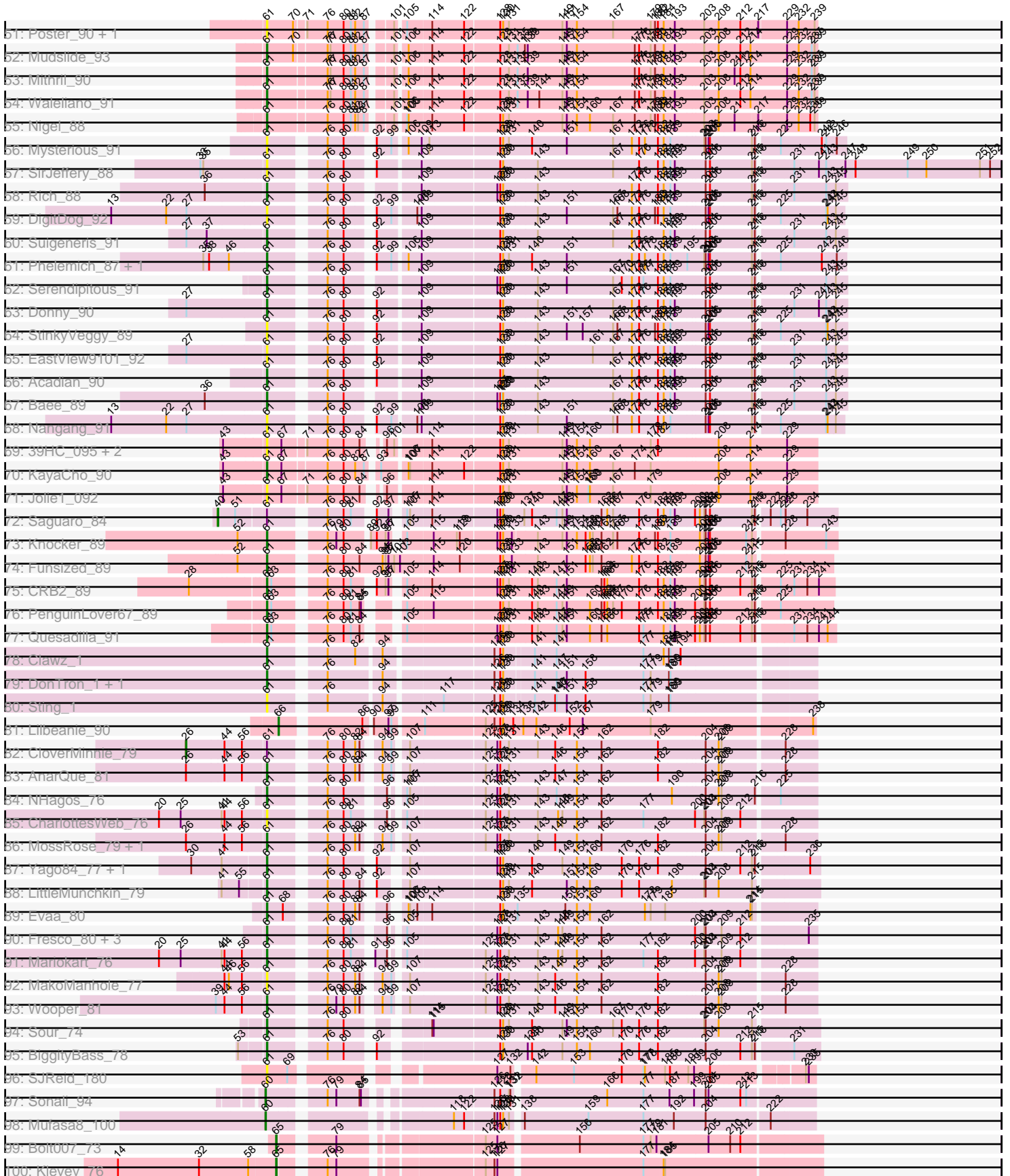


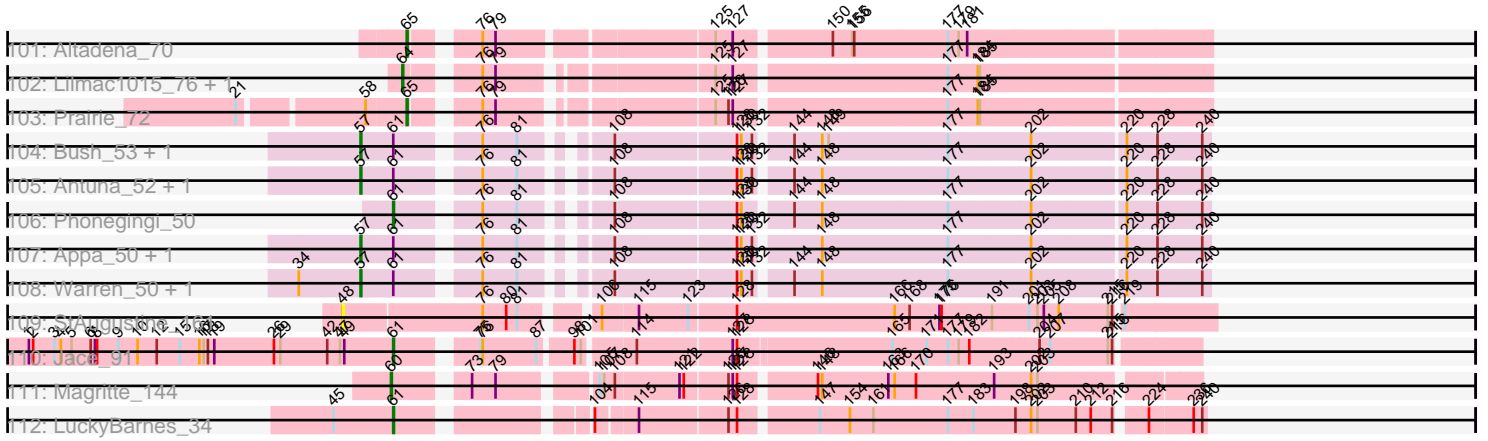
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1: EastWest_82		84	79	88	95	102	125	131	148	156	161	189	196	227		
2: Franzy_71		84	88	95	102	112	116	125	131	148	156	171	179	216	221	
3: Brent_73		84	88	95	102	112	116	125	131	148	156	171	179	216	221	
4: King2_72		84	88	95	102	112	116	125	131	148	156	171	179	216	221	
5: NathanVaag_72		84	88	95	102	112	116	125	131	148	156	171	179	216	221	
6: Beans_72		84	88	95	102	112	116	125	131	148	156	171	179	216	221	
7: Piccoletto_73		84	88	95	102	112	116	125	131	148	156	171	179	216	221	
8: Jawnski_72		84	88	95	102	112	116	125	131	148	156	171	179	216	221	
9: GravityBall_77 + 2		84	79	88	95	102	121	125	131	148	156	171	189	196	221	
10: JKerns_75 + 3		84	79	88	95	102	121	125	131	148	156	171	189	196	221	
11: Grekaycon_77 + 4		84	79	88	95	113	121	125	131	148	156	171	189	196	221	
12: Wybom_77		84	79	88	95	113	121	125	131	148	156	171	189	196	221	
13: Sicanus2_78		84	79	88	95	113	121	125	131	148	156	171	189	196	221	
14: LeeroyJ_78		84	74	79	88	95	121	125	131	148	156	171	189	196	221	
15: Pippa_77		84	79	88	95	102	101	112	121	125	131	148	156	171	189	196
16: BarretLemon_78		84	79	88	95	102	101	112	121	125	131	148	156	171	189	196
17: Abba_70		84	79	88	95	102	101	112	121	125	131	148	156	171	189	196
18: Indiovu_89		84	79	88	95	102	101	112	121	125	131	148	156	171	189	196
19: LmVicDreamy_90	23	84	81	88	95	102	101	112	121	125	131	148	156	171	189	196
20: ItsyBitsy1_82		84	81	88	95	102	101	112	121	125	131	148	156	171	189	196
21: LizLemon_85 + 14	23	84	81	88	95	102	101	112	121	125	131	148	156	171	189	196
22: Phantasmagoria_84 + 2		84	81	88	95	102	101	112	121	125	131	148	156	171	189	196
23: Glass_87 + 6	23	84	81	88	95	102	101	112	121	125	131	148	156	171	189	196
24: Allegro_85 + 1		84	81	88	95	102	101	112	121	125	131	148	156	171	189	196
25: Gyrzula_76		84	81	88	95	102	101	112	121	125	131	148	156	171	189	196
26: Laurie_84		84	81	88	95	102	101	112	121	125	131	148	156	171	189	196
27: FrenchFry_86	23	84	81	88	95	102	101	112	121	125	131	148	156	171	189	196
28: MasterPo_86		84	81	88	95	102	101	112	121	125	131	148	156	171	189	196
29: Lars_86		84	81	88	95	102	101	112	121	125	131	148	156	171	189	196
30: Knein_85	23 31	84	81	88	95	102	101	112	121	125	131	148	156	171	189	196
31: Jackstina_90 + 17	23 31	84	81	88	95	102	101	112	121	125	131	148	156	171	189	196
32: Neos5_96 + 5	23 31	84	81	88	95	102	101	112	121	125	131	148	156	171	189	196
33: Manley1013_95 + 11	23 31	84	81	88	95	102	101	112	121	125	131	148	156	171	189	196
34: OrangeOswald_96 + 2	23 31	84	81	88	95	102	101	112	121	125	131	148	156	171	189	196
35: SynergyX_98 + 6	23 31	84	81	88	95	102	101	112	121	125	131	148	156	171	189	196
36: GlenHope_98		84	81	88	95	102	101	112	121	125	131	148	156	171	189	196
37: BrownCINA_92 + 2		84	70	88	95	102	101	112	121	125	131	148	156	171	189	196
38: Hangman_92		84	71	88	95	102	101	112	121	125	131	148	156	171	189	196
39: Stinger_89		84	70	88	95	102	101	112	121	125	131	148	156	171	189	196
40: Fortunato_89		84	70	88	95	102	101	112	121	125	131	148	156	171	189	196
41: BobbyK_90 + 3		84	70	88	95	102	101	112	121	125	131	148	156	171	189	196
42: JaguarW1_86		84	70	88	95	102	101	112	121	125	131	148	156	171	189	196
43: Apex_93 + 2		84	70	88	95	102	101	112	121	125	131	148	156	171	189	196
44: Rawrger1nat_90		84	70	88	95	102	101	112	121	125	131	148	156	171	189	196
45: JAMal_92		84	70	88	95	102	101	112	121	125	131	148	156	171	189	196
46: Cooper_93	50	84	70	88	95	102	101	112	121	125	131	148	156	171	189	196
47: Magpie_88		84	70	88	95	102	101	112	121	125	131	148	156	171	189	196
48: Austelle_92	50	84	71	88	95	102	101	112	121	125	131	148	156	171	189	196
49: ChrisnVic_93		84	70	88	95	102	101	112	121	125	131	148	156	171	189	196
50: Vincenzo_91 + 1		84	70	88	95	102	101	112	121	125	131	148	156	171	189	196

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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 163348 Report

This analysis was run 04/28/24 on database version 559.

Pham number 163348 has 208 members, 33 are drafts.

Phages represented in each track:

- Track 1 : EastWest\_82
- Track 2 : Franzy\_71
- Track 3 : Brent\_73
- Track 4 : King2\_72
- Track 5 : NathanVaag\_72
- Track 6 : Beans\_72
- Track 7 : Piccoletto\_73
- Track 8 : Jawnski\_72
- Track 9 : GravityBall\_77, Timinator\_78, StevieBAY\_78
- Track 10 : JKerns\_75, Sonny\_76, Jordan\_77, Zartrosa\_78
- Track 11 : Grekaycon\_77, Shade\_76, Martha\_76, TaeYoung\_77, BossLady\_78
- Track 12 : Wyborn\_77
- Track 13 : Sicarius2\_78
- Track 14 : LeeroyJ\_78
- Track 15 : Pippa\_77
- Track 16 : BarretLemon\_78
- Track 17 : Abba\_70
- Track 18 : Indlovu\_89
- Track 19 : LilMcDreamy\_90
- Track 20 : ItsyBitsy1\_82
- Track 21 : LizLemon\_85, Rhinoforte\_85, Sabella\_85, Arbiter\_82, Boyle\_85, Kaleb\_85, Blocker23\_85, Ares\_85, Calamitous\_86, Faze9\_84, Coffee\_84, Bananafish\_86, Lephleur\_85, West99\_85, Hedgerow\_85
- Track 22 : Phantasmagoria\_84, Godines\_85, Tres\_85
- Track 23 : Glass\_87, Opia\_86, Rosebush\_83, Eaglehorse\_86, Tinciduntolum\_86, Brownie5\_85, TA17A\_86
- Track 24 : Allegro\_85, Holeinone\_85
- Track 25 : Qyrzula\_76
- Track 26 : Laurie\_84
- Track 27 : FrenchFry\_86
- Track 28 : MasterPo\_86
- Track 29 : Lars\_86
- Track 30 : Kheth\_85
- Track 31 : Jackstina\_90, Tydolla\_93, Ben11\_97, Gervas\_98, Halfpint\_97, Yinz\_95, Phlyer\_97, Kronus\_97, Rita1961\_98, Morty007\_95, Phayeta\_99, Devonte\_95, Compostia\_96, Mortcellus\_97, Obutu\_99, MmasiCarm\_98, Phaedruss\_92, Casbah\_97
- Track 32 : Neos5\_96, Baloo\_96, Gadget\_96, Pipefish\_96, ChaChing\_97, Athena\_99

- Track 33 : Marley1013\_95, Akoma\_98, Philly\_96, Chandler\_97, Audrey\_97, Heathcliff\_97, LestyG\_95, Yahalom\_95, Bernardo\_94, RomaT\_97, Daisy\_96, Kamiyu\_97
- Track 34 : OrangeOswald\_96, HarveySr\_94, Nozo\_97
- Track 35 : SynergyX\_98, RagingRooster\_97, Corofin\_97, Briakila\_98, Deenasa\_98, Abinghost\_97, SlippinJimmy\_100
- Track 36 : GlenHope\_98
- Track 37 : BrownCNA\_92, Prince\_92, Lolalove\_94
- Track 38 : Hangman\_92
- Track 39 : Stinger\_89
- Track 40 : Fortunato\_89
- Track 41 : BobbyK\_90, Heath\_86, Frederick\_90, Zemanar\_90
- Track 42 : JaguarMi\_86
- Track 43 : Apex\_93, Hydro\_92, VioletZ\_94
- Track 44 : RawrgerThat\_90
- Track 45 : JAMaL\_92
- Track 46 : Cooper\_93
- Track 47 : Magpie\_88
- Track 48 : Austelle\_92
- Track 49 : ChrisnMich\_93
- Track 50 : Vincenzo\_91, AlanGrant\_92
- Track 51 : Poster\_90, Nanao\_91
- Track 52 : Mudslide\_93
- Track 53 : Mithril\_90
- Track 54 : Waleliano\_91
- Track 55 : Nigel\_88
- Track 56 : Mysterious\_91
- Track 57 : SirJeffery\_88
- Track 58 : Rich\_88
- Track 59 : DigitDog\_92
- Track 60 : Suigeneris\_91
- Track 61 : Phelemich\_87, Reprobate\_89
- Track 62 : Serendipitous\_91
- Track 63 : Donny\_90
- Track 64 : StinkyVeggy\_89
- Track 65 : EastView9101\_92
- Track 66 : Acadian\_90
- Track 67 : Bae\_89
- Track 68 : Nangang\_91
- Track 69 : 39HC\_095, Hosp\_090, 40BC\_095
- Track 70 : KayaCho\_90
- Track 71 : Jolie1\_092
- Track 72 : Saguaro\_84
- Track 73 : Knocker\_89
- Track 74 : Funsized\_89
- Track 75 : CRB2\_89
- Track 76 : PenguinLover67\_89
- Track 77 : Quesadilla\_91
- Track 78 : Clawz\_1
- Track 79 : DonTron\_1, Soos\_1
- Track 80 : Sting\_1
- Track 81 : Lilbeanie\_90
- Track 82 : CloverMinnie\_79

- Track 83 : AnarQue\_81
- Track 84 : NHagos\_76
- Track 85 : CharlottesWeb\_76
- Track 86 : MossRose\_79, CaiB\_80
- Track 87 : Yago84\_77, Sisko\_78
- Track 88 : LittleMunchkin\_79
- Track 89 : Evaa\_80
- Track 90 : Fresco\_80, Axumite\_80, Shatter\_80, Ligma\_80
- Track 91 : Mariokart\_76
- Track 92 : MakoManhole\_77
- Track 93 : Wooper\_81
- Track 94 : Sour\_74
- Track 95 : BiggityBass\_78
- Track 96 : SJReid\_180
- Track 97 : Sonali\_94
- Track 98 : Mufasa8\_100
- Track 99 : Bolt007\_73
- Track 100 : Klevey\_76
- Track 101 : Altadena\_70
- Track 102 : LilMac1015\_76, CalWood4100\_76
- Track 103 : Prairie\_72
- Track 104 : Bush\_53, Blett\_50
- Track 105 : Antuna\_52, MenE\_55
- Track 106 : Phonegingi\_50
- Track 107 : Appa\_50, Dropshot\_50
- Track 108 : Warren\_50, Pickles13\_49
- Track 109 : StAugustine\_161
- Track 110 : Jace\_91
- Track 111 : Magritte\_144
- Track 112 : LuckyBarnes\_34

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

The start number called the most often in the published annotations is 61, it was called in 111 of the 175 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• 39HC\_095, 40BC\_095, Abinghost\_97, Acadian\_90, AlanGrant\_92, Allegro\_85, AnarQue\_81, Apex\_93, Arbiter\_82, Ares\_85, Austelle\_92, Axumite\_80, Bae\_89, Bananafish\_86, Ben11\_97, BiggityBass\_78, Blocker23\_85, BobbyK\_90, Boyle\_85, Briakila\_98, BrownCNA\_92, Brownie5\_85, CRB2\_89, CaiB\_80, Calamitous\_86, Casbah\_97, CharlottesWeb\_76, ChrisnMich\_93, Clawz\_1, Coffee\_84, Compostia\_96, Cooper\_93, Corofin\_97, Deenasa\_98, Devonte\_95, DigitDog\_92, DonTron\_1, Donny\_90, Eaglehorse\_86, EastView9101\_92, Evaa\_80, Faze9\_84, Fortunato\_89, Frederick\_90, FrenchFry\_86, Fresco\_80, Funsized\_89, Gervas\_98, Glass\_87, GlenHope\_98, Godines\_85, Halfpint\_97, Hangman\_92, Heath\_86, Hedgerow\_85, Holeinone\_85, Hosp\_090, Hydro\_92, Indlovu\_89, ItsyBitsy1\_82, JAMaL\_92, Jace\_91, Jackstina\_90, JaguarMi\_86, Jolie1\_092, Kaleb\_85, KayaCho\_90, Kheth\_85, Knocker\_89, Kronus\_97, Lars\_86, Laurie\_84, Lephleur\_85, Ligma\_80, LilMcDreamy\_90, LittleMunchkin\_79, LizLemon\_85, Lolalove\_94,

LuckyBarnes\_34, Magpie\_88, MakoManhole\_77, Mariokart\_76, MasterPo\_86, Mithril\_90, MmasiCarm\_98, Mortcellus\_97, Morty007\_95, MossRose\_79, Mudslide\_93, Mysterious\_91, NHagos\_76, Nanao\_91, Nangang\_91, Nigel\_88, Obutu\_99, Opia\_86, PenguinLover67\_89, Phaedruss\_92, Phantasmagoria\_84, Phayeta\_99, Phelemich\_87, Phlyer\_97, Phonegingi\_50, Poster\_90, Prince\_92, Quesadilla\_91, RagingRooster\_97, RawrgerThat\_90, Reprobate\_89, Rhinoforte\_85, Rich\_88, Rita1961\_98, Rosebush\_83, SJReid\_180, Sabella\_85, Serendipitous\_91, Shatter\_80, SirJeffery\_88, Sisko\_78, SlippinJimmy\_100, Soos\_1, Sour\_74, Sting\_1, Stinger\_89, StinkyVeggy\_89, Suigeneris\_91, SynergyX\_98, TA17A\_86, Tinciduntolum\_86, Tres\_85, Tydolla\_93, Vincenzo\_91, VioletZ\_94, Waleliano\_91, West99\_85, Wooper\_81, Yago84\_77, Yinz\_95, Zemanar\_90,

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

- Akoma\_98, Antuna\_52, Appa\_50, Athena\_99, Audrey\_97, Baloo\_96, Bernardo\_94, Blett\_50, Bush\_53, ChaChing\_97, Chandler\_97, CloverMinnie\_79, Daisy\_96, Dropshot\_50, Gadget\_96, HarveySr\_94, Heathcliff\_97, Kamiyu\_97, LestyG\_95, Marley1013\_95, MenE\_55, Neos5\_96, Nozo\_97, OrangeOswald\_96, Philly\_96, Pickles13\_49, Pipefish\_96, Qyrzula\_76, RomaT\_97, Saguaro\_84, Warren\_50, Yahalom\_95,

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

- Abba\_70, Altadena\_70, BarretLemon\_78, Beans\_72, Bolt007\_73, BossLady\_78, Brent\_73, CalWood4100\_76, EastWest\_82, Franzy\_71, GravityBall\_77, Grekaycon\_77, JKerns\_75, Jawnski\_72, Jordan\_77, King2\_72, Klevey\_76, LeeroyJ\_78, Lilbeanie\_90, Lilmac1015\_76, Magritte\_144, Martha\_76, Mufasa8\_100, NathanVaag\_72, Piccoletto\_73, Pippa\_77, Prairie\_72, Shade\_76, Sicarius2\_78, Sonali\_94, Sonny\_76, StAugustine\_161, StevieBAY\_78, TaeYoung\_77, Timinator\_78, Wyborn\_77, Zartrosa\_78,

### Summary by start number:

Start 26:

- Found in 5 of 208 ( 2.4% ) of genes in pham
- Manual Annotations of this start: 1 of 175
- Called 20.0% of time when present
- Phage (with cluster) where this start called: CloverMinnie\_79 (DR),

Start 31:

- Found in 47 of 208 ( 22.6% ) of genes in pham
- Manual Annotations of this start: 6 of 175
- Called 12.8% of time when present
- Phage (with cluster) where this start called: Athena\_99 (B3), Baloo\_96 (B3), ChaChing\_97 (B3), Gadget\_96 (B3), Neos5\_96 (B3), Pipefish\_96 (B3),

Start 40:

- Found in 1 of 208 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 175
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Saguaro\_84 (B7),

Start 48:

- Found in 1 of 208 ( 0.5% ) of genes in pham
- No Manual Annotations of this start.

