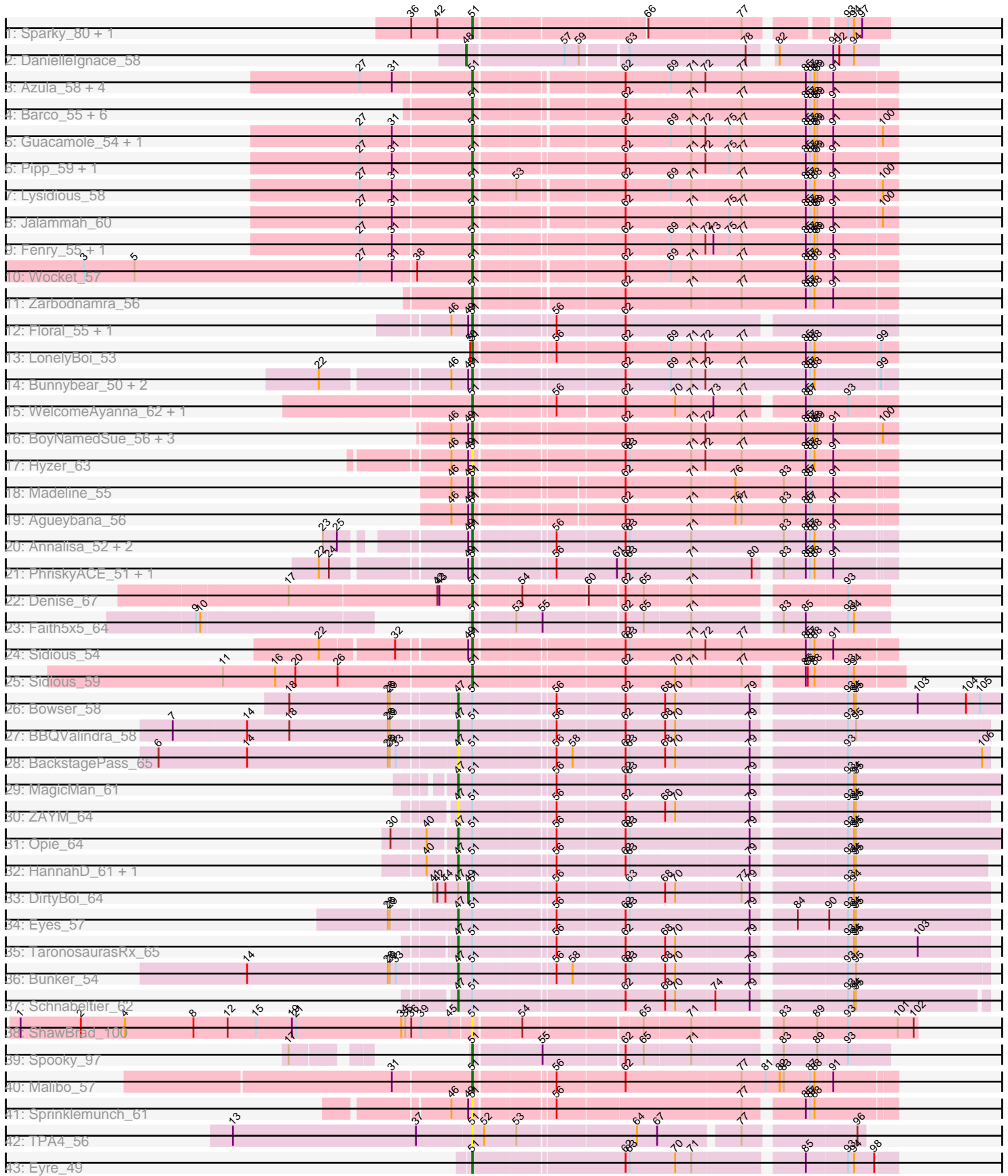


Pham 294712



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 294712 Report

This analysis was run 04/18/26 on database version 643.

Pham number 294712 has 68 members, 10 are drafts.

Phages represented in each track:

