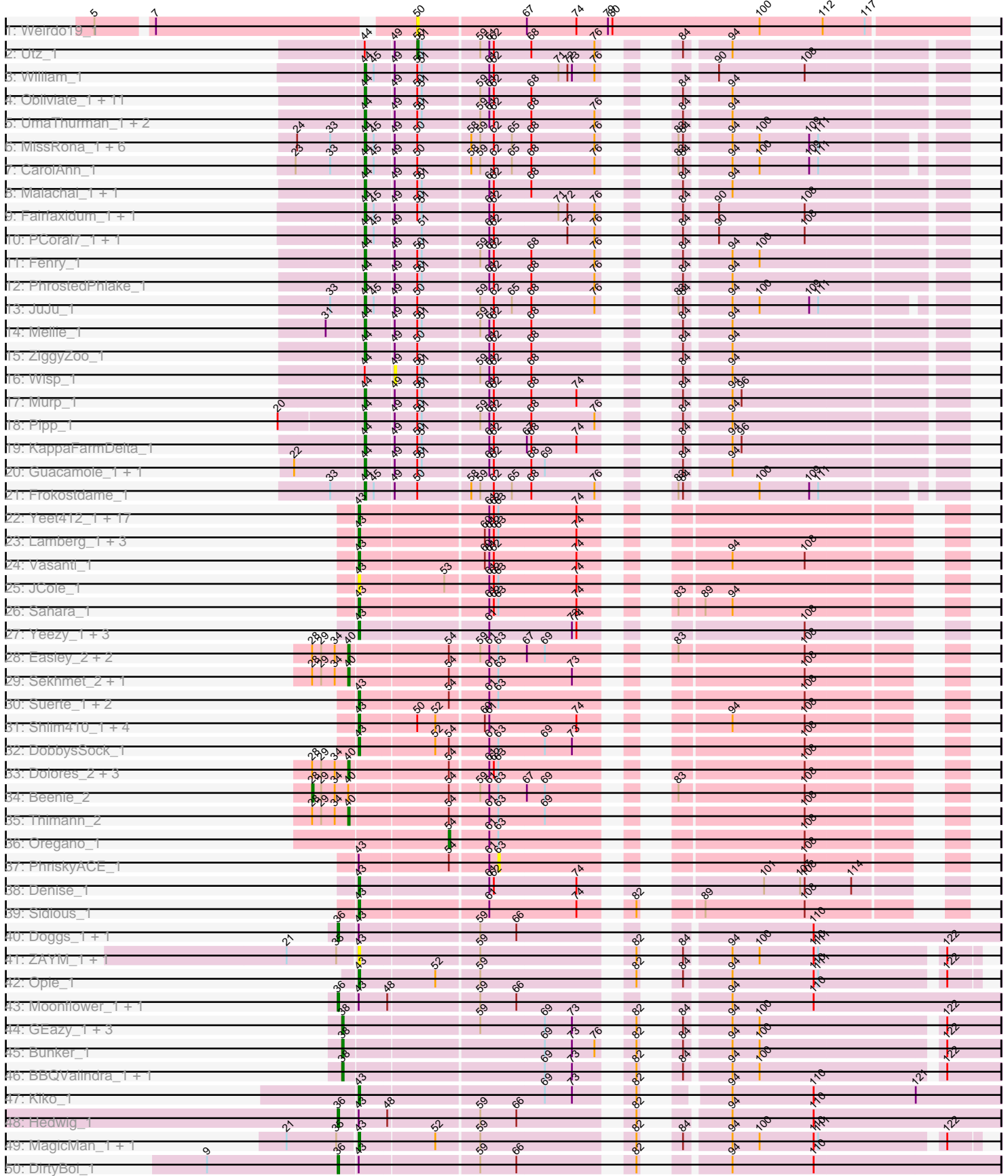
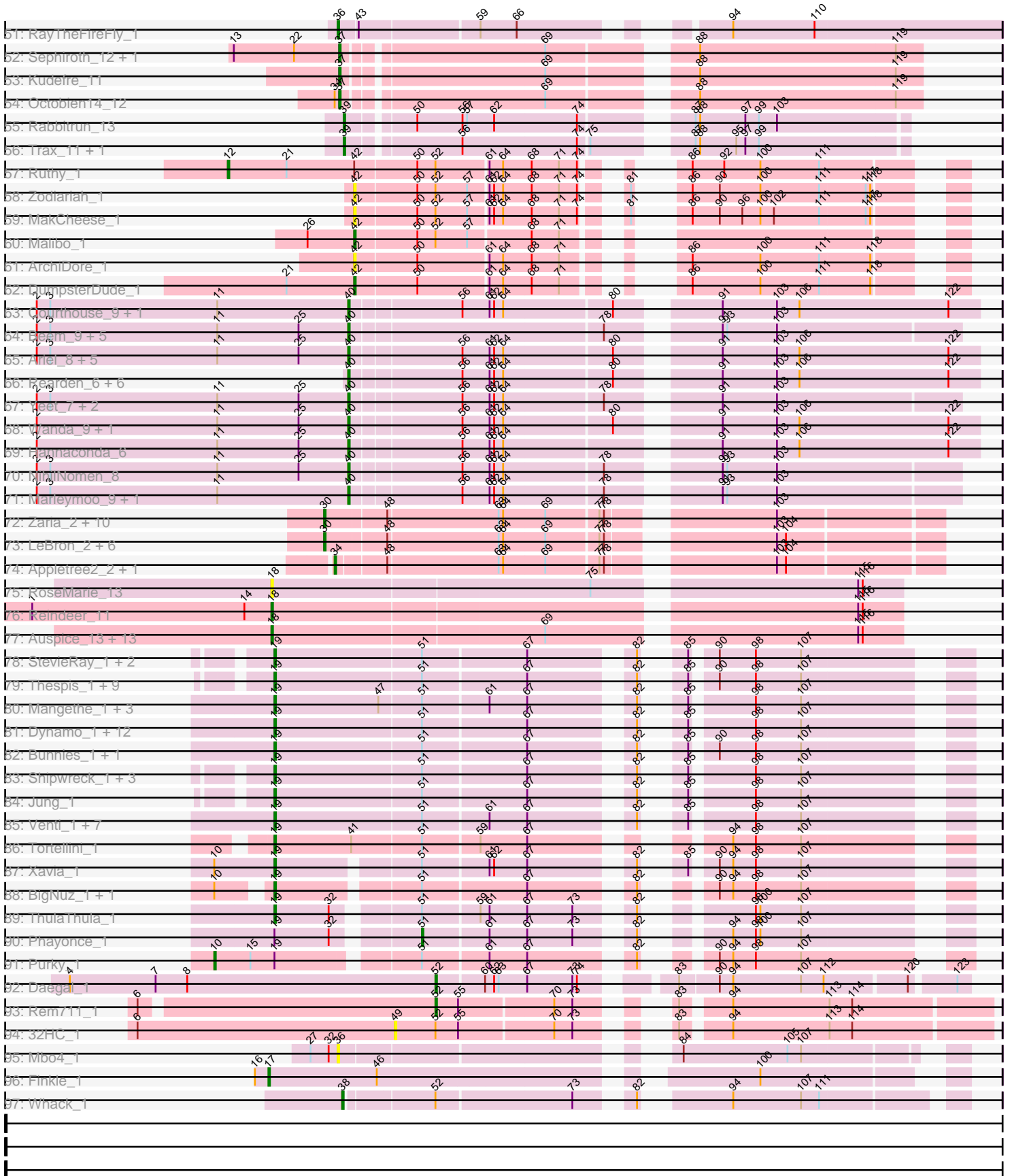


Pham 224254



Pham 224254



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 224254 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224254 has 254 members, 30 are drafts.

Phages represented in each track:

- Track 1 : Weirdo19\_1
- Track 2 : Utz\_1
- Track 3 : William\_1
- Track 4 : Obliviate\_1, MintFen\_1, CaptainKirk2\_1, Barco\_1, Lysidious\_1, Archis\_1, Jalammah\_1, Samba\_1, BlingBling\_1, Hitter\_1, Melba\_1, Delian\_1
- Track 5 : UmaThurman\_1, Wocket\_1, Zarbodnamra\_1
- Track 6 : MissRona\_1, Walrus\_1, Azula\_1, Blueberry\_1, Petra\_1, Gambino\_1, Blino\_1
- Track 7 : CarolAnn\_1
- Track 8 : Malachai\_1, Begonia\_1
- Track 9 : Fairfaxidum\_1, PrincePatrick\_1
- Track 10 : PCoral7\_1, Toast\_1
- Track 11 : Fenry\_1
- Track 12 : PhrostedPhlake\_1
- Track 13 : JuJu\_1
- Track 14 : Mellie\_1
- Track 15 : ZiggyZoo\_1
- Track 16 : Wisp\_1
- Track 17 : Murp\_1
- Track 18 : Pipp\_1
- Track 19 : KappaFarmDelta\_1
- Track 20 : Guacamole\_1, JasperJr\_1
- Track 21 : Frokostdame\_1
- Track 22 : Yeet412\_1, LordFarquaad\_1, Cynthia\_1, Clap\_1, GemG\_1, FroggyToad\_1, Whiteclaw\_1, Attis\_1, Mocha12\_1, Gizermo\_1, SoilAssassin\_1, Ebert\_1, Savage\_1, Matteo\_1, Bjanes7\_1, Sproutie\_1, Haley23\_1, TuertoX\_1
- Track 23 : Lamberg\_1, EdnaMode\_1, Nettuno\_1, Pickett\_1
- Track 24 : Vasanti\_1
- Track 25 : JCole\_1
- Track 26 : Sahara\_1
- Track 27 : Yeezy\_1, BaxterFox\_1, PantheRoc\_1, Ohgeesy\_1
- Track 28 : Easley\_2, Clark\_2, MichaelScott\_2
- Track 29 : Sekhmet\_2, Invectra\_2
- Track 30 : Suerte\_1, Powerball\_1, Dorito\_1
- Track 31 : Shlim410\_1, Adora\_1, Howe\_1, Hortense\_1, Twinkle\_1
- Track 32 : DobbysSock\_1
- Track 33 : Dolores\_2, Samman98\_2, Annalisa\_2, WinkNick\_2

- Track 34 : Beenie\_2
- Track 35 : Thimann\_2
- Track 36 : Oregano\_1
- Track 37 : PhriskyACE\_1
- Track 38 : Denise\_1
- Track 39 : Sidious\_1
- Track 40 : Doggs\_1, Coriander\_1
- Track 41 : ZAYM\_1, TaronosaurusRx\_1
- Track 42 : Opie\_1
- Track 43 : Moonflower\_1, Dmitri\_1
- Track 44 : GEazy\_1, Bowser\_1, Eyes\_1, HannahD\_1
- Track 45 : Bunker\_1
- Track 46 : BBQValindra\_1, BackstagePass\_1
- Track 47 : Kiko\_1
- Track 48 : Hedwig\_1
- Track 49 : MagicMan\_1, Schnabeltier\_1
- Track 50 : DirtyBoi\_1
- Track 51 : RayTheFireFly\_1
- Track 52 : Sephiroth\_12, Syleon\_12
- Track 53 : Kudrefre\_11
- Track 54 : Octobien14\_12
- Track 55 : Rabbitrun\_13
- Track 56 : Trax\_11, Neville\_11
- Track 57 : Ruthy\_1
- Track 58 : Zodiariah\_1
- Track 59 : MakCheese\_1
- Track 60 : Malibo\_1
- Track 61 : ArchiDore\_1
- Track 62 : DumpsterDude\_1
- Track 63 : Courthouse\_9, Superphikiman\_9
- Track 64 : Beem\_9, Dallas\_8, Redno2\_8, Ejimix\_10, JuicyJay\_10, Halley\_9
- Track 65 : Ariel\_8, Porcelain\_9, MiaZeal\_9, Bobby\_10, Lucky2013\_9, Squint\_9
- Track 66 : Rearden\_6, Omega\_10, Gonephishing\_9, Shaboozey\_5, KashFlow\_3, Nekros\_7, LittleE\_8
- Track 67 : Yeet\_7, Pound\_8, Schatzie\_7
- Track 68 : Wanda\_9, Klein\_9
- Track 69 : Hannaconda\_6
- Track 70 : NihilNomen\_8
- Track 71 : Marleymoo\_9, Zelink\_9
- Track 72 : Zaria\_2, AvadaKedavra\_2, Wamburggrxpress\_2, Wyatt2\_2, Rose5\_2, Acquire49\_2, Calm\_2, Tyson\_2, MAckerman\_2, Poochiewood\_2, Halena\_2
- Track 73 : LeBron\_2, JoeDirt\_2, UPIE\_2, Enceladus\_2, DirkDirk\_2, CicholasNage\_2, Silverleaf\_2
- Track 74 : Appletree2\_2, OhShagHennessy\_2
- Track 75 : RoseMarie\_13
- Track 76 : Reindeer\_11
- Track 77 : Auspice\_13, Bricole\_13, Dulcita\_14, KleverKiS\_13, Diminimus\_14, Izel\_12, Glaske16\_14, Skinny\_14, LilhomieP\_12, PegLeg\_13, TyDawg\_13, Bongo\_13, IPhane7\_13, SlimJimmy\_12
- Track 78 : StevieRay\_1, Bhagsy\_1, Atcoo\_1
- Track 79 : Thespis\_1, Glaske\_1, Brusacoram\_1, Phalm\_1, Megiddo\_1, KilKor\_1, StressBall\_1, Willsammy\_1, CactusJack\_1, Gavriela\_1
- Track 80 : Mangethe\_1, Majeke\_1, Arib1\_1, Phegasus\_1

