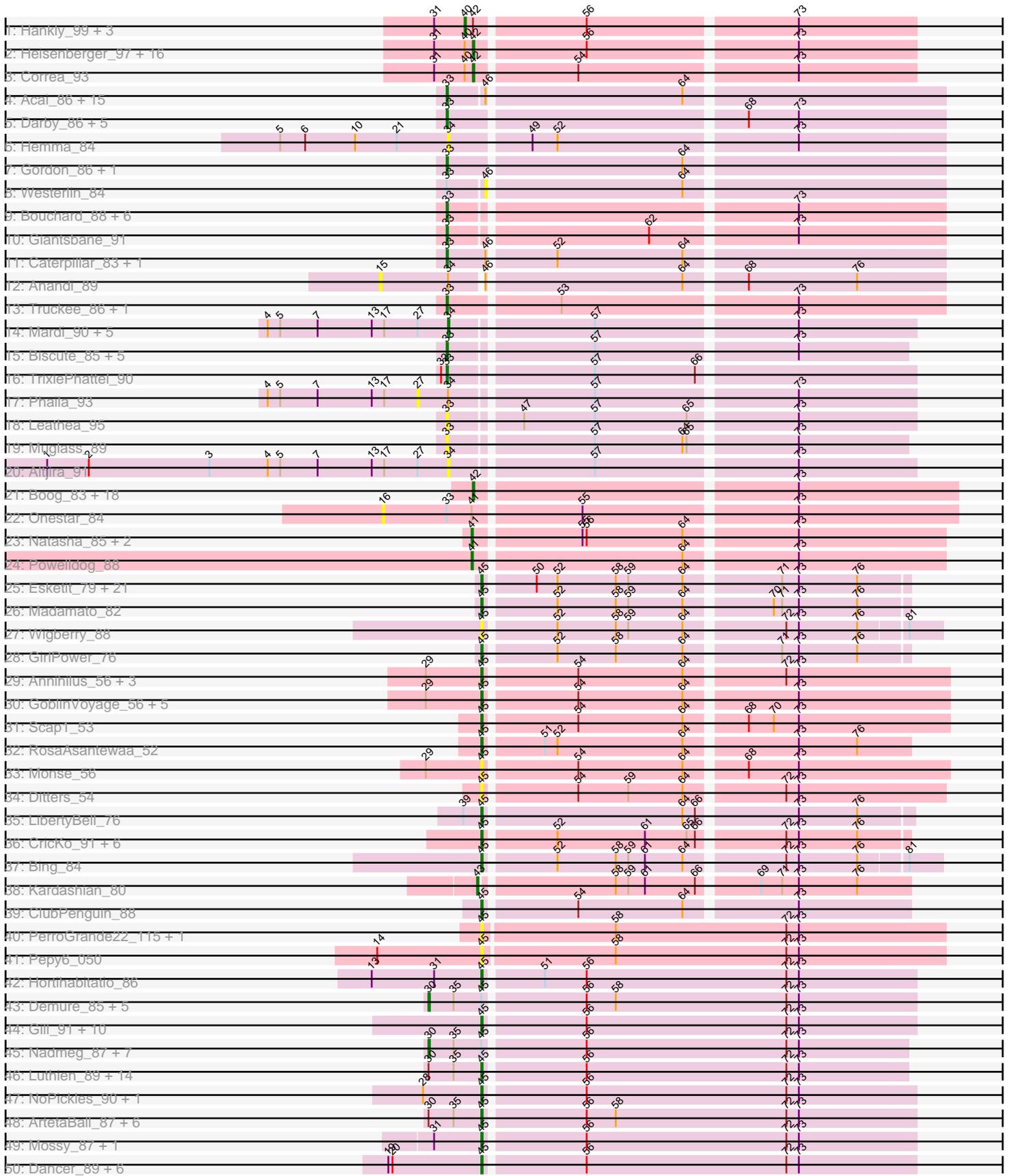
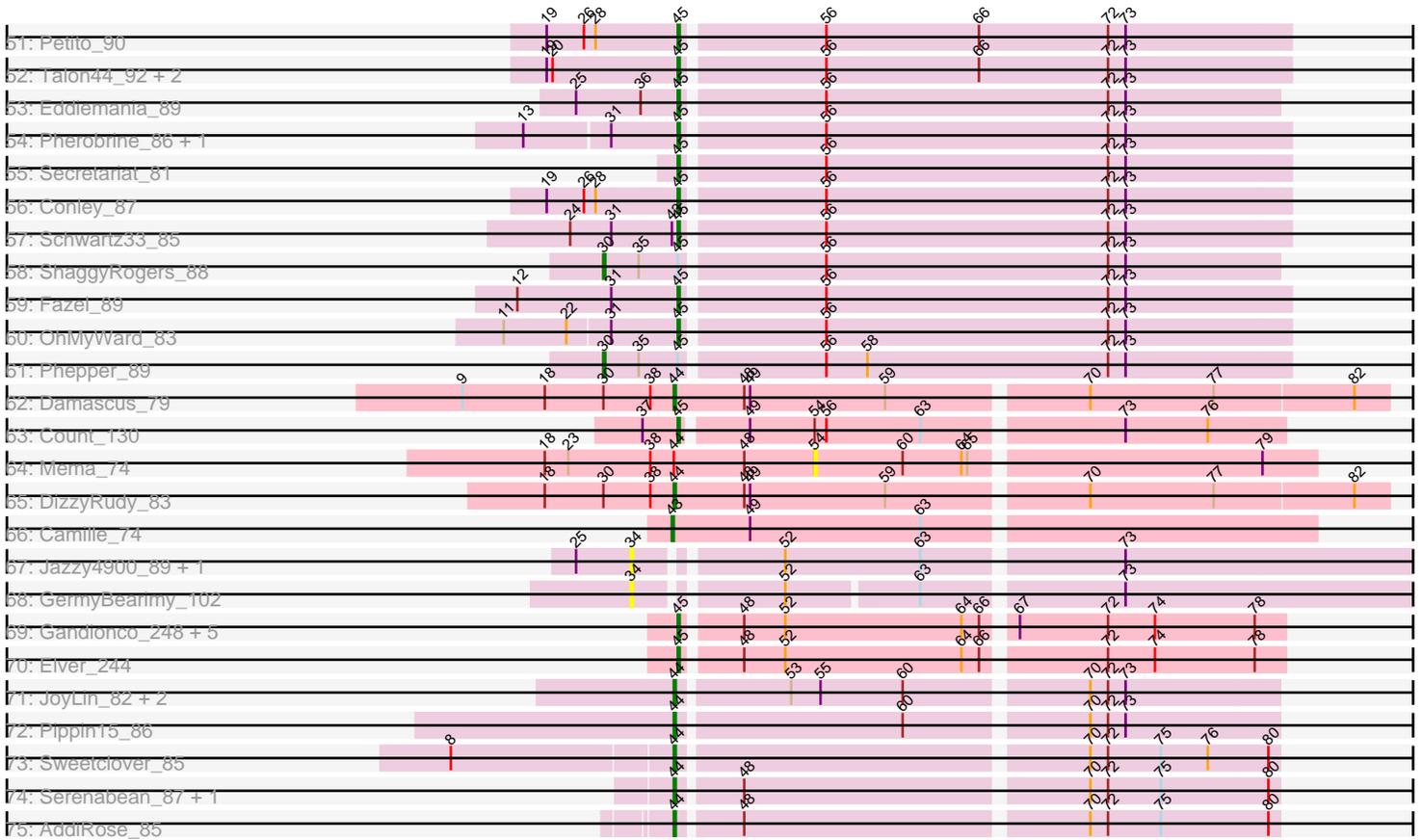


Pham 290804



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Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. If this default region is judged to be packed too tightly with annotated starts, the track will be further scaled to only show that region of the ORF with annotated starts. This action will be indicated by adding "Zoomed" to the title. For starts, yellow indicates the location of called starts comprised solely of Glimmer/GeneMark auto-annotations, green indicates the location of called starts with at least 1 manual gene annotation.

## Pham 290804 Report

This analysis was run 03/28/26 on database version 641.

Pham number 290804 has 251 members, 58 are drafts.

Phages represented in each track:

- Track 1 : Hankly\_99, Bowling\_98, Circum\_96, NapoleonB\_97
- Track 2 : Heisenberger\_97, Elsa\_94, Arcadia\_94, Nason\_94, Kardesai\_97, KeaneyLin\_92, GoCrazy\_92, Dynamite\_96, Mooshroom\_98, Xenomorph\_92, BenitoAntonio\_96, Mudcat\_92, JEGGS\_97, Benllo\_94, Tribby\_99, Cheesy\_98, YoshiYama\_93
- Track 3 : Correa\_93
- Track 4 : Acai\_86, Issa\_82, ScienceWizSam\_93, Nightmare\_89, MiniBagel\_90, LucySwiss\_93, Dinallo\_80, CapnMurica\_85, Tenno\_89, Teacup\_85, Brunswick\_93, Inked\_92, Niktson\_90, DevitoJr\_89, Zippen\_93, ElephantMan\_90
- Track 5 : Darby\_86, CastorTray\_90, Ingrid\_92, Trustiboi\_87, Loretta\_88, AreFloNak\_97
- Track 6 : Hemma\_84
- Track 7 : Gordon\_86, Synepsis\_81
- Track 8 : Westerlin\_84
- Track 9 : Bouchard\_88, LilHuddy\_89, Tokki\_95, Phaby\_89, Tipton\_91, Chlochlo\_91, Shepard\_89
- Track 10 : Giantsbane\_91
- Track 11 : Caterpillar\_83, MediumFry\_82
- Track 12 : Anandi\_89
- Track 13 : Truckee\_86, Makai\_89
- Track 14 : Mardi\_90, KevinMinion\_87, Uzumaki\_89, Stardrop\_95, Navi1117\_92, Tenney120\_90
- Track 15 : Biscute\_85, Lewando\_86, Kinny\_89, Barbonzobean\_92, BarbieDoll\_89, Renaldo\_90
- Track 16 : TrixiePhattel\_90
- Track 17 : Phaila\_93
- Track 18 : Leathea\_95
- Track 19 : Muglass\_89
- Track 20 : Altjira\_91
- Track 21 : Boog\_83, StarLord\_84, Jeremy4pt0\_82, HerbBucket\_84, Linda\_84, Djungelskog\_83, Spain\_84, DoctorPepper\_83, Sloopyjoe\_84, MrAaronian\_84, Stayer\_84, Michelle\_84, ProfFrink\_84, Sprinkle\_81, BronxBay\_84, Egad\_85, Salk\_84, Shiba\_83, Raunak\_85
- Track 22 : Onestar\_84
- Track 23 : Natasha\_85, RustyBoy\_86, Sporto\_81
- Track 24 : Powelldog\_88

- Track 25 : Esketit\_79, OlympicHelado\_85, FidgetOrca\_85, HazuAndZazu\_80, Spectropatronm\_82, DrGrey\_79, Rima\_84, TonyStarch\_82, Soshi\_82, TieDye\_79, FrodoSwaggins\_81, Jaylociraptor\_83, Meibysrarus\_81, TaidaOne\_83, IceWarrior\_83, Indigenous\_85, Hoshi\_84, Maya\_83, Namu\_85, CherryBlossom\_83, Espio\_83, Popy\_81
- Track 26 : Madamoto\_82
- Track 27 : Wigberry\_88
- Track 28 : GirlPower\_76
- Track 29 : Annihilus\_56, SheRa\_56, HotFries\_54, Moozy\_55
- Track 30 : GoblinVoyage\_56, RavenPuff\_56, Bilo\_55, PherryCruz\_55, Doxi13\_57, Sangak\_55
- Track 31 : Scap1\_53
- Track 32 : RosaAsantewaa\_52
- Track 33 : Monse\_56
- Track 34 : Ditters\_54
- Track 35 : LibertyBell\_76
- Track 36 : CricKo\_91, Rainydai\_88, FromIndy\_89, SendItCS\_83, Miek\_85, Regigigas\_91, Thiqqums\_91
- Track 37 : Bing\_84
- Track 38 : Kardashian\_80
- Track 39 : ClubPenguin\_88
- Track 40 : PerroGrande22\_115, Poco6\_049
- Track 41 : Pepy6\_050
- Track 42 : Hortihabitatio\_86
- Track 43 : Demure\_85, Hydrus\_88, Zeph\_91, Arataki\_88, Nithya\_88, Dialga\_89
- Track 44 : Gill\_91, Kerry\_90, Magel\_92, Tanis\_90, Cappybara\_88, Odesza\_89, Trufflozitus\_94, Avazak\_90, Roney\_89, Tairn4Wing\_92, Gravy\_90
- Track 45 : Nadmeg\_87, BetterYeti\_87, PestoPenguin\_92, Figliar\_87, Crocheter\_88, Runhaar\_86, Burley\_87, AlainaMarie\_89
- Track 46 : Luthien\_89, Citrus\_87, Vardy\_87, Jodelie19\_88, Duffington\_89, Rickmore\_89, TenaciousP\_90, Tonaltzin\_93, Gusicorn\_89, BluerMoon\_87, EndAve\_90, Aloe25\_91, Aflac\_89, OlgasClover\_90, MajinBuu\_89
- Track 47 : NoPickles\_90, Captrips\_88
- Track 48 : ArtetaBall\_87, Glintora\_91, Untouchable\_90, Kenosha\_87, Chikenjars\_89, CWormy\_86, Madvan\_87
- Track 49 : Mossy\_87, Blanky\_84
- Track 50 : Dancer\_89, Bugg\_93, JulesRay\_89, ChickyNuggy\_91, Artorias\_89, Football\_94, FortCran\_89
- Track 51 : Petite\_90
- Track 52 : Talon44\_92, Perkunas\_91, SweetCrkHerbs\_92
- Track 53 : Eddiemania\_89
- Track 54 : Pherobrine\_86, Mysticmoon\_87
- Track 55 : Secretariat\_81
- Track 56 : Conley\_87
- Track 57 : Schwartz33\_85
- Track 58 : ShaggyRogers\_88
- Track 59 : Fazel\_89
- Track 60 : OhMyWard\_83
- Track 61 : Phepper\_89
- Track 62 : Damascus\_79
- Track 63 : Count\_130
- Track 64 : Mema\_74
- Track 65 : DizzyRudy\_83

