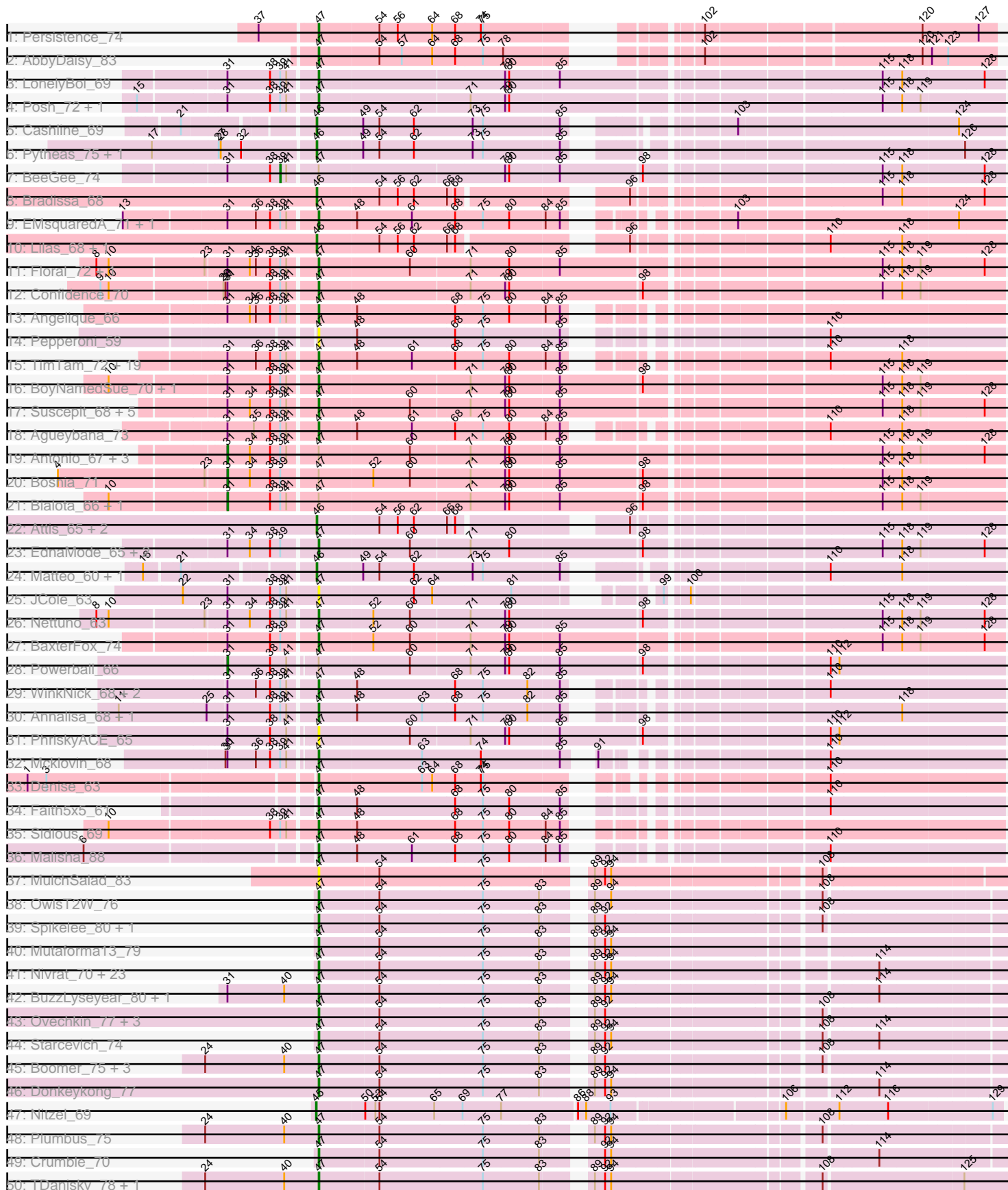
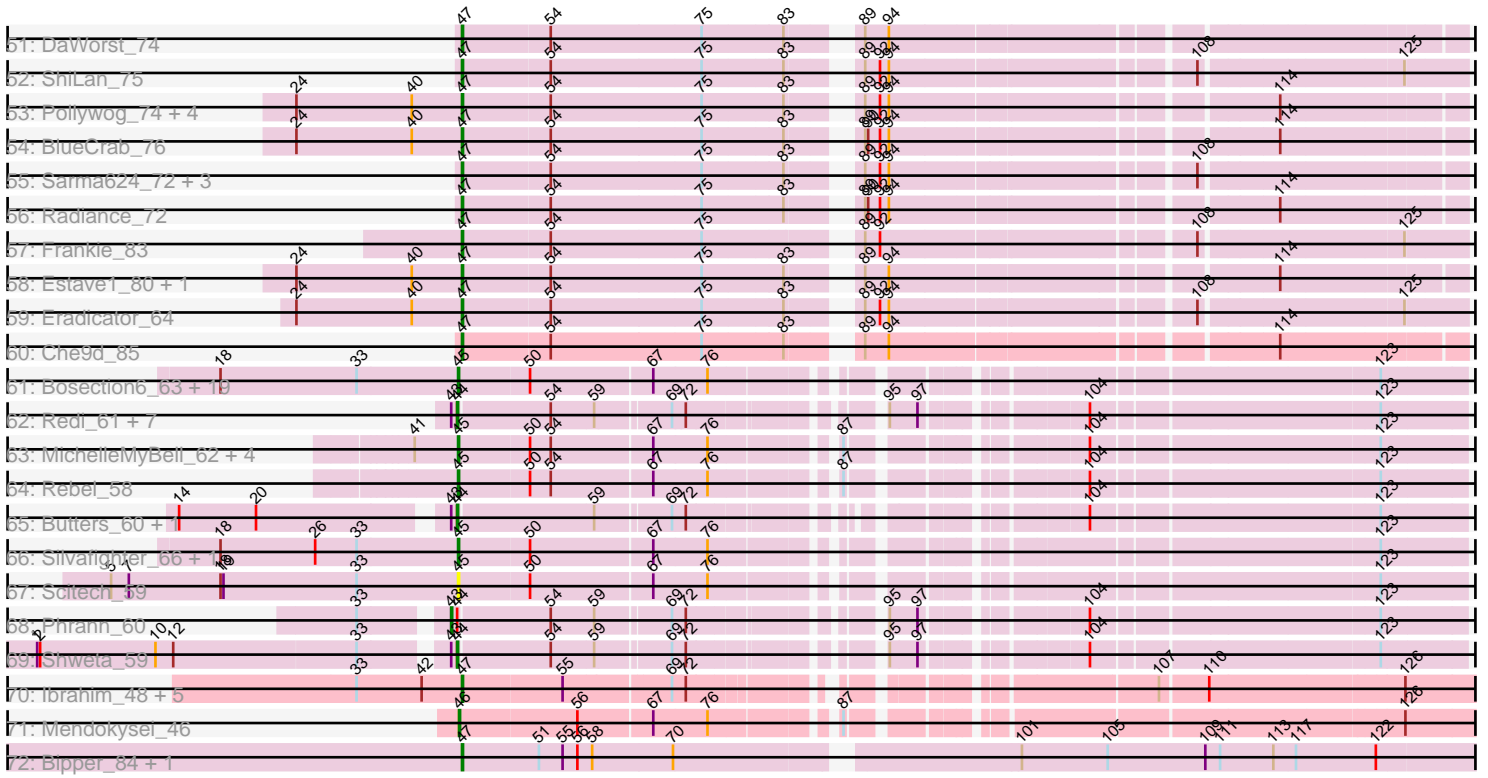


Pham 193752



Pham 193752



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 193752 Report

This analysis was run 11/02/24 on database version 579.

Pham number 193752 has 192 members, 10 are drafts.

Phages represented in each track:

- Track 1 : Persistence\_74
- Track 2 : AbbyDaisy\_83
- Track 3 : LonelyBoi\_69
- Track 4 : Posh\_72, Wrigley\_74
- Track 5 : Cashline\_69
- Track 6 : Pytheas\_75, Jablanski\_74
- Track 7 : BeeGee\_74
- Track 8 : Bradissa\_68
- Track 9 : EMsquaredA\_71, Marteena\_70
- Track 10 : Lilas\_68, EnalisNailo\_67
- Track 11 : Floral\_72, Pollux\_74
- Track 12 : Confidence\_70
- Track 13 : Angelique\_66
- Track 14 : Pepperoni\_59
- Track 15 : TimTam\_72, Cynthia\_66, TuertoX\_66, Ebert\_69, Sproutie\_66, Bjanes7\_63, Herod\_72, Whiteclaw\_66, Lamberg\_62, Clap\_66, Mocha12\_66, Eviarto\_72, BatStarr\_71, Hugley\_70, Gizermo\_66, Nymphadora\_72, GemG\_66, PantheRoc\_74, Savage\_66, Haley23\_66
- Track 16 : BoyNamedSue\_70, AlumE\_70
- Track 17 : Suscepit\_68, Trumpet\_68, Neobush\_70, Manasvini\_70, Tayonia\_68, Zameen\_68
- Track 18 : Agueybana\_73
- Track 19 : Antonio\_67, Eudoria\_68, Kita\_69, Polly\_65
- Track 20 : Bosnia\_71
- Track 21 : Bialota\_66, Zirinka\_66
- Track 22 : Attis\_65, LordFarquaad\_68, SoilAssassin\_65
- Track 23 : EdnaMode\_65, Pickett\_63, Yeet412\_64
- Track 24 : Matteo\_60, Sahara\_65
- Track 25 : JCole\_63
- Track 26 : Nettuno\_63
- Track 27 : BaxterFox\_74
- Track 28 : Powerball\_66
- Track 29 : WinkNick\_68, Dolores\_68, Sekhmet\_67
- Track 30 : Annalisa\_68, Suerte\_62
- Track 31 : PhriskyACE\_65
- Track 32 : Mcklovin\_68
- Track 33 : Denise\_63

- Track 34 : Faith5x5\_61
- Track 35 : Sidious\_69
- Track 36 : Malisha\_88
- Track 37 : MulchSalad\_83
- Track 38 : OwlsT2W\_76
- Track 39 : Spikelee\_80, DosHalletts\_76
- Track 40 : Mutaforma13\_79
- Track 41 : Nivrat\_70, SimranZ1\_74, Ramsey\_77, Juniper1\_72, FreddyB\_82, BodEinwohner17\_79, Mantra\_71, Sabbb\_75, RockyHorror\_74, LilMoolah\_72, Karhdo\_72, Kersh\_75, VRedHorse\_73, Cornucopia\_75, Doug\_74, Che8\_78, LunaBlu\_76, Rialto\_81, Emma\_76, Fancypants\_78, Moonbeam\_74, Galactic\_73, Mahavrat\_70, Pacc40\_67
- Track 42 : BuzzLyseyear\_80, Eish\_77
- Track 43 : Ovechkin\_77, Hegedechwinu\_75, TChen\_75, LunaStella\_73
- Track 44 : Starcevich\_74
- Track 45 : Boomer\_75, MilleniumForce\_74, PMC\_68, Rockne\_72
- Track 46 : Donkeykong\_77
- Track 47 : Nitzel\_69
- Track 48 : Plumbus\_75
- Track 49 : Crumble\_70
- Track 50 : TDanisky\_78, Sparkdehlily\_78
- Track 51 : DaWorst\_74
- Track 52 : ShiLan\_75
- Track 53 : Pollywog\_74, Oksu\_78, Spartacus\_78, Job42\_74, Phasih\_70
- Track 54 : BlueCrab\_76
- Track 55 : Sarma624\_72, CaptainTrips\_72, Hades\_74, Velveteen\_68
- Track 56 : Radiance\_72
- Track 57 : Frankie\_83
- Track 58 : Estave1\_80, Royals2015\_80
- Track 59 : Eradicator\_64
- Track 60 : Che9d\_85
- Track 61 : Bosection6\_63, Pipsqueaks\_65, Smurph\_64, SkinnyPete\_61, Aggie\_60, Carcharodon\_64, Silvy\_60, Magsby\_63, Chewbacca\_67, Schnauzer\_65, Philonius\_64, Fulbright\_62, Xerxes\_64, Charlie\_61, Parmesanjohn\_64, Phloss\_62, Tapioca\_62, Andies\_58, Melville\_69, Gex\_65
- Track 62 : Redi\_61, ShrimpFriedEgg\_61, Raymond7\_54, BabeRuth\_61, Purgamenstris\_61, Nenae\_61, Hanako\_62, PhancyPhin\_61
- Track 63 : MichelleMyBell\_62, Jamie19\_56, SpongeBob\_56, Snekmaggedon\_56, Kevin1\_63
- Track 64 : Rebel\_58
- Track 65 : Butters\_60, Rubeelu\_60
- Track 66 : Silvafighter\_66, Duplicity\_62
- Track 67 : Scitech\_59
- Track 68 : Phrann\_60
- Track 69 : Shweta\_59
- Track 70 : Ibrahim\_48, Bernal13\_48, ZenTime222\_47, Whitty\_47, RonRayGun\_48, Nairb\_47
- Track 71 : Mendokysei\_46
- Track 72 : Bipper\_84, Cracklewink\_84

