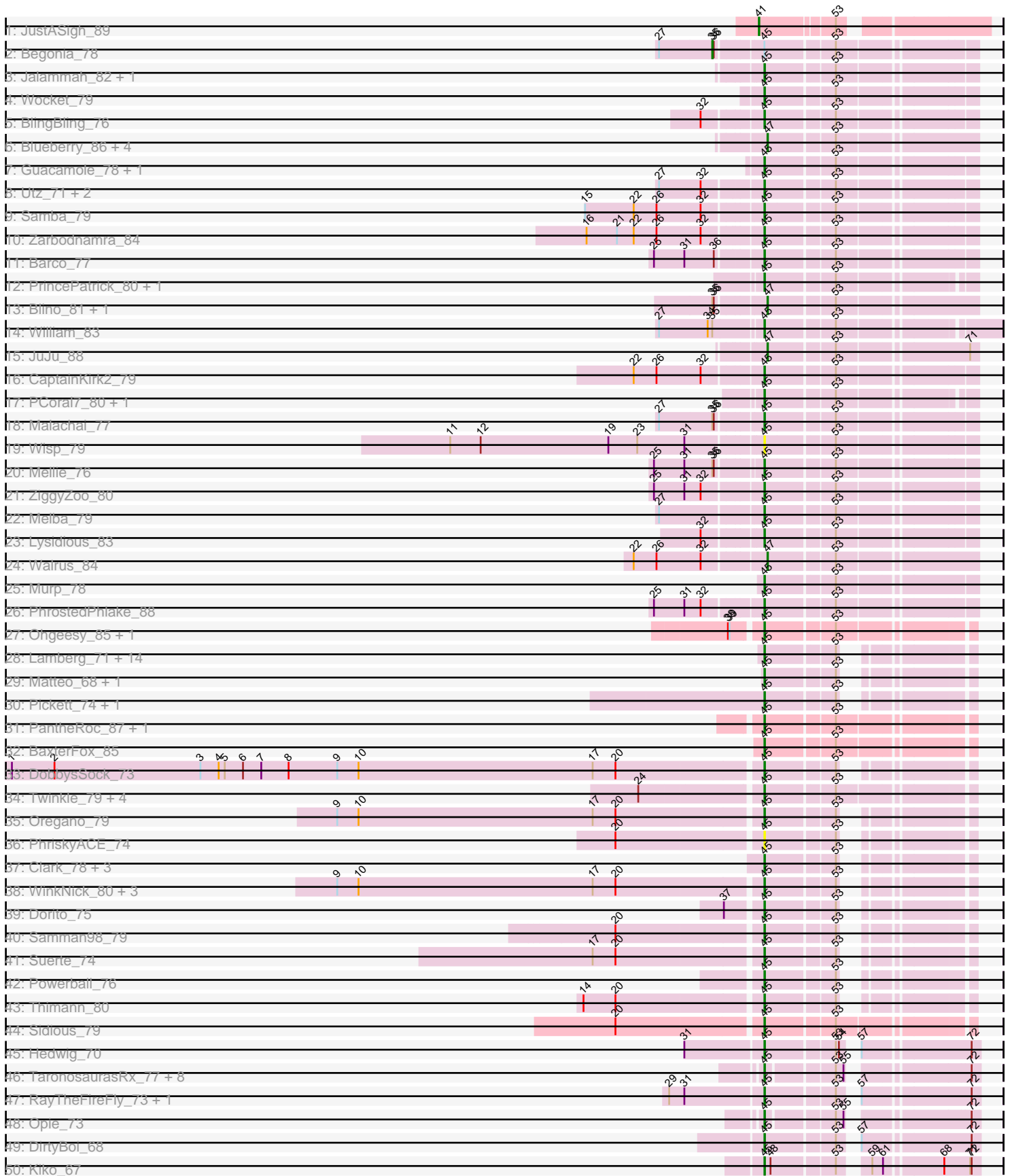
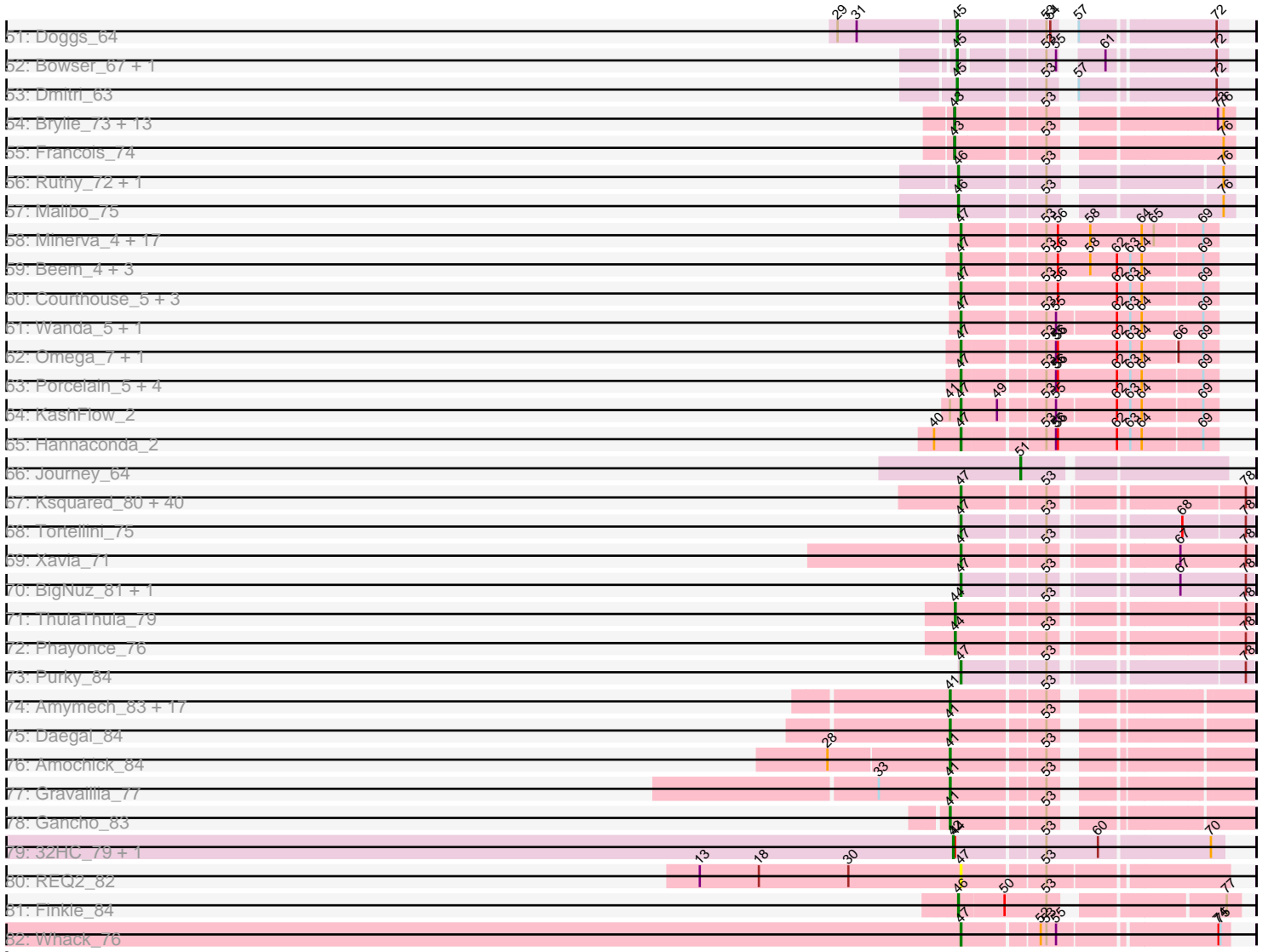


# Pham 193714



Pham 193714



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 193714 Report

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

Pham number 193714 has 233 members, 14 are drafts.

Phages represented in each track:

- Track 1 : JustASigh\_89
- Track 2 : Begonia\_78
- Track 3 : Jalammah\_82, Fenry\_78
- Track 4 : Wocket\_79
- Track 5 : BlingBling\_76
- Track 6 : Blueberry\_86, Gambino\_89, Frokostdame\_84, Azula\_86, MissRona\_86
- Track 7 : Guacamole\_78, JasperJr\_78
- Track 8 : Utz\_71, UmaThurman\_83, Obliviate\_80
- Track 9 : Samba\_79
- Track 10 : Zarbodnamra\_84
- Track 11 : Barco\_77
- Track 12 : PrincePatrick\_80, Fairfaxidum\_81
- Track 13 : Blino\_81, CarolAnn\_80
- Track 14 : William\_83
- Track 15 : JuJu\_88
- Track 16 : CaptainKirk2\_79
- Track 17 : PCoral7\_80, Toast\_81
- Track 18 : Malachai\_77
- Track 19 : Wisp\_79
- Track 20 : Mellie\_76
- Track 21 : ZiggyZoo\_80
- Track 22 : Melba\_79
- Track 23 : Lysidious\_83
- Track 24 : Walrus\_84
- Track 25 : Murp\_78
- Track 26 : PhrostedPhlake\_88
- Track 27 : Ohgeesy\_85, Yeezy\_87
- Track 28 : Lamberg\_71, GemG\_75, Bjanes7\_72, Cynthia\_75, Ebert\_78, Sproutie\_75, Mocha12\_75, Haley23\_75, Clap\_75, Attis\_74, Savage\_75, Nettuno\_71, SoilAssassin\_74, Sahara\_72, LordFarquaad\_76
- Track 29 : Matteo\_68, Denise\_78
- Track 30 : Pickett\_74, EdnaMode\_75
- Track 31 : PantheRoc\_87, Archis\_82
- Track 32 : BaxterFox\_85
- Track 33 : DobbysSock\_73
- Track 34 : Twinkle\_79, Hortense\_80, Adora\_77, Howe\_80, Shlim410\_78
- Track 35 : Oregano\_79