- Track 81 : Dynamo\_1, Malithi\_1, Fishburne\_1, Camster\_1, Polkaroo\_1, FirstPlacePfu\_1, Necropolis\_1, GreaseLightnin\_1, Kari\_1, Etoile\_1, Zilizebeth\_1, Langerak\_1, Vidya\_1
- Track 82 : Bunnies\_1, Ksquared\_1
- Track 83 : Shipwreck\_1, Pygmy\_1, Phineas\_1, Bogie\_1
- Track 84 : Jung\_1
- Track 85 : Venti\_1, Donovan\_1, HUHilltop\_1, Bartholomew\_1, Sonah\_1, Techage\_1, Juniormint\_1, Jebeks\_1
- Track 86 : Tortellini\_1
- Track 87 : Xavia\_1
- Track 88 : BigNuz\_1, Nazo\_1
- Track 89 : ThulaThula\_1
- Track 90 : Phayonce\_1
- Track 91 : Purky\_1
- Track 92 : Daegal\_1
- Track 93 : Rem711\_1
- Track 94 : 32HC\_1
- Track 95 : Mbo4\_1
- Track 96 : Finkle\_1
- Track 97 : Whack\_1

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

The start number called the most often in the published annotations is 19, it was called in 45 of the 224 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Arib1\_1, Atcoo\_1, Bartholomew\_1, Bhagsy\_1, BigNuz\_1, Bogie\_1, Brusacoram\_1, Bunnies\_1, CactusJack\_1, Camster\_1, Donovan\_1, Dynamo\_1, Etoile\_1, FirstPlacePfu\_1, Fishburne\_1, Gavriela\_1, Glaske\_1, GreaseLightnin\_1, HUHilltop\_1, Jebeks\_1, Jung\_1, Juniormint\_1, Kari\_1, KillKor\_1, Ksquared\_1, Langerak\_1, Majeke\_1, Malithi\_1, Mangethe\_1, Megiddo\_1, Nazo\_1, Necropolis\_1, Phalm\_1, Phegasus\_1, Phineas\_1, Polkaroo\_1, Pygmy\_1, Shipwreck\_1, Sonah\_1, StevieRay\_1, StressBall\_1, Techage\_1, Thespis\_1, ThulaThula\_1, Tortellini\_1, Venti\_1, Vidya\_1, Willsammy\_1, Xavia\_1, Zilizebeth\_1,

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

- Phayonce\_1, Purky\_1,

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

- 32HC\_1, Acquire49\_2, Adora\_1, Annalisa\_2, Appletree2\_2, ArchiDore\_1, Archis\_1, Ariel\_8, Attis\_1, Auspice\_13, AvadaKedavra\_2, Azula\_1, BBQValindra\_1, BackstagePass\_1, Barco\_1, BaxterFox\_1, Beem\_9, Beenie\_2, Begonia\_1, Bjaness7\_1, BlingBling\_1, Blino\_1, Blueberry\_1, Bobby\_10, Bongo\_13, Bowser\_1, Bricole\_13, Bunker\_1, Calm\_2, CaptainKirk2\_1, CarolAnn\_1, CicholasNage\_2, Clap\_1, Clark\_2, Coriander\_1, Courthouse\_9, Cynthia\_1, Daegal\_1, Dallas\_8, Delian\_1, Denise\_1, Diminimus\_14, DirkDirk\_2, DirtyBoi\_1, Dmitri\_1, DobbysSock\_1, Doggs\_1, Dolores\_2, Dorito\_1, Dulcita\_14, DumpsterDude\_1, Easley\_2, Ebert\_1, EdnaMode\_1, Ejimix\_10, Enceladus\_2, Eyes\_1, Fairfaxidum\_1, Fenry\_1, Finkle\_1, FroggyToad\_1, Frokostdame\_1, GEazy\_1, Gambino\_1, GemG\_1, Gizermo\_1,

Glaskel6\_14, Gonephishing\_9, Guacamole\_1, Halena\_2, Haley23\_1, Halley\_9, Hannaconda\_6, HannahD\_1, Hedwig\_1, Hitter\_1, Hortense\_1, Howe\_1, IPhane7\_13, Invectra\_2, Izel\_12, JCole\_1, Jalammah\_1, JasperJr\_1, JoeDirt\_2, JuJu\_1, JuicyJay\_10, KappaFarmDelta\_1, KashFlow\_3, Kiko\_1, Klein\_9, KleverKiS\_13, Kudrefre\_11, Lamberg\_1, LeBron\_2, LilhomieP\_12, LittleE\_8, LordFarquaad\_1, Lucky2013\_9, Lysidious\_1, MAckerman\_2, MagicMan\_1, MakCheese\_1, Malachai\_1, Malibo\_1, Marleymoo\_9, Matteo\_1, Mbo4\_1, Melba\_1, Mellie\_1, MiaZeal\_9, MichaelScott\_2, MintFen\_1, MissRona\_1, Mocha12\_1, Moonflower\_1, Murp\_1, Nekros\_7, Nettuno\_1, Neville\_11, NihilNomen\_8, Obliviate\_1, Octobien14\_12, OhShagHennessy\_2, Ohgeesy\_1, Omega\_10, Opie\_1, Oregano\_1, PCoral7\_1, PantheRoc\_1, PegLeg\_13, Petra\_1, PhriskyACE\_1, PhrostedPhlake\_1, Pickett\_1, Pipp\_1, Poochiewood\_2, Porcelain\_9, Pound\_8, Powerball\_1, PrincePatrick\_1, Rabbitrun\_13, RayTheFireFly\_1, Rearden\_6, Redno2\_8, Reindeer\_11, Rem711\_1, Rose5\_2, RoseMarie\_13, Ruthy\_1, Sahara\_1, Samba\_1, Samman98\_2, Savage\_1, Schatzie\_7, Schnabeltier\_1, Sekhmet\_2, Sephiroth\_12, Shaboozey\_5, Shlim410\_1, Sidious\_1, Silverleaf\_2, Skinny\_14, SlimJimmy\_12, SoilAssassin\_1, Sproutie\_1, Squint\_9, Suerte\_1, Superphikiman\_9, Syleon\_12, TaronosaurusRx\_1, Thimann\_2, Toast\_1, Trax\_11, TuertoX\_1, Twinkle\_1, TyDawg\_13, Tyson\_2, UPIE\_2, UmaThurman\_1, Utz\_1, Vasanti\_1, Walrus\_1, Wamburggrxpress\_2, Wanda\_9, Weirdo19\_1, Whack\_1, Whiteclaw\_1, William\_1, WinkNick\_2, Wisp\_1, Wocket\_1, Wyatt2\_2, Yeet412\_1, Yeet\_7, Yeezy\_1, ZAYM\_1, Zarbodnamra\_1, Zaria\_2, Zelink\_9, ZiggyZoo\_1, Zodiariah\_1,

### Summary by start number:

#### Start 10:

- Found in 4 of 254 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 224
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Purky\_1 (P6),

#### Start 12:

- Found in 1 of 254 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 224
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ruthy\_1 (DW),

#### Start 17:

- Found in 1 of 254 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 224
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Finkle\_1 (singleton),

#### Start 18:

- Found in 16 of 254 ( 6.3% ) of genes in pham
- Manual Annotations of this start: 13 of 224
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Auspice\_13 (M1), Bongo\_13 (M1), Bricole\_13 (M1), Diminimus\_14 (M1), Dulcita\_14 (M1), Glaskel6\_14 (M1), IPhane7\_13 (M1), Izel\_12 (M1), KleverKiS\_13 (M1), LilhomieP\_12 (M1), PegLeg\_13 (M1), Reindeer\_11 (M1), RoseMarie\_13 (M), Skinny\_14 (M1), SlimJimmy\_12 (M1), TyDawg\_13 (M1),

Start 19:

- Found in 52 of 254 ( 20.5% ) of genes in pham
- Manual Annotations of this start: 45 of 224
- Called 96.2% of time when present
- Phage (with cluster) where this start called: Arib1\_1 (P1), Atcoo\_1 (P1), Bartholomew\_1 (P1), Bhagsy\_1 (P1), BigNuz\_1 (P4), Bogie\_1 (P1), Brusacoram\_1 (P1), Bunnies\_1 (P1), CactusJack\_1 (P1), Camster\_1 (P1), Donovan\_1 (P1), Dynamo\_1 (P1), Etoile\_1 (P1), FirstPlacePfu\_1 (P1), Fishburne\_1 (P1), Gavriela\_1 (P1), Glaske\_1 (P1), GreaseLightnin\_1 (P1), HUHilltop\_1 (P1), Jebeks\_1 (P1), Jung\_1 (P1), Juniormint\_1 (P1), Kari\_1 (P1), KilKor\_1 (P1), Ksquard\_1 (P1), Langerak\_1 (P1), Majeke\_1 (P1), Malithi\_1 (P1), Mangethe\_1 (P1), Megiddo\_1 (P1), Nazo\_1 (P4), Necropolis\_1 (P1), Phalm\_1 (P1), Phegasus\_1 (P1), Phineas\_1 (P1), Polkaroo\_1 (P1), Pygmy\_1 (P1), Shipwreck\_1 (P1), Sonah\_1 (P1), StevieRay\_1 (P1), StressBall\_1 (P1), Techage\_1 (P1), Thespi\_1 (P1), ThulaThula\_1 (P5), Tortellini\_1 (P2), Venti\_1 (P1), Vidya\_1 (P1), Willsammy\_1 (P1), Xavia\_1 (P3), Zilizabeth\_1 (P1),

Start 28:

- Found in 11 of 254 ( 4.3% ) of genes in pham
- Manual Annotations of this start: 1 of 224
- Called 9.1% of time when present
- Phage (with cluster) where this start called: Beenie\_2 (CZ4),

Start 30:

- Found in 18 of 254 ( 7.1% ) of genes in pham
- Manual Annotations of this start: 17 of 224
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Acquire49\_2 (L1), AvadaKedavra\_2 (L1), Calm\_2 (L1), CicholasNage\_2 (L1), DirkDirk\_2 (L1), Enceladus\_2 (L1), Halena\_2 (L1), JoeDirt\_2 (L1), LeBron\_2 (L1), MAckerman\_2 (L1), Poochiewood\_2 (L1), Rose5\_2 (L1), Silverleaf\_2 (L1), Tyson\_2 (L1), UPIE\_2 (L1), Wamburgxpress\_2 (L1), Wyatt2\_2 (L1), Zaria\_2 (L1),

Start 34:

- Found in 14 of 254 ( 5.5% ) of genes in pham
- Manual Annotations of this start: 2 of 224
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Appletree2\_2 (L1), OhShagHennessy\_2 (L1),

Start 36:

- Found in 8 of 254 ( 3.1% ) of genes in pham
- Manual Annotations of this start: 5 of 224
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Coriander\_1 (DB), DirtyBoi\_1 (DB), Dmitri\_1 (DB), Doggs\_1 (DB), Hedwig\_1 (DB), Mbo4\_1 (singleton), Moonflower\_1 (DB), RayTheFireFly\_1 (DB),

Start 37:

- Found in 4 of 254 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 4 of 224
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kudrefre\_11 (DU1), Octobien14\_12 (DU1), Sephiroth\_12 (DU1), Syleon\_12 (DU1),

Start 38:

- Found in 8 of 254 ( 3.1% ) of genes in pham
- Manual Annotations of this start: 7 of 224
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BBQValindra\_1 (DB), BackstagePass\_1 (DB), Bowser\_1 (DB), Bunker\_1 (DB), Eyes\_1 (DB), GEazy\_1 (DB), HannahD\_1 (DB), Whack\_1 (singleton),

Start 39:

- Found in 3 of 254 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 3 of 224
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Neville\_11 (DU2), Rabbitrun\_13 (DU2), Trax\_11 (DU2),

Start 40:

- Found in 41 of 254 ( 16.1% ) of genes in pham
- Manual Annotations of this start: 34 of 224
- Called 97.6% of time when present
- Phage (with cluster) where this start called: Annalisa\_2 (CZ4), Ariel\_8 (J), Beem\_9 (J), Bobby\_10 (J), Clark\_2 (CZ4), Courthouse\_9 (J), Dallas\_8 (J), Dolores\_2 (CZ4), Easley\_2 (CZ4), Ejimix\_10 (J), Gonephishing\_9 (J), Halley\_9 (J), Hannaconda\_6 (J), Invectra\_2 (CZ4), JuicyJay\_10 (J), KashFlow\_3 (J), Klein\_9 (J), LittleE\_8 (J), Lucky2013\_9 (J), Marleymoo\_9 (J), MiaZeal\_9 (J), MichaelScott\_2 (CZ4), Nekros\_7 (J), NihilNomen\_8 (J), Omega\_10 (J), Porcelain\_9 (J), Pound\_8 (J), Rearden\_6 (J), Redno2\_8 (J), Samman98\_2 (CZ4), Schatzie\_7 (J), Sekhmet\_2 (CZ4), Shaboozey\_5 (J), Squint\_9 (J), Superphikiman\_9 (J), Thimann\_2 (CZ4), Wanda\_9 (J), WinkNick\_2 (CZ4), Yeet\_7 (J), Zelink\_9 (J),

Start 42:

- Found in 6 of 254 ( 2.4% ) of genes in pham
- Manual Annotations of this start: 2 of 224
- Called 83.3% of time when present
- Phage (with cluster) where this start called: ArchiDore\_1 (DW), DumpsterDude\_1 (DW), MakCheese\_1 (DW), Malibo\_1 (DW), Zodiariah\_1 (DW),

Start 43:

- Found in 54 of 254 ( 21.3% ) of genes in pham
- Manual Annotations of this start: 42 of 224
- Called 85.2% of time when present
- Phage (with cluster) where this start called: Adora\_1 (CZ4), Attis\_1 (CZ2), BaxterFox\_1 (CZ3), Bjanes7\_1 (CZ2), Clap\_1 (CZ2), Cynthia\_1 (CZ2), Denise\_1 (CZ5), DobbysSock\_1 (CZ4), Dorito\_1 (CZ4), Ebert\_1 (CZ2), EdnaMode\_1 (CZ2), FroggyToad\_1 (CZ2), GemG\_1 (CZ2), Gizermo\_1 (CZ2), Haley23\_1 (CZ2), Hortense\_1 (CZ4), Howe\_1 (CZ4), JCole\_1 (CZ2), Kiko\_1 (DB), Lamberg\_1 (CZ2), LordFarquaad\_1 (CZ2), MagicMan\_1 (DB), Matteo\_1 (CZ2), Mocha12\_1 (CZ2), Nettuno\_1 (CZ2), Ohgeesy\_1 (CZ), Opie\_1 (DB), PantheRoc\_1 (CZ3), Pickett\_1 (CZ2), Powerball\_1 (CZ4), Sahara\_1 (CZ2), Savage\_1 (CZ2), Schnabeltier\_1 (DB), Shlim410\_1 (CZ4), Sidious\_1 (CZ7), SoilAssassin\_1 (CZ2), Sproutie\_1 (CZ2), Suerte\_1 (CZ4), TaronosaurusRx\_1 (DB), TuertoX\_1 (CZ2), Twinkle\_1 (CZ4), Vasanti\_1 (CZ2), Whiteclaw\_1 (CZ2), Yeet412\_1 (CZ2), Yeezy\_1 (CZ3), ZAYM\_1 (DB),



Start 44:

- Found in 43 of 254 ( 16.9% ) of genes in pham
- Manual Annotations of this start: 41 of 224
- Called 95.3% of time when present
- Phage (with cluster) where this start called: Archis\_1 (CV), Azula\_1 (CV), Barco\_1 (CV), Begonia\_1 (CV), BlingBling\_1 (CV), Blino\_1 (CV), Blueberry\_1 (CV), CaptainKirk2\_1 (CV), CarolAnn\_1 (CV), Delian\_1 (CV), Fairfaxidum\_1 (CV), Fenry\_1 (CV), Frokostdame\_1 (CV), Gambino\_1 (CV), Guacamole\_1 (CV), Hitter\_1 (CV), Jalammah\_1 (CV), JasperJr\_1 (CV), JuJu\_1 (CV), KappaFarmDelta\_1 (CV), Lysidious\_1 (CV), Malachai\_1 (CV), Melba\_1 (CV), Mellie\_1 (CV), MintFen\_1 (CV), MissRona\_1 (CV), Murp\_1 (CV), Oblivate\_1 (CV), PCoral7\_1 (CV), Petra\_1 (CV), PhrostedPhlake\_1 (CV), Pipp\_1 (CV), PrincePatrick\_1 (CV), Samba\_1 (CV), Toast\_1 (CV), UmaThurman\_1 (CV), Walrus\_1 (CV), William\_1 (CV), Wocket\_1 (CV), Zarbodnamra\_1 (CV), ZiggyZoo\_1 (CV),

Start 49:

- Found in 44 of 254 ( 17.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 4.5% of time when present
- Phage (with cluster) where this start called: 32HC\_1 (Z), Wisp\_1 (CV),

Start 50:

- Found in 54 of 254 ( 21.3% ) of genes in pham
- Manual Annotations of this start: 1 of 224
- Called 3.7% of time when present
- Phage (with cluster) where this start called: Utz\_1 (CV), Weirido19\_1 (AH),

Start 51:

- Found in 84 of 254 ( 33.1% ) of genes in pham
- Manual Annotations of this start: 1 of 224
- Called 1.2% of time when present
- Phage (with cluster) where this start called: Phayonce\_1 (P5),

Start 52:

- Found in 17 of 254 ( 6.7% ) of genes in pham
- Manual Annotations of this start: 2 of 224
- Called 11.8% of time when present
- Phage (with cluster) where this start called: Daegal\_1 (Q), Rem711\_1 (Z),

Start 54:

- Found in 17 of 254 ( 6.7% ) of genes in pham
- Manual Annotations of this start: 1 of 224
- Called 5.9% of time when present
- Phage (with cluster) where this start called: Oregano\_1 (CZ4),

Start 63:

- Found in 62 of 254 ( 24.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 1.6% of time when present
- Phage (with cluster) where this start called: PhriskyACE\_1 (CZ4),

**Summary by clusters:**

There are 25 clusters represented in this pham: singleton, CZ2, CZ3, DB, CZ7, CZ4, CZ5, M1, DW, DU1, DU2, P2, P3, P1, P6, P4, P5, AH, J, M, Q, CZ, L1, Z, CV,

Info for manual annotations of cluster CV:

- Start number 44 was manually annotated 41 times for cluster CV.
- Start number 50 was manually annotated 1 time for cluster CV.

Info for manual annotations of cluster CZ:

- Start number 43 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ2:

- Start number 43 was manually annotated 23 times for cluster CZ2.

Info for manual annotations of cluster CZ3:

- Start number 43 was manually annotated 3 times for cluster CZ3.

Info for manual annotations of cluster CZ4:

- Start number 28 was manually annotated 1 time for cluster CZ4.
- Start number 40 was manually annotated 9 times for cluster CZ4.
- Start number 43 was manually annotated 9 times for cluster CZ4.
- Start number 54 was manually annotated 1 time for cluster CZ4.

Info for manual annotations of cluster CZ5:

- Start number 43 was manually annotated 1 time for cluster CZ5.

Info for manual annotations of cluster CZ7:

- Start number 43 was manually annotated 1 time for cluster CZ7.

Info for manual annotations of cluster DB:

- Start number 36 was manually annotated 5 times for cluster DB.
- Start number 38 was manually annotated 6 times for cluster DB.
- Start number 43 was manually annotated 4 times for cluster DB.

Info for manual annotations of cluster DU1:

- Start number 37 was manually annotated 4 times for cluster DU1.

Info for manual annotations of cluster DU2:

- Start number 39 was manually annotated 3 times for cluster DU2.

Info for manual annotations of cluster DW:

- Start number 12 was manually annotated 1 time for cluster DW.
- Start number 42 was manually annotated 2 times for cluster DW.

Info for manual annotations of cluster J:

- Start number 40 was manually annotated 25 times for cluster J.

Info for manual annotations of cluster L1:

- Start number 30 was manually annotated 17 times for cluster L1.
- Start number 34 was manually annotated 2 times for cluster L1.

Info for manual annotations of cluster M1:

- Start number 18 was manually annotated 13 times for cluster M1.

Info for manual annotations of cluster P1:

- Start number 19 was manually annotated 40 times for cluster P1.

Info for manual annotations of cluster P2:

- Start number 19 was manually annotated 1 time for cluster P2.

Info for manual annotations of cluster P3:

- Start number 19 was manually annotated 1 time for cluster P3.

Info for manual annotations of cluster P4:

- Start number 19 was manually annotated 2 times for cluster P4.

Info for manual annotations of cluster P5:

- Start number 19 was manually annotated 1 time for cluster P5.
- Start number 51 was manually annotated 1 time for cluster P5.

Info for manual annotations of cluster P6:

- Start number 10 was manually annotated 1 time for cluster P6.

Info for manual annotations of cluster Q:

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

Info for manual annotations of cluster Z:

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

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

Gene: 32HC\_1 Start: 209, Stop: 550, Start Num: 49

Candidate Starts for 32HC\_1:

(6, 38), (49, 209), (Start: 52 @236 has 2 MA's), (55, 251), (70, 311), (73, 323), (83, 356), (94, 383), (113, 446), (114, 461),

Gene: Acquire49\_2 Start: 474, Stop: 848, Start Num: 30

Candidate Starts for Acquire49\_2:

(Start: 30 @474 has 17 MA's), (48, 513), (63, 585), (64, 588), (69, 615), (77, 648), (78, 651), (103, 744),

Gene: Adora\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Adora\_1:

(Start: 43 @14 has 42 MA's), (Start: 50 @50 has 1 MA's), (Start: 52 @62 has 2 MA's), (60, 92), (61, 95), (74, 152), (94, 215), (108, 263),

Gene: Annalisa\_2 Start: 510, Stop: 848, Start Num: 40

Candidate Starts for Annalisa\_2:

(Start: 28 @486 has 1 MA's), (29, 492), (Start: 34 @501 has 2 MA's), (Start: 40 @510 has 34 MA's), (Start: 54 @573 has 1 MA's), (61, 597), (62, 600), (63, 603), (108, 765),

Gene: Appletree2\_2 Start: 456, Stop: 821, Start Num: 34

Candidate Starts for Appletree2\_2:

(Start: 34 @456 has 2 MA's), (48, 486), (63, 558), (64, 561), (69, 588), (77, 621), (78, 624), (103, 717), (104, 723),

Gene: ArchiDore\_1 Start: 127, Stop: 453, Start Num: 42

Candidate Starts for ArchiDore\_1:

(Start: 42 @127 has 2 MA's), (Start: 50 @166 has 1 MA's), (61, 211), (64, 220), (68, 238), (71, 256), (86, 295), (100, 340), (111, 379), (118, 412),

Gene: Archis\_1 Start: 56, Stop: 397, Start Num: 44

Candidate Starts for Archis\_1:

(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (59, 128), (61, 134), (62, 137), (68, 161), (84, 224), (94, 251),

Gene: Arib1\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Arib1\_1:

(Start: 19 @55 has 45 MA's), (47, 124), (Start: 51 @151 has 1 MA's), (61, 193), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: Ariel\_8 Start: 2563, Stop: 2952, Start Num: 40

Candidate Starts for Ariel\_8:

(2, 2356), (3, 2365), (11, 2476), (25, 2530), (Start: 40 @2563 has 34 MA's), (56, 2632), (61, 2650), (62, 2653), (64, 2659), (80, 2728), (91, 2782), (103, 2818), (106, 2833), (122, 2932),

Gene: Atcoo\_1 Start: 43, Stop: 432, Start Num: 19

Candidate Starts for Atcoo\_1:

(Start: 19 @43 has 45 MA's), (Start: 51 @139 has 1 MA's), (67, 205), (82, 262), (85, 274), (90, 286), (98, 310), (107, 340),

Gene: Attis\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Attis\_1:

(Start: 43 @14 has 42 MA's), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: Auspice\_13 Start: 4298, Stop: 4693, Start Num: 18

Candidate Starts for Auspice\_13:

(Start: 18 @4298 has 13 MA's), (69, 4475), (115, 4664), (116, 4667),

Gene: AvadaKedavra\_2 Start: 474, Stop: 848, Start Num: 30

Candidate Starts for AvadaKedavra\_2:

(Start: 30 @474 has 17 MA's), (48, 513), (63, 585), (64, 588), (69, 615), (77, 648), (78, 651), (103, 744),

Gene: Azula\_1 Start: 57, Stop: 392, Start Num: 44

Candidate Starts for Azula\_1:

(24, 15), (33, 36), (Start: 44 @57 has 41 MA's), (45, 63), (49, 75), (Start: 50 @90 has 1 MA's), (58, 123), (59, 129), (62, 138), (65, 150), (68, 162), (76, 204), (83, 222), (84, 225), (94, 252), (100, 270), (109, 303), (111, 309),