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

The start number called the most often in the published annotations is 47, it was called in 122 of the 182 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AbbyDaisy\_83, Agueybana\_73, AlumE\_70, Angelique\_66, Annalisa\_68, BatStarr\_71, BaxterFox\_74, Bernal13\_48, Bipper\_84, Bjaner7\_63, BlueCrab\_76, BodEinwohner17\_79, Boomer\_75, BoyNamedSue\_70, BuzzLyseyear\_80, CaptainTrips\_72, Che8\_78, Che9d\_85, Clap\_66, Confidence\_70, Cornucopia\_75, Cracklewink\_84, Crumble\_70, Cynthia\_66, DaWorst\_74, Denise\_63, Dolores\_68, Donkeykong\_77, DosHalletts\_76, Doug\_74, EMsquaredA\_71, Ebert\_69, EdnaMode\_65, Eish\_77, Emma\_76, Eradicator\_64, Estave1\_80, Eviarto\_72, Faith5x5\_61, Fancypants\_78, Floral\_72, Frankie\_83, FreddyB\_82, Galactic\_73, GemG\_66, Gizermo\_66, Hades\_74, Haley23\_66, Hegedechwinu\_75, Herod\_72, Hugley\_70, Ibrahim\_48, JCole\_63, Job42\_74, Juniper1\_72, Karhdo\_72, Kersh\_75, Lamberg\_62, LilMoolah\_72, LonelyBoi\_69, LunaBlu\_76, LunaStella\_73, Mahavrat\_70, Malisha\_88, Manasvini\_70, Mantra\_71, Marteena\_70, Mcklovin\_68, MilleniumForce\_74, Mocha12\_66, Moonbeam\_74, MulchSalad\_83, Mutaforma13\_79, Nairb\_47, Neobush\_70, Nettuno\_63, Nivrat\_70, Nymphadora\_72, Oksu\_78, Ovechkin\_77, OwlsT2W\_76, PMC\_68, Pacc40\_67, PantheRoc\_74, Pepperoni\_59, Persistence\_74, Phasih\_70, PhriskyACE\_65, Pickett\_63, Plumbus\_75, Pollux\_74, Pollywog\_74, Posh\_72, Radiance\_72, Ramsey\_77, Rialto\_81, Rockne\_72, RockyHorror\_74, RonRayGun\_48, Royals2015\_80, Sabbb\_75, Sarma624\_72, Savage\_66, Sekhmet\_67, ShiLan\_75, Sidious\_69, SimranZ1\_74, Sparkdehlily\_78, Spartacus\_78, Spikelee\_80, Sproutie\_66, Starcevich\_74, Suerte\_62, Suscepit\_68, TChen\_75, TDanisky\_78, Tayonia\_68, TimTam\_72, Trumpet\_68, TuertoX\_66, VRedHorse\_73, Velveteen\_68, Whiteclaw\_66, Whitty\_47, WinkNick\_68, Wrigley\_74, Yeet412\_64, Zameen\_68, ZenTime222\_47,

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

- Antonio\_67, BeeGee\_74, Bialota\_66, Bosnia\_71, Eudoria\_68, Kita\_69, Polly\_65, Powerball\_66, Zirinka\_66,

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

- Aggie\_60, Andies\_58, Attis\_65, BabeRuth\_61, Bosection6\_63, Bradissa\_68, Butters\_60, Carcharodon\_64, Cashline\_69, Charlie\_61, Chewbacca\_67, Duplicity\_62, EnalisNailo\_67, Fulbright\_62, Gex\_65, Hanako\_62, Jablanski\_74, Jamie19\_56, Kevin1\_63, Lilas\_68, LordFarquaad\_68, Magsby\_63, Matteo\_60, Melville\_69, Mendokysei\_46, MichelleMyBell\_62, Nenae\_61, Nitzel\_69, Parmesanjohn\_64, PhancyPhin\_61, Pilonius\_64, Phloss\_62, Phrann\_60, Pipsqueaks\_65, Purgamenstris\_61, Pytheas\_75, Raymond7\_54, Rebel\_58, Redi\_61, Rubeelu\_60, Sahara\_65, Schnauzer\_65, Scitech\_59, ShrimpFriedEgg\_61, Shweta\_59, Silvafighter\_66, Silvy\_60, SkinnyPete\_61, Smurph\_64, Snekmaggon\_56, SoilAssassin\_65, SpongeBob\_56, Tapioca\_62, Xerxes\_64,

### Summary by start number:

Start 31:

- Found in 62 of 192 ( 32.3% ) of genes in pham
- Manual Annotations of this start: 8 of 182
- Called 12.9% of time when present
- Phage (with cluster) where this start called: Antonio\_67 (CZ1), Bialota\_66 (CZ1), Bosnia\_71 (CZ1), Eudoria\_68 (CZ1), Kita\_69 (CZ1), Polly\_65 (CZ1), Powerball\_66

(CZ4), Zirinka\_66 (CZ1),

Start 39:

- Found in 59 of 192 ( 30.7% ) of genes in pham
- Manual Annotations of this start: 1 of 182
- Called 1.7% of time when present
- Phage (with cluster) where this start called: BeeGee\_74 (CY),

Start 43:

- Found in 12 of 192 ( 6.2% ) of genes in pham
- Manual Annotations of this start: 1 of 182
- Called 8.3% of time when present
- Phage (with cluster) where this start called: Phrann\_60 (N),

Start 44:

- Found in 12 of 192 ( 6.2% ) of genes in pham
- Manual Annotations of this start: 10 of 182
- Called 91.7% of time when present
- Phage (with cluster) where this start called: BabeRuth\_61 (N), Butters\_60 (N), Hanako\_62 (N), Nenae\_61 (N), PhancyPhin\_61 (N), Purgamenstris\_61 (N), Raymond7\_54 (N), Redi\_61 (N), Rubeelu\_60 (N), ShrimpFriedEgg\_61 (N), Shweta\_59 (N),

Start 45:

- Found in 30 of 192 ( 15.6% ) of genes in pham
- Manual Annotations of this start: 28 of 182
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aggie\_60 (N), Andies\_58 (N), Bosection6\_63 (N), Carcharodon\_64 (N), Charlie\_61 (N), Chewbacca\_67 (N), Duplicity\_62 (N), Fulbright\_62 (N), Gex\_65 (N), Jamie19\_56 (N), Kevin1\_63 (N), Magsby\_63 (N), Melville\_69 (N), MichelleMyBell\_62 (N), Nitzel\_69 (F1), Parmesanjohn\_64 (N), Philonius\_64 (N), Phloss\_62 (N), Pipsqueaks\_65 (N), Rebel\_58 (N), Schnauzer\_65 (N), Scitech\_59 (N), Silvafighter\_66 (N), Silvy\_60 (N), SkinnyPete\_61 (N), Smurph\_64 (N), Snekmaggon\_56 (N), SpongeBob\_56 (N), Tapioca\_62 (N), Xerxes\_64 (N),

Start 46:

- Found in 12 of 192 ( 6.2% ) of genes in pham
- Manual Annotations of this start: 12 of 182
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Attis\_65 (CZ2), Bradissa\_68 (CY1), Cashline\_69 (CY), EnalisNailo\_67 (CY1), Jablanski\_74 (CY), Lilas\_68 (CY1), LordFarquaad\_68 (CZ2), Matteo\_60 (CZ2), Mendokysei\_46 (T), Pytheas\_75 (CY), Sahara\_65 (CZ2), SoilAssassin\_65 (CZ2),

Start 47:

- Found in 138 of 192 ( 71.9% ) of genes in pham
- Manual Annotations of this start: 122 of 182
- Called 93.5% of time when present
- Phage (with cluster) where this start called: AbbyDaisy\_83 (AY), Agueybana\_73 (CZ1), AlumE\_70 (CZ1), Angelique\_66 (CY1), Annalisa\_68 (CZ4), BatStarr\_71 (CZ1), BaxterFox\_74 (CZ3), Bernal13\_48 (T), Bipper\_84 (Y), Bjaner7\_63 (CZ2), BlueCrab\_76 (F1), BodEinwohner17\_79 (F1), Boomer\_75 (F1), BoyNamedSue\_70

(CZ1), BuzzLyseyear\_80 (F1), CaptainTrips\_72 (F1), Che8\_78 (F1), Che9d\_85 (F2), Clap\_66 (CZ2), Confidence\_70 (CY1), Cornucopia\_75 (F1), Cracklewink\_84 (Y), Crumble\_70 (F1), Cynthia\_66 (CZ2), DaWorst\_74 (F1), Denise\_63 (CZ5), Dolores\_68 (CZ4), Donkeykong\_77 (F1), DosHalletts\_76 (F1), Doug\_74 (F1), EMSquaredA\_71 (CY1), Ebert\_69 (CZ2), EdnaMode\_65 (CZ2), Eish\_77 (F1), Emma\_76 (F1), Eradicator\_64 (F1), Estave1\_80 (F1), Eviarto\_72 (CZ1), Faith5x5\_61 (CZ6), Fancypants\_78 (F1), Floral\_72 (CY1), Frankie\_83 (F1), FreddyB\_82 (F1), Galactic\_73 (F1), GemG\_66 (CZ2), Gizermo\_66 (CZ2), Hades\_74 (F1), Haley23\_66 (CZ2), Hegedechwinu\_75 (F1), Herod\_72 (CZ1), Hugley\_70 (CZ1), Ibrahim\_48 (T), JCole\_63 (CZ2), Job42\_74 (F1), Juniper1\_72 (F1), Karhdo\_72 (F1), Kersh\_75 (F1), Lamberg\_62 (CZ2), LilMoolah\_72 (F1), LonelyBoi\_69 (CY), LunaBlu\_76 (F1), LunaStella\_73 (F4), Mahavrat\_70 (F1), Malisha\_88 (DN), Manasvini\_70 (CZ1), Mantra\_71 (F1), Marteena\_70 (CY1), Mcklovin\_68 (CZ4), MilleniumForce\_74 (F1), Mocha12\_66 (CZ2), Moonbeam\_74 (F1), MulchSalad\_83 (F), Mutaforma13\_79 (F1), Nairb\_47 (T), Neobush\_70 (CZ1), Nettuno\_63 (CZ2), Nivrat\_70 (F1), Nymphadora\_72 (CZ1), Oksu\_78 (F1), Ovechkin\_77 (F1), OwlsT2W\_76 (F1), PMC\_68 (F1), Pacc40\_67 (F1), PantheRoc\_74 (CZ3), Pepperoni\_59 (CZ), Persistence\_74 (AY), Phasih\_70 (F1), PhriskyACE\_65 (CZ4), Pickett\_63 (CZ2), Plumbus\_75 (F1), Pollux\_74 (CY1), Pollywog\_74 (F1), Posh\_72 (CY), Radiance\_72 (F1), Ramsey\_77 (F1), Rialto\_81 (F1), Rockne\_72 (F1), RockyHorror\_74 (F1), RonRayGun\_48 (T), Royals2015\_80 (F1), Sabbb\_75 (F1), Sarma624\_72 (F1), Savage\_66 (CZ2), Sekhmet\_67 (CZ4), ShiLan\_75 (F1), Sidious\_69 (CZ7), SimranZ1\_74 (F1), Sparkdehlily\_78 (F1), Spartacus\_78 (F1), Spikelee\_80 (F1), Sproutie\_66 (CZ2), Starcevich\_74 (F1), Suerte\_62 (CZ4), Suscepit\_68 (CZ1), TChen\_75 (F4), TDanisky\_78 (F1), Tayonia\_68 (CZ1), TimTam\_72 (CZ1), Trumpet\_68 (CZ1), TuertoX\_66 (CZ2), VRedHorse\_73 (F1), Velveteen\_68 (F1), Whiteclaw\_66 (CZ2), Whitty\_47 (T), WinkNick\_68 (CZ4), Wrigley\_74 (CY), Yeet412\_64 (CZ2), Zameen\_68 (CZ1), ZenTime222\_47 (T),

### Summary by clusters:

There are 19 clusters represented in this pham: DN, F1, CY1, CZ7, F4, CZ, CZ2, CZ3, CZ1, CZ6, F2, CZ4, N, Y, CY, T, AY, F, CZ5,

Info for manual annotations of cluster AY:

- Start number 47 was manually annotated 2 times for cluster AY.