- Called 100.0% of time when present
- Phage (with cluster) where this start called: StAugustine\_161 (singleton),

#### Start 52:

- Found in 49 of 208 ( 23.6% ) of genes in pham
- Manual Annotations of this start: 15 of 175
- Called 30.6% of time when present
- Phage (with cluster) where this start called: Akoma\_98 (B3), Audrey\_97 (B3), Bernardo\_94 (B3), Chandler\_97 (B3), Daisy\_96 (B3), HarveySr\_94 (B3), Heathcliff\_97 (B3), Kamiyu\_97 (B3), LestyG\_95 (B3), Marley1013\_95 (B3), Nozo\_97 (B3), OrangeOswald\_96 (B3), Philly\_96 (B3), RomaT\_97 (B3), Yahalom\_95 (B3),

#### Start 54:

- Found in 3 of 208 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 2 of 175
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Beans\_72 (AO1), Piccoletto\_73 (AO1),

#### Start 57:

- Found in 8 of 208 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 6 of 175
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Antuna\_52 (GA), Appa\_50 (GA), Blett\_50 (GA), Bush\_53 (GA), Dropshot\_50 (GA), MenE\_55 (GA), Pickles13\_49 (GA), Warren\_50 (GA),

#### Start 58:

- Found in 6 of 208 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 2 of 175
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Franzy\_71 (AO1), Jawnski\_72 (AO1),

#### Start 60:

- Found in 3 of 208 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 3 of 175
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Magritte\_144 (singleton), Mufasa8\_100 (FG), Sonali\_94 (FG),

#### Start 61:

- Found in 171 of 208 ( 82.2% ) of genes in pham
- Manual Annotations of this start: 111 of 175
- Called 81.3% of time when present
- Phage (with cluster) where this start called: 39HC\_095 (B6), 40BC\_095 (B6), Abinghost\_97 (B3), Acadian\_90 (B5), AlanGrant\_92 (B4), Allegro\_85 (B2), AnarQue\_81 (DR), Apex\_93 (B4), Arbiter\_82 (B2), Ares\_85 (B2), Austelle\_92 (B4), Axumite\_80 (DR), Baee\_89 (B5), Bananafish\_86 (B2), Ben11\_97 (B3), BiggityBass\_78 (DR), Blocker23\_85 (B2), BobbyK\_90 (B4), Boyle\_85 (B2), Briakila\_98 (B3), BrownCNA\_92 (B4), Brownie5\_85 (B2), CRB2\_89 (B9), CaiB\_80 (DR), Calamitous\_86 (B2), Casbah\_97 (B3), CharlottesWeb\_76 (DR), ChrisnMich\_93 (B4), Clawz\_1 (CP), Coffee\_84 (B2), Compostia\_96 (B3), Cooper\_93 (B4), Corofin\_97 (B3), Deenasa\_98 (B3), Devonte\_95 (B3), DigitDog\_92 (B5), DonTron\_1 (CP), Donny\_90 (B5), Eaglehorse\_86 (B2), EastView9101\_92 (B5), Evaa\_80 (DR),



Faze9\_84 (B2), Fortunato\_89 (B4), Frederick\_90 (B4), FrenchFry\_86 (B2), Fresco\_80 (DR), Funsized\_89 (B9), Gervas\_98 (B3), Glass\_87 (B2), GlenHope\_98 (B3), Godines\_85 (B2), Halfpint\_97 (B3), Hangman\_92 (B4), Heath\_86 (B4), Hedgerow\_85 (B2), Holeinone\_85 (B2), Hosp\_090 (B6), Hydro\_92 (B4), Indlovu\_89 (B11), ItsyBitsy1\_82 (B2), JAMaL\_92 (B4), Jace\_91 (singleton), Jackstina\_90 (B3), JaguarMi\_86 (B4), Jolie1\_092 (B6), Kaleb\_85 (B2), KayaCho\_90 (B6), Kheth\_85 (B2), Knocker\_89 (B9), Kronus\_97 (B3), Lars\_86 (B2), Laurie\_84 (B2), Lephleur\_85 (B2), Ligma\_80 (DR), LilMcDreamy\_90 (B12), LittleMunchkin\_79 (DR), LizLemon\_85 (B2), Lolalove\_94 (B4), LuckyBarnes\_34 (singleton), Magpie\_88 (B4), MakoManhole\_77 (DR), Mariokart\_76 (DR), MasterPo\_86 (B2), Mithril\_90 (B4), MmasiCarm\_98 (B3), Mortcellus\_97 (B3), Morty007\_95 (B3), MossRose\_79 (DR), Mudslide\_93 (B4), Mysterious\_91 (B5), NHagos\_76 (DR), Nanao\_91 (B4), Nangang\_91 (B5), Nigel\_88 (B4), Obutu\_99 (B3), Opia\_86 (B2), PenguinLover67\_89 (B9), Phaedrus\_92 (B3), Phantasmagoria\_84 (B2), Phayeta\_99 (B3), Phelemich\_87 (B5), Phlyer\_97 (B3), Phonegingi\_50 (GA), Poster\_90 (B4), Prince\_92 (B4), Quesadilla\_91 (B9), RagingRooster\_97 (B3), RawrgerThat\_90 (B4), Reprobate\_89 (B5), Rhinoforte\_85 (B2), Rich\_88 (B5), Rita1961\_98 (B3), Rosebush\_83 (B2), SJReid\_180 (FC), Sabella\_85 (B2), Serendipitous\_91 (B5), Shatter\_80 (DR), SirJeffery\_88 (B5), Sisko\_78 (DR), SlippinJimmy\_100 (B3), Soos\_1 (CP), Sour\_74 (DR), Sting\_1 (CP), Stinger\_89 (B4), StinkyVeggy\_89 (B5), Suigeneris\_91 (B5), SynergyX\_98 (B3), TA17A\_86 (B2), Tinciduntolum\_86 (B2), Tres\_85 (B2), Tydolla\_93 (B3), Vincenzo\_91 (B4), VioletZ\_94 (B4), Waleliano\_91 (B4), West99\_85 (B2), Wooper\_81 (DR), Yago84\_77 (DR), Yinz\_95 (B3), Zemanar\_90 (B4),

#### Start 62:

- Found in 5 of 208 ( 2.4% ) of genes in pham
- Manual Annotations of this start: 2 of 175
- Called 40.0% of time when present
- Phage (with cluster) where this start called: BarretLemon\_78 (AO2), LeeroyJ\_78 (AO2),

#### Start 64:

- Found in 28 of 208 ( 13.5% ) of genes in pham
- Manual Annotations of this start: 20 of 175
- Called 78.6% of time when present
- Phage (with cluster) where this start called: Abba\_70 (AO3), BossLady\_78 (AO2), Brent\_73 (AO1), CalWood4100\_76 (FH), EastWest\_82 (AO), GravityBall\_77 (AO2), Grekaycon\_77 (AO2), JKerns\_75 (AO2), Jordan\_77 (AO2), King2\_72 (AO1), Lilmac1015\_76 (FH), Martha\_76 (AO2), NathanVaag\_72 (AO1), Pippa\_77 (AO2), Shade\_76 (AO2), Sicarius2\_78 (AO2), Sonny\_76 (AO2), StevieBAY\_78 (AO2), TaeYoung\_77 (AO2), Timinator\_78 (AO2), Wyborn\_77 (AO2), Zartrosa\_78 (AO2),

#### Start 65:

- Found in 4 of 208 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 4 of 175
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Altadena\_70 (FH), Bolt007\_73 (FH), Klevy\_76 (FH), Prairie\_72 (FH),

#### Start 66:

- Found in 1 of 208 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 175
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Lilbeanie\_90 (DE5),

Start 67:

- Found in 86 of 208 ( 41.3% ) of genes in pham
- Manual Annotations of this start: 1 of 175
- Called 1.2% of time when present
- Phage (with cluster) where this start called: Qyrzula\_76 (B2),

### **Summary by clusters:**

There are 21 clusters represented in this pham: singleton, AO1, FC, B3, B2, AO, DE5, B4, B5, B6, B7, B12, AO2, GA, FG, FH, AO3, CP, DR, B9, B11,

Info for manual annotations of cluster AO:

- Start number 64 was manually annotated 1 time for cluster AO.

Info for manual annotations of cluster AO1:

- Start number 54 was manually annotated 2 times for cluster AO1.
- Start number 58 was manually annotated 2 times for cluster AO1.
- Start number 64 was manually annotated 3 times for cluster AO1.

Info for manual annotations of cluster AO2:

- Start number 62 was manually annotated 2 times for cluster AO2.
- Start number 64 was manually annotated 14 times for cluster AO2.

Info for manual annotations of cluster AO3:

- Start number 64 was manually annotated 1 time for cluster AO3.

Info for manual annotations of cluster B11:

- Start number 61 was manually annotated 1 time for cluster B11.

Info for manual annotations of cluster B12:

- Start number 61 was manually annotated 1 time for cluster B12.

Info for manual annotations of cluster B2:

- Start number 61 was manually annotated 31 times for cluster B2.
- Start number 67 was manually annotated 1 time for cluster B2.

Info for manual annotations of cluster B3:

- Start number 31 was manually annotated 6 times for cluster B3.
- Start number 52 was manually annotated 15 times for cluster B3.
- Start number 61 was manually annotated 23 times for cluster B3.

Info for manual annotations of cluster B4:

- Start number 61 was manually annotated 22 times for cluster B4.

Info for manual annotations of cluster B5:

- Start number 61 was manually annotated 8 times for cluster B5.

Info for manual annotations of cluster B6:

- Start number 61 was manually annotated 1 time for cluster B6.

Info for manual annotations of cluster B7:

- Start number 40 was manually annotated 1 time for cluster B7.

Info for manual annotations of cluster B9:

- Start number 61 was manually annotated 5 times for cluster B9.

Info for manual annotations of cluster CP:

- Start number 61 was manually annotated 2 times for cluster CP.

Info for manual annotations of cluster DE5:

- Start number 66 was manually annotated 1 time for cluster DE5.

Info for manual annotations of cluster DR:

- Start number 26 was manually annotated 1 time for cluster DR.
- Start number 61 was manually annotated 14 times for cluster DR.

Info for manual annotations of cluster FG:

- Start number 60 was manually annotated 2 times for cluster FG.

Info for manual annotations of cluster FH:

- Start number 64 was manually annotated 1 time for cluster FH.
- Start number 65 was manually annotated 4 times for cluster FH.

Info for manual annotations of cluster GA:

- Start number 57 was manually annotated 6 times for cluster GA.
- Start number 61 was manually annotated 1 time for cluster GA.

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

Gene: 39HC\_095 Start: 69471, Stop: 68434, Start Num: 61

Candidate Starts for 39HC\_095:

(43, 69552), (Start: 61 @69471 has 111 MA's), (Start: 67 @69441 has 1 MA's), (71, 69399), (76, 69357), (80, 69324), (84, 69291), (96, 69270), (101, 69261), (114, 69198), (128, 69066), (130, 69060), (131, 69048), (149, 68940), (151, 68931), (154, 68910), (160, 68883), (179, 68760), (182, 68745), (208, 68628), (214, 68565), (229, 68493),

Gene: 40BC\_095 Start: 69471, Stop: 68434, Start Num: 61

Candidate Starts for 40BC\_095:

(43, 69552), (Start: 61 @69471 has 111 MA's), (Start: 67 @69441 has 1 MA's), (71, 69399), (76, 69357), (80, 69324), (84, 69291), (96, 69270), (101, 69261), (114, 69198), (128, 69066), (130, 69060), (131, 69048), (149, 68940), (151, 68931), (154, 68910), (160, 68883), (179, 68760), (182, 68745), (208, 68628), (214, 68565), (229, 68493),

Gene: Abba\_70 Start: 45948, Stop: 44947, Start Num: 64

Candidate Starts for Abba\_70:

(Start: 64 @45948 has 20 MA's), (79, 45855), (102, 45753), (107, 45732), (112, 45699), (125, 45588), (128, 45558), (131, 45540), (148, 45456), (149, 45447), (156, 45411), (161, 45384), (179, 45267), (227, 45015), (232, 44988), (236, 44964), (239, 44955),

Gene: Abinghost\_97 Start: 66868, Stop: 65810, Start Num: 61

Candidate Starts for Abinghost\_97:

(24, 67042), (Start: 31 @67012 has 6 MA's), (Start: 52 @66922 has 15 MA's), (Start: 61 @66868 has 111 MA's), (Start: 67 @66838 has 1 MA's), (76, 66754), (80, 66721), (96, 66649), (114, 66577), (124, 66496), (127, 66451), (128, 66445), (130, 66439), (131, 66427), (133, 66421), (139, 66391), (154, 66289), (158, 66271), (166, 66226), (177, 66154), (179, 66139), (185, 66112), (189, 66103), (201, 66046), (212, 65962), (215, 65938), (223, 65908),

Gene: Acadian\_90 Start: 67115, Stop: 66042, Start Num: 61

Candidate Starts for Acadian\_90:

(Start: 61 @67115 has 111 MA's), (76, 67019), (80, 66986), (92, 66944), (109, 66863), (128, 66713), (130, 66707), (143, 66641), (167, 66488), (172, 66449), (176, 66434), (182, 66398), (184, 66389), (189, 66377), (193, 66368), (204, 66308), (206, 66299), (215, 66215), (216, 66209), (231, 66146), (243, 66080), (245, 66062),

Gene: Akoma\_98 Start: 66999, Stop: 65887, Start Num: 52

Candidate Starts for Akoma\_98:

(24, 67119), (Start: 31 @67089 has 6 MA's), (Start: 52 @66999 has 15 MA's), (Start: 61 @66945 has 111 MA's), (Start: 67 @66915 has 1 MA's), (76, 66831), (80, 66798), (96, 66726), (114, 66654), (124, 66573), (127, 66528), (128, 66522), (130, 66516), (131, 66504), (139, 66468), (154, 66366), (158, 66348), (166, 66303), (177, 66231), (179, 66216), (185, 66189), (189, 66180), (201, 66123), (212, 66039), (215, 66015), (223, 65985),

Gene: AlanGrant\_92 Start: 69472, Stop: 68423, Start Num: 61

Candidate Starts for AlanGrant\_92:

(11, 69811), (Start: 61 @69472 has 111 MA's), (70, 69418), (76, 69358), (77, 69352), (80, 69325), (84, 69292), (101, 69247), (105, 69232), (106, 69229), (114, 69184), (116, 69166), (119, 69136), (122, 69121), (127, 69058), (128, 69052), (130, 69046), (131, 69034), (135, 69016), (145, 68947), (147, 68938), (149, 68926), (154, 68896), (167, 68824), (174, 68779), (179, 68746), (182, 68731), (184, 68722), (203, 68644), (211, 68584), (212, 68572), (219, 68530), (230, 68476), (231, 68470), (232, 68461), (237, 68434), (239, 68428),

Gene: Allegro\_85 Start: 64858, Stop: 63788, Start Num: 61

Candidate Starts for Allegro\_85:

(23, 65053), (Start: 61 @64858 has 111 MA's), (Start: 67 @64828 has 1 MA's), (76, 64762), (78, 64753), (80, 64729), (82, 64705), (88, 64681), (108, 64585), (128, 64426), (130, 64420), (131, 64408), (139, 64375), (143, 64354), (150, 64297), (151, 64294), (158, 64255), (160, 64246), (164, 64216), (167, 64201), (170, 64183), (173, 64159), (177, 64138), (182, 64108), (189, 64087), (203, 64021), (204, 64018), (208, 63991), (209, 63985), (221, 63910), (226, 63874),

Gene: Altadena\_70 Start: 44516, Stop: 43500, Start Num: 65

Candidate Starts for Altadena\_70:

(Start: 65 @44516 has 4 MA's), (76, 44447), (79, 44429), (125, 44156), (127, 44132), (150, 44009), (155, 43982), (156, 43979), (177, 43850), (179, 43835), (181, 43823),

Gene: AnarQue\_81 Start: 60018, Stop: 58999, Start Num: 61

Candidate Starts for AnarQue\_81:

(Start: 26 @60174 has 1 MA's), (44, 60096), (56, 60060), (Start: 61 @60018 has 111 MA's), (76, 59922), (80, 59889), (82, 59865), (84, 59856), (94, 59832), (99, 59814), (107, 59793), (125, 59646), (127, 59622), (128, 59616), (131, 59598), (146, 59508), (154, 59463), (162, 59412), (182, 59298), (204, 59208), (208, 59181), (209, 59175), (228, 59064),

Gene: Antuna\_52 Start: 31056, Stop: 32108, Start Num: 57

Candidate Starts for Antuna\_52:

(Start: 57 @31056 has 6 MA's), (Start: 61 @31098 has 111 MA's), (76, 31194), (81, 31242), (108, 31332), (128, 31491), (130, 31497), (132, 31512), (144, 31554), (148, 31593), (177, 31767), (202, 31875), (220, 31995), (228, 32037), (240, 32097),

Gene: Apex\_93 Start: 68952, Stop: 67894, Start Num: 61

Candidate Starts for Apex\_93:

(Start: 61 @68952 has 111 MA's), (70, 68898), (76, 68838), (77, 68832), (80, 68805), (81, 68790), (82, 68781), (87, 68763), (101, 68724), (106, 68706), (107, 68703), (114, 68661), (122, 68598), (128, 68529), (131, 68511), (135, 68493), (139, 68475), (149, 68403), (151, 68394), (154, 68373), (174, 68256), (176, 68247), (179, 68223), (180, 68214), (193, 68178), (203, 68121), (208, 68091), (211, 68061), (212, 68049), (214, 68028), (229, 67953), (232, 67932), (239, 67899),