Gene: BBQValindra\_1 Start: 176, Stop: 550, Start Num: 38

Candidate Starts for BBQValindra\_1:

(Start: 38 @176 has 7 MA's), (69, 302), (73, 320), (82, 347), (84, 356), (94, 383), (100, 401), (122, 515),

Gene: BackstagePass\_1 Start: 149, Stop: 523, Start Num: 38

Candidate Starts for BackstagePass\_1:

(Start: 38 @149 has 7 MA's), (69, 275), (73, 293), (82, 320), (84, 329), (94, 356), (100, 374), (122, 488),

Gene: Barco\_1 Start: 56, Stop: 397, Start Num: 44

Candidate Starts for Barco\_1:

(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (59, 128), (61, 134), (62, 137), (68, 161), (84, 224), (94, 251),

Gene: Bartholomew\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Bartholomew\_1:

(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (61, 193), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: BaxterFox\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for BaxterFox\_1:

(Start: 43 @14 has 42 MA's), (61, 95), (73, 149), (74, 152), (108, 263),

Gene: Beem\_9 Start: 2758, Stop: 3132, Start Num: 40

Candidate Starts for Beem\_9:

(2, 2551), (3, 2560), (11, 2671), (25, 2725), (Start: 40 @2758 has 34 MA's), (78, 2917), (91, 2977), (93, 2980), (103, 3013),

Gene: Beenie\_2 Start: 486, Stop: 848, Start Num: 28

Candidate Starts for Beenie\_2:

(Start: 28 @486 has 1 MA's), (29, 492), (Start: 34 @501 has 2 MA's), (Start: 40 @510 has 34 MA's), (Start: 54 @573 has 1 MA's), (59, 591), (61, 597), (63, 603), (67, 621), (69, 633), (83, 684), (108, 765),

Gene: Begonia\_1 Start: 56, Stop: 397, Start Num: 44

Candidate Starts for Begonia\_1:

(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (61, 134), (62, 137), (68, 161), (84, 224), (94, 251),

Gene: Bhagsy\_1 Start: 43, Stop: 432, Start Num: 19

Candidate Starts for Bhagsy\_1:

(Start: 19 @43 has 45 MA's), (Start: 51 @139 has 1 MA's), (67, 205), (82, 262), (85, 274), (90, 286), (98, 310), (107, 340),

Gene: BigNuz\_1 Start: 43, Stop: 423, Start Num: 19

Candidate Starts for BigNuz\_1:

(Start: 10 @16 has 1 MA's), (Start: 19 @43 has 45 MA's), (Start: 51 @130 has 1 MA's), (67, 196), (82, 253), (90, 277), (94, 286), (98, 301), (107, 331),

Gene: Bjaner7\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Bjaner7\_1:

(Start: 43 @14 has 42 MA's), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: BlingBling\_1 Start: 56, Stop: 397, Start Num: 44

Candidate Starts for BlingBling\_1:

(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (59, 128), (61, 134), (62, 137), (68, 161), (84, 224), (94, 251),

Gene: Blino\_1 Start: 57, Stop: 392, Start Num: 44

Candidate Starts for Blino\_1:

(24, 15), (33, 36), (Start: 44 @57 has 41 MA's), (45, 63), (49, 75), (Start: 50 @90 has 1 MA's), (58, 123), (59, 129), (62, 138), (65, 150), (68, 162), (76, 204), (83, 222), (84, 225), (94, 252), (100, 270), (109, 303), (111, 309),

Gene: Blueberry\_1 Start: 57, Stop: 392, Start Num: 44

Candidate Starts for Blueberry\_1:

(24, 15), (33, 36), (Start: 44 @57 has 41 MA's), (45, 63), (49, 75), (Start: 50 @90 has 1 MA's), (58, 123), (59, 129), (62, 138), (65, 150), (68, 162), (76, 204), (83, 222), (84, 225), (94, 252), (100, 270), (109, 303), (111, 309),

Gene: Bobby\_10 Start: 3493, Stop: 3882, Start Num: 40

Candidate Starts for Bobby\_10:

(2, 3286), (3, 3295), (11, 3406), (25, 3460), (Start: 40 @3493 has 34 MA's), (56, 3562), (61, 3580), (62, 3583), (64, 3589), (80, 3658), (91, 3712), (103, 3748), (106, 3763), (122, 3862),

Gene: Bogie\_1 Start: 43, Stop: 432, Start Num: 19

Candidate Starts for Bogie\_1:

(Start: 19 @43 has 45 MA's), (Start: 51 @139 has 1 MA's), (67, 205), (82, 262), (85, 274), (98, 310), (107, 340),

Gene: Bongo\_13 Start: 4298, Stop: 4693, Start Num: 18

Candidate Starts for Bongo\_13:

(Start: 18 @4298 has 13 MA's), (69, 4475), (115, 4664), (116, 4667),

Gene: Bowser\_1 Start: 176, Stop: 550, Start Num: 38

Candidate Starts for Bowser\_1:

(Start: 38 @176 has 7 MA's), (59, 260), (69, 302), (73, 320), (82, 347), (84, 356), (94, 383), (100, 401), (122, 515),

Gene: Bricole\_13 Start: 4297, Stop: 4692, Start Num: 18

Candidate Starts for Bricole\_13:

(Start: 18 @4297 has 13 MA's), (69, 4474), (115, 4663), (116, 4666),

Gene: Brusacoram\_1 Start: 42, Stop: 431, Start Num: 19

Candidate Starts for Brusacoram\_1:

(Start: 19 @42 has 45 MA's), (Start: 51 @138 has 1 MA's), (67, 204), (82, 261), (85, 273), (90, 285), (98, 309), (107, 339),

Gene: Bunker\_1 Start: 176, Stop: 550, Start Num: 38

Candidate Starts for Bunker\_1:

(Start: 38 @176 has 7 MA's), (69, 302), (73, 320), (76, 335), (82, 347), (84, 356), (94, 383), (100, 401), (122, 515),

Gene: Bunnies\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Bunnies\_1:

(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (67, 217), (82, 274), (85, 286), (90, 298), (98, 322), (107, 352),

Gene: CactusJack\_1 Start: 42, Stop: 431, Start Num: 19

Candidate Starts for CactusJack\_1:

(Start: 19 @42 has 45 MA's), (Start: 51 @138 has 1 MA's), (67, 204), (82, 261), (85, 273), (90, 285), (98, 309), (107, 339),

Gene: Calm\_2 Start: 474, Stop: 848, Start Num: 30

Candidate Starts for Calm\_2:

(Start: 30 @474 has 17 MA's), (48, 513), (63, 585), (64, 588), (69, 615), (77, 648), (78, 651), (103, 744),

Gene: Camster\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Camster\_1:

(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: CaptainKirk2\_1 Start: 56, Stop: 397, Start Num: 44

Candidate Starts for CaptainKirk2\_1:

(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (59, 128), (61, 134), (62, 137), (68, 161), (84, 224), (94, 251),

Gene: CarolAnn\_1 Start: 56, Stop: 391, Start Num: 44

Candidate Starts for CarolAnn\_1:

(23, 14), (33, 35), (Start: 44 @56 has 41 MA's), (45, 62), (49, 74), (Start: 50 @89 has 1 MA's), (58, 122), (59, 128), (62, 137), (65, 149), (68, 161), (76, 203), (83, 221), (84, 224), (94, 251), (100, 269), (109, 302), (111, 308),

Gene: CicholasNage\_2 Start: 475, Stop: 849, Start Num: 30

Candidate Starts for CicholasNage\_2:

(Start: 30 @475 has 17 MA's), (48, 514), (63, 586), (64, 589), (69, 616), (77, 649), (78, 652), (103, 745), (104, 751),

Gene: Clap\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Clap\_1:

(Start: 43 @14 has 42 MA's), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: Clark\_2 Start: 510, Stop: 848, Start Num: 40

Candidate Starts for Clark\_2:

(Start: 28 @486 has 1 MA's), (29, 492), (Start: 34 @501 has 2 MA's), (Start: 40 @510 has 34 MA's), (Start: 54 @573 has 1 MA's), (59, 591), (61, 597), (63, 603), (67, 621), (69, 633), (83, 684), (108, 765),

Gene: Coriander\_1 Start: 228, Stop: 614, Start Num: 36

Candidate Starts for Coriander\_1:

(Start: 36 @228 has 5 MA's), (Start: 43 @240 has 42 MA's), (59, 315), (66, 339), (110, 492),

Gene: Courthouse\_9 Start: 3362, Stop: 3751, Start Num: 40

Candidate Starts for Courthouse\_9:

(2, 3155), (3, 3164), (11, 3275), (Start: 40 @3362 has 34 MA's), (56, 3431), (61, 3449), (62, 3452), (64, 3458), (80, 3527), (91, 3581), (103, 3617), (106, 3632), (122, 3731),

Gene: Cynthia\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Cynthia\_1:

(Start: 43 @14 has 42 MA's), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: Daegal\_1 Start: 257, Stop: 571, Start Num: 52

Candidate Starts for Daegal\_1:

(4, 14), (7, 71), (8, 92), (Start: 52 @257 has 2 MA's), (60, 287), (62, 293), (63, 296), (67, 314), (73, 344), (74, 347), (83, 392), (90, 416), (94, 425), (107, 470), (112, 485), (120, 536), (123, 563),

Gene: Dallas\_8 Start: 2297, Stop: 2671, Start Num: 40

Candidate Starts for Dallas\_8:

(2, 2090), (3, 2099), (11, 2210), (25, 2264), (Start: 40 @2297 has 34 MA's), (78, 2456), (91, 2516), (93, 2519), (103, 2552),

Gene: Delian\_1 Start: 56, Stop: 397, Start Num: 44

Candidate Starts for Delian\_1:

(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (59, 128), (61, 134), (62, 137), (68, 161), (84, 224), (94, 251),

Gene: Denise\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Denise\_1:

(Start: 43 @14 has 42 MA's), (61, 95), (62, 98), (74, 152), (101, 236), (107, 260), (108, 263), (114, 293),

Gene: Diminimus\_14 Start: 4297, Stop: 4692, Start Num: 18

Candidate Starts for Diminimus\_14:

(Start: 18 @4297 has 13 MA's), (69, 4474), (115, 4663), (116, 4666),

Gene: DirkDirk\_2 Start: 475, Stop: 849, Start Num: 30

Candidate Starts for DirkDirk\_2:

(Start: 30 @475 has 17 MA's), (48, 514), (63, 586), (64, 589), (69, 616), (77, 649), (78, 652), (103, 745), (104, 751),

Gene: DirtyBoi\_1 Start: 228, Stop: 614, Start Num: 36

Candidate Starts for DirtyBoi\_1:

(9, 141), (Start: 36 @228 has 5 MA's), (Start: 43 @240 has 42 MA's), (59, 315), (66, 339), (82, 402), (94, 438), (110, 492),

Gene: Dmitri\_1 Start: 228, Stop: 614, Start Num: 36

Candidate Starts for Dmitri\_1:

(Start: 36 @228 has 5 MA's), (Start: 43 @240 has 42 MA's), (48, 258), (59, 315), (66, 339), (94, 438), (110, 492),

Gene: DobbysSock\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for DobbysSock\_1:

(Start: 43 @14 has 42 MA's), (Start: 52 @62 has 2 MA's), (Start: 54 @71 has 1 MA's), (61, 95), (63, 101), (69, 131), (73, 149), (108, 263),

Gene: Doggs\_1 Start: 228, Stop: 614, Start Num: 36

Candidate Starts for Doggs\_1:

(Start: 36 @228 has 5 MA's), (Start: 43 @240 has 42 MA's), (59, 315), (66, 339), (110, 492),

Gene: Dolores\_2 Start: 510, Stop: 848, Start Num: 40

Candidate Starts for Dolores\_2:

(Start: 28 @486 has 1 MA's), (29, 492), (Start: 34 @501 has 2 MA's), (Start: 40 @510 has 34 MA's), (Start: 54 @573 has 1 MA's), (61, 597), (62, 600), (63, 603), (108, 765),

Gene: Donovan\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Donovan\_1:



(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (61, 193), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: Dorito\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Dorito\_1:

(Start: 43 @14 has 42 MA's), (Start: 54 @71 has 1 MA's), (61, 95), (63, 101), (108, 263),

Gene: Dulcita\_14 Start: 4297, Stop: 4692, Start Num: 18

Candidate Starts for Dulcita\_14:

(Start: 18 @4297 has 13 MA's), (69, 4474), (115, 4663), (116, 4666),

Gene: DumpsterDude\_1 Start: 127, Stop: 453, Start Num: 42

Candidate Starts for DumpsterDude\_1:

(21, 82), (Start: 42 @127 has 2 MA's), (Start: 50 @166 has 1 MA's), (61, 211), (64, 220), (68, 238), (71, 256), (86, 295), (100, 340), (111, 379), (118, 412),

Gene: Dynamo\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Dynamo\_1:

(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: Easley\_2 Start: 510, Stop: 848, Start Num: 40

Candidate Starts for Easley\_2:

(Start: 28 @486 has 1 MA's), (29, 492), (Start: 34 @501 has 2 MA's), (Start: 40 @510 has 34 MA's), (Start: 54 @573 has 1 MA's), (59, 591), (61, 597), (63, 603), (67, 621), (69, 633), (83, 684), (108, 765),

Gene: Ebert\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Ebert\_1:

(Start: 43 @14 has 42 MA's), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: EdnaMode\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for EdnaMode\_1:

(Start: 43 @14 has 42 MA's), (60, 92), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: Ejimix\_10 Start: 3508, Stop: 3882, Start Num: 40

Candidate Starts for Ejimix\_10:

(2, 3301), (3, 3310), (11, 3421), (25, 3475), (Start: 40 @3508 has 34 MA's), (78, 3667), (91, 3727), (93, 3730), (103, 3763),

Gene: Enceladus\_2 Start: 475, Stop: 849, Start Num: 30

Candidate Starts for Enceladus\_2:

(Start: 30 @475 has 17 MA's), (48, 514), (63, 586), (64, 589), (69, 616), (77, 649), (78, 652), (103, 745), (104, 751),

Gene: Etoile\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Etoile\_1:

(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: Eyes\_1 Start: 176, Stop: 550, Start Num: 38

Candidate Starts for Eyes\_1:

(Start: 38 @176 has 7 MA's), (59, 260), (69, 302), (73, 320), (82, 347), (84, 356), (94, 383), (100, 401), (122, 515),

Gene: Fairfaxidum\_1 Start: 56, Stop: 397, Start Num: 44

Candidate Starts for Fairfaxidum\_1:

(Start: 44 @56 has 41 MA's), (45, 62), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (61, 134), (62, 137), (71, 179), (72, 185), (76, 203), (84, 224), (90, 242), (108, 299),

Gene: Fenry\_1 Start: 57, Stop: 398, Start Num: 44

Candidate Starts for Fenry\_1:

(Start: 44 @57 has 41 MA's), (49, 75), (Start: 50 @90 has 1 MA's), (Start: 51 @93 has 1 MA's), (59, 129), (61, 135), (62, 138), (68, 162), (76, 204), (84, 225), (94, 252), (100, 270),

Gene: Finkle\_1 Start: 10, Stop: 411, Start Num: 17

Candidate Starts for Finkle\_1:

(16, 1), (Start: 17 @10 has 1 MA's), (46, 82), (100, 298),

Gene: FirstPlacePfu\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for FirstPlacePfu\_1:

(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: Fishburne\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Fishburne\_1:

(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: FroggyToad\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for FroggyToad\_1:

(Start: 43 @14 has 42 MA's), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: Frokostdame\_1 Start: 57, Stop: 392, Start Num: 44

Candidate Starts for Frokostdame\_1:

(33, 36), (Start: 44 @57 has 41 MA's), (45, 63), (49, 75), (Start: 50 @90 has 1 MA's), (58, 123), (59, 129), (62, 138), (65, 150), (68, 162), (76, 204), (83, 222), (84, 225), (100, 270), (109, 303), (111, 309),

Gene: GEazy\_1 Start: 176, Stop: 550, Start Num: 38

Candidate Starts for GEazy\_1:

(Start: 38 @176 has 7 MA's), (59, 260), (69, 302), (73, 320), (82, 347), (84, 356), (94, 383), (100, 401), (122, 515),

Gene: Gambino\_1 Start: 57, Stop: 392, Start Num: 44

Candidate Starts for Gambino\_1:

(24, 15), (33, 36), (Start: 44 @57 has 41 MA's), (45, 63), (49, 75), (Start: 50 @90 has 1 MA's), (58, 123), (59, 129), (62, 138), (65, 150), (68, 162), (76, 204), (83, 222), (84, 225), (94, 252), (100, 270), (109, 303), (111, 309),

Gene: Gavriela\_1 Start: 42, Stop: 431, Start Num: 19

Candidate Starts for Gavriela\_1:

(Start: 19 @42 has 45 MA's), (Start: 51 @138 has 1 MA's), (67, 204), (82, 261), (85, 273), (90, 285), (98, 309), (107, 339),

Gene: GemG\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for GemG\_1:

(Start: 43 @14 has 42 MA's), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: Gizermo\_1 Start: 14, Stop: 346, Start Num: 43  
Candidate Starts for Gizermo\_1:  
(Start: 43 @14 has 42 MA's), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: Glaske\_1 Start: 42, Stop: 431, Start Num: 19  
Candidate Starts for Glaske\_1:  
(Start: 19 @42 has 45 MA's), (Start: 51 @138 has 1 MA's), (67, 204), (82, 261), (85, 273), (90, 285),  
(98, 309), (107, 339),

Gene: Glaske16\_14 Start: 4297, Stop: 4692, Start Num: 18  
Candidate Starts for Glaske16\_14:  
(Start: 18 @4297 has 13 MA's), (69, 4474), (115, 4663), (116, 4666),

Gene: Gonephishing\_9 Start: 3890, Stop: 4279, Start Num: 40  
Candidate Starts for Gonephishing\_9:  
(Start: 40 @3890 has 34 MA's), (56, 3959), (61, 3977), (62, 3980), (64, 3986), (80, 4055), (91, 4109),  
(103, 4145), (106, 4160), (122, 4259),

Gene: GreaseLightnin\_1 Start: 55, Stop: 444, Start Num: 19  
Candidate Starts for GreaseLightnin\_1:  
(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (67, 217), (82, 274), (85, 286), (98, 322),  
(107, 352),

Gene: Guacamole\_1 Start: 57, Stop: 398, Start Num: 44  
Candidate Starts for Guacamole\_1:  
(22, 12), (Start: 44 @57 has 41 MA's), (49, 75), (Start: 50 @90 has 1 MA's), (Start: 51 @93 has 1  
MA's), (61, 135), (62, 138), (68, 162), (69, 171), (84, 225), (94, 252),

Gene: HUHilltop\_1 Start: 55, Stop: 444, Start Num: 19  
Candidate Starts for HUHilltop\_1:  
(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (61, 193), (67, 217), (82, 274), (85, 286),  
(98, 322), (107, 352),

Gene: Halena\_2 Start: 474, Stop: 848, Start Num: 30  
Candidate Starts for Halena\_2:  
(Start: 30 @474 has 17 MA's), (48, 513), (63, 585), (64, 588), (69, 615), (77, 648), (78, 651), (103,  
744),

Gene: Haley23\_1 Start: 14, Stop: 346, Start Num: 43  
Candidate Starts for Haley23\_1:  
(Start: 43 @14 has 42 MA's), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: Halley\_9 Start: 2758, Stop: 3132, Start Num: 40  
Candidate Starts for Halley\_9:  
(2, 2551), (3, 2560), (11, 2671), (25, 2725), (Start: 40 @2758 has 34 MA's), (78, 2917), (91, 2977), (93,  
2980), (103, 3013),

Gene: Hannaconda\_6 Start: 2042, Stop: 2431, Start Num: 40  
Candidate Starts for Hannaconda\_6:  
(2, 1835), (11, 1955), (25, 2009), (Start: 40 @2042 has 34 MA's), (56, 2111), (61, 2129), (62, 2132),  
(64, 2138), (91, 2261), (103, 2297), (106, 2312), (122, 2411),

Gene: HannahD\_1 Start: 176, Stop: 550, Start Num: 38

Candidate Starts for HannahD\_1:

(Start: 38 @176 has 7 MA's), (59, 260), (69, 302), (73, 320), (82, 347), (84, 356), (94, 383), (100, 401), (122, 515),

Gene: Hedwig\_1 Start: 228, Stop: 614, Start Num: 36

Candidate Starts for Hedwig\_1:

(Start: 36 @228 has 5 MA's), (Start: 43 @240 has 42 MA's), (48, 258), (59, 315), (66, 339), (82, 402), (94, 438), (110, 492),

Gene: Hitter\_1 Start: 56, Stop: 397, Start Num: 44

Candidate Starts for Hitter\_1:

(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (59, 128), (61, 134), (62, 137), (68, 161), (84, 224), (94, 251),

Gene: Hortense\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Hortense\_1:

(Start: 43 @14 has 42 MA's), (Start: 50 @50 has 1 MA's), (Start: 52 @62 has 2 MA's), (60, 92), (61, 95), (74, 152), (94, 215), (108, 263),

Gene: Howe\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Howe\_1:

(Start: 43 @14 has 42 MA's), (Start: 50 @50 has 1 MA's), (Start: 52 @62 has 2 MA's), (60, 92), (61, 95), (74, 152), (94, 215), (108, 263),

Gene: IPHane7\_13 Start: 4298, Stop: 4693, Start Num: 18

Candidate Starts for IPHane7\_13:

(Start: 18 @4298 has 13 MA's), (69, 4475), (115, 4664), (116, 4667),

Gene: Invectra\_2 Start: 510, Stop: 848, Start Num: 40

Candidate Starts for Invectra\_2:

(Start: 28 @486 has 1 MA's), (29, 492), (Start: 34 @501 has 2 MA's), (Start: 40 @510 has 34 MA's), (Start: 54 @573 has 1 MA's), (61, 597), (63, 603), (73, 651), (108, 765),

Gene: Izel\_12 Start: 4297, Stop: 4692, Start Num: 18

Candidate Starts for Izel\_12:

(Start: 18 @4297 has 13 MA's), (69, 4474), (115, 4663), (116, 4666),

Gene: JCole\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for JCole\_1:

(Start: 43 @14 has 42 MA's), (53, 68), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: Jalammah\_1 Start: 56, Stop: 397, Start Num: 44

Candidate Starts for Jalammah\_1:

(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (59, 128), (61, 134), (62, 137), (68, 161), (84, 224), (94, 251),

Gene: JasperJr\_1 Start: 57, Stop: 398, Start Num: 44

Candidate Starts for JasperJr\_1:

(22, 12), (Start: 44 @57 has 41 MA's), (49, 75), (Start: 50 @90 has 1 MA's), (Start: 51 @93 has 1 MA's), (61, 135), (62, 138), (68, 162), (69, 171), (84, 225), (94, 252),

Gene: Jebeks\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Jebeks\_1:

(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (61, 193), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: JoeDirt\_2 Start: 475, Stop: 849, Start Num: 30

Candidate Starts for JoeDirt\_2:

(Start: 30 @475 has 17 MA's), (48, 514), (63, 586), (64, 589), (69, 616), (77, 649), (78, 652), (103, 745), (104, 751),

Gene: JuJu\_1 Start: 57, Stop: 392, Start Num: 44

Candidate Starts for JuJu\_1:

(33, 36), (Start: 44 @57 has 41 MA's), (45, 63), (49, 75), (Start: 50 @90 has 1 MA's), (59, 129), (62, 138), (65, 150), (68, 162), (76, 204), (83, 222), (84, 225), (94, 252), (100, 270), (109, 303), (111, 309),

Gene: JuicyJay\_10 Start: 3588, Stop: 3962, Start Num: 40

Candidate Starts for JuicyJay\_10:

(2, 3381), (3, 3390), (11, 3501), (25, 3555), (Start: 40 @3588 has 34 MA's), (78, 3747), (91, 3807), (93, 3810), (103, 3843),

Gene: Jung\_1 Start: 42, Stop: 431, Start Num: 19

Candidate Starts for Jung\_1:

(Start: 19 @42 has 45 MA's), (Start: 51 @138 has 1 MA's), (67, 204), (82, 261), (85, 273), (98, 309), (107, 339),

Gene: Juniormint\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Juniormint\_1:

(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (61, 193), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: KappaFarmDelta\_1 Start: 56, Stop: 397, Start Num: 44

Candidate Starts for KappaFarmDelta\_1:

(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (61, 134), (62, 137), (67, 158), (68, 161), (74, 191), (84, 224), (94, 251), (96, 257),

Gene: Kari\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Kari\_1:

(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: KashFlow\_3 Start: 1608, Stop: 1997, Start Num: 40

Candidate Starts for KashFlow\_3:

(Start: 40 @1608 has 34 MA's), (56, 1677), (61, 1695), (62, 1698), (64, 1704), (80, 1773), (91, 1827), (103, 1863), (106, 1878), (122, 1977),

Gene: Kiko\_1 Start: 64, Stop: 435, Start Num: 43

Candidate Starts for Kiko\_1:

(Start: 43 @64 has 42 MA's), (69, 181), (73, 199), (82, 226), (94, 259), (110, 313), (121, 379),

Gene: KilKor\_1 Start: 42, Stop: 431, Start Num: 19

Candidate Starts for KilKor\_1:

(Start: 19 @42 has 45 MA's), (Start: 51 @138 has 1 MA's), (67, 204), (82, 261), (85, 273), (90, 285), (98, 309), (107, 339),