Info for manual annotations of cluster CY:

- Start number 39 was manually annotated 1 time for cluster CY.
- Start number 46 was manually annotated 3 times for cluster CY.
- Start number 47 was manually annotated 3 times for cluster CY.

Info for manual annotations of cluster CY1:

- Start number 46 was manually annotated 3 times for cluster CY1.
- Start number 47 was manually annotated 6 times for cluster CY1.

Info for manual annotations of cluster CZ1:

- Start number 31 was manually annotated 7 times for cluster CZ1.
- Start number 47 was manually annotated 14 times for cluster CZ1.

Info for manual annotations of cluster CZ2:

- Start number 46 was manually annotated 5 times for cluster CZ2.

- Start number 47 was manually annotated 17 times for cluster CZ2.

Info for manual annotations of cluster CZ3:

- Start number 47 was manually annotated 2 times for cluster CZ3.

Info for manual annotations of cluster CZ4:

- Start number 31 was manually annotated 1 time for cluster CZ4.
- Start number 47 was manually annotated 5 times for cluster CZ4.

Info for manual annotations of cluster CZ5:

- Start number 47 was manually annotated 1 time for cluster CZ5.

Info for manual annotations of cluster CZ6:

- Start number 47 was manually annotated 1 time for cluster CZ6.

Info for manual annotations of cluster CZ7:

- Start number 47 was manually annotated 1 time for cluster CZ7.

Info for manual annotations of cluster DN:

- Start number 47 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster F1:

- Start number 45 was manually annotated 1 time for cluster F1.
- Start number 47 was manually annotated 58 times for cluster F1.

Info for manual annotations of cluster F2:

- Start number 47 was manually annotated 1 time for cluster F2.

Info for manual annotations of cluster F4:

- Start number 47 was manually annotated 2 times for cluster F4.

Info for manual annotations of cluster N:

- Start number 43 was manually annotated 1 time for cluster N.
- Start number 44 was manually annotated 10 times for cluster N.
- Start number 45 was manually annotated 27 times for cluster N.

Info for manual annotations of cluster T:

- Start number 46 was manually annotated 1 time for cluster T.
- Start number 47 was manually annotated 6 times for cluster T.

Info for manual annotations of cluster Y:

- Start number 47 was manually annotated 2 times for cluster Y.

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

Gene: AbbyDaisy\_83 Start: 47605, Stop: 48462, Start Num: 47

Candidate Starts for AbbyDaisy\_83:

(Start: 47 @47605 has 122 MA's), (54, 47692), (57, 47725), (64, 47770), (68, 47803), (75, 47842), (78, 47872), (102, 48061), (120, 48355), (121, 48367), (123, 48391),



Gene: Aggie\_60 Start: 40157, Stop: 41050, Start Num: 45

Candidate Starts for Aggie\_60:

(18, 39917), (33, 40055), (Start: 45 @40157 has 28 MA's), (50, 40226), (67, 40346), (76, 40400), (123, 40967),

Gene: Agueybana\_73 Start: 47501, Stop: 48382, Start Num: 47

Candidate Starts for Agueybana\_73:

(Start: 31 @47375 has 8 MA's), (35, 47414), (38, 47438), (Start: 39 @47453 has 1 MA's), (41, 47462), (Start: 47 @47501 has 122 MA's), (48, 47555), (61, 47636), (68, 47699), (75, 47738), (80, 47777), (84, 47828), (85, 47849), (110, 48134), (118, 48236),

Gene: AlumE\_70 Start: 47357, Stop: 48307, Start Num: 47

Candidate Starts for AlumE\_70:

(10, 47069), (Start: 31 @47231 has 8 MA's), (38, 47294), (Start: 39 @47309 has 1 MA's), (41, 47318), (Start: 47 @47357 has 122 MA's), (71, 47573), (79, 47624), (80, 47630), (85, 47702), (98, 47819), (115, 48134), (118, 48161), (119, 48188),

Gene: Andies\_58 Start: 39602, Stop: 40495, Start Num: 45

Candidate Starts for Andies\_58:

(18, 39362), (33, 39500), (Start: 45 @39602 has 28 MA's), (50, 39671), (67, 39791), (76, 39845), (123, 40412),

Gene: Angelique\_66 Start: 45818, Stop: 46699, Start Num: 47

Candidate Starts for Angelique\_66:

(Start: 31 @45692 has 8 MA's), (34, 45725), (36, 45734), (38, 45755), (Start: 39 @45770 has 1 MA's), (41, 45779), (Start: 47 @45818 has 122 MA's), (48, 45872), (68, 46016), (75, 46055), (80, 46094), (84, 46145), (85, 46166),

Gene: Annalisa\_68 Start: 42612, Stop: 43493, Start Num: 47

Candidate Starts for Annalisa\_68:

(11, 42333), (25, 42462), (Start: 31 @42486 has 8 MA's), (38, 42549), (Start: 39 @42564 has 1 MA's), (41, 42573), (Start: 47 @42612 has 122 MA's), (48, 42666), (63, 42762), (68, 42810), (75, 42849), (82, 42915), (85, 42960), (118, 43347),

Gene: Antonio\_67 Start: 44748, Stop: 45824, Start Num: 31

Candidate Starts for Antonio\_67:

(Start: 31 @44748 has 8 MA's), (34, 44781), (38, 44811), (Start: 39 @44826 has 1 MA's), (41, 44835), (Start: 47 @44874 has 122 MA's), (60, 45006), (71, 45090), (79, 45141), (80, 45147), (85, 45219), (115, 45651), (118, 45678), (119, 45705), (128, 45795),

Gene: Attis\_65 Start: 43651, Stop: 44541, Start Num: 46

Candidate Starts for Attis\_65:

(Start: 46 @43651 has 12 MA's), (54, 43738), (56, 43765), (62, 43789), (66, 43837), (68, 43846), (96, 44050),

Gene: BabeRuth\_61 Start: 38268, Stop: 39146, Start Num: 44

Candidate Starts for BabeRuth\_61:

(Start: 43 @38262 has 1 MA's), (Start: 44 @38268 has 10 MA's), (54, 38358), (59, 38400), (69, 38469), (72, 38481), (95, 38631), (97, 38658), (104, 38793), (123, 39063),

Gene: BatStarr\_71 Start: 47905, Stop: 48786, Start Num: 47

Candidate Starts for BatStarr\_71:

(Start: 31 @47779 has 8 MA's), (36, 47821), (38, 47842), (Start: 39 @47857 has 1 MA's), (41, 47866), (Start: 47 @47905 has 122 MA's), (48, 47959), (61, 48040), (68, 48103), (75, 48142), (80, 48181), (84, 48232), (85, 48253), (110, 48538), (118, 48640),

Gene: BaxterFox\_74 Start: 48420, Stop: 49370, Start Num: 47

Candidate Starts for BaxterFox\_74:

(Start: 31 @48294 has 8 MA's), (38, 48357), (Start: 39 @48372 has 1 MA's), (Start: 47 @48420 has 122 MA's), (52, 48498), (60, 48552), (71, 48636), (79, 48687), (80, 48693), (85, 48765), (115, 49197), (118, 49224), (119, 49251), (128, 49341),

Gene: BeeGee\_74 Start: 46893, Stop: 47891, Start Num: 39

Candidate Starts for BeeGee\_74:

(Start: 31 @46815 has 8 MA's), (38, 46878), (Start: 39 @46893 has 1 MA's), (41, 46902), (Start: 47 @46941 has 122 MA's), (79, 47208), (80, 47214), (85, 47286), (98, 47403), (115, 47718), (118, 47745), (128, 47862),

Gene: Bernal13\_48 Start: 35076, Stop: 35957, Start Num: 47

Candidate Starts for Bernal13\_48:

(33, 34971), (42, 35037), (Start: 47 @35076 has 122 MA's), (55, 35175), (69, 35274), (72, 35286), (107, 35658), (110, 35703), (126, 35889),

Gene: Bialota\_66 Start: 46422, Stop: 47498, Start Num: 31

Candidate Starts for Bialota\_66:

(10, 46260), (Start: 31 @46422 has 8 MA's), (38, 46485), (Start: 39 @46500 has 1 MA's), (41, 46509), (Start: 47 @46548 has 122 MA's), (71, 46764), (79, 46815), (80, 46821), (85, 46893), (98, 47010), (115, 47325), (118, 47352), (119, 47379),

Gene: Bipper\_84 Start: 54628, Stop: 55608, Start Num: 47

Candidate Starts for Bipper\_84:

(Start: 47 @54628 has 122 MA's), (51, 54706), (55, 54730), (56, 54745), (58, 54760), (70, 54841), (101, 55156), (105, 55243), (109, 55342), (111, 55357), (113, 55411), (117, 55432), (122, 55513),

Gene: Bjaner7\_63 Start: 41285, Stop: 42166, Start Num: 47

Candidate Starts for Bjaner7\_63:

(Start: 31 @41159 has 8 MA's), (36, 41201), (38, 41222), (Start: 39 @41237 has 1 MA's), (41, 41246), (Start: 47 @41285 has 122 MA's), (48, 41339), (61, 41420), (68, 41483), (75, 41522), (80, 41561), (84, 41612), (85, 41633), (110, 41918), (118, 42020),

Gene: BlueCrab\_76 Start: 47486, Stop: 48391, Start Num: 47

Candidate Starts for BlueCrab\_76:

(24, 47318), (40, 47435), (Start: 47 @47486 has 122 MA's), (54, 47573), (75, 47723), (83, 47801), (89, 47849), (90, 47852), (92, 47864), (94, 47873), (114, 48221),

Gene: BodEinwohner17\_79 Start: 48575, Stop: 49480, Start Num: 47

Candidate Starts for BodEinwohner17\_79:

(Start: 47 @48575 has 122 MA's), (54, 48662), (75, 48812), (83, 48890), (89, 48938), (92, 48953), (94, 48962), (114, 49310),

Gene: Boomer\_75 Start: 46670, Stop: 47575, Start Num: 47

Candidate Starts for Boomer\_75:

(24, 46502), (40, 46619), (Start: 47 @46670 has 122 MA's), (54, 46757), (75, 46907), (83, 46985), (89, 47033), (92, 47048), (108, 47333),

Gene: Bosection6\_63 Start: 39206, Stop: 40099, Start Num: 45

Candidate Starts for Bosection6\_63:

(18, 38966), (33, 39104), (Start: 45 @39206 has 28 MA's), (50, 39275), (67, 39395), (76, 39449), (123, 40016),

Gene: Bosnia\_71 Start: 49075, Stop: 50151, Start Num: 31

Candidate Starts for Bosnia\_71:

(4, 48838), (23, 49048), (Start: 31 @49075 has 8 MA's), (34, 49108), (38, 49138), (Start: 39 @49153 has 1 MA's), (Start: 47 @49201 has 122 MA's), (52, 49279), (60, 49333), (71, 49417), (79, 49468), (80, 49474), (85, 49546), (98, 49663), (115, 49978), (118, 50005),

Gene: BoyNamedSue\_70 Start: 47357, Stop: 48307, Start Num: 47

Candidate Starts for BoyNamedSue\_70:

(10, 47069), (Start: 31 @47231 has 8 MA's), (38, 47294), (Start: 39 @47309 has 1 MA's), (41, 47318), (Start: 47 @47357 has 122 MA's), (71, 47573), (79, 47624), (80, 47630), (85, 47702), (98, 47819), (115, 48134), (118, 48161), (119, 48188),

Gene: Bradissa\_68 Start: 47335, Stop: 48228, Start Num: 46

Candidate Starts for Bradissa\_68:

(Start: 46 @47335 has 12 MA's), (54, 47422), (56, 47449), (62, 47473), (66, 47521), (68, 47530), (96, 47734), (115, 48055), (118, 48082), (128, 48199),

Gene: Butters\_60 Start: 37566, Stop: 38435, Start Num: 44

Candidate Starts for Butters\_60:

(14, 37308), (20, 37386), (Start: 43 @37560 has 1 MA's), (Start: 44 @37566 has 10 MA's), (59, 37698), (69, 37767), (72, 37779), (104, 38082), (123, 38352),

Gene: BuzzLyseyear\_80 Start: 48620, Stop: 49525, Start Num: 47

Candidate Starts for BuzzLyseyear\_80:

(Start: 31 @48485 has 8 MA's), (40, 48569), (Start: 47 @48620 has 122 MA's), (54, 48707), (75, 48857), (83, 48935), (89, 48983), (92, 48998), (94, 49007), (114, 49355),

Gene: CaptainTrips\_72 Start: 45876, Stop: 46781, Start Num: 47

Candidate Starts for CaptainTrips\_72:

(Start: 47 @45876 has 122 MA's), (54, 45963), (75, 46113), (83, 46191), (89, 46239), (92, 46254), (94, 46263), (108, 46539),

Gene: Carcharodon\_64 Start: 39504, Stop: 40397, Start Num: 45

Candidate Starts for Carcharodon\_64:

(18, 39264), (33, 39402), (Start: 45 @39504 has 28 MA's), (50, 39573), (67, 39693), (76, 39747), (123, 40314),

Gene: Cashline\_69 Start: 48024, Stop: 48923, Start Num: 46

Candidate Starts for Cashline\_69:

(21, 47856), (Start: 46 @48024 has 12 MA's), (49, 48090), (54, 48114), (62, 48165), (73, 48252), (75, 48267), (85, 48378), (103, 48552), (124, 48858),

Gene: Charlie\_61 Start: 38830, Stop: 39723, Start Num: 45

Candidate Starts for Charlie\_61:

(18, 38590), (33, 38728), (Start: 45 @38830 has 28 MA's), (50, 38899), (67, 39019), (76, 39073), (123, 39640),

Gene: Che8\_78 Start: 46685, Stop: 47590, Start Num: 47

Candidate Starts for Che8\_78:

(Start: 47 @46685 has 122 MA's), (54, 46772), (75, 46922), (83, 47000), (89, 47048), (92, 47063), (94, 47072), (114, 47420),

Gene: Che9d\_85 Start: 46409, Stop: 47314, Start Num: 47

Candidate Starts for Che9d\_85:

(Start: 47 @46409 has 122 MA's), (54, 46496), (75, 46646), (83, 46724), (89, 46772), (94, 46796), (114, 47144),

Gene: Chewbacca\_67 Start: 39399, Stop: 40292, Start Num: 45

Candidate Starts for Chewbacca\_67:

(18, 39159), (33, 39297), (Start: 45 @39399 has 28 MA's), (50, 39468), (67, 39588), (76, 39642), (123, 40209),

Gene: Clap\_66 Start: 41464, Stop: 42345, Start Num: 47

Candidate Starts for Clap\_66:

(Start: 31 @41338 has 8 MA's), (36, 41380), (38, 41401), (Start: 39 @41416 has 1 MA's), (41, 41425), (Start: 47 @41464 has 122 MA's), (48, 41518), (61, 41599), (68, 41662), (75, 41701), (80, 41740), (84, 41791), (85, 41812), (110, 42097), (118, 42199),

Gene: Confidence\_70 Start: 45341, Stop: 46291, Start Num: 47

Candidate Starts for Confidence\_70:

(9, 45041), (10, 45053), (29, 45209), (30, 45212), (Start: 31 @45215 has 8 MA's), (38, 45278), (Start: 39 @45293 has 1 MA's), (41, 45302), (Start: 47 @45341 has 122 MA's), (71, 45557), (79, 45608), (80, 45614), (98, 45803), (115, 46118), (118, 46145), (119, 46172),

Gene: Cornucopia\_75 Start: 45300, Stop: 46205, Start Num: 47

Candidate Starts for Cornucopia\_75:

(Start: 47 @45300 has 122 MA's), (54, 45387), (75, 45537), (83, 45615), (89, 45663), (92, 45678), (94, 45687), (114, 46035),

Gene: Cracklewink\_84 Start: 53668, Stop: 54648, Start Num: 47

Candidate Starts for Cracklewink\_84:

(Start: 47 @53668 has 122 MA's), (51, 53746), (55, 53770), (56, 53785), (58, 53800), (70, 53881), (101, 54196), (105, 54283), (109, 54382), (111, 54397), (113, 54451), (117, 54472), (122, 54553),

Gene: Crumble\_70 Start: 42909, Stop: 43814, Start Num: 47

Candidate Starts for Crumble\_70:

(Start: 47 @42909 has 122 MA's), (54, 42996), (75, 43146), (83, 43224), (92, 43287), (94, 43296), (114, 43644),

Gene: Cynthia\_66 Start: 41462, Stop: 42343, Start Num: 47

Candidate Starts for Cynthia\_66:

(Start: 31 @41336 has 8 MA's), (36, 41378), (38, 41399), (Start: 39 @41414 has 1 MA's), (41, 41423), (Start: 47 @41462 has 122 MA's), (48, 41516), (61, 41597), (68, 41660), (75, 41699), (80, 41738), (84, 41789), (85, 41810), (110, 42095), (118, 42197),

Gene: DaWorst\_74 Start: 45649, Stop: 46554, Start Num: 47

Candidate Starts for DaWorst\_74:

(Start: 47 @45649 has 122 MA's), (54, 45736), (75, 45886), (83, 45964), (89, 46012), (94, 46036),

Gene: Denise\_63 Start: 38261, Stop: 39133, Start Num: 47

Candidate Starts for Denise\_63:

(1, 37868), (3, 37895), (Start: 47 @38261 has 122 MA's), (63, 38411), (64, 38426), (68, 38459), (74, 38495), (75, 38498), (110, 38885),

Gene: Dolores\_68 Start: 42147, Stop: 43028, Start Num: 47

Candidate Starts for Dolores\_68:

(Start: 31 @42021 has 8 MA's), (36, 42063), (38, 42084), (Start: 39 @42099 has 1 MA's), (41, 42108), (Start: 47 @42147 has 122 MA's), (48, 42201), (68, 42345), (75, 42384), (82, 42450), (85, 42495), (110, 42780),

Gene: Donkeykong\_77 Start: 47602, Stop: 48507, Start Num: 47

Candidate Starts for Donkeykong\_77:

(Start: 47 @47602 has 122 MA's), (54, 47689), (75, 47839), (83, 47917), (89, 47965), (92, 47980), (94, 47989), (114, 48337),

Gene: DosHalletts\_76 Start: 47904, Stop: 48809, Start Num: 47

Candidate Starts for DosHalletts\_76:

(Start: 47 @47904 has 122 MA's), (54, 47991), (75, 48141), (83, 48219), (89, 48267), (92, 48282), (108, 48567),

Gene: Doug\_74 Start: 47529, Stop: 48434, Start Num: 47

Candidate Starts for Doug\_74:

(Start: 47 @47529 has 122 MA's), (54, 47616), (75, 47766), (83, 47844), (89, 47892), (92, 47907), (94, 47916), (114, 48264),

Gene: Duplicity\_62 Start: 38761, Stop: 39654, Start Num: 45

Candidate Starts for Duplicity\_62:

(18, 38521), (26, 38617), (33, 38659), (Start: 45 @38761 has 28 MA's), (50, 38830), (67, 38950), (76, 39004), (123, 39571),

Gene: EMSquaredA\_71 Start: 46386, Stop: 47267, Start Num: 47

Candidate Starts for EMSquaredA\_71:

(13, 46119), (Start: 31 @46260 has 8 MA's), (36, 46302), (38, 46323), (Start: 39 @46338 has 1 MA's), (41, 46347), (Start: 47 @46386 has 122 MA's), (48, 46440), (61, 46521), (68, 46584), (75, 46623), (80, 46662), (84, 46713), (85, 46734), (103, 46896), (124, 47202),

Gene: Ebert\_69 Start: 41896, Stop: 42777, Start Num: 47

Candidate Starts for Ebert\_69:

(Start: 31 @41770 has 8 MA's), (36, 41812), (38, 41833), (Start: 39 @41848 has 1 MA's), (41, 41857), (Start: 47 @41896 has 122 MA's), (48, 41950), (61, 42031), (68, 42094), (75, 42133), (80, 42172), (84, 42223), (85, 42244), (110, 42529), (118, 42631),

Gene: EdnaMode\_65 Start: 41503, Stop: 42453, Start Num: 47

Candidate Starts for EdnaMode\_65:

(Start: 31 @41377 has 8 MA's), (34, 41410), (38, 41440), (Start: 39 @41455 has 1 MA's), (Start: 47 @41503 has 122 MA's), (60, 41635), (71, 41719), (80, 41776), (98, 41965), (115, 42280), (118, 42307), (119, 42334), (128, 42424),

Gene: Eish\_77 Start: 47282, Stop: 48187, Start Num: 47

Candidate Starts for Eish\_77:

(Start: 31 @47147 has 8 MA's), (40, 47231), (Start: 47 @47282 has 122 MA's), (54, 47369), (75, 47519), (83, 47597), (89, 47645), (92, 47660), (94, 47669), (114, 48017),

Gene: Emma\_76 Start: 45662, Stop: 46567, Start Num: 47

Candidate Starts for Emma\_76:

(Start: 47 @45662 has 122 MA's), (54, 45749), (75, 45899), (83, 45977), (89, 46025), (92, 46040), (94, 46049), (114, 46397),

Gene: EnalisNailo\_67 Start: 46869, Stop: 47759, Start Num: 46

Candidate Starts for EnalisNailo\_67:

(Start: 46 @46869 has 12 MA's), (54, 46956), (56, 46983), (62, 47007), (66, 47055), (68, 47064), (96, 47268), (110, 47511), (118, 47613),

Gene: Eradicator\_64 Start: 44086, Stop: 44997, Start Num: 47

Candidate Starts for Eradicator\_64:

(24, 43918), (40, 44035), (Start: 47 @44086 has 122 MA's), (54, 44173), (75, 44323), (83, 44401), (89, 44449), (92, 44464), (94, 44473), (108, 44749), (125, 44938),

Gene: Estave1\_80 Start: 49599, Stop: 50504, Start Num: 47

Candidate Starts for Estave1\_80:

(24, 49431), (40, 49548), (Start: 47 @49599 has 122 MA's), (54, 49686), (75, 49836), (83, 49914), (89, 49962), (94, 49986), (114, 50334),

Gene: Eudoria\_68 Start: 44748, Stop: 45824, Start Num: 31

Candidate Starts for Eudoria\_68:

(Start: 31 @44748 has 8 MA's), (34, 44781), (38, 44811), (Start: 39 @44826 has 1 MA's), (41, 44835), (Start: 47 @44874 has 122 MA's), (60, 45006), (71, 45090), (79, 45141), (80, 45147), (85, 45219), (115, 45651), (118, 45678), (119, 45705), (128, 45795),

Gene: Eviarto\_72 Start: 47880, Stop: 48761, Start Num: 47

Candidate Starts for Eviarto\_72:

(Start: 31 @47754 has 8 MA's), (36, 47796), (38, 47817), (Start: 39 @47832 has 1 MA's), (41, 47841), (Start: 47 @47880 has 122 MA's), (48, 47934), (61, 48015), (68, 48078), (75, 48117), (80, 48156), (84, 48207), (85, 48228), (110, 48513), (118, 48615),

Gene: Faith5x5\_61 Start: 36698, Stop: 37582, Start Num: 47

Candidate Starts for Faith5x5\_61:

(Start: 47 @36698 has 122 MA's), (48, 36752), (68, 36896), (75, 36935), (80, 36974), (85, 37046), (110, 37334),

Gene: Fancypants\_78 Start: 47897, Stop: 48802, Start Num: 47

Candidate Starts for Fancypants\_78:

(Start: 47 @47897 has 122 MA's), (54, 47984), (75, 48134), (83, 48212), (89, 48260), (92, 48275), (94, 48284), (114, 48632),

Gene: Floral\_72 Start: 48274, Stop: 49224, Start Num: 47

Candidate Starts for Floral\_72:

(8, 47968), (10, 47986), (23, 48121), (Start: 31 @48148 has 8 MA's), (34, 48181), (36, 48190), (38, 48211), (Start: 39 @48226 has 1 MA's), (41, 48235), (Start: 47 @48274 has 122 MA's), (60, 48406), (71, 48490), (80, 48547), (85, 48619), (115, 49051), (118, 49078), (119, 49105), (128, 49195),

Gene: Frankie\_83 Start: 48012, Stop: 48923, Start Num: 47

Candidate Starts for Frankie\_83:

(Start: 47 @48012 has 122 MA's), (54, 48099), (75, 48249), (89, 48375), (92, 48390), (108, 48675), (125, 48864),

Gene: FreddyB\_82 Start: 47645, Stop: 48550, Start Num: 47

Candidate Starts for FreddyB\_82:

(Start: 47 @47645 has 122 MA's), (54, 47732), (75, 47882), (83, 47960), (89, 48008), (92, 48023), (94, 48032), (114, 48380),

Gene: Fulbright\_62 Start: 38198, Stop: 39091, Start Num: 45

Candidate Starts for Fulbright\_62:

(18, 37958), (33, 38096), (Start: 45 @38198 has 28 MA's), (50, 38267), (67, 38387), (76, 38441), (123, 39008),

Gene: Galactic\_73 Start: 45921, Stop: 46826, Start Num: 47

Candidate Starts for Galactic\_73:

(Start: 47 @45921 has 122 MA's), (54, 46008), (75, 46158), (83, 46236), (89, 46284), (92, 46299), (94, 46308), (114, 46656),

Gene: GemG\_66 Start: 41468, Stop: 42349, Start Num: 47

Candidate Starts for GemG\_66:

(Start: 31 @41342 has 8 MA's), (36, 41384), (38, 41405), (Start: 39 @41420 has 1 MA's), (41, 41429), (Start: 47 @41468 has 122 MA's), (48, 41522), (61, 41603), (68, 41666), (75, 41705), (80, 41744), (84, 41795), (85, 41816), (110, 42101), (118, 42203),

Gene: Gex\_65 Start: 39520, Stop: 40413, Start Num: 45

Candidate Starts for Gex\_65:

(18, 39280), (33, 39418), (Start: 45 @39520 has 28 MA's), (50, 39589), (67, 39709), (76, 39763), (123, 40330),

Gene: Gizermo\_66 Start: 41464, Stop: 42345, Start Num: 47

Candidate Starts for Gizermo\_66:

(Start: 31 @41338 has 8 MA's), (36, 41380), (38, 41401), (Start: 39 @41416 has 1 MA's), (41, 41425), (Start: 47 @41464 has 122 MA's), (48, 41518), (61, 41599), (68, 41662), (75, 41701), (80, 41740), (84, 41791), (85, 41812), (110, 42097), (118, 42199),

Gene: Hades\_74 Start: 44660, Stop: 45565, Start Num: 47

Candidate Starts for Hades\_74:

(Start: 47 @44660 has 122 MA's), (54, 44747), (75, 44897), (83, 44975), (89, 45023), (92, 45038), (94, 45047), (108, 45323),

Gene: Haley23\_66 Start: 41464, Stop: 42345, Start Num: 47

Candidate Starts for Haley23\_66:

(Start: 31 @41338 has 8 MA's), (36, 41380), (38, 41401), (Start: 39 @41416 has 1 MA's), (41, 41425), (Start: 47 @41464 has 122 MA's), (48, 41518), (61, 41599), (68, 41662), (75, 41701), (80, 41740), (84, 41791), (85, 41812), (110, 42097), (118, 42199),

Gene: Hanako\_62 Start: 38268, Stop: 39146, Start Num: 44

Candidate Starts for Hanako\_62:

(Start: 43 @38262 has 1 MA's), (Start: 44 @38268 has 10 MA's), (54, 38358), (59, 38400), (69, 38469), (72, 38481), (95, 38631), (97, 38658), (104, 38793), (123, 39063),

Gene: Hegedechwinu\_75 Start: 45050, Stop: 45955, Start Num: 47

Candidate Starts for Hegedechwinu\_75:

(Start: 47 @45050 has 122 MA's), (54, 45137), (75, 45287), (83, 45365), (89, 45413), (92, 45428), (108, 45713),

Gene: Herod\_72 Start: 48299, Stop: 49180, Start Num: 47

Candidate Starts for Herod\_72:

(Start: 31 @48173 has 8 MA's), (36, 48215), (38, 48236), (Start: 39 @48251 has 1 MA's), (41, 48260), (Start: 47 @48299 has 122 MA's), (48, 48353), (61, 48434), (68, 48497), (75, 48536), (80, 48575), (84, 48626), (85, 48647), (110, 48932), (118, 49034),

Gene: Hugley\_70 Start: 48279, Stop: 49160, Start Num: 47

Candidate Starts for Hugley\_70:

(Start: 31 @48153 has 8 MA's), (36, 48195), (38, 48216), (Start: 39 @48231 has 1 MA's), (41, 48240), (Start: 47 @48279 has 122 MA's), (48, 48333), (61, 48414), (68, 48477), (75, 48516), (80, 48555), (84, 48606), (85, 48627), (110, 48912), (118, 49014),

Gene: Ibrahim\_48 Start: 35522, Stop: 36403, Start Num: 47

Candidate Starts for Ibrahim\_48:

(33, 35417), (42, 35483), (Start: 47 @35522 has 122 MA's), (55, 35621), (69, 35720), (72, 35732), (107, 36104), (110, 36149), (126, 36335),

Gene: JCole\_63 Start: 40143, Stop: 41015, Start Num: 47

Candidate Starts for JCole\_63:

(22, 39945), (Start: 31 @40011 has 8 MA's), (38, 40074), (Start: 39 @40089 has 1 MA's), (41, 40098), (Start: 47 @40143 has 122 MA's), (62, 40281), (64, 40308), (81, 40422), (99, 40560), (100, 40584),

Gene: Jablanski\_74 Start: 49403, Stop: 50302, Start Num: 46

Candidate Starts for Jablanski\_74:

(17, 49172), (27, 49268), (28, 49271), (32, 49301), (Start: 46 @49403 has 12 MA's), (49, 49469), (54, 49493), (62, 49544), (73, 49631), (75, 49646), (85, 49757), (126, 50246),

Gene: Jamie19\_56 Start: 36936, Stop: 37826, Start Num: 45

Candidate Starts for Jamie19\_56:

(41, 36894), (Start: 45 @36936 has 28 MA's), (50, 37005), (54, 37026), (67, 37125), (76, 37179), (87, 37284), (104, 37473), (123, 37743),

Gene: Job42\_74 Start: 49242, Stop: 50147, Start Num: 47

Candidate Starts for Job42\_74:

(24, 49074), (40, 49191), (Start: 47 @49242 has 122 MA's), (54, 49329), (75, 49479), (83, 49557), (89, 49605), (92, 49620), (94, 49629), (114, 49977),

Gene: Juniper1\_72 Start: 45836, Stop: 46741, Start Num: 47

Candidate Starts for Juniper1\_72:

(Start: 47 @45836 has 122 MA's), (54, 45923), (75, 46073), (83, 46151), (89, 46199), (92, 46214), (94, 46223), (114, 46571),

Gene: Karhdo\_72 Start: 44899, Stop: 45804, Start Num: 47

Candidate Starts for Karhdo\_72:

(Start: 47 @44899 has 122 MA's), (54, 44986), (75, 45136), (83, 45214), (89, 45262), (92, 45277), (94, 45286), (114, 45634),

Gene: Kersh\_75 Start: 48085, Stop: 48990, Start Num: 47

Candidate Starts for Kersh\_75:

(Start: 47 @48085 has 122 MA's), (54, 48172), (75, 48322), (83, 48400), (89, 48448), (92, 48463), (94, 48472), (114, 48820),

Gene: Kevin1\_63 Start: 38051, Stop: 38941, Start Num: 45

Candidate Starts for Kevin1\_63:



(41, 38009), (Start: 45 @38051 has 28 MA's), (50, 38120), (54, 38141), (67, 38240), (76, 38294), (87, 38399), (104, 38588), (123, 38858),

Gene: Kita\_69 Start: 44757, Stop: 45833, Start Num: 31

Candidate Starts for Kita\_69:

(Start: 31 @44757 has 8 MA's), (34, 44790), (38, 44820), (Start: 39 @44835 has 1 MA's), (41, 44844), (Start: 47 @44883 has 122 MA's), (60, 45015), (71, 45099), (79, 45150), (80, 45156), (85, 45228), (115, 45660), (118, 45687), (119, 45714), (128, 45804),

Gene: Lamberg\_62 Start: 39973, Stop: 40854, Start Num: 47

Candidate Starts for Lamberg\_62:

(Start: 31 @39847 has 8 MA's), (36, 39889), (38, 39910), (Start: 39 @39925 has 1 MA's), (41, 39934), (Start: 47 @39973 has 122 MA's), (48, 40027), (61, 40108), (68, 40171), (75, 40210), (80, 40249), (84, 40300), (85, 40321), (110, 40606), (118, 40708),

Gene: LilMoolah\_72 Start: 46239, Stop: 47144, Start Num: 47

Candidate Starts for LilMoolah\_72:

(Start: 47 @46239 has 122 MA's), (54, 46326), (75, 46476), (83, 46554), (89, 46602), (92, 46617), (94, 46626), (114, 46974),

Gene: Lilas\_68 Start: 48407, Stop: 49297, Start Num: 46

Candidate Starts for Lilas\_68:

(Start: 46 @48407 has 12 MA's), (54, 48494), (56, 48521), (62, 48545), (66, 48593), (68, 48602), (96, 48806), (110, 49049), (118, 49151),

Gene: LonelyBoi\_69 Start: 48440, Stop: 49390, Start Num: 47

Candidate Starts for LonelyBoi\_69:

(Start: 31 @48314 has 8 MA's), (38, 48377), (Start: 39 @48392 has 1 MA's), (41, 48401), (Start: 47 @48440 has 122 MA's), (79, 48707), (80, 48713), (85, 48785), (115, 49217), (118, 49244), (128, 49361),

Gene: LordFarquaad\_68 Start: 43632, Stop: 44522, Start Num: 46

Candidate Starts for LordFarquaad\_68:

(Start: 46 @43632 has 12 MA's), (54, 43719), (56, 43746), (62, 43770), (66, 43818), (68, 43827), (96, 44031),

Gene: LunaBlu\_76 Start: 46579, Stop: 47484, Start Num: 47

Candidate Starts for LunaBlu\_76:

(Start: 47 @46579 has 122 MA's), (54, 46666), (75, 46816), (83, 46894), (89, 46942), (92, 46957), (94, 46966), (114, 47314),

Gene: LunaStella\_73 Start: 46014, Stop: 46916, Start Num: 47

Candidate Starts for LunaStella\_73:

(Start: 47 @46014 has 122 MA's), (54, 46101), (75, 46251), (83, 46329), (89, 46377), (92, 46392), (108, 46677),

Gene: Magsby\_63 Start: 39466, Stop: 40359, Start Num: 45

Candidate Starts for Magsby\_63:

(18, 39226), (33, 39364), (Start: 45 @39466 has 28 MA's), (50, 39535), (67, 39655), (76, 39709), (123, 40276),

Gene: Mahavrat\_70 Start: 44044, Stop: 44949, Start Num: 47

Candidate Starts for Mahavrat\_70:

(Start: 47 @44044 has 122 MA's), (54, 44131), (75, 44281), (83, 44359), (89, 44407), (92, 44422), (94, 44431), (114, 44779),

