Unicorn\_30:

(Start: 19 @24247 has 223 MA's), (Start: 28 @24316 has 3 MA's), (29, 24328), (33, 24385), (35, 24394), (55, 24583), (57, 24604), (65, 24727), (71, 24781), (75, 24820), (93, 25006), (95, 25015), (103, 25120), (113, 25192), (115, 25228), (119, 25309), (126, 25387), (129, 25420), (134, 25432), (139, 25465), (143, 25492), (154, 25570), (165, 25615), (181, 25744), (186, 25783), (190, 25813),

Gene: ViviJ\_28 Start: 25378, Stop: 26991, Start Num: 22

Candidate Starts for ViviJ\_28:

(Start: 19 @25357 has 223 MA's), (Start: 21 @25363 has 1 MA's), (Start: 22 @25378 has 1 MA's), (32, 25483), (36, 25507), (39, 25522), (44, 25570), (52, 25642), (55, 25693), (57, 25714), (69, 25864), (70, 25876), (71, 25891), (75, 25930), (86, 26038), (87, 26047), (93, 26116), (94, 26122), (95, 26125), (110, 26290), (112, 26299), (115, 26338), (117, 26383), (119, 26419), (126, 26503), (129, 26536), (130, 26539), (155, 26686), (156, 26692), (166, 26728), (170, 26746), (186, 26881), (192, 26947), (196, 26980),

Gene: Wanda\_53 Start: 40631, Stop: 42073, Start Num: 16

Candidate Starts for Wanda\_53:

(15, 40607), (Start: 16 @40631 has 2 MA's), (Start: 20 @40640 has 20 MA's), (40, 40805), (41, 40826), (43, 40856), (49, 40898), (50, 40901), (57, 41009), (72, 41195), (76, 41246), (91, 41378), (95, 41411), (96, 41414), (100, 41459), (116, 41606), (120, 41693), (125, 41756), (126, 41780), (127, 41789), (152, 41939), (161, 41972), (162, 41975),

Gene: Waterfoul\_29 Start: 25439, Stop: 27073, Start Num: 19

Candidate Starts for Waterfoul\_29:

(Start: 19 @25439 has 223 MA's), (Start: 21 @25445 has 1 MA's), (Start: 22 @25460 has 1 MA's), (27, 25493), (Start: 28 @25508 has 3 MA's), (32, 25565), (35, 25586), (36, 25589), (39, 25604), (44, 25652), (52, 25724), (55, 25775), (57, 25796), (66, 25925), (69, 25946), (71, 25973), (75, 26012), (86, 26120), (87, 26129), (93, 26198), (94, 26204), (95, 26207), (103, 26312), (107, 26348), (110, 26372), (115, 26420), (119, 26501), (126, 26585), (129, 26618), (130, 26621), (144, 26714), (150, 26741),

(155, 26768), (156, 26774), (166, 26810), (170, 26828), (171, 26846), (173, 26879), (182, 26939), (192, 27029), (194, 27047), (196, 27062),

Gene: Whitty\_27 Start: 23579, Stop: 25162, Start Num: 19

Candidate Starts for Whitty\_27:

(Start: 19 @23579 has 223 MA's), (29, 23660), (31, 23678), (36, 23729), (38, 23741), (39, 23744), (55, 23915), (58, 23942), (70, 24104), (72, 24125), (75, 24149), (80, 24215), (86, 24257), (90, 24311), (95, 24353), (102, 24437), (106, 24473), (107, 24491), (119, 24641), (126, 24728), (146, 24839), (163, 24920), (189, 25121),

Gene: Wiggin\_35 Start: 30145, Stop: 31647, Start Num: 19

Candidate Starts for Wiggin\_35:

(Start: 19 @30145 has 223 MA's), (Start: 28 @30214 has 3 MA's), (35, 30292), (47, 30388), (49, 30409), (51, 30415), (55, 30499), (57, 30520), (60, 30571), (64, 30625), (71, 30700), (85, 30835), (87, 30847), (93, 30916), (95, 30925), (103, 31030), (112, 31099), (119, 31225), (126, 31306), (150, 31429), (155, 31456), (156, 31462), (162, 31480), (170, 31516),