Gene: Klein\_9 Start: 3342, Stop: 3731, Start Num: 40

Candidate Starts for Klein\_9:

(2, 3135), (11, 3255), (25, 3309), (Start: 40 @3342 has 34 MA's), (56, 3411), (61, 3429), (62, 3432), (64, 3438), (80, 3507), (91, 3561), (103, 3597), (106, 3612), (122, 3711),

Gene: KleverKiS\_13 Start: 4294, Stop: 4689, Start Num: 18

Candidate Starts for KleverKiS\_13:

(Start: 18 @4294 has 13 MA's), (69, 4471), (115, 4660), (116, 4663),

Gene: Ksquared\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Ksquared\_1:

(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (67, 217), (82, 274), (85, 286), (90, 298), (98, 322), (107, 352),

Gene: Kudrefre\_11 Start: 4593, Stop: 4943, Start Num: 37

Candidate Starts for Kudrefre\_11:

(Start: 37 @4593 has 4 MA's), (69, 4716), (88, 4797), (119, 4926),

Gene: Lamberg\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Lamberg\_1:

(Start: 43 @14 has 42 MA's), (60, 92), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: Langerak\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Langerak\_1:

(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: LeBron\_2 Start: 475, Stop: 849, Start Num: 30

Candidate Starts for LeBron\_2:

(Start: 30 @475 has 17 MA's), (48, 514), (63, 586), (64, 589), (69, 616), (77, 649), (78, 652), (103, 745), (104, 751),

Gene: LilhomieP\_12 Start: 4298, Stop: 4693, Start Num: 18

Candidate Starts for LilhomieP\_12:

(Start: 18 @4298 has 13 MA's), (69, 4475), (115, 4664), (116, 4667),

Gene: LittleE\_8 Start: 2721, Stop: 3110, Start Num: 40

Candidate Starts for LittleE\_8:

(Start: 40 @2721 has 34 MA's), (56, 2790), (61, 2808), (62, 2811), (64, 2817), (80, 2886), (91, 2940), (103, 2976), (106, 2991), (122, 3090),

Gene: LordFarquaad\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for LordFarquaad\_1:

(Start: 43 @14 has 42 MA's), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: Lucky2013\_9 Start: 3112, Stop: 3501, Start Num: 40

Candidate Starts for Lucky2013\_9:

(2, 2905), (3, 2914), (11, 3025), (25, 3079), (Start: 40 @3112 has 34 MA's), (56, 3181), (61, 3199), (62, 3202), (64, 3208), (80, 3277), (91, 3331), (103, 3367), (106, 3382), (122, 3481),

Gene: Lysidious\_1 Start: 56, Stop: 397, Start Num: 44

Candidate Starts for Lysidious\_1:

(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (59, 128), (61, 134), (62, 137), (68, 161), (84, 224), (94, 251),

Gene: MAckerman\_2 Start: 474, Stop: 848, Start Num: 30

Candidate Starts for MAckerman\_2:

(Start: 30 @474 has 17 MA's), (48, 513), (63, 585), (64, 588), (69, 615), (77, 648), (78, 651), (103, 744),

Gene: MagicMan\_1 Start: 166, Stop: 516, Start Num: 43

Candidate Starts for MagicMan\_1:

(21, 121), (35, 154), (Start: 43 @166 has 42 MA's), (Start: 52 @214 has 2 MA's), (59, 241), (82, 328), (84, 337), (94, 364), (100, 382), (110, 418), (111, 421), (122, 496),

Gene: Majeke\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Majeke\_1:

(Start: 19 @55 has 45 MA's), (47, 124), (Start: 51 @151 has 1 MA's), (61, 193), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: MakCheese\_1 Start: 127, Stop: 453, Start Num: 42

Candidate Starts for MakCheese\_1:

(Start: 42 @127 has 2 MA's), (Start: 50 @166 has 1 MA's), (Start: 52 @178 has 2 MA's), (57, 199), (61, 211), (62, 214), (64, 220), (68, 238), (71, 256), (74, 268), (81, 283), (86, 295), (90, 313), (96, 328), (100, 340), (102, 349), (111, 379), (117, 409), (118, 412),

Gene: Malachai\_1 Start: 56, Stop: 397, Start Num: 44

Candidate Starts for Malachai\_1:

(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (61, 134), (62, 137), (68, 161), (84, 224), (94, 251),

Gene: Malibo\_1 Start: 127, Stop: 453, Start Num: 42

Candidate Starts for Malibo\_1:

(26, 97), (Start: 42 @127 has 2 MA's), (Start: 50 @166 has 1 MA's), (Start: 52 @178 has 2 MA's), (57, 199), (68, 238), (71, 256),

Gene: Malithi\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Malithi\_1:

(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: Mangethe\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Mangethe\_1:

(Start: 19 @55 has 45 MA's), (47, 124), (Start: 51 @151 has 1 MA's), (61, 193), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: Marleymoo\_9 Start: 3358, Stop: 3732, Start Num: 40

Candidate Starts for Marleymoo\_9:

(2, 3151), (3, 3160), (11, 3271), (Start: 40 @3358 has 34 MA's), (56, 3427), (61, 3445), (62, 3448), (64, 3454), (78, 3517), (91, 3577), (93, 3580), (103, 3613),

Gene: Matteo\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Matteo\_1:

(Start: 43 @14 has 42 MA's), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: Mbo4\_1 Start: 117, Stop: 464, Start Num: 36  
Candidate Starts for Mbo4\_1:  
(27, 99), (32, 111), (Start: 36 @117 has 5 MA's), (84, 300), (105, 369), (107, 378),

Gene: Megiddo\_1 Start: 42, Stop: 431, Start Num: 19  
Candidate Starts for Megiddo\_1:  
(Start: 19 @42 has 45 MA's), (Start: 51 @138 has 1 MA's), (67, 204), (82, 261), (85, 273), (90, 285),  
(98, 309), (107, 339),

Gene: Melba\_1 Start: 56, Stop: 397, Start Num: 44  
Candidate Starts for Melba\_1:  
(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (59,  
128), (61, 134), (62, 137), (68, 161), (84, 224), (94, 251),

Gene: Mellie\_1 Start: 56, Stop: 397, Start Num: 44  
Candidate Starts for Mellie\_1:  
(31, 32), (Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1  
MA's), (59, 128), (61, 134), (62, 137), (68, 161), (84, 224), (94, 251),

Gene: MiaZeal\_9 Start: 3181, Stop: 3570, Start Num: 40  
Candidate Starts for MiaZeal\_9:  
(2, 2974), (3, 2983), (11, 3094), (25, 3148), (Start: 40 @3181 has 34 MA's), (56, 3250), (61, 3268), (62,  
3271), (64, 3277), (80, 3346), (91, 3400), (103, 3436), (106, 3451), (122, 3550),

Gene: MichaelScott\_2 Start: 510, Stop: 848, Start Num: 40  
Candidate Starts for MichaelScott\_2:  
(Start: 28 @486 has 1 MA's), (29, 492), (Start: 34 @501 has 2 MA's), (Start: 40 @510 has 34 MA's),  
(Start: 54 @573 has 1 MA's), (59, 591), (61, 597), (63, 603), (67, 621), (69, 633), (83, 684), (108, 765),

Gene: MintFen\_1 Start: 56, Stop: 397, Start Num: 44  
Candidate Starts for MintFen\_1:  
(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (59,  
128), (61, 134), (62, 137), (68, 161), (84, 224), (94, 251),

Gene: MissRona\_1 Start: 57, Stop: 392, Start Num: 44  
Candidate Starts for MissRona\_1:  
(24, 15), (33, 36), (Start: 44 @57 has 41 MA's), (45, 63), (49, 75), (Start: 50 @90 has 1 MA's), (58,  
123), (59, 129), (62, 138), (65, 150), (68, 162), (76, 204), (83, 222), (84, 225), (94, 252), (100, 270),  
(109, 303), (111, 309),

Gene: Mocha12\_1 Start: 14, Stop: 346, Start Num: 43  
Candidate Starts for Mocha12\_1:  
(Start: 43 @14 has 42 MA's), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: Moonflower\_1 Start: 227, Stop: 613, Start Num: 36  
Candidate Starts for Moonflower\_1:  
(Start: 36 @227 has 5 MA's), (Start: 43 @239 has 42 MA's), (48, 257), (59, 314), (66, 338), (94, 437),  
(110, 491),

Gene: Murp\_1 Start: 56, Stop: 397, Start Num: 44  
Candidate Starts for Murp\_1:  
(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (61,  
134), (62, 137), (68, 161), (74, 191), (84, 224), (94, 251), (96, 257),



Gene: Nazo\_1 Start: 43, Stop: 423, Start Num: 19

Candidate Starts for Nazo\_1:

(Start: 10 @16 has 1 MA's), (Start: 19 @43 has 45 MA's), (Start: 51 @130 has 1 MA's), (67, 196), (82, 253), (90, 277), (94, 286), (98, 301), (107, 331),

Gene: Necropolis\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Necropolis\_1:

(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: Nekros\_7 Start: 3229, Stop: 3618, Start Num: 40

Candidate Starts for Nekros\_7:

(Start: 40 @3229 has 34 MA's), (56, 3298), (61, 3316), (62, 3319), (64, 3325), (80, 3394), (91, 3448), (103, 3484), (106, 3499), (122, 3598),

Gene: Nettuno\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Nettuno\_1:

(Start: 43 @14 has 42 MA's), (60, 92), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: Neville\_11 Start: 4473, Stop: 4811, Start Num: 39

Candidate Starts for Neville\_11:

(Start: 39 @4473 has 3 MA's), (56, 4542), (74, 4617), (75, 4623), (87, 4674), (88, 4677), (95, 4701), (97, 4707), (99, 4716),

Gene: NihilNomen\_8 Start: 2817, Stop: 3191, Start Num: 40

Candidate Starts for NihilNomen\_8:

(2, 2610), (3, 2619), (11, 2730), (25, 2784), (Start: 40 @2817 has 34 MA's), (56, 2886), (61, 2904), (62, 2907), (64, 2913), (78, 2976), (91, 3036), (93, 3039), (103, 3072),

Gene: Obliviate\_1 Start: 56, Stop: 397, Start Num: 44

Candidate Starts for Obliviate\_1:

(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (59, 128), (61, 134), (62, 137), (68, 161), (84, 224), (94, 251),

Gene: Octobien14\_12 Start: 5664, Stop: 6014, Start Num: 37

Candidate Starts for Octobien14\_12:

(Start: 34 @5661 has 2 MA's), (Start: 37 @5664 has 4 MA's), (69, 5787), (88, 5868), (119, 5997),

Gene: OhShagHennessy\_2 Start: 456, Stop: 821, Start Num: 34

Candidate Starts for OhShagHennessy\_2:

(Start: 34 @456 has 2 MA's), (48, 486), (63, 558), (64, 561), (69, 588), (77, 621), (78, 624), (103, 717), (104, 723),

Gene: Ohgeesy\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Ohgeesy\_1:

(Start: 43 @14 has 42 MA's), (61, 95), (73, 149), (74, 152), (108, 263),

Gene: Omega\_10 Start: 4066, Stop: 4455, Start Num: 40

Candidate Starts for Omega\_10:

(Start: 40 @4066 has 34 MA's), (56, 4135), (61, 4153), (62, 4156), (64, 4162), (80, 4231), (91, 4285), (103, 4321), (106, 4336), (122, 4435),

Gene: Opie\_1 Start: 166, Stop: 516, Start Num: 43

Candidate Starts for Opie\_1:

(Start: 43 @166 has 42 MA's), (Start: 52 @214 has 2 MA's), (59, 241), (82, 328), (84, 337), (94, 364), (110, 418), (111, 421), (122, 496),

Gene: Oregano\_1 Start: 101, Stop: 376, Start Num: 54

Candidate Starts for Oregano\_1:

(Start: 54 @101 has 1 MA's), (61, 125), (63, 131), (108, 293),

Gene: PCoral7\_1 Start: 56, Stop: 397, Start Num: 44

Candidate Starts for PCoral7\_1:

(Start: 44 @56 has 41 MA's), (45, 62), (49, 74), (Start: 51 @92 has 1 MA's), (61, 134), (62, 137), (72, 185), (76, 203), (84, 224), (90, 242), (108, 299),

Gene: PantheRoc\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for PantheRoc\_1:

(Start: 43 @14 has 42 MA's), (61, 95), (73, 149), (74, 152), (108, 263),

Gene: PegLeg\_13 Start: 4297, Stop: 4692, Start Num: 18

Candidate Starts for PegLeg\_13:

(Start: 18 @4297 has 13 MA's), (69, 4474), (115, 4663), (116, 4666),

Gene: Petra\_1 Start: 57, Stop: 392, Start Num: 44

Candidate Starts for Petra\_1:

(24, 15), (33, 36), (Start: 44 @57 has 41 MA's), (45, 63), (49, 75), (Start: 50 @90 has 1 MA's), (58, 123), (59, 129), (62, 138), (65, 150), (68, 162), (76, 204), (83, 222), (84, 225), (94, 252), (100, 270), (109, 303), (111, 309),