Gene: Malisha\_88 Start: 51421, Stop: 52305, Start Num: 47

Candidate Starts for Malisha\_88:

(6, 51109), (Start: 47 @51421 has 122 MA's), (48, 51475), (61, 51556), (68, 51619), (75, 51658), (80, 51697), (84, 51748), (85, 51769), (110, 52057),

Gene: Manasvini\_70 Start: 44898, Stop: 45848, Start Num: 47

Candidate Starts for Manasvini\_70:

(Start: 31 @44772 has 8 MA's), (34, 44805), (38, 44835), (Start: 39 @44850 has 1 MA's), (41, 44859), (Start: 47 @44898 has 122 MA's), (60, 45030), (71, 45114), (79, 45165), (80, 45171), (85, 45243), (115, 45675), (118, 45702), (119, 45729), (128, 45819),

Gene: Mantra\_71 Start: 45873, Stop: 46778, Start Num: 47

Candidate Starts for Mantra\_71:

(Start: 47 @45873 has 122 MA's), (54, 45960), (75, 46110), (83, 46188), (89, 46236), (92, 46251), (94, 46260), (114, 46608),

Gene: Marteena\_70 Start: 46386, Stop: 47267, Start Num: 47

Candidate Starts for Marteena\_70:

(13, 46119), (Start: 31 @46260 has 8 MA's), (36, 46302), (38, 46323), (Start: 39 @46338 has 1 MA's), (41, 46347), (Start: 47 @46386 has 122 MA's), (48, 46440), (61, 46521), (68, 46584), (75, 46623), (80, 46662), (84, 46713), (85, 46734), (103, 46896), (124, 47202),

Gene: Matteo\_60 Start: 39987, Stop: 40886, Start Num: 46

Candidate Starts for Matteo\_60:

(16, 39774), (21, 39819), (Start: 46 @39987 has 12 MA's), (49, 40053), (54, 40077), (62, 40128), (73, 40215), (75, 40230), (85, 40341), (110, 40638), (118, 40740),

Gene: Mcklovin\_68 Start: 48730, Stop: 49602, Start Num: 47

Candidate Starts for Mcklovin\_68:

(30, 48607), (Start: 31 @48610 has 8 MA's), (36, 48652), (38, 48673), (Start: 39 @48688 has 1 MA's), (41, 48697), (Start: 47 @48730 has 122 MA's), (63, 48880), (74, 48964), (85, 49078), (91, 49096), (110, 49354),

Gene: Melville\_69 Start: 39075, Stop: 39968, Start Num: 45

Candidate Starts for Melville\_69:

(18, 38835), (33, 38973), (Start: 45 @39075 has 28 MA's), (50, 39144), (67, 39264), (76, 39318), (123, 39885),

Gene: Mendokysei\_46 Start: 34624, Stop: 35529, Start Num: 46

Candidate Starts for Mendokysei\_46:

(Start: 46 @34624 has 12 MA's), (56, 34741), (67, 34813), (76, 34867), (87, 34972), (126, 35461),

Gene: MichelleMyBell\_62 Start: 37899, Stop: 38789, Start Num: 45

Candidate Starts for MichelleMyBell\_62:

(41, 37857), (Start: 45 @37899 has 28 MA's), (50, 37968), (54, 37989), (67, 38088), (76, 38142), (87, 38247), (104, 38436), (123, 38706),

Gene: MilleniumForce\_74 Start: 46544, Stop: 47449, Start Num: 47

Candidate Starts for MilleniumForce\_74:

(24, 46376), (40, 46493), (Start: 47 @46544 has 122 MA's), (54, 46631), (75, 46781), (83, 46859), (89, 46907), (92, 46922), (108, 47207),

Gene: Mocha12\_66 Start: 41464, Stop: 42345, Start Num: 47

Candidate Starts for Mocha12\_66:

(Start: 31 @41338 has 8 MA's), (36, 41380), (38, 41401), (Start: 39 @41416 has 1 MA's), (41, 41425), (Start: 47 @41464 has 122 MA's), (48, 41518), (61, 41599), (68, 41662), (75, 41701), (80, 41740), (84, 41791), (85, 41812), (110, 42097), (118, 42199),

Gene: Moonbeam\_74 Start: 46691, Stop: 47596, Start Num: 47

Candidate Starts for Moonbeam\_74:

(Start: 47 @46691 has 122 MA's), (54, 46778), (75, 46928), (83, 47006), (89, 47054), (92, 47069), (94, 47078), (114, 47426),

Gene: MulchSalad\_83 Start: 48676, Stop: 49581, Start Num: 47

Candidate Starts for MulchSalad\_83:

(Start: 47 @48676 has 122 MA's), (54, 48763), (75, 48913), (89, 49039), (92, 49054), (94, 49063), (108, 49339),

Gene: Mutaforma13\_79 Start: 47293, Stop: 48198, Start Num: 47

Candidate Starts for Mutaforma13\_79:

(Start: 47 @47293 has 122 MA's), (54, 47380), (75, 47530), (83, 47608), (89, 47656), (92, 47671), (94, 47680),

Gene: Nairb\_47 Start: 35076, Stop: 35957, Start Num: 47

Candidate Starts for Nairb\_47:

(33, 34971), (42, 35037), (Start: 47 @35076 has 122 MA's), (55, 35175), (69, 35274), (72, 35286), (107, 35658), (110, 35703), (126, 35889),

Gene: Nenae\_61 Start: 38270, Stop: 39148, Start Num: 44

Candidate Starts for Nenae\_61:

(Start: 43 @38264 has 1 MA's), (Start: 44 @38270 has 10 MA's), (54, 38360), (59, 38402), (69, 38471), (72, 38483), (95, 38633), (97, 38660), (104, 38795), (123, 39065),

Gene: Neobush\_70 Start: 45442, Stop: 46392, Start Num: 47

Candidate Starts for Neobush\_70:

(Start: 31 @45316 has 8 MA's), (34, 45349), (38, 45379), (Start: 39 @45394 has 1 MA's), (41, 45403), (Start: 47 @45442 has 122 MA's), (60, 45574), (71, 45658), (79, 45709), (80, 45715), (85, 45787), (115, 46219), (118, 46246), (119, 46273), (128, 46363),

Gene: Nettuno\_63 Start: 40349, Stop: 41299, Start Num: 47

Candidate Starts for Nettuno\_63:

(8, 40043), (10, 40061), (23, 40196), (Start: 31 @40223 has 8 MA's), (34, 40256), (38, 40286), (Start: 39 @40301 has 1 MA's), (41, 40310), (Start: 47 @40349 has 122 MA's), (52, 40427), (60, 40481), (71, 40565), (79, 40616), (80, 40622), (98, 40811), (115, 41126), (118, 41153), (119, 41180), (128, 41270),

Gene: Nitzel\_69 Start: 43645, Stop: 44598, Start Num: 45

Candidate Starts for Nitzel\_69:

(Start: 45 @43645 has 28 MA's), (50, 43714), (53, 43729), (54, 43735), (65, 43816), (69, 43858), (77, 43912), (86, 44020), (88, 44032), (93, 44068), (106, 44296), (112, 44368), (116, 44437), (129, 44584),

Gene: Nivrat\_70 Start: 46112, Stop: 47017, Start Num: 47

Candidate Starts for Nivrat\_70:

(Start: 47 @46112 has 122 MA's), (54, 46199), (75, 46349), (83, 46427), (89, 46475), (92, 46490), (94, 46499), (114, 46847),

Gene: Nymphadora\_72 Start: 47904, Stop: 48785, Start Num: 47

Candidate Starts for Nymphadora\_72:

(Start: 31 @47778 has 8 MA's), (36, 47820), (38, 47841), (Start: 39 @47856 has 1 MA's), (41, 47865), (Start: 47 @47904 has 122 MA's), (48, 47958), (61, 48039), (68, 48102), (75, 48141), (80, 48180), (84, 48231), (85, 48252), (110, 48537), (118, 48639),

Gene: Oksu\_78 Start: 48039, Stop: 48944, Start Num: 47

Candidate Starts for Oksu\_78:

(24, 47871), (40, 47988), (Start: 47 @48039 has 122 MA's), (54, 48126), (75, 48276), (83, 48354), (89, 48402), (92, 48417), (94, 48426), (114, 48774),

Gene: Ovechkin\_77 Start: 46874, Stop: 47779, Start Num: 47

Candidate Starts for Ovechkin\_77:

(Start: 47 @46874 has 122 MA's), (54, 46961), (75, 47111), (83, 47189), (89, 47237), (92, 47252), (108, 47537),

Gene: OwlsT2W\_76 Start: 46405, Stop: 47310, Start Num: 47

Candidate Starts for OwlsT2W\_76:

(Start: 47 @46405 has 122 MA's), (54, 46492), (75, 46642), (83, 46720), (89, 46768), (94, 46792), (108, 47068),

Gene: PMC\_68 Start: 44894, Stop: 45799, Start Num: 47

Candidate Starts for PMC\_68:

(24, 44726), (40, 44843), (Start: 47 @44894 has 122 MA's), (54, 44981), (75, 45131), (83, 45209), (89, 45257), (92, 45272), (108, 45557),

Gene: Pacc40\_67 Start: 46139, Stop: 47044, Start Num: 47

Candidate Starts for Pacc40\_67:

(Start: 47 @46139 has 122 MA's), (54, 46226), (75, 46376), (83, 46454), (89, 46502), (92, 46517), (94, 46526), (114, 46874),

Gene: PantheRoc\_74 Start: 47598, Stop: 48479, Start Num: 47

Candidate Starts for PantheRoc\_74:

(Start: 31 @47472 has 8 MA's), (36, 47514), (38, 47535), (Start: 39 @47550 has 1 MA's), (41, 47559), (Start: 47 @47598 has 122 MA's), (48, 47652), (61, 47733), (68, 47796), (75, 47835), (80, 47874), (84, 47925), (85, 47946), (110, 48231), (118, 48333),

Gene: Parmesanjohn\_64 Start: 39524, Stop: 40417, Start Num: 45

Candidate Starts for Parmesanjohn\_64:

(18, 39284), (33, 39422), (Start: 45 @39524 has 28 MA's), (50, 39593), (67, 39713), (76, 39767), (123, 40334),

Gene: Pepperoni\_59 Start: 36710, Stop: 37591, Start Num: 47

Candidate Starts for Pepperoni\_59:

(Start: 47 @36710 has 122 MA's), (48, 36764), (68, 36908), (75, 36947), (85, 37058), (110, 37343),

Gene: Persistence\_74 Start: 43581, Stop: 44438, Start Num: 47

Candidate Starts for Persistence\_74:

(37, 43503), (Start: 47 @43581 has 122 MA's), (54, 43668), (56, 43695), (64, 43746), (68, 43779), (74, 43815), (75, 43818), (102, 44037), (120, 44331), (127, 44412),

Gene: PhancyPhin\_61 Start: 38264, Stop: 39142, Start Num: 44

Candidate Starts for PhancyPhin\_61:

(Start: 43 @38258 has 1 MA's), (Start: 44 @38264 has 10 MA's), (54, 38354), (59, 38396), (69, 38465), (72, 38477), (95, 38627), (97, 38654), (104, 38789), (123, 39059),

Gene: Phasih\_70 Start: 45082, Stop: 45987, Start Num: 47

Candidate Starts for Phasih\_70:

(24, 44914), (40, 45031), (Start: 47 @45082 has 122 MA's), (54, 45169), (75, 45319), (83, 45397), (89, 45445), (92, 45460), (94, 45469), (114, 45817),

Gene: Philonius\_64 Start: 39689, Stop: 40582, Start Num: 45

Candidate Starts for Philonius\_64:

(18, 39449), (33, 39587), (Start: 45 @39689 has 28 MA's), (50, 39758), (67, 39878), (76, 39932), (123, 40499),

Gene: Phloss\_62 Start: 38931, Stop: 39824, Start Num: 45

Candidate Starts for Phloss\_62:

(18, 38691), (33, 38829), (Start: 45 @38931 has 28 MA's), (50, 39000), (67, 39120), (76, 39174), (123, 39741),

Gene: Phrann\_60 Start: 40807, Stop: 41691, Start Num: 43

Candidate Starts for Phrann\_60:

(33, 40732), (Start: 43 @40807 has 1 MA's), (Start: 44 @40813 has 10 MA's), (54, 40903), (59, 40945), (69, 41014), (72, 41026), (95, 41176), (97, 41203), (104, 41338), (123, 41608),

Gene: PhriskyACE\_65 Start: 42694, Stop: 43641, Start Num: 47

Candidate Starts for PhriskyACE\_65:

(Start: 31 @42574 has 8 MA's), (38, 42637), (41, 42661), (Start: 47 @42694 has 122 MA's), (60, 42826), (71, 42910), (79, 42961), (80, 42967), (85, 43039), (98, 43156), (110, 43393), (112, 43405),

Gene: Pickett\_63 Start: 40108, Stop: 41058, Start Num: 47

Candidate Starts for Pickett\_63:

(Start: 31 @39982 has 8 MA's), (34, 40015), (38, 40045), (Start: 39 @40060 has 1 MA's), (Start: 47 @40108 has 122 MA's), (60, 40240), (71, 40324), (80, 40381), (98, 40570), (115, 40885), (118, 40912), (119, 40939), (128, 41029),

Gene: Pipsqueaks\_65 Start: 39502, Stop: 40395, Start Num: 45

Candidate Starts for Pipsqueaks\_65:

(18, 39262), (33, 39400), (Start: 45 @39502 has 28 MA's), (50, 39571), (67, 39691), (76, 39745), (123, 40312),

Gene: Plumbus\_75 Start: 43831, Stop: 44736, Start Num: 47

Candidate Starts for Plumbus\_75:

(24, 43663), (40, 43780), (Start: 47 @43831 has 122 MA's), (54, 43918), (75, 44068), (83, 44146), (89, 44194), (92, 44209), (94, 44218), (108, 44494),

Gene: Pollux\_74 Start: 48274, Stop: 49224, Start Num: 47

Candidate Starts for Pollux\_74:

(8, 47968), (10, 47986), (23, 48121), (Start: 31 @48148 has 8 MA's), (34, 48181), (36, 48190), (38, 48211), (Start: 39 @48226 has 1 MA's), (41, 48235), (Start: 47 @48274 has 122 MA's), (60, 48406), (71, 48490), (80, 48547), (85, 48619), (115, 49051), (118, 49078), (119, 49105), (128, 49195),

Gene: Polly\_65 Start: 44191, Stop: 45267, Start Num: 31

Candidate Starts for Polly\_65:

(Start: 31 @44191 has 8 MA's), (34, 44224), (38, 44254), (Start: 39 @44269 has 1 MA's), (41, 44278), (Start: 47 @44317 has 122 MA's), (60, 44449), (71, 44533), (79, 44584), (80, 44590), (85, 44662), (115, 45094), (118, 45121), (119, 45148), (128, 45238),

Gene: Pollywog\_74 Start: 47154, Stop: 48059, Start Num: 47

Candidate Starts for Pollywog\_74:

(24, 46986), (40, 47103), (Start: 47 @47154 has 122 MA's), (54, 47241), (75, 47391), (83, 47469), (89, 47517), (92, 47532), (94, 47541), (114, 47889),

Gene: Posh\_72 Start: 48148, Stop: 49098, Start Num: 47

Candidate Starts for Posh\_72:

(15, 47902), (Start: 31 @48022 has 8 MA's), (38, 48085), (Start: 39 @48100 has 1 MA's), (41, 48109), (Start: 47 @48148 has 122 MA's), (71, 48364), (79, 48415), (80, 48421), (115, 48925), (118, 48952), (119, 48979),

Gene: Powerball\_66 Start: 42677, Stop: 43744, Start Num: 31

Candidate Starts for Powerball\_66:

(Start: 31 @42677 has 8 MA's), (38, 42740), (41, 42764), (Start: 47 @42797 has 122 MA's), (60, 42929), (71, 43013), (79, 43064), (80, 43070), (85, 43142), (98, 43259), (110, 43496), (112, 43508),

Gene: Purgamenstris\_61 Start: 38268, Stop: 39146, Start Num: 44

Candidate Starts for Purgamenstris\_61:

(Start: 43 @38262 has 1 MA's), (Start: 44 @38268 has 10 MA's), (54, 38358), (59, 38400), (69, 38469), (72, 38481), (95, 38631), (97, 38658), (104, 38793), (123, 39063),

Gene: Pytheas\_75 Start: 49402, Stop: 50301, Start Num: 46

Candidate Starts for Pytheas\_75:

(17, 49171), (27, 49267), (28, 49270), (32, 49300), (Start: 46 @49402 has 12 MA's), (49, 49468), (54, 49492), (62, 49543), (73, 49630), (75, 49645), (85, 49756), (126, 50245),

Gene: Radiance\_72 Start: 46899, Stop: 47804, Start Num: 47

Candidate Starts for Radiance\_72:

(Start: 47 @46899 has 122 MA's), (54, 46986), (75, 47136), (83, 47214), (89, 47262), (90, 47265), (92, 47277), (94, 47286), (114, 47634),

Gene: Ramsey\_77 Start: 48381, Stop: 49286, Start Num: 47

Candidate Starts for Ramsey\_77:

(Start: 47 @48381 has 122 MA's), (54, 48468), (75, 48618), (83, 48696), (89, 48744), (92, 48759), (94, 48768), (114, 49116),

Gene: Raymond7\_54 Start: 38056, Stop: 38934, Start Num: 44

Candidate Starts for Raymond7\_54:

(Start: 43 @38050 has 1 MA's), (Start: 44 @38056 has 10 MA's), (54, 38146), (59, 38188), (69, 38257), (72, 38269), (95, 38419), (97, 38446), (104, 38581), (123, 38851),

Gene: Rebel\_58 Start: 36361, Stop: 37251, Start Num: 45

Candidate Starts for Rebel\_58:

(Start: 45 @36361 has 28 MA's), (50, 36430), (54, 36451), (67, 36550), (76, 36604), (87, 36709), (104, 36898), (123, 37168),

Gene: Redi\_61 Start: 38267, Stop: 39145, Start Num: 44

Candidate Starts for Redi\_61:

(Start: 43 @38261 has 1 MA's), (Start: 44 @38267 has 10 MA's), (54, 38357), (59, 38399), (69, 38468), (72, 38480), (95, 38630), (97, 38657), (104, 38792), (123, 39062),

Gene: Rialto\_81 Start: 47773, Stop: 48678, Start Num: 47

Candidate Starts for Rialto\_81:

(Start: 47 @47773 has 122 MA's), (54, 47860), (75, 48010), (83, 48088), (89, 48136), (92, 48151), (94, 48160), (114, 48508),

Gene: Rockne\_72 Start: 44906, Stop: 45811, Start Num: 47

Candidate Starts for Rockne\_72:

(24, 44738), (40, 44855), (Start: 47 @44906 has 122 MA's), (54, 44993), (75, 45143), (83, 45221), (89, 45269), (92, 45284), (108, 45569),

Gene: RockyHorror\_74 Start: 45465, Stop: 46370, Start Num: 47

Candidate Starts for RockyHorror\_74:

(Start: 47 @45465 has 122 MA's), (54, 45552), (75, 45702), (83, 45780), (89, 45828), (92, 45843), (94, 45852), (114, 46200),

Gene: RonRayGun\_48 Start: 35522, Stop: 36403, Start Num: 47

Candidate Starts for RonRayGun\_48:

(33, 35417), (42, 35483), (Start: 47 @35522 has 122 MA's), (55, 35621), (69, 35720), (72, 35732), (107, 36104), (110, 36149), (126, 36335),

Gene: Royals2015\_80 Start: 46425, Stop: 47330, Start Num: 47

Candidate Starts for Royals2015\_80:

(24, 46257), (40, 46374), (Start: 47 @46425 has 122 MA's), (54, 46512), (75, 46662), (83, 46740), (89, 46788), (94, 46812), (114, 47160),

Gene: Rubeelu\_60 Start: 37566, Stop: 38435, Start Num: 44

Candidate Starts for Rubeelu\_60:

(14, 37308), (20, 37386), (Start: 43 @37560 has 1 MA's), (Start: 44 @37566 has 10 MA's), (59, 37698), (69, 37767), (72, 37779), (104, 38082), (123, 38352),

Gene: Sabbb\_75 Start: 44060, Stop: 44965, Start Num: 47

Candidate Starts for Sabbb\_75:

(Start: 47 @44060 has 122 MA's), (54, 44147), (75, 44297), (83, 44375), (89, 44423), (92, 44438), (94, 44447), (114, 44795),

Gene: Sahara\_65 Start: 41267, Stop: 42166, Start Num: 46

Candidate Starts for Sahara\_65:

(16, 41054), (21, 41099), (Start: 46 @41267 has 12 MA's), (49, 41333), (54, 41357), (62, 41408), (73, 41495), (75, 41510), (85, 41621), (110, 41918), (118, 42020),

Gene: Sarma624\_72 Start: 43039, Stop: 43944, Start Num: 47

Candidate Starts for Sarma624\_72:

(Start: 47 @43039 has 122 MA's), (54, 43126), (75, 43276), (83, 43354), (89, 43402), (92, 43417), (94, 43426), (108, 43702),

Gene: Savage\_66 Start: 41464, Stop: 42345, Start Num: 47

Candidate Starts for Savage\_66:

(Start: 31 @41338 has 8 MA's), (36, 41380), (38, 41401), (Start: 39 @41416 has 1 MA's), (41, 41425), (Start: 47 @41464 has 122 MA's), (48, 41518), (61, 41599), (68, 41662), (75, 41701), (80, 41740), (84,

41791), (85, 41812), (110, 42097), (118, 42199),

Gene: Schnauzer\_65 Start: 39524, Stop: 40417, Start Num: 45

Candidate Starts for Schnauzer\_65:

(18, 39284), (33, 39422), (Start: 45 @39524 has 28 MA's), (50, 39593), (67, 39713), (76, 39767), (123, 40334),

Gene: Scitech\_59 Start: 38927, Stop: 39820, Start Num: 45

Candidate Starts for Scitech\_59:

(5, 38576), (7, 38594), (18, 38687), (19, 38690), (33, 38825), (Start: 45 @38927 has 28 MA's), (50, 38996), (67, 39116), (76, 39170), (123, 39737),

Gene: Sekhmet\_67 Start: 42546, Stop: 43427, Start Num: 47

Candidate Starts for Sekhmet\_67:

(Start: 31 @42420 has 8 MA's), (36, 42462), (38, 42483), (Start: 39 @42498 has 1 MA's), (41, 42507), (Start: 47 @42546 has 122 MA's), (48, 42600), (68, 42744), (75, 42783), (82, 42849), (85, 42894), (110, 43179),

Gene: ShiLan\_75 Start: 49014, Stop: 49925, Start Num: 47

Candidate Starts for ShiLan\_75:

(Start: 47 @49014 has 122 MA's), (54, 49101), (75, 49251), (83, 49329), (89, 49377), (92, 49392), (94, 49401), (108, 49677), (125, 49866),

Gene: ShrimpFriedEgg\_61 Start: 38267, Stop: 39145, Start Num: 44

Candidate Starts for ShrimpFriedEgg\_61:

(Start: 43 @38261 has 1 MA's), (Start: 44 @38267 has 10 MA's), (54, 38357), (59, 38399), (69, 38468), (72, 38480), (95, 38630), (97, 38657), (104, 38792), (123, 39062),

Gene: Shweta\_59 Start: 38499, Stop: 39377, Start Num: 44

Candidate Starts for Shweta\_59:

(1, 38097), (2, 38100), (10, 38217), (12, 38235), (33, 38418), (Start: 43 @38493 has 1 MA's), (Start: 44 @38499 has 10 MA's), (54, 38589), (59, 38631), (69, 38700), (72, 38712), (95, 38862), (97, 38889), (104, 39024), (123, 39294),

Gene: Sidious\_69 Start: 47185, Stop: 48066, Start Num: 47

Candidate Starts for Sidious\_69:

(10, 46897), (38, 47122), (Start: 39 @47137 has 1 MA's), (41, 47146), (Start: 47 @47185 has 122 MA's), (48, 47239), (68, 47383), (75, 47422), (80, 47461), (84, 47512), (85, 47533),