Gene: Willez\_31 Start: 29145, Stop: 30647, Start Num: 19

Candidate Starts for Willez\_31:

(Start: 19 @29145 has 223 MA's), (Start: 28 @29214 has 3 MA's), (35, 29292), (47, 29388), (49, 29409), (51, 29415), (55, 29499), (57, 29520), (60, 29571), (64, 29625), (71, 29700), (85, 29835), (87, 29847), (93, 29916), (95, 29925), (103, 30030), (112, 30099), (119, 30225), (126, 30306), (155, 30456), (156, 30462), (162, 30480), (170, 30516),

Gene: Wintermute\_31 Start: 26019, Stop: 27629, Start Num: 19

Candidate Starts for Wintermute\_31:

(Start: 19 @26019 has 223 MA's), (Start: 28 @26088 has 3 MA's), (32, 26145), (33, 26157), (35, 26166), (36, 26169), (39, 26184), (46, 26238), (51, 26271), (52, 26304), (55, 26355), (57, 26376), (59, 26409), (62, 26466), (70, 26538), (75, 26583), (87, 26700), (91, 26748), (93, 26769), (94, 26775), (95, 26778), (103, 26883), (115, 26991), (119, 27072), (121, 27090), (126, 27153), (127, 27162), (142, 27225), (175, 27441), (185, 27501),

Gene: Xandras\_34 Start: 29631, Stop: 31133, Start Num: 19

Candidate Starts for Xandras\_34:

(Start: 19 @29631 has 223 MA's), (Start: 28 @29700 has 3 MA's), (35, 29778), (47, 29874), (49, 29895), (51, 29901), (55, 29985), (57, 30006), (60, 30057), (64, 30111), (71, 30186), (85, 30321), (87, 30333), (93, 30402), (95, 30411), (103, 30516), (112, 30585), (119, 30711), (126, 30792), (144, 30888), (150, 30915), (155, 30942), (156, 30948), (162, 30966), (170, 31002),

Gene: Ximenita\_31 Start: 24274, Stop: 25920, Start Num: 19

Candidate Starts for Ximenita\_31:

(Start: 19 @24274 has 223 MA's), (Start: 28 @24343 has 3 MA's), (29, 24355), (33, 24412), (35, 24421), (55, 24610), (57, 24631), (59, 24667), (65, 24757), (71, 24811), (75, 24850), (93, 25036), (95, 25045), (103, 25150), (110, 25210), (115, 25258), (119, 25339), (126, 25417), (129, 25450), (134, 25462), (139, 25495), (143, 25522), (154, 25600), (165, 25645), (181, 25774), (186, 25810), (188, 25819), (190, 25840), (194, 25894),

Gene: Y10\_31 Start: 26019, Stop: 27629, Start Num: 19

Candidate Starts for Y10\_31:

(Start: 19 @26019 has 223 MA's), (Start: 28 @26088 has 3 MA's), (32, 26145), (33, 26157), (35, 26166), (36, 26169), (39, 26184), (46, 26238), (51, 26271), (52, 26304), (55, 26355), (57, 26376), (59, 26409), (62, 26466), (70, 26538), (75, 26583), (87, 26700), (91, 26748), (93, 26769), (94, 26775), (95, 26778), (103, 26883), (115, 26991), (119, 27072), (121, 27090), (126, 27153), (127, 27162), (142,

27225), (175, 27441), (185, 27501),

Gene: Y2\_31 Start: 26019, Stop: 27629, Start Num: 19

Candidate Starts for Y2\_31:

(Start: 19 @26019 has 223 MA's), (Start: 28 @26088 has 3 MA's), (32, 26145), (33, 26157), (35, 26166), (36, 26169), (39, 26184), (46, 26238), (51, 26271), (52, 26304), (55, 26355), (57, 26376), (59, 26409), (62, 26466), (70, 26538), (75, 26583), (87, 26700), (91, 26748), (93, 26769), (94, 26775), (95, 26778), (103, 26883), (115, 26991), (119, 27072), (121, 27090), (126, 27153), (127, 27162), (142, 27225), (175, 27441), (185, 27501),

Gene: YassJohnny\_33 Start: 30156, Stop: 31658, Start Num: 19

Candidate Starts for YassJohnny\_33:

(Start: 19 @30156 has 223 MA's), (Start: 28 @30225 has 3 MA's), (35, 30303), (47, 30399), (49, 30420), (51, 30426), (55, 30510), (57, 30531), (60, 30582), (64, 30636), (71, 30711), (85, 30846), (87, 30858), (93, 30927), (95, 30936), (103, 31041), (112, 31110), (119, 31236), (126, 31317), (150, 31440), (155, 31467), (156, 31473), (162, 31491), (170, 31527),

Gene: Yeet\_45 Start: 40076, Stop: 41494, Start Num: 19

Candidate Starts for Yeet\_45:

(Start: 19 @40076 has 223 MA's), (27, 40130), (32, 40202), (35, 40223), (45, 40304), (52, 40361), (55, 40412), (56, 40424), (57, 40433), (61, 40484), (72, 40616), (76, 40667), (91, 40799), (95, 40832), (96, 40835), (116, 41027), (120, 41114), (125, 41177), (126, 41201), (127, 41210), (152, 41360), (161, 41393), (162, 41396),

Gene: Youngblood\_32 Start: 29801, Stop: 31303, Start Num: 19

Candidate Starts for Youngblood\_32:

(Start: 19 @29801 has 223 MA's), (Start: 28 @29870 has 3 MA's), (35, 29948), (47, 30044), (49, 30065), (51, 30071), (55, 30155), (57, 30176), (60, 30227), (64, 30281), (71, 30356), (85, 30491), (87, 30503), (93, 30572), (95, 30581), (103, 30686), (112, 30755), (119, 30881), (126, 30962), (155, 31112), (156, 31118), (162, 31136), (170, 31172),

Gene: Zelink\_48 Start: 41861, Stop: 43279, Start Num: 19

Candidate Starts for Zelink\_48:

(Start: 19 @41861 has 223 MA's), (27, 41915), (32, 41987), (35, 42008), (45, 42089), (52, 42146), (55, 42197), (56, 42209), (57, 42218), (61, 42269), (72, 42401), (76, 42452), (91, 42584), (95, 42617), (96, 42620), (100, 42665), (116, 42812), (120, 42899), (125, 42962), (126, 42986), (127, 42995), (152, 43145), (161, 43178), (162, 43181),

Gene: ZenTime222\_27 Start: 23579, Stop: 25162, Start Num: 19

Candidate Starts for ZenTime222\_27:

(Start: 19 @23579 has 223 MA's), (29, 23660), (31, 23678), (36, 23729), (38, 23741), (39, 23744), (55, 23915), (58, 23942), (70, 24104), (72, 24125), (75, 24149), (80, 24215), (86, 24257), (90, 24311), (95, 24353), (102, 24437), (106, 24473), (107, 24491), (119, 24641), (126, 24728), (146, 24839), (163, 24920), (189, 25121),

Gene: xkcd\_33 Start: 29810, Stop: 31312, Start Num: 19

Candidate Starts for xkcd\_33:

(Start: 19 @29810 has 223 MA's), (Start: 28 @29879 has 3 MA's), (35, 29957), (47, 30053), (49, 30074), (51, 30080), (55, 30164), (57, 30185), (60, 30236), (64, 30290), (71, 30365), (85, 30500), (87, 30512), (93, 30581), (95, 30590), (103, 30695), (112, 30764), (119, 30890), (126, 30971), (144, 31067), (150, 31094), (155, 31121), (156, 31127), (162, 31145), (170, 31181),