Gene: Appa\_50 Start: 30821, Stop: 31873, Start Num: 57

Candidate Starts for Appa\_50:

(Start: 57 @30821 has 6 MA's), (Start: 61 @30863 has 111 MA's), (76, 30959), (81, 31007), (108, 31097), (128, 31256), (130, 31262), (132, 31277), (148, 31358), (177, 31532), (202, 31640), (220, 31760), (228, 31802), (240, 31862),

Gene: Arbiter\_82 Start: 64898, Stop: 63828, Start Num: 61

Candidate Starts for Arbiter\_82:

(Start: 61 @64898 has 111 MA's), (Start: 67 @64868 has 1 MA's), (76, 64802), (78, 64793), (80, 64769), (82, 64745), (88, 64721), (128, 64466), (130, 64460), (131, 64448), (139, 64415), (143, 64394), (150, 64337), (151, 64334), (158, 64295), (160, 64286), (164, 64256), (167, 64241), (170, 64223), (173, 64199), (177, 64178), (182, 64148), (189, 64127), (203, 64061), (204, 64058), (208, 64031), (209, 64025), (221, 63950), (226, 63914),

Gene: Ares\_85 Start: 64857, Stop: 63787, Start Num: 61

Candidate Starts for Ares\_85:

(Start: 61 @64857 has 111 MA's), (Start: 67 @64827 has 1 MA's), (76, 64761), (78, 64752), (80, 64728), (82, 64704), (88, 64680), (128, 64425), (130, 64419), (131, 64407), (139, 64374), (143, 64353), (150, 64296), (151, 64293), (158, 64254), (160, 64245), (164, 64215), (167, 64200), (170, 64182), (173, 64158), (177, 64137), (182, 64107), (189, 64086), (203, 64020), (204, 64017), (208, 63990), (209, 63984), (221, 63909), (226, 63873),

Gene: Athena\_99 Start: 67785, Stop: 66583, Start Num: 31

Candidate Starts for Athena\_99:

(24, 67815), (Start: 31 @67785 has 6 MA's), (Start: 52 @67695 has 15 MA's), (Start: 61 @67641 has 111 MA's), (Start: 67 @67611 has 1 MA's), (76, 67527), (80, 67494), (96, 67422), (114, 67350), (124, 67269), (127, 67224), (128, 67218), (130, 67212), (131, 67200), (139, 67164), (154, 67062), (158, 67044), (166, 66999), (177, 66927), (179, 66912), (185, 66885), (189, 66876), (201, 66819), (212, 66735), (215, 66711), (223, 66681),

Gene: Audrey\_97 Start: 66949, Stop: 65837, Start Num: 52

Candidate Starts for Audrey\_97:

(24, 67069), (Start: 31 @67039 has 6 MA's), (Start: 52 @66949 has 15 MA's), (Start: 61 @66895 has 111 MA's), (Start: 67 @66865 has 1 MA's), (76, 66781), (80, 66748), (96, 66676), (114, 66604), (124, 66523), (127, 66478), (128, 66472), (130, 66466), (131, 66454), (139, 66418), (154, 66316), (158, 66298), (166, 66253), (177, 66181), (179, 66166), (185, 66139), (189, 66130), (201, 66073), (212, 65989), (215, 65965), (223, 65935),

Gene: Austelle\_92 Start: 69484, Stop: 68426, Start Num: 61

Candidate Starts for Austelle\_92:

(Start: 61 @69484 has 111 MA's), (76, 69370), (77, 69364), (80, 69337), (81, 69322), (82, 69313), (87, 69295), (101, 69256), (106, 69238), (107, 69235), (114, 69193), (122, 69130), (128, 69061), (131, 69043), (135, 69025), (139, 69007), (149, 68935), (151, 68926), (154, 68905), (174, 68788), (176, 68779), (179, 68755), (180, 68746), (184, 68731), (193, 68710), (203, 68653), (208, 68623), (211, 68593), (212, 68581), (214, 68560), (229, 68485), (232, 68464), (237, 68437), (239, 68431),

Gene: Axumite\_80 Start: 59316, Stop: 58309, Start Num: 61

Candidate Starts for Axumite\_80:

(Start: 61 @59316 has 111 MA's), (76, 59220), (80, 59187), (81, 59172), (96, 59121), (105, 59106), (127, 58932), (128, 58926), (131, 58908), (143, 58854), (148, 58812), (149, 58803), (154, 58773), (162, 58722), (200, 58539), (203, 58521), (204, 58518), (209, 58485), (212, 58449), (235, 58326),

Gene: Bae\_89 Start: 67621, Stop: 66548, Start Num: 61

Candidate Starts for Bae\_89:

(36, 67735), (Start: 61 @67621 has 111 MA's), (76, 67525), (80, 67492), (109, 67369), (127, 67225), (128, 67219), (129, 67216), (130, 67213), (143, 67147), (167, 66994), (172, 66955), (176, 66940), (182, 66904), (184, 66895), (189, 66883), (193, 66874), (204, 66814), (206, 66805), (215, 66721), (216, 66715), (231, 66652), (243, 66586), (245, 66568),

Gene: Baloo\_96 Start: 66892, Stop: 65690, Start Num: 31

Candidate Starts for Baloo\_96:

(24, 66922), (Start: 31 @66892 has 6 MA's), (Start: 52 @66802 has 15 MA's), (Start: 61 @66748 has 111 MA's), (Start: 67 @66718 has 1 MA's), (76, 66634), (80, 66601), (96, 66529), (114, 66457), (124, 66376), (127, 66331), (128, 66325), (130, 66319), (131, 66307), (139, 66271), (154, 66169), (158, 66151), (166, 66106), (177, 66034), (179, 66019), (185, 65992), (189, 65983), (201, 65926), (212, 65842), (215, 65818), (223, 65788),

Gene: Bananafish\_86 Start: 64794, Stop: 63724, Start Num: 61

Candidate Starts for Bananafish\_86:

(Start: 61 @64794 has 111 MA's), (Start: 67 @64764 has 1 MA's), (76, 64698), (78, 64689), (80, 64665), (82, 64641), (88, 64617), (128, 64362), (130, 64356), (131, 64344), (139, 64311), (143, 64290), (150, 64233), (151, 64230), (158, 64191), (160, 64182), (164, 64152), (167, 64137), (170, 64119), (173, 64095), (177, 64074), (182, 64044), (189, 64023), (203, 63957), (204, 63954), (208, 63927), (209, 63921), (221, 63846), (226, 63810),

Gene: BarretLemon\_78 Start: 50937, Stop: 49933, Start Num: 62

Candidate Starts for BarretLemon\_78:

(Start: 62 @50937 has 2 MA's), (Start: 64 @50931 has 20 MA's), (79, 50835), (88, 50772), (125, 50574), (127, 50550), (128, 50544), (131, 50526), (132, 50523), (146, 50448), (156, 50397), (170, 50313), (179, 50253), (189, 50217), (196, 50184), (227, 50001), (236, 49950),

Gene: Beans\_72 Start: 49478, Stop: 48408, Start Num: 54

Candidate Starts for Beans\_72:

(Start: 54 @49478 has 2 MA's), (Start: 64 @49415 has 20 MA's), (88, 49253), (96, 49232), (102, 49214), (110, 49169), (112, 49160), (116, 49133), (125, 49049), (126, 49031), (127, 49025), (128, 49019), (131, 49001), (156, 48872), (177, 48743), (179, 48728), (218, 48521), (227, 48476), (237, 48422),

Gene: Ben11\_97 Start: 67125, Stop: 66067, Start Num: 61

Candidate Starts for Ben11\_97:

(24, 67299), (Start: 31 @67269 has 6 MA's), (Start: 52 @67179 has 15 MA's), (Start: 61 @67125 has 111 MA's), (Start: 67 @67095 has 1 MA's), (76, 67011), (80, 66978), (96, 66906), (114, 66834), (124, 66753), (127, 66708), (128, 66702), (130, 66696), (131, 66684), (139, 66648), (154, 66546), (158,

66528), (166, 66483), (177, 66411), (179, 66396), (185, 66369), (189, 66360), (201, 66303), (212, 66219), (215, 66195), (223, 66165),

Gene: Bernardo\_94 Start: 66473, Stop: 65361, Start Num: 52

Candidate Starts for Bernardo\_94:

(24, 66593), (Start: 31 @66563 has 6 MA's), (Start: 52 @66473 has 15 MA's), (Start: 61 @66419 has 111 MA's), (Start: 67 @66389 has 1 MA's), (76, 66305), (80, 66272), (96, 66200), (114, 66128), (124, 66047), (127, 66002), (128, 65996), (130, 65990), (131, 65978), (139, 65942), (154, 65840), (158, 65822), (166, 65777), (177, 65705), (179, 65690), (185, 65663), (189, 65654), (201, 65597), (212, 65513), (215, 65489), (223, 65459),

Gene: BiggityBass\_78 Start: 60906, Stop: 59896, Start Num: 61

Candidate Starts for BiggityBass\_78:

(53, 60951), (Start: 61 @60906 has 111 MA's), (76, 60810), (80, 60777), (92, 60735), (128, 60519), (130, 60513), (139, 60465), (140, 60456), (149, 60393), (154, 60363), (160, 60336), (170, 60273), (176, 60237), (182, 60198), (204, 60108), (212, 60039), (215, 60015), (216, 60009), (231, 59949),

Gene: Blett\_50 Start: 31007, Stop: 32059, Start Num: 57

Candidate Starts for Blett\_50:

(Start: 57 @31007 has 6 MA's), (Start: 61 @31049 has 111 MA's), (76, 31145), (81, 31193), (108, 31283), (128, 31442), (130, 31448), (132, 31463), (144, 31505), (148, 31544), (149, 31553), (177, 31718), (202, 31826), (220, 31946), (228, 31988), (240, 32048),

Gene: Blocker23\_85 Start: 64859, Stop: 63789, Start Num: 61

Candidate Starts for Blocker23\_85:

(Start: 61 @64859 has 111 MA's), (Start: 67 @64829 has 1 MA's), (76, 64763), (78, 64754), (80, 64730), (82, 64706), (88, 64682), (128, 64427), (130, 64421), (131, 64409), (139, 64376), (143, 64355), (150, 64298), (151, 64295), (158, 64256), (160, 64247), (164, 64217), (167, 64202), (170, 64184), (173, 64160), (177, 64139), (182, 64109), (189, 64088), (203, 64022), (204, 64019), (208, 63992), (209, 63986), (221, 63911), (226, 63875),

Gene: BobbyK\_90 Start: 68460, Stop: 67402, Start Num: 61

Candidate Starts for BobbyK\_90:

(Start: 61 @68460 has 111 MA's), (70, 68406), (71, 68388), (76, 68346), (77, 68340), (80, 68313), (81, 68298), (82, 68289), (87, 68271), (101, 68232), (106, 68214), (114, 68169), (122, 68106), (128, 68037), (131, 68019), (135, 68001), (139, 67983), (149, 67911), (151, 67902), (154, 67881), (174, 67764), (176, 67755), (179, 67731), (180, 67722), (184, 67707), (193, 67686), (203, 67629), (208, 67599), (211, 67569), (212, 67557), (214, 67536), (229, 67461), (232, 67440), (239, 67407),

Gene: Bolt007\_73 Start: 46402, Stop: 45404, Start Num: 65

Candidate Starts for Bolt007\_73:

(Start: 65 @46402 has 4 MA's), (79, 46315), (125, 46057), (127, 46033), (156, 45880), (177, 45751), (179, 45736), (181, 45724), (205, 45622), (210, 45580), (212, 45559),

Gene: BossLady\_78 Start: 50700, Stop: 49705, Start Num: 64

Candidate Starts for BossLady\_78:

(Start: 64 @50700 has 20 MA's), (79, 50607), (88, 50544), (95, 50526), (125, 50346), (127, 50322), (128, 50316), (131, 50298), (132, 50295), (146, 50220), (156, 50169), (177, 50040), (179, 50025), (189, 49989), (196, 49956), (227, 49773),

Gene: Boyle\_85 Start: 64906, Stop: 63836, Start Num: 61

Candidate Starts for Boyle\_85:

(Start: 61 @64906 has 111 MA's), (Start: 67 @64876 has 1 MA's), (76, 64810), (78, 64801), (80, 64777), (82, 64753), (88, 64729), (128, 64474), (130, 64468), (131, 64456), (139, 64423), (143, 64402), (150, 64345), (151, 64342), (158, 64303), (160, 64294), (164, 64264), (167, 64249), (170, 64231), (173, 64207), (177, 64186), (182, 64156), (189, 64135), (203, 64069), (204, 64066), (208, 64039), (209, 64033), (221, 63958), (226, 63922),

Gene: Brent\_73 Start: 49498, Stop: 48494, Start Num: 64

Candidate Starts for Brent\_73:

(Start: 58 @49543 has 2 MA's), (59, 49516), (Start: 64 @49498 has 20 MA's), (96, 49318), (102, 49300), (110, 49255), (112, 49246), (116, 49219), (125, 49135), (127, 49111), (128, 49105), (131, 49087), (156, 48958), (177, 48829), (179, 48814), (218, 48607), (227, 48562), (237, 48508),

Gene: Briakila\_98 Start: 67399, Stop: 66341, Start Num: 61

Candidate Starts for Briakila\_98:

(24, 67573), (Start: 31 @67543 has 6 MA's), (Start: 52 @67453 has 15 MA's), (Start: 61 @67399 has 111 MA's), (Start: 67 @67369 has 1 MA's), (76, 67285), (80, 67252), (96, 67180), (114, 67108), (124, 67027), (127, 66982), (128, 66976), (130, 66970), (131, 66958), (133, 66952), (139, 66922), (154, 66820), (158, 66802), (166, 66757), (177, 66685), (179, 66670), (185, 66643), (189, 66634), (201, 66577), (212, 66493), (215, 66469), (223, 66439),

Gene: BrownCNA\_92 Start: 68899, Stop: 67841, Start Num: 61

Candidate Starts for BrownCNA\_92:

(Start: 61 @68899 has 111 MA's), (76, 68785), (77, 68779), (80, 68752), (81, 68737), (82, 68728), (87, 68710), (101, 68671), (106, 68653), (114, 68608), (122, 68545), (128, 68476), (131, 68458), (135, 68440), (138, 68428), (139, 68422), (149, 68350), (151, 68341), (154, 68320), (174, 68203), (176, 68194), (179, 68170), (180, 68161), (184, 68146), (193, 68125), (203, 68068), (208, 68038), (212, 67996), (214, 67975), (229, 67900), (232, 67879), (237, 67852), (239, 67846),

Gene: Brownie5\_85 Start: 64906, Stop: 63836, Start Num: 61

Candidate Starts for Brownie5\_85:

(Start: 61 @64906 has 111 MA's), (Start: 67 @64876 has 1 MA's), (76, 64810), (78, 64801), (80, 64777), (82, 64753), (88, 64729), (128, 64474), (130, 64468), (131, 64456), (139, 64423), (143, 64402), (150, 64345), (151, 64342), (158, 64303), (160, 64294), (164, 64264), (167, 64249), (173, 64207), (177, 64186), (182, 64156), (189, 64135), (203, 64069), (204, 64066), (208, 64039), (209, 64033), (221, 63958), (226, 63922),

Gene: Bush\_53 Start: 30955, Stop: 32007, Start Num: 57

Candidate Starts for Bush\_53:

(Start: 57 @30955 has 6 MA's), (Start: 61 @30997 has 111 MA's), (76, 31093), (81, 31141), (108, 31231), (128, 31390), (130, 31396), (132, 31411), (144, 31453), (148, 31492), (149, 31501), (177, 31666), (202, 31774), (220, 31894), (228, 31936), (240, 31996),

Gene: CRB2\_89 Start: 68970, Stop: 67930, Start Num: 61

Candidate Starts for CRB2\_89:

(28, 69111), (Start: 61 @68970 has 111 MA's), (63, 68961), (76, 68874), (80, 68841), (81, 68826), (92, 68799), (95, 68781), (97, 68775), (105, 68760), (114, 68712), (127, 68586), (128, 68580), (130, 68574), (131, 68562), (140, 68520), (143, 68508), (147, 68469), (151, 68448), (162, 68376), (164, 68370), (166, 68364), (176, 68301), (182, 68262), (184, 68253), (189, 68241), (193, 68232), (202, 68184), (203, 68175), (204, 68172), (206, 68163), (212, 68103), (215, 68079), (216, 68073), (225, 68037), (231, 68013), (234, 67986), (241, 67962),

Gene: CaiB\_80 Start: 59816, Stop: 58797, Start Num: 61

Candidate Starts for CaiB\_80:



(Start: 26 @59972 has 1 MA's), (44, 59894), (56, 59858), (Start: 61 @59816 has 111 MA's), (76, 59720), (80, 59687), (82, 59663), (84, 59654), (94, 59630), (99, 59612), (107, 59591), (125, 59444), (127, 59420), (128, 59414), (131, 59396), (143, 59342), (146, 59306), (154, 59261), (162, 59210), (182, 59096), (204, 59006), (208, 58979), (209, 58973), (228, 58862),

Gene: CalWood4100\_76 Start: 46704, Stop: 45700, Start Num: 64

Candidate Starts for CalWood4100\_76:

(Start: 64 @46704 has 20 MA's), (76, 46629), (79, 46611), (125, 46353), (127, 46329), (177, 46047), (184, 46008), (185, 46005),

Gene: Calamitous\_86 Start: 64789, Stop: 63719, Start Num: 61

Candidate Starts for Calamitous\_86:

(Start: 61 @64789 has 111 MA's), (Start: 67 @64759 has 1 MA's), (76, 64693), (78, 64684), (80, 64660), (82, 64636), (88, 64612), (128, 64357), (130, 64351), (131, 64339), (139, 64306), (143, 64285), (150, 64228), (151, 64225), (158, 64186), (160, 64177), (164, 64147), (167, 64132), (170, 64114), (173, 64090), (177, 64069), (182, 64039), (189, 64018), (203, 63952), (204, 63949), (208, 63922), (209, 63916), (221, 63841), (226, 63805),

Gene: Casbah\_97 Start: 67210, Stop: 66152, Start Num: 61

Candidate Starts for Casbah\_97:

(24, 67384), (Start: 31 @67354 has 6 MA's), (Start: 52 @67264 has 15 MA's), (Start: 61 @67210 has 111 MA's), (Start: 67 @67180 has 1 MA's), (76, 67096), (80, 67063), (96, 66991), (114, 66919), (124, 66838), (127, 66793), (128, 66787), (130, 66781), (131, 66769), (139, 66733), (154, 66631), (158, 66613), (166, 66568), (177, 66496), (179, 66481), (185, 66454), (189, 66445), (201, 66388), (212, 66304), (215, 66280), (223, 66250),

Gene: ChaChing\_97 Start: 67052, Stop: 65850, Start Num: 31

Candidate Starts for ChaChing\_97:

(24, 67082), (Start: 31 @67052 has 6 MA's), (Start: 52 @66962 has 15 MA's), (Start: 61 @66908 has 111 MA's), (Start: 67 @66878 has 1 MA's), (76, 66794), (80, 66761), (96, 66689), (114, 66617), (124, 66536), (127, 66491), (128, 66485), (130, 66479), (131, 66467), (139, 66431), (154, 66329), (158, 66311), (166, 66266), (177, 66194), (179, 66179), (185, 66152), (189, 66143), (201, 66086), (212, 66002), (215, 65978), (223, 65948),

Gene: Chandler\_97 Start: 67738, Stop: 66626, Start Num: 52

Candidate Starts for Chandler\_97:

(24, 67858), (Start: 31 @67828 has 6 MA's), (Start: 52 @67738 has 15 MA's), (Start: 61 @67684 has 111 MA's), (Start: 67 @67654 has 1 MA's), (76, 67570), (80, 67537), (96, 67465), (114, 67393), (124, 67312), (127, 67267), (128, 67261), (130, 67255), (131, 67243), (139, 67207), (154, 67105), (158, 67087), (166, 67042), (177, 66970), (179, 66955), (185, 66928), (189, 66919), (201, 66862), (212, 66778), (215, 66754), (223, 66724),

Gene: CharlottesWeb\_76 Start: 57928, Stop: 56921, Start Num: 61

Candidate Starts for CharlottesWeb\_76:

(20, 58141), (25, 58096), (41, 58012), (44, 58006), (56, 57970), (Start: 61 @57928 has 111 MA's), (76, 57832), (80, 57799), (81, 57784), (96, 57733), (105, 57718), (125, 57568), (127, 57544), (128, 57538), (131, 57520), (143, 57466), (148, 57424), (149, 57415), (154, 57385), (162, 57334), (177, 57250), (200, 57151), (203, 57133), (204, 57130), (209, 57097), (212, 57061),

Gene: ChrisnMich\_93 Start: 67523, Stop: 66477, Start Num: 61

Candidate Starts for ChrisnMich\_93:

(50, 67580), (Start: 61 @67523 has 111 MA's), (71, 67451), (76, 67409), (80, 67376), (81, 67361), (82, 67352), (87, 67334), (101, 67295), (105, 67280), (106, 67277), (114, 67232), (122, 67169), (128,

67100), (130, 67094), (131, 67082), (135, 67064), (149, 66974), (151, 66965), (154, 66944), (160, 66917), (167, 66872), (174, 66827), (177, 66809), (179, 66794), (180, 66785), (182, 66779), (184, 66770), (193, 66749), (203, 66692), (208, 66662), (211, 66632), (212, 66620), (229, 66536), (232, 66515), (239, 66482),

Gene: Clawz\_1 Start: 1, Stop: 1032, Start Num: 61

Candidate Starts for Clawz\_1:

(Start: 61 @1 has 111 MA's), (76, 97), (82, 154), (94, 199), (126, 406), (128, 418), (130, 424), (141, 481), (147, 526), (177, 703), (184, 745), (186, 754), (189, 757), (194, 778),

Gene: CloverMinnie\_79 Start: 59450, Stop: 58275, Start Num: 26

Candidate Starts for CloverMinnie\_79:

(Start: 26 @59450 has 1 MA's), (44, 59372), (56, 59336), (Start: 61 @59294 has 111 MA's), (76, 59198), (80, 59165), (82, 59141), (84, 59132), (94, 59108), (99, 59090), (107, 59069), (125, 58922), (127, 58898), (128, 58892), (131, 58874), (143, 58820), (146, 58784), (154, 58739), (162, 58688), (182, 58574), (204, 58484), (208, 58457), (209, 58451), (228, 58340),

Gene: Coffee\_84 Start: 64899, Stop: 63829, Start Num: 61

Candidate Starts for Coffee\_84:

(Start: 61 @64899 has 111 MA's), (Start: 67 @64869 has 1 MA's), (76, 64803), (78, 64794), (80, 64770), (82, 64746), (88, 64722), (128, 64467), (130, 64461), (131, 64449), (139, 64416), (143, 64395), (150, 64338), (151, 64335), (158, 64296), (160, 64287), (164, 64257), (167, 64242), (170, 64224), (173, 64200), (177, 64179), (182, 64149), (189, 64128), (203, 64062), (204, 64059), (208, 64032), (209, 64026), (221, 63951), (226, 63915),

Gene: Compostia\_96 Start: 67362, Stop: 66304, Start Num: 61

Candidate Starts for Compostia\_96:

(24, 67536), (Start: 31 @67506 has 6 MA's), (Start: 52 @67416 has 15 MA's), (Start: 61 @67362 has 111 MA's), (Start: 67 @67332 has 1 MA's), (76, 67248), (80, 67215), (96, 67143), (114, 67071), (124, 66990), (127, 66945), (128, 66939), (130, 66933), (131, 66921), (139, 66885), (154, 66783), (158, 66765), (166, 66720), (177, 66648), (179, 66633), (185, 66606), (189, 66597), (201, 66540), (212, 66456), (215, 66432), (223, 66402),

Gene: Cooper\_93 Start: 68069, Stop: 67017, Start Num: 61

Candidate Starts for Cooper\_93:

(50, 68126), (Start: 61 @68069 has 111 MA's), (71, 67997), (76, 67955), (80, 67922), (81, 67907), (82, 67898), (87, 67880), (100, 67838), (101, 67835), (105, 67820), (106, 67817), (114, 67772), (122, 67709), (128, 67640), (130, 67634), (131, 67622), (135, 67604), (149, 67514), (151, 67505), (154, 67484), (160, 67457), (167, 67412), (174, 67367), (177, 67349), (179, 67334), (180, 67325), (182, 67319), (184, 67310), (193, 67289), (203, 67232), (208, 67202), (211, 67172), (212, 67160), (229, 67076), (232, 67055), (239, 67022),

Gene: Corofin\_97 Start: 66919, Stop: 65861, Start Num: 61

Candidate Starts for Corofin\_97:

(24, 67093), (Start: 31 @67063 has 6 MA's), (Start: 52 @66973 has 15 MA's), (Start: 61 @66919 has 111 MA's), (Start: 67 @66889 has 1 MA's), (76, 66805), (80, 66772), (96, 66700), (114, 66628), (124, 66547), (127, 66502), (128, 66496), (130, 66490), (131, 66478), (133, 66472), (139, 66442), (154, 66340), (158, 66322), (166, 66277), (177, 66205), (179, 66190), (185, 66163), (189, 66154), (201, 66097), (212, 66013), (215, 65989), (223, 65959),

Gene: Daisy\_96 Start: 66522, Stop: 65410, Start Num: 52

Candidate Starts for Daisy\_96:

(24, 66642), (Start: 31 @66612 has 6 MA's), (Start: 52 @66522 has 15 MA's), (Start: 61 @66468 has 111 MA's), (Start: 67 @66438 has 1 MA's), (76, 66354), (80, 66321), (96, 66249), (114, 66177), (124, 66096), (127, 66051), (128, 66045), (130, 66039), (131, 66027), (139, 65991), (154, 65889), (158, 65871), (166, 65826), (177, 65754), (179, 65739), (185, 65712), (189, 65703), (201, 65646), (212, 65562), (215, 65538), (223, 65508),

Gene: Deenasa\_98 Start: 68122, Stop: 67064, Start Num: 61

Candidate Starts for Deenasa\_98:

(24, 68296), (Start: 31 @68266 has 6 MA's), (Start: 52 @68176 has 15 MA's), (Start: 61 @68122 has 111 MA's), (Start: 67 @68092 has 1 MA's), (76, 68008), (80, 67975), (96, 67903), (114, 67831), (124, 67750), (127, 67705), (128, 67699), (130, 67693), (131, 67681), (133, 67675), (139, 67645), (154, 67543), (158, 67525), (166, 67480), (177, 67408), (179, 67393), (185, 67366), (189, 67357), (201, 67300), (212, 67216), (215, 67192), (223, 67162),

Gene: Devonte\_95 Start: 66534, Stop: 65476, Start Num: 61

Candidate Starts for Devonte\_95:

(24, 66708), (Start: 31 @66678 has 6 MA's), (Start: 52 @66588 has 15 MA's), (Start: 61 @66534 has 111 MA's), (Start: 67 @66504 has 1 MA's), (76, 66420), (80, 66387), (96, 66315), (114, 66243), (124, 66162), (127, 66117), (128, 66111), (130, 66105), (131, 66093), (139, 66057), (154, 65955), (158, 65937), (166, 65892), (177, 65820), (179, 65805), (185, 65778), (189, 65769), (201, 65712), (212, 65628), (215, 65604), (223, 65574),

Gene: DigitDog\_92 Start: 67609, Stop: 66536, Start Num: 61

Candidate Starts for DigitDog\_92:

(13, 67918), (22, 67804), (27, 67762), (Start: 61 @67609 has 111 MA's), (76, 67513), (80, 67480), (92, 67438), (99, 67408), (108, 67366), (109, 67357), (128, 67207), (130, 67201), (143, 67135), (151, 67075), (167, 66982), (168, 66973), (172, 66943), (176, 66928), (180, 66895), (182, 66889), (184, 66880), (189, 66868), (204, 66799), (205, 66793), (206, 66790), (215, 66706), (216, 66700), (225, 66661), (243, 66571), (244, 66568), (245, 66553),

Gene: DonTron\_1 Start: 1, Stop: 1032, Start Num: 61

Candidate Starts for DonTron\_1:

(Start: 61 @1 has 111 MA's), (76, 97), (94, 199), (126, 406), (128, 418), (130, 424), (141, 481), (147, 526), (151, 547), (158, 586), (177, 703), (179, 718), (186, 754), (189, 757),

Gene: Donny\_90 Start: 66942, Stop: 65869, Start Num: 61

Candidate Starts for Donny\_90:

(27, 67095), (Start: 61 @66942 has 111 MA's), (76, 66846), (80, 66813), (92, 66771), (109, 66690), (128, 66540), (130, 66534), (143, 66468), (167, 66315), (172, 66276), (176, 66261), (182, 66225), (184, 66216), (189, 66204), (193, 66195), (204, 66135), (206, 66126), (215, 66042), (216, 66036), (231, 65973), (241, 65922), (243, 65907), (245, 65889),

Gene: Dropshot\_50 Start: 30656, Stop: 31708, Start Num: 57

Candidate Starts for Dropshot\_50:

(Start: 57 @30656 has 6 MA's), (Start: 61 @30698 has 111 MA's), (76, 30794), (81, 30842), (108, 30932), (128, 31091), (130, 31097), (132, 31112), (148, 31193), (177, 31367), (202, 31475), (220, 31595), (228, 31637), (240, 31697),

Gene: Eaglehorse\_86 Start: 64784, Stop: 63714, Start Num: 61

Candidate Starts for Eaglehorse\_86:

(Start: 61 @64784 has 111 MA's), (Start: 67 @64754 has 1 MA's), (76, 64688), (78, 64679), (80, 64655), (82, 64631), (88, 64607), (128, 64352), (130, 64346), (131, 64334), (139, 64301), (143, 64280), (150, 64223), (151, 64220), (158, 64181), (160, 64172), (164, 64142), (167, 64127), (173,

64085), (177, 64064), (182, 64034), (189, 64013), (203, 63947), (204, 63944), (208, 63917), (209, 63911), (221, 63836), (226, 63800),

Gene: EastView9101\_92 Start: 67134, Stop: 66061, Start Num: 61

Candidate Starts for EastView9101\_92:

(27, 67287), (Start: 61 @67134 has 111 MA's), (76, 67038), (80, 67005), (92, 66963), (109, 66882), (128, 66732), (130, 66726), (143, 66660), (161, 66546), (167, 66507), (172, 66468), (176, 66453), (182, 66417), (184, 66408), (189, 66396), (193, 66387), (204, 66327), (206, 66318), (215, 66234), (216, 66228), (231, 66165), (243, 66099), (245, 66081),

Gene: EastWest\_82 Start: 49764, Stop: 48769, Start Num: 64

Candidate Starts for EastWest\_82:

(Start: 64 @49764 has 20 MA's), (79, 49671), (88, 49608), (95, 49590), (102, 49575), (125, 49410), (128, 49380), (131, 49362), (148, 49278), (155, 49236), (156, 49233), (161, 49206), (189, 49053), (196, 49020), (227, 48837),

Gene: Evaa\_80 Start: 59121, Stop: 58117, Start Num: 61

Candidate Starts for Evaa\_80:

(Start: 61 @59121 has 111 MA's), (68, 59088), (76, 59025), (80, 58992), (82, 58968), (84, 58959), (96, 58929), (106, 58911), (107, 58908), (108, 58893), (114, 58866), (128, 58734), (130, 58728), (135, 58698), (150, 58602), (154, 58578), (160, 58551), (178, 58440), (179, 58428), (185, 58401), (214, 58233), (215, 58230),

Gene: Faze9\_84 Start: 64921, Stop: 63851, Start Num: 61

Candidate Starts for Faze9\_84:

(Start: 61 @64921 has 111 MA's), (Start: 67 @64891 has 1 MA's), (76, 64825), (78, 64816), (80, 64792), (82, 64768), (88, 64744), (128, 64489), (130, 64483), (131, 64471), (139, 64438), (143, 64417), (150, 64360), (151, 64357), (158, 64318), (160, 64309), (164, 64279), (167, 64264), (170, 64246), (173, 64222), (177, 64201), (182, 64171), (189, 64150), (203, 64084), (204, 64081), (208, 64054), (209, 64048), (221, 63973), (226, 63937),

Gene: Fortunato\_89 Start: 68261, Stop: 67203, Start Num: 61

Candidate Starts for Fortunato\_89:

(Start: 61 @68261 has 111 MA's), (70, 68207), (76, 68147), (77, 68141), (80, 68114), (81, 68099), (82, 68090), (87, 68072), (101, 68033), (106, 68015), (114, 67970), (122, 67907), (128, 67838), (131, 67820), (135, 67802), (139, 67784), (149, 67712), (151, 67703), (154, 67682), (174, 67565), (176, 67556), (179, 67532), (180, 67523), (184, 67508), (193, 67487), (203, 67430), (208, 67400), (211, 67370), (212, 67358), (214, 67337), (229, 67262), (232, 67241), (237, 67214), (239, 67208),

Gene: Franzy\_71 Start: 49640, Stop: 48591, Start Num: 58

Candidate Starts for Franzy\_71:

(Start: 58 @49640 has 2 MA's), (Start: 64 @49595 has 20 MA's), (96, 49415), (102, 49397), (110, 49352), (112, 49343), (116, 49316), (125, 49232), (127, 49208), (128, 49202), (131, 49184), (156, 49055), (177, 48926), (179, 48911), (218, 48704), (227, 48659), (237, 48605),

Gene: Frederick\_90 Start: 68766, Stop: 67708, Start Num: 61

Candidate Starts for Frederick\_90:

(Start: 61 @68766 has 111 MA's), (70, 68712), (71, 68694), (76, 68652), (77, 68646), (80, 68619), (81, 68604), (82, 68595), (87, 68577), (101, 68538), (106, 68520), (114, 68475), (122, 68412), (128, 68343), (131, 68325), (135, 68307), (139, 68289), (149, 68217), (151, 68208), (154, 68187), (174, 68070), (176, 68061), (179, 68037), (180, 68028), (184, 68013), (193, 67992), (203, 67935), (208, 67905), (211, 67875), (212, 67863), (214, 67842), (229, 67767), (232, 67746), (239, 67713),

Gene: FrenchFry\_86 Start: 64908, Stop: 63838, Start Num: 61

Candidate Starts for FrenchFry\_86:

(Start: 61 @64908 has 111 MA's), (Start: 67 @64878 has 1 MA's), (76, 64812), (78, 64803), (80, 64779), (82, 64755), (88, 64731), (128, 64476), (130, 64470), (131, 64458), (139, 64425), (143, 64404), (150, 64347), (151, 64344), (158, 64305), (160, 64296), (164, 64266), (167, 64251), (170, 64233), (173, 64209), (177, 64188), (182, 64158), (189, 64137), (203, 64071), (204, 64068), (208, 64041), (209, 64035), (221, 63960), (226, 63924),

Gene: Fresco\_80 Start: 59322, Stop: 58315, Start Num: 61

Candidate Starts for Fresco\_80:

(Start: 61 @59322 has 111 MA's), (76, 59226), (80, 59193), (81, 59178), (96, 59127), (105, 59112), (127, 58938), (128, 58932), (131, 58914), (143, 58860), (148, 58818), (149, 58809), (154, 58779), (162, 58728), (200, 58545), (203, 58527), (204, 58524), (209, 58491), (212, 58455), (235, 58332),

Gene: Funsized\_89 Start: 69514, Stop: 68426, Start Num: 61

Candidate Starts for Funsized\_89:

(Start: 52 @69568 has 15 MA's), (Start: 61 @69514 has 111 MA's), (76, 69418), (80, 69385), (84, 69352), (94, 69304), (95, 69298), (97, 69292), (101, 69280), (103, 69268), (115, 69202), (120, 69151), (128, 69073), (130, 69067), (133, 69049), (143, 69001), (151, 68941), (158, 68902), (160, 68893), (161, 68887), (162, 68869), (172, 68809), (176, 68794), (182, 68755), (189, 68734), (202, 68677), (204, 68665), (205, 68659), (206, 68656), (213, 68584), (215, 68572),

Gene: Gadget\_96 Start: 66316, Stop: 65114, Start Num: 31

Candidate Starts for Gadget\_96:

(24, 66346), (Start: 31 @66316 has 6 MA's), (Start: 52 @66226 has 15 MA's), (Start: 61 @66172 has 111 MA's), (Start: 67 @66142 has 1 MA's), (76, 66058), (80, 66025), (96, 65953), (114, 65881), (124, 65800), (127, 65755), (128, 65749), (130, 65743), (131, 65731), (139, 65695), (154, 65593), (158, 65575), (166, 65530), (177, 65458), (179, 65443), (185, 65416), (189, 65407), (201, 65350), (212, 65266), (215, 65242), (223, 65212),

Gene: Gervas\_98 Start: 67363, Stop: 66305, Start Num: 61

Candidate Starts for Gervas\_98:

(24, 67537), (Start: 31 @67507 has 6 MA's), (Start: 52 @67417 has 15 MA's), (Start: 61 @67363 has 111 MA's), (Start: 67 @67333 has 1 MA's), (76, 67249), (80, 67216), (96, 67144), (114, 67072), (124, 66991), (127, 66946), (128, 66940), (130, 66934), (131, 66922), (139, 66886), (154, 66784), (158, 66766), (166, 66721), (177, 66649), (179, 66634), (185, 66607), (189, 66598), (201, 66541), (212, 66457), (215, 66433), (223, 66403),

Gene: Glass\_87 Start: 64915, Stop: 63845, Start Num: 61

Candidate Starts for Glass\_87:

(Start: 61 @64915 has 111 MA's), (Start: 67 @64885 has 1 MA's), (76, 64819), (78, 64810), (80, 64786), (82, 64762), (88, 64738), (128, 64483), (130, 64477), (131, 64465), (139, 64432), (143, 64411), (150, 64354), (151, 64351), (158, 64312), (160, 64303), (164, 64273), (167, 64258), (173, 64216), (177, 64195), (182, 64165), (189, 64144), (203, 64078), (204, 64075), (208, 64048), (209, 64042), (221, 63967), (226, 63931),

Gene: GlenHope\_98 Start: 66938, Stop: 65880, Start Num: 61

Candidate Starts for GlenHope\_98:

(24, 67112), (Start: 31 @67082 has 6 MA's), (Start: 52 @66992 has 15 MA's), (Start: 61 @66938 has 111 MA's), (Start: 67 @66908 has 1 MA's), (76, 66824), (80, 66791), (96, 66719), (111, 66662), (114, 66647), (124, 66566), (127, 66521), (128, 66515), (130, 66509), (131, 66497), (139, 66461), (154, 66359), (158, 66341), (166, 66296), (177, 66224), (179, 66209), (185, 66182), (189, 66173), (201, 66116), (212, 66032), (215, 66008), (223, 65978),

Gene: Godines\_85 Start: 64821, Stop: 63751, Start Num: 61

Candidate Starts for Godines\_85:

(23, 65016), (Start: 61 @64821 has 111 MA's), (Start: 67 @64791 has 1 MA's), (76, 64725), (78, 64716), (80, 64692), (82, 64668), (88, 64644), (128, 64389), (130, 64383), (131, 64371), (139, 64338), (143, 64317), (150, 64260), (151, 64257), (158, 64218), (160, 64209), (164, 64179), (167, 64164), (170, 64146), (173, 64122), (177, 64101), (182, 64071), (189, 64050), (203, 63984), (204, 63981), (208, 63954), (209, 63948), (221, 63873), (226, 63837),

Gene: GravityBall\_77 Start: 50741, Stop: 49743, Start Num: 64

Candidate Starts for GravityBall\_77:

(Start: 62 @50747 has 2 MA's), (Start: 64 @50741 has 20 MA's), (79, 50645), (88, 50582), (95, 50564), (125, 50384), (127, 50360), (128, 50354), (131, 50336), (132, 50333), (146, 50258), (156, 50207), (179, 50063), (189, 50027), (196, 49994), (227, 49811), (236, 49760),

Gene: Grekaycon\_77 Start: 50613, Stop: 49618, Start Num: 64

Candidate Starts for Grekaycon\_77:

(Start: 64 @50613 has 20 MA's), (79, 50520), (88, 50457), (95, 50439), (125, 50259), (127, 50235), (128, 50229), (131, 50211), (132, 50208), (146, 50133), (156, 50082), (177, 49953), (179, 49938), (189, 49902), (196, 49869), (227, 49686),