Gene: Silvafighter\_66 Start: 39067, Stop: 39960, Start Num: 45

Candidate Starts for Silvafighter\_66:

(18, 38827), (26, 38923), (33, 38965), (Start: 45 @39067 has 28 MA's), (50, 39136), (67, 39256), (76, 39310), (123, 39877),

Gene: Silvy\_60 Start: 40157, Stop: 41050, Start Num: 45

Candidate Starts for Silvy\_60:

(18, 39917), (33, 40055), (Start: 45 @40157 has 28 MA's), (50, 40226), (67, 40346), (76, 40400), (123, 40967),

Gene: SimranZ1\_74 Start: 45498, Stop: 46403, Start Num: 47

Candidate Starts for SimranZ1\_74:

(Start: 47 @45498 has 122 MA's), (54, 45585), (75, 45735), (83, 45813), (89, 45861), (92, 45876), (94, 45885), (114, 46233),



Gene: SkinnyPete\_61 Start: 39271, Stop: 40164, Start Num: 45

Candidate Starts for SkinnyPete\_61:

(18, 39031), (33, 39169), (Start: 45 @39271 has 28 MA's), (50, 39340), (67, 39460), (76, 39514), (123, 40081),

Gene: Smurph\_64 Start: 39524, Stop: 40417, Start Num: 45

Candidate Starts for Smurph\_64:

(18, 39284), (33, 39422), (Start: 45 @39524 has 28 MA's), (50, 39593), (67, 39713), (76, 39767), (123, 40334),

Gene: Snekmaggedon\_56 Start: 36936, Stop: 37826, Start Num: 45

Candidate Starts for Snekmaggedon\_56:

(41, 36894), (Start: 45 @36936 has 28 MA's), (50, 37005), (54, 37026), (67, 37125), (76, 37179), (87, 37284), (104, 37473), (123, 37743),

Gene: SoilAssassin\_65 Start: 43650, Stop: 44540, Start Num: 46

Candidate Starts for SoilAssassin\_65:

(Start: 46 @43650 has 12 MA's), (54, 43737), (56, 43764), (62, 43788), (66, 43836), (68, 43845), (96, 44049),

Gene: Sparkdehlily\_78 Start: 44957, Stop: 45868, Start Num: 47

Candidate Starts for Sparkdehlily\_78:

(24, 44789), (40, 44906), (Start: 47 @44957 has 122 MA's), (54, 45044), (75, 45194), (83, 45272), (89, 45320), (92, 45335), (94, 45344), (108, 45620), (125, 45809),

Gene: Spartacus\_78 Start: 48592, Stop: 49497, Start Num: 47

Candidate Starts for Spartacus\_78:

(24, 48424), (40, 48541), (Start: 47 @48592 has 122 MA's), (54, 48679), (75, 48829), (83, 48907), (89, 48955), (92, 48970), (94, 48979), (114, 49327),

Gene: Spikelee\_80 Start: 48482, Stop: 49387, Start Num: 47

Candidate Starts for Spikelee\_80:

(Start: 47 @48482 has 122 MA's), (54, 48569), (75, 48719), (83, 48797), (89, 48845), (92, 48860), (108, 49145),

Gene: SpongeBob\_56 Start: 36936, Stop: 37826, Start Num: 45

Candidate Starts for SpongeBob\_56:

(41, 36894), (Start: 45 @36936 has 28 MA's), (50, 37005), (54, 37026), (67, 37125), (76, 37179), (87, 37284), (104, 37473), (123, 37743),

Gene: Sproutie\_66 Start: 41464, Stop: 42345, Start Num: 47

Candidate Starts for Sproutie\_66:

(Start: 31 @41338 has 8 MA's), (36, 41380), (38, 41401), (Start: 39 @41416 has 1 MA's), (41, 41425), (Start: 47 @41464 has 122 MA's), (48, 41518), (61, 41599), (68, 41662), (75, 41701), (80, 41740), (84, 41791), (85, 41812), (110, 42097), (118, 42199),

Gene: Starcevich\_74 Start: 47456, Stop: 48361, Start Num: 47

Candidate Starts for Starcevich\_74:

(Start: 47 @47456 has 122 MA's), (54, 47543), (75, 47693), (83, 47771), (89, 47819), (92, 47834), (94, 47843), (108, 48119), (114, 48191),

Gene: Suerte\_62 Start: 42161, Stop: 43042, Start Num: 47

Candidate Starts for Suerte\_62:

(11, 41882), (25, 42011), (Start: 31 @42035 has 8 MA's), (38, 42098), (Start: 39 @42113 has 1 MA's), (41, 42122), (Start: 47 @42161 has 122 MA's), (48, 42215), (63, 42311), (68, 42359), (75, 42398), (82, 42464), (85, 42509), (118, 42896),

Gene: Suscepit\_68 Start: 44875, Stop: 45825, Start Num: 47

Candidate Starts for Suscepit\_68:

(Start: 31 @44749 has 8 MA's), (34, 44782), (38, 44812), (Start: 39 @44827 has 1 MA's), (41, 44836), (Start: 47 @44875 has 122 MA's), (60, 45007), (71, 45091), (79, 45142), (80, 45148), (85, 45220), (115, 45652), (118, 45679), (119, 45706), (128, 45796),

Gene: TChen\_75 Start: 47965, Stop: 48867, Start Num: 47

Candidate Starts for TChen\_75:

(Start: 47 @47965 has 122 MA's), (54, 48052), (75, 48202), (83, 48280), (89, 48328), (92, 48343), (108, 48628),

Gene: TDanisky\_78 Start: 44957, Stop: 45868, Start Num: 47

Candidate Starts for TDanisky\_78:

(24, 44789), (40, 44906), (Start: 47 @44957 has 122 MA's), (54, 45044), (75, 45194), (83, 45272), (89, 45320), (92, 45335), (94, 45344), (108, 45620), (125, 45809),

Gene: Tapioca\_62 Start: 40041, Stop: 40934, Start Num: 45

Candidate Starts for Tapioca\_62:

(18, 39801), (33, 39939), (Start: 45 @40041 has 28 MA's), (50, 40110), (67, 40230), (76, 40284), (123, 40851),

Gene: Tayonia\_68 Start: 44874, Stop: 45824, Start Num: 47

Candidate Starts for Tayonia\_68:

(Start: 31 @44748 has 8 MA's), (34, 44781), (38, 44811), (Start: 39 @44826 has 1 MA's), (41, 44835), (Start: 47 @44874 has 122 MA's), (60, 45006), (71, 45090), (79, 45141), (80, 45147), (85, 45219), (115, 45651), (118, 45678), (119, 45705), (128, 45795),

Gene: TimTam\_72 Start: 47904, Stop: 48785, Start Num: 47

Candidate Starts for TimTam\_72:

(Start: 31 @47778 has 8 MA's), (36, 47820), (38, 47841), (Start: 39 @47856 has 1 MA's), (41, 47865), (Start: 47 @47904 has 122 MA's), (48, 47958), (61, 48039), (68, 48102), (75, 48141), (80, 48180), (84, 48231), (85, 48252), (110, 48537), (118, 48639),

Gene: Trumpet\_68 Start: 44875, Stop: 45825, Start Num: 47

Candidate Starts for Trumpet\_68:

(Start: 31 @44749 has 8 MA's), (34, 44782), (38, 44812), (Start: 39 @44827 has 1 MA's), (41, 44836), (Start: 47 @44875 has 122 MA's), (60, 45007), (71, 45091), (79, 45142), (80, 45148), (85, 45220), (115, 45652), (118, 45679), (119, 45706), (128, 45796),

Gene: TuertoX\_66 Start: 41464, Stop: 42345, Start Num: 47

Candidate Starts for TuertoX\_66:

(Start: 31 @41338 has 8 MA's), (36, 41380), (38, 41401), (Start: 39 @41416 has 1 MA's), (41, 41425), (Start: 47 @41464 has 122 MA's), (48, 41518), (61, 41599), (68, 41662), (75, 41701), (80, 41740), (84, 41791), (85, 41812), (110, 42097), (118, 42199),

Gene: VRedHorse\_73 Start: 44118, Stop: 45023, Start Num: 47

Candidate Starts for VRedHorse\_73:

(Start: 47 @44118 has 122 MA's), (54, 44205), (75, 44355), (83, 44433), (89, 44481), (92, 44496), (94, 44505), (114, 44853),

Gene: Velveteen\_68 Start: 43039, Stop: 43944, Start Num: 47

Candidate Starts for Velveteen\_68:

(Start: 47 @43039 has 122 MA's), (54, 43126), (75, 43276), (83, 43354), (89, 43402), (92, 43417), (94, 43426), (108, 43702),

Gene: Whiteclaw\_66 Start: 41464, Stop: 42345, Start Num: 47

Candidate Starts for Whiteclaw\_66:

(Start: 31 @41338 has 8 MA's), (36, 41380), (38, 41401), (Start: 39 @41416 has 1 MA's), (41, 41425), (Start: 47 @41464 has 122 MA's), (48, 41518), (61, 41599), (68, 41662), (75, 41701), (80, 41740), (84, 41791), (85, 41812), (110, 42097), (118, 42199),

Gene: Whitty\_47 Start: 35077, Stop: 35958, Start Num: 47

Candidate Starts for Whitty\_47:

(33, 34972), (42, 35038), (Start: 47 @35077 has 122 MA's), (55, 35176), (69, 35275), (72, 35287), (107, 35659), (110, 35704), (126, 35890),

Gene: WinkNick\_68 Start: 42070, Stop: 42951, Start Num: 47

Candidate Starts for WinkNick\_68:

(Start: 31 @41944 has 8 MA's), (36, 41986), (38, 42007), (Start: 39 @42022 has 1 MA's), (41, 42031), (Start: 47 @42070 has 122 MA's), (48, 42124), (68, 42268), (75, 42307), (82, 42373), (85, 42418), (110, 42703),

Gene: Wrigley\_74 Start: 47731, Stop: 48681, Start Num: 47

Candidate Starts for Wrigley\_74:

(15, 47485), (Start: 31 @47605 has 8 MA's), (38, 47668), (Start: 39 @47683 has 1 MA's), (41, 47692), (Start: 47 @47731 has 122 MA's), (71, 47947), (79, 47998), (80, 48004), (115, 48508), (118, 48535), (119, 48562),

Gene: Xerxes\_64 Start: 39521, Stop: 40414, Start Num: 45

Candidate Starts for Xerxes\_64:

(18, 39281), (33, 39419), (Start: 45 @39521 has 28 MA's), (50, 39590), (67, 39710), (76, 39764), (123, 40331),

Gene: Yeet412\_64 Start: 42394, Stop: 43344, Start Num: 47

Candidate Starts for Yeet412\_64:

(Start: 31 @42268 has 8 MA's), (34, 42301), (38, 42331), (Start: 39 @42346 has 1 MA's), (Start: 47 @42394 has 122 MA's), (60, 42526), (71, 42610), (80, 42667), (98, 42856), (115, 43171), (118, 43198), (119, 43225), (128, 43315),

Gene: Zameen\_68 Start: 44874, Stop: 45824, Start Num: 47

Candidate Starts for Zameen\_68:

(Start: 31 @44748 has 8 MA's), (34, 44781), (38, 44811), (Start: 39 @44826 has 1 MA's), (41, 44835), (Start: 47 @44874 has 122 MA's), (60, 45006), (71, 45090), (79, 45141), (80, 45147), (85, 45219), (115, 45651), (118, 45678), (119, 45705), (128, 45795),

Gene: ZenTime222\_47 Start: 35076, Stop: 35957, Start Num: 47

Candidate Starts for ZenTime222\_47:

(33, 34971), (42, 35037), (Start: 47 @35076 has 122 MA's), (55, 35175), (69, 35274), (72, 35286), (107, 35658), (110, 35703), (126, 35889),

Gene: Zirinka\_66 Start: 46410, Stop: 47486, Start Num: 31

Candidate Starts for Zirinka\_66:

(10, 46248), (Start: 31 @46410 has 8 MA's), (38, 46473), (Start: 39 @46488 has 1 MA's), (41, 46497),  
(Start: 47 @46536 has 122 MA's), (71, 46752), (79, 46803), (80, 46809), (85, 46881), (98, 46998),  
(115, 47313), (118, 47340), (119, 47367),