Gene: Phalm\_1 Start: 42, Stop: 431, Start Num: 19

Candidate Starts for Phalm\_1:

(Start: 19 @42 has 45 MA's), (Start: 51 @138 has 1 MA's), (67, 204), (82, 261), (85, 273), (90, 285), (98, 309), (107, 339),

Gene: Phayonce\_1 Start: 139, Stop: 432, Start Num: 51

Candidate Starts for Phayonce\_1:

(Start: 19 @55 has 45 MA's), (32, 91), (Start: 51 @139 has 1 MA's), (61, 181), (67, 205), (73, 235), (82, 262), (94, 295), (98, 310), (100, 313), (107, 340),

Gene: Phegasus\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Phegasus\_1:

(Start: 19 @55 has 45 MA's), (47, 124), (Start: 51 @151 has 1 MA's), (61, 193), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: Phineas\_1 Start: 43, Stop: 432, Start Num: 19

Candidate Starts for Phineas\_1:

(Start: 19 @43 has 45 MA's), (Start: 51 @139 has 1 MA's), (67, 205), (82, 262), (85, 274), (98, 310), (107, 340),

Gene: PhriskyACE\_1 Start: 101, Stop: 346, Start Num: 63

Candidate Starts for PhriskyACE\_1:

(Start: 43 @14 has 42 MA's), (Start: 54 @71 has 1 MA's), (61, 95), (63, 101), (108, 263),

Gene: PhrostedPhlake\_1 Start: 56, Stop: 397, Start Num: 44

Candidate Starts for PhrostedPhlake\_1:

(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (61, 134), (62, 137), (68, 161), (76, 203), (84, 224), (94, 251),

Gene: Pickett\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Pickett\_1:

(Start: 43 @14 has 42 MA's), (60, 92), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: Pipp\_1 Start: 55, Stop: 396, Start Num: 44

Candidate Starts for Pipp\_1:

(20, 1), (Start: 44 @55 has 41 MA's), (49, 73), (Start: 50 @88 has 1 MA's), (Start: 51 @91 has 1 MA's), (59, 127), (61, 133), (62, 136), (68, 160), (76, 202), (84, 223), (94, 250),

Gene: Polkaroo\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Polkaroo\_1:

(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: Poochiewood\_2 Start: 474, Stop: 848, Start Num: 30

Candidate Starts for Poochiewood\_2:

(Start: 30 @474 has 17 MA's), (48, 513), (63, 585), (64, 588), (69, 615), (77, 648), (78, 651), (103, 744),

Gene: Porcelain\_9 Start: 3181, Stop: 3570, Start Num: 40

Candidate Starts for Porcelain\_9:

(2, 2974), (3, 2983), (11, 3094), (25, 3148), (Start: 40 @3181 has 34 MA's), (56, 3250), (61, 3268), (62, 3271), (64, 3277), (80, 3346), (91, 3400), (103, 3436), (106, 3451), (122, 3550),

Gene: Pound\_8 Start: 2813, Stop: 3187, Start Num: 40

Candidate Starts for Pound\_8:

(2, 2606), (3, 2615), (11, 2726), (25, 2780), (Start: 40 @2813 has 34 MA's), (56, 2882), (61, 2900), (62, 2903), (64, 2909), (78, 2972), (91, 3032), (103, 3068),

Gene: Powerball\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Powerball\_1:

(Start: 43 @14 has 42 MA's), (Start: 54 @71 has 1 MA's), (61, 95), (63, 101), (108, 263),

Gene: PrincePatrick\_1 Start: 57, Stop: 398, Start Num: 44

Candidate Starts for PrincePatrick\_1:

(Start: 44 @57 has 41 MA's), (45, 63), (49, 75), (Start: 50 @90 has 1 MA's), (Start: 51 @93 has 1 MA's), (61, 135), (62, 138), (71, 180), (72, 186), (76, 204), (84, 225), (90, 243), (108, 300),

Gene: Purky\_1 Start: 16, Stop: 432, Start Num: 10

Candidate Starts for Purky\_1:

(Start: 10 @16 has 1 MA's), (15, 40), (Start: 19 @55 has 45 MA's), (Start: 51 @139 has 1 MA's), (61, 181), (67, 205), (82, 262), (90, 286), (94, 295), (98, 310), (107, 340),

Gene: Pygmy\_1 Start: 43, Stop: 432, Start Num: 19

Candidate Starts for Pygmy\_1:

(Start: 19 @43 has 45 MA's), (Start: 51 @139 has 1 MA's), (67, 205), (82, 262), (85, 274), (98, 310), (107, 340),

Gene: Rabbitrun\_13 Start: 4987, Stop: 5325, Start Num: 39

Candidate Starts for Rabbitrun\_13:

(Start: 39 @4987 has 3 MA's), (Start: 50 @5026 has 1 MA's), (56, 5056), (57, 5059), (62, 5077), (74, 5131), (87, 5188), (88, 5191), (97, 5221), (99, 5230), (103, 5242),

Gene: RayTheFireFly\_1 Start: 228, Stop: 614, Start Num: 36

Candidate Starts for RayTheFireFly\_1:

(Start: 36 @228 has 5 MA's), (Start: 43 @240 has 42 MA's), (59, 315), (66, 339), (94, 438), (110, 492),

Gene: Rearden\_6 Start: 1991, Stop: 2380, Start Num: 40

Candidate Starts for Rearden\_6:

(Start: 40 @1991 has 34 MA's), (56, 2060), (61, 2078), (62, 2081), (64, 2087), (80, 2156), (91, 2210), (103, 2246), (106, 2261), (122, 2360),

Gene: Redno2\_8 Start: 2528, Stop: 2902, Start Num: 40

Candidate Starts for Redno2\_8:

(2, 2321), (3, 2330), (11, 2441), (25, 2495), (Start: 40 @2528 has 34 MA's), (78, 2687), (91, 2747), (93, 2750), (103, 2783),

Gene: Reindeer\_11 Start: 4169, Stop: 4564, Start Num: 18

Candidate Starts for Reindeer\_11:

(1, 4010), (14, 4151), (Start: 18 @4169 has 13 MA's), (115, 4535), (116, 4538),

Gene: Rem711\_1 Start: 226, Stop: 540, Start Num: 52

Candidate Starts for Rem711\_1:

(6, 37), (Start: 52 @226 has 2 MA's), (55, 241), (70, 301), (73, 313), (83, 346), (94, 373), (113, 436), (114, 451),

Gene: Rose5\_2 Start: 474, Stop: 848, Start Num: 30

Candidate Starts for Rose5\_2:

(Start: 30 @474 has 17 MA's), (48, 513), (63, 585), (64, 588), (69, 615), (77, 648), (78, 651), (103, 744),

Gene: RoseMarie\_13 Start: 4545, Stop: 4940, Start Num: 18

Candidate Starts for RoseMarie\_13:

(Start: 18 @4545 has 13 MA's), (75, 4752), (115, 4911), (116, 4914),

Gene: Ruthy\_1 Start: 43, Stop: 453, Start Num: 12

Candidate Starts for Ruthy\_1:

(Start: 12 @43 has 1 MA's), (21, 82), (Start: 42 @127 has 2 MA's), (Start: 50 @166 has 1 MA's), (Start: 52 @178 has 2 MA's), (61, 211), (64, 220), (68, 238), (71, 256), (74, 268), (86, 295), (92, 316), (100, 340), (111, 379),

Gene: Sahara\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Sahara\_1:

(Start: 43 @14 has 42 MA's), (61, 95), (62, 98), (63, 101), (74, 152), (83, 182), (89, 197), (94, 215),

Gene: Samba\_1 Start: 56, Stop: 397, Start Num: 44

Candidate Starts for Samba\_1:

(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (59, 128), (61, 134), (62, 137), (68, 161), (84, 224), (94, 251),

Gene: Samman98\_2 Start: 510, Stop: 848, Start Num: 40

Candidate Starts for Samman98\_2:

(Start: 28 @486 has 1 MA's), (29, 492), (Start: 34 @501 has 2 MA's), (Start: 40 @510 has 34 MA's),  
(Start: 54 @573 has 1 MA's), (61, 597), (62, 600), (63, 603), (108, 765),

Gene: Savage\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Savage\_1:

(Start: 43 @14 has 42 MA's), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: Schatzie\_7 Start: 2067, Stop: 2441, Start Num: 40

Candidate Starts for Schatzie\_7:

(2, 1860), (3, 1869), (11, 1980), (25, 2034), (Start: 40 @2067 has 34 MA's), (56, 2136), (61, 2154), (62, 2157), (64, 2163), (78, 2226), (91, 2286), (103, 2322),

Gene: Schnabeltier\_1 Start: 167, Stop: 517, Start Num: 43

Candidate Starts for Schnabeltier\_1:

(21, 122), (35, 155), (Start: 43 @167 has 42 MA's), (Start: 52 @215 has 2 MA's), (59, 242), (82, 329),  
(84, 338), (94, 365), (100, 383), (110, 419), (111, 422), (122, 497),

Gene: Sekhmet\_2 Start: 510, Stop: 848, Start Num: 40

Candidate Starts for Sekhmet\_2:

(Start: 28 @486 has 1 MA's), (29, 492), (Start: 34 @501 has 2 MA's), (Start: 40 @510 has 34 MA's),  
(Start: 54 @573 has 1 MA's), (61, 597), (63, 603), (73, 651), (108, 765),

Gene: Sephiroth\_12 Start: 4764, Stop: 5114, Start Num: 37

Candidate Starts for Sephiroth\_12:

(13, 4695), (22, 4734), (Start: 37 @4764 has 4 MA's), (69, 4887), (88, 4968), (119, 5097),

Gene: Shaboozey\_5 Start: 1913, Stop: 2302, Start Num: 40

Candidate Starts for Shaboozey\_5:

(Start: 40 @1913 has 34 MA's), (56, 1982), (61, 2000), (62, 2003), (64, 2009), (80, 2078), (91, 2132),  
(103, 2168), (106, 2183), (122, 2282),

Gene: Shipwreck\_1 Start: 43, Stop: 432, Start Num: 19

Candidate Starts for Shipwreck\_1:

(Start: 19 @43 has 45 MA's), (Start: 51 @139 has 1 MA's), (67, 205), (82, 262), (85, 274), (98, 310),  
(107, 340),

Gene: Shlim410\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Shlim410\_1:

(Start: 43 @14 has 42 MA's), (Start: 50 @50 has 1 MA's), (Start: 52 @62 has 2 MA's), (60, 92), (61, 95), (74, 152), (94, 215), (108, 263),

Gene: Sidious\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Sidious\_1:

(Start: 43 @14 has 42 MA's), (61, 95), (74, 152), (82, 176), (89, 197), (108, 263),

Gene: Silverleaf\_2 Start: 474, Stop: 848, Start Num: 30

Candidate Starts for Silverleaf\_2:

(Start: 30 @474 has 17 MA's), (48, 513), (63, 585), (64, 588), (69, 615), (77, 648), (78, 651), (103, 744), (104, 750),

Gene: Skinny\_14 Start: 4297, Stop: 4692, Start Num: 18

Candidate Starts for Skinny\_14:

(Start: 18 @4297 has 13 MA's), (69, 4474), (115, 4663), (116, 4666),

Gene: SlimJimmy\_12 Start: 4297, Stop: 4692, Start Num: 18  
Candidate Starts for SlimJimmy\_12:  
(Start: 18 @4297 has 13 MA's), (69, 4474), (115, 4663), (116, 4666),

Gene: SoilAssassin\_1 Start: 14, Stop: 346, Start Num: 43  
Candidate Starts for SoilAssassin\_1:  
(Start: 43 @14 has 42 MA's), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: Sonah\_1 Start: 55, Stop: 444, Start Num: 19  
Candidate Starts for Sonah\_1:  
(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (61, 193), (67, 217), (82, 274), (85, 286),  
(98, 322), (107, 352),

Gene: Sproutie\_1 Start: 14, Stop: 346, Start Num: 43  
Candidate Starts for Sproutie\_1:  
(Start: 43 @14 has 42 MA's), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: Squint\_9 Start: 3112, Stop: 3501, Start Num: 40  
Candidate Starts for Squint\_9:  
(2, 2905), (3, 2914), (11, 3025), (25, 3079), (Start: 40 @3112 has 34 MA's), (56, 3181), (61, 3199), (62,  
3202), (64, 3208), (80, 3277), (91, 3331), (103, 3367), (106, 3382), (122, 3481),

Gene: StevieRay\_1 Start: 43, Stop: 432, Start Num: 19  
Candidate Starts for StevieRay\_1:  
(Start: 19 @43 has 45 MA's), (Start: 51 @139 has 1 MA's), (67, 205), (82, 262), (85, 274), (90, 286),  
(98, 310), (107, 340),