Gene: Halfpint\_97 Start: 66683, Stop: 65625, Start Num: 61

Candidate Starts for Halfpint\_97:

(24, 66857), (Start: 31 @66827 has 6 MA's), (Start: 52 @66737 has 15 MA's), (Start: 61 @66683 has 111 MA's), (Start: 67 @66653 has 1 MA's), (76, 66569), (80, 66536), (96, 66464), (114, 66392), (124, 66311), (127, 66266), (128, 66260), (130, 66254), (131, 66242), (139, 66206), (154, 66104), (158, 66086), (166, 66041), (177, 65969), (179, 65954), (185, 65927), (189, 65918), (201, 65861), (212, 65777), (215, 65753), (223, 65723),

Gene: Hangman\_92 Start: 69061, Stop: 68003, Start Num: 61

Candidate Starts for Hangman\_92:

(Start: 61 @69061 has 111 MA's), (70, 69007), (76, 68947), (77, 68941), (80, 68914), (81, 68899), (82, 68890), (87, 68872), (101, 68833), (106, 68815), (107, 68812), (114, 68770), (122, 68707), (128, 68638), (131, 68620), (135, 68602), (139, 68584), (149, 68512), (151, 68503), (154, 68482), (174, 68365), (176, 68356), (179, 68332), (180, 68323), (184, 68308), (193, 68287), (203, 68230), (208, 68200), (211, 68170), (212, 68158), (214, 68137), (229, 68062), (232, 68041), (237, 68014), (239, 68008),

Gene: HarveySr\_94 Start: 66061, Stop: 64949, Start Num: 52

Candidate Starts for HarveySr\_94:

(24, 66181), (Start: 31 @66151 has 6 MA's), (Start: 52 @66061 has 15 MA's), (Start: 61 @66007 has 111 MA's), (Start: 67 @65977 has 1 MA's), (76, 65893), (80, 65860), (96, 65788), (114, 65716), (124, 65635), (127, 65590), (128, 65584), (130, 65578), (131, 65566), (133, 65560), (139, 65530), (154, 65428), (158, 65410), (166, 65365), (177, 65293), (179, 65278), (185, 65251), (189, 65242), (201, 65185), (212, 65101), (215, 65077), (223, 65047),

Gene: Heath\_86 Start: 66831, Stop: 65773, Start Num: 61

Candidate Starts for Heath\_86:

(Start: 61 @66831 has 111 MA's), (70, 66777), (71, 66759), (76, 66717), (77, 66711), (80, 66684), (81, 66669), (82, 66660), (87, 66642), (101, 66603), (106, 66585), (114, 66540), (122, 66477), (128, 66408), (131, 66390), (135, 66372), (139, 66354), (149, 66282), (151, 66273), (154, 66252), (174, 66135), (176, 66126), (179, 66102), (180, 66093), (184, 66078), (193, 66057), (203, 66000), (208, 65970), (211, 65940), (212, 65928), (214, 65907), (229, 65832), (232, 65811), (239, 65778),

Gene: Heathcliff\_97 Start: 66916, Stop: 65804, Start Num: 52

Candidate Starts for Heathcliff\_97:

(24, 67036), (Start: 31 @67006 has 6 MA's), (Start: 52 @66916 has 15 MA's), (Start: 61 @66862 has 111 MA's), (Start: 67 @66832 has 1 MA's), (76, 66748), (80, 66715), (96, 66643), (114, 66571), (124, 66490), (127, 66445), (128, 66439), (130, 66433), (131, 66421), (139, 66385), (154, 66283), (158, 66265), (166, 66220), (177, 66148), (179, 66133), (185, 66106), (189, 66097), (201, 66040), (212, 65956), (215, 65932), (223, 65902),

Gene: Hedgerow\_85 Start: 64872, Stop: 63802, Start Num: 61

Candidate Starts for Hedgerow\_85:

(Start: 61 @64872 has 111 MA's), (Start: 67 @64842 has 1 MA's), (76, 64776), (78, 64767), (80, 64743), (82, 64719), (88, 64695), (128, 64440), (130, 64434), (131, 64422), (139, 64389), (143, 64368), (150, 64311), (151, 64308), (158, 64269), (160, 64260), (164, 64230), (167, 64215), (170, 64197), (173, 64173), (177, 64152), (182, 64122), (189, 64101), (203, 64035), (204, 64032), (208, 64005), (209, 63999), (221, 63924), (226, 63888),

Gene: Holeinone\_85 Start: 64762, Stop: 63692, Start Num: 61

Candidate Starts for Holeinone\_85:

(23, 64957), (Start: 61 @64762 has 111 MA's), (Start: 67 @64732 has 1 MA's), (76, 64666), (78, 64657), (80, 64633), (82, 64609), (88, 64585), (108, 64489), (128, 64330), (130, 64324), (131, 64312), (139, 64279), (143, 64258), (150, 64201), (151, 64198), (158, 64159), (160, 64150), (164, 64120), (167, 64105), (170, 64087), (173, 64063), (177, 64042), (182, 64012), (189, 63991), (203, 63925), (204, 63922), (208, 63895), (209, 63889), (221, 63814), (226, 63778),

Gene: Hosp\_090 Start: 66775, Stop: 65738, Start Num: 61

Candidate Starts for Hosp\_090:

(43, 66856), (Start: 61 @66775 has 111 MA's), (Start: 67 @66745 has 1 MA's), (71, 66703), (76, 66661), (80, 66628), (84, 66595), (96, 66574), (101, 66565), (114, 66502), (128, 66370), (130, 66364), (131, 66352), (149, 66244), (151, 66235), (154, 66214), (160, 66187), (179, 66064), (182, 66049), (208, 65932), (214, 65869), (229, 65797),

Gene: Hydro\_92 Start: 68848, Stop: 67790, Start Num: 61

Candidate Starts for Hydro\_92:

(Start: 61 @68848 has 111 MA's), (70, 68794), (76, 68734), (77, 68728), (80, 68701), (81, 68686), (82, 68677), (87, 68659), (101, 68620), (106, 68602), (107, 68599), (114, 68557), (122, 68494), (128, 68425), (131, 68407), (135, 68389), (139, 68371), (149, 68299), (151, 68290), (154, 68269), (174, 68152), (176, 68143), (179, 68119), (180, 68110), (193, 68074), (203, 68017), (208, 67987), (211, 67957), (212, 67945), (214, 67924), (229, 67849), (232, 67828), (239, 67795),

Gene: Indlovu\_89 Start: 68368, Stop: 67307, Start Num: 61

Candidate Starts for Indlovu\_89:

(Start: 61 @68368 has 111 MA's), (76, 68242), (77, 68236), (80, 68209), (84, 68176), (87, 68167), (99, 68137), (128, 67936), (130, 67930), (131, 67918), (133, 67912), (143, 67864), (150, 67807), (154, 67783), (160, 67756), (161, 67750), (166, 67720), (167, 67711), (169, 67699), (183, 67615), (203, 67531), (204, 67528), (229, 67366), (232, 67345), (236, 67321), (237, 67318),

Gene: ItsyBitsy1\_82 Start: 64989, Stop: 63919, Start Num: 61

Candidate Starts for ItsyBitsy1\_82:

(23, 65184), (Start: 61 @64989 has 111 MA's), (Start: 67 @64959 has 1 MA's), (76, 64893), (78, 64884), (80, 64860), (88, 64812), (128, 64557), (130, 64551), (131, 64539), (139, 64506), (143, 64485), (150, 64428), (151, 64425), (158, 64386), (160, 64377), (164, 64347), (167, 64332), (170, 64314), (173, 64290), (177, 64269), (182, 64239), (189, 64218), (203, 64152), (204, 64149), (208,

64122), (209, 64116), (221, 64041), (226, 64005),

Gene: JAMaL\_92 Start: 68380, Stop: 67322, Start Num: 61

Candidate Starts for JAMaL\_92:

(Start: 61 @68380 has 111 MA's), (70, 68326), (71, 68308), (76, 68266), (80, 68233), (81, 68218), (82, 68209), (87, 68191), (99, 68158), (101, 68152), (106, 68134), (107, 68131), (114, 68089), (122, 68026), (128, 67957), (131, 67939), (135, 67921), (139, 67903), (149, 67831), (151, 67822), (154, 67801), (174, 67684), (176, 67675), (179, 67651), (180, 67642), (184, 67627), (193, 67606), (203, 67549), (208, 67519), (211, 67489), (212, 67477), (214, 67456), (229, 67381), (232, 67360), (239, 67327),

Gene: JKerns\_75 Start: 50196, Stop: 49201, Start Num: 64

Candidate Starts for JKerns\_75:

(Start: 64 @50196 has 20 MA's), (79, 50103), (88, 50040), (95, 50022), (121, 49887), (125, 49842), (127, 49818), (128, 49812), (131, 49794), (132, 49791), (146, 49716), (156, 49665), (177, 49536), (179, 49521), (189, 49485), (196, 49452), (227, 49269),

Gene: Jace\_91 Start: 51481, Stop: 50453, Start Num: 61

Candidate Starts for Jace\_91:

(1, 51994), (2, 51988), (3, 51958), (4, 51949), (5, 51934), (6, 51907), (7, 51901), (8, 51898), (9, 51868), (10, 51841), (12, 51814), (15, 51781), (16, 51754), (17, 51748), (18, 51742), (19, 51733), (Start: 26 @51649 has 1 MA's), (29, 51640), (42, 51574), (47, 51556), (49, 51550), (Start: 61 @51481 has 111 MA's), (75, 51388), (76, 51385), (87, 51310), (98, 51268), (101, 51259), (114, 51196), (127, 51070), (128, 51064), (165, 50854), (171, 50809), (177, 50779), (179, 50764), (182, 50749), (204, 50659), (207, 50644), (215, 50566), (216, 50560),

Gene: Jackstina\_90 Start: 66779, Stop: 65721, Start Num: 61

Candidate Starts for Jackstina\_90:

(24, 66953), (Start: 31 @66923 has 6 MA's), (Start: 52 @66833 has 15 MA's), (Start: 61 @66779 has 111 MA's), (Start: 67 @66749 has 1 MA's), (76, 66665), (80, 66632), (96, 66560), (114, 66488), (124, 66407), (127, 66362), (128, 66356), (130, 66350), (131, 66338), (139, 66302), (154, 66200), (158, 66182), (166, 66137), (177, 66065), (179, 66050), (185, 66023), (189, 66014), (201, 65957), (212, 65873), (215, 65849), (223, 65819),

Gene: JaguarMi\_86 Start: 68822, Stop: 67764, Start Num: 61

Candidate Starts for JaguarMi\_86:

(Start: 61 @68822 has 111 MA's), (70, 68768), (72, 68732), (76, 68708), (77, 68702), (80, 68675), (81, 68660), (82, 68651), (87, 68633), (101, 68594), (106, 68576), (107, 68573), (114, 68531), (122, 68468), (128, 68399), (131, 68381), (135, 68363), (139, 68345), (149, 68273), (151, 68264), (154, 68243), (174, 68126), (176, 68117), (179, 68093), (180, 68084), (184, 68069), (193, 68048), (203, 67991), (208, 67961), (211, 67931), (212, 67919), (214, 67898), (229, 67823), (232, 67802), (237, 67775), (239, 67769),

Gene: Jawnski\_72 Start: 49083, Stop: 48034, Start Num: 58

Candidate Starts for Jawnski\_72:

(Start: 58 @49083 has 2 MA's), (Start: 64 @49038 has 20 MA's), (96, 48858), (102, 48840), (110, 48795), (112, 48786), (116, 48759), (125, 48675), (127, 48651), (128, 48645), (131, 48627), (156, 48498), (177, 48369), (179, 48354), (196, 48285), (218, 48147), (227, 48102), (237, 48048),

Gene: Jolie1\_092 Start: 68844, Stop: 67807, Start Num: 61

Candidate Starts for Jolie1\_092:

(43, 68925), (Start: 61 @68844 has 111 MA's), (Start: 67 @68814 has 1 MA's), (71, 68772), (76, 68730), (80, 68697), (84, 68664), (96, 68643), (114, 68571), (128, 68439), (130, 68433), (131, 68421),



(149, 68313), (151, 68304), (154, 68283), (159, 68259), (160, 68256), (167, 68211), (179, 68133), (208, 68001), (214, 67938), (229, 67866),

Gene: Jordan\_77 Start: 50754, Stop: 49759, Start Num: 64

Candidate Starts for Jordan\_77:

(Start: 64 @50754 has 20 MA's), (79, 50661), (88, 50598), (95, 50580), (121, 50445), (125, 50400), (127, 50376), (128, 50370), (131, 50352), (132, 50349), (146, 50274), (156, 50223), (177, 50094), (179, 50079), (189, 50043), (196, 50010), (227, 49827),

Gene: Kaleb\_85 Start: 64918, Stop: 63848, Start Num: 61

Candidate Starts for Kaleb\_85:

(Start: 61 @64918 has 111 MA's), (Start: 67 @64888 has 1 MA's), (76, 64822), (78, 64813), (80, 64789), (82, 64765), (88, 64741), (128, 64486), (130, 64480), (131, 64468), (139, 64435), (143, 64414), (150, 64357), (151, 64354), (158, 64315), (160, 64306), (164, 64276), (167, 64261), (170, 64243), (173, 64219), (177, 64198), (182, 64168), (189, 64147), (203, 64081), (204, 64078), (208, 64051), (209, 64045), (221, 63970), (226, 63934),

Gene: Kamiyu\_97 Start: 66920, Stop: 65808, Start Num: 52

Candidate Starts for Kamiyu\_97:

(24, 67040), (Start: 31 @67010 has 6 MA's), (Start: 52 @66920 has 15 MA's), (Start: 61 @66866 has 111 MA's), (Start: 67 @66836 has 1 MA's), (76, 66752), (80, 66719), (96, 66647), (114, 66575), (124, 66494), (127, 66449), (128, 66443), (130, 66437), (131, 66425), (139, 66389), (154, 66287), (158, 66269), (166, 66224), (177, 66152), (179, 66137), (185, 66110), (189, 66101), (201, 66044), (212, 65960), (215, 65936), (223, 65906),

Gene: KayaCho\_90 Start: 68660, Stop: 67599, Start Num: 61

Candidate Starts for KayaCho\_90:

(43, 68741), (Start: 61 @68660 has 111 MA's), (Start: 67 @68630 has 1 MA's), (76, 68546), (80, 68513), (82, 68489), (87, 68471), (93, 68453), (106, 68408), (107, 68405), (114, 68363), (122, 68300), (128, 68231), (130, 68225), (131, 68213), (149, 68105), (151, 68096), (154, 68075), (160, 68048), (167, 68003), (174, 67958), (179, 67925), (208, 67793), (214, 67730), (229, 67658),

Gene: Kheth\_85 Start: 64824, Stop: 63754, Start Num: 61

Candidate Starts for Kheth\_85:

(Start: 61 @64824 has 111 MA's), (Start: 67 @64794 has 1 MA's), (76, 64728), (78, 64719), (80, 64695), (82, 64671), (128, 64392), (130, 64386), (131, 64374), (139, 64341), (143, 64320), (150, 64263), (151, 64260), (158, 64221), (160, 64212), (164, 64182), (167, 64167), (170, 64149), (173, 64125), (177, 64104), (182, 64074), (189, 64053), (203, 63987), (204, 63984), (208, 63957), (209, 63951), (221, 63876), (226, 63840),

Gene: King2\_72 Start: 49965, Stop: 48961, Start Num: 64

Candidate Starts for King2\_72:

(Start: 58 @50010 has 2 MA's), (Start: 64 @49965 has 20 MA's), (96, 49785), (102, 49767), (110, 49722), (112, 49713), (116, 49686), (125, 49602), (127, 49578), (128, 49572), (131, 49554), (156, 49425), (177, 49296), (179, 49281), (218, 49074), (227, 49029), (237, 48975),

Gene: Klevey\_76 Start: 46572, Stop: 45574, Start Num: 65

Candidate Starts for Klevey\_76:

(14, 46890), (32, 46722), (Start: 58 @46623 has 2 MA's), (Start: 65 @46572 has 4 MA's), (76, 46503), (79, 46485), (125, 46227), (126, 46209), (127, 46203), (177, 45921), (184, 45882), (185, 45879),

Gene: Knocker\_89 Start: 68373, Stop: 67315, Start Num: 61

Candidate Starts for Knocker\_89:

(Start: 52 @68424 has 15 MA's), (Start: 61 @68373 has 111 MA's), (76, 68277), (79, 68259), (80, 68244), (89, 68202), (92, 68190), (95, 68172), (97, 68166), (105, 68151), (115, 68100), (119, 68055), (120, 68049), (127, 67977), (128, 67971), (130, 67965), (133, 67947), (143, 67902), (149, 67851), (151, 67842), (154, 67821), (158, 67803), (160, 67794), (161, 67788), (162, 67770), (167, 67749), (168, 67740), (176, 67695), (180, 67662), (182, 67656), (189, 67635), (202, 67578), (203, 67569), (204, 67566), (205, 67560), (206, 67557), (213, 67485), (215, 67473), (228, 67419), (243, 67338),

Gene: Kronus\_97 Start: 67951, Stop: 66893, Start Num: 61

Candidate Starts for Kronus\_97:

(24, 68125), (Start: 31 @68095 has 6 MA's), (Start: 52 @68005 has 15 MA's), (Start: 61 @67951 has 111 MA's), (Start: 67 @67921 has 1 MA's), (76, 67837), (80, 67804), (96, 67732), (114, 67660), (124, 67579), (127, 67534), (128, 67528), (130, 67522), (131, 67510), (139, 67474), (154, 67372), (158, 67354), (166, 67309), (177, 67237), (179, 67222), (185, 67195), (189, 67186), (201, 67129), (212, 67045), (215, 67021), (223, 66991),

Gene: Lars\_86 Start: 64888, Stop: 63818, Start Num: 61

Candidate Starts for Lars\_86:

(Start: 61 @64888 has 111 MA's), (Start: 67 @64858 has 1 MA's), (76, 64792), (78, 64783), (80, 64759), (82, 64735), (88, 64711), (128, 64456), (130, 64450), (131, 64438), (139, 64405), (143, 64384), (150, 64327), (151, 64324), (158, 64285), (160, 64276), (164, 64246), (167, 64231), (173, 64189), (177, 64168), (182, 64138), (189, 64117), (203, 64051), (204, 64048), (208, 64021), (209, 64015), (221, 63940), (226, 63904),

Gene: Laurie\_84 Start: 64232, Stop: 63162, Start Num: 61

Candidate Starts for Laurie\_84:

(Start: 61 @64232 has 111 MA's), (Start: 67 @64202 has 1 MA's), (76, 64136), (78, 64127), (80, 64103), (82, 64079), (88, 64055), (94, 64028), (108, 63959), (128, 63800), (130, 63794), (131, 63782), (139, 63749), (143, 63728), (150, 63671), (151, 63668), (158, 63629), (160, 63620), (164, 63590), (167, 63575), (170, 63557), (173, 63533), (177, 63512), (182, 63482), (189, 63461), (203, 63395), (204, 63392), (208, 63365), (209, 63359), (221, 63284), (226, 63248),

Gene: LeeroyJ\_78 Start: 50672, Stop: 49668, Start Num: 62

Candidate Starts for LeeroyJ\_78:

(Start: 62 @50672 has 2 MA's), (Start: 64 @50666 has 20 MA's), (79, 50570), (88, 50507), (95, 50489), (125, 50309), (127, 50285), (128, 50279), (131, 50261), (132, 50258), (146, 50183), (156, 50132), (179, 49988), (189, 49952), (196, 49919), (227, 49736), (236, 49685),

Gene: Lephleur\_85 Start: 64743, Stop: 63673, Start Num: 61

Candidate Starts for Lephleur\_85:

(Start: 61 @64743 has 111 MA's), (Start: 67 @64713 has 1 MA's), (76, 64647), (78, 64638), (80, 64614), (82, 64590), (88, 64566), (128, 64311), (130, 64305), (131, 64293), (139, 64260), (143, 64239), (150, 64182), (151, 64179), (158, 64140), (160, 64131), (164, 64101), (167, 64086), (170, 64068), (173, 64044), (177, 64023), (182, 63993), (189, 63972), (203, 63906), (204, 63903), (208, 63876), (209, 63870), (221, 63795), (226, 63759),