- Track 1 : Sparky\_80, Farewell\_81
- Track 2 : DanielleIgnace\_58
- Track 3 : Azula\_58, Gambino\_60, MissRona\_58, Blueberry\_57, Mellie\_55
- Track 4 : Barco\_55, Delian\_60, Hitter\_57, CaptainKirk2\_57, MintFen\_57, Zilla\_56, Samba\_56
- Track 5 : Guacamole\_54, JasperJr\_54
- Track 6 : Pipp\_59, Walrus\_55
- Track 7 : Lysidious\_58
- Track 8 : Jalammah\_60
- Track 9 : Fenry\_55, Petra\_53
- Track 10 : Wocket\_57
- Track 11 : Zarbodnamra\_56
- Track 12 : Floral\_55, Pollux\_57
- Track 13 : LonelyBoi\_53
- Track 14 : Bunnybear\_50, Madavieve\_52, Maridalia\_58
- Track 15 : WelcomeAyanna\_62, ThankyouJordi\_62
- Track 16 : BoyNamedSue\_56, EMSquaredA\_54, Marteena\_53, AlumE\_56
- Track 17 : Hyzer\_63
- Track 18 : Madeline\_55
- Track 19 : Agueybana\_56
- Track 20 : Annalisa\_52, Tuti\_55, Oregano\_55
- Track 21 : PhriskyACE\_51, Powerball\_52
- Track 22 : Denise\_67
- Track 23 : Faith5x5\_64
- Track 24 : Sidious\_54
- Track 25 : Sidious\_59
- Track 26 : Bowser\_58
- Track 27 : BBQValindra\_58
- Track 28 : BackstagePass\_65
- Track 29 : MagicMan\_61
- Track 30 : ZAYM\_64
- Track 31 : Opie\_64
- Track 32 : HannahD\_61, GEazy\_64
- Track 33 : DirtyBoi\_64
- Track 34 : Eyes\_57
- Track 35 : TaronosaurusRx\_65
- Track 36 : Bunker\_54

- Track 37 : Schnabeltier\_62
- Track 38 : ShawBrad\_100
- Track 39 : Spooky\_97
- Track 40 : Malibo\_57
- Track 41 : Sprinklemunch\_61
- Track 42 : TPA4\_56
- Track 43 : Eyre\_49

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

The start number called the most often in the published annotations is 51, it was called in 46 of the 58 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agueybana\_56, AlumE\_56, Annalisa\_52, Azula\_58, Barco\_55, Blueberry\_57, BoyNamedSue\_56, Bunnybear\_50, CaptainKirk2\_57, Delian\_60, Denise\_67, EMSquaredA\_54, Eyre\_49, Faith5x5\_64, Farewell\_81, Fenry\_55, Floral\_55, Gambino\_60, Guacamole\_54, Hitter\_57, Hyzer\_63, Jalammah\_60, JasperJr\_54, LonelyBoi\_53, Lysidious\_58, Madavieve\_52, Madeline\_55, Malibo\_57, Maridalia\_58, Marteena\_53, Mellie\_55, MintFen\_57, MissRona\_58, Oregano\_55, Petra\_53, PhriskyACE\_51, Pipp\_59, Pollux\_57, Powerball\_52, Samba\_56, ShawBrad\_100, Sidious\_54, Sidious\_59, Sparky\_80, Spooky\_97, Sprinklemunch\_61, TPA4\_56, ThankyouJordi\_62, Tuti\_55, Walrus\_55, WelcomeAyanna\_62, Wocket\_57, Zarbodnamra\_56, Zilla\_56,

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

- BBQValindra\_58, BackstagePass\_65, Bowser\_58, Bunker\_54, DirtyBoi\_64, Eyes\_57, GEazy\_64, HannahD\_61, MagicMan\_61, Opie\_64, Schnabeltier\_62, TaronosaurusRx\_65, ZAYM\_64,

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

- DanielleIgnace\_58,

**Summary by start number:**

Start 47:

- Found in 13 of 68 ( 19.1% ) of genes in pham
- Manual Annotations of this start: 10 of 58
- Called 92.3% of time when present
- Phage (with cluster) where this start called: BBQValindra\_58 (DB), BackstagePass\_65 (DB), Bowser\_58 (DB), Bunker\_54 (DB), Eyes\_57 (DB), GEazy\_64 (DB), HannahD\_61 (DB), MagicMan\_61 (DB), Opie\_64 (DB), Schnabeltier\_62 (DB), TaronosaurusRx\_65 (DB), ZAYM\_64 (DB),

Start 48:

- Found in 1 of 68 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DanielleIgnace\_58 (AT),

#### Start 49:

- Found in 20 of 68 ( 29.4% ) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 5.0% of time when present
- Phage (with cluster) where this start called: DirtyBoi\_64 (DB),