- Track 66 : Camille\_74
- Track 67 : Jazzy4900\_89, Sunny4976\_88
- Track 68 : GermyBearimy\_102
- Track 69 : Gandionco\_248, Paella\_245, Qui\_244, Marianna39\_248, JeNeSaisPas\_241, Kureo\_245
- Track 70 : Elver\_244
- Track 71 : JoyLin\_82, Yotsuba\_82, Eevee\_81
- Track 72 : Pippin15\_86
- Track 73 : Sweetclover\_85
- Track 74 : Serenabean\_87, Daddyjeff\_87
- Track 75 : AddiRose\_85

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

The start number called the most often in the published annotations is 45, it was called in 89 of the 193 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aflac\_89, Aloe25\_91, Annihilus\_56, ArtetaBall\_87, Artorias\_89, Avazak\_90, Bilo\_55, Bing\_84, Blanky\_84, BluerMoon\_87, Bugg\_93, CWormy\_86, Captrips\_88, Capybara\_88, CherryBlossom\_83, ChickyNugget\_91, Chickenjars\_89, Citrus\_87, ClubPenguin\_88, Conley\_87, Count\_130, CricKo\_91, Dancer\_89, Ditters\_54, Doxi13\_57, DrGrey\_79, Duffington\_89, Eddiemania\_89, Elver\_244, EndAve\_90, Esketit\_79, Espio\_83, Fazel\_89, FidgetOrca\_85, Football\_94, FortCran\_89, FrodoSwaggins\_81, FromIndy\_89, Gandionco\_248, Gill\_91, GirlPower\_76, Glintora\_91, GoblinVoyage\_56, Gravy\_90, Gusicorn\_89, HazuAndZazu\_80, Hortihabitatio\_86, Hoshi\_84, HotFries\_54, IceWarrior\_83, Indigenous\_85, Jaylociraptor\_83, JeNeSaisPas\_241, Jodelie19\_88, JulesRay\_89, Kenosha\_87, Kerry\_90, Kureo\_245, LibertyBell\_76, Luthien\_89, Madamoto\_82, Madvan\_87, Magel\_92, MajinBuu\_89, Marianna39\_248, Maya\_83, Meibysrarus\_81, Miek\_85, Monse\_56, Moozy\_55, Mossy\_87, Mysticmoon\_87, Namu\_85, NoPickles\_90, Odesza\_89, OhMyWard\_83, OlgasClover\_90, OlympicHelado\_85, Paella\_245, Pepy6\_050, Perkunas\_91, PerroGrande22\_115, Petite\_90, Pherobrine\_86, PherryCruz\_55, Poco6\_049, Popy\_81, Qui\_244, Rainydai\_88, RavenPuff\_56, Regigigas\_91, Rickmore\_89, Rima\_84, Roney\_89, RosaAsantewaa\_52, Sangak\_55, Scap1\_53, Schwartz33\_85, Secretariat\_81, SendItCS\_83, SheRa\_56, Soshi\_82, Spectropatronm\_82, SweetCrkHerbs\_92, TaidaOne\_83, Tairn4Wing\_92, Talon44\_92, Tanis\_90, TenaciousP\_90, Thiqqums\_91, TieDye\_79, Tonaltzin\_93, TonyStarch\_82, Trufflozitus\_94, Untouchable\_90, Vardy\_87, Wigberry\_88,

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

- AlainaMarie\_89, Arataki\_88, BetterYeti\_87, Burley\_87, Crocheter\_88, Demure\_85, Dialga\_89, Figliar\_87, Hydrus\_88, Nadmeg\_87, Nithya\_88, PestoPenguin\_92, Phepper\_89, Runhaar\_86, ShaggyRogers\_88, Zeph\_91,

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

- Acai\_86, AddiRose\_85, Altjira\_91, Anandi\_89, Arcadia\_94, AreFloNak\_97, BarbieDoll\_89, Barbonzobean\_92, BenitoAntonio\_96, Benllo\_94, Biscute\_85, Boog\_83, Bouchard\_88, Bowling\_98, BronxBay\_84, Brunswick\_93, Camille\_74, CapnMurica\_85, CastorTray\_90, Caterpillar\_83, Cheesy\_98, Chlochlo\_91,

Circum\_96, Correa\_93, Daddyjeff\_87, Damascus\_79, Darby\_86, DevitoJr\_89, Dinallo\_80, DizzyRudy\_83, Djungelskog\_83, DoctorPepper\_83, Dynamite\_96, Eevee\_81, Egad\_85, ElephantMan\_90, Elsa\_94, GermyBearimy\_102, Giantsbane\_91, GoCrazy\_92, Gordon\_86, Hankly\_99, Heisenberger\_97, Hemma\_84, HerbBucket\_84, Ingrid\_92, Inked\_92, Issa\_82, JEGGS\_97, Jazzy4900\_89, Jeremy4pt0\_82, JoyLin\_82, Kardashian\_80, Kardesai\_97, KeaneyLin\_92, KevinMinion\_87, Kinny\_89, Leathea\_95, Lewando\_86, LilHuddy\_89, Linda\_84, Loretta\_88, LucySwiss\_93, Makai\_89, Mardi\_90, MediumFry\_82, Mema\_74, Michelle\_84, MiniBagel\_90, Mooshroom\_98, MrAaronian\_84, Mudcat\_92, Muglass\_89, NapoleonB\_97, Nason\_94, Natasha\_85, Navi1117\_92, Nightmare\_89, Nikton\_90, Onestar\_84, Phaby\_89, Phaila\_93, Pippin15\_86, PowellDog\_88, ProfFrink\_84, Raunak\_85, Renaldo\_90, RustyBoy\_86, Salk\_84, ScienceWizSam\_93, Serenabean\_87, Shepard\_89, Shiba\_83, Sloopyjoe\_84, Spain\_84, Sporto\_81, Sprinkle\_81, StarLord\_84, Stardrop\_95, Stayer\_84, Sunny4976\_88, Sweetclover\_85, Synopsis\_81, Teacup\_85, Tenney120\_90, Tenno\_89, Tipton\_91, Tokki\_95, Tribby\_99, TrixiePhattel\_90, Truckee\_86, Trustiboi\_87, Uzumaki\_89, Westerlin\_84, Xenomorph\_92, YoshiYama\_93, Yotsuba\_82, Zippen\_93,

### Summary by start number:

#### Start 15:

- Found in 1 of 251 ( 0.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anandi\_89 (AU4),

#### Start 16:

- Found in 1 of 251 ( 0.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Onestar\_84 (AW),

#### Start 27:

- Found in 8 of 251 ( 3.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Phaila\_93 (AU6),

#### Start 30:

- Found in 40 of 251 ( 15.9% ) of genes in pham
- Manual Annotations of this start: 13 of 193
- Called 40.0% of time when present
- Phage (with cluster) where this start called: AlainaMarie\_89 (DJ), Arataki\_88 (DJ), BetterYeti\_87 (DJ), Burley\_87 (DJ), Crocheter\_88 (DJ), Demure\_85 (DJ), Dialga\_89 (DJ), Figliar\_87 (DJ), Hydrus\_88 (DJ), Nadmeg\_87 (DJ), Nithya\_88 (DJ), PestoPenguin\_92 (DJ), Phepper\_89 (DJ), Runhaar\_86 (DJ), ShaggyRogers\_88 (DJ), Zeph\_91 (DJ),

#### Start 33:

- Found in 47 of 251 ( 18.7% ) of genes in pham
- Manual Annotations of this start: 36 of 193
- Called 95.7% of time when present

- Phage (with cluster) where this start called: Acai\_86 (AU1), AreFloNak\_97 (AU1), BarbieDoll\_89 (AU6), Barbonzobean\_92 (AU6), Biscute\_85 (AU6), Bouchard\_88 (AU2), Brunswick\_93 (AU1), CapnMurica\_85 (AU1), CastorTray\_90 (AU1), Caterpillar\_83 (AU4), Chlochlo\_91 (AU2), Darby\_86 (AU1), DevitoJr\_89 (AU1), Dinallo\_80 (AU1), ElephantMan\_90 (AU1), Giantsbane\_91 (AU2), Gordon\_86 (AU1), Ingrid\_92 (AU3), Inked\_92 (AU7), Issa\_82 (AU1), Kinny\_89 (AU6), Leathea\_95 (AU6), Lewando\_86 (AU6), LilHuddy\_89 (AU2), Loretta\_88 (AU3), LucySwiss\_93 (AU1), Makai\_89 (AU5), MediumFry\_82 (AU4), MiniBagel\_90 (AU1), Muglass\_89 (AU6), Nightmare\_89 (AU1), Niktson\_90 (AU1), Phaby\_89 (AU2), Renaldo\_90 (AU6), ScienceWizSam\_93 (AU1), Shepard\_89 (AU2), Synopsis\_81 (AU1), Teacup\_85 (AU1), Tenno\_89 (AU1), Tipton\_91 (AU2), Tokki\_95 (AU2), TrixiePhattel\_90 (AU6), Truckee\_86 (AU5), Trustiboi\_87 (AU1), Zippen\_93 (AU7),

#### Start 34:

- Found in 13 of 251 ( 5.2% ) of genes in pham
- Manual Annotations of this start: 4 of 193
- Called 84.6% of time when present
- Phage (with cluster) where this start called: Altjira\_91 (AU6), GermyBearimy\_102 (FI), Hemma\_84 (AU1), Jazzy4900\_89 (FI), KevinMinion\_87 (AU6), Mardi\_90 (AU6), Navi1117\_92 (AU6), Stardrop\_95 (AU6), Sunny4976\_88 (FI), Tenney120\_90 (AU6), Uzumaki\_89 (AU6),

#### Start 40:

- Found in 22 of 251 ( 8.8% ) of genes in pham
- Manual Annotations of this start: 4 of 193
- Called 18.2% of time when present
- Phage (with cluster) where this start called: Bowling\_98 (AM), Circum\_96 (AM), Hankly\_99 (AM), NapoleonB\_97 (AM),

#### Start 41:

- Found in 5 of 251 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 4 of 193
- Called 80.0% of time when present
- Phage (with cluster) where this start called: Natasha\_85 (AW), PowellDog\_88 (AW), RustyBoy\_86 (AW), Sporto\_81 (AW),

#### Start 42:

- Found in 41 of 251 ( 16.3% ) of genes in pham
- Manual Annotations of this start: 31 of 193
- Called 90.2% of time when present
- Phage (with cluster) where this start called: Arcadia\_94 (AM), BenitoAntonio\_96 (AM), Benllo\_94 (AM), Boog\_83 (AW), BronxBay\_84 (AW), Cheesy\_98 (AM), Correa\_93 (AM), Djungelskog\_83 (AW), DoctorPepper\_83 (AW), Dynamite\_96 (AM), Egad\_85 (AW), Elsa\_94 (AM), GoCrazy\_92 (AM), Heisenberger\_97 (AM), HerbBucket\_84 (AW), JEGGS\_97 (AM), Jeremy4pt0\_82 (AW), Kardesai\_97 (AM), KeaneyLin\_92 (AM), Linda\_84 (AW), Michelle\_84 (AW), Mooshroom\_98 (AM), MrAaronian\_84 (AW), Mudcat\_92 (AM), Nason\_94 (AM), ProfFrink\_84 (AW), Raunak\_85 (AW), Salk\_84 (AW), Shiba\_83 (AW), Sloopyjoe\_84 (AW), Spain\_84 (AW), Sprinkle\_81 (AW), StarLord\_84 (AW), Stayer\_84 (AW), Tribby\_99 (AM), Xenomorph\_92 (AM), YoshiYama\_93 (AM),