Gene: LestyG\_95 Start: 66491, Stop: 65379, Start Num: 52

Candidate Starts for LestyG\_95:

(24, 66611), (Start: 31 @66581 has 6 MA's), (Start: 52 @66491 has 15 MA's), (Start: 61 @66437 has 111 MA's), (Start: 67 @66407 has 1 MA's), (76, 66323), (80, 66290), (96, 66218), (114, 66146), (124, 66065), (127, 66020), (128, 66014), (130, 66008), (131, 65996), (139, 65960), (154, 65858), (158, 65840), (166, 65795), (177, 65723), (179, 65708), (185, 65681), (189, 65672), (201, 65615), (212, 65531), (215, 65507), (223, 65477),

Gene: Ligma\_80 Start: 59316, Stop: 58309, Start Num: 61

Candidate Starts for Ligma\_80:

(Start: 61 @59316 has 111 MA's), (76, 59220), (80, 59187), (81, 59172), (96, 59121), (105, 59106), (127, 58932), (128, 58926), (131, 58908), (143, 58854), (148, 58812), (149, 58803), (154, 58773), (162, 58722), (200, 58539), (203, 58521), (204, 58518), (209, 58485), (212, 58449), (235, 58326),

Gene: LilMcDreamy\_90 Start: 68177, Stop: 67116, Start Num: 61

Candidate Starts for LilMcDreamy\_90:

(Start: 61 @68177 has 111 MA's), (76, 68081), (80, 68048), (106, 67952), (109, 67925), (114, 67907), (128, 67775), (130, 67769), (148, 67658), (151, 67640), (160, 67592), (167, 67547), (176, 67493), (182, 67454), (184, 67445), (195, 67400), (203, 67367), (204, 67364), (212, 67295), (215, 67271), (216, 67265), (225, 67229), (240, 67160), (241, 67154),

Gene: Lilbeanie\_90 Start: 55740, Stop: 56759, Start Num: 66

Candidate Starts for Lilbeanie\_90:

(Start: 66 @55740 has 1 MA's), (86, 55887), (90, 55899), (97, 55929), (99, 55935), (111, 55989), (125, 56106), (126, 56124), (128, 56136), (130, 56142), (134, 56163), (136, 56178), (142, 56205), (152, 56274), (157, 56301), (179, 56439), (238, 56754),

Gene: Lilmac1015\_76 Start: 46704, Stop: 45700, Start Num: 64

Candidate Starts for Lilmac1015\_76:

(Start: 64 @46704 has 20 MA's), (76, 46629), (79, 46611), (125, 46353), (127, 46329), (177, 46047), (184, 46008), (185, 46005),

Gene: LittleMunchkin\_79 Start: 61029, Stop: 60016, Start Num: 61

Candidate Starts for LittleMunchkin\_79:

(41, 61110), (55, 61074), (Start: 61 @61029 has 111 MA's), (76, 60933), (80, 60900), (84, 60867), (92, 60858), (107, 60816), (128, 60642), (130, 60636), (131, 60624), (140, 60576), (151, 60504), (154, 60483), (160, 60456), (170, 60393), (176, 60357), (190, 60294), (203, 60231), (204, 60228), (208, 60201), (215, 60135),

Gene: LizLemon\_85 Start: 64914, Stop: 63844, Start Num: 61

Candidate Starts for LizLemon\_85:

(Start: 61 @64914 has 111 MA's), (Start: 67 @64884 has 1 MA's), (76, 64818), (78, 64809), (80, 64785), (82, 64761), (88, 64737), (128, 64482), (130, 64476), (131, 64464), (139, 64431), (143, 64410), (150, 64353), (151, 64350), (158, 64311), (160, 64302), (164, 64272), (167, 64257), (170, 64239), (173, 64215), (177, 64194), (182, 64164), (189, 64143), (203, 64077), (204, 64074), (208, 64047), (209, 64041), (221, 63966), (226, 63930),

Gene: Lolalove\_94 Start: 68796, Stop: 67738, Start Num: 61

Candidate Starts for Lolalove\_94:

(Start: 61 @68796 has 111 MA's), (76, 68682), (77, 68676), (80, 68649), (81, 68634), (82, 68625), (87, 68607), (101, 68568), (106, 68550), (114, 68505), (122, 68442), (128, 68373), (131, 68355), (135, 68337), (138, 68325), (139, 68319), (149, 68247), (151, 68238), (154, 68217), (174, 68100), (176, 68091), (179, 68067), (180, 68058), (184, 68043), (193, 68022), (203, 67965), (208, 67935), (212, 67893), (214, 67872), (229, 67797), (232, 67776), (237, 67749), (239, 67743),

Gene: LuckyBarnes\_34 Start: 31205, Stop: 30204, Start Num: 61

Candidate Starts for LuckyBarnes\_34:

(45, 31289), (Start: 61 @31205 has 111 MA's), (104, 30989), (115, 30938), (126, 30821), (128, 30809), (147, 30710), (154, 30668), (161, 30635), (177, 30530), (183, 30497), (198, 30443), (202, 30422), (203, 30413), (210, 30362), (212, 30341), (216, 30311), (224, 30278), (236, 30221), (240, 30209),

Gene: Magpie\_88 Start: 68610, Stop: 67552, Start Num: 61

Candidate Starts for Magpie\_88:

(Start: 61 @68610 has 111 MA's), (70, 68556), (76, 68496), (77, 68490), (80, 68463), (81, 68448), (82, 68439), (87, 68421), (101, 68382), (106, 68364), (114, 68319), (122, 68256), (128, 68187), (131, 68169), (135, 68151), (139, 68133), (149, 68061), (151, 68052), (154, 68031), (166, 67968), (174, 67914), (176, 67905), (179, 67881), (180, 67872), (184, 67857), (193, 67836), (203, 67779), (208, 67749), (211, 67719), (212, 67707), (214, 67686), (229, 67611), (232, 67590), (237, 67563), (239, 67557),

Gene: Magritte\_144 Start: 88480, Stop: 89481, Start Num: 60

Candidate Starts for Magritte\_144:

(Start: 60 @88480 has 3 MA's), (73, 88561), (79, 88594), (105, 88711), (107, 88717), (108, 88732), (121, 88816), (122, 88822), (126, 88879), (127, 88885), (128, 88891), (146, 88984), (148, 88990), (163, 89083), (166, 89092), (170, 89119), (193, 89224), (202, 89272), (203, 89281),

Gene: MakoManhole\_77 Start: 58357, Stop: 57338, Start Num: 61

Candidate Starts for MakoManhole\_77:

(44, 58435), (46, 58426), (56, 58399), (Start: 61 @58357 has 111 MA's), (76, 58261), (80, 58228), (82, 58204), (84, 58195), (94, 58171), (99, 58153), (107, 58132), (125, 57985), (127, 57961), (128, 57955), (131, 57937), (143, 57883), (146, 57847), (154, 57802), (162, 57751), (182, 57637), (204, 57547), (208, 57520), (209, 57514), (228, 57403),

Gene: Mariokart\_76 Start: 58166, Stop: 57159, Start Num: 61

Candidate Starts for Mariokart\_76:

(20, 58379), (25, 58334), (41, 58250), (44, 58244), (56, 58208), (Start: 61 @58166 has 111 MA's), (76, 58070), (80, 58037), (81, 58022), (91, 57995), (96, 57971), (105, 57956), (125, 57806), (127, 57782), (128, 57776), (131, 57758), (143, 57704), (148, 57662), (149, 57653), (154, 57623), (162, 57572), (177, 57488), (182, 57458), (200, 57389), (203, 57371), (204, 57368), (209, 57335), (212, 57299),

Gene: Marley1013\_95 Start: 67451, Stop: 66339, Start Num: 52

Candidate Starts for Marley1013\_95:

(24, 67571), (Start: 31 @67541 has 6 MA's), (Start: 52 @67451 has 15 MA's), (Start: 61 @67397 has 111 MA's), (Start: 67 @67367 has 1 MA's), (76, 67283), (80, 67250), (96, 67178), (114, 67106), (124, 67025), (127, 66980), (128, 66974), (130, 66968), (131, 66956), (139, 66920), (154, 66818), (158, 66800), (166, 66755), (177, 66683), (179, 66668), (185, 66641), (189, 66632), (201, 66575), (212, 66491), (215, 66467), (223, 66437),

Gene: Martha\_76 Start: 50549, Stop: 49554, Start Num: 64

Candidate Starts for Martha\_76:

(Start: 64 @50549 has 20 MA's), (79, 50456), (88, 50393), (95, 50375), (125, 50195), (127, 50171), (128, 50165), (131, 50147), (132, 50144), (146, 50069), (156, 50018), (177, 49889), (179, 49874), (189, 49838), (196, 49805), (227, 49622),

Gene: MasterPo\_86 Start: 64783, Stop: 63713, Start Num: 61

Candidate Starts for MasterPo\_86:

(23, 64978), (Start: 61 @64783 has 111 MA's), (Start: 67 @64753 has 1 MA's), (76, 64687), (78, 64678), (80, 64654), (82, 64630), (88, 64606), (128, 64351), (130, 64345), (131, 64333), (139, 64300), (143, 64279), (150, 64222), (151, 64219), (158, 64180), (164, 64141), (167, 64126), (170, 64108), (173, 64084), (177, 64063), (182, 64033), (189, 64012), (203, 63946), (204, 63943), (208, 63916), (209, 63910), (221, 63835), (226, 63799),

Gene: MenE\_55 Start: 31078, Stop: 32130, Start Num: 57

Candidate Starts for MenE\_55:

(Start: 57 @31078 has 6 MA's), (Start: 61 @31120 has 111 MA's), (76, 31216), (81, 31264), (108, 31354), (128, 31513), (130, 31519), (132, 31534), (144, 31576), (148, 31615), (177, 31789), (202, 31897), (220, 32017), (228, 32059), (240, 32119),

Gene: Mithril\_90 Start: 68622, Stop: 67564, Start Num: 61

Candidate Starts for Mithril\_90:

(Start: 61 @68622 has 111 MA's), (76, 68508), (77, 68502), (80, 68475), (81, 68460), (82, 68451), (87, 68433), (101, 68394), (106, 68376), (114, 68331), (122, 68268), (128, 68199), (131, 68181), (135, 68163), (139, 68145), (149, 68073), (151, 68064), (154, 68043), (174, 67926), (176, 67917), (179, 67893), (180, 67884), (184, 67869), (193, 67848), (203, 67791), (208, 67761), (211, 67731), (212, 67719), (214, 67698), (229, 67623), (232, 67602), (237, 67575), (239, 67569),

Gene: MmasiCarm\_98 Start: 67294, Stop: 66236, Start Num: 61

Candidate Starts for MmasiCarm\_98:

(24, 67468), (Start: 31 @67438 has 6 MA's), (Start: 52 @67348 has 15 MA's), (Start: 61 @67294 has 111 MA's), (Start: 67 @67264 has 1 MA's), (76, 67180), (80, 67147), (96, 67075), (114, 67003), (124, 66922), (127, 66877), (128, 66871), (130, 66865), (131, 66853), (139, 66817), (154, 66715), (158, 66697), (166, 66652), (177, 66580), (179, 66565), (185, 66538), (189, 66529), (201, 66472), (212, 66388), (215, 66364), (223, 66334),

Gene: Mortcellus\_97 Start: 68032, Stop: 66974, Start Num: 61

Candidate Starts for Mortcellus\_97:

(24, 68206), (Start: 31 @68176 has 6 MA's), (Start: 52 @68086 has 15 MA's), (Start: 61 @68032 has 111 MA's), (Start: 67 @68002 has 1 MA's), (76, 67918), (80, 67885), (96, 67813), (114, 67741), (124, 67660), (127, 67615), (128, 67609), (130, 67603), (131, 67591), (139, 67555), (154, 67453), (158, 67435), (166, 67390), (177, 67318), (179, 67303), (185, 67276), (189, 67267), (201, 67210), (212, 67126), (215, 67102), (223, 67072),

Gene: Morty007\_95 Start: 67664, Stop: 66606, Start Num: 61

Candidate Starts for Morty007\_95:

(24, 67838), (Start: 31 @67808 has 6 MA's), (Start: 52 @67718 has 15 MA's), (Start: 61 @67664 has 111 MA's), (Start: 67 @67634 has 1 MA's), (76, 67550), (80, 67517), (96, 67445), (114, 67373), (124, 67292), (127, 67247), (128, 67241), (130, 67235), (131, 67223), (139, 67187), (154, 67085), (158, 67067), (166, 67022), (177, 66950), (179, 66935), (185, 66908), (189, 66899), (201, 66842), (212, 66758), (215, 66734), (223, 66704),

Gene: MossRose\_79 Start: 59268, Stop: 58249, Start Num: 61

Candidate Starts for MossRose\_79:

(Start: 26 @59424 has 1 MA's), (44, 59346), (56, 59310), (Start: 61 @59268 has 111 MA's), (76, 59172), (80, 59139), (82, 59115), (84, 59106), (94, 59082), (99, 59064), (107, 59043), (125, 58896), (127, 58872), (128, 58866), (131, 58848), (143, 58794), (146, 58758), (154, 58713), (162, 58662), (182, 58548), (204, 58458), (208, 58431), (209, 58425), (228, 58314),

Gene: Mudslide\_93 Start: 69027, Stop: 67969, Start Num: 61

Candidate Starts for Mudslide\_93:

(Start: 61 @69027 has 111 MA's), (70, 68973), (76, 68913), (77, 68907), (80, 68880), (81, 68865), (82, 68856), (87, 68838), (101, 68799), (106, 68781), (114, 68736), (122, 68673), (128, 68604), (131, 68586), (135, 68568), (138, 68556), (139, 68550), (149, 68478), (151, 68469), (154, 68448), (174, 68331), (176, 68322), (179, 68298), (180, 68289), (184, 68274), (193, 68253), (203, 68196), (208, 68166), (212, 68124), (214, 68103), (229, 68028), (232, 68007), (237, 67980), (239, 67974),

Gene: Mufasa8\_100 Start: 59050, Stop: 58061, Start Num: 60

Candidate Starts for Mufasa8\_100:

(Start: 60 @59050 has 3 MA's), (118, 58750), (122, 58729), (126, 58672), (127, 58666), (128, 58660), (130, 58654), (131, 58642), (138, 58627), (159, 58495), (177, 58384), (192, 58330), (204, 58264), (222, 58144),

Gene: Mysterious\_91 Start: 67024, Stop: 65951, Start Num: 61

Candidate Starts for Mysterious\_91:

(Start: 61 @67024 has 111 MA's), (76, 66928), (80, 66895), (92, 66853), (99, 66823), (106, 66799), (109, 66772), (113, 66760), (128, 66622), (130, 66616), (131, 66604), (140, 66562), (151, 66490), (167, 66397), (172, 66358), (176, 66343), (178, 66331), (182, 66304), (184, 66295), (189, 66283), (203, 66217), (204, 66214), (205, 66208), (206, 66205), (215, 66121), (216, 66115), (225, 66079), (242, 65998), (243, 65989), (246, 65968),

Gene: NHagos\_76 Start: 57550, Stop: 56543, Start Num: 61

Candidate Starts for NHagos\_76:

(Start: 61 @57550 has 111 MA's), (76, 57454), (80, 57421), (96, 57355), (105, 57340), (107, 57334), (125, 57190), (127, 57166), (128, 57160), (131, 57142), (143, 57088), (147, 57049), (154, 57007), (162, 56956), (190, 56818), (204, 56752), (208, 56725), (209, 56719), (216, 56653), (225, 56617),

Gene: Nanao\_91 Start: 67687, Stop: 66641, Start Num: 61

Candidate Starts for Nanao\_91:

(Start: 61 @67687 has 111 MA's), (70, 67633), (71, 67615), (76, 67573), (80, 67540), (81, 67525), (82, 67516), (87, 67498), (101, 67459), (105, 67444), (114, 67396), (122, 67333), (128, 67264), (130, 67258), (131, 67246), (149, 67138), (151, 67129), (154, 67108), (167, 67036), (179, 66958), (180, 66949), (182, 66943), (184, 66934), (193, 66913), (203, 66856), (208, 66826), (212, 66784), (217, 66754), (229, 66700), (232, 66679), (239, 66646),

Gene: Nangang\_91 Start: 67505, Stop: 66432, Start Num: 61

Candidate Starts for Nangang\_91:

(13, 67814), (22, 67700), (27, 67658), (Start: 61 @67505 has 111 MA's), (76, 67409), (80, 67376), (92, 67334), (99, 67304), (108, 67262), (109, 67253), (128, 67103), (130, 67097), (143, 67031), (151, 66971), (167, 66878), (168, 66869), (172, 66839), (176, 66824), (182, 66785), (184, 66776), (189, 66764), (204, 66695), (205, 66689), (206, 66686), (215, 66602), (216, 66596), (225, 66557), (243, 66467), (244, 66464), (245, 66449),

Gene: NathanVaag\_72 Start: 49262, Stop: 48258, Start Num: 64

Candidate Starts for NathanVaag\_72:

(Start: 54 @49325 has 2 MA's), (Start: 64 @49262 has 20 MA's), (88, 49103), (96, 49082), (102, 49064), (110, 49019), (112, 49010), (116, 48983), (125, 48899), (127, 48875), (128, 48869), (131, 48851), (150, 48752), (156, 48722), (177, 48593), (179, 48578), (218, 48371), (227, 48326), (237, 48272),

Gene: Neos5\_96 Start: 67264, Stop: 66062, Start Num: 31

Candidate Starts for Neos5\_96:

(24, 67294), (Start: 31 @67264 has 6 MA's), (Start: 52 @67174 has 15 MA's), (Start: 61 @67120 has 111 MA's), (Start: 67 @67090 has 1 MA's), (76, 67006), (80, 66973), (96, 66901), (114, 66829), (124, 66748), (127, 66703), (128, 66697), (130, 66691), (131, 66679), (139, 66643), (154, 66541), (158, 66523), (166, 66478), (177, 66406), (179, 66391), (185, 66364), (189, 66355), (201, 66298), (212, 66214), (215, 66190), (223, 66160),

Gene: Nigel\_88 Start: 67148, Stop: 66102, Start Num: 61

Candidate Starts for Nigel\_88:

(Start: 61 @67148 has 111 MA's), (76, 67034), (80, 67001), (81, 66986), (82, 66977), (83, 66971), (87, 66959), (101, 66920), (105, 66905), (106, 66902), (114, 66857), (122, 66794), (128, 66725), (130, 66719), (131, 66707), (149, 66599), (151, 66590), (154, 66569), (160, 66542), (167, 66497), (174, 66452), (179, 66419), (180, 66410), (182, 66404), (184, 66395), (193, 66374), (203, 66317), (208, 66287), (211, 66257), (217, 66215), (229, 66161), (232, 66140), (236, 66116), (239, 66107),

Gene: Nozo\_97 Start: 67727, Stop: 66615, Start Num: 52

Candidate Starts for Nozo\_97:

(24, 67847), (Start: 31 @67817 has 6 MA's), (Start: 52 @67727 has 15 MA's), (Start: 61 @67673 has 111 MA's), (Start: 67 @67643 has 1 MA's), (76, 67559), (80, 67526), (96, 67454), (114, 67382), (124, 67301), (127, 67256), (128, 67250), (130, 67244), (131, 67232), (133, 67226), (139, 67196), (154, 67094), (158, 67076), (166, 67031), (177, 66959), (179, 66944), (185, 66917), (189, 66908), (201, 66851), (212, 66767), (215, 66743), (223, 66713),

Gene: Obutu\_99 Start: 67477, Stop: 66419, Start Num: 61

Candidate Starts for Obutu\_99:

(24, 67651), (Start: 31 @67621 has 6 MA's), (Start: 52 @67531 has 15 MA's), (Start: 61 @67477 has 111 MA's), (Start: 67 @67447 has 1 MA's), (76, 67363), (80, 67330), (96, 67258), (114, 67186), (124, 67105), (127, 67060), (128, 67054), (130, 67048), (131, 67036), (139, 67000), (154, 66898), (158, 66880), (166, 66835), (177, 66763), (179, 66748), (185, 66721), (189, 66712), (201, 66655), (212, 66571), (215, 66547), (223, 66517),