- Track 36 : PhriskyACE\_74
- Track 37 : Clark\_78, Easley\_77, Beenie\_73, MichaelScott\_80
- Track 38 : WinkNick\_80, Annalisa\_79, Dolores\_80, Sekhmet\_79
- Track 39 : Dorito\_75
- Track 40 : Samman98\_79
- Track 41 : Suerte\_74
- Track 42 : Powerball\_76
- Track 43 : Thimann\_80
- Track 44 : Sidious\_79
- Track 45 : Hedwig\_70
- Track 46 : TaronosaurusRx\_77, Bunker\_61, MagicMan\_70, Eyes\_65, BackstagePass\_72, BBQValindra\_67, GEazy\_73, Schnabeltier\_71, HannahD\_70
- Track 47 : RayTheFireFly\_73, Coriander\_66
- Track 48 : Opie\_73
- Track 49 : DirtyBoi\_68
- Track 50 : Kiko\_67
- Track 51 : Doggs\_64
- Track 52 : Bowser\_67, ZAYM\_76
- Track 53 : Dmitri\_63
- Track 54 : Brylie\_73, Bock\_75, Ayotoya\_74, BetterKatz\_74, GrandSlam\_75, WheatThin\_73, Mulch\_73, Nadeem\_73, Parada\_73, Pimento\_76, DelRio\_74, NancyRae\_72, Chop\_75, Hamood\_75
- Track 55 : Francois\_74
- Track 56 : Ruthy\_72, DumpsterDude\_70
- Track 57 : Malibo\_75
- Track 58 : Minerva\_4, Dove\_3, DmpstrDiver\_4, Yeet\_3, BAKA\_4, HokkenD\_4, EricMillard\_4, Duke13\_4, Optimus\_4, Bagrid\_3, Pound\_4, ThreeRngTarjay\_4, Schatzie\_3, Constella\_3, NihilNomen\_4, Hughesyang\_4, Phoebus\_4, Kalah2\_5
- Track 59 : Beem\_4, Bobby\_5, Halley\_4, Ejimix\_5
- Track 60 : Courthouse\_5, Ariel\_4, Zelink\_4, JuicyJay\_5
- Track 61 : Wanda\_5, Klein\_5
- Track 62 : Omega\_7, LittleE\_5
- Track 63 : Porcelain\_5, Gonephishing\_8, MiaZeal\_5, Lucky2013\_5, Squint\_5
- Track 64 : KashFlow\_2
- Track 65 : Hannaconda\_2
- Track 66 : Journey\_64
- Track 67 : Ksquared\_80, Bunnies\_81, Shipwreck\_81, Necropolis\_76, Kari\_77, Mangethe\_81, Arib1\_78, Zilizebeth\_83, Jebeks\_77, Camster\_80, CactusJack\_79, Thespis\_78, HUHilltop\_81, Sonah\_81, Glaske\_78, Malithi\_79, Donovan\_78, Fishburne\_77, Phegasus\_81, Polkaroo\_80, Bogie\_81, GreaseLightnin\_80, Brusacoram\_78, Atcoo\_78, Bartholomew\_77, Pygmy\_82, Juniormint\_74, Megiddo\_78, FirstPlacePfu\_82, Langerak\_77, Majeke\_81, Techage\_79, Dynamo\_78, StressBall\_78, StevieRay\_81, Phalm\_79, Jung\_77, Willsammy\_80, Vidya\_76, KilKor\_79, Venti\_79
- Track 68 : Tortellini\_75
- Track 69 : Xavia\_71
- Track 70 : BigNuz\_81, Nazo\_82
- Track 71 : ThulaThula\_79
- Track 72 : Phayonce\_76
- Track 73 : Purky\_84
- Track 74 : Amymech\_83, OBUpride\_82, Kinbote\_81, Ubuntu\_83, Ein37\_83, Evanesce\_82, Luna22\_76, LilHazelNut\_83, DeepSoil15\_83, Webster2\_83, HH92\_82, Giles\_76, Hadrien\_80, Dewey\_76, Hail\_76, Luke\_80, Forge\_76, Wishmaker\_76

- Track 75 : Daegal\_84
- Track 76 : Amochick\_84
- Track 77 : Gravaillia\_77
- Track 78 : Gancho\_83
- Track 79 : 32HC\_79, Rem711\_78
- Track 80 : REQ2\_82
- Track 81 : Finkle\_84
- Track 82 : Whack\_76

**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 88 of the 219 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Arib1\_78, Ariel\_4, Atcoo\_78, Azula\_86, BAKA\_4, Bagrid\_3, Bartholomew\_77, Beem\_4, BigNuz\_81, Blino\_81, Blueberry\_86, Bobby\_5, Bogie\_81, Brusacoram\_78, Bunnies\_81, CactusJack\_79, Camster\_80, CarolAnn\_80, Constella\_3, Courthouse\_5, DmpstrDiver\_4, Donovan\_78, Dove\_3, Duke13\_4, Dynamo\_78, Ejimix\_5, EricMillard\_4, FirstPlacePfu\_82, Fishburne\_77, Frokostdame\_84, Gambino\_89, Glaske\_78, Gonephishing\_8, GreaseLightnin\_80, HUHilltop\_81, Halley\_4, Hannaconda\_2, HokkenD\_4, Hughesyang\_4, Jebeks\_77, JuJu\_88, JuicyJay\_5, Jung\_77, Juniormint\_74, Kalah2\_5, Kari\_77, KashFlow\_2, KilKor\_79, Klein\_5, Ksquared\_80, Langerak\_77, LittleE\_5, Lucky2013\_5, Majeke\_81, Malithi\_79, Mangethe\_81, Megiddo\_78, MiaZeal\_5, Minerva\_4, MissRona\_86, Nazo\_82, Necropolis\_76, NihilNomen\_4, Omega\_7, Optimus\_4, Phalm\_79, Phegasus\_81, Phoebus\_4, Polkaroo\_80, Porcelain\_5, Pound\_4, Purky\_84, Pygmy\_82, REQ2\_82, Schatzie\_3, Shipwreck\_81, Sonah\_81, Squint\_5, StevieRay\_81, StressBall\_78, Techage\_79, Thespis\_78, ThreeRngTarjay\_4, Tortellini\_75, Venti\_79, Vidya\_76, Walrus\_84, Wanda\_5, Whack\_76, Willsammy\_80, Xavia\_71, Yeet\_3, Zelink\_4, Zilizebeth\_83,

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

- 

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

- 32HC\_79, Adora\_77, Amochick\_84, Amymech\_83, Annalisa\_79, Archis\_82, Attis\_74, Ayotoya\_74, BBQValindra\_67, BackstagePass\_72, Barco\_77, BaxterFox\_85, Beenie\_73, Begonia\_78, BetterKatz\_74, Bjanes7\_72, BlingBling\_76, Bock\_75, Bowser\_67, Brylie\_73, Bunker\_61, CaptainKirk2\_79, Chop\_75, Clap\_75, Clark\_78, Coriander\_66, Cynthia\_75, Daegal\_84, DeepSoil15\_83, DelRio\_74, Denise\_78, Dewey\_76, DirtyBoi\_68, Dmitri\_63, DobbysSock\_73, Doggs\_64, Dolores\_80, Dorito\_75, DumpsterDude\_70, Easley\_77, Ebert\_78, EdnaMode\_75, Ein37\_83, Evanesce\_82, Eyes\_65, Fairfaxidum\_81, Fenry\_78, Finkle\_84, Forge\_76, Francois\_74, GEazy\_73, Gancho\_83, GemG\_75, Giles\_76, GrandSlam\_75, Gravaillia\_77, Guacamole\_78, HH92\_82, Hadrien\_80, Hail\_76, Haley23\_75, Hamood\_75, HannahD\_70, Hedwig\_70, Hortense\_80, Howe\_80, Jalammah\_82, JasperJr\_78, Journey\_64, JustASigh\_89, Kiko\_67, Kinbote\_81, Lamberg\_71, LilHazelNut\_83, LordFarquaad\_76, Luke\_80, Luna22\_76, Lysidious\_83, MagicMan\_70, Malachai\_77, Malibo\_75, Matteo\_68, Melba\_79, Mellie\_76,

MichaelScott\_80, Mocha12\_75, Mulch\_73, Murp\_78, Nadeem\_73, NancyRae\_72, Nettuno\_71, OBUpride\_82, Obliviate\_80, Ohgeesy\_85, Opie\_73, Oregano\_79, PCoral7\_80, PantheRoc\_87, Parada\_73, Phayonce\_76, PhriskyACE\_74, PhrostedPhlake\_88, Pickett\_74, Pimento\_76, Powerball\_76, PrincePatrick\_80, RayTheFireFly\_73, Rem711\_78, Ruthy\_72, Sahara\_72, Samba\_79, Samman98\_79, Savage\_75, Schnabeltier\_71, Sekhmet\_79, Shlim410\_78, Sidious\_79, SoilAssassin\_74, Sproutie\_75, Suerte\_74, TaronosaurusRx\_77, Thimann\_80, ThulaThula\_79, Toast\_81, Twinkle\_79, Ubuntu\_83, UmaThurman\_83, Utz\_71, Webster2\_83, WheatThin\_73, William\_83, WinkNick\_80, Wishmaker\_76, Wisp\_79, Wocket\_79, Yeezy\_87, ZAYM\_76, Zarbodnamra\_84, ZiggyZoo\_80,

### Summary by start number:

#### Start 35:

- Found in 6 of 233 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 1 of 219
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Begonia\_78 (CV),

#### Start 41:

- Found in 24 of 233 ( 10.3% ) of genes in pham
- Manual Annotations of this start: 23 of 219
- Called 95.8% of time when present
- Phage (with cluster) where this start called: Amochick\_84 (Q), Amymech\_83 (Q), Daegal\_84 (Q), DeepSoil15\_83 (Q), Dewey\_76 (Q), Ein37\_83 (Q), Evanesce\_82 (Q), Forge\_76 (Q), Gancho\_83 (Q), Giles\_76 (Q), Gravaillia\_77 (Q), HH92\_82 (Q), Hadrien\_80 (Q), Hail\_76 (Q), JustASigh\_89 (AH), Kinbote\_81 (Q), LilHazelNut\_83 (Q), Luke\_80 (Q), Luna22\_76 (Q), OBUpride\_82 (Q), Ubuntu\_83 (Q), Webster2\_83 (Q), Wishmaker\_76 (Q),

#### Start 42:

- Found in 2 of 233 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 1 of 219
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 32HC\_79 (Z), Rem711\_78 (Z),

#### Start 43:

- Found in 15 of 233 ( 6.4% ) of genes in pham
- Manual Annotations of this start: 15 of 219
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ayotoya\_74 (DI), BetterKatz\_74 (DI), Bock\_75 (DI), Brylie\_73 (DI), Chop\_75 (DI), DelRio\_74 (DI), Francois\_74 (DI), GrandSlam\_75 (DI), Hamood\_75 (DI), Mulch\_73 (DI), Nadeem\_73 (DI), NancyRae\_72 (DI), Parada\_73 (DI), Pimento\_76 (DI), WheatThin\_73 (DI),

#### Start 44:

- Found in 4 of 233 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 2 of 219
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Phayonce\_76 (P5), ThulaThula\_79 (P5),