#### Start 43:

- Found in 3 of 251 ( 1.2% ) of genes in pham

- Manual Annotations of this start: 2 of 193
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Camille\_74 (EL), Kardashian\_80 (BI6),

#### Start 44:

- Found in 11 of 251 ( 4.4% ) of genes in pham
- Manual Annotations of this start: 10 of 193
- Called 90.9% of time when present
- Phage (with cluster) where this start called: AddiRose\_85 (JA), Daddyjeff\_87 (JA), Damascus\_79 (EL), DizzyRudy\_83 (EL), Eevee\_81 (JA), JoyLin\_82 (JA), Pippin15\_86 (JA), Serenabean\_87 (JA), Sweetclover\_85 (JA), Yotsuba\_82 (JA),

#### Start 45:

- Found in 133 of 251 ( 53.0% ) of genes in pham
- Manual Annotations of this start: 89 of 193
- Called 88.0% of time when present
- Phage (with cluster) where this start called: Aflac\_89 (DJ), Aloe25\_91 (DJ), Annihilus\_56 (BI2), ArtetaBall\_87 (DJ), Artorias\_89 (DJ), Avazak\_90 (DJ), Bilo\_55 (BI2), Bing\_84 (BI5), Blanky\_84 (DJ), BluerMoon\_87 (DJ), Bugg\_93 (DJ), CWormy\_86 (DJ), Captrips\_88 (DJ), Copybara\_88 (DJ), CherryBlossom\_83 (BI1), ChickyNuggy\_91 (DJ), Chikenjars\_89 (DJ), Citrus\_87 (DJ), ClubPenguin\_88 (BI7), Conley\_87 (DJ), Count\_130 (EL), CricKo\_91 (BI4), Dancer\_89 (DJ), Ditters\_54 (BI2), Doxi13\_57 (BI2), DrGrey\_79 (BI1), Duffington\_89 (DJ), Eddiemania\_89 (DJ), Elver\_244 (FK), EndAve\_90 (DJ), Esketit\_79 (BI1), Espio\_83 (BI1), Fazel\_89 (DJ), FidgetOrca\_85 (BI1), Football\_94 (DJ), FortCran\_89 (DJ), FrodoSwaggins\_81 (BI1), FromIndy\_89 (BI4), Gandionco\_248 (FK), Gill\_91 (DJ), GirlPower\_76 (BI1), Glintora\_91 (DJ), GoblinVoyage\_56 (BI2), Gravy\_90 (DJ), Gusicorn\_89 (DJ), HazuAndZazu\_80 (BI1), Hortihabitatio\_86 (DJ), Hoshi\_84 (BI1), HotFries\_54 (BI2), IceWarrior\_83 (BI1), Indigenous\_85 (BI1), Jaylociraptor\_83 (BI1), JeNeSaisPas\_241 (FK), Jodelie19\_88 (DJ), JulesRay\_89 (DJ), Kenosha\_87 (DJ), Kerry\_90 (DJ), Kureo\_245 (FK), LibertyBell\_76 (BI3), Luthien\_89 (DJ), Madamoto\_82 (BI1), Madvan\_87 (DJ), Magel\_92 (DJ), MajinBuu\_89 (DJ), Marianna39\_248 (FK), Maya\_83 (BI1), Meibysrarus\_81 (BI1), Miek\_85 (BI4), Monse\_56 (BI2), Moozy\_55 (BI2), Mossy\_87 (DJ), Mysticmoon\_87 (DJ), Namu\_85 (BI1), NoPickles\_90 (DJ), Odesza\_89 (DJ), OhMyWard\_83 (DJ), OlgasClover\_90 (DJ), OlympicHelado\_85 (BI1), Paella\_245 (FK), Pepy6\_050 (CC), Perkunas\_91 (DJ), PerroGrande22\_115 (CC), Petit\_90 (DJ), Pherobrine\_86 (DJ), PherryCruz\_55 (BI2), Poco6\_049 (CC), Popy\_81 (BI1), Qui\_244 (FK), Rainydai\_88 (BI4), RavenPuff\_56 (BI2), Regigigas\_91 (BI4), Rickmore\_89 (DJ), Rima\_84 (BI1), Roney\_89 (DJ), RosaAsantewaa\_52 (BI2), Sangak\_55 (BI2), Scap1\_53 (BI2), Schwartz33\_85 (DJ), Secretariat\_81 (DJ), SendItCS\_83 (BI4), SheRa\_56 (BI2), Soshi\_82 (BI1), Spectropatronm\_82 (BI1), SweetCrkHerbs\_92 (DJ), TaidaOne\_83 (BI1), Tairn4Wing\_92 (DJ), Talon44\_92 (DJ), Tanis\_90 (DJ), TenaciousP\_90 (DJ), Thiqqums\_91 (BI4), TieDye\_79 (BI1), Tonaltzin\_93 (DJ), TonyStarch\_82 (BI1), Trufflozitus\_94 (DJ), Untouchable\_90 (DJ), Vardy\_87 (DJ), Wigberry\_88 (BI1),

#### Start 46:

- Found in 20 of 251 ( 8.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 5.0% of time when present
- Phage (with cluster) where this start called: Westerlin\_84 (AU1),

#### Start 54:

- Found in 17 of 251 ( 6.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 5.9% of time when present
- Phage (with cluster) where this start called: Mema\_74 (EL),

### **Summary by clusters:**

There are 22 clusters represented in this pham: DJ, FI, FK, JA, AU1, AU3, AU2, AU5, AU4, AU7, AU6, EL, CC, AM, AW, BI6, BI7, BI4, BI5, BI2, BI3, BI1,

Info for manual annotations of cluster AM:

- Start number 40 was manually annotated 4 times for cluster AM.
- Start number 42 was manually annotated 17 times for cluster AM.

Info for manual annotations of cluster AU1:

- Start number 33 was manually annotated 17 times for cluster AU1.

Info for manual annotations of cluster AU2:

- Start number 33 was manually annotated 7 times for cluster AU2.

Info for manual annotations of cluster AU3:

- Start number 33 was manually annotated 2 times for cluster AU3.

Info for manual annotations of cluster AU4:

- Start number 33 was manually annotated 2 times for cluster AU4.

Info for manual annotations of cluster AU5:

- Start number 33 was manually annotated 2 times for cluster AU5.

Info for manual annotations of cluster AU6:

- Start number 33 was manually annotated 4 times for cluster AU6.
- Start number 34 was manually annotated 4 times for cluster AU6.

Info for manual annotations of cluster AU7:

- Start number 33 was manually annotated 2 times for cluster AU7.

Info for manual annotations of cluster AW:

- Start number 41 was manually annotated 4 times for cluster AW.
- Start number 42 was manually annotated 14 times for cluster AW.

Info for manual annotations of cluster BI1:

- Start number 45 was manually annotated 23 times for cluster BI1.

Info for manual annotations of cluster BI2:

- Start number 45 was manually annotated 11 times for cluster BI2.

Info for manual annotations of cluster BI3:

- Start number 45 was manually annotated 1 time for cluster BI3.

Info for manual annotations of cluster BI4:

- Start number 45 was manually annotated 5 times for cluster BI4.

Info for manual annotations of cluster BI5:

- Start number 45 was manually annotated 1 time for cluster BI5.

Info for manual annotations of cluster BI6:

- Start number 43 was manually annotated 1 time for cluster BI6.

Info for manual annotations of cluster BI7:

- Start number 45 was manually annotated 1 time for cluster BI7.

Info for manual annotations of cluster DJ:

- Start number 30 was manually annotated 13 times for cluster DJ.
- Start number 45 was manually annotated 43 times for cluster DJ.

Info for manual annotations of cluster EL:

- Start number 43 was manually annotated 1 time for cluster EL.
- Start number 44 was manually annotated 2 times for cluster EL.
- Start number 45 was manually annotated 1 time for cluster EL.

Info for manual annotations of cluster FK:

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

Info for manual annotations of cluster JA:

- Start number 44 was manually annotated 8 times for cluster JA.

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

Gene: Acai\_86 Start: 53948, Stop: 54286, Start Num: 33

Candidate Starts for Acai\_86:

(Start: 33 @53948 has 36 MA's), (46, 53972), (64, 54107),

Gene: AddiRose\_85 Start: 50887, Stop: 51180, Start Num: 44

Candidate Starts for AddiRose\_85:

(Start: 44 @50887 has 10 MA's), (48, 50917), (70, 51085), (72, 51094), (75, 51121), (80, 51175),

Gene: Aflac\_89 Start: 57301, Stop: 57600, Start Num: 45

Candidate Starts for Aflac\_89:

(Start: 30 @57265 has 13 MA's), (35, 57283), (Start: 45 @57301 has 89 MA's), (56, 57370), (72, 57514), (73, 57523),

Gene: AlainaMarie\_89 Start: 57292, Stop: 57627, Start Num: 30

Candidate Starts for AlainaMarie\_89:

(Start: 30 @57292 has 13 MA's), (35, 57310), (Start: 45 @57328 has 89 MA's), (56, 57397), (72, 57541), (73, 57550),

Gene: Aloe25\_91 Start: 56458, Stop: 56757, Start Num: 45

Candidate Starts for Aloe25\_91:

(Start: 30 @56422 has 13 MA's), (35, 56440), (Start: 45 @56458 has 89 MA's), (56, 56527), (72, 56671), (73, 56680),

Gene: Altjira\_91 Start: 52325, Stop: 52642, Start Num: 34

Candidate Starts for Altjira\_91:

(1, 52037), (2, 52067), (3, 52154), (4, 52196), (5, 52205), (7, 52232), (13, 52271), (17, 52280), (27, 52304), (Start: 34 @52325 has 4 MA's), (57, 52421), (73, 52559),

Gene: Anandi\_89 Start: 53272, Stop: 53655, Start Num: 15

Candidate Starts for Anandi\_89:

(15, 53272), (Start: 34 @53320 has 4 MA's), (46, 53341), (64, 53476), (68, 53515), (76, 53593),

Gene: Annihilus\_56 Start: 39529, Stop: 39849, Start Num: 45

Candidate Starts for Annihilus\_56:

(29, 39490), (Start: 45 @39529 has 89 MA's), (54, 39592), (64, 39667), (72, 39733), (73, 39742),

Gene: Arataki\_88 Start: 56409, Stop: 56750, Start Num: 30

Candidate Starts for Arataki\_88:

(Start: 30 @56409 has 13 MA's), (35, 56427), (Start: 45 @56445 has 89 MA's), (56, 56514), (58, 56535), (72, 56658), (73, 56667),

Gene: Arcadia\_94 Start: 54217, Stop: 54519, Start Num: 42

Candidate Starts for Arcadia\_94:

(31, 54190), (Start: 40 @54211 has 4 MA's), (Start: 42 @54217 has 31 MA's), (56, 54292), (73, 54436),

Gene: AreFloNak\_97 Start: 54422, Stop: 54763, Start Num: 33

Candidate Starts for AreFloNak\_97:

(Start: 33 @54422 has 36 MA's), (68, 54623), (73, 54659),

Gene: ArtetaBall\_87 Start: 56402, Stop: 56707, Start Num: 45

Candidate Starts for ArtetaBall\_87:

(Start: 30 @56366 has 13 MA's), (35, 56384), (Start: 45 @56402 has 89 MA's), (56, 56471), (58, 56492), (72, 56615), (73, 56624),

Gene: Artorias\_89 Start: 55853, Stop: 56158, Start Num: 45

Candidate Starts for Artorias\_89:

(19, 55790), (20, 55793), (Start: 45 @55853 has 89 MA's), (56, 55922), (72, 56066), (73, 56075),

Gene: Avazak\_90 Start: 56283, Stop: 56588, Start Num: 45

Candidate Starts for Avazak\_90:

(Start: 45 @56283 has 89 MA's), (56, 56352), (72, 56496), (73, 56505),

Gene: BarbieDoll\_89 Start: 51742, Stop: 52053, Start Num: 33

Candidate Starts for BarbieDoll\_89:

(Start: 33 @51742 has 36 MA's), (57, 51838), (73, 51976),

Gene: Barbonzobean\_92 Start: 52044, Stop: 52355, Start Num: 33

Candidate Starts for Barbonzobean\_92:

(Start: 33 @52044 has 36 MA's), (57, 52140), (73, 52278),

Gene: BenitoAntonio\_96 Start: 54148, Stop: 54450, Start Num: 42

Candidate Starts for BenitoAntonio\_96:

(31, 54121), (Start: 40 @54142 has 4 MA's), (Start: 42 @54148 has 31 MA's), (56, 54223), (73, 54367),

Gene: Benllo\_94 Start: 54986, Stop: 55288, Start Num: 42

Candidate Starts for Benllo\_94:

(31, 54959), (Start: 40 @54980 has 4 MA's), (Start: 42 @54986 has 31 MA's), (56, 55061), (73, 55205),

Gene: BetterYeti\_87 Start: 56421, Stop: 56756, Start Num: 30

Candidate Starts for BetterYeti\_87:

(Start: 30 @56421 has 13 MA's), (35, 56439), (Start: 45 @56457 has 89 MA's), (56, 56526), (72, 56670), (73, 56679),

Gene: Bilo\_55 Start: 39823, Stop: 40143, Start Num: 45

Candidate Starts for Bilo\_55:

(29, 39784), (Start: 45 @39823 has 89 MA's), (54, 39886), (64, 39961), (73, 40036),

Gene: Bing\_84 Start: 52233, Stop: 52544, Start Num: 45

Candidate Starts for Bing\_84:

(Start: 45 @52233 has 89 MA's), (52, 52281), (58, 52323), (59, 52332), (61, 52344), (64, 52371), (72, 52437), (73, 52446), (76, 52488), (81, 52521),

Gene: Biscute\_85 Start: 51587, Stop: 51898, Start Num: 33

Candidate Starts for Biscute\_85:

(Start: 33 @51587 has 36 MA's), (57, 51683), (73, 51821),

Gene: Blanky\_84 Start: 57097, Stop: 57402, Start Num: 45

Candidate Starts for Blanky\_84:

(31, 57064), (Start: 45 @57097 has 89 MA's), (56, 57166), (72, 57310), (73, 57319),

Gene: BluerMoon\_87 Start: 57131, Stop: 57430, Start Num: 45

Candidate Starts for BluerMoon\_87:

(Start: 30 @57095 has 13 MA's), (35, 57113), (Start: 45 @57131 has 89 MA's), (56, 57200), (72, 57344), (73, 57353),

Gene: Boog\_83 Start: 50318, Stop: 50650, Start Num: 42

Candidate Starts for Boog\_83:

(Start: 42 @50318 has 31 MA's), (73, 50537),

Gene: Bouchard\_88 Start: 53388, Stop: 53726, Start Num: 33

Candidate Starts for Bouchard\_88:

(Start: 33 @53388 has 36 MA's), (73, 53622),

Gene: Bowling\_98 Start: 55030, Stop: 55338, Start Num: 40

Candidate Starts for Bowling\_98:

(31, 55009), (Start: 40 @55030 has 4 MA's), (Start: 42 @55036 has 31 MA's), (56, 55111), (73, 55255),

Gene: BronxBay\_84 Start: 50569, Stop: 50901, Start Num: 42

Candidate Starts for BronxBay\_84:

(Start: 42 @50569 has 31 MA's), (73, 50788),

Gene: Brunswick\_93 Start: 54283, Stop: 54621, Start Num: 33

Candidate Starts for Brunswick\_93:

(Start: 33 @54283 has 36 MA's), (46, 54307), (64, 54442),

Gene: Bugg\_93 Start: 55898, Stop: 56203, Start Num: 45

Candidate Starts for Bugg\_93:

(19, 55835), (20, 55838), (Start: 45 @55898 has 89 MA's), (56, 55967), (72, 56111), (73, 56120),

Gene: Burley\_87 Start: 56095, Stop: 56430, Start Num: 30

Candidate Starts for Burley\_87:

(Start: 30 @56095 has 13 MA's), (35, 56113), (Start: 45 @56131 has 89 MA's), (56, 56200), (72, 56344), (73, 56353),

Gene: CWormy\_86 Start: 56085, Stop: 56390, Start Num: 45

Candidate Starts for CWormy\_86:

(Start: 30 @56049 has 13 MA's), (35, 56067), (Start: 45 @56085 has 89 MA's), (56, 56154), (58, 56175), (72, 56298), (73, 56307),

Gene: Camille\_74 Start: 49086, Stop: 49403, Start Num: 43

Candidate Starts for Camille\_74:

(Start: 43 @49086 has 2 MA's), (49, 49125), (63, 49212),

Gene: CapnMurica\_85 Start: 54229, Stop: 54567, Start Num: 33

Candidate Starts for CapnMurica\_85:

(Start: 33 @54229 has 36 MA's), (46, 54253), (64, 54388),

Gene: Captrips\_88 Start: 55634, Stop: 55939, Start Num: 45

Candidate Starts for Captrips\_88:

(28, 55595), (Start: 45 @55634 has 89 MA's), (56, 55703), (72, 55847), (73, 55856),

Gene: Capybara\_88 Start: 55857, Stop: 56162, Start Num: 45

Candidate Starts for Capybara\_88:

(Start: 45 @55857 has 89 MA's), (56, 55926), (72, 56070), (73, 56079),

Gene: CastorTray\_90 Start: 54445, Stop: 54786, Start Num: 33

Candidate Starts for CastorTray\_90:

(Start: 33 @54445 has 36 MA's), (68, 54646), (73, 54682),

Gene: Caterpillar\_83 Start: 52687, Stop: 53028, Start Num: 33

Candidate Starts for Caterpillar\_83:

(Start: 33 @52687 has 36 MA's), (46, 52714), (52, 52759), (64, 52849),

Gene: Cheesy\_98 Start: 54899, Stop: 55201, Start Num: 42

Candidate Starts for Cheesy\_98:

(31, 54872), (Start: 40 @54893 has 4 MA's), (Start: 42 @54899 has 31 MA's), (56, 54974), (73, 55118),

Gene: CherryBlossom\_83 Start: 51474, Stop: 51764, Start Num: 45

Candidate Starts for CherryBlossom\_83:

(Start: 45 @51474 has 89 MA's), (50, 51507), (52, 51522), (58, 51564), (59, 51573), (64, 51612), (71, 51675), (73, 51687), (76, 51729),

Gene: ChickyNuggy\_91 Start: 56024, Stop: 56329, Start Num: 45

Candidate Starts for ChickyNuggy\_91:

(19, 55961), (20, 55964), (Start: 45 @56024 has 89 MA's), (56, 56093), (72, 56237), (73, 56246),

Gene: Chikenjars\_89 Start: 57556, Stop: 57855, Start Num: 45

Candidate Starts for Chikenjars\_89:

(Start: 30 @57520 has 13 MA's), (35, 57538), (Start: 45 @57556 has 89 MA's), (56, 57625), (58, 57646), (72, 57769), (73, 57778),

Gene: Chlochlo\_91 Start: 53458, Stop: 53796, Start Num: 33

Candidate Starts for Chlochlo\_91:

(Start: 33 @53458 has 36 MA's), (73, 53692),

Gene: Circum\_96 Start: 54506, Stop: 54814, Start Num: 40

Candidate Starts for Circum\_96:

(31, 54485), (Start: 40 @54506 has 4 MA's), (Start: 42 @54512 has 31 MA's), (56, 54587), (73, 54731),

Gene: Citrus\_87 Start: 57149, Stop: 57448, Start Num: 45

Candidate Starts for Citrus\_87:

(Start: 30 @57113 has 13 MA's), (35, 57131), (Start: 45 @57149 has 89 MA's), (56, 57218), (72, 57362), (73, 57371),

Gene: ClubPenguin\_88 Start: 52169, Stop: 52462, Start Num: 45

Candidate Starts for ClubPenguin\_88:

(Start: 45 @52169 has 89 MA's), (54, 52232), (64, 52307), (73, 52382),

Gene: Conley\_87 Start: 56148, Stop: 56453, Start Num: 45

Candidate Starts for Conley\_87:

(19, 56085), (26, 56103), (28, 56109), (Start: 45 @56148 has 89 MA's), (56, 56217), (72, 56361), (73, 56370),

Gene: Correa\_93 Start: 53560, Stop: 53862, Start Num: 42

Candidate Starts for Correa\_93:

(31, 53533), (Start: 40 @53554 has 4 MA's), (Start: 42 @53560 has 31 MA's), (54, 53629), (73, 53779),

Gene: Count\_130 Start: 74858, Stop: 75151, Start Num: 45

Candidate Starts for Count\_130:

(37, 74840), (Start: 45 @74858 has 89 MA's), (49, 74888), (54, 74921), (56, 74927), (63, 74975), (73, 75071), (76, 75113),

Gene: CricKo\_91 Start: 53655, Stop: 53945, Start Num: 45

Candidate Starts for CricKo\_91:

(Start: 45 @53655 has 89 MA's), (52, 53703), (61, 53766), (65, 53796), (66, 53802), (72, 53859), (73, 53868), (76, 53910),

Gene: Crocheter\_88 Start: 56515, Stop: 56850, Start Num: 30

Candidate Starts for Crocheter\_88:

(Start: 30 @56515 has 13 MA's), (35, 56533), (Start: 45 @56551 has 89 MA's), (56, 56620), (72, 56764), (73, 56773),

Gene: Daddyjeff\_87 Start: 51237, Stop: 51530, Start Num: 44

Candidate Starts for Daddyjeff\_87:

(Start: 44 @51237 has 10 MA's), (48, 51267), (70, 51435), (72, 51444), (75, 51471), (80, 51525),

Gene: Damascus\_79 Start: 52477, Stop: 52830, Start Num: 44

Candidate Starts for Damascus\_79:

(9, 52369), (18, 52411), (Start: 30 @52441 has 13 MA's), (38, 52465), (Start: 44 @52477 has 10 MA's), (48, 52513), (49, 52516), (59, 52585), (70, 52681), (77, 52744), (82, 52813),

Gene: Dancer\_89 Start: 55590, Stop: 55895, Start Num: 45

Candidate Starts for Dancer\_89:

(19, 55527), (20, 55530), (Start: 45 @55590 has 89 MA's), (56, 55659), (72, 55803), (73, 55812),

Gene: Darby\_86 Start: 53826, Stop: 54167, Start Num: 33

Candidate Starts for Darby\_86:  
(Start: 33 @53826 has 36 MA's), (68, 54027), (73, 54063),

Gene: Demure\_85 Start: 56543, Stop: 56884, Start Num: 30  
Candidate Starts for Demure\_85:  
(Start: 30 @56543 has 13 MA's), (35, 56561), (Start: 45 @56579 has 89 MA's), (56, 56648), (58, 56669), (72, 56792), (73, 56801),

Gene: DevitoJr\_89 Start: 54115, Stop: 54453, Start Num: 33  
Candidate Starts for DevitoJr\_89:  
(Start: 33 @54115 has 36 MA's), (46, 54139), (64, 54274),

Gene: Dialga\_89 Start: 56382, Stop: 56723, Start Num: 30  
Candidate Starts for Dialga\_89:  
(Start: 30 @56382 has 13 MA's), (35, 56400), (Start: 45 @56418 has 89 MA's), (56, 56487), (58, 56508), (72, 56631), (73, 56640),

Gene: Dinallo\_80 Start: 54473, Stop: 54811, Start Num: 33  
Candidate Starts for Dinallo\_80:  
(Start: 33 @54473 has 36 MA's), (46, 54497), (64, 54632),

Gene: Ditters\_54 Start: 40002, Stop: 40319, Start Num: 45  
Candidate Starts for Ditters\_54:  
(Start: 45 @40002 has 89 MA's), (54, 40065), (59, 40101), (64, 40140), (72, 40206), (73, 40215),

Gene: DizzyRudy\_83 Start: 51813, Stop: 52166, Start Num: 44  
Candidate Starts for DizzyRudy\_83:  
(18, 51747), (Start: 30 @51777 has 13 MA's), (38, 51801), (Start: 44 @51813 has 10 MA's), (48, 51849), (49, 51852), (59, 51921), (70, 52017), (77, 52080), (82, 52149),

Gene: Djungelskog\_83 Start: 50571, Stop: 50903, Start Num: 42  
Candidate Starts for Djungelskog\_83:  
(Start: 42 @50571 has 31 MA's), (73, 50790),

Gene: DoctorPepper\_83 Start: 50302, Stop: 50634, Start Num: 42  
Candidate Starts for DoctorPepper\_83:  
(Start: 42 @50302 has 31 MA's), (73, 50521),