Gene: StressBall\_1 Start: 42, Stop: 431, Start Num: 19  
Candidate Starts for StressBall\_1:  
(Start: 19 @42 has 45 MA's), (Start: 51 @138 has 1 MA's), (67, 204), (82, 261), (85, 273), (90, 285),  
(98, 309), (107, 339),

Gene: Suerte\_1 Start: 14, Stop: 346, Start Num: 43  
Candidate Starts for Suerte\_1:  
(Start: 43 @14 has 42 MA's), (Start: 54 @71 has 1 MA's), (61, 95), (63, 101), (108, 263),

Gene: Superphikiman\_9 Start: 3362, Stop: 3751, Start Num: 40  
Candidate Starts for Superphikiman\_9:  
(2, 3155), (3, 3164), (11, 3275), (Start: 40 @3362 has 34 MA's), (56, 3431), (61, 3449), (62, 3452), (64,  
3458), (80, 3527), (91, 3581), (103, 3617), (106, 3632), (122, 3731),

Gene: Syleon\_12 Start: 4686, Stop: 5036, Start Num: 37  
Candidate Starts for Syleon\_12:  
(13, 4617), (22, 4656), (Start: 37 @4686 has 4 MA's), (69, 4809), (88, 4890), (119, 5019),

Gene: TaronosaurusRx\_1 Start: 167, Stop: 517, Start Num: 43  
Candidate Starts for TaronosaurusRx\_1:  
(21, 122), (35, 155), (Start: 43 @167 has 42 MA's), (59, 242), (82, 329), (84, 338), (94, 365), (100,  
383), (110, 419), (111, 422), (122, 497),

Gene: Techage\_1 Start: 55, Stop: 444, Start Num: 19  
Candidate Starts for Techage\_1:

(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (61, 193), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: Thespis\_1 Start: 42, Stop: 431, Start Num: 19

Candidate Starts for Thespis\_1:

(Start: 19 @42 has 45 MA's), (Start: 51 @138 has 1 MA's), (67, 204), (82, 261), (85, 273), (90, 285), (98, 309), (107, 339),

Gene: Thimann\_2 Start: 510, Stop: 848, Start Num: 40

Candidate Starts for Thimann\_2:

(Start: 28 @486 has 1 MA's), (29, 492), (Start: 34 @501 has 2 MA's), (Start: 40 @510 has 34 MA's), (Start: 54 @573 has 1 MA's), (61, 597), (63, 603), (69, 633), (108, 765),

Gene: ThulaThula\_1 Start: 55, Stop: 432, Start Num: 19

Candidate Starts for ThulaThula\_1:

(Start: 19 @55 has 45 MA's), (32, 91), (Start: 51 @139 has 1 MA's), (59, 175), (61, 181), (67, 205), (73, 235), (82, 262), (98, 310), (100, 313), (107, 340),

Gene: Toast\_1 Start: 56, Stop: 397, Start Num: 44

Candidate Starts for Toast\_1:

(Start: 44 @56 has 41 MA's), (45, 62), (49, 74), (Start: 51 @92 has 1 MA's), (61, 134), (62, 137), (72, 185), (76, 203), (84, 224), (90, 242), (108, 299),

Gene: Tortellini\_1 Start: 43, Stop: 432, Start Num: 19

Candidate Starts for Tortellini\_1:

(Start: 19 @43 has 45 MA's), (41, 94), (Start: 51 @139 has 1 MA's), (59, 175), (67, 205), (94, 295), (98, 310), (107, 340),

Gene: Trax\_11 Start: 4473, Stop: 4811, Start Num: 39

Candidate Starts for Trax\_11:

(Start: 39 @4473 has 3 MA's), (56, 4542), (74, 4617), (75, 4623), (87, 4674), (88, 4677), (95, 4701), (97, 4707), (99, 4716),

Gene: TuertoX\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for TuertoX\_1:

(Start: 43 @14 has 42 MA's), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: Twinkle\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Twinkle\_1:

(Start: 43 @14 has 42 MA's), (Start: 50 @50 has 1 MA's), (Start: 52 @62 has 2 MA's), (60, 92), (61, 95), (74, 152), (94, 215), (108, 263),

Gene: TyDawg\_13 Start: 4298, Stop: 4693, Start Num: 18

Candidate Starts for TyDawg\_13:

(Start: 18 @4298 has 13 MA's), (69, 4475), (115, 4664), (116, 4667),

Gene: Tyson\_2 Start: 474, Stop: 848, Start Num: 30

Candidate Starts for Tyson\_2:

(Start: 30 @474 has 17 MA's), (48, 513), (63, 585), (64, 588), (69, 615), (77, 648), (78, 651), (103, 744),

Gene: UPIE\_2 Start: 475, Stop: 849, Start Num: 30

Candidate Starts for UPIE\_2:

(Start: 30 @475 has 17 MA's), (48, 514), (63, 586), (64, 589), (69, 616), (77, 649), (78, 652), (103, 745), (104, 751),

Gene: UmaThurman\_1 Start: 56, Stop: 397, Start Num: 44

Candidate Starts for UmaThurman\_1:

(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (59, 128), (61, 134), (62, 137), (68, 161), (76, 203), (84, 224), (94, 251),

Gene: Utz\_1 Start: 89, Stop: 397, Start Num: 50

Candidate Starts for Utz\_1:

(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (59, 128), (61, 134), (62, 137), (68, 161), (76, 203), (84, 224), (94, 251),

Gene: Vasanti\_1 Start: 14, Stop: 346, Start Num: 43

Candidate Starts for Vasanti\_1:

(Start: 43 @14 has 42 MA's), (60, 92), (61, 95), (62, 98), (74, 152), (94, 215), (108, 263),

Gene: Venti\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Venti\_1:

(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (61, 193), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: Vidya\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Vidya\_1:

(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: Walrus\_1 Start: 57, Stop: 392, Start Num: 44

Candidate Starts for Walrus\_1:

(24, 15), (33, 36), (Start: 44 @57 has 41 MA's), (45, 63), (49, 75), (Start: 50 @90 has 1 MA's), (58, 123), (59, 129), (62, 138), (65, 150), (68, 162), (76, 204), (83, 222), (84, 225), (94, 252), (100, 270), (109, 303), (111, 309),

Gene: Wamburgrexpress\_2 Start: 474, Stop: 848, Start Num: 30

Candidate Starts for Wamburgrexpress\_2:

(Start: 30 @474 has 17 MA's), (48, 513), (63, 585), (64, 588), (69, 615), (77, 648), (78, 651), (103, 744),

Gene: Wanda\_9 Start: 3342, Stop: 3731, Start Num: 40

Candidate Starts for Wanda\_9:

(2, 3135), (11, 3255), (25, 3309), (Start: 40 @3342 has 34 MA's), (56, 3411), (61, 3429), (62, 3432), (64, 3438), (80, 3507), (91, 3561), (103, 3597), (106, 3612), (122, 3711),

Gene: Weirido19\_1 Start: 209, Stop: 565, Start Num: 50

Candidate Starts for Weirido19\_1:

(5, 14), (7, 47), (Start: 50 @209 has 1 MA's), (67, 278), (74, 311), (79, 332), (80, 335), (100, 431), (112, 473), (117, 500),

Gene: Whack\_1 Start: 53, Stop: 403, Start Num: 38

Candidate Starts for Whack\_1:

(Start: 38 @53 has 7 MA's), (Start: 52 @107 has 2 MA's), (73, 194), (82, 221), (94, 263), (107, 308), (111, 320),



Gene: Whiteclaw\_1 Start: 14, Stop: 346, Start Num: 43  
Candidate Starts for Whiteclaw\_1:  
(Start: 43 @14 has 42 MA's), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: William\_1 Start: 56, Stop: 397, Start Num: 44  
Candidate Starts for William\_1:  
(Start: 44 @56 has 41 MA's), (45, 62), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (61, 134), (62, 137), (71, 179), (72, 185), (73, 188), (76, 203), (90, 242), (108, 299),

Gene: Willsammy\_1 Start: 42, Stop: 431, Start Num: 19  
Candidate Starts for Willsammy\_1:  
(Start: 19 @42 has 45 MA's), (Start: 51 @138 has 1 MA's), (67, 204), (82, 261), (85, 273), (90, 285), (98, 309), (107, 339),

Gene: WinkNick\_2 Start: 510, Stop: 848, Start Num: 40  
Candidate Starts for WinkNick\_2:  
(Start: 28 @486 has 1 MA's), (29, 492), (Start: 34 @501 has 2 MA's), (Start: 40 @510 has 34 MA's), (Start: 54 @573 has 1 MA's), (61, 597), (62, 600), (63, 603), (108, 765),

Gene: Wisp\_1 Start: 74, Stop: 397, Start Num: 49  
Candidate Starts for Wisp\_1:  
(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (59, 128), (61, 134), (62, 137), (68, 161), (84, 224), (94, 251),

Gene: Wocket\_1 Start: 56, Stop: 397, Start Num: 44  
Candidate Starts for Wocket\_1:  
(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (59, 128), (61, 134), (62, 137), (68, 161), (76, 203), (84, 224), (94, 251),

Gene: Wyatt2\_2 Start: 474, Stop: 848, Start Num: 30  
Candidate Starts for Wyatt2\_2:  
(Start: 30 @474 has 17 MA's), (48, 513), (63, 585), (64, 588), (69, 615), (77, 648), (78, 651), (103, 744),

Gene: Xavia\_1 Start: 55, Stop: 435, Start Num: 19  
Candidate Starts for Xavia\_1:  
(Start: 10 @16 has 1 MA's), (Start: 19 @55 has 45 MA's), (Start: 51 @142 has 1 MA's), (61, 184), (62, 187), (67, 208), (82, 265), (85, 277), (90, 289), (94, 298), (98, 313), (107, 343),

Gene: Yeet\_7 Start: 2067, Stop: 2441, Start Num: 40  
Candidate Starts for Yeet\_7:  
(2, 1860), (3, 1869), (11, 1980), (25, 2034), (Start: 40 @2067 has 34 MA's), (56, 2136), (61, 2154), (62, 2157), (64, 2163), (78, 2226), (91, 2286), (103, 2322),

Gene: Yeet412\_1 Start: 14, Stop: 346, Start Num: 43  
Candidate Starts for Yeet412\_1:  
(Start: 43 @14 has 42 MA's), (61, 95), (62, 98), (63, 101), (74, 152),

Gene: Yeezy\_1 Start: 14, Stop: 346, Start Num: 43  
Candidate Starts for Yeezy\_1:  
(Start: 43 @14 has 42 MA's), (61, 95), (73, 149), (74, 152), (108, 263),

Gene: ZAYM\_1 Start: 166, Stop: 516, Start Num: 43

Candidate Starts for ZAYM\_1:

(21, 121), (35, 154), (Start: 43 @166 has 42 MA's), (59, 241), (82, 328), (84, 337), (94, 364), (100, 382), (110, 418), (111, 421), (122, 496),

Gene: Zarbodnamra\_1 Start: 56, Stop: 397, Start Num: 44

Candidate Starts for Zarbodnamra\_1:

(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (Start: 51 @92 has 1 MA's), (59, 128), (61, 134), (62, 137), (68, 161), (76, 203), (84, 224), (94, 251),

Gene: Zaria\_2 Start: 474, Stop: 848, Start Num: 30

Candidate Starts for Zaria\_2:

(Start: 30 @474 has 17 MA's), (48, 513), (63, 585), (64, 588), (69, 615), (77, 648), (78, 651), (103, 744),

Gene: Zelink\_9 Start: 2841, Stop: 3215, Start Num: 40

Candidate Starts for Zelink\_9:

(2, 2634), (3, 2643), (11, 2754), (Start: 40 @2841 has 34 MA's), (56, 2910), (61, 2928), (62, 2931), (64, 2937), (78, 3000), (91, 3060), (93, 3063), (103, 3096),

Gene: ZiggyZoo\_1 Start: 56, Stop: 397, Start Num: 44

Candidate Starts for ZiggyZoo\_1:

(Start: 44 @56 has 41 MA's), (49, 74), (Start: 50 @89 has 1 MA's), (61, 134), (62, 137), (68, 161), (84, 224), (94, 251),

Gene: Zilizebeth\_1 Start: 55, Stop: 444, Start Num: 19

Candidate Starts for Zilizebeth\_1:

(Start: 19 @55 has 45 MA's), (Start: 51 @151 has 1 MA's), (67, 217), (82, 274), (85, 286), (98, 322), (107, 352),

Gene: Zodiariah\_1 Start: 125, Stop: 451, Start Num: 42

Candidate Starts for Zodiariah\_1:

(Start: 42 @125 has 2 MA's), (Start: 50 @164 has 1 MA's), (Start: 52 @176 has 2 MA's), (57, 197), (61, 209), (62, 212), (64, 218), (68, 236), (71, 254), (74, 266), (81, 281), (86, 293), (90, 311), (100, 338), (111, 377), (117, 407), (118, 410),