#### Start 45:

- Found in 92 of 233 ( 39.5% ) of genes in pham

- Manual Annotations of this start: 84 of 219
- Called 98.9% of time when present
- Phage (with cluster) where this start called: Adora\_77 (CZ4), Annalisa\_79 (CZ4), Archis\_82 (CV), Attis\_74 (CZ2), BBQValindra\_67 (DB), BackstagePass\_72 (DB), Barco\_77 (CV), BaxterFox\_85 (CZ3), Beenie\_73 (CZ4), Bjanest\_72 (CZ2), BlingBling\_76 (CV), Bowser\_67 (DB), Bunker\_61 (DB), CaptainKirk2\_79 (CV), Clap\_75 (CZ2), Clark\_78 (CZ4), Coriander\_66 (DB), Cynthia\_75 (CZ2), Denise\_78 (CZ5), DirtyBoi\_68 (DB), Dmitri\_63 (DB), DobbysSock\_73 (CZ4), Doggs\_64 (DB), Dolores\_80 (CZ4), Dorito\_75 (CZ4), Easley\_77 (CZ4), Ebert\_78 (CZ2), EdnaMode\_75 (CZ2), Eyes\_65 (DB), Fairfaxidum\_81 (CV), Fenry\_78 (CV), GEazy\_73 (DB), GemG\_75 (CZ2), Guacamole\_78 (CV), Haley23\_75 (CZ2), HannahD\_70 (DB), Hedwig\_70 (DB), Hortense\_80 (CZ4), Howe\_80 (CZ4), Jalammah\_82 (CV), JasperJr\_78 (CV), Kiko\_67 (DB), Lamberg\_71 (CZ2), LordFarquaad\_76 (CZ2), Lysidious\_83 (CV), MagicMan\_70 (DB), Malachai\_77 (CV), Matteo\_68 (CZ2), Melba\_79 (CV), Mellie\_76 (CV), MichaelScott\_80 (CZ4), Mocha12\_75 (CZ2), Murp\_78 (CV), Nettuno\_71 (CZ2), Obliviate\_80 (CV), Ohgeesy\_85 (CZ), Opie\_73 (DB), Oregano\_79 (CZ4), PCoral7\_80 (CV), PantheRoc\_87 (CZ3), PhriskyACE\_74 (CZ4), PhrostedPhlake\_88 (CV), Pickett\_74 (CZ2), Powerball\_76 (CZ4), PrincePatrick\_80 (CV), RayTheFireFly\_73 (DB), Sahara\_72 (CZ2), Samba\_79 (CV), Samman98\_79 (CZ4), Savage\_75 (CZ2), Schnabeltier\_71 (DB), Sekhmet\_79 (CZ4), Shlim410\_78 (CZ4), Sidious\_79 (CZ7), SoilAssassin\_74 (CZ2), Sproutie\_75 (CZ2), Suerte\_74 (CZ4), TaronosaurusRx\_77 (DB), Thimann\_80 (CZ4), Toast\_81 (CV), Twinkle\_79 (CZ4), UmaThurman\_83 (CV), Utz\_71 (CV), William\_83 (CV), WinkNick\_80 (CZ4), Wisp\_79 (CV), Wocket\_79 (CV), Yeezy\_87 (CZ3), ZAYM\_76 (DB), Zarbodnamra\_84 (CV), ZiggyZoo\_80 (CV),

#### Start 46:

- Found in 4 of 233 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 4 of 219
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DumpsterDude\_70 (DW), Finkle\_84 (singleton), Malibo\_75 (DW), Ruthy\_72 (DW),

#### Start 47:

- Found in 94 of 233 ( 40.3% ) of genes in pham
- Manual Annotations of this start: 88 of 219
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arib1\_78 (P1), Ariel\_4 (J), Atcoo\_78 (P1), Azula\_86 (CV), BAKA\_4 (J), Bagrid\_3 (J), Bartholomew\_77 (P1), Beem\_4 (J), BigNuz\_81 (P4), Blino\_81 (CV), Blueberry\_86 (CV), Bobby\_5 (J), Bogie\_81 (P1), Brusacoram\_78 (P1), Bunnies\_81 (P1), CactusJack\_79 (P1), Camster\_80 (P1), CarolAnn\_80 (CV), Constella\_3 (J), Courthouse\_5 (J), DmpstrDiver\_4 (J), Donovan\_78 (P1), Dove\_3 (J), Duke13\_4 (J), Dynamo\_78 (P1), Ejimix\_5 (J), EricMillard\_4 (J), FirstPlacePfu\_82 (P1), Fishburne\_77 (P1), Frokostdame\_84 (CV), Gambino\_89 (CV), Glaske\_78 (P1), Gonephishing\_8 (J), GreaseLightnin\_80 (P1), HUHilltop\_81 (P1), Halley\_4 (J), Hannaconda\_2 (J), HokkenD\_4 (J), Hughesyang\_4 (J), Jebeks\_77 (P1), JuJu\_88 (CV), JuicyJay\_5 (J), Jung\_77 (P1), Juniormint\_74 (P1), Kalah2\_5 (J), Kari\_77 (P1), KashFlow\_2 (J), KilKor\_79 (P1), Klein\_5 (J), Ksquared\_80 (P1), Langerak\_77 (P1), LittleE\_5 (J), Lucky2013\_5 (J), Majeke\_81 (P1), Malithi\_79 (P1), Mangethe\_81 (P1), Megiddo\_78 (P1), MiaZeal\_5 (J), Minerva\_4 (J), MissRona\_86 (CV), Nazo\_82 (P4), Necropolis\_76 (P1), NihilNomen\_4 (J), Omega\_7 (J), Optimus\_4 (J), Phalm\_79 (P1), Phegasus\_81 (P1), Phoebus\_4 (J), Polkaroo\_80 (P1), Porcelain\_5 (J), Pound\_4 (J), Purky\_84 (P6), Pygmy\_82 (P1),

REQ2\_82 (singleton), Schatzie\_3 (J), Shipwreck\_81 (P1), Sonah\_81 (P1), Squint\_5 (J), StevieRay\_81 (P1), StressBall\_78 (P1), Techage\_79 (P1), Thespis\_78 (P1), ThreeRngTarjay\_4 (J), Tortellini\_75 (P2), Venti\_79 (P1), Vidya\_76 (P1), Walrus\_84 (CV), Wanda\_5 (J), Whack\_76 (singleton), Willsammy\_80 (P1), Xavia\_71 (P3), Yeet\_3 (J), Zelink\_4 (J), Zilizebeth\_83 (P1),

Start 51:

- Found in 1 of 233 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 219
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Journey\_64 (N),

### **Summary by clusters:**

There are 22 clusters represented in this pham: singleton, DI, CZ2, CZ3, DB, CZ7, CZ4, CZ5, DW, P2, P3, P1, P6, P4, P5, AH, J, N, Q, CZ, Z, CV,

Info for manual annotations of cluster AH:

- Start number 41 was manually annotated 1 time for cluster AH.

Info for manual annotations of cluster CV:

- Start number 35 was manually annotated 1 time for cluster CV.
- Start number 45 was manually annotated 26 times for cluster CV.
- Start number 47 was manually annotated 9 times for cluster CV.

Info for manual annotations of cluster CZ:

- Start number 45 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ2:

- Start number 45 was manually annotated 18 times for cluster CZ2.

Info for manual annotations of cluster CZ3:

- Start number 45 was manually annotated 3 times for cluster CZ3.

Info for manual annotations of cluster CZ4:

- Start number 45 was manually annotated 19 times for cluster CZ4.

Info for manual annotations of cluster CZ5:

- Start number 45 was manually annotated 1 time for cluster CZ5.

Info for manual annotations of cluster CZ7:

- Start number 45 was manually annotated 1 time for cluster CZ7.

Info for manual annotations of cluster DB:

- Start number 45 was manually annotated 15 times for cluster DB.

Info for manual annotations of cluster DI:

- Start number 43 was manually annotated 15 times for cluster DI.

Info for manual annotations of cluster DW:

- Start number 46 was manually annotated 3 times for cluster DW.

Info for manual annotations of cluster J:



•Start number 47 was manually annotated 35 times for cluster J.

Info for manual annotations of cluster N:

•Start number 51 was manually annotated 1 time for cluster N.

Info for manual annotations of cluster P1:

•Start number 47 was manually annotated 38 times for cluster P1.

Info for manual annotations of cluster P2:

•Start number 47 was manually annotated 1 time for cluster P2.

Info for manual annotations of cluster P3:

•Start number 47 was manually annotated 1 time for cluster P3.

Info for manual annotations of cluster P4:

•Start number 47 was manually annotated 2 times for cluster P4.

Info for manual annotations of cluster P5:

•Start number 44 was manually annotated 2 times for cluster P5.

Info for manual annotations of cluster P6:

•Start number 47 was manually annotated 1 time for cluster P6.

Info for manual annotations of cluster Q:

•Start number 41 was manually annotated 22 times for cluster Q.

Info for manual annotations of cluster Z:

•Start number 42 was manually annotated 1 time for cluster Z.

**Gene Information:**

Gene: 32HC\_79 Start: 48021, Stop: 48413, Start Num: 42

Candidate Starts for 32HC\_79:

(Start: 42 @48021 has 1 MA's), (Start: 44 @48024 has 2 MA's), (53, 48150), (60, 48231), (70, 48393),

Gene: Adora\_77 Start: 51381, Stop: 51737, Start Num: 45

Candidate Starts for Adora\_77:

(24, 51159), (Start: 45 @51381 has 84 MA's), (53, 51504),

Gene: Amochick\_84 Start: 53002, Stop: 53388, Start Num: 41

Candidate Starts for Amochick\_84:

(28, 52816), (Start: 41 @53002 has 23 MA's), (53, 53134),

Gene: Amymech\_83 Start: 52603, Stop: 52992, Start Num: 41

Candidate Starts for Amymech\_83:

(Start: 41 @52603 has 23 MA's), (53, 52735),

Gene: Annalisa\_79 Start: 46848, Stop: 47156, Start Num: 45

Candidate Starts for Annalisa\_79:

(9, 46026), (10, 46068), (17, 46530), (20, 46575), (Start: 45 @46848 has 84 MA's), (53, 46971),

Gene: Archis\_82 Start: 48570, Stop: 48932, Start Num: 45

Candidate Starts for Archis\_82:

(Start: 45 @48570 has 84 MA's), (53, 48690),

Gene: Arib1\_78 Start: 46141, Stop: 46524, Start Num: 47

Candidate Starts for Arib1\_78:

(Start: 47 @46141 has 88 MA's), (53, 46258), (78, 46513),

Gene: Ariel\_4 Start: 1612, Stop: 1986, Start Num: 47

Candidate Starts for Ariel\_4:

(Start: 47 @1612 has 88 MA's), (53, 1729), (56, 1747), (62, 1840), (63, 1861), (64, 1879), (69, 1963),

Gene: Atcoo\_78 Start: 48483, Stop: 48866, Start Num: 47

Candidate Starts for Atcoo\_78:

(Start: 47 @48483 has 88 MA's), (53, 48600), (78, 48855),

Gene: Attis\_74 Start: 47514, Stop: 47822, Start Num: 45

Candidate Starts for Attis\_74:

(Start: 45 @47514 has 84 MA's), (53, 47637),

Gene: Ayotoya\_74 Start: 50124, Stop: 50486, Start Num: 43

Candidate Starts for Ayotoya\_74:

(Start: 43 @50124 has 15 MA's), (53, 50247), (73, 50460), (76, 50469),

Gene: Azula\_86 Start: 53170, Stop: 53538, Start Num: 47

Candidate Starts for Azula\_86:

(Start: 47 @53170 has 88 MA's), (53, 53287),

Gene: BAKA\_4 Start: 1934, Stop: 2308, Start Num: 47

Candidate Starts for BAKA\_4:

(Start: 47 @1934 has 88 MA's), (53, 2051), (56, 2069), (58, 2120), (64, 2201), (65, 2219), (69, 2285),

Gene: BBQValindra\_67 Start: 46445, Stop: 46783, Start Num: 45

Candidate Starts for BBQValindra\_67:

(Start: 45 @46445 has 84 MA's), (53, 46559), (55, 46574), (72, 46766),

Gene: BackstagePass\_72 Start: 45793, Stop: 46131, Start Num: 45

Candidate Starts for BackstagePass\_72:

(Start: 45 @45793 has 84 MA's), (53, 45907), (55, 45922), (72, 46114),

Gene: Bagrid\_3 Start: 1116, Stop: 1490, Start Num: 47

Candidate Starts for Bagrid\_3:

(Start: 47 @1116 has 88 MA's), (53, 1233), (56, 1251), (58, 1302), (64, 1383), (65, 1401), (69, 1467),

Gene: Barco\_77 Start: 48475, Stop: 48837, Start Num: 45

Candidate Starts for Barco\_77:

(25, 48286), (31, 48346), (36, 48400), (Start: 45 @48475 has 84 MA's), (53, 48595),

Gene: Bartholomew\_77 Start: 45893, Stop: 46276, Start Num: 47

Candidate Starts for Bartholomew\_77:

(Start: 47 @45893 has 88 MA's), (53, 46010), (78, 46265),

Gene: BaxterFox\_85 Start: 53261, Stop: 53617, Start Num: 45

Candidate Starts for BaxterFox\_85:  
(Start: 45 @53261 has 84 MA's), (53, 53384),

Gene: Beem\_4 Start: 1577, Stop: 1951, Start Num: 47  
Candidate Starts for Beem\_4:  
(Start: 47 @1577 has 88 MA's), (53, 1694), (56, 1712), (58, 1763), (62, 1805), (63, 1826), (64, 1844),  
(69, 1928),

Gene: Beenie\_73 Start: 47518, Stop: 47826, Start Num: 45  
Candidate Starts for Beenie\_73:  
(Start: 45 @47518 has 84 MA's), (53, 47641),

Gene: Begonia\_78 Start: 50356, Stop: 50799, Start Num: 35  
Candidate Starts for Begonia\_78:  
(27, 50254), (Start: 35 @50356 has 1 MA's), (36, 50359), (Start: 45 @50437 has 84 MA's), (53,  
50557),

Gene: BetterKatz\_74 Start: 49906, Stop: 50268, Start Num: 43  
Candidate Starts for BetterKatz\_74:  
(Start: 43 @49906 has 15 MA's), (53, 50029), (73, 50242), (76, 50251),

Gene: BigNuz\_81 Start: 48028, Stop: 48417, Start Num: 47  
Candidate Starts for BigNuz\_81:  
(Start: 47 @48028 has 88 MA's), (53, 48145), (67, 48304), (78, 48406),

Gene: Bjanes7\_72 Start: 45675, Stop: 45983, Start Num: 45  
Candidate Starts for Bjanes7\_72:  
(Start: 45 @45675 has 84 MA's), (53, 45798),

Gene: BlingBling\_76 Start: 48316, Stop: 48678, Start Num: 45  
Candidate Starts for BlingBling\_76:  
(32, 48214), (Start: 45 @48316 has 84 MA's), (53, 48436),

Gene: Blino\_81 Start: 53716, Stop: 54084, Start Num: 47  
Candidate Starts for Blino\_81:  
(Start: 35 @53626 has 1 MA's), (36, 53629), (Start: 47 @53716 has 88 MA's), (53, 53833),

Gene: Blueberry\_86 Start: 54538, Stop: 54906, Start Num: 47  
Candidate Starts for Blueberry\_86:  
(Start: 47 @54538 has 88 MA's), (53, 54655),

Gene: Bobby\_5 Start: 2312, Stop: 2686, Start Num: 47  
Candidate Starts for Bobby\_5:  
(Start: 47 @2312 has 88 MA's), (53, 2429), (56, 2447), (58, 2498), (62, 2540), (63, 2561), (64, 2579),  
(69, 2663),

Gene: Bock\_75 Start: 49490, Stop: 49852, Start Num: 43  
Candidate Starts for Bock\_75:  
(Start: 43 @49490 has 15 MA's), (53, 49613), (73, 49826), (76, 49835),

Gene: Bogie\_81 Start: 48048, Stop: 48431, Start Num: 47  
Candidate Starts for Bogie\_81:  
(Start: 47 @48048 has 88 MA's), (53, 48165), (78, 48420),

Gene: Bowser\_67 Start: 46139, Stop: 46477, Start Num: 45

Candidate Starts for Bowser\_67:

(Start: 45 @46139 has 84 MA's), (53, 46253), (55, 46268), (61, 46310), (72, 46460),

Gene: Brusacoram\_78 Start: 47026, Stop: 47409, Start Num: 47

Candidate Starts for Brusacoram\_78:

(Start: 47 @47026 has 88 MA's), (53, 47143), (78, 47398),

Gene: Brylie\_73 Start: 49140, Stop: 49502, Start Num: 43

Candidate Starts for Brylie\_73:

(Start: 43 @49140 has 15 MA's), (53, 49263), (73, 49476), (76, 49485),

Gene: Bunker\_61 Start: 45078, Stop: 45416, Start Num: 45

Candidate Starts for Bunker\_61:

(Start: 45 @45078 has 84 MA's), (53, 45192), (55, 45207), (72, 45399),

Gene: Bunnies\_81 Start: 48231, Stop: 48614, Start Num: 47

Candidate Starts for Bunnies\_81:

(Start: 47 @48231 has 88 MA's), (53, 48348), (78, 48603),

Gene: CactusJack\_79 Start: 47630, Stop: 48013, Start Num: 47

Candidate Starts for CactusJack\_79:

(Start: 47 @47630 has 88 MA's), (53, 47747), (78, 48002),

Gene: Camster\_80 Start: 46558, Stop: 46941, Start Num: 47

Candidate Starts for Camster\_80:

(Start: 47 @46558 has 88 MA's), (53, 46675), (78, 46930),

Gene: CaptainKirk2\_79 Start: 47468, Stop: 47830, Start Num: 45

Candidate Starts for CaptainKirk2\_79:

(22, 47237), (26, 47282), (32, 47366), (Start: 45 @47468 has 84 MA's), (53, 47588),

Gene: CarolAnn\_80 Start: 53715, Stop: 54083, Start Num: 47

Candidate Starts for CarolAnn\_80:

(Start: 35 @53625 has 1 MA's), (36, 53628), (Start: 47 @53715 has 88 MA's), (53, 53832),

Gene: Chop\_75 Start: 50189, Stop: 50551, Start Num: 43

Candidate Starts for Chop\_75:

(Start: 43 @50189 has 15 MA's), (53, 50312), (73, 50525), (76, 50534),

Gene: Clap\_75 Start: 45854, Stop: 46162, Start Num: 45

Candidate Starts for Clap\_75:

(Start: 45 @45854 has 84 MA's), (53, 45977),

Gene: Clark\_78 Start: 47281, Stop: 47589, Start Num: 45

Candidate Starts for Clark\_78:

(Start: 45 @47281 has 84 MA's), (53, 47404),

Gene: Constella\_3 Start: 1115, Stop: 1489, Start Num: 47

Candidate Starts for Constella\_3:

(Start: 47 @1115 has 88 MA's), (53, 1232), (56, 1250), (58, 1301), (64, 1382), (65, 1400), (69, 1466),

Gene: Coriander\_66 Start: 43793, Stop: 44143, Start Num: 45  
Candidate Starts for Coriander\_66:  
(29, 43616), (31, 43646), (Start: 45 @43793 has 84 MA's), (53, 43916), (57, 43934), (72, 44126),

Gene: Courthouse\_5 Start: 2411, Stop: 2785, Start Num: 47  
Candidate Starts for Courthouse\_5:  
(Start: 47 @2411 has 88 MA's), (53, 2528), (56, 2546), (62, 2639), (63, 2660), (64, 2678), (69, 2762),

Gene: Cynthia\_75 Start: 45852, Stop: 46160, Start Num: 45  
Candidate Starts for Cynthia\_75:  
(Start: 45 @45852 has 84 MA's), (53, 45975),

Gene: Daegal\_84 Start: 53717, Stop: 54103, Start Num: 41  
Candidate Starts for Daegal\_84:  
(Start: 41 @53717 has 23 MA's), (53, 53849),

Gene: DeepSoil15\_83 Start: 52603, Stop: 52992, Start Num: 41  
Candidate Starts for DeepSoil15\_83:  
(Start: 41 @52603 has 23 MA's), (53, 52735),

Gene: DelRio\_74 Start: 50231, Stop: 50593, Start Num: 43  
Candidate Starts for DelRio\_74:  
(Start: 43 @50231 has 15 MA's), (53, 50354), (73, 50567), (76, 50576),

Gene: Denise\_78 Start: 44676, Stop: 44984, Start Num: 45  
Candidate Starts for Denise\_78:  
(Start: 45 @44676 has 84 MA's), (53, 44799),

Gene: Dewey\_76 Start: 52603, Stop: 52992, Start Num: 41  
Candidate Starts for Dewey\_76:  
(Start: 41 @52603 has 23 MA's), (53, 52735),

Gene: DirtyBoi\_68 Start: 43434, Stop: 43784, Start Num: 45  
Candidate Starts for DirtyBoi\_68:  
(Start: 45 @43434 has 84 MA's), (53, 43557), (57, 43575), (72, 43767),