#### Start 51:

- Found in 67 of 68 ( 98.5% ) of genes in pham
- Manual Annotations of this start: 46 of 58
- Called 80.6% of time when present
- Phage (with cluster) where this start called: Agueybana\_56 (CZ1), AlumE\_56 (CZ1), Annalisa\_52 (CZ4), Azula\_58 (CV), Barco\_55 (CV), Blueberry\_57 (CV), BoyNamedSue\_56 (CZ1), Bunnybear\_50 (CZ), CaptainKirk2\_57 (CV), Delian\_60 (CV), Denise\_67 (CZ5), EMSquaredA\_54 (CY1), Eyre\_49 (singleton), Faith5x5\_64 (CZ6), Farewell\_81 (AF), Fenry\_55 (CV), Floral\_55 (CY1), Gambino\_60 (CV), Guacamole\_54 (CV), Hitter\_57 (CV), Hyzer\_63 (CZ1), Jalammah\_60 (CV), JasperJr\_54 (CV), LonelyBoi\_53 (CY7), Lysidious\_58 (CV), Madavieve\_52 (CZ1), Madeline\_55 (CZ1), Malibo\_57 (DW), Maridalia\_58 (CZ1), Marteenaa\_53 (CY1), Mellie\_55 (CV), MintFen\_57 (CV), MissRona\_58 (CV), Oregano\_55 (CZ4), Petra\_53 (CV), PhriskyACE\_51 (CZ4), Pipp\_59 (CV), Pollux\_57 (CY1), Powerball\_52 (CZ4), Samba\_56 (CV), ShawBrad\_100 (DN1), Sidious\_54 (CZ7), Sidious\_59 (CZ7), Sparky\_80 (AF), Spooky\_97 (DN2), Sprinklemunch\_61 (DW), TPA4\_56 (singleton), ThankyouJordi\_62 (CZ1), Tuti\_55 (CZ4), Walrus\_55 (CV), WelcomeAyanna\_62 (CZ1), Wocket\_57 (CV), Zarbodnamra\_56 (CV), Zilla\_56 (CV),

#### Summary by clusters:

There are 16 clusters represented in this pham: CY1, CY7, AF, CZ6, CZ1, DB, singleton, CZ4, CZ7, CZ, DN1, AT, DN2, DW, CZ5, CV,

Info for manual annotations of cluster AF:

- Start number 51 was manually annotated 2 times for cluster AF.

Info for manual annotations of cluster AT:

- Start number 48 was manually annotated 1 time for cluster AT.

Info for manual annotations of cluster CV:

- Start number 51 was manually annotated 21 times for cluster CV.

Info for manual annotations of cluster CY1:

- Start number 51 was manually annotated 4 times for cluster CY1.

Info for manual annotations of cluster CY7:

- Start number 51 was manually annotated 1 time for cluster CY7.

Info for manual annotations of cluster CZ:

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

Info for manual annotations of cluster CZ1:

- Start number 51 was manually annotated 7 times for cluster CZ1.

Info for manual annotations of cluster CZ4:

- Start number 51 was manually annotated 3 times for cluster CZ4.

Info for manual annotations of cluster CZ5:

- Start number 51 was manually annotated 1 time for cluster CZ5.

Info for manual annotations of cluster CZ6:

- Start number 51 was manually annotated 1 time for cluster CZ6.

Info for manual annotations of cluster CZ7:

- Start number 51 was manually annotated 2 times for cluster CZ7.

Info for manual annotations of cluster DB:

- Start number 47 was manually annotated 10 times for cluster DB.
- Start number 49 was manually annotated 1 time for cluster DB.

Info for manual annotations of cluster DN2:

- Start number 51 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster DW:

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

### **Gene Information:**

Gene: Agueybana\_56 Start: 39653, Stop: 40237, Start Num: 51

Candidate Starts for Agueybana\_56:

(46, 39623), (Start: 49 @39647 has 1 MA's), (Start: 51 @39653 has 46 MA's), (62, 39854), (71, 39950), (76, 40013), (77, 40022), (83, 40085), (85, 40118), (87, 40121), (91, 40151),

Gene: AlumE\_56 Start: 39435, Stop: 40025, Start Num: 51

Candidate Starts for AlumE\_56:

(46, 39405), (Start: 49 @39429 has 1 MA's), (Start: 51 @39435 has 46 MA's), (62, 39639), (71, 39735), (72, 39756), (77, 39807), (85, 39903), (87, 39906), (88, 39912), (89, 39915), (91, 39936), (100, 40005),

Gene: Annalisa\_52 Start: 35792, Stop: 36379, Start Num: 51

Candidate Starts for Annalisa\_52:

(23, 35615), (25, 35636), (Start: 49 @35786 has 1 MA's), (Start: 51 @35792 has 46 MA's), (56, 35900), (62, 35996), (63, 36002), (71, 36092), (83, 36230), (85, 36263), (87, 36266), (88, 36272), (91, 36296),

Gene: Azula\_58 Start: 39149, Stop: 39736, Start Num: 51

Candidate Starts for Azula\_58:

(27, 38987), (31, 39035), (Start: 51 @39149 has 46 MA's), (62, 39350), (69, 39416), (71, 39446), (72, 39467), (77, 39518), (85, 39614), (87, 39617), (88, 39623), (89, 39626), (91, 39647),

Gene: BBQValindra\_58 Start: 41020, Stop: 41751, Start Num: 47

Candidate Starts for BBQValindra\_58:

(7, 40606), (14, 40714), (18, 40777), (28, 40924), (29, 40927), (Start: 47 @41020 has 10 MA's), (Start: 51 @41038 has 46 MA's), (56, 41152), (62, 41245), (68, 41302), (70, 41317), (79, 41425), (93, 41545), (95, 41557),