Gene: Opia\_86 Start: 64807, Stop: 63737, Start Num: 61

Candidate Starts for Opia\_86:

(Start: 61 @64807 has 111 MA's), (Start: 67 @64777 has 1 MA's), (76, 64711), (78, 64702), (80, 64678), (82, 64654), (88, 64630), (128, 64375), (130, 64369), (131, 64357), (139, 64324), (143, 64303), (150, 64246), (151, 64243), (158, 64204), (160, 64195), (164, 64165), (167, 64150), (173, 64108), (177, 64087), (182, 64057), (189, 64036), (203, 63970), (204, 63967), (208, 63940), (209, 63934), (221, 63859), (226, 63823),

Gene: OrangeOswald\_96 Start: 66962, Stop: 65850, Start Num: 52

Candidate Starts for OrangeOswald\_96:

(24, 67082), (Start: 31 @67052 has 6 MA's), (Start: 52 @66962 has 15 MA's), (Start: 61 @66908 has 111 MA's), (Start: 67 @66878 has 1 MA's), (76, 66794), (80, 66761), (96, 66689), (114, 66617), (124, 66536), (127, 66491), (128, 66485), (130, 66479), (131, 66467), (133, 66461), (139, 66431), (154, 66329), (158, 66311), (166, 66266), (177, 66194), (179, 66179), (185, 66152), (189, 66143), (201, 66086), (212, 66002), (215, 65978), (223, 65948),

Gene: PenguinLover67\_89 Start: 66616, Stop: 65579, Start Num: 61

Candidate Starts for PenguinLover67\_89:

(Start: 61 @66616 has 111 MA's), (63, 66607), (76, 66520), (80, 66487), (81, 66472), (84, 66454), (85, 66451), (105, 66406), (115, 66355), (128, 66226), (130, 66220), (131, 66208), (140, 66166), (143, 66154), (147, 66115), (149, 66103), (151, 66094), (160, 66046), (162, 66022), (164, 66016), (166, 66010), (167, 66001), (170, 65983), (176, 65947), (182, 65908), (184, 65899), (189, 65887), (193, 65878), (200, 65839), (203, 65821), (204, 65818), (206, 65809), (215, 65725), (216, 65719), (225, 65683),

Gene: Phaedrus\_92 Start: 66323, Stop: 65265, Start Num: 61

Candidate Starts for Phaedrus\_92:

(24, 66497), (Start: 31 @66467 has 6 MA's), (Start: 52 @66377 has 15 MA's), (Start: 61 @66323 has 111 MA's), (Start: 67 @66293 has 1 MA's), (76, 66209), (80, 66176), (96, 66104), (114, 66032), (124, 65951), (127, 65906), (128, 65900), (130, 65894), (131, 65882), (139, 65846), (154, 65744), (158, 65726), (166, 65681), (177, 65609), (179, 65594), (185, 65567), (189, 65558), (201, 65501), (212,

65417), (215, 65393), (223, 65363),

Gene: Phantasmagoria\_84 Start: 64790, Stop: 63720, Start Num: 61

Candidate Starts for Phantasmagoria\_84:

(23, 64985), (Start: 61 @64790 has 111 MA's), (Start: 67 @64760 has 1 MA's), (76, 64694), (78, 64685), (80, 64661), (82, 64637), (88, 64613), (128, 64358), (130, 64352), (131, 64340), (139, 64307), (143, 64286), (150, 64229), (151, 64226), (158, 64187), (160, 64178), (164, 64148), (167, 64133), (170, 64115), (173, 64091), (177, 64070), (182, 64040), (189, 64019), (203, 63953), (204, 63950), (208, 63923), (209, 63917), (221, 63842), (226, 63806),

Gene: Phayeta\_99 Start: 67158, Stop: 66100, Start Num: 61

Candidate Starts for Phayeta\_99:

(24, 67332), (Start: 31 @67302 has 6 MA's), (Start: 52 @67212 has 15 MA's), (Start: 61 @67158 has 111 MA's), (Start: 67 @67128 has 1 MA's), (76, 67044), (80, 67011), (96, 66939), (114, 66867), (124, 66786), (127, 66741), (128, 66735), (130, 66729), (131, 66717), (139, 66681), (154, 66579), (158, 66561), (166, 66516), (177, 66444), (179, 66429), (185, 66402), (189, 66393), (201, 66336), (212, 66252), (215, 66228), (223, 66198),

Gene: Phelemich\_87 Start: 66931, Stop: 65858, Start Num: 61

Candidate Starts for Phelemich\_87:

(35, 67057), (38, 67045), (46, 67006), (Start: 61 @66931 has 111 MA's), (76, 66835), (80, 66802), (92, 66760), (99, 66730), (106, 66706), (109, 66679), (128, 66529), (130, 66523), (131, 66511), (140, 66469), (151, 66397), (172, 66265), (176, 66250), (178, 66238), (182, 66211), (184, 66202), (189, 66190), (195, 66157), (203, 66124), (204, 66121), (205, 66115), (206, 66112), (215, 66028), (216, 66022), (225, 65986), (242, 65905), (246, 65875),

Gene: Philly\_96 Start: 66810, Stop: 65698, Start Num: 52

Candidate Starts for Philly\_96:

(24, 66930), (Start: 31 @66900 has 6 MA's), (Start: 52 @66810 has 15 MA's), (Start: 61 @66756 has 111 MA's), (Start: 67 @66726 has 1 MA's), (76, 66642), (80, 66609), (96, 66537), (114, 66465), (124, 66384), (127, 66339), (128, 66333), (130, 66327), (131, 66315), (139, 66279), (154, 66177), (158, 66159), (166, 66114), (177, 66042), (179, 66027), (185, 66000), (189, 65991), (201, 65934), (212, 65850), (215, 65826), (223, 65796),

Gene: Phlyer\_97 Start: 67618, Stop: 66560, Start Num: 61

Candidate Starts for Phlyer\_97:

(24, 67792), (Start: 31 @67762 has 6 MA's), (Start: 52 @67672 has 15 MA's), (Start: 61 @67618 has 111 MA's), (Start: 67 @67588 has 1 MA's), (76, 67504), (80, 67471), (96, 67399), (114, 67327), (124, 67246), (127, 67201), (128, 67195), (130, 67189), (131, 67177), (139, 67141), (154, 67039), (158, 67021), (166, 66976), (177, 66904), (179, 66889), (185, 66862), (189, 66853), (201, 66796), (212, 66712), (215, 66688), (223, 66658),

Gene: Phonegingi\_50 Start: 30903, Stop: 31913, Start Num: 61

Candidate Starts for Phonegingi\_50:

(Start: 61 @30903 has 111 MA's), (76, 30999), (81, 31047), (108, 31137), (128, 31296), (130, 31302), (144, 31359), (148, 31398), (177, 31572), (202, 31680), (220, 31800), (228, 31842), (240, 31902),

Gene: Piccoletto\_73 Start: 49488, Stop: 48421, Start Num: 54

Candidate Starts for Piccoletto\_73:

(Start: 54 @49488 has 2 MA's), (Start: 64 @49425 has 20 MA's), (88, 49266), (96, 49245), (102, 49227), (110, 49182), (112, 49173), (116, 49146), (125, 49062), (126, 49044), (127, 49038), (128, 49032), (131, 49014), (150, 48915), (156, 48885), (177, 48756), (179, 48741), (218, 48534), (227, 48489), (237, 48435),



Gene: Pickles13\_49 Start: 31137, Stop: 32189, Start Num: 57

Candidate Starts for Pickles13\_49:

(34, 31050), (Start: 57 @31137 has 6 MA's), (Start: 61 @31179 has 111 MA's), (76, 31275), (81, 31323), (108, 31413), (128, 31572), (130, 31578), (132, 31593), (144, 31635), (148, 31674), (177, 31848), (202, 31956), (220, 32076), (228, 32118), (240, 32178),

Gene: Pipefish\_96 Start: 67436, Stop: 66234, Start Num: 31

Candidate Starts for Pipefish\_96:

(24, 67466), (Start: 31 @67436 has 6 MA's), (Start: 52 @67346 has 15 MA's), (Start: 61 @67292 has 111 MA's), (Start: 67 @67262 has 1 MA's), (76, 67178), (80, 67145), (96, 67073), (114, 67001), (124, 66920), (127, 66875), (128, 66869), (130, 66863), (131, 66851), (139, 66815), (154, 66713), (158, 66695), (166, 66650), (177, 66578), (179, 66563), (185, 66536), (189, 66527), (201, 66470), (212, 66386), (215, 66362), (223, 66332),

Gene: Pippa\_77 Start: 50604, Stop: 49609, Start Num: 64

Candidate Starts for Pippa\_77:

(Start: 64 @50604 has 20 MA's), (74, 50541), (79, 50511), (88, 50448), (95, 50430), (125, 50250), (127, 50226), (128, 50220), (131, 50202), (132, 50199), (146, 50124), (156, 50073), (177, 49944), (179, 49929), (189, 49893), (196, 49860), (227, 49677),

Gene: Poster\_90 Start: 67688, Stop: 66642, Start Num: 61

Candidate Starts for Poster\_90:

(Start: 61 @67688 has 111 MA's), (70, 67634), (71, 67616), (76, 67574), (80, 67541), (81, 67526), (82, 67517), (87, 67499), (101, 67460), (105, 67445), (114, 67397), (122, 67334), (128, 67265), (130, 67259), (131, 67247), (149, 67139), (151, 67130), (154, 67109), (167, 67037), (179, 66959), (180, 66950), (182, 66944), (184, 66935), (193, 66914), (203, 66857), (208, 66827), (212, 66785), (217, 66755), (229, 66701), (232, 66680), (239, 66647),

Gene: Prairie\_72 Start: 45989, Stop: 44991, Start Num: 65

Candidate Starts for Prairie\_72:

(21, 46193), (Start: 58 @46037 has 2 MA's), (Start: 65 @45989 has 4 MA's), (76, 45920), (79, 45902), (125, 45644), (126, 45626), (127, 45620), (177, 45338), (184, 45299), (185, 45296),

Gene: Prince\_92 Start: 68894, Stop: 67836, Start Num: 61

Candidate Starts for Prince\_92:

(Start: 61 @68894 has 111 MA's), (76, 68780), (77, 68774), (80, 68747), (81, 68732), (82, 68723), (87, 68705), (101, 68666), (106, 68648), (114, 68603), (122, 68540), (128, 68471), (131, 68453), (135, 68435), (138, 68423), (139, 68417), (149, 68345), (151, 68336), (154, 68315), (174, 68198), (176, 68189), (179, 68165), (180, 68156), (184, 68141), (193, 68120), (203, 68063), (208, 68033), (212, 67991), (214, 67970), (229, 67895), (232, 67874), (237, 67847), (239, 67841),

Gene: Quesadilla\_91 Start: 67907, Stop: 66864, Start Num: 61

Candidate Starts for Quesadilla\_91:

(Start: 61 @67907 has 111 MA's), (63, 67898), (76, 67811), (80, 67778), (81, 67763), (84, 67745), (105, 67697), (127, 67523), (128, 67517), (130, 67511), (131, 67499), (140, 67457), (143, 67445), (147, 67406), (149, 67394), (151, 67385), (160, 67337), (162, 67313), (166, 67301), (176, 67238), (177, 67229), (184, 67190), (189, 67178), (193, 67169), (200, 67130), (202, 67121), (203, 67112), (204, 67109), (206, 67100), (212, 67040), (215, 67016), (216, 67010), (231, 66950), (234, 66923), (241, 66899), (244, 66881),

Gene: Qyrzula\_76 Start: 64899, Stop: 63859, Start Num: 67

Candidate Starts for Qyrzula\_76:

(Start: 61 @64929 has 111 MA's), (Start: 67 @64899 has 1 MA's), (76, 64833), (78, 64824), (80, 64800), (82, 64776), (88, 64752), (128, 64497), (130, 64491), (131, 64479), (139, 64446), (143, 64425), (150, 64368), (151, 64365), (158, 64326), (160, 64317), (164, 64287), (167, 64272), (170, 64254), (173, 64230), (177, 64209), (182, 64179), (189, 64158), (203, 64092), (204, 64089), (208, 64062), (209, 64056), (221, 63981), (226, 63945),

Gene: RagingRooster\_97 Start: 66904, Stop: 65846, Start Num: 61

Candidate Starts for RagingRooster\_97:

(24, 67078), (Start: 31 @67048 has 6 MA's), (Start: 52 @66958 has 15 MA's), (Start: 61 @66904 has 111 MA's), (Start: 67 @66874 has 1 MA's), (76, 66790), (80, 66757), (96, 66685), (114, 66613), (124, 66532), (127, 66487), (128, 66481), (130, 66475), (131, 66463), (133, 66457), (139, 66427), (154, 66325), (158, 66307), (166, 66262), (177, 66190), (179, 66175), (185, 66148), (189, 66139), (201, 66082), (212, 65998), (215, 65974), (223, 65944),

Gene: RawrgerThat\_90 Start: 68392, Stop: 67343, Start Num: 61

Candidate Starts for RawrgerThat\_90:

(Start: 61 @68392 has 111 MA's), (70, 68338), (71, 68320), (76, 68278), (77, 68272), (80, 68245), (81, 68230), (98, 68176), (105, 68152), (114, 68104), (115, 68101), (116, 68086), (128, 67972), (131, 67954), (135, 67936), (139, 67918), (154, 67816), (174, 67699), (176, 67690), (179, 67666), (181, 67654), (182, 67651), (184, 67639), (203, 67561), (208, 67531), (211, 67501), (214, 67468), (229, 67402), (232, 67381), (239, 67348),

Gene: Reprobate\_89 Start: 66936, Stop: 65863, Start Num: 61

Candidate Starts for Reprobate\_89:

(35, 67062), (38, 67050), (46, 67011), (Start: 61 @66936 has 111 MA's), (76, 66840), (80, 66807), (92, 66765), (99, 66735), (106, 66711), (109, 66684), (128, 66534), (130, 66528), (131, 66516), (140, 66474), (151, 66402), (172, 66270), (176, 66255), (178, 66243), (182, 66216), (184, 66207), (189, 66195), (195, 66162), (203, 66129), (204, 66126), (205, 66120), (206, 66117), (215, 66033), (216, 66027), (225, 65991), (242, 65910), (246, 65880),

Gene: Rhinoforte\_85 Start: 64826, Stop: 63756, Start Num: 61

Candidate Starts for Rhinoforte\_85:

(Start: 61 @64826 has 111 MA's), (Start: 67 @64796 has 1 MA's), (76, 64730), (78, 64721), (80, 64697), (82, 64673), (88, 64649), (128, 64394), (130, 64388), (131, 64376), (139, 64343), (143, 64322), (150, 64265), (151, 64262), (158, 64223), (160, 64214), (164, 64184), (167, 64169), (170, 64151), (173, 64127), (177, 64106), (182, 64076), (189, 64055), (203, 63989), (204, 63986), (208, 63959), (209, 63953), (221, 63878), (226, 63842),

Gene: Rich\_88 Start: 67174, Stop: 66101, Start Num: 61

Candidate Starts for Rich\_88:

(36, 67288), (Start: 61 @67174 has 111 MA's), (76, 67078), (80, 67045), (109, 66922), (127, 66778), (128, 66772), (130, 66766), (143, 66700), (172, 66508), (176, 66493), (182, 66457), (184, 66448), (189, 66436), (193, 66427), (204, 66367), (206, 66358), (215, 66274), (216, 66268), (231, 66205), (243, 66139), (245, 66121),

Gene: Rita1961\_98 Start: 67249, Stop: 66191, Start Num: 61

Candidate Starts for Rita1961\_98:

(24, 67423), (Start: 31 @67393 has 6 MA's), (Start: 52 @67303 has 15 MA's), (Start: 61 @67249 has 111 MA's), (Start: 67 @67219 has 1 MA's), (76, 67135), (80, 67102), (96, 67030), (114, 66958), (124, 66877), (127, 66832), (128, 66826), (130, 66820), (131, 66808), (139, 66772), (154, 66670), (158, 66652), (166, 66607), (177, 66535), (179, 66520), (185, 66493), (189, 66484), (201, 66427), (212, 66343), (215, 66319), (223, 66289),

Gene: RomaT\_97 Start: 67526, Stop: 66414, Start Num: 52

Candidate Starts for RomaT\_97:

(24, 67646), (Start: 31 @67616 has 6 MA's), (Start: 52 @67526 has 15 MA's), (Start: 61 @67472 has 111 MA's), (Start: 67 @67442 has 1 MA's), (76, 67358), (80, 67325), (96, 67253), (114, 67181), (124, 67100), (127, 67055), (128, 67049), (130, 67043), (131, 67031), (139, 66995), (154, 66893), (158, 66875), (166, 66830), (177, 66758), (179, 66743), (185, 66716), (189, 66707), (201, 66650), (212, 66566), (215, 66542), (223, 66512),

Gene: Rosebush\_83 Start: 64898, Stop: 63828, Start Num: 61

Candidate Starts for Rosebush\_83:

(Start: 61 @64898 has 111 MA's), (Start: 67 @64868 has 1 MA's), (76, 64802), (78, 64793), (80, 64769), (82, 64745), (88, 64721), (128, 64466), (130, 64460), (131, 64448), (139, 64415), (143, 64394), (150, 64337), (151, 64334), (158, 64295), (160, 64286), (164, 64256), (167, 64241), (173, 64199), (177, 64178), (182, 64148), (189, 64127), (203, 64061), (204, 64058), (208, 64031), (209, 64025), (221, 63950), (226, 63914),

Gene: SJReid\_180 Start: 106944, Stop: 107924, Start Num: 61

Candidate Starts for SJReid\_180:

(Start: 61 @106944 has 111 MA's), (69, 106986), (127, 107322), (132, 107349), (142, 107385), (153, 107463), (170, 107559), (177, 107604), (178, 107607), (185, 107646), (188, 107655), (197, 107691), (199, 107703), (206, 107736), (233, 107904), (235, 107910),

Gene: Sabella\_85 Start: 64734, Stop: 63664, Start Num: 61

Candidate Starts for Sabella\_85:

(Start: 61 @64734 has 111 MA's), (Start: 67 @64704 has 1 MA's), (76, 64638), (78, 64629), (80, 64605), (82, 64581), (88, 64557), (128, 64302), (130, 64296), (131, 64284), (139, 64251), (143, 64230), (150, 64173), (151, 64170), (158, 64131), (160, 64122), (164, 64092), (167, 64077), (170, 64059), (173, 64035), (177, 64014), (182, 63984), (189, 63963), (203, 63897), (204, 63894), (208, 63867), (209, 63861), (221, 63786), (226, 63750),

Gene: Saguaro\_84 Start: 66210, Stop: 65080, Start Num: 40

Candidate Starts for Saguaro\_84:

(Start: 40 @66210 has 1 MA's), (51, 66177), (Start: 61 @66126 has 111 MA's), (76, 66030), (80, 65997), (81, 65982), (92, 65955), (97, 65931), (105, 65916), (107, 65910), (114, 65868), (127, 65742), (128, 65736), (130, 65730), (137, 65691), (140, 65676), (147, 65625), (149, 65613), (151, 65604), (162, 65532), (166, 65520), (167, 65511), (176, 65457), (182, 65418), (184, 65409), (189, 65397), (193, 65388), (200, 65349), (202, 65340), (203, 65331), (204, 65328), (206, 65319), (215, 65235), (216, 65229), (222, 65211), (225, 65193), (228, 65184), (234, 65142),

Gene: Serendipitous\_91 Start: 67097, Stop: 66021, Start Num: 61

Candidate Starts for Serendipitous\_91:

(Start: 61 @67097 has 111 MA's), (76, 67001), (80, 66968), (109, 66845), (127, 66701), (128, 66695), (130, 66689), (143, 66623), (151, 66563), (167, 66470), (170, 66452), (172, 66431), (176, 66416), (177, 66407), (182, 66377), (184, 66368), (189, 66356), (204, 66287), (206, 66278), (215, 66194), (216, 66188), (243, 66062), (245, 66044),