Gene: Dmitri\_63 Start: 45337, Stop: 45687, Start Num: 45  
Candidate Starts for Dmitri\_63:  
(Start: 45 @45337 has 84 MA's), (53, 45460), (57, 45478), (72, 45670),

Gene: DmpstrDiver\_4 Start: 1862, Stop: 2236, Start Num: 47  
Candidate Starts for DmpstrDiver\_4:  
(Start: 47 @1862 has 88 MA's), (53, 1979), (56, 1997), (58, 2048), (64, 2129), (65, 2147), (69, 2213),

Gene: DobbysSock\_73 Start: 47763, Stop: 48071, Start Num: 45  
Candidate Starts for DobbysSock\_73:  
(1, 46299), (2, 46383), (3, 46671), (4, 46707), (5, 46719), (6, 46755), (7, 46791), (8, 46845), (9, 46941), (10, 46983), (17, 47445), (20, 47490), (Start: 45 @47763 has 84 MA's), (53, 47886),

Gene: Doggs\_64 Start: 44986, Stop: 45336, Start Num: 45  
Candidate Starts for Doggs\_64:  
(29, 44809), (31, 44839), (Start: 45 @44986 has 84 MA's), (53, 45109), (54, 45115), (57, 45127), (72, 45319),

Gene: Dolores\_80 Start: 46901, Stop: 47209, Start Num: 45  
Candidate Starts for Dolores\_80:  
(9, 46079), (10, 46121), (17, 46583), (20, 46628), (Start: 45 @46901 has 84 MA's), (53, 47024),

Gene: Donovan\_78 Start: 46571, Stop: 46954, Start Num: 47  
Candidate Starts for Donovan\_78:  
(Start: 47 @46571 has 88 MA's), (53, 46688), (78, 46943),

Gene: Dorito\_75 Start: 46349, Stop: 46657, Start Num: 45  
Candidate Starts for Dorito\_75:  
(37, 46286), (Start: 45 @46349 has 84 MA's), (53, 46472),

Gene: Dove\_3 Start: 1115, Stop: 1489, Start Num: 47  
Candidate Starts for Dove\_3:  
(Start: 47 @1115 has 88 MA's), (53, 1232), (56, 1250), (58, 1301), (64, 1382), (65, 1400), (69, 1466),

Gene: Duke13\_4 Start: 1862, Stop: 2236, Start Num: 47  
Candidate Starts for Duke13\_4:  
(Start: 47 @1862 has 88 MA's), (53, 1979), (56, 1997), (58, 2048), (64, 2129), (65, 2147), (69, 2213),

Gene: DumpsterDude\_70 Start: 51346, Stop: 51699, Start Num: 46  
Candidate Starts for DumpsterDude\_70:  
(Start: 46 @51346 has 4 MA's), (53, 51466), (76, 51682),

Gene: Dynamo\_78 Start: 46082, Stop: 46465, Start Num: 47  
Candidate Starts for Dynamo\_78:  
(Start: 47 @46082 has 88 MA's), (53, 46199), (78, 46454),

Gene: Easley\_77 Start: 46282, Stop: 46590, Start Num: 45  
Candidate Starts for Easley\_77:  
(Start: 45 @46282 has 84 MA's), (53, 46405),

Gene: Ebert\_78 Start: 46286, Stop: 46594, Start Num: 45  
Candidate Starts for Ebert\_78:  
(Start: 45 @46286 has 84 MA's), (53, 46409),

Gene: EdnaMode\_75 Start: 46208, Stop: 46516, Start Num: 45  
Candidate Starts for EdnaMode\_75:  
(Start: 45 @46208 has 84 MA's), (53, 46331),

Gene: Ein37\_83 Start: 52603, Stop: 52992, Start Num: 41  
Candidate Starts for Ein37\_83:  
(Start: 41 @52603 has 23 MA's), (53, 52735),

Gene: Ejimix\_5 Start: 2327, Stop: 2701, Start Num: 47  
Candidate Starts for Ejimix\_5:  
(Start: 47 @2327 has 88 MA's), (53, 2444), (56, 2462), (58, 2513), (62, 2555), (63, 2576), (64, 2594), (69, 2678),

Gene: EricMillard\_4 Start: 1862, Stop: 2236, Start Num: 47  
Candidate Starts for EricMillard\_4:  
(Start: 47 @1862 has 88 MA's), (53, 1979), (56, 1997), (58, 2048), (64, 2129), (65, 2147), (69, 2213),

Gene: Evanesce\_82 Start: 52603, Stop: 52992, Start Num: 41

Candidate Starts for Evanesce\_82:

(Start: 41 @52603 has 23 MA's), (53, 52735),

Gene: Eyes\_65 Start: 46342, Stop: 46680, Start Num: 45

Candidate Starts for Eyes\_65:

(Start: 45 @46342 has 84 MA's), (53, 46456), (55, 46471), (72, 46663),

Gene: Fairfaxidum\_81 Start: 49748, Stop: 50098, Start Num: 45

Candidate Starts for Fairfaxidum\_81:

(Start: 45 @49748 has 84 MA's), (53, 49868),

Gene: Fenry\_78 Start: 49536, Stop: 49898, Start Num: 45

Candidate Starts for Fenry\_78:

(Start: 45 @49536 has 84 MA's), (53, 49656),

Gene: Finkle\_84 Start: 47378, Stop: 47758, Start Num: 46

Candidate Starts for Finkle\_84:

(Start: 46 @47378 has 4 MA's), (50, 47447), (53, 47513), (77, 47738),

Gene: FirstPlacePfu\_82 Start: 45089, Stop: 45472, Start Num: 47

Candidate Starts for FirstPlacePfu\_82:

(Start: 47 @45089 has 88 MA's), (53, 45206), (78, 45461),

Gene: Fishburne\_77 Start: 46518, Stop: 46901, Start Num: 47

Candidate Starts for Fishburne\_77:

(Start: 47 @46518 has 88 MA's), (53, 46635), (78, 46890),

Gene: Forge\_76 Start: 52603, Stop: 52992, Start Num: 41

Candidate Starts for Forge\_76:

(Start: 41 @52603 has 23 MA's), (53, 52735),

Gene: Francois\_74 Start: 49804, Stop: 50169, Start Num: 43

Candidate Starts for Francois\_74:

(Start: 43 @49804 has 15 MA's), (53, 49927), (76, 50152),

Gene: Frokostdame\_84 Start: 52079, Stop: 52447, Start Num: 47

Candidate Starts for Frokostdame\_84:

(Start: 47 @52079 has 88 MA's), (53, 52196),

Gene: GEazy\_73 Start: 46298, Stop: 46636, Start Num: 45

Candidate Starts for GEazy\_73:

(Start: 45 @46298 has 84 MA's), (53, 46412), (55, 46427), (72, 46619),

Gene: Gambino\_89 Start: 53170, Stop: 53538, Start Num: 47

Candidate Starts for Gambino\_89:

(Start: 47 @53170 has 88 MA's), (53, 53287),

Gene: Gancho\_83 Start: 52980, Stop: 53369, Start Num: 41

Candidate Starts for Gancho\_83:

(Start: 41 @52980 has 23 MA's), (53, 53112),

Gene: GemG\_75 Start: 45858, Stop: 46166, Start Num: 45  
Candidate Starts for GemG\_75:  
(Start: 45 @45858 has 84 MA's), (53, 45981),

Gene: Giles\_76 Start: 52603, Stop: 52992, Start Num: 41  
Candidate Starts for Giles\_76:  
(Start: 41 @52603 has 23 MA's), (53, 52735),

Gene: Glaske\_78 Start: 47630, Stop: 48013, Start Num: 47  
Candidate Starts for Glaske\_78:  
(Start: 47 @47630 has 88 MA's), (53, 47747), (78, 48002),

Gene: Gonephishing\_8 Start: 3463, Stop: 3834, Start Num: 47  
Candidate Starts for Gonephishing\_8:  
(Start: 47 @3463 has 88 MA's), (53, 3577), (55, 3592), (56, 3595), (62, 3688), (63, 3709), (64, 3727),  
(69, 3811),

Gene: GrandSlam\_75 Start: 50189, Stop: 50551, Start Num: 43  
Candidate Starts for GrandSlam\_75:  
(Start: 43 @50189 has 15 MA's), (53, 50312), (73, 50525), (76, 50534),

Gene: Gravaillia\_77 Start: 52782, Stop: 53168, Start Num: 41  
Candidate Starts for Gravaillia\_77:  
(33, 52671), (Start: 41 @52782 has 23 MA's), (53, 52914),

Gene: GreaseLightnin\_80 Start: 47833, Stop: 48216, Start Num: 47  
Candidate Starts for GreaseLightnin\_80:  
(Start: 47 @47833 has 88 MA's), (53, 47950), (78, 48205),

Gene: Guacamole\_78 Start: 49464, Stop: 49826, Start Num: 45  
Candidate Starts for Guacamole\_78:  
(Start: 45 @49464 has 84 MA's), (53, 49584),

Gene: HH92\_82 Start: 52603, Stop: 52992, Start Num: 41  
Candidate Starts for HH92\_82:  
(Start: 41 @52603 has 23 MA's), (53, 52735),

Gene: HUHilltop\_81 Start: 46305, Stop: 46688, Start Num: 47  
Candidate Starts for HUHilltop\_81:  
(Start: 47 @46305 has 88 MA's), (53, 46422), (78, 46677),

Gene: Hadrien\_80 Start: 52603, Stop: 52992, Start Num: 41  
Candidate Starts for Hadrien\_80:  
(Start: 41 @52603 has 23 MA's), (53, 52735),

Gene: Hail\_76 Start: 52603, Stop: 52992, Start Num: 41  
Candidate Starts for Hail\_76:  
(Start: 41 @52603 has 23 MA's), (53, 52735),

Gene: Haley23\_75 Start: 45854, Stop: 46162, Start Num: 45  
Candidate Starts for Haley23\_75:  
(Start: 45 @45854 has 84 MA's), (53, 45977),



Gene: Halley\_4 Start: 1577, Stop: 1951, Start Num: 47

Candidate Starts for Halley\_4:

(Start: 47 @1577 has 88 MA's), (53, 1694), (56, 1712), (58, 1763), (62, 1805), (63, 1826), (64, 1844), (69, 1928),

Gene: Hamood\_75 Start: 50189, Stop: 50551, Start Num: 43

Candidate Starts for Hamood\_75:

(Start: 43 @50189 has 15 MA's), (53, 50312), (73, 50525), (76, 50534),

Gene: Hannaconda\_2 Start: 1094, Stop: 1465, Start Num: 47

Candidate Starts for Hannaconda\_2:

(40, 1052), (Start: 47 @1094 has 88 MA's), (53, 1208), (55, 1223), (56, 1226), (62, 1319), (63, 1340), (64, 1358), (69, 1442),

Gene: HannahD\_70 Start: 45665, Stop: 46003, Start Num: 45

Candidate Starts for HannahD\_70:

(Start: 45 @45665 has 84 MA's), (53, 45779), (55, 45794), (72, 45986),

Gene: Hedwig\_70 Start: 44137, Stop: 44487, Start Num: 45

Candidate Starts for Hedwig\_70:

(31, 43990), (Start: 45 @44137 has 84 MA's), (53, 44260), (54, 44266), (57, 44278), (72, 44470),

Gene: HokkenD\_4 Start: 1865, Stop: 2239, Start Num: 47

Candidate Starts for HokkenD\_4:

(Start: 47 @1865 has 88 MA's), (53, 1982), (56, 2000), (58, 2051), (64, 2132), (65, 2150), (69, 2216),

Gene: Hortense\_80 Start: 52736, Stop: 53092, Start Num: 45

Candidate Starts for Hortense\_80:

(24, 52514), (Start: 45 @52736 has 84 MA's), (53, 52859),

Gene: Howe\_80 Start: 52736, Stop: 53092, Start Num: 45

Candidate Starts for Howe\_80:

(24, 52514), (Start: 45 @52736 has 84 MA's), (53, 52859),

Gene: Hughesyang\_4 Start: 1862, Stop: 2236, Start Num: 47

Candidate Starts for Hughesyang\_4:

(Start: 47 @1862 has 88 MA's), (53, 1979), (56, 1997), (58, 2048), (64, 2129), (65, 2147), (69, 2213),

Gene: Jalammah\_82 Start: 51123, Stop: 51485, Start Num: 45

Candidate Starts for Jalammah\_82:

(Start: 45 @51123 has 84 MA's), (53, 51243),

Gene: JasperJr\_78 Start: 49464, Stop: 49826, Start Num: 45

Candidate Starts for JasperJr\_78:

(Start: 45 @49464 has 84 MA's), (53, 49584),

Gene: Jebeks\_77 Start: 44989, Stop: 45372, Start Num: 47

Candidate Starts for Jebeks\_77:

(Start: 47 @44989 has 88 MA's), (53, 45106), (78, 45361),

Gene: Journey\_64 Start: 41500, Stop: 41799, Start Num: 51

Candidate Starts for Journey\_64:

(Start: 51 @41500 has 1 MA's),

Gene: JuJu\_88 Start: 53549, Stop: 53917, Start Num: 47  
Candidate Starts for JuJu\_88:  
(Start: 47 @53549 has 88 MA's), (53, 53666), (71, 53900),

Gene: JuicyJay\_5 Start: 2410, Stop: 2784, Start Num: 47  
Candidate Starts for JuicyJay\_5:  
(Start: 47 @2410 has 88 MA's), (53, 2527), (56, 2545), (62, 2638), (63, 2659), (64, 2677), (69, 2761),

Gene: Jung\_77 Start: 45968, Stop: 46351, Start Num: 47  
Candidate Starts for Jung\_77:  
(Start: 47 @45968 has 88 MA's), (53, 46085), (78, 46340),

Gene: Juniormint\_74 Start: 44984, Stop: 45367, Start Num: 47  
Candidate Starts for Juniormint\_74:  
(Start: 47 @44984 has 88 MA's), (53, 45101), (78, 45356),

Gene: JustASigh\_89 Start: 52239, Stop: 52625, Start Num: 41  
Candidate Starts for JustASigh\_89:  
(Start: 41 @52239 has 23 MA's), (53, 52371),

Gene: Kalah2\_5 Start: 2406, Stop: 2780, Start Num: 47  
Candidate Starts for Kalah2\_5:  
(Start: 47 @2406 has 88 MA's), (53, 2523), (56, 2541), (58, 2592), (64, 2673), (65, 2691), (69, 2757),

Gene: Kari\_77 Start: 46932, Stop: 47315, Start Num: 47  
Candidate Starts for Kari\_77:  
(Start: 47 @46932 has 88 MA's), (53, 47049), (78, 47304),

Gene: KashFlow\_2 Start: 1184, Stop: 1552, Start Num: 47  
Candidate Starts for KashFlow\_2:  
(Start: 41 @1175 has 23 MA's), (Start: 47 @1184 has 88 MA's), (49, 1241), (53, 1301), (55, 1316),  
(62, 1406), (63, 1427), (64, 1445), (69, 1529),

Gene: Kiko\_67 Start: 43864, Stop: 44214, Start Num: 45  
Candidate Starts for Kiko\_67:  
(Start: 45 @43864 has 84 MA's), (48, 43876), (53, 43987), (59, 44026), (61, 44044), (68, 44143), (71,  
44194), (72, 44197),

Gene: KilKor\_79 Start: 48323, Stop: 48706, Start Num: 47  
Candidate Starts for KilKor\_79:  
(Start: 47 @48323 has 88 MA's), (53, 48440), (78, 48695),

Gene: Kinbote\_81 Start: 52603, Stop: 52992, Start Num: 41  
Candidate Starts for Kinbote\_81:  
(Start: 41 @52603 has 23 MA's), (53, 52735),

Gene: Klein\_5 Start: 2410, Stop: 2778, Start Num: 47  
Candidate Starts for Klein\_5:  
(Start: 47 @2410 has 88 MA's), (53, 2527), (55, 2542), (62, 2632), (63, 2653), (64, 2671), (69, 2755),

Gene: Ksquared\_80 Start: 48108, Stop: 48491, Start Num: 47  
Candidate Starts for Ksquared\_80:

(Start: 47 @48108 has 88 MA's), (53, 48225), (78, 48480),

Gene: Lamberg\_71 Start: 44363, Stop: 44671, Start Num: 45

Candidate Starts for Lamberg\_71:

(Start: 45 @44363 has 84 MA's), (53, 44486),

Gene: Langerak\_77 Start: 46496, Stop: 46879, Start Num: 47

Candidate Starts for Langerak\_77:

(Start: 47 @46496 has 88 MA's), (53, 46613), (78, 46868),

Gene: LilHazelnut\_83 Start: 52603, Stop: 52992, Start Num: 41

Candidate Starts for LilHazelnut\_83:

(Start: 41 @52603 has 23 MA's), (53, 52735),

Gene: LittleE\_5 Start: 1974, Stop: 2345, Start Num: 47

Candidate Starts for LittleE\_5:

(Start: 47 @1974 has 88 MA's), (53, 2088), (55, 2103), (56, 2106), (62, 2199), (63, 2220), (64, 2238), (66, 2286), (69, 2322),

Gene: LordFarquaad\_76 Start: 47496, Stop: 47804, Start Num: 45

Candidate Starts for LordFarquaad\_76:

(Start: 45 @47496 has 84 MA's), (53, 47619),

Gene: Lucky2013\_5 Start: 2039, Stop: 2410, Start Num: 47

Candidate Starts for Lucky2013\_5:

(Start: 47 @2039 has 88 MA's), (53, 2153), (55, 2168), (56, 2171), (62, 2264), (63, 2285), (64, 2303), (69, 2387),

Gene: Luke\_80 Start: 52558, Stop: 52947, Start Num: 41

Candidate Starts for Luke\_80:

(Start: 41 @52558 has 23 MA's), (53, 52690),

Gene: Luna22\_76 Start: 52587, Stop: 52976, Start Num: 41

Candidate Starts for Luna22\_76:

(Start: 41 @52587 has 23 MA's), (53, 52719),

Gene: Lysidious\_83 Start: 50525, Stop: 50887, Start Num: 45

Candidate Starts for Lysidious\_83:

(32, 50423), (Start: 45 @50525 has 84 MA's), (53, 50645),

Gene: MagicMan\_70 Start: 47168, Stop: 47506, Start Num: 45

Candidate Starts for MagicMan\_70:

(Start: 45 @47168 has 84 MA's), (53, 47282), (55, 47297), (72, 47489),

Gene: Majeke\_81 Start: 47020, Stop: 47403, Start Num: 47

Candidate Starts for Majeke\_81:

(Start: 47 @47020 has 88 MA's), (53, 47137), (78, 47392),

Gene: Malachai\_77 Start: 50437, Stop: 50799, Start Num: 45

Candidate Starts for Malachai\_77:

(27, 50254), (Start: 35 @50356 has 1 MA's), (36, 50359), (Start: 45 @50437 has 84 MA's), (53, 50557),

Gene: Malibo\_75 Start: 49012, Stop: 49365, Start Num: 46  
Candidate Starts for Malibo\_75:  
(Start: 46 @49012 has 4 MA's), (53, 49132), (76, 49348),

Gene: Malithi\_79 Start: 46278, Stop: 46661, Start Num: 47  
Candidate Starts for Malithi\_79:  
(Start: 47 @46278 has 88 MA's), (53, 46395), (78, 46650),

Gene: Mangethe\_81 Start: 47020, Stop: 47403, Start Num: 47  
Candidate Starts for Mangethe\_81:  
(Start: 47 @47020 has 88 MA's), (53, 47137), (78, 47392),

Gene: Matteo\_68 Start: 43712, Stop: 44020, Start Num: 45  
Candidate Starts for Matteo\_68:  
(Start: 45 @43712 has 84 MA's), (53, 43835),

Gene: Megiddo\_78 Start: 48191, Stop: 48574, Start Num: 47  
Candidate Starts for Megiddo\_78:  
(Start: 47 @48191 has 88 MA's), (53, 48308), (78, 48563),

Gene: Melba\_79 Start: 47920, Stop: 48282, Start Num: 45  
Candidate Starts for Melba\_79:  
(27, 47734), (Start: 45 @47920 has 84 MA's), (53, 48040),

Gene: Mellie\_76 Start: 47585, Stop: 47947, Start Num: 45  
Candidate Starts for Mellie\_76:  
(25, 47396), (31, 47456), (Start: 35 @47507 has 1 MA's), (36, 47510), (Start: 45 @47585 has 84 MA's), (53, 47705),

Gene: MiaZeal\_5 Start: 2108, Stop: 2479, Start Num: 47  
Candidate Starts for MiaZeal\_5:  
(Start: 47 @2108 has 88 MA's), (53, 2222), (55, 2237), (56, 2240), (62, 2333), (63, 2354), (64, 2372), (69, 2456),

Gene: MichaelScott\_80 Start: 47962, Stop: 48270, Start Num: 45  
Candidate Starts for MichaelScott\_80:  
(Start: 45 @47962 has 84 MA's), (53, 48085),

Gene: Minerva\_4 Start: 1866, Stop: 2240, Start Num: 47  
Candidate Starts for Minerva\_4:  
(Start: 47 @1866 has 88 MA's), (53, 1983), (56, 2001), (58, 2052), (64, 2133), (65, 2151), (69, 2217),