Gene: Doxi13\_57 Start: 39659, Stop: 39979, Start Num: 45  
Candidate Starts for Doxi13\_57:  
(29, 39620), (Start: 45 @39659 has 89 MA's), (54, 39722), (64, 39797), (73, 39872),

Gene: DrGrey\_79 Start: 51987, Stop: 52277, Start Num: 45  
Candidate Starts for DrGrey\_79:  
(Start: 45 @51987 has 89 MA's), (50, 52020), (52, 52035), (58, 52077), (59, 52086), (64, 52125), (71, 52188), (73, 52200), (76, 52242),

Gene: Duffington\_89 Start: 57356, Stop: 57655, Start Num: 45  
Candidate Starts for Duffington\_89:  
(Start: 30 @57320 has 13 MA's), (35, 57338), (Start: 45 @57356 has 89 MA's), (56, 57425), (72, 57569), (73, 57578),

Gene: Dynamite\_96 Start: 54004, Stop: 54306, Start Num: 42

Candidate Starts for Dynamite\_96:

(31, 53977), (Start: 40 @53998 has 4 MA's), (Start: 42 @54004 has 31 MA's), (56, 54079), (73, 54223),

Gene: Eddiemania\_89 Start: 57446, Stop: 57745, Start Num: 45

Candidate Starts for Eddiemania\_89:

(25, 57395), (36, 57428), (Start: 45 @57446 has 89 MA's), (56, 57515), (72, 57659), (73, 57668),

Gene: Eevee\_81 Start: 52573, Stop: 52866, Start Num: 44

Candidate Starts for Eevee\_81:

(Start: 44 @52573 has 10 MA's), (53, 52627), (55, 52642), (60, 52684), (70, 52771), (72, 52780), (73, 52789),

Gene: Egad\_85 Start: 50576, Stop: 50908, Start Num: 42

Candidate Starts for Egad\_85:

(Start: 42 @50576 has 31 MA's), (73, 50795),

Gene: ElephantMan\_90 Start: 54476, Stop: 54814, Start Num: 33

Candidate Starts for ElephantMan\_90:

(Start: 33 @54476 has 36 MA's), (46, 54500), (64, 54635),

Gene: Elsa\_94 Start: 54217, Stop: 54519, Start Num: 42

Candidate Starts for Elsa\_94:

(31, 54190), (Start: 40 @54211 has 4 MA's), (Start: 42 @54217 has 31 MA's), (56, 54292), (73, 54436),

Gene: Elver\_244 Start: 109082, Stop: 109375, Start Num: 45

Candidate Starts for Elver\_244:

(Start: 45 @109082 has 89 MA's), (48, 109109), (52, 109130), (64, 109220), (66, 109229), (72, 109286), (74, 109310), (78, 109361),

Gene: EndAve\_90 Start: 57266, Stop: 57565, Start Num: 45

Candidate Starts for EndAve\_90:

(Start: 30 @57230 has 13 MA's), (35, 57248), (Start: 45 @57266 has 89 MA's), (56, 57335), (72, 57479), (73, 57488),

Gene: Esketit\_79 Start: 50575, Stop: 50865, Start Num: 45

Candidate Starts for Esketit\_79:

(Start: 45 @50575 has 89 MA's), (50, 50608), (52, 50623), (58, 50665), (59, 50674), (64, 50713), (71, 50776), (73, 50788), (76, 50830),

Gene: Espio\_83 Start: 52358, Stop: 52648, Start Num: 45

Candidate Starts for Espio\_83:

(Start: 45 @52358 has 89 MA's), (50, 52391), (52, 52406), (58, 52448), (59, 52457), (64, 52496), (71, 52559), (73, 52571), (76, 52613),

Gene: Fazel\_89 Start: 56115, Stop: 56420, Start Num: 45

Candidate Starts for Fazel\_89:

(12, 56034), (31, 56082), (Start: 45 @56115 has 89 MA's), (56, 56184), (72, 56328), (73, 56337),

Gene: FidgetOrca\_85 Start: 52025, Stop: 52315, Start Num: 45

Candidate Starts for FidgetOrca\_85:

(Start: 45 @52025 has 89 MA's), (50, 52058), (52, 52073), (58, 52115), (59, 52124), (64, 52163), (71, 52226), (73, 52238), (76, 52280),

Gene: Figliar\_87 Start: 57124, Stop: 57459, Start Num: 30

Candidate Starts for Figliar\_87:

(Start: 30 @57124 has 13 MA's), (35, 57142), (Start: 45 @57160 has 89 MA's), (56, 57229), (72, 57373), (73, 57382),

Gene: Football\_94 Start: 55933, Stop: 56238, Start Num: 45

Candidate Starts for Football\_94:

(19, 55870), (20, 55873), (Start: 45 @55933 has 89 MA's), (56, 56002), (72, 56146), (73, 56155),

Gene: FortCran\_89 Start: 55854, Stop: 56159, Start Num: 45

Candidate Starts for FortCran\_89:

(19, 55791), (20, 55794), (Start: 45 @55854 has 89 MA's), (56, 55923), (72, 56067), (73, 56076),

Gene: FrodoSwaggins\_81 Start: 52382, Stop: 52672, Start Num: 45

Candidate Starts for FrodoSwaggins\_81:

(Start: 45 @52382 has 89 MA's), (50, 52415), (52, 52430), (58, 52472), (59, 52481), (64, 52520), (71, 52583), (73, 52595), (76, 52637),

Gene: FromIndy\_89 Start: 52855, Stop: 53145, Start Num: 45

Candidate Starts for FromIndy\_89:

(Start: 45 @52855 has 89 MA's), (52, 52903), (61, 52966), (65, 52996), (66, 53002), (72, 53059), (73, 53068), (76, 53110),

Gene: Gandionco\_248 Start: 109877, Stop: 110170, Start Num: 45

Candidate Starts for Gandionco\_248:

(Start: 45 @109877 has 89 MA's), (48, 109904), (52, 109925), (64, 110015), (66, 110024), (67, 110036), (72, 110081), (74, 110105), (78, 110156),

Gene: GermyBearimy\_102 Start: 55428, Stop: 55799, Start Num: 34

Candidate Starts for GermyBearimy\_102:

(Start: 34 @55428 has 4 MA's), (52, 55494), (63, 55557), (73, 55653),

Gene: Giantsbane\_91 Start: 52822, Stop: 53160, Start Num: 33

Candidate Starts for Giantsbane\_91:

(Start: 33 @52822 has 36 MA's), (62, 52957), (73, 53056),

Gene: Gill\_91 Start: 55884, Stop: 56189, Start Num: 45

Candidate Starts for Gill\_91:

(Start: 45 @55884 has 89 MA's), (56, 55953), (72, 56097), (73, 56106),

Gene: GirlPower\_76 Start: 51444, Stop: 51734, Start Num: 45

Candidate Starts for GirlPower\_76:

(Start: 45 @51444 has 89 MA's), (52, 51492), (58, 51534), (64, 51582), (71, 51645), (73, 51657), (76, 51699),

Gene: Glintora\_91 Start: 57547, Stop: 57846, Start Num: 45

Candidate Starts for Glintora\_91:

(Start: 30 @57511 has 13 MA's), (35, 57529), (Start: 45 @57547 has 89 MA's), (56, 57616), (58, 57637), (72, 57760), (73, 57769),

Gene: GoCrazy\_92 Start: 52968, Stop: 53270, Start Num: 42

Candidate Starts for GoCrazy\_92:

(31, 52941), (Start: 40 @52962 has 4 MA's), (Start: 42 @52968 has 31 MA's), (56, 53043), (73, 53187),

Gene: GoblinVoyage\_56 Start: 39503, Stop: 39823, Start Num: 45  
Candidate Starts for GoblinVoyage\_56:  
(29, 39464), (Start: 45 @39503 has 89 MA's), (54, 39566), (64, 39641), (73, 39716),

Gene: Gordon\_86 Start: 54346, Stop: 54687, Start Num: 33  
Candidate Starts for Gordon\_86:  
(Start: 33 @54346 has 36 MA's), (64, 54508),

Gene: Gravy\_90 Start: 55547, Stop: 55852, Start Num: 45  
Candidate Starts for Gravy\_90:  
(Start: 45 @55547 has 89 MA's), (56, 55616), (72, 55760), (73, 55769),

Gene: Gusicorn\_89 Start: 56458, Stop: 56757, Start Num: 45  
Candidate Starts for Gusicorn\_89:  
(Start: 30 @56422 has 13 MA's), (35, 56440), (Start: 45 @56458 has 89 MA's), (56, 56527), (72, 56671), (73, 56680),

Gene: Hankly\_99 Start: 54591, Stop: 54899, Start Num: 40  
Candidate Starts for Hankly\_99:  
(31, 54570), (Start: 40 @54591 has 4 MA's), (Start: 42 @54597 has 31 MA's), (56, 54672), (73, 54816),

Gene: HazuAndZazu\_80 Start: 51734, Stop: 52024, Start Num: 45  
Candidate Starts for HazuAndZazu\_80:  
(Start: 45 @51734 has 89 MA's), (50, 51767), (52, 51782), (58, 51824), (59, 51833), (64, 51872), (71, 51935), (73, 51947), (76, 51989),

Gene: Heisenberger\_97 Start: 54367, Stop: 54669, Start Num: 42  
Candidate Starts for Heisenberger\_97:  
(31, 54340), (Start: 40 @54361 has 4 MA's), (Start: 42 @54367 has 31 MA's), (56, 54442), (73, 54586),

Gene: Hemma\_84 Start: 51241, Stop: 51582, Start Num: 34  
Candidate Starts for Hemma\_84:  
(5, 51121), (6, 51139), (10, 51175), (21, 51205), (Start: 34 @51241 has 4 MA's), (49, 51295), (52, 51313), (73, 51478),

Gene: HerbBucket\_84 Start: 50302, Stop: 50634, Start Num: 42  
Candidate Starts for HerbBucket\_84:  
(Start: 42 @50302 has 31 MA's), (73, 50521),

Gene: Hortihabitatio\_86 Start: 55884, Stop: 56189, Start Num: 45  
Candidate Starts for Hortihabitatio\_86:  
(13, 55809), (31, 55851), (Start: 45 @55884 has 89 MA's), (51, 55923), (56, 55953), (72, 56097), (73, 56106),

Gene: Hoshi\_84 Start: 51639, Stop: 51929, Start Num: 45  
Candidate Starts for Hoshi\_84:  
(Start: 45 @51639 has 89 MA's), (50, 51672), (52, 51687), (58, 51729), (59, 51738), (64, 51777), (71, 51840), (73, 51852), (76, 51894),

Gene: HotFries\_54 Start: 39686, Stop: 40006, Start Num: 45  
Candidate Starts for HotFries\_54:  
(29, 39647), (Start: 45 @39686 has 89 MA's), (54, 39749), (64, 39824), (72, 39890), (73, 39899),

Gene: Hydrus\_88 Start: 56826, Stop: 57167, Start Num: 30

Candidate Starts for Hydrus\_88:

(Start: 30 @56826 has 13 MA's), (35, 56844), (Start: 45 @56862 has 89 MA's), (56, 56931), (58, 56952), (72, 57075), (73, 57084),

Gene: IceWarrior\_83 Start: 51444, Stop: 51734, Start Num: 45

Candidate Starts for IceWarrior\_83:

(Start: 45 @51444 has 89 MA's), (50, 51477), (52, 51492), (58, 51534), (59, 51543), (64, 51582), (71, 51645), (73, 51657), (76, 51699),

Gene: Indigenous\_85 Start: 52030, Stop: 52320, Start Num: 45

Candidate Starts for Indigenous\_85:

(Start: 45 @52030 has 89 MA's), (50, 52063), (52, 52078), (58, 52120), (59, 52129), (64, 52168), (71, 52231), (73, 52243), (76, 52285),

Gene: Ingrid\_92 Start: 53005, Stop: 53346, Start Num: 33

Candidate Starts for Ingrid\_92:

(Start: 33 @53005 has 36 MA's), (68, 53206), (73, 53242),

Gene: Inked\_92 Start: 53930, Stop: 54268, Start Num: 33

Candidate Starts for Inked\_92:

(Start: 33 @53930 has 36 MA's), (46, 53954), (64, 54089),

Gene: Issa\_82 Start: 53534, Stop: 53872, Start Num: 33

Candidate Starts for Issa\_82:

(Start: 33 @53534 has 36 MA's), (46, 53558), (64, 53693),

Gene: JEGGS\_97 Start: 54446, Stop: 54748, Start Num: 42

Candidate Starts for JEGGS\_97:

(31, 54419), (Start: 40 @54440 has 4 MA's), (Start: 42 @54446 has 31 MA's), (56, 54521), (73, 54665),