Gene: BackstagePass\_65 Start: 40434, Stop: 41168, Start Num: 47

Candidate Starts for BackstagePass\_65:

(6, 39999), (14, 40131), (28, 40341), (29, 40344), (33, 40353), (Start: 47 @40434 has 10 MA's), (Start: 51 @40452 has 46 MA's), (56, 40566), (58, 40590), (62, 40659), (63, 40665), (68, 40716), (70, 40731), (79, 40839), (93, 40959), (106, 41157),

Gene: Barco\_55 Start: 36423, Stop: 37010, Start Num: 51

Candidate Starts for Barco\_55:

(Start: 51 @36423 has 46 MA's), (62, 36624), (71, 36720), (77, 36792), (85, 36888), (87, 36891), (88, 36897), (89, 36900), (91, 36921),

Gene: Blueberry\_57 Start: 39149, Stop: 39736, Start Num: 51

Candidate Starts for Blueberry\_57:

(27, 38987), (31, 39035), (Start: 51 @39149 has 46 MA's), (62, 39350), (69, 39416), (71, 39446), (72, 39467), (77, 39518), (85, 39614), (87, 39617), (88, 39623), (89, 39626), (91, 39647),

Gene: Bowser\_58 Start: 40743, Stop: 41495, Start Num: 47

Candidate Starts for Bowser\_58:

(18, 40503), (28, 40650), (29, 40653), (Start: 47 @40743 has 10 MA's), (Start: 51 @40761 has 46 MA's), (56, 40875), (62, 40968), (68, 41025), (70, 41040), (79, 41148), (93, 41268), (94, 41277), (95, 41280), (103, 41370), (104, 41442), (105, 41463),

Gene: BoyNamedSue\_56 Start: 39435, Stop: 40025, Start Num: 51

Candidate Starts for BoyNamedSue\_56:

(46, 39405), (Start: 49 @39429 has 1 MA's), (Start: 51 @39435 has 46 MA's), (62, 39639), (71, 39735), (72, 39756), (77, 39807), (85, 39903), (87, 39906), (88, 39912), (89, 39915), (91, 39936), (100, 40005),

Gene: Bunker\_54 Start: 39327, Stop: 40058, Start Num: 47

Candidate Starts for Bunker\_54:

(14, 39024), (28, 39234), (29, 39237), (33, 39246), (Start: 47 @39327 has 10 MA's), (Start: 51 @39345 has 46 MA's), (56, 39459), (58, 39483), (62, 39552), (63, 39558), (68, 39609), (70, 39624), (79, 39732), (93, 39852), (95, 39864),

Gene: Bunnybear\_50 Start: 37443, Stop: 38027, Start Num: 51

Candidate Starts for Bunnybear\_50:

(22, 37239), (46, 37413), (Start: 49 @37437 has 1 MA's), (Start: 51 @37443 has 46 MA's), (62, 37644), (69, 37710), (71, 37740), (72, 37761), (77, 37812), (85, 37908), (87, 37911), (88, 37917), (99, 38007),

Gene: CaptainKirk2\_57 Start: 36662, Stop: 37249, Start Num: 51

Candidate Starts for CaptainKirk2\_57:

(Start: 51 @36662 has 46 MA's), (62, 36863), (71, 36959), (77, 37031), (85, 37127), (87, 37130), (88, 37136), (89, 37139), (91, 37160),

Gene: DanielleIgnace\_58 Start: 38690, Stop: 39253, Start Num: 48

Candidate Starts for DanielleIgnace\_58:

(Start: 48 @38690 has 1 MA's), (57, 38831), (59, 38852), (63, 38915), (78, 39083), (82, 39110), (91, 39188), (92, 39197), (94, 39218),

Gene: Delian\_60 Start: 36660, Stop: 37247, Start Num: 51

Candidate Starts for Delian\_60:

(Start: 51 @36660 has 46 MA's), (62, 36861), (71, 36957), (77, 37029), (85, 37125), (87, 37128), (88, 37134), (89, 37137), (91, 37158),

Gene: Denise\_67 Start: 40135, Stop: 40689, Start Num: 51

Candidate Starts for Denise\_67:

(17, 39871), (42, 40084), (43, 40087), (Start: 51 @40135 has 46 MA's), (54, 40201), (60, 40285), (62, 40333), (65, 40357), (71, 40423), (93, 40627),

Gene: DirtyBoi\_64 Start: 41042, Stop: 41764, Start Num: 49

Candidate Starts for DirtyBoi\_64:

(41, 40991), (42, 40997), (44, 41009), (Start: 47 @41027 has 10 MA's), (Start: 49 @41042 has 1 MA's), (Start: 51 @41048 has 46 MA's), (56, 41162), (63, 41261), (68, 41312), (70, 41327), (77, 41423), (79, 41435), (93, 41555), (94, 41564),

Gene: EMSquaredA\_54 Start: 38610, Stop: 39200, Start Num: 51

Candidate Starts for EMSquaredA\_54:

(46, 38580), (Start: 49 @38604 has 1 MA's), (Start: 51 @38610 has 46 MA's), (62, 38814), (71, 38910), (72, 38931), (77, 38982), (85, 39078), (87, 39081), (88, 39087), (89, 39090), (91, 39111), (100, 39180),

Gene: Eyes\_57 Start: 40795, Stop: 41526, Start Num: 47

Candidate Starts for Eyes\_57:

(28, 40702), (29, 40705), (Start: 47 @40795 has 10 MA's), (Start: 51 @40813 has 46 MA's), (56, 40927), (62, 41020), (63, 41026), (79, 41200), (84, 41251), (90, 41293), (93, 41320), (94, 41329), (95, 41332),

Gene: Eyre\_49 Start: 34637, Stop: 35221, Start Num: 51

Candidate Starts for Eyre\_49:

(Start: 51 @34637 has 46 MA's), (62, 34853), (63, 34859), (70, 34925), (71, 34949), (85, 35096), (93, 35153), (94, 35162), (98, 35192),

Gene: Faith5x5\_64 Start: 38441, Stop: 39004, Start Num: 51

Candidate Starts for Faith5x5\_64:

(9, 38189), (10, 38195), (Start: 51 @38441 has 46 MA's), (53, 38498), (55, 38537), (62, 38648), (65, 38672), (71, 38738), (83, 38852), (85, 38885), (93, 38942), (94, 38951),

Gene: Farewell\_81 Start: 52822, Stop: 53370, Start Num: 51

Candidate Starts for Farewell\_81:

(36, 52732), (42, 52771), (Start: 51 @52822 has 46 MA's), (66, 53056), (77, 53191), (93, 53308), (94, 53317), (97, 53329),

Gene: Fenry\_55 Start: 38167, Stop: 38757, Start Num: 51

Candidate Starts for Fenry\_55:

(27, 38005), (31, 38053), (Start: 51 @38167 has 46 MA's), (62, 38371), (69, 38437), (71, 38467), (72, 38488), (73, 38497), (75, 38521), (77, 38539), (85, 38635), (87, 38638), (88, 38644), (89, 38647), (91, 38668),

Gene: Floral\_55 Start: 40516, Stop: 41088, Start Num: 51

Candidate Starts for Floral\_55:

(46, 40486), (Start: 49 @40510 has 1 MA's), (Start: 51 @40516 has 46 MA's), (56, 40624), (62, 40720),

Gene: GEazy\_64 Start: 40986, Stop: 41714, Start Num: 47

Candidate Starts for GEazy\_64:

(40, 40947), (Start: 47 @40986 has 10 MA's), (Start: 51 @41004 has 46 MA's), (56, 41118), (62, 41211), (63, 41217), (79, 41391), (93, 41511), (94, 41520), (95, 41523),

Gene: Gambino\_60 Start: 39149, Stop: 39736, Start Num: 51

Candidate Starts for Gambino\_60:

(27, 38987), (31, 39035), (Start: 51 @39149 has 46 MA's), (62, 39350), (69, 39416), (71, 39446), (72, 39467), (77, 39518), (85, 39614), (87, 39617), (88, 39623), (89, 39626), (91, 39647),

Gene: Guacamole\_54 Start: 36889, Stop: 37476, Start Num: 51

Candidate Starts for Guacamole\_54:

(27, 36727), (31, 36775), (Start: 51 @36889 has 46 MA's), (62, 37090), (69, 37156), (71, 37186), (72, 37207), (75, 37240), (77, 37258), (85, 37354), (87, 37357), (88, 37363), (89, 37366), (91, 37387), (100, 37456),

Gene: HannahD\_61 Start: 40353, Stop: 41081, Start Num: 47

Candidate Starts for HannahD\_61:

(40, 40314), (Start: 47 @40353 has 10 MA's), (Start: 51 @40371 has 46 MA's), (56, 40485), (62, 40578), (63, 40584), (79, 40758), (93, 40878), (94, 40887), (95, 40890),

Gene: Hitter\_57 Start: 36465, Stop: 37052, Start Num: 51

Candidate Starts for Hitter\_57:

(Start: 51 @36465 has 46 MA's), (62, 36666), (71, 36762), (77, 36834), (85, 36930), (87, 36933), (88, 36939), (89, 36942), (91, 36963),

Gene: Hyzer\_63 Start: 42350, Stop: 42940, Start Num: 51

Candidate Starts for Hyzer\_63:

(46, 42320), (Start: 49 @42344 has 1 MA's), (Start: 51 @42350 has 46 MA's), (62, 42554), (63, 42560), (71, 42650), (72, 42671), (77, 42722), (85, 42818), (87, 42821), (88, 42827), (91, 42851),

Gene: Jalammah\_60 Start: 39468, Stop: 40055, Start Num: 51

Candidate Starts for Jalammah\_60:

(27, 39306), (31, 39354), (Start: 51 @39468 has 46 MA's), (62, 39669), (71, 39765), (75, 39819), (77, 39837), (85, 39933), (87, 39936), (88, 39942), (89, 39945), (91, 39966), (100, 40035),

Gene: JasperJr\_54 Start: 36889, Stop: 37476, Start Num: 51

Candidate Starts for JasperJr\_54:

(27, 36727), (31, 36775), (Start: 51 @36889 has 46 MA's), (62, 37090), (69, 37156), (71, 37186), (72, 37207), (75, 37240), (77, 37258), (85, 37354), (87, 37357), (88, 37363), (89, 37366), (91, 37387), (100, 37456),

Gene: LonelyBoi\_53 Start: 40470, Stop: 41057, Start Num: 51

Candidate Starts for LonelyBoi\_53:

(50, 40467), (Start: 51 @40470 has 46 MA's), (56, 40578), (62, 40674), (69, 40740), (71, 40770), (72, 40791), (77, 40842), (85, 40938), (87, 40941), (88, 40947), (99, 41037),

Gene: Lysidious\_58 Start: 38835, Stop: 39422, Start Num: 51

Candidate Starts for Lysidious\_58:

(27, 38673), (31, 38721), (Start: 51 @38835 has 46 MA's), (53, 38892), (62, 39036), (69, 39102), (71, 39132), (77, 39204), (85, 39300), (87, 39303), (88, 39309), (91, 39333), (100, 39402),

Gene: Madavieve\_52 Start: 38399, Stop: 38983, Start Num: 51

Candidate Starts for Madavieve\_52:

(22, 38195), (46, 38369), (Start: 49 @38393 has 1 MA's), (Start: 51 @38399 has 46 MA's), (62, 38600), (69, 38666), (71, 38696), (72, 38717), (77, 38768), (85, 38864), (87, 38867), (88, 38873), (99, 38963),

Gene: Madeline\_55 Start: 39843, Stop: 40427, Start Num: 51

Candidate Starts for Madeline\_55:

(46, 39813), (Start: 49 @39837 has 1 MA's), (Start: 51 @39843 has 46 MA's), (62, 40044), (71, 40140), (76, 40203), (83, 40275), (85, 40308), (87, 40311), (91, 40341),

Gene: MagicMan\_61 Start: 41953, Stop: 42714, Start Num: 47

Candidate Starts for MagicMan\_61:

(Start: 47 @41953 has 10 MA's), (Start: 51 @41971 has 46 MA's), (56, 42085), (62, 42178), (63, 42184), (79, 42358), (93, 42478), (94, 42487), (95, 42490),

Gene: Malibo\_57 Start: 39555, Stop: 40142, Start Num: 51

Candidate Starts for Malibo\_57:

(31, 39441), (Start: 51 @39555 has 46 MA's), (56, 39663), (62, 39759), (77, 39927), (81, 39963), (82, 39984), (83, 39990), (87, 40026), (88, 40032), (91, 40056),

Gene: Maridalia\_58 Start: 39189, Stop: 39773, Start Num: 51

Candidate Starts for Maridalia\_58:

(22, 38985), (46, 39159), (Start: 49 @39183 has 1 MA's), (Start: 51 @39189 has 46 MA's), (62, 39390), (69, 39456), (71, 39486), (72, 39507), (77, 39558), (85, 39654), (87, 39657), (88, 39663), (99, 39753),

Gene: Marteena\_53 Start: 38610, Stop: 39200, Start Num: 51

Candidate Starts for Marteena\_53:

(46, 38580), (Start: 49 @38604 has 1 MA's), (Start: 51 @38610 has 46 MA's), (62, 38814), (71, 38910), (72, 38931), (77, 38982), (85, 39078), (87, 39081), (88, 39087), (89, 39090), (91, 39111), (100, 39180),

Gene: Mellie\_55 Start: 36842, Stop: 37432, Start Num: 51

Candidate Starts for Mellie\_55:

(27, 36680), (31, 36728), (Start: 51 @36842 has 46 MA's), (62, 37046), (69, 37112), (71, 37142), (72, 37163), (77, 37214), (85, 37310), (87, 37313), (88, 37319), (89, 37322), (91, 37343),

Gene: MintFen\_57 Start: 37276, Stop: 37863, Start Num: 51

Candidate Starts for MintFen\_57:

(Start: 51 @37276 has 46 MA's), (62, 37477), (71, 37573), (77, 37645), (85, 37741), (87, 37744), (88, 37750), (89, 37753), (91, 37774),

Gene: MissRona\_58 Start: 39150, Stop: 39737, Start Num: 51

Candidate Starts for MissRona\_58:

(27, 38988), (31, 39036), (Start: 51 @39150 has 46 MA's), (62, 39351), (69, 39417), (71, 39447), (72, 39468), (77, 39519), (85, 39615), (87, 39618), (88, 39624), (89, 39627), (91, 39648),

Gene: Opie\_64 Start: 42071, Stop: 42832, Start Num: 47

Candidate Starts for Opie\_64:

(30, 41987), (40, 42032), (Start: 47 @42071 has 10 MA's), (Start: 51 @42089 has 46 MA's), (56, 42203), (62, 42296), (63, 42302), (79, 42476), (93, 42596), (94, 42605), (95, 42608),

Gene: Oregano\_55 Start: 36424, Stop: 37011, Start Num: 51

Candidate Starts for Oregano\_55:

(23, 36247), (25, 36268), (Start: 49 @36418 has 1 MA's), (Start: 51 @36424 has 46 MA's), (56, 36532), (62, 36628), (63, 36634), (71, 36724), (83, 36862), (85, 36895), (87, 36898), (88, 36904), (91, 36928),

Gene: Petra\_53 Start: 35617, Stop: 36207, Start Num: 51

Candidate Starts for Petra\_53:

(27, 35455), (31, 35503), (Start: 51 @35617 has 46 MA's), (62, 35821), (69, 35887), (71, 35917), (72, 35938), (73, 35947), (75, 35971), (77, 35989), (85, 36085), (87, 36088), (88, 36094), (89, 36097), (91, 36118),

Gene: PhriskyACE\_51 Start: 36416, Stop: 36979, Start Num: 51

Candidate Starts for PhriskyACE\_51:

(22, 36212), (24, 36227), (Start: 49 @36410 has 1 MA's), (Start: 51 @36416 has 46 MA's), (56, 36524), (61, 36608), (62, 36620), (63, 36626), (71, 36716), (80, 36803), (83, 36830), (85, 36863), (87, 36866), (88, 36872), (91, 36896),

Gene: Pipp\_59 Start: 37969, Stop: 38559, Start Num: 51

Candidate Starts for Pipp\_59:

(27, 37807), (31, 37855), (Start: 51 @37969 has 46 MA's), (62, 38173), (71, 38269), (72, 38290), (75, 38323), (77, 38341), (85, 38437), (87, 38440), (88, 38446), (89, 38449), (91, 38470),

Gene: Pollux\_57 Start: 40516, Stop: 41088, Start Num: 51

Candidate Starts for Pollux\_57:

(46, 40486), (Start: 49 @40510 has 1 MA's), (Start: 51 @40516 has 46 MA's), (56, 40624), (62, 40720),

Gene: Powerball\_52 Start: 36542, Stop: 37105, Start Num: 51

Candidate Starts for Powerball\_52:

(22, 36338), (24, 36353), (Start: 49 @36536 has 1 MA's), (Start: 51 @36542 has 46 MA's), (56, 36650), (61, 36734), (62, 36746), (63, 36752), (71, 36842), (80, 36929), (83, 36956), (85, 36989), (87, 36992), (88, 36998), (91, 37022),

Gene: Samba\_56 Start: 39498, Stop: 40085, Start Num: 51

Candidate Starts for Samba\_56:

(Start: 51 @39498 has 46 MA's), (62, 39699), (71, 39795), (77, 39867), (85, 39963), (87, 39966), (88, 39972), (89, 39975), (91, 39996),

Gene: Schnabeltier\_62 Start: 41372, Stop: 42097, Start Num: 47

Candidate Starts for Schnabeltier\_62:

(Start: 47 @41372 has 10 MA's), (Start: 51 @41390 has 46 MA's), (62, 41597), (68, 41654), (70, 41669), (74, 41726), (79, 41777), (93, 41897), (94, 41906), (95, 41909),

Gene: ShawBrad\_100 Start: 50885, Stop: 51478, Start Num: 51

Candidate Starts for ShawBrad\_100:

(1, 50216), (2, 50306), (4, 50372), (8, 50474), (12, 50525), (15, 50567), (19, 50621), (21, 50627), (34, 50783), (35, 50789), (36, 50798), (39, 50813), (45, 50855), (Start: 51 @50885 has 46 MA's), (54, 50951), (65, 51107), (71, 51173), (83, 51287), (89, 51335), (93, 51377), (101, 51449), (102, 51473),

Gene: Sidious\_54 Start: 38723, Stop: 39313, Start Num: 51

Candidate Starts for Sidious\_54:

(22, 38519), (32, 38621), (Start: 49 @38717 has 1 MA's), (Start: 51 @38723 has 46 MA's), (62, 38927), (63, 38933), (71, 39023), (72, 39044), (77, 39095), (85, 39191), (87, 39194), (88, 39200), (91, 39224),

Gene: Sidious\_59 Start: 42258, Stop: 42845, Start Num: 51

Candidate Starts for Sidious\_59:

(11, 41895), (16, 41973), (20, 42003), (26, 42066), (Start: 51 @42258 has 46 MA's), (62, 42468), (70, 42540), (71, 42564), (77, 42636), (85, 42711), (86, 42714), (88, 42720), (93, 42765), (94, 42774),

Gene: Sparky\_80 Start: 54416, Stop: 54964, Start Num: 51

Candidate Starts for Sparky\_80:

(36, 54326), (42, 54365), (Start: 51 @54416 has 46 MA's), (66, 54650), (77, 54785), (93, 54902), (94, 54911), (97, 54923),

Gene: Spooky\_97 Start: 52512, Stop: 53075, Start Num: 51

Candidate Starts for Spooky\_97:

(17, 52416), (Start: 51 @52512 has 46 MA's), (55, 52608), (62, 52719), (65, 52743), (71, 52809), (83, 52923), (89, 52971), (93, 53013),

Gene: Sprinklemunch\_61 Start: 41882, Stop: 42448, Start Num: 51

Candidate Starts for Sprinklemunch\_61:

(46, 41852), (Start: 49 @41876 has 1 MA's), (Start: 51 @41882 has 46 MA's), (56, 41990), (77, 42251), (85, 42326), (87, 42329), (88, 42335),

Gene: TPA4\_56 Start: 40632, Stop: 41162, Start Num: 51

Candidate Starts for TPA4\_56:

(13, 40278), (37, 40551), (Start: 51 @40632 has 46 MA's), (52, 40650), (53, 40698), (64, 40863), (67, 40893), (77, 41004), (96, 41151),

Gene: TaronosaurusRx\_65 Start: 41369, Stop: 42100, Start Num: 47

Candidate Starts for TaronosaurusRx\_65:

(Start: 47 @41369 has 10 MA's), (Start: 51 @41387 has 46 MA's), (56, 41501), (62, 41594), (68, 41651), (70, 41666), (79, 41774), (93, 41894), (94, 41903), (95, 41906), (103, 41996),

Gene: ThankyouJordi\_62 Start: 43975, Stop: 44550, Start Num: 51

Candidate Starts for ThankyouJordi\_62:

(Start: 51 @43975 has 46 MA's), (56, 44089), (62, 44182), (70, 44254), (71, 44278), (73, 44308), (77, 44350), (85, 44425), (87, 44431), (93, 44482),

Gene: Tuti\_55 Start: 37172, Stop: 37759, Start Num: 51

Candidate Starts for Tuti\_55:

(23, 36995), (25, 37016), (Start: 49 @37166 has 1 MA's), (Start: 51 @37172 has 46 MA's), (56, 37280), (62, 37376), (63, 37382), (71, 37472), (83, 37610), (85, 37643), (87, 37646), (88, 37652), (91, 37676),

Gene: Walrus\_55 Start: 36777, Stop: 37367, Start Num: 51

Candidate Starts for Walrus\_55:

(27, 36615), (31, 36663), (Start: 51 @36777 has 46 MA's), (62, 36981), (71, 37077), (72, 37098), (75, 37131), (77, 37149), (85, 37245), (87, 37248), (88, 37254), (89, 37257), (91, 37278),

Gene: WelcomeAyanna\_62 Start: 44122, Stop: 44697, Start Num: 51

Candidate Starts for WelcomeAyanna\_62:

(Start: 51 @44122 has 46 MA's), (56, 44236), (62, 44329), (70, 44401), (71, 44425), (73, 44455), (77, 44497), (85, 44572), (87, 44578), (93, 44629),

Gene: Wocket\_57 Start: 37262, Stop: 37849, Start Num: 51

Candidate Starts for Wocket\_57:

(3, 36689), (5, 36764), (27, 37100), (31, 37148), (38, 37181), (Start: 51 @37262 has 46 MA's), (62, 37463), (69, 37529), (71, 37559), (77, 37631), (85, 37727), (87, 37730), (88, 37736), (91, 37760),

Gene: ZAYM\_64 Start: 41414, Stop: 42145, Start Num: 47

Candidate Starts for ZAYM\_64:

(Start: 47 @41414 has 10 MA's), (Start: 51 @41432 has 46 MA's), (56, 41546), (62, 41639), (68, 41696), (70, 41711), (79, 41819), (93, 41939), (94, 41948), (95, 41951),

Gene: Zarbodnamra\_56 Start: 36684, Stop: 37271, Start Num: 51

Candidate Starts for Zarbodnamra\_56:

(Start: 51 @36684 has 46 MA's), (62, 36885), (71, 36981), (77, 37053), (85, 37149), (87, 37152), (88, 37158), (91, 37182),

Gene: Zilla\_56 Start: 36440, Stop: 37027, Start Num: 51

Candidate Starts for Zilla\_56:

(Start: 51 @36440 has 46 MA's), (62, 36641), (71, 36737), (77, 36809), (85, 36905), (87, 36908), (88, 36914), (89, 36917), (91, 36938),