Gene: MissRona\_86 Start: 53171, Stop: 53539, Start Num: 47  
Candidate Starts for MissRona\_86:  
(Start: 47 @53171 has 88 MA's), (53, 53288),

Gene: Mocha12\_75 Start: 45854, Stop: 46162, Start Num: 45  
Candidate Starts for Mocha12\_75:  
(Start: 45 @45854 has 84 MA's), (53, 45977),

Gene: Mulch\_73 Start: 49179, Stop: 49541, Start Num: 43  
Candidate Starts for Mulch\_73:  
(Start: 43 @49179 has 15 MA's), (53, 49302), (73, 49515), (76, 49524),

Gene: Murp\_78 Start: 51067, Stop: 51432, Start Num: 45

Candidate Starts for Murp\_78:

(Start: 45 @51067 has 84 MA's), (53, 51187),

Gene: Nadeem\_73 Start: 49167, Stop: 49529, Start Num: 43

Candidate Starts for Nadeem\_73:

(Start: 43 @49167 has 15 MA's), (53, 49290), (73, 49503), (76, 49512),

Gene: NancyRae\_72 Start: 49045, Stop: 49407, Start Num: 43

Candidate Starts for NancyRae\_72:

(Start: 43 @49045 has 15 MA's), (53, 49168), (73, 49381), (76, 49390),

Gene: Nazo\_82 Start: 47914, Stop: 48303, Start Num: 47

Candidate Starts for Nazo\_82:

(Start: 47 @47914 has 88 MA's), (53, 48031), (67, 48190), (78, 48292),

Gene: Necropolis\_76 Start: 45672, Stop: 46055, Start Num: 47

Candidate Starts for Necropolis\_76:

(Start: 47 @45672 has 88 MA's), (53, 45789), (78, 46044),

Gene: Nettuno\_71 Start: 44161, Stop: 44469, Start Num: 45

Candidate Starts for Nettuno\_71:

(Start: 45 @44161 has 84 MA's), (53, 44284),

Gene: NihilNomen\_4 Start: 1866, Stop: 2240, Start Num: 47

Candidate Starts for NihilNomen\_4:

(Start: 47 @1866 has 88 MA's), (53, 1983), (56, 2001), (58, 2052), (64, 2133), (65, 2151), (69, 2217),

Gene: OBUpride\_82 Start: 52647, Stop: 53036, Start Num: 41

Candidate Starts for OBUpride\_82:

(Start: 41 @52647 has 23 MA's), (53, 52779),

Gene: Obliviate\_80 Start: 48856, Stop: 49218, Start Num: 45

Candidate Starts for Obliviate\_80:

(27, 48673), (32, 48754), (Start: 45 @48856 has 84 MA's), (53, 48976),

Gene: Ohgeesy\_85 Start: 53016, Stop: 53372, Start Num: 45

Candidate Starts for Ohgeesy\_85:

(38, 52962), (39, 52965), (Start: 45 @53016 has 84 MA's), (53, 53139),

Gene: Omega\_7 Start: 3319, Stop: 3690, Start Num: 47

Candidate Starts for Omega\_7:

(Start: 47 @3319 has 88 MA's), (53, 3433), (55, 3448), (56, 3451), (62, 3544), (63, 3565), (64, 3583), (66, 3631), (69, 3667),

Gene: Opie\_73 Start: 47283, Stop: 47621, Start Num: 45

Candidate Starts for Opie\_73:

(Start: 45 @47283 has 84 MA's), (53, 47397), (55, 47412), (72, 47604),

Gene: Optimus\_4 Start: 1862, Stop: 2236, Start Num: 47

Candidate Starts for Optimus\_4:

(Start: 47 @1862 has 88 MA's), (53, 1979), (56, 1997), (58, 2048), (64, 2129), (65, 2147), (69, 2213),

Gene: Oregano\_79 Start: 47140, Stop: 47448, Start Num: 45  
Candidate Starts for Oregano\_79:  
(9, 46318), (10, 46360), (17, 46822), (20, 46867), (Start: 45 @47140 has 84 MA's), (53, 47263),

Gene: PCoral7\_80 Start: 49167, Stop: 49517, Start Num: 45  
Candidate Starts for PCoral7\_80:  
(Start: 45 @49167 has 84 MA's), (53, 49287),

Gene: PantheRoc\_87 Start: 53085, Stop: 53441, Start Num: 45  
Candidate Starts for PantheRoc\_87:  
(Start: 45 @53085 has 84 MA's), (53, 53208),

Gene: Parada\_73 Start: 49179, Stop: 49541, Start Num: 43  
Candidate Starts for Parada\_73:  
(Start: 43 @49179 has 15 MA's), (53, 49302), (73, 49515), (76, 49524),

Gene: Phalm\_79 Start: 47621, Stop: 48004, Start Num: 47  
Candidate Starts for Phalm\_79:  
(Start: 47 @47621 has 88 MA's), (53, 47738), (78, 47993),

Gene: Phayonce\_76 Start: 48244, Stop: 48636, Start Num: 44  
Candidate Starts for Phayonce\_76:  
(Start: 44 @48244 has 2 MA's), (53, 48370), (78, 48625),

Gene: Phegasus\_81 Start: 46987, Stop: 47370, Start Num: 47  
Candidate Starts for Phegasus\_81:  
(Start: 47 @46987 has 88 MA's), (53, 47104), (78, 47359),

Gene: Phoebus\_4 Start: 1862, Stop: 2236, Start Num: 47  
Candidate Starts for Phoebus\_4:  
(Start: 47 @1862 has 88 MA's), (53, 1979), (56, 1997), (58, 2048), (64, 2129), (65, 2147), (69, 2213),

Gene: PhriskyACE\_74 Start: 46797, Stop: 47105, Start Num: 45  
Candidate Starts for PhriskyACE\_74:  
(20, 46524), (Start: 45 @46797 has 84 MA's), (53, 46920),

Gene: PhrostedPhlake\_88 Start: 51612, Stop: 51974, Start Num: 45  
Candidate Starts for PhrostedPhlake\_88:  
(25, 51417), (31, 51477), (32, 51507), (Start: 45 @51612 has 84 MA's), (53, 51732),

Gene: Pickett\_74 Start: 45046, Stop: 45354, Start Num: 45  
Candidate Starts for Pickett\_74:  
(Start: 45 @45046 has 84 MA's), (53, 45169),

Gene: Pimento\_76 Start: 49264, Stop: 49626, Start Num: 43  
Candidate Starts for Pimento\_76:  
(Start: 43 @49264 has 15 MA's), (53, 49387), (73, 49600), (76, 49609),

Gene: Polkaroo\_80 Start: 48493, Stop: 48876, Start Num: 47  
Candidate Starts for Polkaroo\_80:  
(Start: 47 @48493 has 88 MA's), (53, 48610), (78, 48865),

Gene: Porcelain\_5 Start: 2108, Stop: 2479, Start Num: 47  
Candidate Starts for Porcelain\_5:  
(Start: 47 @2108 has 88 MA's), (53, 2222), (55, 2237), (56, 2240), (62, 2333), (63, 2354), (64, 2372),  
(69, 2456),

Gene: Pound\_4 Start: 1862, Stop: 2236, Start Num: 47  
Candidate Starts for Pound\_4:  
(Start: 47 @1862 has 88 MA's), (53, 1979), (56, 1997), (58, 2048), (64, 2129), (65, 2147), (69, 2213),

Gene: Powerball\_76 Start: 47248, Stop: 47556, Start Num: 45  
Candidate Starts for Powerball\_76:  
(Start: 45 @47248 has 84 MA's), (53, 47371),

Gene: PrincePatrick\_80 Start: 48397, Stop: 48747, Start Num: 45  
Candidate Starts for PrincePatrick\_80:  
(Start: 45 @48397 has 84 MA's), (53, 48517),

Gene: Purky\_84 Start: 49951, Stop: 50334, Start Num: 47  
Candidate Starts for Purky\_84:  
(Start: 47 @49951 has 88 MA's), (53, 50068), (78, 50323),

Gene: Pygmy\_82 Start: 48021, Stop: 48404, Start Num: 47  
Candidate Starts for Pygmy\_82:  
(Start: 47 @48021 has 88 MA's), (53, 48138), (78, 48393),

Gene: REQ2\_82 Start: 48914, Stop: 49288, Start Num: 47  
Candidate Starts for REQ2\_82:  
(13, 48503), (18, 48596), (30, 48737), (Start: 47 @48914 has 88 MA's), (53, 49031),

Gene: RayTheFireFly\_73 Start: 45355, Stop: 45705, Start Num: 45  
Candidate Starts for RayTheFireFly\_73:  
(29, 45178), (31, 45208), (Start: 45 @45355 has 84 MA's), (53, 45478), (57, 45496), (72, 45688),

Gene: Rem711\_78 Start: 47971, Stop: 48363, Start Num: 42  
Candidate Starts for Rem711\_78:  
(Start: 42 @47971 has 1 MA's), (Start: 44 @47974 has 2 MA's), (53, 48100), (60, 48181), (70, 48343),

Gene: Ruthy\_72 Start: 50444, Stop: 50797, Start Num: 46  
Candidate Starts for Ruthy\_72:  
(Start: 46 @50444 has 4 MA's), (53, 50564), (76, 50780),

Gene: Sahara\_72 Start: 44705, Stop: 45013, Start Num: 45  
Candidate Starts for Sahara\_72:  
(Start: 45 @44705 has 84 MA's), (53, 44828),

Gene: Samba\_79 Start: 51070, Stop: 51432, Start Num: 45  
Candidate Starts for Samba\_79:  
(15, 50740), (22, 50836), (26, 50881), (32, 50968), (Start: 45 @51070 has 84 MA's), (53, 51190),

Gene: Samman98\_79 Start: 47113, Stop: 47421, Start Num: 45  
Candidate Starts for Samman98\_79:  
(20, 46840), (Start: 45 @47113 has 84 MA's), (53, 47236),

Gene: Savage\_75 Start: 45854, Stop: 46162, Start Num: 45

Candidate Starts for Savage\_75:

(Start: 45 @45854 has 84 MA's), (53, 45977),

Gene: Schatzie\_3 Start: 1116, Stop: 1490, Start Num: 47

Candidate Starts for Schatzie\_3:

(Start: 47 @1116 has 88 MA's), (53, 1233), (56, 1251), (58, 1302), (64, 1383), (65, 1401), (69, 1467),

Gene: Schnabeltier\_71 Start: 46465, Stop: 46803, Start Num: 45

Candidate Starts for Schnabeltier\_71:

(Start: 45 @46465 has 84 MA's), (53, 46579), (55, 46594), (72, 46786),

Gene: Sekhmet\_79 Start: 47300, Stop: 47608, Start Num: 45

Candidate Starts for Sekhmet\_79:

(9, 46478), (10, 46520), (17, 46982), (20, 47027), (Start: 45 @47300 has 84 MA's), (53, 47423),

Gene: Shipwreck\_81 Start: 48079, Stop: 48462, Start Num: 47

Candidate Starts for Shipwreck\_81:

(Start: 47 @48079 has 88 MA's), (53, 48196), (78, 48451),

Gene: Shlim410\_78 Start: 52736, Stop: 53092, Start Num: 45

Candidate Starts for Shlim410\_78:

(24, 52514), (Start: 45 @52736 has 84 MA's), (53, 52859),

Gene: Sidious\_79 Start: 51297, Stop: 51653, Start Num: 45

Candidate Starts for Sidious\_79:

(20, 51024), (Start: 45 @51297 has 84 MA's), (53, 51420),

Gene: SoilAssassin\_74 Start: 47513, Stop: 47821, Start Num: 45

Candidate Starts for SoilAssassin\_74:

(Start: 45 @47513 has 84 MA's), (53, 47636),

Gene: Sonah\_81 Start: 45823, Stop: 46206, Start Num: 47

Candidate Starts for Sonah\_81:

(Start: 47 @45823 has 88 MA's), (53, 45940), (78, 46195),

Gene: Sproutie\_75 Start: 45854, Stop: 46162, Start Num: 45

Candidate Starts for Sproutie\_75:

(Start: 45 @45854 has 84 MA's), (53, 45977),

Gene: Squint\_5 Start: 2039, Stop: 2410, Start Num: 47

Candidate Starts for Squint\_5:

(Start: 47 @2039 has 88 MA's), (53, 2153), (55, 2168), (56, 2171), (62, 2264), (63, 2285), (64, 2303), (69, 2387),

Gene: StevieRay\_81 Start: 48224, Stop: 48607, Start Num: 47

Candidate Starts for StevieRay\_81:

(Start: 47 @48224 has 88 MA's), (53, 48341), (78, 48596),

Gene: StressBall\_78 Start: 47323, Stop: 47706, Start Num: 47

Candidate Starts for StressBall\_78:

(Start: 47 @47323 has 88 MA's), (53, 47440), (78, 47695),



Gene: Suerte\_74 Start: 46871, Stop: 47179, Start Num: 45  
Candidate Starts for Suerte\_74:  
(17, 46553), (20, 46598), (Start: 45 @46871 has 84 MA's), (53, 46994),

Gene: TaronosaurusRx\_77 Start: 46841, Stop: 47179, Start Num: 45  
Candidate Starts for TaronosaurusRx\_77:  
(Start: 45 @46841 has 84 MA's), (53, 46955), (55, 46970), (72, 47162),

Gene: Techage\_79 Start: 46503, Stop: 46886, Start Num: 47  
Candidate Starts for Techage\_79:  
(Start: 47 @46503 has 88 MA's), (53, 46620), (78, 46875),

Gene: Thespis\_78 Start: 47026, Stop: 47409, Start Num: 47  
Candidate Starts for Thespis\_78:  
(Start: 47 @47026 has 88 MA's), (53, 47143), (78, 47398),

Gene: Thimann\_80 Start: 47611, Stop: 47919, Start Num: 45  
Candidate Starts for Thimann\_80:  
(14, 47275), (20, 47338), (Start: 45 @47611 has 84 MA's), (53, 47734),

Gene: ThreeRngTarjay\_4 Start: 1862, Stop: 2236, Start Num: 47  
Candidate Starts for ThreeRngTarjay\_4:  
(Start: 47 @1862 has 88 MA's), (53, 1979), (56, 1997), (58, 2048), (64, 2129), (65, 2147), (69, 2213),

Gene: ThulaThula\_79 Start: 49453, Stop: 49845, Start Num: 44  
Candidate Starts for ThulaThula\_79:  
(Start: 44 @49453 has 2 MA's), (53, 49579), (78, 49834),

Gene: Toast\_81 Start: 49167, Stop: 49517, Start Num: 45  
Candidate Starts for Toast\_81:  
(Start: 45 @49167 has 84 MA's), (53, 49287),

Gene: Tortellini\_75 Start: 48723, Stop: 49103, Start Num: 47  
Candidate Starts for Tortellini\_75:  
(Start: 47 @48723 has 88 MA's), (53, 48840), (68, 49002), (78, 49092),

Gene: Twinkle\_79 Start: 53795, Stop: 54151, Start Num: 45  
Candidate Starts for Twinkle\_79:  
(24, 53573), (Start: 45 @53795 has 84 MA's), (53, 53918),

Gene: Ubuntu\_83 Start: 52603, Stop: 52992, Start Num: 41  
Candidate Starts for Ubuntu\_83:  
(Start: 41 @52603 has 23 MA's), (53, 52735),

Gene: UmaThurman\_83 Start: 49697, Stop: 50059, Start Num: 45  
Candidate Starts for UmaThurman\_83:  
(27, 49514), (32, 49595), (Start: 45 @49697 has 84 MA's), (53, 49817),

Gene: Utz\_71 Start: 49339, Stop: 49701, Start Num: 45  
Candidate Starts for Utz\_71:  
(27, 49156), (32, 49237), (Start: 45 @49339 has 84 MA's), (53, 49459),

Gene: Venti\_79 Start: 45893, Stop: 46276, Start Num: 47

Candidate Starts for Venti\_79:  
(Start: 47 @45893 has 88 MA's), (53, 46010), (78, 46265),

Gene: Vidya\_76 Start: 45911, Stop: 46294, Start Num: 47  
Candidate Starts for Vidya\_76:  
(Start: 47 @45911 has 88 MA's), (53, 46028), (78, 46283),

Gene: Walrus\_84 Start: 51572, Stop: 51940, Start Num: 47  
Candidate Starts for Walrus\_84:  
(22, 51332), (26, 51377), (32, 51461), (Start: 47 @51572 has 88 MA's), (53, 51689),

Gene: Wanda\_5 Start: 2410, Stop: 2778, Start Num: 47  
Candidate Starts for Wanda\_5:  
(Start: 47 @2410 has 88 MA's), (53, 2527), (55, 2542), (62, 2632), (63, 2653), (64, 2671), (69, 2755),

Gene: Webster2\_83 Start: 52603, Stop: 52992, Start Num: 41  
Candidate Starts for Webster2\_83:  
(Start: 41 @52603 has 23 MA's), (53, 52735),

Gene: Whack\_76 Start: 48575, Stop: 48946, Start Num: 47  
Candidate Starts for Whack\_76:  
(Start: 47 @48575 has 88 MA's), (52, 48680), (53, 48689), (55, 48704), (74, 48929), (75, 48932),

Gene: WheatThin\_73 Start: 49167, Stop: 49529, Start Num: 43  
Candidate Starts for WheatThin\_73:  
(Start: 43 @49167 has 15 MA's), (53, 49290), (73, 49503), (76, 49512),

Gene: William\_83 Start: 50248, Stop: 50646, Start Num: 45  
Candidate Starts for William\_83:  
(27, 50053), (34, 50149), (Start: 35 @50158 has 1 MA's), (Start: 45 @50248 has 84 MA's), (53, 50368),

Gene: Willsammy\_80 Start: 47807, Stop: 48190, Start Num: 47  
Candidate Starts for Willsammy\_80:  
(Start: 47 @47807 has 88 MA's), (53, 47924), (78, 48179),

Gene: WinkNick\_80 Start: 46824, Stop: 47132, Start Num: 45  
Candidate Starts for WinkNick\_80:  
(9, 46002), (10, 46044), (17, 46506), (20, 46551), (Start: 45 @46824 has 84 MA's), (53, 46947),

Gene: Wishmaker\_76 Start: 52603, Stop: 52992, Start Num: 41  
Candidate Starts for Wishmaker\_76:  
(Start: 41 @52603 has 23 MA's), (53, 52735),

Gene: Wisp\_79 Start: 49191, Stop: 49553, Start Num: 45  
Candidate Starts for Wisp\_79:  
(11, 48594), (12, 48654), (19, 48906), (23, 48963), (31, 49056), (Start: 45 @49191 has 84 MA's), (53, 49311),

Gene: Wocket\_79 Start: 49336, Stop: 49698, Start Num: 45  
Candidate Starts for Wocket\_79:  
(Start: 45 @49336 has 84 MA's), (53, 49456),

Gene: Xavia\_71 Start: 49232, Stop: 49621, Start Num: 47  
Candidate Starts for Xavia\_71:  
(Start: 47 @49232 has 88 MA's), (53, 49349), (67, 49508), (78, 49610),

Gene: Yeet\_3 Start: 1116, Stop: 1490, Start Num: 47  
Candidate Starts for Yeet\_3:  
(Start: 47 @1116 has 88 MA's), (53, 1233), (56, 1251), (58, 1302), (64, 1383), (65, 1401), (69, 1467),

Gene: Yeezy\_87 Start: 51428, Stop: 51784, Start Num: 45  
Candidate Starts for Yeezy\_87:  
(38, 51374), (39, 51377), (Start: 45 @51428 has 84 MA's), (53, 51551),

Gene: ZAYM\_76 Start: 46682, Stop: 47020, Start Num: 45  
Candidate Starts for ZAYM\_76:  
(Start: 45 @46682 has 84 MA's), (53, 46796), (55, 46811), (61, 46853), (72, 47003),

Gene: Zarbodnamra\_84 Start: 49299, Stop: 49661, Start Num: 45  
Candidate Starts for Zarbodnamra\_84:  
(16, 48975), (21, 49035), (22, 49068), (26, 49113), (32, 49197), (Start: 45 @49299 has 84 MA's), (53, 49419),

Gene: Zelink\_4 Start: 1660, Stop: 2034, Start Num: 47  
Candidate Starts for Zelink\_4:  
(Start: 47 @1660 has 88 MA's), (53, 1777), (56, 1795), (62, 1888), (63, 1909), (64, 1927), (69, 2011),

Gene: ZiggyZoo\_80 Start: 50561, Stop: 50923, Start Num: 45  
Candidate Starts for ZiggyZoo\_80:  
(25, 50369), (31, 50429), (32, 50459), (Start: 45 @50561 has 84 MA's), (53, 50681),

Gene: Zilizebeth\_83 Start: 47465, Stop: 47848, Start Num: 47  
Candidate Starts for Zilizebeth\_83:  
(Start: 47 @47465 has 88 MA's), (53, 47582), (78, 47837),