Gene: Shade\_76 Start: 50360, Stop: 49365, Start Num: 64

Candidate Starts for Shade\_76:

(Start: 64 @50360 has 20 MA's), (79, 50267), (88, 50204), (95, 50186), (125, 50006), (127, 49982), (128, 49976), (131, 49958), (132, 49955), (146, 49880), (156, 49829), (177, 49700), (179, 49685), (189, 49649), (196, 49616), (227, 49433),

Gene: Shatter\_80 Start: 59316, Stop: 58309, Start Num: 61

Candidate Starts for Shatter\_80:

(Start: 61 @59316 has 111 MA's), (76, 59220), (80, 59187), (81, 59172), (96, 59121), (105, 59106), (127, 58932), (128, 58926), (131, 58908), (143, 58854), (148, 58812), (149, 58803), (154, 58773), (162, 58722), (200, 58539), (203, 58521), (204, 58518), (209, 58485), (212, 58449), (235, 58326),

Gene: Sicarius2\_78 Start: 48605, Stop: 47610, Start Num: 64

Candidate Starts for Sicarius2\_78:

(Start: 64 @48605 has 20 MA's), (79, 48512), (86, 48458), (88, 48449), (95, 48431), (125, 48251), (128, 48221), (131, 48203), (148, 48119), (149, 48110), (156, 48074), (161, 48047), (189, 47894), (196, 47861), (227, 47678),

Gene: SirJeffery\_88 Start: 67154, Stop: 65760, Start Num: 61

Candidate Starts for SirJeffery\_88:

(33, 67277), (35, 67271), (Start: 61 @67154 has 111 MA's), (76, 67058), (80, 67025), (92, 66983), (109, 66902), (128, 66752), (130, 66746), (143, 66680), (167, 66527), (176, 66473), (182, 66437), (184, 66428), (189, 66416), (193, 66407), (204, 66347), (206, 66338), (215, 66254), (216, 66248), (231, 66185), (241, 66134), (243, 66119), (247, 66083), (248, 66062), (249, 65954), (250, 65915), (251, 65804), (252, 65783),

Gene: Sisko\_78 Start: 59761, Stop: 58751, Start Num: 61

Candidate Starts for Sisko\_78:

(30, 59902), (41, 59839), (Start: 61 @59761 has 111 MA's), (76, 59665), (80, 59632), (92, 59590), (107, 59548), (127, 59380), (128, 59374), (130, 59368), (140, 59311), (149, 59248), (154, 59218), (160, 59191), (170, 59128), (176, 59092), (182, 59053), (204, 58963), (212, 58894), (215, 58870), (216, 58864), (236, 58771),

Gene: SlippinJimmy\_100 Start: 68272, Stop: 67214, Start Num: 61

Candidate Starts for SlippinJimmy\_100:

(24, 68446), (Start: 31 @68416 has 6 MA's), (Start: 52 @68326 has 15 MA's), (Start: 61 @68272 has 111 MA's), (Start: 67 @68242 has 1 MA's), (76, 68158), (80, 68125), (96, 68053), (114, 67981), (124, 67900), (127, 67855), (128, 67849), (130, 67843), (131, 67831), (133, 67825), (139, 67795), (154, 67693), (158, 67675), (166, 67630), (177, 67558), (179, 67543), (185, 67516), (189, 67507), (201, 67450), (212, 67366), (215, 67342), (223, 67312),

Gene: Sonali\_94 Start: 58994, Stop: 57999, Start Num: 60

Candidate Starts for Sonali\_94:

(Start: 60 @58994 has 3 MA's), (76, 58898), (79, 58880), (84, 58835), (85, 58832), (126, 58613), (128, 58601), (131, 58583), (132, 58580), (166, 58397), (177, 58325), (187, 58274), (199, 58223), (204, 58199), (205, 58193), (212, 58130), (213, 58118),

Gene: Sonny\_76 Start: 50316, Stop: 49321, Start Num: 64

Candidate Starts for Sonny\_76:

(Start: 64 @50316 has 20 MA's), (79, 50223), (88, 50160), (95, 50142), (121, 50007), (125, 49962), (127, 49938), (128, 49932), (131, 49914), (132, 49911), (146, 49836), (156, 49785), (177, 49656), (179, 49641), (189, 49605), (196, 49572), (227, 49389),

Gene: Soos\_1 Start: 1, Stop: 1032, Start Num: 61

Candidate Starts for Soos\_1:

(Start: 61 @1 has 111 MA's), (76, 97), (94, 199), (126, 406), (128, 418), (130, 424), (141, 481), (147, 526), (151, 547), (158, 586), (177, 703), (179, 718), (186, 754), (189, 757),

Gene: Sour\_74 Start: 59508, Stop: 58498, Start Num: 61

Candidate Starts for Sour\_74:

(Start: 61 @59508 has 111 MA's), (76, 59412), (80, 59379), (114, 59253), (115, 59250), (128, 59121), (130, 59115), (131, 59103), (140, 59058), (149, 58995), (151, 58986), (154, 58965), (167, 58893), (170, 58875), (176, 58839), (182, 58800), (203, 58713), (204, 58710), (208, 58683), (215, 58617),

Gene: StAugustine\_161 Start: 88734, Stop: 87598, Start Num: 48

Candidate Starts for StAugustine\_161:

(48, 88734), (76, 88548), (80, 88515), (81, 88500), (106, 88419), (115, 88371), (123, 88305), (128, 88242), (166, 88023), (168, 88005), (175, 87963), (176, 87960), (191, 87894), (201, 87843), (203, 87831), (205, 87822), (208, 87801), (215, 87735), (216, 87729), (219, 87723),

Gene: StevieBAY\_78 Start: 50960, Stop: 49962, Start Num: 64

Candidate Starts for StevieBAY\_78:

(Start: 62 @50966 has 2 MA's), (Start: 64 @50960 has 20 MA's), (79, 50864), (88, 50801), (95, 50783), (125, 50603), (127, 50579), (128, 50573), (131, 50555), (132, 50552), (146, 50477), (156, 50426), (179, 50282), (189, 50246), (196, 50213), (227, 50030), (236, 49979),

Gene: Sting\_1 Start: 1, Stop: 1032, Start Num: 61

Candidate Starts for Sting\_1:

(Start: 61 @1 has 111 MA's), (76, 97), (94, 199), (117, 307), (126, 406), (128, 418), (130, 424), (141, 481), (146, 523), (147, 526), (151, 547), (158, 586), (177, 703), (179, 718), (186, 754), (189, 757),

Gene: Stinger\_89 Start: 67077, Stop: 66025, Start Num: 61

Candidate Starts for Stinger\_89:

(Start: 61 @67077 has 111 MA's), (71, 67005), (74, 66975), (76, 66963), (80, 66930), (81, 66915), (82, 66906), (87, 66888), (101, 66843), (105, 66828), (106, 66825), (114, 66780), (122, 66717), (128, 66648), (130, 66642), (131, 66630), (135, 66612), (149, 66522), (151, 66513), (154, 66492), (160, 66465), (167, 66420), (174, 66375), (179, 66342), (180, 66333), (184, 66318), (193, 66297), (203, 66240), (208, 66210), (211, 66180), (212, 66168), (217, 66138), (229, 66084), (232, 66063), (236, 66039), (239, 66030),

Gene: StinkyVeggy\_89 Start: 67233, Stop: 66154, Start Num: 61

Candidate Starts for StinkyVeggy\_89:

(Start: 61 @67233 has 111 MA's), (76, 67137), (80, 67104), (92, 67062), (109, 66981), (128, 66831), (130, 66825), (143, 66759), (151, 66699), (157, 66666), (167, 66606), (168, 66597), (172, 66567), (176, 66552), (180, 66519), (182, 66513), (184, 66504), (189, 66492), (204, 66423), (205, 66417), (206, 66414), (215, 66330), (216, 66324), (225, 66285), (243, 66195), (244, 66192), (245, 66177),

Gene: Suigeneris\_91 Start: 67330, Stop: 66257, Start Num: 61

Candidate Starts for Suigeneris\_91:

(27, 67483), (37, 67441), (Start: 61 @67330 has 111 MA's), (76, 67234), (80, 67201), (92, 67159), (109, 67078), (128, 66928), (130, 66922), (143, 66856), (167, 66703), (172, 66664), (176, 66649), (184, 66604), (189, 66592), (193, 66583), (204, 66523), (206, 66514), (215, 66430), (216, 66424), (231, 66361), (243, 66295), (245, 66277),

Gene: SynergyX\_98 Start: 67214, Stop: 66156, Start Num: 61

Candidate Starts for SynergyX\_98:

(24, 67388), (Start: 31 @67358 has 6 MA's), (Start: 52 @67268 has 15 MA's), (Start: 61 @67214 has 111 MA's), (Start: 67 @67184 has 1 MA's), (76, 67100), (80, 67067), (96, 66995), (114, 66923), (124, 66842), (127, 66797), (128, 66791), (130, 66785), (131, 66773), (133, 66767), (139, 66737), (154, 66635), (158, 66617), (166, 66572), (177, 66500), (179, 66485), (185, 66458), (189, 66449), (201, 66392), (212, 66308), (215, 66284), (223, 66254),

Gene: TA17A\_86 Start: 64741, Stop: 63671, Start Num: 61

Candidate Starts for TA17A\_86:

(Start: 61 @64741 has 111 MA's), (Start: 67 @64711 has 1 MA's), (76, 64645), (78, 64636), (80, 64612), (82, 64588), (88, 64564), (128, 64309), (130, 64303), (131, 64291), (139, 64258), (143, 64237), (150, 64180), (151, 64177), (158, 64138), (160, 64129), (164, 64099), (167, 64084), (173, 64042), (177, 64021), (182, 63991), (189, 63970), (203, 63904), (204, 63901), (208, 63874), (209, 63868), (221, 63793), (226, 63757),

Gene: TaeYoung\_77 Start: 50521, Stop: 49526, Start Num: 64

Candidate Starts for TaeYoung\_77:

(Start: 64 @50521 has 20 MA's), (79, 50428), (88, 50365), (95, 50347), (125, 50167), (127, 50143), (128, 50137), (131, 50119), (132, 50116), (146, 50041), (156, 49990), (177, 49861), (179, 49846), (189, 49810), (196, 49777), (227, 49594),

Gene: Timinator\_78 Start: 50779, Stop: 49781, Start Num: 64

Candidate Starts for Timinator\_78:

(Start: 62 @50785 has 2 MA's), (Start: 64 @50779 has 20 MA's), (79, 50683), (88, 50620), (95, 50602), (125, 50422), (127, 50398), (128, 50392), (131, 50374), (132, 50371), (146, 50296), (156, 50245), (179, 50101), (189, 50065), (196, 50032), (227, 49849), (236, 49798),

Gene: Tinciduntolum\_86 Start: 64905, Stop: 63835, Start Num: 61

Candidate Starts for Tinciduntolum\_86:

(Start: 61 @64905 has 111 MA's), (Start: 67 @64875 has 1 MA's), (76, 64809), (78, 64800), (80, 64776), (82, 64752), (88, 64728), (128, 64473), (130, 64467), (131, 64455), (139, 64422), (143, 64401), (150, 64344), (151, 64341), (158, 64302), (160, 64293), (164, 64263), (167, 64248), (173, 64206), (177, 64185), (182, 64155), (189, 64134), (203, 64068), (204, 64065), (208, 64038), (209, 64032), (221, 63957), (226, 63921),

Gene: Tres\_85 Start: 64759, Stop: 63689, Start Num: 61

Candidate Starts for Tres\_85:

(23, 64954), (Start: 61 @64759 has 111 MA's), (Start: 67 @64729 has 1 MA's), (76, 64663), (78, 64654), (80, 64630), (82, 64606), (88, 64582), (128, 64327), (130, 64321), (131, 64309), (139, 64276), (143, 64255), (150, 64198), (151, 64195), (158, 64156), (160, 64147), (164, 64117), (167, 64102), (170, 64084), (173, 64060), (177, 64039), (182, 64009), (189, 63988), (203, 63922), (204, 63919), (208, 63892), (209, 63886), (221, 63811), (226, 63775),

Gene: Tydolla\_93 Start: 66890, Stop: 65832, Start Num: 61

Candidate Starts for Tydolla\_93:

(24, 67064), (Start: 31 @67034 has 6 MA's), (Start: 52 @66944 has 15 MA's), (Start: 61 @66890 has 111 MA's), (Start: 67 @66860 has 1 MA's), (76, 66776), (80, 66743), (96, 66671), (114, 66599), (124, 66518), (127, 66473), (128, 66467), (130, 66461), (131, 66449), (139, 66413), (154, 66311), (158, 66293), (166, 66248), (177, 66176), (179, 66161), (185, 66134), (189, 66125), (201, 66068), (212, 65984), (215, 65960), (223, 65930),

Gene: Vincenzo\_91 Start: 69502, Stop: 68453, Start Num: 61

Candidate Starts for Vincenzo\_91:

(11, 69841), (Start: 61 @69502 has 111 MA's), (70, 69448), (76, 69388), (77, 69382), (80, 69355), (84, 69322), (101, 69277), (105, 69262), (106, 69259), (114, 69214), (116, 69196), (119, 69166), (122, 69151), (127, 69088), (128, 69082), (130, 69076), (131, 69064), (135, 69046), (145, 68977), (147, 68968), (149, 68956), (154, 68926), (167, 68854), (174, 68809), (179, 68776), (182, 68761), (184, 68752), (203, 68674), (211, 68614), (212, 68602), (219, 68560), (230, 68506), (231, 68500), (232, 68491), (237, 68464), (239, 68458),

Gene: VioletZ\_94 Start: 69001, Stop: 67943, Start Num: 61

Candidate Starts for VioletZ\_94:

(Start: 61 @69001 has 111 MA's), (70, 68947), (76, 68887), (77, 68881), (80, 68854), (81, 68839), (82, 68830), (87, 68812), (101, 68773), (106, 68755), (107, 68752), (114, 68710), (122, 68647), (128, 68578), (131, 68560), (135, 68542), (139, 68524), (149, 68452), (151, 68443), (154, 68422), (174, 68305), (176, 68296), (179, 68272), (180, 68263), (193, 68227), (203, 68170), (208, 68140), (211, 68110), (212, 68098), (214, 68077), (229, 68002), (232, 67981), (239, 67948),

Gene: Waleliano\_91 Start: 68648, Stop: 67590, Start Num: 61

Candidate Starts for Waleliano\_91:

(Start: 61 @68648 has 111 MA's), (76, 68534), (77, 68528), (80, 68501), (81, 68486), (82, 68477), (87, 68459), (101, 68420), (106, 68402), (114, 68357), (122, 68294), (128, 68225), (131, 68207), (135, 68189), (139, 68171), (144, 68147), (149, 68099), (151, 68090), (154, 68069), (174, 67952), (176, 67943), (179, 67919), (180, 67910), (184, 67895), (193, 67874), (203, 67817), (208, 67787), (212, 67745), (214, 67724), (229, 67649), (232, 67628), (237, 67601), (239, 67595),

Gene: Warren\_50 Start: 30876, Stop: 31928, Start Num: 57

Candidate Starts for Warren\_50:

(34, 30789), (Start: 57 @30876 has 6 MA's), (Start: 61 @30918 has 111 MA's), (76, 31014), (81, 31062), (108, 31152), (128, 31311), (130, 31317), (132, 31332), (144, 31374), (148, 31413), (177, 31587), (202, 31695), (220, 31815), (228, 31857), (240, 31917),

Gene: West99\_85 Start: 64928, Stop: 63858, Start Num: 61

Candidate Starts for West99\_85:

(Start: 61 @64928 has 111 MA's), (Start: 67 @64898 has 1 MA's), (76, 64832), (78, 64823), (80, 64799), (82, 64775), (88, 64751), (128, 64496), (130, 64490), (131, 64478), (139, 64445), (143, 64424), (150, 64367), (151, 64364), (158, 64325), (160, 64316), (164, 64286), (167, 64271), (170, 64253), (173, 64229), (177, 64208), (182, 64178), (189, 64157), (203, 64091), (204, 64088), (208, 64061), (209, 64055), (221, 63980), (226, 63944),

Gene: Wooper\_81 Start: 59350, Stop: 58331, Start Num: 61

Candidate Starts for Wooper\_81:

(39, 59446), (44, 59428), (56, 59392), (Start: 61 @59350 has 111 MA's), (76, 59254), (79, 59236), (80, 59221), (82, 59197), (84, 59188), (94, 59164), (99, 59146), (107, 59125), (125, 58978), (127, 58954), (128, 58948), (131, 58930), (143, 58876), (146, 58840), (154, 58795), (162, 58744), (182, 58630), (204, 58540), (208, 58513), (209, 58507), (228, 58396),

Gene: Wyborn\_77 Start: 49339, Stop: 48344, Start Num: 64

Candidate Starts for Wyborn\_77:

(Start: 64 @49339 has 20 MA's), (79, 49246), (86, 49192), (88, 49183), (95, 49165), (115, 49084), (125, 48985), (128, 48955), (131, 48937), (148, 48853), (149, 48844), (156, 48808), (161, 48781), (189, 48628), (196, 48595), (227, 48412),

Gene: Yago84\_77 Start: 59460, Stop: 58450, Start Num: 61

Candidate Starts for Yago84\_77:

(30, 59601), (41, 59538), (Start: 61 @59460 has 111 MA's), (76, 59364), (80, 59331), (92, 59289), (107, 59247), (127, 59079), (128, 59073), (130, 59067), (140, 59010), (149, 58947), (154, 58917), (160, 58890), (170, 58827), (176, 58791), (182, 58752), (204, 58662), (212, 58593), (215, 58569), (216, 58563), (236, 58470),

Gene: Yahalom\_95 Start: 66769, Stop: 65657, Start Num: 52

Candidate Starts for Yahalom\_95:

(24, 66889), (Start: 31 @66859 has 6 MA's), (Start: 52 @66769 has 15 MA's), (Start: 61 @66715 has 111 MA's), (Start: 67 @66685 has 1 MA's), (76, 66601), (80, 66568), (96, 66496), (114, 66424), (124,

66343), (127, 66298), (128, 66292), (130, 66286), (131, 66274), (139, 66238), (154, 66136), (158, 66118), (166, 66073), (177, 66001), (179, 65986), (185, 65959), (189, 65950), (201, 65893), (212, 65809), (215, 65785), (223, 65755),

Gene: Yinz\_95 Start: 66316, Stop: 65258, Start Num: 61

Candidate Starts for Yinz\_95:

(24, 66490), (Start: 31 @66460 has 6 MA's), (Start: 52 @66370 has 15 MA's), (Start: 61 @66316 has 111 MA's), (Start: 67 @66286 has 1 MA's), (76, 66202), (80, 66169), (96, 66097), (114, 66025), (124, 65944), (127, 65899), (128, 65893), (130, 65887), (131, 65875), (139, 65839), (154, 65737), (158, 65719), (166, 65674), (177, 65602), (179, 65587), (185, 65560), (189, 65551), (201, 65494), (212, 65410), (215, 65386), (223, 65356),

Gene: Zartrosa\_78 Start: 50212, Stop: 49217, Start Num: 64

Candidate Starts for Zartrosa\_78:

(Start: 64 @50212 has 20 MA's), (79, 50119), (88, 50056), (95, 50038), (121, 49903), (125, 49858), (127, 49834), (128, 49828), (131, 49810), (132, 49807), (146, 49732), (156, 49681), (177, 49552), (179, 49537), (189, 49501), (196, 49468), (227, 49285),

Gene: Zemanar\_90 Start: 68665, Stop: 67607, Start Num: 61

Candidate Starts for Zemanar\_90:

(Start: 61 @68665 has 111 MA's), (70, 68611), (71, 68593), (76, 68551), (77, 68545), (80, 68518), (81, 68503), (82, 68494), (87, 68476), (101, 68437), (106, 68419), (114, 68374), (122, 68311), (128, 68242), (131, 68224), (135, 68206), (139, 68188), (149, 68116), (151, 68107), (154, 68086), (174, 67969), (176, 67960), (179, 67936), (180, 67927), (184, 67912), (193, 67891), (203, 67834), (208, 67804), (211, 67774), (212, 67762), (214, 67741), (229, 67666), (232, 67645), (239, 67612),