Gene: Jaylociraptor\_83 Start: 51610, Stop: 51900, Start Num: 45

Candidate Starts for Jaylociraptor\_83:

(Start: 45 @51610 has 89 MA's), (50, 51643), (52, 51658), (58, 51700), (59, 51709), (64, 51748), (71, 51811), (73, 51823), (76, 51865),

Gene: Jazzy4900\_89 Start: 54541, Stop: 54918, Start Num: 34

Candidate Starts for Jazzy4900\_89:

(25, 54514), (Start: 34 @54541 has 4 MA's), (52, 54607), (63, 54676), (73, 54772),

Gene: JeNeSaisPas\_241 Start: 110065, Stop: 110358, Start Num: 45

Candidate Starts for JeNeSaisPas\_241:

(Start: 45 @110065 has 89 MA's), (48, 110092), (52, 110113), (64, 110203), (66, 110212), (67, 110224), (72, 110269), (74, 110293), (78, 110344),

Gene: Jeremy4pt0\_82 Start: 50256, Stop: 50588, Start Num: 42

Candidate Starts for Jeremy4pt0\_82:

(Start: 42 @50256 has 31 MA's), (73, 50475),

Gene: Jodelie19\_88 Start: 58344, Stop: 58643, Start Num: 45

Candidate Starts for Jodelie19\_88:

(Start: 30 @58308 has 13 MA's), (35, 58326), (Start: 45 @58344 has 89 MA's), (56, 58413), (72, 58557), (73, 58566),

Gene: JoyLin\_82 Start: 53326, Stop: 53619, Start Num: 44

Candidate Starts for JoyLin\_82:

(Start: 44 @53326 has 10 MA's), (53, 53380), (55, 53395), (60, 53437), (70, 53524), (72, 53533), (73, 53542),

Gene: JulesRay\_89 Start: 55949, Stop: 56254, Start Num: 45

Candidate Starts for JulesRay\_89:

(19, 55886), (20, 55889), (Start: 45 @55949 has 89 MA's), (56, 56018), (72, 56162), (73, 56171),

Gene: Kardashian\_80 Start: 51975, Stop: 52268, Start Num: 43

Candidate Starts for Kardashian\_80:

(Start: 43 @51975 has 2 MA's), (58, 52065), (59, 52074), (61, 52086), (66, 52122), (69, 52161), (71, 52176), (73, 52188), (76, 52230),

Gene: Kardesai\_97 Start: 54025, Stop: 54327, Start Num: 42

Candidate Starts for Kardesai\_97:

(31, 53998), (Start: 40 @54019 has 4 MA's), (Start: 42 @54025 has 31 MA's), (56, 54100), (73, 54244),

Gene: KeaneyLin\_92 Start: 54006, Stop: 54308, Start Num: 42

Candidate Starts for KeaneyLin\_92:

(31, 53979), (Start: 40 @54000 has 4 MA's), (Start: 42 @54006 has 31 MA's), (56, 54081), (73, 54225),

Gene: Kenosha\_87 Start: 56919, Stop: 57224, Start Num: 45

Candidate Starts for Kenosha\_87:

(Start: 30 @56883 has 13 MA's), (35, 56901), (Start: 45 @56919 has 89 MA's), (56, 56988), (58, 57009), (72, 57132), (73, 57141),

Gene: Kerry\_90 Start: 55610, Stop: 55915, Start Num: 45

Candidate Starts for Kerry\_90:

(Start: 45 @55610 has 89 MA's), (56, 55679), (72, 55823), (73, 55832),

Gene: KevinMinion\_87 Start: 52323, Stop: 52640, Start Num: 34

Candidate Starts for KevinMinion\_87:

(4, 52194), (5, 52203), (7, 52230), (13, 52269), (17, 52278), (27, 52302), (Start: 34 @52323 has 4 MA's), (57, 52419), (73, 52557),

Gene: Kinny\_89 Start: 52518, Stop: 52829, Start Num: 33

Candidate Starts for Kinny\_89:

(Start: 33 @52518 has 36 MA's), (57, 52614), (73, 52752),

Gene: Kureo\_245 Start: 108288, Stop: 108581, Start Num: 45

Candidate Starts for Kureo\_245:

(Start: 45 @108288 has 89 MA's), (48, 108315), (52, 108336), (64, 108426), (66, 108435), (67, 108447), (72, 108492), (74, 108516), (78, 108567),

Gene: Leathea\_95 Start: 51147, Stop: 51464, Start Num: 33

Candidate Starts for Leathea\_95:

(Start: 33 @51147 has 36 MA's), (47, 51192), (57, 51243), (65, 51309), (73, 51381),

Gene: Lewando\_86 Start: 51174, Stop: 51485, Start Num: 33

Candidate Starts for Lewando\_86:

(Start: 33 @51174 has 36 MA's), (57, 51270), (73, 51408),

Gene: LibertyBell\_76 Start: 48692, Stop: 48985, Start Num: 45

Candidate Starts for LibertyBell\_76:

(39, 48680), (Start: 45 @48692 has 89 MA's), (64, 48830), (66, 48839), (73, 48905), (76, 48947),

Gene: LilHuddy\_89 Start: 53435, Stop: 53773, Start Num: 33

Candidate Starts for LilHuddy\_89:

(Start: 33 @53435 has 36 MA's), (73, 53669),

Gene: Linda\_84 Start: 50589, Stop: 50921, Start Num: 42

Candidate Starts for Linda\_84:

(Start: 42 @50589 has 31 MA's), (73, 50808),

Gene: Loretta\_88 Start: 53005, Stop: 53346, Start Num: 33

Candidate Starts for Loretta\_88:

(Start: 33 @53005 has 36 MA's), (68, 53206), (73, 53242),

Gene: LucySwiss\_93 Start: 54380, Stop: 54715, Start Num: 33

Candidate Starts for LucySwiss\_93:

(Start: 33 @54380 has 36 MA's), (46, 54401), (64, 54536),

Gene: Luthien\_89 Start: 57271, Stop: 57570, Start Num: 45

Candidate Starts for Luthien\_89:

(Start: 30 @57235 has 13 MA's), (35, 57253), (Start: 45 @57271 has 89 MA's), (56, 57340), (72, 57484), (73, 57493),

Gene: Madamoto\_82 Start: 51285, Stop: 51575, Start Num: 45

Candidate Starts for Madamoto\_82:

(Start: 45 @51285 has 89 MA's), (52, 51333), (58, 51375), (59, 51384), (64, 51423), (70, 51480), (71, 51486), (73, 51498), (76, 51540),

Gene: Madvan\_87 Start: 56174, Stop: 56479, Start Num: 45

Candidate Starts for Madvan\_87:

(Start: 30 @56138 has 13 MA's), (35, 56156), (Start: 45 @56174 has 89 MA's), (56, 56243), (58, 56264), (72, 56387), (73, 56396),

Gene: Magel\_92 Start: 55799, Stop: 56104, Start Num: 45

Candidate Starts for Magel\_92:

(Start: 45 @55799 has 89 MA's), (56, 55868), (72, 56012), (73, 56021),

Gene: MajinBuu\_89 Start: 57538, Stop: 57837, Start Num: 45

Candidate Starts for MajinBuu\_89:

(Start: 30 @57502 has 13 MA's), (35, 57520), (Start: 45 @57538 has 89 MA's), (56, 57607), (72, 57751), (73, 57760),

Gene: Makai\_89 Start: 54043, Stop: 54384, Start Num: 33

Candidate Starts for Makai\_89:

(Start: 33 @54043 has 36 MA's), (53, 54118), (73, 54280),

Gene: Mardi\_90 Start: 51735, Stop: 52052, Start Num: 34

Candidate Starts for Mardi\_90:

(4, 51606), (5, 51615), (7, 51642), (13, 51681), (17, 51690), (27, 51714), (Start: 34 @51735 has 4 MA's), (57, 51831), (73, 51969),

Gene: Marianna39\_248 Start: 110480, Stop: 110773, Start Num: 45

Candidate Starts for Marianna39\_248:

(Start: 45 @110480 has 89 MA's), (48, 110507), (52, 110528), (64, 110618), (66, 110627), (67, 110639), (72, 110684), (74, 110708), (78, 110759),

Gene: Maya\_83 Start: 51624, Stop: 51914, Start Num: 45

Candidate Starts for Maya\_83:

(Start: 45 @51624 has 89 MA's), (50, 51657), (52, 51672), (58, 51714), (59, 51723), (64, 51762), (71, 51825), (73, 51837), (76, 51879),

Gene: MediumFry\_82 Start: 53043, Stop: 53384, Start Num: 33

Candidate Starts for MediumFry\_82:

(Start: 33 @53043 has 36 MA's), (46, 53070), (52, 53115), (64, 53205),

Gene: Meibysrarus\_81 Start: 51008, Stop: 51298, Start Num: 45

Candidate Starts for Meibysrarus\_81:

(Start: 45 @51008 has 89 MA's), (50, 51041), (52, 51056), (58, 51098), (59, 51107), (64, 51146), (71, 51209), (73, 51221), (76, 51263),

Gene: Mema\_74 Start: 53163, Stop: 53408, Start Num: 54

Candidate Starts for Mema\_74:

(18, 53025), (23, 53037), (38, 53079), (Start: 44 @53091 has 10 MA's), (48, 53127), (54, 53163), (60, 53208), (64, 53238), (65, 53241), (79, 53382),

Gene: Michelle\_84 Start: 50568, Stop: 50900, Start Num: 42

Candidate Starts for Michelle\_84:

(Start: 42 @50568 has 31 MA's), (73, 50787),

Gene: Miek\_85 Start: 52037, Stop: 52327, Start Num: 45

Candidate Starts for Miek\_85:

(Start: 45 @52037 has 89 MA's), (52, 52085), (61, 52148), (65, 52178), (66, 52184), (72, 52241), (73, 52250), (76, 52292),

Gene: MiniBagel\_90 Start: 54346, Stop: 54684, Start Num: 33

Candidate Starts for MiniBagel\_90:

(Start: 33 @54346 has 36 MA's), (46, 54370), (64, 54505),

Gene: Monse\_56 Start: 39510, Stop: 39830, Start Num: 45

Candidate Starts for Monse\_56:

(29, 39471), (Start: 45 @39510 has 89 MA's), (54, 39573), (64, 39648), (68, 39687), (73, 39723),

Gene: Mooshroom\_98 Start: 54025, Stop: 54327, Start Num: 42

Candidate Starts for Mooshroom\_98:

(31, 53998), (Start: 40 @54019 has 4 MA's), (Start: 42 @54025 has 31 MA's), (56, 54100), (73, 54244),

Gene: Moozy\_55 Start: 39513, Stop: 39833, Start Num: 45

Candidate Starts for Moozy\_55:

(29, 39474), (Start: 45 @39513 has 89 MA's), (54, 39576), (64, 39651), (72, 39717), (73, 39726),

Gene: Mossy\_87 Start: 57201, Stop: 57506, Start Num: 45

Candidate Starts for Mossy\_87:

(31, 57168), (Start: 45 @57201 has 89 MA's), (56, 57270), (72, 57414), (73, 57423),

Gene: MrAaronian\_84 Start: 50568, Stop: 50900, Start Num: 42

Candidate Starts for MrAaronian\_84:

(Start: 42 @50568 has 31 MA's), (73, 50787),

Gene: Mudcat\_92 Start: 55602, Stop: 55904, Start Num: 42

Candidate Starts for Mudcat\_92:

(31, 55575), (Start: 40 @55596 has 4 MA's), (Start: 42 @55602 has 31 MA's), (56, 55677), (73, 55821),

Gene: Muglass\_89 Start: 51936, Stop: 52247, Start Num: 33

Candidate Starts for Muglass\_89:

(Start: 33 @51936 has 36 MA's), (57, 52032), (64, 52095), (65, 52098), (73, 52170),

Gene: Mysticmoon\_87 Start: 56297, Stop: 56602, Start Num: 45

Candidate Starts for Mysticmoon\_87:

(13, 56225), (31, 56264), (Start: 45 @56297 has 89 MA's), (56, 56366), (72, 56510), (73, 56519),

Gene: Nadmeg\_87 Start: 57121, Stop: 57456, Start Num: 30

Candidate Starts for Nadmeg\_87:

(Start: 30 @57121 has 13 MA's), (35, 57139), (Start: 45 @57157 has 89 MA's), (56, 57226), (72, 57370), (73, 57379),

Gene: Namo\_85 Start: 52079, Stop: 52369, Start Num: 45

Candidate Starts for Namo\_85:

(Start: 45 @52079 has 89 MA's), (50, 52112), (52, 52127), (58, 52169), (59, 52178), (64, 52217), (71, 52280), (73, 52292), (76, 52334),

Gene: NapoleonB\_97 Start: 53998, Stop: 54306, Start Num: 40

Candidate Starts for NapoleonB\_97:

(31, 53977), (Start: 40 @53998 has 4 MA's), (Start: 42 @54004 has 31 MA's), (56, 54079), (73, 54223),

Gene: Nason\_94 Start: 54217, Stop: 54519, Start Num: 42

Candidate Starts for Nason\_94:

(31, 54190), (Start: 40 @54211 has 4 MA's), (Start: 42 @54217 has 31 MA's), (56, 54292), (73, 54436),

Gene: Natasha\_85 Start: 50502, Stop: 50825, Start Num: 41

Candidate Starts for Natasha\_85:

(Start: 41 @50502 has 4 MA's), (55, 50574), (56, 50577), (64, 50646), (73, 50721),

Gene: Navi1117\_92 Start: 52818, Stop: 53135, Start Num: 34

Candidate Starts for Navi1117\_92:

(4, 52689), (5, 52698), (7, 52725), (13, 52764), (17, 52773), (27, 52797), (Start: 34 @52818 has 4 MA's), (57, 52914), (73, 53052),

Gene: Nightmare\_89 Start: 54909, Stop: 55247, Start Num: 33

Candidate Starts for Nightmare\_89:

(Start: 33 @54909 has 36 MA's), (46, 54933), (64, 55068),

Gene: Niktson\_90 Start: 54476, Stop: 54814, Start Num: 33

Candidate Starts for Niktson\_90:

(Start: 33 @54476 has 36 MA's), (46, 54500), (64, 54635),

Gene: Nithya\_88 Start: 57069, Stop: 57404, Start Num: 30

Candidate Starts for Nithya\_88:

(Start: 30 @57069 has 13 MA's), (35, 57087), (Start: 45 @57105 has 89 MA's), (56, 57174), (58, 57195), (72, 57318), (73, 57327),

Gene: NoPickles\_90 Start: 55706, Stop: 56011, Start Num: 45

Candidate Starts for NoPickles\_90:

(28, 55667), (Start: 45 @55706 has 89 MA's), (56, 55775), (72, 55919), (73, 55928),

Gene: Odesza\_89 Start: 55746, Stop: 56051, Start Num: 45

Candidate Starts for Odesza\_89:

(Start: 45 @55746 has 89 MA's), (56, 55815), (72, 55959), (73, 55968),

Gene: OhMyWard\_83 Start: 56996, Stop: 57301, Start Num: 45

Candidate Starts for OhMyWard\_83:

(11, 56912), (22, 56942), (31, 56963), (Start: 45 @56996 has 89 MA's), (56, 57065), (72, 57209), (73, 57218),

Gene: OlgasClover\_90 Start: 57939, Stop: 58238, Start Num: 45

Candidate Starts for OlgasClover\_90:

(Start: 30 @57903 has 13 MA's), (35, 57921), (Start: 45 @57939 has 89 MA's), (56, 58008), (72, 58152), (73, 58161),

Gene: OlympicHelado\_85 Start: 52100, Stop: 52390, Start Num: 45

Candidate Starts for OlympicHelado\_85:

(Start: 45 @52100 has 89 MA's), (50, 52133), (52, 52148), (58, 52190), (59, 52199), (64, 52238), (71, 52301), (73, 52313), (76, 52355),

Gene: Onestar\_84 Start: 50968, Stop: 51363, Start Num: 16

Candidate Starts for Onestar\_84:

(16, 50968), (Start: 33 @51013 has 36 MA's), (Start: 41 @51031 has 4 MA's), (55, 51103), (73, 51250),

Gene: Paella\_245 Start: 109816, Stop: 110109, Start Num: 45

Candidate Starts for Paella\_245:

(Start: 45 @109816 has 89 MA's), (48, 109843), (52, 109864), (64, 109954), (66, 109963), (67, 109975), (72, 110020), (74, 110044), (78, 110095),

Gene: Pepy6\_050 Start: 72684, Stop: 73013, Start Num: 45

Candidate Starts for Pepy6\_050:

(14, 72609), (Start: 45 @72684 has 89 MA's), (58, 72777), (72, 72900), (73, 72909),

Gene: Perkunas\_91 Start: 55643, Stop: 55948, Start Num: 45

Candidate Starts for Perkunas\_91:

(19, 55580), (20, 55583), (Start: 45 @55643 has 89 MA's), (56, 55712), (66, 55790), (72, 55856), (73, 55865),

Gene: PerroGrande22\_115 Start: 75337, Stop: 75666, Start Num: 45

Candidate Starts for PerroGrande22\_115:

(Start: 45 @75337 has 89 MA's), (58, 75430), (72, 75553), (73, 75562),

Gene: PestoPenguin\_92 Start: 56422, Stop: 56757, Start Num: 30

Candidate Starts for PestoPenguin\_92:

(Start: 30 @56422 has 13 MA's), (35, 56440), (Start: 45 @56458 has 89 MA's), (56, 56527), (72, 56671), (73, 56680),

Gene: Petito\_90 Start: 56517, Stop: 56822, Start Num: 45

Candidate Starts for Petito\_90:

(19, 56454), (26, 56472), (28, 56478), (Start: 45 @56517 has 89 MA's), (56, 56586), (66, 56664), (72, 56730), (73, 56739),

Gene: Phaby\_89 Start: 53367, Stop: 53705, Start Num: 33

Candidate Starts for Phaby\_89:

(Start: 33 @53367 has 36 MA's), (73, 53601),

Gene: Phaila\_93 Start: 51735, Stop: 52073, Start Num: 27

Candidate Starts for Phaila\_93:

(4, 51627), (5, 51636), (7, 51663), (13, 51702), (17, 51711), (27, 51735), (Start: 34 @51756 has 4 MA's), (57, 51852), (73, 51990),

Gene: Phepper\_89 Start: 56610, Stop: 56951, Start Num: 30

Candidate Starts for Phepper\_89:

(Start: 30 @56610 has 13 MA's), (35, 56628), (Start: 45 @56646 has 89 MA's), (56, 56715), (58, 56736), (72, 56859), (73, 56868),

Gene: Pherobrine\_86 Start: 56340, Stop: 56645, Start Num: 45

Candidate Starts for Pherobrine\_86:

(13, 56268), (31, 56307), (Start: 45 @56340 has 89 MA's), (56, 56409), (72, 56553), (73, 56562),

Gene: PherryCruz\_55 Start: 39702, Stop: 40022, Start Num: 45

Candidate Starts for PherryCruz\_55:

(29, 39663), (Start: 45 @39702 has 89 MA's), (54, 39765), (64, 39840), (73, 39915),

Gene: Pippin15\_86 Start: 50675, Stop: 50968, Start Num: 44

Candidate Starts for Pippin15\_86:

(Start: 44 @50675 has 10 MA's), (60, 50786), (70, 50873), (72, 50882), (73, 50891),

Gene: Poco6\_049 Start: 73946, Stop: 74275, Start Num: 45

Candidate Starts for Poco6\_049:

(Start: 45 @73946 has 89 MA's), (58, 74039), (72, 74162), (73, 74171),

Gene: Popy\_81 Start: 52381, Stop: 52671, Start Num: 45

Candidate Starts for Popy\_81:

(Start: 45 @52381 has 89 MA's), (50, 52414), (52, 52429), (58, 52471), (59, 52480), (64, 52519), (71, 52582), (73, 52594), (76, 52636),

Gene: Powelldog\_88 Start: 51614, Stop: 51937, Start Num: 41

Candidate Starts for Powelldog\_88:

(Start: 41 @51614 has 4 MA's), (64, 51758), (73, 51833),

Gene: ProfFrink\_84 Start: 50537, Stop: 50869, Start Num: 42

Candidate Starts for ProfFrink\_84:

(Start: 42 @50537 has 31 MA's), (73, 50756),

Gene: Qui\_244 Start: 109804, Stop: 110097, Start Num: 45

Candidate Starts for Qui\_244:

(Start: 45 @109804 has 89 MA's), (48, 109831), (52, 109852), (64, 109942), (66, 109951), (67, 109963), (72, 110008), (74, 110032), (78, 110083),

Gene: Rainydai\_88 Start: 53655, Stop: 53945, Start Num: 45

Candidate Starts for Rainydai\_88:

(Start: 45 @53655 has 89 MA's), (52, 53703), (61, 53766), (65, 53796), (66, 53802), (72, 53859), (73, 53868), (76, 53910),

Gene: Raunak\_85 Start: 50247, Stop: 50579, Start Num: 42

Candidate Starts for Raunak\_85:

(Start: 42 @50247 has 31 MA's), (73, 50466),

Gene: RavenPuff\_56 Start: 39672, Stop: 39992, Start Num: 45

Candidate Starts for RavenPuff\_56:

(29, 39633), (Start: 45 @39672 has 89 MA's), (54, 39735), (64, 39810), (73, 39885),

Gene: Regigigas\_91 Start: 53267, Stop: 53557, Start Num: 45

Candidate Starts for Regigigas\_91:

(Start: 45 @53267 has 89 MA's), (52, 53315), (61, 53378), (65, 53408), (66, 53414), (72, 53471), (73, 53480), (76, 53522),

Gene: Renaldo\_90 Start: 51279, Stop: 51590, Start Num: 33

Candidate Starts for Renaldo\_90:

(Start: 33 @51279 has 36 MA's), (57, 51375), (73, 51513),

Gene: Rickmore\_89 Start: 56232, Stop: 56531, Start Num: 45

Candidate Starts for Rickmore\_89:

(Start: 30 @56196 has 13 MA's), (35, 56214), (Start: 45 @56232 has 89 MA's), (56, 56301), (72, 56445), (73, 56454),

Gene: Rima\_84 Start: 52079, Stop: 52369, Start Num: 45

Candidate Starts for Rima\_84:

(Start: 45 @52079 has 89 MA's), (50, 52112), (52, 52127), (58, 52169), (59, 52178), (64, 52217), (71, 52280), (73, 52292), (76, 52334),

Gene: Roney\_89 Start: 55909, Stop: 56214, Start Num: 45

Candidate Starts for Roney\_89:

(Start: 45 @55909 has 89 MA's), (56, 55978), (72, 56122), (73, 56131),

Gene: RosaAsantewaa\_52 Start: 38783, Stop: 39076, Start Num: 45

Candidate Starts for RosaAsantewaa\_52:

(Start: 45 @38783 has 89 MA's), (51, 38822), (52, 38831), (64, 38921), (73, 38996), (76, 39038),

Gene: Runhaar\_86 Start: 56213, Stop: 56548, Start Num: 30

Candidate Starts for Runhaar\_86:

(Start: 30 @56213 has 13 MA's), (35, 56231), (Start: 45 @56249 has 89 MA's), (56, 56318), (72, 56462), (73, 56471),

Gene: RustyBoy\_86 Start: 50701, Stop: 51024, Start Num: 41

Candidate Starts for RustyBoy\_86:

(Start: 41 @50701 has 4 MA's), (55, 50773), (56, 50776), (64, 50845), (73, 50920),

Gene: Salk\_84 Start: 50551, Stop: 50883, Start Num: 42

Candidate Starts for Salk\_84:  
(Start: 42 @50551 has 31 MA's), (73, 50770),

Gene: Sangak\_55 Start: 39212, Stop: 39532, Start Num: 45  
Candidate Starts for Sangak\_55:  
(29, 39173), (Start: 45 @39212 has 89 MA's), (54, 39275), (64, 39350), (73, 39425),

Gene: Scap1\_53 Start: 39048, Stop: 39368, Start Num: 45  
Candidate Starts for Scap1\_53:  
(Start: 45 @39048 has 89 MA's), (54, 39111), (64, 39186), (68, 39225), (70, 39243), (73, 39261),

Gene: Schwartz33\_85 Start: 55529, Stop: 55834, Start Num: 45  
Candidate Starts for Schwartz33\_85:  
(24, 55475), (31, 55496), (Start: 43 @55526 has 2 MA's), (Start: 45 @55529 has 89 MA's), (56, 55598),  
(72, 55742), (73, 55751),

Gene: ScienceWizSam\_93 Start: 54288, Stop: 54626, Start Num: 33  
Candidate Starts for ScienceWizSam\_93:  
(Start: 33 @54288 has 36 MA's), (46, 54312), (64, 54447),

Gene: Secretariat\_81 Start: 53797, Stop: 54102, Start Num: 45  
Candidate Starts for Secretariat\_81:  
(Start: 45 @53797 has 89 MA's), (56, 53866), (72, 54010), (73, 54019),

Gene: SendItCS\_83 Start: 52025, Stop: 52315, Start Num: 45  
Candidate Starts for SendItCS\_83:  
(Start: 45 @52025 has 89 MA's), (52, 52073), (61, 52136), (65, 52166), (66, 52172), (72, 52229), (73,  
52238), (76, 52280),

Gene: Serenabean\_87 Start: 51398, Stop: 51691, Start Num: 44  
Candidate Starts for Serenabean\_87:  
(Start: 44 @51398 has 10 MA's), (48, 51428), (70, 51596), (72, 51605), (75, 51632), (80, 51686),

Gene: ShaggyRogers\_88 Start: 56181, Stop: 56516, Start Num: 30  
Candidate Starts for ShaggyRogers\_88:  
(Start: 30 @56181 has 13 MA's), (35, 56199), (Start: 45 @56217 has 89 MA's), (56, 56286), (72,  
56430), (73, 56439),

Gene: SheRa\_56 Start: 39582, Stop: 39902, Start Num: 45  
Candidate Starts for SheRa\_56:  
(29, 39543), (Start: 45 @39582 has 89 MA's), (54, 39645), (64, 39720), (72, 39786), (73, 39795),

Gene: Shepard\_89 Start: 53355, Stop: 53693, Start Num: 33  
Candidate Starts for Shepard\_89:  
(Start: 33 @53355 has 36 MA's), (73, 53589),

Gene: Shiba\_83 Start: 50263, Stop: 50595, Start Num: 42  
Candidate Starts for Shiba\_83:  
(Start: 42 @50263 has 31 MA's), (73, 50482),

Gene: Sloopyjoe\_84 Start: 50570, Stop: 50902, Start Num: 42  
Candidate Starts for Sloopyjoe\_84:  
(Start: 42 @50570 has 31 MA's), (73, 50789),

Gene: Soshi\_82 Start: 52222, Stop: 52512, Start Num: 45

Candidate Starts for Soshi\_82:

(Start: 45 @52222 has 89 MA's), (50, 52255), (52, 52270), (58, 52312), (59, 52321), (64, 52360), (71, 52423), (73, 52435), (76, 52477),

Gene: Spain\_84 Start: 50568, Stop: 50900, Start Num: 42

Candidate Starts for Spain\_84:

(Start: 42 @50568 has 31 MA's), (73, 50787),

Gene: Spectropatronm\_82 Start: 51618, Stop: 51908, Start Num: 45

Candidate Starts for Spectropatronm\_82:

(Start: 45 @51618 has 89 MA's), (50, 51651), (52, 51666), (58, 51708), (59, 51717), (64, 51756), (71, 51819), (73, 51831), (76, 51873),

Gene: Sporto\_81 Start: 50849, Stop: 51172, Start Num: 41

Candidate Starts for Sporto\_81:

(Start: 41 @50849 has 4 MA's), (55, 50921), (56, 50924), (64, 50993), (73, 51068),

Gene: Sprinkle\_81 Start: 50522, Stop: 50845, Start Num: 42

Candidate Starts for Sprinkle\_81:

(Start: 42 @50522 has 31 MA's), (73, 50741),

Gene: StarLord\_84 Start: 50563, Stop: 50895, Start Num: 42

Candidate Starts for StarLord\_84:

(Start: 42 @50563 has 31 MA's), (73, 50782),

Gene: Stardrop\_95 Start: 52722, Stop: 53039, Start Num: 34

Candidate Starts for Stardrop\_95:

(4, 52593), (5, 52602), (7, 52629), (13, 52668), (17, 52677), (27, 52701), (Start: 34 @52722 has 4 MA's), (57, 52818), (73, 52956),

Gene: Stayer\_84 Start: 50566, Stop: 50898, Start Num: 42

Candidate Starts for Stayer\_84:

(Start: 42 @50566 has 31 MA's), (73, 50785),

Gene: Sunny4976\_88 Start: 54541, Stop: 54918, Start Num: 34

Candidate Starts for Sunny4976\_88:

(25, 54514), (Start: 34 @54541 has 4 MA's), (52, 54607), (63, 54676), (73, 54772),

Gene: SweetCrkHerbs\_92 Start: 55656, Stop: 55961, Start Num: 45

Candidate Starts for SweetCrkHerbs\_92:

(19, 55593), (20, 55596), (Start: 45 @55656 has 89 MA's), (56, 55725), (66, 55803), (72, 55869), (73, 55878),

Gene: Sweetclover\_85 Start: 50105, Stop: 50398, Start Num: 44

Candidate Starts for Sweetclover\_85:

(8, 49997), (Start: 44 @50105 has 10 MA's), (70, 50303), (72, 50312), (75, 50339), (76, 50363), (80, 50393),

Gene: Synopsis\_81 Start: 53610, Stop: 53951, Start Num: 33

Candidate Starts for Synopsis\_81:

(Start: 33 @53610 has 36 MA's), (64, 53772),

Gene: TaidaOne\_83 Start: 52094, Stop: 52384, Start Num: 45

Candidate Starts for TaidaOne\_83:

(Start: 45 @52094 has 89 MA's), (50, 52127), (52, 52142), (58, 52184), (59, 52193), (64, 52232), (71, 52295), (73, 52307), (76, 52349),

Gene: Tairn4Wing\_92 Start: 55692, Stop: 55997, Start Num: 45

Candidate Starts for Tairn4Wing\_92:

(Start: 45 @55692 has 89 MA's), (56, 55761), (72, 55905), (73, 55914),

Gene: Talon44\_92 Start: 56253, Stop: 56558, Start Num: 45

Candidate Starts for Talon44\_92:

(19, 56190), (20, 56193), (Start: 45 @56253 has 89 MA's), (56, 56322), (66, 56400), (72, 56466), (73, 56475),

Gene: Tanis\_90 Start: 55729, Stop: 56034, Start Num: 45

Candidate Starts for Tanis\_90:

(Start: 45 @55729 has 89 MA's), (56, 55798), (72, 55942), (73, 55951),

Gene: Teacup\_85 Start: 54308, Stop: 54646, Start Num: 33

Candidate Starts for Teacup\_85:

(Start: 33 @54308 has 36 MA's), (46, 54332), (64, 54467),

Gene: TenaciousP\_90 Start: 58307, Stop: 58606, Start Num: 45

Candidate Starts for TenaciousP\_90:

(Start: 30 @58271 has 13 MA's), (35, 58289), (Start: 45 @58307 has 89 MA's), (56, 58376), (72, 58520), (73, 58529),

Gene: Tenney120\_90 Start: 52029, Stop: 52346, Start Num: 34

Candidate Starts for Tenney120\_90:

(4, 51900), (5, 51909), (7, 51936), (13, 51975), (17, 51984), (27, 52008), (Start: 34 @52029 has 4 MA's), (57, 52125), (73, 52263),

Gene: Tenno\_89 Start: 54263, Stop: 54601, Start Num: 33

Candidate Starts for Tenno\_89:

(Start: 33 @54263 has 36 MA's), (46, 54287), (64, 54422),

Gene: Thiqqums\_91 Start: 53655, Stop: 53945, Start Num: 45

Candidate Starts for Thiqqums\_91:

(Start: 45 @53655 has 89 MA's), (52, 53703), (61, 53766), (65, 53796), (66, 53802), (72, 53859), (73, 53868), (76, 53910),

Gene: TieDye\_79 Start: 50942, Stop: 51232, Start Num: 45

Candidate Starts for TieDye\_79:

(Start: 45 @50942 has 89 MA's), (50, 50975), (52, 50990), (58, 51032), (59, 51041), (64, 51080), (71, 51143), (73, 51155), (76, 51197),

Gene: Tipton\_91 Start: 53735, Stop: 54073, Start Num: 33

Candidate Starts for Tipton\_91:

(Start: 33 @53735 has 36 MA's), (73, 53969),

Gene: Tokki\_95 Start: 53736, Stop: 54074, Start Num: 33

Candidate Starts for Tokki\_95:

(Start: 33 @53736 has 36 MA's), (73, 53970),

Gene: Tonaltzin\_93 Start: 57046, Stop: 57345, Start Num: 45

Candidate Starts for Tonaltzin\_93:

(Start: 30 @57010 has 13 MA's), (35, 57028), (Start: 45 @57046 has 89 MA's), (56, 57115), (72, 57259), (73, 57268),

Gene: TonyStarch\_82 Start: 51380, Stop: 51670, Start Num: 45

Candidate Starts for TonyStarch\_82:

(Start: 45 @51380 has 89 MA's), (50, 51413), (52, 51428), (58, 51470), (59, 51479), (64, 51518), (71, 51581), (73, 51593), (76, 51635),

Gene: Tribby\_99 Start: 55243, Stop: 55545, Start Num: 42

Candidate Starts for Tribby\_99:

(31, 55216), (Start: 40 @55237 has 4 MA's), (Start: 42 @55243 has 31 MA's), (56, 55318), (73, 55462),

Gene: TrixiePhattel\_90 Start: 51329, Stop: 51646, Start Num: 33

Candidate Starts for TrixiePhattel\_90:

(32, 51326), (Start: 33 @51329 has 36 MA's), (57, 51425), (66, 51497),

Gene: Truckee\_86 Start: 53795, Stop: 54136, Start Num: 33

Candidate Starts for Truckee\_86:

(Start: 33 @53795 has 36 MA's), (53, 53870), (73, 54032),

Gene: Trufflozitus\_94 Start: 56207, Stop: 56512, Start Num: 45

Candidate Starts for Trufflozitus\_94:

(Start: 45 @56207 has 89 MA's), (56, 56276), (72, 56420), (73, 56429),

Gene: Trustiboi\_87 Start: 54309, Stop: 54650, Start Num: 33

Candidate Starts for Trustiboi\_87:

(Start: 33 @54309 has 36 MA's), (68, 54510), (73, 54546),

Gene: Untouchable\_90 Start: 57643, Stop: 57948, Start Num: 45

Candidate Starts for Untouchable\_90:

(Start: 30 @57607 has 13 MA's), (35, 57625), (Start: 45 @57643 has 89 MA's), (56, 57712), (58, 57733), (72, 57856), (73, 57865),

Gene: Uzumaki\_89 Start: 51465, Stop: 51782, Start Num: 34

Candidate Starts for Uzumaki\_89:

(4, 51336), (5, 51345), (7, 51372), (13, 51411), (17, 51420), (27, 51444), (Start: 34 @51465 has 4 MA's), (57, 51561), (73, 51699),

Gene: Vardy\_87 Start: 56164, Stop: 56463, Start Num: 45

Candidate Starts for Vardy\_87:

(Start: 30 @56128 has 13 MA's), (35, 56146), (Start: 45 @56164 has 89 MA's), (56, 56233), (72, 56377), (73, 56386),

Gene: Westerlin\_84 Start: 55207, Stop: 55521, Start Num: 46

Candidate Starts for Westerlin\_84:

(Start: 33 @55183 has 36 MA's), (46, 55207), (64, 55342),

Gene: Wigberry\_88 Start: 52792, Stop: 53103, Start Num: 45

Candidate Starts for Wigberry\_88:

(Start: 45 @52792 has 89 MA's), (52, 52840), (58, 52882), (59, 52891), (64, 52930), (72, 52996), (73, 53005), (76, 53047), (81, 53080),

Gene: Xenomorph\_92 Start: 54848, Stop: 55150, Start Num: 42

Candidate Starts for Xenomorph\_92:

(31, 54821), (Start: 40 @54842 has 4 MA's), (Start: 42 @54848 has 31 MA's), (56, 54923), (73, 55067),

Gene: YoshiYama\_93 Start: 54431, Stop: 54733, Start Num: 42

Candidate Starts for YoshiYama\_93:

(31, 54404), (Start: 40 @54425 has 4 MA's), (Start: 42 @54431 has 31 MA's), (56, 54506), (73, 54650),

Gene: Yotsuba\_82 Start: 53343, Stop: 53636, Start Num: 44

Candidate Starts for Yotsuba\_82:

(Start: 44 @53343 has 10 MA's), (53, 53397), (55, 53412), (60, 53454), (70, 53541), (72, 53550), (73, 53559),

Gene: Zeph\_91 Start: 57411, Stop: 57752, Start Num: 30

Candidate Starts for Zeph\_91:

(Start: 30 @57411 has 13 MA's), (35, 57429), (Start: 45 @57447 has 89 MA's), (56, 57516), (58, 57537), (72, 57660), (73, 57669),

Gene: Zippen\_93 Start: 54182, Stop: 54523, Start Num: 33

Candidate Starts for Zippen\_93:

(Start: 33 @54182 has 36 MA's), (46, 54209), (64, 54344),